

**CONSTRUCTION QUALITY ASSURANCE REPORT
ASH POND D CLOSURE
HUTSONVILLE POWER STATION
15142 EAST 1900 AVENUE
HUTSONVILLE, CRAWFORD COUNTY, ILLINOIS**

Prepared for:

AMEREN ENERGY RESOURCES GENERATING COMPANY

Prepared by:

GEOTECHNOLOGY, INC.
St. Louis, Missouri

Project No. J019896.01
DRAFT

November 8, 2012

November 2, 2012

J019896.01
DRAFT

Mr. Mike Wagstaff
Hutsonville Power Station
15142 East 1900 Avenue
Hutsonville, Crawford County, Illinois

Re: Construction Quality Assurance Report
Ash Pond D Closure
Hutsonville Power Station
15142 East 1900 Avenue
Hutsonville, Crawford County, Illinois

Dear Mr. Wagstaff:

Attached is the Construction Quality Assurance report for the referenced site. This report covers the activities associated with the Ash Pond D closure at the Hutsonville Power Station in Crawford County, Illinois.

If you have any questions or comments regarding the attached information, please feel free to contact the undersigned at (314) 997-7440.

Very truly yours,

GEOTECHNOLOGY, INC.

Anna M. Saindon, R.G., P.E., Ph.D.
Senior Engineer

Eric J. Neuner, P.E.
Senior Project Manager

AMS/EJN:ams/ejn/her

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1.0 PROJECT BACKGROUND

The Ameren Energy Resources (Ameren) Hutsonville Power Station (Hutsonville) is at 15142 East 1900 Avenue, Hutsonville, Illinois. This report describes the completed Construction Quality Assurance (CQA) program for the Ash Pond D closure. The plan has been completed in general accordance with the coal combustion waste (CCW) surface impoundment closure requirements of 35 Illinois Administration Code (IAC) 840.146 entitled Construction Quality Assurance Program.

Ash Pond D was the primary disposal location for CCW generated from the Hutsonville coal fired power plant from 1968 to 2000. Reportedly, the CCW consisted primarily of fly ash and bottom ash, and was sluiced to Ash Pond D. Based on information provided by Ameren, Ash Pond D is estimated to contain between 800,000 and 850,000 cubic yards of ash.

In summary, the Ash Pond D Closure activities included: CCW subgrade grading, CCW subgrade compaction, placement of 40- mil high density polyethylene (HDPE), placement of a three-foot thick vegetative soil layer, vegetation, construction of surface water control structures, and construction of a groundwater collection system. The CQA Plan¹ required a scheduled program of monitoring, inspecting, sampling, and testing. The CQA Plan was used to evaluate compliance with the intent of the closure plans² and specifications³. This CQA report includes a summary of the site activities, construction observation, field-testing, laboratory testing, and surveying during the Ash Pond D closure. Presented in Appendix A are the weekly memorandums, daily reports, meeting minutes, and photograph logs. Presented in Appendix B are the CQA certifications.

¹ *Construction Quality Assurance Plan, Closure of Ash Pond D, Hutsonville Power Station*, prepared by Hanson Professional Services Inc. for Ameren Energy Generating Company, 2012.

² *Closure Plan, Closure of Ash Pond D, Hutsonville Power Station, Revised March*, prepared by Hanson Professional Services Inc. for Ameren Energy Generating Company, 2012.

³ *Project Manual for the Closure of Ash Pond D, Hutsonville Power Station*, prepared by Hanson Professional Services Inc. for Ameren Energy Generating Company, 2011.

2.0 SUBGRADE PREPARATION

Subgrade preparation began on March 28, 2012 and was completed on May 29, 2012. In summary, subgrade preparation activities consisted of deconstructing the geotubes (geotextile wrapped ash), spreading geotube material into Ash Pond D, grading ash and embankment materials, compacting the top one foot of subgrade material, performing compaction testing, and surveying the final subgrade elevations. In addition, the prepared subgrade was visually assessed by the CQA Officer to observe that the surface was relatively smooth and free of deleterious materials (i.e. jagged irregular shaped protrusions) that could damage the geomembrane.

2.1 Laboratory Testing

Four CCW bulk samples were obtained from the existing subgrade and two bulk samples were obtained from the existing embankment materials. Index testing (moisture content and Atterberg limits) was performed on select samples. Standard Proctor moisture-density relationship was performed on the six bulk samples. The laboratory test results are summarized and presented in Appendix C.

2.2 Subgrade Compaction

Nuclear gauge density tests were performed for the upper 12 inches of the prepared subgrade at the 100 foot surveying grid points provided on the site plans (refer to Table 2). The field density tests were compared to the standard Proctor moisture-density relationship laboratory test data (Appendix C) to provide information regarding subgrade compaction. The project specifications required the subgrade to be compacted to 90 percent of the maximum standard Proctor dry density. Areas of failed density tests were recompacted and retested as needed. Based on the laboratory test results and field density test results at the grid points, the subgrade was compacted in conformance of the CQA plan. The field tests are summarized in Table 2 and provided in the field observation reports in Appendix A.

2.3 Subgrade Survey

The subgrade was surveyed by a licensed surveyor. In addition, the subgrade was observed by the CQA Officer to check that the prepare slopes did not have sharp grade changes, depressions, or protrusions. Repairs were made to areas that did not meet these criteria, prior to geomembrane placement. A final as-built survey of the subgrade was performed. The results of the survey are illustrated and summarized on Sheet 1. After the soil liner was smooth drum rolled, certification of the survey data and general condition of the subgrade was provided by the CQA Officer prior to installation of the 40-mil HDPE geomembrane liner (Appendix B).

3.0 GEOMEMBRANE

After the subgrade was approved, geomembrane placement began on May 30, 2012 and was completed on June 16, 2012.

3.1 Prequalification Testing

The geomembrane manufacturer supplied an inventory list of 40-mil HDPE geomembrane rolls to the Owner and the CQA Officer. The geomembrane manufacturer submitted samples from the prequalification rolls to an independent geosynthetics laboratory for verification of selected manufacturer's guaranteed properties (presented in Appendix D). On each geomembrane roll selected for sampling, a 3-foot long sample was collected along the entire width of the roll.

In addition, the manufacturer submitted documentation that the materials supplied were tested for the parameters listed in the manufacturers list of guaranteed properties at the required testing frequency. The results of the testing, including identification of tested rolls, were submitted to the CQA Officer for review. The manufacturer certified that all rolls met the manufacturer's guaranteed properties, in accordance with the specified testing frequency rate (Appendix D).

Geomembrane prequalification testing was completed prior to delivery.

3.2 Installer Certification of Placement Surface

Prior to daily geomembrane placement, the geomembrane installer provided the CQA Officer daily "certificates of acceptance." The "certificates of acceptance" documented the geomembrane installer's inspection and acceptance of the prepared subgrade surface as being suitable for the geomembrane installation (Appendix D).

3.3 Seam Overlap Testing

The general contractor and geomembrane installer arranged the geomembrane panels in an orientation to reduce the number of field seams. Within the geomembrane footprint, seam overlaps were field measured by the geomembrane installer to verify that the required three inches of overlap was met for all seams. Seam overlaps were "shingled" in the direction of the downslope. The CQA Officer and field representatives made independent measurements of the seam overlaps for additional verification.

3.4 Non-Destructive Testing

The geomembrane installer performed non-destructive testing of seams at the frequency specified in the CQA Plan. The seams were non-destructively tested over the full-length using a vacuum test unit, air pressure test, or other methods (spark testing for geomembrane boots around vent pipes) approved by the CQA Officer. Vacuum testing and air pressure testing procedures are presented in Sections 3.4.1 and 3.4.2. Continuity testing was completed as the seaming progressed. The CQA Officer and field representatives observed the non-destructive testing performed by the geomembrane installer. The geomembrane installer submitted all non-destructive field-testing results to the CQA Officer (Appendix D).

3.4.1 Vacuum Testing (Extrusion Welds)

Extrusion welds are typically used for repairs and protrusions through the geomembrane. The following procedures describe vacuum testing of the extrusion welds.

Equipment

The following equipment was used:

- A vacuum box assembly consisting of a rigid housing, a transparent viewing window, a soft neoprene gasket attached to the bottom, a port hole or valve assembly, and a vacuum gauge;
- A vacuum tank and pump assembly equipped with a pressure controller and pipe connections;
- A rubber pressure or vacuum hose with fittings and connections;
- A bucket; and
- A soapy solution.

Procedures

The following procedures were followed:

1. The vacuum pump was energized and tank pressure was adjusted to approximately ten inches of mercury.
2. A strip of geomembrane approximately 12 inch wide by 48 inch long (an area larger than the coverage of the vacuum box) was wetted with the soapy solution.
3. The box was placed over the wetted area.
4. The bleed valve was closed and the vacuum valve opened.
5. Creation of a leak tight seal was verified.
6. The geomembrane was observed for at least 10 seconds through the viewing window for the presence of soap bubbles.

7. When bubbles were not observed after 10 seconds, the vacuum valve was closed, and the bleed valve opened. The box was moved to the next adjoining area, and the process was repeated.
8. All areas where soap bubbles appeared were marked, repaired, and retested until passing test results were obtained.

3.4.2 Air Pressure Testing (Double Fusion Welds)

Double fusion seams are typically used to fuse two panels of geomembrane together. The following procedures describe air pressure testing of double fusion welds.

Equipment

The following equipment was used:

- An air pump (manual or motor driven) equipped with pressure gauge capable of generating and sustaining a pressure of 25 to 30 pounds per square inch (psi) and mounted on a cushion to protect the geomembrane;
- A rubber hose with fittings and connections; and
- A sharp hollow needle.

Procedures

The following procedures were followed:

1. Both ends of the seam to be tested were sealed.
2. A needle was inserted into the tunnel created by the fusion weld.
3. A protective cushion was inserted between the air pump and the geomembrane.
4. The air pump was energized to a pressure between 25 psi and 30 psi. The valve was closed, and the pressure was sustained for a minimum of five minutes.
5. If loss of pressure exceeded 3 psi or did not stabilize, the leaking area was located, then repaired and retested until passing test results were obtained.
6. At the conclusion of a passing air pressure test, the opposite end of the seam was slit and the subsequent drop in pressure was observed. Our observation of the pressure drop indicated that the seam passed.
7. The needle was removed and the needle hole sealed.

3.5 Destructive Testing

Destructive seam tests were performed at randomly selected geomembrane locations as seaming work progressed. The purpose of the destructive seam tests was to evaluate seam strength. The CQA Officer and field representatives observed the destructive testing performed by the geomembrane installer.

The geomembrane installer submitted the results of the field destructive testing to the CQA Officer. An independent laboratory, selected by the CQA Officer, performed the destructive seam tests that included peel and shear strength testing. The destructive seam testing results (field-testing and independent testing) are presented in Appendix D.

3.5.1 Testing Location and Frequency

The geomembrane installer selected the destructive test locations where seam samples were removed for testing. In addition, the CQA Officer or field representative could select additional destructive seam sample locations at their discretion. Destructive seam test locations include random seam testing and areas of possible defects (excess crystallinity, contamination, offset welds, equipment malfunction). The destructive seam samples were collected and tested according to the requirements in the CQA plan.

3.5.2 Sampling Procedures

Destructive seam samples were obtained as the seaming progressed. This method was used to facilitate approval of the geomembrane results prior to covering the geomembrane with the next layer of the closure construction. The geomembrane installer assigned a number to each destructive seam sample and marked the location and seaming information on each collected sample. The destructive seam sample location was recorded on an as-built drawing. The explanation for taking the sample was also recorded. The locations of the destructive seam samples were repaired in accordance with the CQA Plan. The continuity of the repairs were subsequently vacuum tested.

3.5.3 Field-Testing

The geomembrane installer used a tensiometer to test ten 1-inch wide strips from each sample identified for destructive testing. In accordance with the CQA Plan, the field destructive tests consisted of five samples for peel adhesion and five samples for shear strength. Upon successful field-testing, the remaining destructive seam samples were qualified to be submitted for independent laboratory testing.

3.5.4 Laboratory Testing

Samples that passed the prequalifying field-tests were submitted to the independent testing laboratory. Ten specimens from each destructive seam sample were tested that included five shear strength tests and five peel adhesion tests. Laboratory testing was in accordance with “Standard Test Method for Determining the Integrity of Nonreinforced Geomembrane Seams Produced Using Thermo-Fusion Methods” (ASTM D 6392). Acceptance was based on the criteria outlined in the Geosynthetics Research Institutes (GRI) standard GRI GM19 as provided in the CQA Plan.

3.5.5 Procedures for Failed Destructive Tests

If a destructive sample did not pass either a field or a laboratory test, the geomembrane installer had two options to remediate the failure. The geomembrane installer could reconstruct and repair the seam between any two passed test locations completed by the same technician on the same day. Alternatively, the geomembrane installer could trace the welding path to an intermediate location at least ten feet from the failed test in either direction and take additional destructive seam samples. The additional samples were then field-tested prior to sending to the independent laboratory as previously described. If the additional samples passed, then the seam was reconstructed between the two passing samples. If the additional samples failed, then the process was repeated to establish the zone in which the seam should be reconstructed.

Reconstructed seams were bounded by two locations with passing laboratory destructive tests. In cases that exceeded 150 feet of reconstructed seam, a destructive sample was taken from the zone in the reconstructed area. The geomembrane installer documented the actions taken in conjunction with destructive test failures (Appendix D).

4.0 VEGETATIVE COVER

After a section of geomembrane was constructed and approved, three feet of vegetative cover (soil) was placed over the 40-mil HDPE geomembrane. Soil grading began on June 11, 2012 and was completed on October 4, 2012. The soil grading activities consisted of:

- Visually observing that the geomembrane surface was free of defects prior to soil placement,
- Removing deleterious materials (such as roots and rocks) from the soil that could damage the geomembrane,
- Spreading the soil over the geomembrane,
- Surveying the final subgrade elevations on the established 100-foot grid points,

- Calculating the difference between the ash subgrade and the final surface to confirm that a minimum of three feet of soil vegetative cover was present over the geomembrane.

In summary, the soil was placed in a 3-foot thick lift, which was brought to final grade in a second grading phase after the geomembrane surface was covered. The final surface survey data and calculated thickness is provided on Sheet 2. The vegetative layer (soil) installer's certificates of acceptance of the geomembrane are provided in Appendix E. Discussions of the soil placement are provided on the field observation reports presented in Appendix A.

After the vegetative layer was graded and the surface water management controls constructed, Ash Pond D was fertilized and seeded using synthetic mats, coconut mats, and hay as needed to establish vegetation.

5.0 SURFACE WATER MANAGEMENT

Berms and channels were constructed on the vegetative layer for surface water management. Construction of the berms and channels were observed and an as-built survey was performed. Concrete testing was performed on paved ditches along the west, south, and east Ash Pond D perimeter. In general accordance with the CQA Plan, concrete testing included slump testing, air entrainment, and compressive strength testing. One failed air entrainment test occurred on August 24, 2012, and the concrete plant was notified the same day. Subsequent air entrainment tests performed that day passed. The slump and air entrainment requirements for the paved ditches were adjusted from the original CQA Plan by the Ameren project manager and the design engineer, due to the paved ditches not requiring the same loading conditions as concrete in the roadway. A copy of the specifications is provided in Table 1.

A copy of the berm and channel survey data is provided on Sheet 3. Copies of the concrete test data are provided in Appendix C. Additional information on the field observations are provided in Appendix A.

6.0 GROUNDWATER COLLECTION SYSTEM

The groundwater collection system is designed to intercept and collect potentially impacted groundwater along the south side of Ash Pond A and Ash Pond D. This system is generally composed of a series of pumps, pump structures, collector pipe, discharge pipes, cleanouts, and other electrical and mechanical devices. Periodic field observations and visual observations of the connections in the groundwater collection system occurred and are included in Appendix A. The elevations of the collector pipe and dewatering sumps were field adjusted when bedrock was encountered, and surveyed for positive grade (Sheet 3). The groundwater collection system was commissioned on October 1, 2012.

7.0 SIGNATURES

As Construction Quality Assurance (CQA) Officer for the construction of the Ash Pond D Closure (from March 28, 2012 to October 16, 2012), located at the Ameren Energy Generating Company Hutsonville Plant in Hutsonville, Illinois, I am familiar with the plans and specifications and the CQA Plan as prepared and approved for the project, and it is my professional opinion that the construction was completed as described in this Report. CQA certification by the Owner's Representative does not relieve the Contractor of their obligations to furnish all Work in accordance with the Contract.

Rosanna M. Saindon, P.E., R.G., Ph.D.
Illinois Licensed Professional Engineer
Senior Engineer
Geotechnology, Inc.

As Construction Quality Assurance (CQA) Officer-In-Absentia for the construction of the Ash Pond D Closure (from March 28, 2012 to October 16, 2012), located at the Ameren Energy Generating Company Hutsonville Plant in Hutsonville, Illinois, I am familiar with the plans and specifications and the CQA Plan as prepared and approved for the project, and it is my professional opinion that the construction was completed as described in this Report. CQA certification by the Owner's Representative does not relieve the Contractor of their obligations to furnish all Work in accordance with the Contract.

Joe Cravens, E.I.
Staff Engineer
Geotechnology, Inc.

As Construction Quality Assurance (CQA) Officer-In-Absentia for the construction of the Ash Pond D Closure (from May 30, 2012 to June 16, 2012), located at the Ameren Energy Generating Company Hutsonville Plant in Hutsonville, Illinois, I am familiar with the plans and specifications and the CQA Plan as prepared and approved for the project, and it is my professional opinion that the construction was completed as described in this Report. CQA certification by the Owner's Representative does not relieve the Contractor of their obligations to furnish all Work in accordance with the Contract.

Steve Graham
Senior Scientist
Geotechnology, Inc.

APPENDIX A

WEEKLY REPORTS

APPENDIX B

CQA CERTIFICATIONS

APPENDIX C

MATERIALS TESTING

APPENDIX D

40 MIL HDPE GEOMEMBRANE

APPENDIX E
GEOSYNTHETIC

APPENDIX F

INSTALLER CERTIFICATION

APPENDIX G
CALIBRATIONS



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Energy Resources

FROM: Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DATE: April 3, 2012

SUBJECT: Weekly Summary Report for March 26, 2012 to March 30, 2012

PROJECT: Hutsonville Ash Pond D Closure
Crawford County, Hutsonville, Illinois
Geotechnology Project No. J019896.01

The following is a weekly summary of the site activities at the referenced site.

Weather

The weather was generally sunny with temperature (°F) lows in the 50s and temperature highs in the 70s. Weather related delays did not occur.

Construction Activities

Equipment mobilization, vegetation removal, ash grading, and geotube demolition occurred this week. Vegetation was removed on the north side in quadrant A and B, and on the east and west areas between the geotubes and the embankments to facilitate grade staking and preparation for ash grading. Geotubes were broken open on the south and east sides in preparation for ash grading. Geotubes on the north side were cut open to dry over the weekend. Ash was moved from quadrant A and B to lower areas of quadrant A, and the northern portion of quadrant C. Grading began in quadrant C. Refer to attached daily reports and photograph log for additional information.

Equipment and Personnel On-Site

CAT D6N Bulldozer
CAT D6H Bulldozer
CAT 325C Excavator
John Deere 9520 Tractor with 2-1812C John Deere Scrapers (Pans)
Water Truck

Geotechnology, Inc. – Joe Cravens
Ash Management Systems, LLC (AMS) – Randy Porter, Jimmy Boone, and Robert Dunkley
Charah, Inc. – Joe Tasich
Belt Construction, Inc. – Shelby Belt, Jared Belt, Nick Walker, Kevin Flynn, and Brad Bolenbaugh
Visitors –Refer to the Visitor's Log for visitors, dates, and times.
Refer to the meeting minutes for additional personnel.

Meetings

The weekly progress meeting was held on Tuesday, March 27, 2012. Refer to the attached meeting minutes for additional information.

Photographs

A photograph log with select photographs obtained this week is attached .

Materials

Ash in the geotubes and within the footprint of Ash Pond D was graded.

Testing/Sampling


Two ash samples were obtained to run Standard Proctor tests. Sample Ash 1 was obtained from the north side of Ash Pond D, and sample Ash 2 was obtained from the south side of Ash Pond D.

Calibration Records

Calibration information was requested from LAMAC Engineering Co., Inc. for their surveying equipment.

Signature of CQA Officer

Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.



DAILY REPORTS

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren UE Date: 3/26/12

TIME: Arrive: 6:30 AM Depart: 3:00 PM Travel: 1.0 hr Total: 9.5 hrs
Weather: Sunny, 70° Contractor: AMS Subcontr./Supplier: Belt Construction
Equipment Working: None

Site Activities / Observations / Contacts / Notes: Met with Randy Porter (AMS) and Joe Tasich, who works for Charah and is the Safety Specialist for AMS. Randy, AMS's Site Supervisor, gave me a tour of the Hutsonville Power Station and its ash ponds. At this time, Randy does not have any co-workers on site. There are three job trailers on site: 1 - Geotechnology/Ameren, 2 - AMS Randy's, and 3 - AMS Employee's. Currently, there is no electric, data, or phone lines supplied to the trailers. Note: AMS will have three types of workers: 1 - Operators, 2 - Teamsters (truck drivers), and 3 - Laborers. Along with the trailers, AMS has supplied Out Houses (porter potties), Dumpsters, and Smoking areas.

Met with Shelby Belt, Jared, and Nicky with Belt Construction. Belt brought out two pieces of equipment, 1 - 325C Excavator and 2 - D6N Dozer. Both pieces are Caterpillar (CAT) models. Full Names: Shelby Belt, Jared Belt, and Nick Walker. They went to the Newton Plant for badges.

Aside from Surveying and Mobilization, no work has been performed on site to date.

Note, the Power Plant will be completely shut down after Friday, March 30, 2012.

Additional Comments: _____

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

Randy Porter
Contractor Representative
Anna Saindon
Signature
Geotechnology, Inc.
Engineer's Signature
Company AMS
Date 3-26-12
Date 3-28-12

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: JO19896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren UE Date: 3/27/12

TIME: Arrive: 6:30 AM Depart: 3:30 PM Travel: 1.0 hr Total: 10.0 hrs
Weather: Sunny, 50° AM, 75° PM Contractor: AMS Subcontr./Supplier: Belt Construction
Equipment Working: None

Site Activities / Observations / Contacts / Notes: Progress Meeting 3/27/12: Attendees - Mike Wagstaff, Paul Zinsious, Jimmy Boone, Randy Porter, John Denham, Joe Tasich, Austin Ridgely, and myself. Key Components: Power to trailers needed, AMS will move the Employee trailer to join the other two, after plant shutdown on Friday, I will receive keys to all new locks (approx. 18 locks), and AMS will develop an evacuation plan for storm/hazard events.

Two pieces of equipment were delivered for Belt Construction: 1- 1812 C John Deere Scraper or "Pan" by Robert Ryterski with Ryterski Trucking, and another 2- 1812 C John Deere Scraper by Andrew Miller with ERB Trucking.

The coal pile will be used in Ash Pond D as Fill. The approx. 5000 c.y. of coal will be placed in the pond and covered with ash. The coal cannot come into contact with the overlying geomembrane. However, Mike, Paul, Austin, and myself discussed cleaning the entire lot where the coal was placed (i.e. the coal pile and 12"-18" of coal covering the lot would be put in the ash pond). Soil backfill would then be need to fill the entire lot, along with mulching and seeding. AMS will provide a cost to AER before proceeding. The volume of coal and soil will be produced from areas calculated from aerial photos for cost.

Robert Dunkley, AMS's Teamster, arrived today and went through training with Joe Tasich.

Belt Construction delivered a CAT D6H Dozer and a John Deere 9520 Dual Wheel Tractor. They also brought a 4700 International work truck to be left on site. They will assemble their tractor and scrapers for the remainder of the day.

Additional Comments: Longer Hours are expected due to the delay of ash movement.

Randy Porter
Contractor Representative

Anna Saindon
Signature
Geotechnology, Inc.
Engineer's Signature

AMS
Company
3-27-12
Date
3-28-12
Date

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 3/28/12

TIME: Arrive: 6:30 AM Depart: 4:00 PM Travel: 1.0 hr Total: 10.5 hrs
Weather: Sunny, 65° AM, 75° PM Contractor: AMS Subcontr./Supplier: Belt Construction
Equipment Working: CAT D6N Dozer, CAT D6H Dozer, CAT 325C Excavator, John Deere 9520
Site Activities / Observations / Contacts / Notes: Tractor, Two John Deere 1812C Pans, and Water Truck.
Two new operators arrived for Belt: Kevin Flynn and Brad Bolenbaugh. They went through training with Belt and AMS, and received their badges from the Newton Plant.

Robert Dunkley will primarily drive the Water Truck and the Bus. Nick Walker will primarily operate the 9520 Tractor with the two 1812C Pans. Jared Belt will primarily operate the D6N Dozer. Brad Bolenbaugh will primarily operate the D6H Dozer. Kevin Flynn will primarily operate the 325C Excavator. This is subject to change throughout the project.

Work began in Sections A and B, on the North end of Pond D. Both Dozers and the Tractor began stripping the grass and topsoil in order for the remainder of the North end of the Pond to be staked. The 100' grid was never finished due to the tall grass. Lamac will finish the grid after clearing. On the West side of the Pond, on the NW area of the geotubes, or Sections A and C, a geotube was broken to allow access from the South end of the Pond (the cleared end with the geotubes), to the North end of the Pond (the heavily vegetated end). As of right now, one gate on the West side is the only gate big enough for the equipment to enter, hence, the path between the geotubes was created. Pipe was laid in the entryway to act as a culvert and was covered. This pipe is only temporary to allow water to flow until excessive fill is placed in the center of the Pond.

The strobe light on the Water Truck was repaired. Randy will host three safety meetings/day. We found two potential storm shelters in the event of a tornado. The operators will fill out weekly inspections. Electric Utility stopped by and will use existing pole for power. Will be setup next week. No word from Frontier about phone or data.

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

Randy Padgett
Contractor Representative
Anna Swindon
Signature
Geotechnology, Inc.
Mac Lach
Engineer's Signature

AMS
Company
3-28-12
Date
3-30-12
Date

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: JO19896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: — Client: Ameren ER Date: 3/29/12

TIME: Arrive: 6:30 AM Depart: 4:30 PM Travel: 1.0 hr Total: 11.0 hrs
 Weather: Sunny, 50° AM, 70° PM Contractor: AMS Subcontr./Supplier: Belt Construction
 Equipment Working: D6N Dozer, D6H Dozer, 325C Excavator, 9520 Tractor, Two 1812C Pans, Water Truck

Site Activities / Observations / Contacts / Notes:

To continue from yesterday: The only entry for equipment into Pond D is on the West side of the Pond, in Section C, within the cleared area in between the geotubes. The NW area of the geotubes was cut to allow access to the North end of the Pond, in Sections A and B. The NW entryway was finished with Fill over the pipe from Sections A and B. However, during constructing, the tractor and pans got stuck in the entryway. They were pulled out with a dozer and the underlying pipe was not damaged. An entryway was also made on the NE side of the geotubes, similar to the NW entryway; with an underlying pipe to act as a temporary culvert, and Fill from the North end of Pond D. This will allow for more efficient grading with the tractor and pans, being able to make a circular route from Sections A and B to Sections C and D. Stripping the uncleared North end of the Pond continued, and the vegetation surrounding the perimeter of the geotubes was cleared. Belt began breaking the East side geotubes in Section D. They began placing Fill in Section C from Sections A and B, and they began grading Section C with a dozer.

Obtained samples for Proctors from the North and South end of the Pond. Leaking valves on the Water Truck were fixed and dust control was started. Surveyors will come next Mon. or Tues. to finish staking the PGL, stake some cut areas, and stake all fill areas. Due to existing site features, the Fill will primarily consist of Fly Ash, but will also contain Bottom Ash, Geotube material, PVC, topsoil, grass, roots, and Coal. At this time, the wheels on the pans are to act as rollers. However, if compaction is not met, AMS will pursue using a sheepfoot roller. After time restraints end for the SWP3, Work can proceed on the outer perimeter of the Pond.

Additional Comments: Same operators for the same equipment as yesterday's list.

Randy Porter
 Contractor Representative

AMS
 Company 3-29-12

Anna Sathel
 Signature
 Geotechnology, Inc.

Date
3-30-12
 Date

Anna Sathel
 Engineer's Signature

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: JO19896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 3/30/12

TIME: Arrive: 6:30 AM Depart: 4:00 PM Travel: 1.0 hr Total: 10.5 hrs
Weather: Sunny, 55° AM, 80° PM Contractor: AMS Subcontr./Supplier: Belt Construction
Equipment Working: D6N Dozer, D6H Dozer, 325C Excavator, 9520 Tractor, Two 1812C Pans, Water Truck

Site Activities / Observations / Contacts / Notes:

The majority of Pond D has been cleared of vegetation, excluding the far East side of the Pond. The D6H Dozer continued grading Section C. The 325C Excavator finished breaking the East side geotubes and began breaking the South side geotubes. At the end of the day, the tops of the North side geotubes were ripped open to dry over the weekend. This area is critical of drying because it will contain the most Fill and the Coal, once the EWO is approved, will be placed in this area as well. The D6N Dozer continued grading Section A. The 9520 Tractor continued cutting the North area of Section A and B, and filled lower areas of Section A. In all areas where dozers graded, the tractor would pull the 1812C Pans in these areas to compact the disturbed soil.

They do not need a roller to compact the Base material until they approach the Base grade elevation, where 6" lifts are required in the upper 1.0 ft, and 90% of the Maximum Dry Density of the material is required. If compaction is not reached at the Base grade, they will have to use Steel or Tamped Foot rollers.

Note: Required PPE - Hard Hat, Steel-Toe Boots, Glasses with side protection, and bright shirts or vests. Reflective vests are only required when not wearing bright clothes or at night time (AMS).

Dust Control being performed. Along with Electric (AAA) next week, Frontier will be here April 3, at 10:30 AM for phone and data.

Additional Comments: Same operators for same equipment used as yesterday's list.

Randy Pactor
Contractor Representative

Anna Swindon
Signature
Geotechnology, Inc.

Anna Swindon
Engineer's Signature

AMS
Company
3-30-12

Date
4-2-12
Date

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

MEETING MINUTES



Hutsonville Power Station - Ash Pond D closure
Progress Meeting No. 2 Minutes
Tuesday, March 27, 2012

01	PUBLICATION
	Publication date: 2012-03-30 Distribution: E-mail only Submitted by: P. Zinsious Notes taken by: P. Zinsious Meeting place: Hutsonville Power Station

02	ATTENDEES				
01	Mr. Mike Wagstaff	Ameren	618-343-7790	mwagstaff@ameren.com	
02	Mr. Joe Cravens	Geotechnology	314-568-6628	j_cravens@geotechnology.com	
03	Mr. Austin Ridgely	Lamac Engineering	618-262-8651	aridgely@lamac.net	
04	Mr. John Denham	AMS - RM	502-609-0278	idenham@ashmanagementservices.com	
05	Mr. Joko Tasich	AMS - SS	502-649-7633	itasich@charah.com	
06	Mr. Jimmy Boone	AMS - ARM	502-574-5465	jboone@ashmanagementservices.com	
07	Mr. Randy Porter	AMS - SM	502-554-5230	rporter@ashmanagementservices.com	
08	Mr. Paul Zinsious	AMS - PCM	502-640-2918	pzinsious@ashmanagementservices.com	

03	ABBREVIATIONS
	AER Ameren Energy Resources AMS Ash Management Services BNSF Burlington CBT Computer Based Training EOD End of [the] Day EOM End of [the] month EOW End of [the] week EDTS Energy Delivery Transmission Services EDC Estimated Date [of] Completion EWO Extra Work Order HDPE High Density Polyethylene HRS Hours LOTO Lock Out Tag Out NMA National Maintenance Agreement OSHA Occupational Safety Health Administration PCP Perforated Collector Pipe PO Purchase Order RHOM Routine Handling, Operation, and Maintenance SPOC Single Point of Contact T/M Time and Materials TBD To Be Determined TD Transmission Dispatch WPA Worker Protection Assurance

04	DOCUMENTATION
	Minutes are documented weekly, and the publication have a "rolling record" of the immediate past three weeks. Each week the oldest drops off and the current week is added to the minutes. Items are categorized as either "NEW", "OPEN", "CLOSE", or in case the an item has to be re-published after closed the previous week - "REOPEN".

05	SAFETY - HOUSEKEEPING
01	ACCIDENTS OR INJURIES
	2012-03-27 OPEN - no issues 2012-03-20 OPEN - no issues 2012-03-13 NEW - no issues - no work on site.
04	WORKER PROTECTION ASSURANCE
	2012-03-27 OPEN - no issues. LOTO for temporary electric for trailer. 2012-03-20 OPEN - no issues 2012-03-13 NEW - no issues - no work on site.

05 EMPLOYEE DRUG TESTING

2012-03-27	OPEN - Belt Construction employees 3x tested negative [will begin work]. Scheduled testing for 1x teamster on 03-27 and 2x operators on 03-28. Reminder for 24 HR notice.
2012-03-20	OPEN - Reminder to call ahead. All scheduling to Newton is to be coordinated reported to and coordinated by P. Zinsious. M. Wagstaff indicated AER pays for the drug test. Also if workers have copy of a drug test in the last 6x months, this will be acceptable. Lamac inquired about interns on site during the summer. No issue with AER or AMS as long as follows same CBT, drug testing, and badge as required for this project.
2012-03-13	[No previous commentary]

06 AMS SAFETY

2012-03-27	OPEN - Portable toilets and hand wash stations on site and set up. Only smoking area is located at the employee trailer[s]. J. Cravens Geotechnology Construction Manager now full time on site. M. Wagstaff reviewed the program for J. Cravens list he gave him for the "anytime anyone see anything" safety program on site. J. Tasich general safety discussion.
2012-03-20	OPEN - The switch gear area adjacent to the plant has bench mark within confines of the fenced area. If a surveyor or engineer requires entrance, they are to be escorted. M. Wagstaff indicated this switch gear area is not owned by AER, but by Ameren Illinois. All site access is to be coordinated through R. Porter. Geotechnology indicated training on 03-28 and/or 03-29. AMS to upcoming training 3x workers. M. Wagstaff discussed J. Cravens list he gave him for the "anytime anyone see anything" safety program on site. R. Porter indicated similar to AMS "brothers keeper".
2012-03-13	NEW - no issues - no work on site. Training to begin on 03-22.

07 HOUSEKEEPING

2012-03-27	OPEN - no issues
2012-03-20	OPEN - no issues
2012-03-13	NEW - no issues - no work on site.

08 PLANT ACCESS - CBT BADGE

2012-03-27	OPEN - J. Denham concern over badge in/out at other plants and the change over required back to Hutsonville for those who go to other plants. M. Wagstaff indicated can still get a visitors badge, but he would provide J. Denham, J. Boone, and J. Tasich consultant's badge [where as "employee" of M. Wagstaff].
2012-03-20	OPEN - R. Porter to get visitors badge if goes to other Ameren plants. When badge in/out workers are to watch the light on the swipe unit, not the green light above.
2012-03-13	NEW - no issues - no work on site. [01] All employees are to be badged. [02] All employees are to swipe in/out at the existing gate. This will remain active for project. [03] Hauling contractor can swipe in once at beginning of their day, and out once at the end of their day. [04] Employees without badge or not current are to go to Newton Power Station located at 6725 North 500th Street, Newton, IL 62447 [05] For option [extreme cases after push-back] AER has option of sending information to the corporate office. This is considered a last resort. [06] M. Wagstaff to look into contact and schedule at the plant for CBT and drug testing. [07] Key required by AMS for locks. Guard does not have key. [08] Visitors over 1-2 days have to get badge. Visitor get escorted when on site.

09 VEHICLES ON SITE

2012-03-27	OPEN - Fuel trucks [such as for Belt Construction] can be on work site. Park at trailer area. Only Geotechnology and AMS trucks allowed frequent access. For Lamac, vehicle allowed on site, but work in that area when they are surveying will be shut down.
2012-03-20	OPEN - Employees to park in lot, ride AMS transportation bus to site and back from badge in area.
2012-03-13	NEW - no issues - no work on site.

10 OSHA LOG - WORK HOURS

2012-03-27	OPEN - no workers on site except Site Manager and surveyor. Hours will be from previous Monday to Friday [the week]. 0,059.00 RT 0,000.00 OT 0,059.00 TOTAL
2012-03-20	OPEN - no workers on site except Site Manager. 0,000.00 0,000.00 0,000.00
2012-03-13	NEW - no issues - no work on site. 0,000.00 0,000.00 0,000.00

06	MANPOWER
01	CREW SIZE
2012-03-27	OPEN - no workers on site except Site Manager and surveyor. Projection for next week will add employees: 4x ash placement and 1x for water truck.
Current	
[00] Pipe	
[00] Mech	
[00] Elec	
[00] Cement	
[00] Laborers	
[00] Operators	
[02] Survey	[Part time]
[01] Foreman	[Full time]
[03] Total	
2012-03-20	OPEN - no workers on site except Site Manager.
Current	
[00] Pipe	
[00] Mech	
[00] Elec	
[00] Cement	
[00] Laborers	
[00] Operators	
[01] Foreman	
[01] Total	
2012-03-13	NEW - no issues - no work on site.
Current	
[00] Pipe	
[00] Mech	
[00] Elec	
[00] Cement	
[00] Laborers	
[00] Operators	
[01] Foreman	[00] Foreman
[00] Total	
02	WORK HOURS
2012-03-27	OPEN - Standard hours
2012-03-20	OPEN - Standard hours
2012-03-13	NEW - no issues - no work on site.
03	OVER TIME
2012-03-27	OPEN - none projected
2012-03-20	OPEN - none projected
2012-03-13	NEW - no issues - no work on site.
04	TRAILER [AND GENERAL CONDITIONS]
2012-03-27	OPEN - Price form AAA Electric 03-28. AMS to move employee trailer adjacent to GEO trailer. No generators will be required for now. J. Tasich discussed the electric can be heavy wall SCH 80 conduit run on top the ground with gravel covering. Their could be issues with the Ameren Illinois requirement for the new pole height. M. Wagstaff to get with utility to review options.
2012-03-20	OPEN - Trailers on site. AMS has set 3x portable toilets with 2x hand wash stations. Units are "unisex". AMS will also set a storage container in the next week or so.
2012-03-13	NEW - no issues - no work on site. Employees trailer to be delivered 03-20. Some equipment to be delivered 03-13 and mobilized on 03-20.

07	PREVIOUS
01	SUBCONTRACTS
2012-03-27	OPEN - no issues
2012-03-20	OPEN - no issues
2012-03-13	NEW - no issues - no work on site.
02	SUBMITTALS
2012-03-27	OPEN - no issues
2012-03-20	OPEN - no issues
2012-03-13	NEW - no issues - no work on site.

08	MATERIAL
01	GENERAL
2012-03-27	OPEN - Lamac to take few more elevation shots in coal yard.
2012-03-20	OPEN - Discussion on the remaining coal pile volume, Lamac survey show approximately 3,500 CY. If area around coal pile considered to level, 3,780 CY. Coal has to be placed in the bottom of the APD, as it cannot come in contact with the liner. The schedule will need to be adjusted to account for this activity. This area may also require top soil and seeding.
2012-03-13	NEW - no issues - no work on site.

09	ADJACENT PROPERTIES
01	GENERAL
2012-03-27	OPEN - General discussion. AMS in process of reviewing subcontractors for the Perforated Collector Pipe [PCP]. When subcontractor is approved, then excavation plan will be published. AMS reiterated that if it is not necessary, the area will not be used. General consensus to "wait and see" as the scope of work is not until June.
2012-03-20	OPEN - Lamac surveyed are of License Agreement and found path of irrigation unit extends into this area. Lamac provided drawing of the wheel arc in the area. Work is scheduled in this area in June, and AMS indicated that if it is not necessary, the area will not be used. A. Ridgely indicated there is a cable in the field the irrigation unit follows. No action required at this time. When excavation plan has been created, AMS will review again. Survey stakes currently will be left in the area.
2012-03-13	NEW - General discussion regarding the adjacent Wampler Farmland. J. Denham indicated before we do anything in that area 24 HRS notice will be given.

10	QUALITY CONTROL
01	GENERAL
2012-03-27	OPEN - no issues
2012-03-20	OPEN - no issues
2012-03-13	NEW - no issues - no work on site.
02	ASH
2012-03-27	OPEN - no issues. AMS to proceed with mixing in the "topsoil" found within the Ash Pond D into the fill. [Note: This is as noted in previous contract documents]. Reviewed the topographic survey by Lamac. A. Ridgely indicated the topo on the [AER] drawings Land Lamac survey were very close and AER engineer probably used "LIDAR" [Light Detection and Ranging], an [optical] scanning process. The delta in the survey is about 5,000 CY. Drawing will be created fro EWO baseline.
2012-03-20	OPEN - no issues. Lamac topographic survey of the ash pile was within 300 CY of the Massmann aerial survey. A. Ridgely indicated variation could be due to the actual in place fluctuations in elevation in between survey points. The delta in volume is considered almost a "wash".
2012-03-13	NEW - no issues - no work on site.
03	CLAY
2012-03-27	OPEN - no issues
2012-03-20	OPEN - no issues
2012-03-13	NEW - no issues - no work on site.

11	SCHEDULE REVIEW
01	SCHEDULE
2012-03-27	OPEN - No significant changes. AMS to update. General discussion 2012-10-11 good end [substantial completion] date.
2012-03-20	OPEN - Review of general and critical path schedules provided by AER. General discussions of rain days and how budgeted into the schedule calendar. The end date has been extended to 2012-10-11, and is acceptable to Ameren. The primary driving factor at this item is the seeding in the fall of the cap.
2012-03-13	NEW - no issues - no work on site.
02	TIME AND MATERIAL
2012-03-27	OPEN - no issues
2012-03-20	OPEN - no issues
2012-03-13	NEW - no issues - no work on site.
03	COORDINATION
2012-03-27	OPEN - J. Cravens and R. Porter to monitor the access to the site as team. M. Wagstaff to notify the team of any AER personnel or entity coming to the site or who should badge in. The concern was knowledge of who has permission to come on site once security is gone.
2012-03-20	OPEN - no issues
2012-03-13	NEW - no issues - no work on site.

12	COST AND BUDGET
01	CHANGE REQUEST ISSUES
2012-03-27	OPEN - General discussion items for EWO [Potential change Orders - PCO] ash cap, coal pile, pipe [in berm], surveying, and utility change. If excavating the trench in Pond A is just a few hours, AMS would not charge for this work.
2012-03-20	OPEN - no issues
2012-03-13	NEW - no issues - no work on site. AMS request tax exemption clarification.
02	AMS PAY APPLICATION
2012-03-27	OPEN - no issues. J. Denham we will have pay app this month.
2012-03-20	OPEN - no issues
2012-03-13	NEW - no issues - no work on site.

13	ACTION ITEMS - AER
01	AMEREN [AER]
2012-30-27	
[03]	Fire protection [OPEN - pumps off in plant so cannot use basements - team to review pit next to coal pile "push wall". The gathering place is guard shack by the trailers.
[17]	ACAD files to AMS [CLOSED - AER transmitted disc]
[18]	AER to print full size schedule [CLOSED]
[19]	Flood plain permit [CLOSED - AMS will publish AER info]
[20]	Drawing S-386 SHT 5 RF - the survey coordinates are reversed. [NEW - AER to get revised]
2012-30-20	
[03]	Fire protection [OPEN - where to go for high winds or tornado]
[13]	Wetlands permit application by Hanson [CLOSED - non-issue. Hanson reviewed, AER issued e-mail.]
[14]	Keys for locks [CLOSED - AMS has keys]
[15]	Provide new safety SPOC [CLOSED - M. Wagstaff is safety SPOC]
[16]	Tax exemption clarification [CLOSED - AER will renew when dates reaches close to expiration]
[17]	ACAD files to AMS [OPEN - AER to send disc]
[18]	AER to print full size schedule [NEW]
[19]	Flood plain permit [NEW - AER provide copy of the permit via e-mail]
[20]	Drawing S-386 SHT 5 RF - the survey coordinates are reversed. [NEW - AER to get revised]
2012-30-13	
[01]	Security procedures after 2012-03-01 [CLOSED - badge in/out at gate]
[02]	Vehicle tag requirements [CLOSED - not required]
[03]	Fire protection [OPEN - where to go for high winds or tornado]
[04]	Water source [possible use of 1MG tank on site] [CLOSED - approved for use - RFI response]
[05]	Severe weather procedure [gathering place] [CLOSED - approved as submitted - RFI response]
[06]	Provide existing site survey [after ash placement in PAD] [CLOSED - AER submitted]
[07]	Information for "ftp" site [CLOSED]
[08]	Revised drawings [CLOSED - AER has published]
[09]	Tax exemption [CLOSED - AER has published]
[10]	Telephone hookup in trailer area. [CLOSED - data line to be provided]
[11]	Fencing specification [CLOSED - response to RFI].
[12]	Investigate if AER requires copy of borrow site agreement. [CLOSED - AER not requiring]
[13]	Wetlands permit application by Hanson [NEW]
[14]	Keys for locks [NEW]
[15]	Provide new safety SPOC [NEW]
[16]	Tax exemption clarification [NEW]
[17]	ACAD files to AMS [NEW]

14	ACTION ITEMS - AMS
01	ASH MANAGEMENT [AMS]
2012-03-27	
[04]	Cost review - relocation flume and change to cap [when receive revised drawings] [OPEN - General discussion topo reference previous commentary above in Item No. 10.02-2012-03-27 - communication will be essential during ash placement to track changes.]
[05]	Cost review - HDPE line relocation [when receive revised drawings] [OPEN - line to be moved to inside of the pond area, as pipe will get "shorter" by virtue of shorter run .
[06]	RFI-01 roadway clarification [OPEN - AER sent e-mail, AMS to check]
[16]	Submittal log [OPEN - AMS submit EOW] [In progress]

2012-03-20

[04] Cost review – relocation flume and change to cap [when receive revised drawings] [OPEN – revised ash placement price within week]

[05] Cost review – HDPE line relocation [when receive revised drawings] [OPEN – AMS to create PCO, line will have to be lowered, manhole will have to be cut into. Lamac to shoot elevations of pipe at manhole.

[06] RFI-01 roadway clarification [OPEN - AER sent e-mail, AMS to check]

[11] AER request each Subcontractor to have their lead person with 30HR. AMS to create RFI.

[CLOSED -

AER not requiring sub supervisors to have 30 HR]

[14] Issue log [CLOSED - information to PCO and RFI]

[15] Check on drawing distribution for Lamac. [CLOSED - Lamac sent e-mail drawings were received]

[16] Submittal log [OPEN - AMS submit EOW]

[17] HDPE QA/QC [CLOSED - liner subcontractor to submit - Geotechnology to provide lab information]

[18] Last two weeks close out [CLOSED - reviewed at Ameren scheduling meeting]

2012-03-13

[01] Calculate water requirements [CLOSED – AER has submitted in RFI]

[02] Coordinate with AER safety – Mr. Richard Spurgeon [CLOSED - AER provide contact].

[03] Set up survey meeting [CLOSED – meeting 2012-02-29]

[04] Cost review – relocation flume and change to cap [when receive revised drawings] [OPEN – further disc.]

[05] Cost review – HDPE line relocation [when receive revised drawings] [OPEN – further disc.]

[06] RFI-01 roadway clarification [OPEN - RFI to be submitted]

[07] RFI-02 12 IN bridge lift on geomembrane [CLOSED - RFI to be submitted]

[08] Provide NMA information [CLOSED – J. Denham to attend Building Trades Meeting 03-01]

[09] Coordinate liner approval [CLOSED – information submitted]

[10] E-mail radio channel frequency requirements [CLOSED – in specifications]

[11] AER request each Subcontractor to have their lead person with 30HR. AMS to create RFI.

[12] Provide trailer information. [CLOSED]

[13] SWP3 for Ash Pond D Closure submittal. [CLOSED]

[14] Issue log [NEW]

[15] Check on drawing distribution for Lamac. [NEW]

[16] Submittal log [NEW]

[17] HDPE QA/QC [NEW]

[18] Last two weeks close out [NEW]

15 PRODUCTION

01 GENERAL

2012-03-27 OPEN - no issues - no work on site.

2012-03-20 OPEN - no issues - no work on site.

2012-03-13 NEW - no issues - no work on site.

02 ASH

2012-03-27 OPEN - no issues - no work on site.

2012-03-20 OPEN - no issues - no work on site.

2012-03-13 NEW - no issues - no work on site.

03 CLAY

2012-03-27 OPEN - no issues - no work on site.

2012-03-20 OPEN - no issues - no work on site.

2012-03-13 NEW - no issues - no work on site.

16 DOCUMENTS TRANSMITTED

3/27/2012 [01] AER - CD drawings on ACAD and PDF to LEC, GEO, and AMS

[02] AMS - Lamac topographic of the ash pond [COR to AER info]

[03] AMS - Lamac topographic of coal ash pile

2012-03-20 [01] Critical Path schedule dated 2012-03-19

[02] Full schedule dated 2012-03-19

2012-03-13 [01] Critical Path schedule dated 2012-03-09.

17 DOCUMENTS REVIEWED

2012-03-27 None

2012-03-20 [01] Lamac revised borrow access road layout dated 2012-03-19 [road marked yellow]

[02] Lamac layout of Wampler property in Geotechnology binder.

2012-03-13 None

18 NEXT PROGRESS MEETING

Next meeting will be held in one week - Tuesday, April 3, 2012 at Hutsonville

19 DISTRIBUTION - STANDARD

AER

- 01 Mr. Mike Wagstaff
- 02 Mr. Mike Stewart
- 03 Mr. Andy Antonik
- 04 Mr. Bob Muesenfechter

GEO

- 01 Ms. Anna Saindon
- 02 Mr. Eric Neuner
- 03 Mr. Joe Cravens
- 04 TBD

AMS

- 01 Mr. Jimmy Boone
- 02 Mr. John Denham
- 03 Mr. Joko Tasich
- 04 Mr. Randy Porter

If there are any corrections, modifications, additions, or deletions please notify the sender by e-mail at pzinsious@ashmanagementservices.com

PHOTO LOG



Photograph 1 ▲ - Overview of south portion of Ash Pond D facing southeast



Photograph 2 ▲ - Overview of north portion of Ash Pond D facing northeast

All photographs taken by Joseph Cravens of Geotechnology, Inc.

JRC



Photograph 3 ▲ - Geotube on west end cut for pond access facing north



Photograph 4 ▲ - Stripping vegetation in Quadrant A facing west

All photographs taken by Joseph Cravens of Geotechnology, Inc.

JRC



Photograph 5 ▲ - Geotubes on south end facing east



Photograph 6 ▲ - Northwest entrance from south end to north end of Ash Pond D facing northwest

All photographs taken by Joseph Cravens of Geotechnology, Inc.

JRC



Photograph 7 ▲ - Moving ash in Quadrant A and B facing north



Photograph 8 ▲ - Breaking Geotubes on east end facing northeast

All photographs taken by Joseph Cravens of Geotechnology, Inc.

JRC



Photograph 9 ▲ - Ash placement in Quadrant C facing southeast



Photograph 10 ▲ - Dust control in Quadrant A facing north

All photographs taken by Joseph Cravens of Geotechnology, Inc.

JRC



Photograph 11 ▲ - Overview of south portion of Ash Pond D facing southeast



Photograph 12 ▲ - Overview of north portion of Ash Pond D facing northeast

All photographs taken by Joseph Cravens of Geotechnology, Inc.

JRC



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Energy Resources

FROM: Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DATE: April 9, 2012

SUBJECT: Weekly Summary Report for April 2, 2012 to April 6, 2012

PROJECT: Hutsonville Ash Pond D Closure
Crawford County, Hutsonville, Illinois
Geotechnology Project No. J019896.01

The following is a weekly summary of the site activities at the referenced site.

Weather

The weather was generally sunny, but became cloudy with rain beginning the evening of April 4, 2012, continuing to the morning of April 5, 2012. Temperature (°F) lows ranged from 40 to 65°F, and temperature highs ranged from 55 to 80°F. Earthwork was not performed on April 5, 2012, due to wet site conditions.

Construction Activities

Ash grading and geotube demolition occurred this week. The remaining geotubes on the west portion of Ash Pond D were broken open in preparation for ash grading. All of the geotubes on-site have been broken. Ash was moved from quadrant A and B to lower areas of quadrant A, quadrant B, and the northern portion of quadrant C. Grading occurred in quadrants A, C, and D. On April 2, 2012, the CAT D6N bulldozer got stuck in quadrant D (between the broken geotubes and the east embankment). The CAT 325C excavator was used to pull the dozer out. A Lessons Learned/Near Miss Report was developed by AMS and is included with the daily reports. Refer to attached daily reports and photograph log for additional information.

Equipment and Personnel On-Site

CAT D6N Bulldozer
CAT D6H Bulldozer
CAT 325C Excavator

John Deere 9520 Tractor with 2-1812C John Deere Scrapers (Pans)
Water Truck

Geotechnology, Inc. – Joe Cravens

Ash Management Services, LLC (AMS) – Randy Porter, Robert Dunkley, and Jimmy Boone

Charah, Inc. – Joe Tasich

Lamac Engineering – Austin Ridgely

Belt Construction, Inc. – Jared Belt, Nick Walker, Kevin Flynn, Brad Bolenbaugh, and Shelby Belt

Visitors –Refer to the Visitor's Log for visitors, dates, and times.

Refer to the meeting minutes for additional personnel.

Meetings

The weekly progress meeting was held on Tuesday, April 3, 2012. Refer to the attached meeting minutes for additional information.

Photographs

A photograph log with select photographs obtained this week is attached.

Materials

Ash in the geotubes and within the footprint of Ash Pond D was graded. The geomembrane is estimated to be delivered in early May 2012.

Testing/Sampling

Two ash samples were obtained to run Standard Proctor tests. Sample Ash 3 was obtained from the west side of Ash Pond D, and sample Ash 4 was obtained from the east side of Ash Pond D.

Calibration Records

Calibration information was not obtained this week. LAMAC will provide calibration information for their total station in approximately one week.

Signature of CQA Officer

Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.



DAILY REPORTS

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: — Client: Ameren ER Date: 4/2/12

TIME: Arrive: 6:30 AM Depart: 4:45 PM Travel: 1.0 hr Total: 10.75 hrs (0.5 hr for lunch/safety)

Weather: Sunny, 65° AM, 80° PM Contractor: AMS Subcontr./Supplier: Belt Construction

Equipment Working: D6N Dozer, D6H Dozer, 325C Excavator, 9520 Tractor, Two 1812C Pans, Water Truck

Site Activities / Observations / Contacts / Notes:

The D6H continued grading Section C, as well as the Southern portion of Section A. The 9520 continued cutting the high areas of Section A and B, and filling the low, SW area of Section A. The D6N began grading Section D, where the geotubes have already been broken. The 325C continued breaking the South end geotubes, along with spreading the material out from the already broken East side geotubes.

The batteries in the Water Truck were replaced. Fittings were replaced in the hitch connecting the 1812C Scrapers. Dust Control being performed on a daily basis. Randy and I raised the Fill stakes for the operators. The fuel truck came to fuel equipment and tanks. A Konex Trailer was delivered for AMS for storage. Belt also brought a small trailer for their own use. Lomac, AAA, and Frontier will be on site tomorrow.

D6N Dozer - Jared (Belt)	The D6N got stuck in Section D, East of the geotubes near the ponded water. The 325C pulled the dozer out, but then got stuck in the same area. They had to bring out cables and mats to get the 325C out. After the excavator buried itself passed the cab with only using the mats, the D6N pushed the mats under the tracks, and pulled it out. After, they used water hoses on the Water Truck to clean the excavator. This incident happened from approx. 1:30 PM to 4:15 PM.
D6H Dozer - Brad (Belt)	
325C Excavator - Kevin (Belt)	
9520 Tractor - Nick (Belt)	
1812C Pans - Nick (Belt)	
Water Truck - Robert (AMS)	
School Bus - Robert (AMS)	
AMS Chevy Pickup - Numerous	

Additional Comments: _____

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

Randy Polke
 Contractor Representative
Anna Saindon
 Signature
 Geotechnology Inc.
Anna Saindon
 Engineer's Signature

AMS
 Company
4-2-12
 Date
4-6-12
 Date

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 4/3/12

TIME: Arrive: 6:30 AM Depart: 4:00 PM Travel: 1.0 hr Total: 10.5 hrs (Did paperwork through lunch)

Weather: Sunny, 55° AM, 85° PM Contractor: AMS Subcontr./Supplier: Belt Construction

Equipment Working: D6N Dozer, D6H Dozer, 325C Excavator, 9520 Tractor, Two 1812C Pans, Water Truck

Site Activities / Observations / Contacts / Notes: Due to the incident regarding the 325C Excavator getting stuck in Section D, between the broken geotubes and the East embankment, AMS issued a Near Miss Report. This area will be avoided during Earth Work until a plan is developed by Randy and Paul, regarding remediation so this incident doesn't occur again. This could lead to a possible PCO or EWO if under cutting and decanting is Required. AMS will provide a proposal to AER before commencing work. Report will go towards "Lessons Learned". Austin Ridgely with Lamac was on site to finish staking the PGL around Pond D. He also staked more cut and fill locations for the 100' grid. I should receive a Cert. of Calibration for Lamac's Total Stations by the end of this week. Austin will convert Northings and Eastings for the PGL and 100' grid system into Lat. and Long. and forward to Geotechnology. AAA Electric was here to setup a Disconnect from the existing power pole, and branch off hard wiring to the trailers in conduit from an A-Frame. All work performed is OSHA approved. AMS Employee trailer will be moved tomorrow, adjacent to the other trailers. Electric will not be on until Thursday, when local utility installs a meter for hard wiring. The potential storm shelter, selected by Joe T., is still awaiting approval. The HDPE to be used on site is currently in Houston, TX. It will be mobilized to the site within 30 days. The Coal Pile issue is still not approved. An EWO was submitted, but may not go through. The SWP3 time constraint has passed; erosion control can begin. AMS will build a large entry sign, regarding procedures and contacts for visitors, when Randy and I are away from the trailers. AMS will consistently provide a temporary berm around Pond D to prevent drainage into Wabash River. 325C continued breaking geotubes. 9520 continued cutting and filling Section A and B. D6N and D6H continued grading Section A, C, and D. Paul and Jimmy were on site to view the wet area on the East side of Pond D.

Additional Comments: Mike is trying to issue myself a stamp for submittals and deliveries.

Randy Porter Contractor Representative
Anna Sandon Signature
Geotechnology, Inc.
Engineer's Signature
Company AMS
Date 4-3-12
Date 4-6-12

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ORIGINAL - FILE COPIES: 1-JOB SITE 1-ACCOUNTING
Frontier arrived to install phone lines, no data yet.

Same operators for same equipment as listed on 4/2/12.

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 4/4/12

TIME: Arrive: 6:30 AM Depart: 4:15 PM Travel: 1.0 hr Total: 10.5 hrs (0.25 hr for lunch/safety)
Weather: Cloudy, 55° AM, 70° PM Contractor: AMS Subcontr./Supplier: Belt Construction
Equipment Working: D6N Dozer, D6H Dozer, 325C Excavator, 9520 Tractor, Two 1812C Pans, Water Truck

Site Activities / Observations / Contacts / Notes:

The 325C finished breaking the West end geotubes. All of the geotubes have now been broken in Pond D. The 325C then continued to spread out the geotube material across the southern portion of the Pond, excluding the broken, North end geotubes. These will remain in place since they are located in the greatest Fill area. The D6H continued grading Section C and D. The D6N graded different areas across the Pond in all four Sections. The 9520 continued cutting the north areas of Section A and B, and filling the southern areas of Section A and B. Little fill has been placed in the Center of the Pond. This is because AMS is still awaiting confirmation whether to use the Coal Pile or not.

Shelby Belt came on site to view the wet area where the excavator was stuck. AMS is still developing remediation procedures for this area. The wet area, between the East end broken geotubes and East embankment, runs from approx. Sta. 10+00 to 17+00. This wet ash shows that even though there is no geosynthetic liner, the clay liner below was constructed well.

Two samples were obtained for Standard Proctor tests from the west and east ends of the Pond. AMS's Employee trailer was moved adjacent to the other two trailers on site. AAA finished installing Electric and local utility installed the meter. Frontier hooked up the second phone line. There is still no internet on site. The existing drainage pipes from under the geotubes were moved to the Yard. The crane mats and cable still remain on the East end of the Pond.

Additional Comments: _____

Randy Pactor
Contractor Representative

AMS
Company

Anna Sandon
Signature
Geotechnology, Inc.

Anna Sandon
Engineer's Signature

4-14-
Date
4-6-12
Date

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: JO19896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 4/5/12

TIME: Arrive: 6:30 AM Depart: 1:30 PM Travel: 1.0 hr Total: 8.0 hrs
Weather: Rain, 50° AM, Cloudy, 60° PM Contractor: AMS Subcontr./Supplier: Belt Construction
Equipment Working: None

Site Activities / Observations / Contacts / Notes: _____

Rain Day - The site was too wet for earthwork. No Production in Ash Pond D.

Kevin Flynn, Brad Bolenbaugh, and Robert Dunkley did not come to the site.

Jared Belt and Nick Walker did routine maint. on their equipment. They also put up an orange fence around an above ground pipe, located next to the proposed Coal Route. Still awaiting approval from AER to move the coal.

No lunch or safety meetings took place today, strictly paperwork and phone calls.

Additional Comments: _____

Kandy Porter AMS
Contractor Representative Company 4-5-12
[Signature] Signature Date 4-6-12
Anna Seindon
Geotechnology, Inc.
[Signature] Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 4/6/12

TIME: Arrive: 6:30 AM Depart: 3:45 PM Travel: 1.0 hr Total: 10.25 (installed software through lunch)
Weather: Sunny, 40° AM, 55° PM Contractor: AMS Subcontr./Supplier: Belt Construction
Equipment Working: D6N Dozer, D6H Dozer, 325C Excavator, 9520 Tractor, Two 1812C Pans, Water Truck
Site Activities / Observations / Contacts / Notes: _____

Work Proceeded: the majority of the site was dry enough to move Ash. The 325C continued spreading out geotube material in Section C and D. The 9520 continued cutting and filling Section A and B. The D6H continued grading Section C and D. The D6N continued grading Section A and D. The site is looking much more uniform.

Randy estimates they have moved approx. 23,848 CY of ash to date. (Half of org. proposed)

Randy probed for the outfall pipe (HDPE 18") from Ash Pond B to the manhole located East of Pond D, near the outfall structure. The depth ranged from 2' to 4'.

CB's are now installed in the trailers for communication with the operators.
2-way radios are put together and charging.

Additional Comments: _____

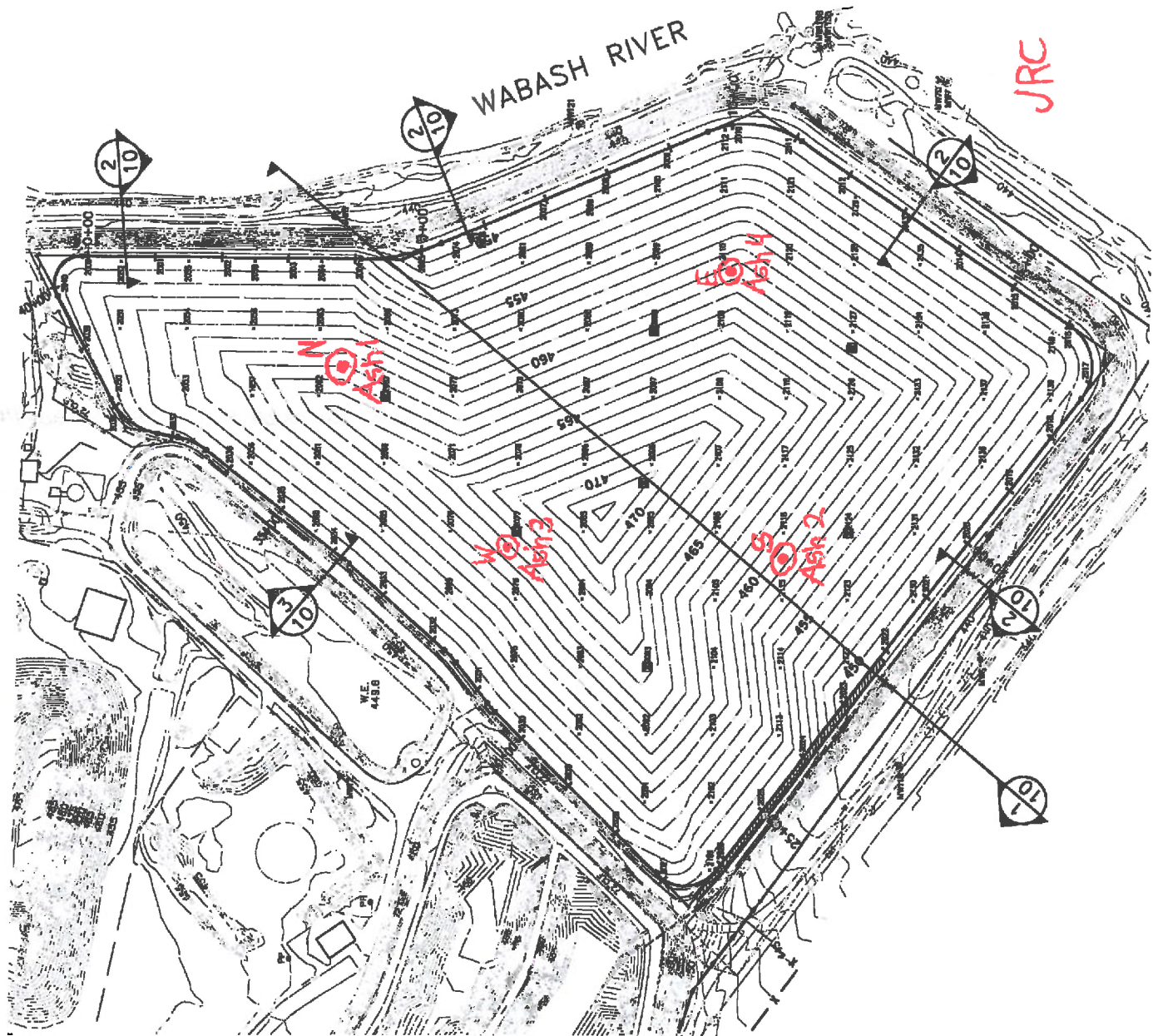
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Randy Porter
Contractor Representative

Anna Saindon
Signature
Geotechnology, Inc.
Engineer's Signature

AMS
Company
4-16-12
Date
4/6/12
Date

Ash Sample Locations



2001	4349.87	5
2002	4249.88	5
2003	4149.88	5
2004	4049.88	5
2005	3951.19	5
2006	3851.58	5
2007	3766.57	5
2008	3674.55	5
2009	3582.54	5
2010	3488.99	5
2011	3382.55	5
2012	3319.05	5
2013	3225.70	5
2014	3142.36	5
2015	3059.02	5
2016	2975.68	5
2017	2941.20	5
2018	2897.56	5
2019	2858.27	5
2020	3118.97	4
2021	3179.68	4
2022	3240.39	4
2023	3301.09	4
2024	3361.80	4
2025	3422.51	4
2026	3483.21	4
2027	3543.92	4
2028	3604.63	4
2029	3665.34	4
2030	3726.05	4
2031	3786.75	4
2032	3847.46	4
2033	3908.17	4
2034	3968.88	4
2035	4029.59	4
2036	4090.30	4
2037	4151.01	4
2038	4211.72	4
2039	4272.43	4
2040	4333.14	4
2041	4393.85	4
2042	4454.56	4
2043	4515.27	4
2044	4575.98	4
2045	4636.69	4
2046	4697.40	4
2047	4758.11	4
2048	4818.82	4
2049	4879.53	4
2050	4940.24	4
2051	5000.95	4
2052	5061.66	4
2053	5122.37	4
2054	5183.08	4
2055	5243.79	4
2056	5304.50	4
2057	5365.21	4
2058	5425.92	4
2059	5486.63	4
2060	5547.34	4
2061	5608.05	4
2062	5668.76	4
2063	5729.47	4
2064	5790.18	4



Lessons Learned/Near Miss Report

Project: Hutsonville Ash Pond Closure

Site Manager: Randy Porter

Date of Incident: April 2, 2012

Details of Incident: Excavator that was being operated by Kevin Flynn was traveling across the east side of Ash Pond D at about 1:30 pm when the left track sunk without warning

Repairing the Problem Encountered: *crew immediately got and placed the mats under the tracks, one under each track being pushed underneath by dozer while excavator held the front of the tracks up by pushing down with the bucket. Crew also placed the third mat cross way under the mat that was long ways under the track. This process made the back of the tractor sink down further, but by doing this process it gives a stable ramp for excavator to be pulled out by dozer. After a safety brief and going over the safe start and hazards of the task along with the inspection of proper rigging equipment. The excavator come out without further incident. Joe Tasich, Charah Safety Specialist was on site and Joe Cravens who is representing Ameren was also on site. Once machine was stabilized with mats Jimmy Boone was notified.*

Damage or Injury: *there was no damage to the machine or any injuries*

Lessons Learned: do not work in the east side of Ash Pond D with excavator unless on a minimum of five mats, after reevaluating the scope of work to be performed in this area with Jimmy Boone and John Denham

Submitted By: Randy Porter

Reviewed By: Jimmy Boone

MEETING MINUTES



Hutsonville Power Station - Ash Pond D closure
Progress Meeting No. 3 Minutes
Tuesday, April 03, 2012

01 PUBLICATION	
Publication date:	2012-04-06
Distribution:	E-mail only
Submitted by:	P. Zinsious
Notes taken by:	P. Zinsious
Meeting place:	Hutsonville Power Station

02 ATTENDEES				
01	Mr. Mike Wagstaff	Ameren	618-343-7790	mwagstaff@ameren.com
02	Mr. Joe Cravens	Geotechnology	314-568-6628	j_cravens@geotechnology.com
03	Mr. Austin Ridgely	Lamac Engineering	618-262-8651	aridgely@lamac.net
04	Mr. Randy Porter	AMS - SM	502-554-5230	rporter@ashmanagementservices.com
05	Mr. Paul Zinsious	AMS - PCM	502-640-2918	pzinsious@ashmanagementservices.com

03 ABBREVIATIONS	
AER	Ameren Energy Resources
AMS	Ash Management Services
BNSF	Burlington
CBT	Computer Based Training
EOD	End of [the] Day
EOM	End of [the] month
EOW	End of [the] week
EDTS	Energy Delivery Transmission Services
EDC	Estimated Date [of] Completion
EWO	Extra Work Order
HDPE	High Density Polyethylene
HRS	Hours
LOTO	Lock Out Tag Out
NMA	National Maintenance Agreement
OSHA	Occupational Safety Health Administration
PCP	Perforated Collector Pipe
PO	Purchase Order
RHOM	Routine Handling, Operation, and Maintenance
SPOC	Single Point of Contact
T/M	Time and Materials
TBD	To Be Determined
TD	Transmission Dispatch
WPA	Worker Protection Assurance

04 DOCUMENTATION	
Minutes are documented weekly, and the publication have a "rolling record" of the immediate past three weeks. Each week the oldest drops off and the current week is added to the minutes. Items are categorized as either "NEW", "OPEN", "CLOSE", or in case the an item has to be re-published after closed the previous week - "REOPEN".	

05 SAFETY - HOUSEKEEPING	
01 ACCIDENTS OR INJURIES	
2012-04-03	OPEN - no Issues. CORRECTED THE NUMBERING FOR THIS TOPIC
2012-03-27	OPEN - no issues
2012-03-20	OPEN - no issues
02 WORKER PROTECTION ASSURANCE	
2012-04-03	OPEN - no issues [electricians working on temporary power 04-03] Meter based LOTO by AMS. R. Porter did not want any work "hot" if meter base was to be put in. M. Wagstaff to contact Ameren Utilities for the meter, and come on site Monday or Thursday [see also action item].
2012-03-27	OPEN - no issues. LOTO for temporary electric for trailer.
2012-03-20	OPEN - no issues

03 EMPLOYEE DRUG TESTING

2012-04-03	OPEN - no issues
2012-03-27	OPEN - Belt Construction employees 3x tested negative [will begin work]. Scheduled testing for 1x teamster on 03-27 and 2x operators on 03-28. Reminder for 24 HR notice.
2012-03-20	OPEN - Reminder to call ahead. All scheduling to Newton is to be coordinated reported to and coordinated by P. Zinsious. M. Wagstaff indicated AER pays for the drug test. Also if workers have copy of a drug test in the last 6x months, this will be acceptable. Lamac inquired about interns on site during the summer. No issue with AER or AMS as long as follows same CBT, drug testing, and badge as required for this project.

04 AMS SAFETY

2012-04-03	OPEN - AMS submitted "Lessons Learned/Near Miss Report": Summary: Excavator was traveling across the east side of Ash Pond D when the left track sunk without warning. After a safety brief and going over the safe start and hazards of the task along with the inspection of proper rigging equipment, work proceeded to remove the excavator. The excavator come out without further incident. J. Tasich was on site and J. Cravens. There was no damage to the machine or any injuries. No work this portion of the site until further review. See report for more details.
2012-03-27	OPEN - Portable toilets and hand wash stations on site and set up. Only smoking area is located at the employee trailer[s]. J. Cravens Geotechnology Construction Manager now full time on site. M. Wagstaff reviewed the program for J. Cravens list he gave him for the "anytime anyone see anything" safety program on site. J. Tasich general safety discussion.
2012-03-20	OPEN - The switch gear area adjacent to the plant has bench mark within confines of the fenced area. If a surveyor or engineer requires entrance, they are to be escorted. M. Wagstaff indicated this switch gear area is not owned by AER, but by Ameren Illinois. All site access is to be coordinated through R. Porter. Geotechnology indicated training on 03-28 and/or 03-29. AMS to upcoming training 3x workers. M. Wagstaff discussed J. Cravens list he gave him for the "anytime anyone see anything" safety program on site. R. Porter indicated similar to AMS "brothers keeper".

05 HOUSEKEEPING

2012-04-03	OPEN - no issues
2012-03-27	OPEN - no issues
2012-03-20	OPEN - no issues

06 PLANT ACCESS - CBT BADGE

2012-04-03	AAA 2x electricians went this AM. Currently working on visitor as the badge form Newton not assigned to Hutsonville. Coordination in e-mail to ensure Newton assigns workers to Hutsonville. R. Porter reported various Ameren employees have been coming on site, such as substation maintenance. R. Porter and J. Cravens are monitoring this together.
2012-03-27	OPEN - J. Denham concern over badge in/out at other plants and the change over required back to Hutsonville for those who go to other plants. M. Wagstaff indicated can still get a visitors badge, but he would provide J. Denham, J. Boone, and J. Tasich consultant's badge [where as "employee" of M. Wagstaff].
2012-03-20	OPEN - R. Porter to get visitors badge if goes to other Ameren plants. When badge in/out workers are to watch the light on the swipe unit, not the green light above.

07 VEHICLES ON SITE

2012-04-03	OPEN - no issues
2012-03-27	OPEN - Fuel trucks [such as for Belt Construction] can be on work site. Park at trailer area. Only Geotechnology and AMS trucks allowed frequent access. For Lamac, vehicle allowed on site, but work in that area when they are surveying will be shut down.
2012-03-20	OPEN - Employees to park in lot, ride AMS transportation bus to site and back from badge in area.

08 OSHA LOG - WORK HOURS

2012-04-03	OPEN - total all hours [including subcontractors]
0,239.00	RT
<u>0,000.00</u>	OT
0,239.00	TOTAL
2012-03-27	OPEN - no workers on site except Site Manager and surveyor. Hours will be from previous Monday to Friday [the week].
0,059.00	RT
<u>0,000.00</u>	OT
0,059.00	TOTAL
2012-03-20	OPEN - no workers on site except Site Manager.
0,000.00	
<u>0,000.00</u>	
0,000.00	

06 MANPOWER

01 CREW SIZE

2012-04-03 OPEN - AMS and Belt Construction on site.

Current

[00] Pipe

[00] Mechanical

[00] Electrical

[00] Cement

[00] Laborers

[04] Operators

[01] Teamsters

[00] Survey

[01] Foreman [Full time]

[06] Total

2012-03-27 OPEN - no workers on site except Site Manager and surveyor. Projection for next week will add employees: 4x ash placement and 1x for water truck.

Current

[00] Pipe

[00] Mech

[00] Elec

[00] Cement

[00] Laborers

[00] Operators

[02] Survey [Part time]

[01] Foreman [Full time]

[03] Total

2012-03-20 OPEN - no workers on site except Site Manager.

Current

[00] Pipe

[00] Mech

[00] Elec

[00] Cement

[00] Laborers

[00] Operators

[01] Foreman

[01] Total

02 WORK HOURS

2012-04-03 OPEN - Standard hours

2012-03-27 OPEN - Standard hours

2012-03-20 OPEN - Standard hours

03 OVER TIME

2012-04-03 OPEN - none projected. Advise GEO if change.

2012-03-27 OPEN - none projected

2012-03-20 OPEN - none projected

04 TRAILER [AND GENERAL CONDITIONS]

2012-04-03 OPEN - no issues. Power to trailer[s] this week. AMS employee trailer to move to trailer site 04-04.

2012-03-27 OPEN - Price form AAA Electric 03-28. AMS to move employee trailer adjacent to GEO trailer. No generators will be required for now. J. Tasich discussed the electric can be heavy wall SCH 80 conduit run on top the ground with gravel covering. Their could be issues with the Ameren Illinois requirement for the new pole height. M. Wagstaff to get with utility to review options.

2012-03-20 OPEN - Trailers on site. AMS has set 3x portable toilets with 2x hand wash stations. Units are "unisex". AMS will also set a storage container in the next week or so.

07 PREVIOUS

01 SUBCONTRACTS

2012-04-03 OPEN - no issues

2012-03-27 OPEN - no issues

2012-03-20 OPEN - no issues

02 SUBMITTALS

2012-04-03 OPEN - no issues. In progress.

2012-03-27 OPEN - no issues

2012-03-20 OPEN - no issues

08 MATERIAL**01 GENERAL**

2012-04-03 OPEN - M. Wagstaff concern on liner delivery. P. Zinsious contacted subcontractor, and liner has been manufactured, and is in Houston, TX. No issue with delivery [if required] within 30 D.

2012-03-27 OPEN - Lamac to take few more elevation shots in coal yard.

2012-03-20 OPEN - Discussion on the remaining coal pile volume, Lamac survey show approximately 3,500 CY. If area around coal pile considered to level, 3,780 CY. Coal has to be placed in the bottom of the APD, as it cannot come in contact with the liner. The schedule will need to be adjusted to account for this activity. This area may also require top soil and seeding.

09 ADJACENT PROPERTIES**01 GENERAL**

2012-04-03 OPEN - no issues. AMS announced Koberstein Contracting as the pipe subcontractor, who will provide excavation plan.

2012-03-27 OPEN - General discussion. AMS in process of reviewing subcontractors for the Perforated Collector Pipe [PCP]. When subcontractor is approved, then excavation plan will be published. AMS reiterated that if it is not necessary, the area will not be used. General consensus to "wait and see" as the scope of work is not until June.

2012-03-20 OPEN - Lamac surveyed are of License Agreement and found path of irrigation unit extends into this area. Lamac provided drawing of the wheel arc in the area. Work is scheduled in this area in June, and AMS indicated that if it is not necessary, the area will not be used. A. Ridgely indicated there is a cable in the field the irrigation unit follows. No action required at this time. When excavation plan has been created, AMS will review again. Survey stakes currently will be left in the area.

10 QUALITY CONTROL**01 GENERAL**

2012-04-03 OPEN - no issues

2012-03-27 OPEN - no issues

2012-03-20 OPEN - no issues

02 ASH

2012-04-03 OPEN - no quality issues. Safety concern - reference Item No. 05.04-2012-04-03 above. A. Ridgely indicated survey shows settlement in Pond D as minimal - approximately 2/10 FT. AMS at this time indicated not an issue.

2012-03-27 OPEN - no issues. AMS to proceed with mixing in the "topsoil" found within the Ash Pond D into the fill. [Note: This is as noted in previous contract documents]. Reviewed the topographic survey by Lamac. A. Ridgely indicated the topo on the [AER] drawings Land Lamac survey were very close and AER engineer probably used "LiDAR" [Light Detection and Ranging], an [optical] scanning process. The delta in the survey is about 5,000 CY. Drawing will be created from EWO baseline.

2012-03-20 OPEN - no issues. Lamac topographic survey of the ash pile was within 300 CY of the Massmann aerial survey. A. Ridgely indicated variation could be due to the actual in place fluctuations in elevation in between survey points. The delta in volume is considered almost a "wash".

03 CLAY

2012-04-03 OPEN - no issues

2012-03-27 OPEN - no issues

2012-03-20 OPEN - no issues

11 SCHEDULE REVIEW**01 SCHEDULE**

2012-04-03 OPEN - No significant changes. AMS to update actuals and submittals. AER changed the description "piezometer" to "vent pipe" on the P6 schedule. M. Wagstaff concern addition of 17D to critical path by EWO-02 [reference Item No. 12.03-2012-04-03 below] as project is already "2x weeks behind schedule". Two week look ahead - pipe filling in Pond D.

2012-03-27 OPEN - No significant changes. AMS to update. General discussion 2012-10-11 good end [substantial completion] date.

2012-03-20 OPEN - Review of general and critical path schedules provided by AER. General discussions of rain days and how budgeted into the schedule calendar. The end date has been extended to 2012-10-11, and is acceptable to Ameren. The primary driving factor at this item is the seeding in the fall of the cap.

02 TIME AND MATERIAL

2012-04-03 OPEN - no issues
 2012-03-27 OPEN - no issues
 2012-03-20 OPEN - no issues

03 COORDINATION

2012-04-03 OPEN - no issues. Reference Item No. 05.06-2012-04-03 above regarding others access to plant. AMS to laminate sign and post. Reference Item No. 14.01.20-2012-04-03 below.
 2012-03-27 OPEN - J. Cravens and R. Porter to monitor the access to the site as team. M. Wagstaff to notify the team of any AER personnel or entity coming to the site or who should badge in. The concern was knowledge of who has permission to come on site once security is gone.
 2012-03-20 OPEN - no issues

12 COST AND BUDGET**01 CHANGE REQUEST ISSUES**

2012-04-03 OPEN - AMS submitted EWO-02 and EWO-03. See Item No. 12.03 and 12.04
 2012-03-27 OPEN - General discussion items for EWO [Potential change Orders - PCO] ash cap, coal pile, pipe [in berm], surveying, and utility change. If excavating the trench in Pond A is just a few hours, AMS would not charge for this work.
 2012-03-20 OPEN - no issues

02 AMS PAY APPLICATION

2012-04-03 OPEN - in progress
 2012-03-27 OPEN - no issues. J. Denham we will have pay app this month.
 2012-03-20 OPEN - no issues

03 EWO-02 - ASH PLACEMENT

2012-04-03 NEW - AMS submitted EWO letter. M. Wagstaff requesting the description be changed from "ash placement" to "cap modification". This EWO is to include all changes from the plan changes to date. P. Zinsious indicated AMS to have AER "agree in principle" with the ash placement portion presented. AMS will provide spreadsheet showing changes of overall project such as the channels, berms, pump system, etc. M. Wagstaff question how AMS arrived at the 17D addition to the critical path. P. Zinsious to investigate calculation used. R. Porter reported there is a soft area approximately 50 FT x 1,000 FT located on the east and south perimeter of the pond. P. Zinsious indicated that J. Denham and J. Boone are in process of reviewing options, and would report back in a couple of days.

04 EWO-03 - COAL PILE

2012-04-03 NEW - AMS submitted EWO letter. M. Wagstaff indicated AER has to review as other options for site may affect the decision.

05 EWO-04 - PIPE RELOCATION

2012-04-03 NEW - R. Porter briefly explained the procedure to excavate and move the line inside the berm. M. Wagstaff requested "pothole" to locate.

05 EWO-05 - ELECTRICAL REVISION

2012-04-03 NEW - M. Wagstaff indicated drawings to be released 04-03.

13 ACTION ITEMS - AER**01 AMEREN [AER]**

2012-04-03

[03] Fire protection [OPEN - pumps off in plant so cannot use basements - team to review pit next to coal pile "push wall". The gathering place is guard shack by the trailers. [OPEN - J. Tasich reviewed location, and has proposed option. Will review 04-03]
 [17] ACAD files to AMS [CLOSED - AER transmitted disc]
 [18] AER to print full size schedule [CLOSED]
 [19] Flood plain permit [CLOSED - AMS will publish AER info]
 [20] Drawing S-386 SHT 5 RF - the survey coordinates are reversed. [NEW - AER to get revised]
 [21] M. Wagstaff to contact Ameren Utilities for the meter.
 [22] Mailbox and delivery thereof status.

2012-30-27

[03] Fire protection [OPEN - pumps off in plant so cannot use basements - team to review pit next to coal pile "push wall". The gathering place is guard shack by the trailers.
 [17] ACAD files to AMS [CLOSED - AER transmitted disc]
 [18] AER to print full size schedule [CLOSED]
 [19] Flood plain permit [CLOSED - AMS will publish AER info]
 [20] Drawing S-386 SHT 5 RF - the survey coordinates are reversed. [NEW - AER to get revised]

2012-30-20

- [03] Fire protection [OPEN - where to go for high winds or tornado]
- [13] Wetlands permit application by Hanson [CLOSED - non-issue. Hanson reviewed, AER issued e-mail.]
- [14] Keys for locks [CLOSED - AMS has keys]
- [15] Provide new safety SPOC [CLOSED - M. Wagstaff is safety SPOC]
- [16] Tax exemption clarification [CLOSED - AER will renew when dates reaches close to expiration]
- [17] ACAD files to AMS [OPEN - AER to send disc]
- [18] AER to print full size schedule [NEW]
- [19] Flood plain permit [NEW - AER provide copy of the permit via e-mail]
- [20] Drawing S-386 SHT 5 RF - the survey coordinates are reversed. [NEW - AER to get revised]

14 ACTION ITEMS - AMS

01 ASH MANAGEMENT [AMS]

2012-04-03

- [04] Cost review – relocation flume and change to cap [when receive revised drawings] [OPEN – General discussion topo reference previous commentary above in Item No. 10.02-2012-03-27 - communication will be essential during ash placement to track changes.]
- [05] Cost review – HDPE line relocation [when receive revised drawings] [OPEN – line to be moved to inside of the pond area, as pipe will get "shorter" by virtue of shorter run . [In progress]
- [06] RFI-01 roadway clarification [OPEN - AMS in progress]
- [16] Submittal log [OPEN - AMS submit EOW] [In progress - couple days out]
- [19] All documents to be copied [e-mailed] to Mr. Joe Cravens - M. Wagstaff representative on site.
- [20] Site entry signage

2012-03-27

- [04] Cost review – relocation flume and change to cap [when receive revised drawings] [OPEN – General discussion topo reference previous commentary above in Item No. 10.02-2012-03-27 - communication will be essential during ash placement to track changes.]
- [05] Cost review – HDPE line relocation [when receive revised drawings] [OPEN – line to be moved to inside of the pond area, as pipe will get "shorter" by virtue of shorter run .
- [06] RFI-01 roadway clarification [OPEN - AER sent e-mail, AMS to check]
- [16] Submittal log [OPEN - AMS submit EOW] [In progress]

2012-03-20

- [04] Cost review – relocation flume and change to cap [when receive revised drawings] [OPEN – revised ash placement price within week]
- [05] Cost review – HDPE line relocation [when receive revised drawings] [OPEN – AMS to create PCO, line will have to be lowered, manhole will have to be cut into. Lamac to shoot elevations of pipe at manhole.
- [06] RFI-01 roadway clarification [OPEN - AER sent e-mail, AMS to check]
- [11] AER request each Subcontractor to have their lead person with 30HR. AMS to create RFI. [CLOSED - AER not requiring sub supervisors to have 30 HR]
- [14] Issue log [CLOSED - information to PCO and RFI]
- [15] Check on drawing distribution for Lamac. [CLOSED - Lamac sent e-mail drawings were received]
- [16] Submittal log [OPEN - AMS submit EOW]
- [17] HDPE QA/QC [CLOSED - liner subcontractor to submit - Geotechnology to provide lab information]
- [18] Last two weeks close out [CLOSED - reviewed at Ameren scheduling meeting]

15 PRODUCTION

01 GENERAL

- 2012-04-03 OPEN - no issues
- 2012-03-27 OPEN - no issues - no work on site.
- 2012-03-20 OPEN - no issues - no work on site.

02 ASH

- 2012-04-03 OPEN - no issues - 10,300 CY as of 03-03. Estimated 13,968 CY EOD.
- 2012-03-27 OPEN - no issues - no work on site.
- 2012-03-20 OPEN - no issues - no work on site.

03 CLAY

- 2012-04-03 OPEN - no issues - this activity not begun. Borrow site in process closing on agreements.
- 2012-03-27 OPEN - no issues - no work on site.
- 2012-03-20 OPEN - no issues - no work on site.

16	DOCUMENTS TRANSMITTED
2012-04-03	[01] AMS - EWO-02 - ash placement to AER and GEO [02] AMS - EWO-03 - coal pile to AER and GEO [03] AMS - Lessons Learned/Near Miss Report [Incident dated 2012-04-20] [04] AMS - Contact list [next print out 11x17]
2012-03-27	[01] AER - CD drawings on ACAD and PDF to LEC, GEO, and AMS [02] AMS - Lamac topographic of the ash pond [COR to AER info] [03] AMS - Lamac topographic of coal ash pile
2012-03-20	[01] Critical Path schedule dated 2012-03-19 [02] Full schedule dated 2012-03-19

17	DOCUMENTS REVIEW ONLY
2012-04-03	None
2012-03-27	None
2012-03-20	[01] Lamac revised borrow access road layout dated 2012-03-19 [road marked yellow] [02] Lamac layout of Wampler property in Geotechnology binder.

18	NEXT PROGRESS MEETING
Next meeting will be held in one week - Tuesday, April 10, 2012 at Hutsonville	

19	DISTRIBUTION - STANDARD
AER	
01	Mr. Mike Wagstaff
02	Mr. Mike Stewart
03	Mr. Bob Muesenfechter
GEO	
01	Ms. Anna Saindon
02	Mr. Eric Neuner
03	Mr. Joe Cravens
AMS	
01	Mr. Jimmy Boone
02	Mr. John Denham
03	Mr. Joko Tasich
04	Mr. Randy Porter

If there are any corrections, modifications, additions, or deletions please notify the sender by e-mail at pzinsious@ashmanagementservices.com

PHOTO LOG



Photograph 1 ▲ - Ash grading in Quadrant C facing northeast



Photograph 2 ▲ - Ash placement in Quadrant A facing west

All photographs taken by Joseph Cravens of Geotechnology, Inc. between April 2 and April 6, 2012

JRC



Photograph 3 ▲ - Excavator stuck in Quadrant D facing southwest



Photograph 4 ▲ - Excavator removal from ash in Quadrant D facing south

All photographs taken by Joseph Cravens of Geotechnology, Inc. between April 2 and April 6, 2012

JRC



Photograph 5 ▲ - Breaking geotubes on west end of Ash Pond D facing south



Photograph 6 ▲ - Overview of south portion of Ash Pond D facing southeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between April 2 and April 6, 2012

JRC



Photograph 7 ▲ - Overview of north portion of Ash Pond D facing northeast



Photograph 8 ▲ - Ash grading on Quadrant C facing northeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between April 2 and April 6, 2012

JRC



Photograph 9 ▲ - Ponded water from rain in Ash Pond D facing east



Photograph 10 ▲ - Ash removal in Quadrants A and B facing west

All photographs taken by Joseph Cravens of Geotechnology, Inc. between April 2 and April 6, 2012

JRC



Photograph 11 ▲ - Overview of south portion of Ash Pond D facing southeast



Photograph 12 ▲ - Overview of north portion of Ash Pond D facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between April 2 and April 6, 2012

JRC



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Energy Resources

FROM: Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DATE: April 16, 2012

SUBJECT: Weekly Summary Report for April 9, 2012 to April 13, 2012

PROJECT: Hutsonville Ash Pond D Closure
Crawford County, Hutsonville, Illinois
Geotechnology Project No. J019896.01

The following is a weekly summary of the site activities at the referenced site.

Weather

The weather was generally sunny and windy. Temperature (°F) lows ranged from 35 to 45°F, and temperature highs ranged from 60 to 70°F. Weather delays did not occur.

Construction Activities

Ash grading, undercutting of soft areas, and locating the HDPE drainage pipe occurred this week. Ash was moved from quadrant A and B to lower areas of quadrant A, quadrant B, and the northern portion of quadrant C. Grading occurred in all four quadrants. On April 10, 2012, the John Deere 9520 tractor encountered soft soils and got stuck in the southern end of quadrant A (where fill was being placed). The CAT D6N and D6H bulldozers were used to remove the tractor. A CAT 324 C Excavator dug a test pit to locate soft areas in quadrant D along the east embankment. Soft ash was undercut along the south portion of quadrant D, along the south embankment. The 18-inch HDPE gravity drainage pipe was located and surveyed along the south and east embankments of Ash Pond D. Refer to attached daily reports and photograph log for additional information.

Equipment and Personnel On-Site

CAT D6N Bulldozer
CAT D6H Bulldozer
CAT 325C Excavator

Geotechnology, Inc. – Joe Cravens
Ash Management Services, LLC (AMS) – Randy Porter, Robert Dunkley, and Jimmy Boone
Charah, Inc. – Joe Tasich
Lamac Engineering – Austin Ridgely
Belt Construction, Inc. – Jared Belt, Nick Walker, Kevin Flynn, Brad Bolenbaugh, and Shelby Belt
Visitors – Refer to the Visitor's Log for visitors, dates, and times.
Refer to the meeting minutes for additional personnel.

Meetings

The weekly progress meeting was held on Tuesday, April 10, 2012. Refer to the attached meeting minutes for additional information.

Photographs

A photograph log with select photographs obtained this week is attached.

Materials

Ash within the footprint of Ash Pond D was graded. The geomembrane is estimated to be delivered in early May 2012.

Testing/Sampling

Additional testing and sampling did not occur.

Calibration Records

Calibration information was obtained from Lamac for their surveying equipment.

Signature of CQA Officer

Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.



DAILY REPORTS

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 4/9/12

TIME: Arrive: 6:30 AM Depart: 4:30 PM Travel: 1.0 hr Total: 11.0 hr (created spreadsheet through lunch)
Weather: Sunny, 45° AM, 65° PM Contractor: AMS Subcontr./Supplier: Belt Construction
Equipment Working: D6N Dozer, D6H Dozer, 325C Excavator, 9520 Tractor, Two 1812C Pans, Water Truck
Site Activities / Observations / Contacts / Notes: _____

The D6H continued grading Section C to match the PGL. The D6N continued grading Section A and C to match the PGL. The west side of Pond D is starting to take shape very well. The 9520 continued cutting and filling Section A and B. The 325C cut the ash on the north side of the Pond next to the PGL near the fence. This was too close to the fence for the tractor and scrapers. The 325C then began pulling out the ripped geotube HDPE from the ash around the exterior perimeter, and placing it in the center of the Pond to be covered. This will allow for more efficient grading and compaction around the exterior perimeter of the Pond.

The locks for the gates were never changed. We will continue to use the existing locks.

Lamac will be back on Wednesday to stake additional areas in the 100' grid layout.

Data lines were never provided from Frontier. The phone lines might be cancelled.

Created a Submittal spreadsheet for review in tomorrow's meeting.

Additional Comments: Some operators for some equipment as last week.

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

Andy Juelz
Contractor Representative
Signature
Anna Saindon
Geotechnology, Inc.
Engineer's Signature

AMS
Company
4-9-12
Date
4-16-12
Date

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: - Client: Ameren ER Date: 4/10/12

TIME: Arrive: 6:30 AM Depart: 4:00 PM Travel: 1.0 hr Total: 10.0 (0.5 hr for lunch)
 Weather: Sunny, 56° AM, 60° PM Contractor: AMS Subcontr./Supplier: Belt Construction
 Equipment Working: D6N Dozer, D6H Dozer, 325C Excavator, 9520 Tractor, Two 1812C Pans, Water Truck

Site Activities / Observations / Contacts / Notes:

The D6N continued grading Section D. The D6H continued grading the south end of Section A. The 9520 continued cutting Section A and B, and filling the south end of Section A. The 325C began clearing the remaining vegetation on the east side of the Pond, near the wet area by the east embankment. Crane mats were used as a precaution in this area, even though the actual wet area was avoided.

The 9520 got stuck in the south end of Section A, where fill was being placed. The D6N pushed the pans out of the ruts, and then pulled the tractor out with a cable, as the D6H pushed the pans from behind.

AMS plans to bring in a Long Reach Excavator to undercut the wet area of the east side of the pond. The material will be cut 18"-24", or as necessary, and will be pushed towards the center of the Pond to dry. The material from the embankment will be cut and used to fill this area once it is dried. This might begin next week and AMS may or may not have an additional operator for this procedure.

EWO-02 and EWO-03 was approved. The additional 50,000 CY will be moved, and AMS will begin moving the coal at the end of this week, or next week, once final approval goes through and the coal route is prepared.

Joe Tasich and Shelby Belt were here to observe site activities. Storm shelter will be finalized by Joe T. Weekly Progress Meeting attended.

Additional Comments: As of 4/9/12, Belt has moved approx. 28,076 CY of Ash.

Randy Porter
 Contractor Representative
 Signature

Anna Saindon
 Geotechnology, Inc.
 Engineer's Signature

AMS
 Company
4-10-12
 Date
4-16-12
 Date

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 4/11/12

TIME: Arrive: 6:30 AM Depart: 4:15 PM Travel: 1.0 hr Total: 10.25 hr (0.5 hr for lunch)

Weather: Sunny, 35° AM, 60° PM Contractor: AMS Subcontr./Supplier: Belt Construction

Equipment Working: D6N Dozer, D6H Dozer, 325C Excavator, 9520 Tractor, Two 812C Pans, Water Truck

Site Activities / Observations / Contacts / Notes: —

Austin Ridgely with Lamac was on-site to stake more of the 100' grid. Point numbers were written on all of the stakes to match the drawings. The 100' grid, including the PGL, is now complete. Randy raised all of the stakes to visually show the Ash Grade. Lamac will return on Monday to stake the layout of the Silt Fence for the Erosion Control.

The 325C finished clearing the vegetation on the east side of the Pond. All of the vegetation has now been cleared, excluding the little vegetation that is left by the embankment perimeter. The cleared vegetation was then spread out to dry. The 325C dug a test pit in the wet area next to the east embankment. This was done to determine how wet the material is, and to determine the condition of the embankment material. The test pit was approx. 6' deep, and the embankment had a decent slope of clay + silt material going into the ash. The test pit was filled in to prevent accidents. The Long Reach Excavator will be here next Tuesday to undercut this area. The 325C also graded more of the PGL at the north tip of the Pond.

The D6N and D6H continued grading Section D. The 9520 continued cutting Section A and B, and filling the area located in the Center of the Sections.

Shelby Belt was here to observe site activities. AMS will attempt to dewater the standing water in the coal yard when the coal pile is moved. It is unknown when AMS will divert the ponded water in Ash Pond A. The west perimeter of the Pond needs to be evaluated for slopes, swales, and the paved ditch, to prevent the slope of the clay cap coming into the existing west gravel road.

Additional Comments: Same operators for same equipment as last week.

Randy Felter
Contractor Representative

Signature

Anna Saindon
Geotechnology, Inc.

Signature
Engineer's Signature

AMS
Company

4-11-12
Date

4-16-12
Date

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 4/12/12

TIME: Arrive: 6:30 AM Depart: 6:15 PM Travel: 1.0 hr Total: 12.75 hrs (emails through lunch)

Weather: Sunny, 35° AM, 70° PM Contractor: AMS Subcontr./Supplier: Belt Construction

Equipment Working: D6N Dozer, D6H Dozer, 325C Excavator, 9520 Tractor, Two 1812C Pans, Water Truck

Site Activities / Observations / Contacts / Notes: —

The D6N continued grading the south end of Section A, along with Section C and D. The D6H continued grading Section D. The 9520 continued cutting the north ends of Section A and B, and filling the south end of Section A, along with Section C. The 325C continued spreading out wet ash and cleared vegetation on the east side of the Pond, next to the outfall structure. The 325C then began undercutting the south end of the Pond in Section D.

Jimmy Boone and Shelby Belt were on-site to discuss the schedule. The Long Reach Excavator will be delivered on 4/17/12, and picked up on 5/1/12. Belt will hire an additional operator to operate the Long Boom. This two week period is very critical, if there are any delays, all personnel will have to switch to 10 hour days. The Long Boom will be used to undercut the ash along the east embankment.

The silt fence (SF) will be constructed on 4/18/12 by a subcontractor. The SF will not follow the original plan. AMS will set the location of the SF instead of Lamoc. The SF cannot be set in the south and east berms until they are cut down. The northeast SF will now run along the tree line next to the river, and will extend passed the Deep Wells on the east side of the Pond. On the Farmer's land, the SF will be located 2' inside the AMS property line. A section will be left open between the field and the inside of the chain link fence, until the fence is taken down on the south side of Pond B. The subcontractor can install the SF in one day with a plow, as opposed to one week if AMS were to install the SF with a trencher.

Additional Comments: —

NEXT PAGE

Randy Peeler
Contractor Representative

AMS
Company

Anna Saindon
Signature
Geotechnology, Inc.

4-17-12
Date
4-16-12
Date

Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: — Client: Ameren ER Date: 4/12/12

TIME: Arrive: — Depart: — Travel: — Total: —
 Weather: — Contractor: — Subcontractor: — Supplier: —
 Equipment Working: —
 Site Activities / Observations / Contacts / Notes: —

A forklift for the HDPE Liner will be ordered on 4/23/12, and delivered on 4/25/12.
 The liner will be delivered on 4/27/12. Belt will unload and stock the Liner.

Tomorrow, the 325G will locate the existing drainage pipe around the south and east embankments of Pond D in 4-6 locations. When pipe relocation from Pond B to the manhole by the outfall structure begins, AMS will hire a new laborer. The new operator and laborer will be trained next Tuesday by Joe T. The 18" HDPE gravity pipe may or may not be plugged for relocation. The pipe will be moved as a whole, 3' horizontally, and 7' vertically, starting from the outlet of Pond B, to the manhole east of Pond D. An EWO was sent this afternoon for pipe relocation. Randy and I will survey the exposed pipe with a level, to enable design for a new location and flowline of the discharge pipe.

If rain days occur, AMS plans on working on the pipe and moving the coal pile to minimize delays. This time is very critical on the schedule. Jimmy and Shelby viewed the borrow site to determine a schedule. The SF cannot be constructed around the borrow site and the haul road for another 2 weeks, per the SWPPP.

A photo log was created for the West Side PGL (Gutter location) to be submitted to Hanson. This side needs to be evaluated for the gutter and slopes / fence and gravel road. Lamac will layout the gutter next time they are on site.

Additional Comments: Same Operators for Same Equipment as last week.

Randy Petric
 Contractor Representative
Anna Saindon
 Signature
 Geotechnology, Inc.
—
 Engineer's Signature

AMS
 Company
4-12-12
 Date
4-16-12
 Date

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 4/13/12

TIME: Arrive: 6:30 AM Depart: 4:15 PM Travel: 1.0 hr Total: 10.5 hrs (0.25 hr for lunch)

Weather: Sunny, 45° AM, ^{cloudy} 70° PM Contractor: AMS Subcontr./Supplier: Belt Construction

Equipment Working: D6N Dozer, D6H Dozer, 325C Excavator, 9520 Tractor, Two 1812C Pans, Water Truck

Site Activities / Observations / Contacts / Notes: _____

The 9520 continued cutting the north end of Section A and B, and filling Section C. The D6H graded Section C and D. The D6N graded Section C, D, south of B, and the north tip of the pond where the excavator had graded. The 325C continued undercutting the south end of Section D next to the embankment until it got too wet (the crane mats were sinking). Then the 325C began spreading out the undercut material to dry. The undercut area was blocked off with tape and tags signed by Randy P. for safety.

Randy probed for the 18" drainage HDPE pipe along the south and east embankments, and the 325C exposed the pipe in these areas along the berms. Next to the manhole and Pond B, the HDPE was cased in concrete. The pipe was 18" to 36" deep along the berms. On the east embankment, the old drainage pipe was found in two locations next to the new HDPE pipe. The old drainage is made of corrugated pipe. AMS needs to know what to do with it. There is a possibility this old corrugated pipe is located along the south embankment as well. Randy and I shot in the elevations of the pipe with a Level, with the nearby station as a control. We also shot the flowline in the outfall structure in Pond D and the outlet structure in Pond B. After surveying, the pipe was covered up for safety. This information will be sent out Monday.

Additional Comments: _____

<u>Randy Poole</u> Contractor Representative	<u>AMS</u> Company
<u>Anna Saindon</u> Signature	<u>4-13-12</u> Date
<u>Anna Saindon</u> Geotechnology, Inc.	<u>4-16-12</u> Date
<u>Anna Saindon</u> Engineer's Signature	

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MEETING MINUTES



Hutsonville Power Station - Ash Pond D closure
Progress Meeting No. 4 Minutes
Tuesday, April 10, 2012

01 PUBLICATION			
Publish date:	2012-04-16	Submitted by:	P. Zinsious
Distribution:	E-mail only	Notes taken by:	P. Zinsious
Location:	Hutsonville Power Station	AMS-Charah File No.	HUT-APD-MTG-MIN-2012-04-10-PM-02
AER PO:	567523 R2	AMS-Charah Project:	4116-06-6120

02 ATTENDEES				
01	Mr. Mike Wagstaff	Ameren	618-343-7790	mwagstaff@ameren.com
02	Mr. Joe Cravens	Geotechnology	314-568-6628	j_cravens@geotechnology.com
03	Ms. Anna Saindon	Geotechnology	314-997-7440	a_saindon@geotechnology.com
04	Mr. John Denham	AMS - RM	502-609-0278	idenham@ashmanagementservices.com
05	Mr. Joko Tasich	AMS-Charah	502-649-7633	itasich@charah.com
06	Mr. Randy Porter	AMS - SM	502-554-5230	rporter@ashmanagementservices.com
07	Mr. Paul Zinsious	AMS - PCM	502-640-2918	pzinsious@ashmanagementservices.com

03 ABBREVIATIONS	
AER	Ameren Energy Resources
AMS	Ash Management Services
BNSF	Burlington
CBT	Computer Based Training
EOD	End of [the] Day
EOM	End of [the] month
EOW	End of [the] week
EDTS	Energy Delivery Transmission Services
EDC	Estimated Date [of] Completion
EWO	Extra Work Order
HDPE	High Density Polyethylene
HRS	Hours
LOTO	Lock Out Tag Out
NMA	National Maintenance Agreement
OSHA	Occupational Safety Health Administration
PCP	Perforated Collector Pipe
PO	Purchase Order
RHOM	Routine Handling, Operation, and Maintenance
SPOC	Single Point of Contact
T/M	Time and Materials
TBD	To Be Determined
TD	Transmission Dispatch
WPA	Worker Protection Assurance

04 DOCUMENTATION	
Minutes are documented weekly, and the publication have a "rolling record" of the immediate past three weeks. Each week the oldest drops off and the current week is added to the minutes. Items are categorized as either "NEW", "OPEN", "CLOSE", or in case the an item has to be re-published after closed the previous week - "REOPEN".	

05 SAFETY - HOUSEKEEPING	
01 ACCIDENTS OR INJURIES	
2012-04-10	OPEN - no issues.
2012-04-03	OPEN - no issues. CORRECTED THE NUMBERING FOR THIS TOPIC
2012-03-27	OPEN - no issues
02 WORKER PROTECTION ASSURANCE	
2012-04-10	OPEN - no issues.
2012-04-03	OPEN - no issues [electricians working on temporary power 04-03] Meter based LOTO by AMS. R. Porter did not want any work "hot" if meter base was to be put in. M. Wagstaff to contact Ameren Utilities for the meter, and come on site Monday or Thursday [see also action item].
2012-03-27	OPEN - no issues. LOTO for temporary electric for trailer.

03 EMPLOYEE DRUG TESTING

2012-04-10	OPEN - no issues. Inquiry as to liner subcontractor [Chesapeake Containment]. Trained on schedule, some already trained.
2012-04-03	OPEN - no issues
2012-03-27	OPEN - Belt Construction employees 3x tested negative [will begin work]. Scheduled testing for 1x teamster on 03-27 and 2x operators on 03-28. Reminder for 24 HR notice.

04 AMS SAFETY

2012-04-10	OPEN - no issues.
2012-04-03	OPEN - AMS submitted "Lessons Learned/Near Miss Report": Summary: Excavator was traveling across the east side of Ash Pond D when the left track sunk without warning. After a safety brief and going over the safe start and hazards of the task along with the inspection of proper rigging equipment, work proceeded to remove the excavator. The excavator come out without further incident. J. Tasich was on site and J. Cravens. There was no damage to the machine or any injuries. No work this portion of the site until further review. See report for more details.
2012-03-27	OPEN - Portable toilets and hand wash stations on site and set up. Only smoking area is located at the employee trailer[s]. J. Cravens Geotechnology Construction Manager now full time on site. M. Wagstaff reviewed the program for J. Cravens list he gave him for the "anytime anyone see anything" safety program on site. J. Tasich general safety discussion.

05 HOUSEKEEPING

2012-04-10	OPEN - no issues
2012-04-03	OPEN - no issues
2012-03-27	OPEN - no issues

06 PLANT ACCESS - CBT BADGE

2012-04-10	OPEN - no issues
2012-04-03	AAA 2x electricians went this AM. Currently working on visitor as the badge form Newton not assigned to Hutsonville. Coordination in e-mail to ensure Newton assigns workers to Hutsonville. R. Porter reported various Ameren employees have been coming on site, such as substation maintenance. R. Porter and J. Cravens are monitoring this together.
2012-03-27	OPEN - J. Denham concern over badge in/out at other plants and the change over required back to Hutsonville for those who go to other plants. M. Wagstaff indicated can still get a visitors badge, but he would provide J. Denham, J. Boone, and J. Tasich consultant's badge [where as "employee" of M. Wagstaff].

07 VEHICLES ON SITE

2012-04-10	OPEN - no issues
2012-04-03	OPEN - no issues
2012-03-27	OPEN - Fuel trucks [such as for Belt Construction] can be on work site. Park at trailer area. Only Geotechnology and AMS trucks allowed frequent access. For Lamac, vehicle allowed on site, but work in that area when they are surveying will be shut down.

08 OSHA LOG - WORK HOURS

2012-04-10	OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday]
0,522.00	RT
<u>0,000.00</u>	OT
0,522.00	TOTAL
2012-04-03	OPEN - total all hours [including subcontractors]
0,239.00	RT
<u>0,000.00</u>	OT
0,239.00	TOTAL
2012-03-27	OPEN - no workers on site except Site Manager and surveyor. Hours will be from previous Monday to Friday [the week].
0,059.00	RT
<u>0,000.00</u>	OT
0,059.00	TOTAL

01 CREW SIZE

2012-04-10 OPEN - AMS and Belt Construction on site.

Current

[00] Pipe

[00] Mechanical

[00] Electrical

[00] Cement

[00] Laborers

[04] Operators

[01] Teamsters

[00] Survey

[01] Foreman [Full time][06] Total

2012-04-03 OPEN - AMS and Belt Construction on site.

Current

[00] Pipe

[00] Mechanical

[00] Electrical

[00] Cement

[00] Laborers

[04] Operators

[01] Teamsters

[00] Survey

[01] Foreman [Full time][06] Total

2012-03-27 OPEN - no workers on site except Site Manager and surveyor. Projection for next week will add employees: 4x ash placement and 1x for water truck.

Current

[00] Pipe

[00] Mech

[00] Elec

[00] Cement

[00] Laborers

[00] Operators

[02] Survey [Part time]

[01] Foreman [Full time][03] Total**02 WORK HOURS**

2012-04-10 OPEN - Standard hours

2012-04-03 OPEN - Standard hours

2012-03-27 OPEN - Standard hours

03 OVER TIME

2012-04-10 OPEN - none projected

2012-04-03 OPEN - none projected. Advise GEO if change.

2012-03-27 OPEN - none projected

04 TRAILER [AND GENERAL CONDITIONS]

2012-04-10 OPEN - no issues. Power to trailers operational. Phone lines dead. M. Wagstaff to cancel order due to data service not available to the site by landline.

2012-04-03 OPEN - no issues. Power to trailer[s] this week. AMS employee trailer to move to trailer site 04-04.

2012-03-27 OPEN - Price form AAA Electric 03-28. AMS to move employee trailer adjacent to GEO trailer. No generators will be required for now. J. Tasich discussed the electric can be heavy wall SCH 80 conduit run on top the ground with gravel covering. Their could be issues with the Ameren Illinois requirement for the new pole height. M. Wagstaff to get with utility to review options.

01 SUBCONTRACTS

2012-04-10 OPEN - no issues

2012-04-03 OPEN - no issues

2012-03-27 OPEN - no issues

02 SUBMITTALS

2012-04-10	OPEN - no issues. In progress, J. Cravens and P. Zinsious to finish out log. GEO to maintain the log. Submit in groups.
2012-04-03	OPEN - no issues. In progress.
2012-03-27	OPEN - no issues

08 MATERIAL**01 GENERAL**

2012-04-10	OPEN - Liner can be delivered early to the site if necessary.
2012-04-03	OPEN - M. Wagstaff concern on liner delivery. P. Zinsious contacted subcontractor, and liner has been manufactured, and is in Houston, TX. No issue with delivery [if required] within 30 D.
2012-03-27	OPEN - Lamac to take few more elevation shots in coal yard.

09 ADJACENT PROPERTIES**01 GENERAL**

2012-04-10	OPEN - no issues. Excavation plan scheduled for two weeks out.
2012-04-03	OPEN - no issues. AMS announced Koberstein Contracting as the pipe subcontractor, who will provide excavation plan.
2012-03-27	OPEN - General discussion. AMS in process of reviewing subcontractors for the Perforated Collector Pipe [PCP]. When subcontractor is approved, then excavation plan will be published. AMS reiterated that if it is not necessary, the area will not be used. General consensus to "wait and see" as the scope of work is not until June.

10 QUALITY CONTROL**01 GENERAL**

2012-04-10	OPEN - no issues
2012-04-03	OPEN - no issues
2012-03-27	OPEN - no issues

02 ASH

2012-04-10	OPEN - no quality issues. Ash placement by scrapers. No issue on compaction. Tests to be taken when elevation is within 1 FT of finish grade. GEO has taken samples for proctors, and 1 of 2 test analysis have been returned.
2012-04-03	OPEN - no quality issues. Safety concern - reference Item No. 05.04-2012-04-03 above. A. Ridgely indicated survey shows settlement in Pond D as minimal - approximately 2/10 FT. AMS at this time indicated not an issue.
2012-03-27	OPEN - no issues. AMS to proceed with mixing in the "topsoil" found within the Ash Pond D into the fill. [Note: This is as noted in previous contract documents]. Reviewed the topographic survey by Lamac. A. Ridgely indicated the topo on the [AER] drawings Land Lamac survey were very close and AER engineer probably used "LiDAR" [Light Detection and Ranging], an [optical] scanning process. The delta in the survey is about 5,000 CY. Drawing will be created fro EWO baseline.

03 CLAY

2012-04-10	OPEN - no issues. Samples to be taken in next week or two [by AMS]. Analysis to follow the [revised] CQA plan.
2012-04-03	OPEN - no issues
2012-03-27	OPEN - no issues

11 SCHEDULE REVIEW**01 SCHEDULE**

2012-04-10	OPEN - Review of schedule with actuals dates, activity look-ahead for two weeks, and critical path. . AER to provide revised schedule next week. One rain date documented for 04-05.
2012-04-03	OPEN - No significant changes. AMS to update actuals and submittals. AER changed the description "piezometer" to "vent pipe" on the P6 schedule. M. Wagstaff concern addition of 17D to critical path by EWO-02 [reference Item No. 12.03-2012-04-03 below] as project is already "2x weeks behind schedule". Two week look ahead - pipe filling in Pond D.
2012-03-27	OPEN - No significant changes. AMS to update. General discussion 2012-10-11 good end [substantial completion] date.

02 TIME AND MATERIAL

2012-04-10 OPEN - no issues
 2012-04-03 OPEN - no issues
 2012-03-27 OPEN - no issues

03 COORDINATION

2012-04-10 OPEN - no issues. Hierarchy for call for site access - R. Porter, J. Craven, and then M. Wagstaff. Post sign on site.
 2012-04-03 OPEN - no issues. Reference Item No. 05.06-2012-04-03 above regarding others access to plant. AMS to laminate sign and post. Reference Item No. 14.01.20-2012-04-03 below.
 2012-03-27 OPEN - J. Cravens and R. Porter to monitor the access to the site as team. M. Wagstaff to notify the team of any AER personnel or entity coming to the site or who should badge in. The concern was knowledge of who has permission to come on site once security is gone.

12 COST AND BUDGET**01 CHANGE REQUEST ISSUES**

2012-04-10 OPEN - Discussion and review of EWO's to be deferred to after the progress meeting.
 2012-04-03 OPEN - AMS submitted EWO-02 and EWO-03. See Item No. 12.03 and 12.04
 2012-03-27 OPEN - General discussion items for EWO [Potential change Orders - PCO] ash cap, coal pile, pipe [in berm], surveying, and utility change. If excavating the trench in Pond A is just a few hours, AMS would not charge for this work.

02 AMS PAY APPLICATION

2012-04-10 OPEN - M. Wagstaff indicated the application has been received from AMS, and he has forwarded to J. Davis at AER for review.
 2012-04-03 OPEN - in progress
 2012-03-27 OPEN - no issues. J. Denham we will have pay app this month.

03 EWO-02 - ASH PLACEMENT

2012-04-10 OPEN - Discussion and review of EWO's to be deferred to after the progress meeting.
 2012-04-03 NEW - AMS submitted EWO letter. M. Wagstaff requesting the description be changed from "ash placement" to "cap modification". This EWO is to include all changes from the plan changes to date. P. Zinsious indicated AMS to have AER "agree in principle" with the ash placement portion presented. AMS will provide spreadsheet showing changes of overall project such as the channels, berms, pump system, etc. M. Wagstaff question how AMS arrived at the 17D addition to the critical path. P. Zinsious to investigate calculation used. R. Porter reported there is a soft area approximately 50 FT x 1,000 FT located on the east and south perimeter of the pond. P. Zinsious indicated that J. Denham and J. Boone are in process of reviewing options, and would report back in a couple of days.

04 EWO-03 - COAL PILE

2012-04-10 OPEN - Discussion and review of EWO's to be deferred to after the progress meeting. However, AER approved this work.
 2012-04-03 NEW - AMS submitted EWO letter. M. Wagstaff indicated AER has to review as other options for site may affect the decision.

05 EWO-04 - PIPE RELOCATION

2012-04-10 OPEN - Discussion and review of EWO's to be deferred to after the progress meeting.
 2012-04-03 NEW - R. Porter briefly explained the procedure to excavate and move the line inside the berm. M. Wagstaff requested "pothole" to locate.

05 EWO-05 - ELECTRICAL REVISION

2012-04-10 OPEN - Discussion and review of EWO's to be deferred to after the progress meeting.
 2012-04-03 NEW - M. Wagstaff indicated drawings to be released 04-03.

13 ACTION ITEMS - AER**01 AMEREN [AER]**

2012-04-10

[03] Fire protection [OPEN - pumps off in plant so cannot use basements - team to review pit next to coal pile "push wall". The gathering place is guard shack by the trailers. [OPEN - J. Tasich described area and supplies for emergency shelter in old switchgear room]

[20] Drawing S-386 SHT 5 RF - the survey coordinates are reversed. [OPEN - Hanson to provide revised drawing]

[21] M. Wagstaff to contact Ameren Utilities for the meter. [CLOSED]

[22] Mailbox and delivery thereof status. [CLOSED - M. Wagstaff reports all mail now goes to Newton]

2012-04-03

[03] Fire protection [OPEN - pumps off in plant so cannot use basements - team to review pit next to coal pile "push wall". The gathering place is guard shack by the trailers. [OPEN - J. Tasich reviewed location, and has proposed option. Will review 04-03]

[17] ACAD files to AMS [CLOSED - AER transmitted disc]

[18] AER to print full size schedule [CLOSED]

[19] Flood plain permit [CLOSED - AMS will publish AER info]

[20] Drawing S-386 SHT 5 RF - the survey coordinates are reversed. [NEW - AER to get revised]

[21] M. Wagstaff to contact Ameren Utilities for the meter.

[22] Mailbox and delivery thereof status.

2012-30-27

[03] Fire protection [OPEN - pumps off in plant so cannot use basements - team to review pit next to coal pile "push wall". The gathering place is guard shack by the trailers.

[17] ACAD files to AMS [CLOSED - AER transmitted disc]

[18] AER to print full size schedule [CLOSED]

[19] Flood plain permit [CLOSED - AMS will publish AER info]

[20] Drawing S-386 SHT 5 RF - the survey coordinates are reversed. [NEW - AER to get revised]

14 ACTION ITEMS - AMS

01 ASH MANAGEMENT [AMS]

2012-04-10

[04] Cost review – relocation flume and change to cap [when receive revised drawings] [OPEN – General discussion topo reference previous commentary above in Item No. 10.02-2012-03-27 - communication will be essential during ash placement to track changes.] [CLOSED - differed to discussion after progress meeting]

[05] Cost review – HDPE line relocation [when receive revised drawings] [OPEN – line to be moved to inside of the pond area, as pipe will get "shorter" by virtue of shorter run . [CLOSED - differed to discussion after progress meeting]

[06] RFI-01 roadway clarification [OPEN - AMS not received]

[16] Submittal log [OPEN - AMS submit EOW] [CLOSED - reference above in submittals]

[19] All documents to be copied [e-mailed] to Mr. Joe Cravens - M. Wagstaff representative on site.[CLOSED - e-mails will be copied/forwarded]

[20] Site entry signage [CLOSED - provide draft]

2012-04-03

[04] Cost review – relocation flume and change to cap [when receive revised drawings] [OPEN – General discussion topo reference previous commentary above in Item No. 10.02-2012-03-27 - communication will be essential during ash placement to track changes.]

[05] Cost review – HDPE line relocation [when receive revised drawings] [OPEN – line to be moved to inside of the pond area, as pipe will get "shorter" by virtue of shorter run . [In progress]

[06] RFI-01 roadway clarification [OPEN - AMS in progress]

[16] Submittal log [OPEN - AMS submit EOW] [In progress - couple days out]

[19] All documents to be copied [e-mailed] to Mr. Joe Cravens - M. Wagstaff representative on site.

[20] Site entry signage

2012-03-27

[04] Cost review – relocation flume and change to cap [when receive revised drawings] [OPEN – General discussion topo reference previous commentary above in Item No. 10.02-2012-03-27 - communication will be essential during ash placement to track changes.]

[05] Cost review – HDPE line relocation [when receive revised drawings] [OPEN – line to be moved to inside of the pond area, as pipe will get "shorter" by virtue of shorter run .

[06] RFI-01 roadway clarification [OPEN - AER sent e-mail, AMS to check]

[16] Submittal log [OPEN - AMS submit EOW] [In progress]

15 PRODUCTION

01 GENERAL

2012-04-10 OPEN - no issues

2012-04-03 OPEN - no issues

2012-03-27 OPEN - no issues - no work on site.

02 ASH

2012-04-10 OPEN - no issues. Estimated 28,076 CY EOD 04-09.

2012-04-03 OPEN - no issues - 10,300 CY as of 03-03. Estimated 13,968 CY EOD.

2012-03-27 OPEN - no issues - no work on site.

03 CLAY

2012-04-03 OPEN - no issues - this activity not begun. Borrow site agreement signing 04-10.

2012-04-03 OPEN - no issues - this activity not begun. Borrow site in process closing on agreements.

2012-03-27 OPEN - no issues - no work on site.

16	DOCUMENTS TRANSMITTED
2012-04-10	[01] AMS - Contact List HUT-APD-CON-20120-04-10 [02] AMS - Submittal Breakout Report [previously issued at Pre-Con] dated 20120-01-31. [03] AER - J. Craven submittal log draft spreadsheet.
2012-04-03	[01] AMS - EWO-02 - ash placement to AER and GEO [02] AMS - EWO-03 - coal pile to AER and GEO [03] AMS - Lessons Learned/Near Miss Report [Incident dated 2012-04-20] [04] AMS - Contact list [next print out 11x17]
2012-03-27	[01] AER - CD drawings on ACAD and PDF to LEC, GEO, and AMS [02] AMS - Lamac topographic of the ash pond [COR to AER info] [03] AMS - Lamac topographic of coal ash pile

17	DOCUMENTS REVIEW ONLY
2012-04-10	None
2012-04-03	None
2012-03-27	None

18	NEXT PROGRESS MEETING
	Next meeting will be held in one week - Tuesday, April 17, 2012 at Hutsonville

19	DISTRIBUTION - STANDARD
	AER
01	Mr. Mike Wagstaff
02	Mr. Mike Stewart
03	Mr. Bob Muesenfechter
	GEO
01	Ms. Anna Saindon
02	Mr. Eric Neuner
03	Mr. Joe Cravens
	AMS
01	Mr. Jimmy Boone
02	Mr. John Denham
03	Mr. Joko Tasich
04	Mr. Randy Porter

If there are any corrections, modifications, additions, or deletions please notify the sender by e-mail at pzinsious@ashmanagementservices.com

PHOTO LOG



Photograph 1 ▲ - Grading north end to PGL facing northwest



Photograph 2 ▲ - Quadrant C PGL facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between April 9 and April 13, 2012

JRC



Photograph 3 ▲ - Grading Quadrant A facing northeast



Photograph 4 ▲ - Lamac staking 100' grid facing southeast



Photograph 5 ▲ - West side PGL facing northwest



Photograph 6 ▲ - Undercutting south end of Quadrant D facing west



Photograph 7 ▲ - Exposing existing HDPE drainage pipe on embankments facing west



Photograph 8 ▲ - Exposing existing HDPE drainage pipe on embankments facing west

All photographs taken by Joseph Cravens of Geotechnology, Inc. between April 9 and April 13, 2012

JRC



Photograph 9 ▲ - Exposing existing HDPE drainage pipe on embankments facing northwest



Photograph 10 ▲ - Undercut area taped off facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between April 9 and April 13, 2012

JRC



Photograph 11 ▲ - Overview Ash Pond D facing southeast



Photograph 12 ▲ - Overview Ash Pond D facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between April 9 and April 13, 2012

JRC



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Energy Resources

FROM: Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DATE: April 23, 2012

SUBJECT: Weekly Summary Report for April 16, 2012 to April 20, 2012

PROJECT: Hutsonville Ash Pond D Closure
Crawford County, Hutsonville, Illinois
Geotechnology Project No. J019896.01

The following is a weekly summary of the site activities at the referenced site.

Weather

The weather was generally sunny and windy. Temperature (°F) lows ranged from 40 to 65°F, and temperature highs ranged from 60 to 80°F. Weather delays occurred on April 16, 2012 due to rain over the weekend.

Construction Activities

Ash grading, undercutting of soft areas, coal pile transported to ash pond, silt fence installation, ADS corrugated pipe removal, and 18-inch HDPE gravity drainage pipe excavation occurred this week. Ash was moved from the northern portion of quadrant A and B, to the southern portion of quadrant A and B, and the northern portion of quadrant C. Grading occurred in all four quadrants. Soft ash was undercut along the south and east portion of quadrant D beside the embankments, and spread out within the pond to dry. The coal pile was moved to the south end of quadrant A and B to be covered with ash. The 18-inch HDPE gravity drainage pipe was exposed and approx. 600 feet of the ADS corrugated pipe was removed from the south embankment of Ash Pond D. Refer to attached daily reports and photograph log for additional information.

Equipment and Personnel On-Site

CAT D6N Bulldozer
CAT D6H Bulldozer
CAT 325C Excavator
John Deere 9520 Tractor with 2-1812C John Deere Scrapers (Pans)
Hyundai 290 LC-9 Long Reach Excavator
Water Truck
John Deere 5420 tractor with silt fence plow
John Deere 35D Mini Excavator with John Deere HH50 Hammer.

Geotechnology, Inc. – Joe Cravens
Ash Management Systems, LLC (AMS) – Randy Porter, Robert Dunkley, James Marks, Jimmy Boone, and Paul Zinsious
Charah, Inc. – Joe Tasich and Kirby Bilsland
Belt Construction, Inc. – Jared Belt, Nick Walker, Kevin Flynn, Brad Bolenbaugh, Marc Downs, Daylight Land Management – Adam Ziliak, John Ziliak, and Billy Georges.
Visitors –Refer to the Visitor's Log for visitors, dates, and times.
Refer to the meeting minutes for additional personnel.

Meetings

The weekly progress meeting was held on Tuesday, April 17, 2012. Refer to the attached meeting minutes for additional information.

Photographs

A photograph log with select photographs obtained this week is attached.

Materials

Ash within the footprint of Ash Pond D (quadrants A, B, C, and D) was graded. The geomembrane is estimated to be delivered in early May 2012.

Testing/Sampling

Testing and sampling did not occur.

Calibration Records

Calibration information was obtained from Geotechnology, Inc. for the nuclear moisture density gauge.

Signature of CQA Officer

Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.



DAILY REPORTS

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 4/16/12

TIME: Arrive: 6:30 AM Depart: 2:45 PM Travel: 1.0 hr Total: 9.25 (no lunch)
Weather: Cloudy, 50° AM, 65° PM Contractor: AMS Subcontr./Supplier: Belt Construction
Equipment Working: D6N Dozer, 325C Excavator
Site Activities / Observations / Contacts / Notes: —

Rain Day - No Production.

On-Site Personnel: Joe Cravens, Randy Porter, Jared Belt, Nick Walker

Jared and Nick took down one section of pipe running south of the coal yard for coal route access. One pipe support was also dug out for the coal route access. The pipe was used for drainage in the entrance to the coal yard. For the rest of the day, Jared and Nick did routine maint. on equipment.

Anthony Divers (AMS Focus Group) will be on-site next week to assist Randy.

Mike Wagstaff and I discussed the HDPE Gravity Drain Pipe and the issue with the west side Gutter. Lamac is to shoot in the west fence line next time on site.

Additional Comments: —

Randy Porter
Contractor Representative

AMS
Company 4-16-12

Anna Saindon
Signature
Geotechnology, Inc.

4-23-12
Date

—
Engineer's Signature

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 4/17/12

TIME: Arrive: 6:30 AM Depart: 5:30 PM Travel: 1.0 hr Total: 12 hrs (paperwork through lunch)
Weather: Sunny, 40° AM, 75° PM Contractor: AMS Subcontr./Supplier: Belt/Daylight Land Management
Equipment Working: D6N Dozer, D6H Dozer, 325C Excavator, 9520 Tractor, Two 1812C Pans, Water Truck,
Site Activities / Observations / Contacts / Notes: 290 LC-9 Excavator, 5420 Tractor with Silt Fence Plow,
and 35D Mini Excavator with HH50 Hammer

New operator for Belt arrived; Marc Downs will be operating the long boom. He was trained by Kirby Bilsland (Charch Safety) and got his badge from the Newton Plant. He completed his paperwork and CBT and began working in the PM. The Long Reach Excavator, "Long Boom", was delivered (60' Hyundai 290 LC-9) by Glenn Brown Trucking, LLC. It will have to be sent back to Diamond Equipment in two weeks.

The D6N graded south Section C and D. The D6H graded Section C and D, coal placed in the Pond, and built up the coal route entrance with gravel. The 9520 began moving the coal pile, and placing the coal in the south end of Section A and B, south of the north broken geotubes. The 325C undercut the south end of Section C and D along the south embankment. The 290 LC-9 began undercutting the east side of the Pond in Section D.

Daylight Land Management arrived to install the silt fence. Employees: Adam Ziliak, John Ziliak, and Billy Georges. Equipment: John Deere 5420 Tractor with Silt Fence Plow, and John Deere 35D Mini Excavator with John Deere HH50 Hammer. Billy will operate the Mini Ex, and John will operate the Tractor. They arrived late so they worked late. They began the fence at the north tip of the Pond, and worked SE on the outside of the berm, to wrap around the south end. They will pin up the fence tomorrow and will be completed. The Switchgear Room was viewed by Joseph King (AAA Electric) with Randy, Paul, and Mike to determine the MCC Plan. Jimmy and Paul here.

Additional Comments: all day. Attended Progress Meeting.
Developed official submittal log with Paul Z.

Randy Porter
Contractor Representative

AMS
Company

Anna Saindon
Signature

Geotechnology, Inc.

Engineer's Signature

4-17-12
Date

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FIELD OBSERVATION REPORT

Representative: Joe Gravens Project No.: JO19896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 4/18/12

TIME: Arrive: 6:30 AM Depart: 3:45 PM Travel: 1.0 hr Total: 10.25 hrs (photo log through lunch)
Weather: Sunny, 40° AM, 78° PM Contractor: AMS Subcontr./Supplier: Belt/Daylight Land Management
Equipment Working: D6N Dozer, D6H Dozer, 325C Excavator, 9520 Tractor, Two 1812C Pans, Water Truck,
Site Activities / Observations / Contacts / Notes: 290 LC-9 Excavator (Daylight demobilized their equipment yesterday evening)

The 325C began cutting the south embankment, exposing the 18" HDPE Gravity Drain Pipe, and ripping out the old ADS Corrugated Drain Pipe. There will be a dumpster delivered to haul off the old ADS pipe. For now, the pipe is being layed outside of the embankment (south of the berm). The location of the ADS Pipe on the south berm differs from its location on the east berm. On the south berm, it is inside the HDPE pipe, as opposed to outside the HDPE pipe on the east berm. The cut embankment material was placed in the undercut area in Section C for grading. The 325C also spread out undercut material in Section D at the end of the day. Cutting the south berm ceased when they reached the undercut areas with ponded water.

The 9520 continued cutting the coal pile, and filling the south end of Section A and B. The D6H continued grading Section C and D. The D6N graded Section C and D, and the cut south embankment material. The 290 LC-9 continued undercutting the east side of the pond in Section D along the east embankment, as well as the south side of the pond in Section D along the south embankment.

Adam Ziliak finished stapling the silt fence. The 3200' silt fence along the NE, E, SE, and S ends of the pond is complete. James Marks, AMS's new laborer, arrived today for training. Joko Tasich did the training.

Additional Comments: James is scheduled to start next Monday to assist with pipe relocation.

Randy Porter
Contractor Representative
Signature

AMS
Company
4-18-12
Date
4-23-12
Date

Anna Saindony
Geotechnology, Inc.
Engineer's Signature

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

FIELD OBSERVATION REPORT

Representative: Joe Croveng Project No.: J019896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: — Client: Ameren ER Date: 4/19/12

TIME: Arrive: 6:30 AM Depart: 4:00 PM Travel: 1.0 hr Total: 10.25 hrs (0.25 hr for lunch)
 Weather: Sunny, 50° AM, 80° PM Contractor: AMS Subcontr./Supplier: Belt Construction
 Equipment Working: D6N Dozer, D6H Dozer, 325C Excavator, 9520 Tractor, Two 1812C Pans,
 Site Activities / Observations / Contacts / Notes: Water Truck, 290 LC-9 Excavator

Moving the coal pile has been completed. The 9520 cut the east end of the coal yard and filled the west end to promote drainage. The D6N graded within the coal yard, cut small key ways in for drainage, and re-graded coal route. If there is standing water in the coal yard after the next rain, the yard will be re-graded for drainage.

The 290 LC-9 continued undercutting the south side of the Pond along the embankment, and moving undercut wet ash within the Pond. The D6H graded section C and D. The D6N graded section C and D, as well as South Section A and B where the coal was covered. The 325C continued cutting the south embankment, exposing the pipe, and filling the undercut trench with berm material. Over 500' of the HDPE Pipe has been exposed. The 325C also moved undercut wet ash on the east side of the Pond, and spread it out within the Pond. The 9520 re-cut the western entrance to Pond D to remove the coal from the coal route. In the PM, the 9520 continued cutting the north end of Section A and B, and filling the south end of Section A and B to cover the coal.

The ponded water in the undercut south trench will be directed to the undercut east trench as it is completed. Then the water will be either pumped or bailed out. The wet ash undercut on the south end of Pond D is very wet. Drying time might delay schedule for compaction testing and/or geomembrane installation. Next week, the temporary drainage pipes (ADS) used between the N and S end of the Pond will be taken out, and the drainage ditch will be filled.

Additional Comments: The electric running to the deep wells needs determined for construction of collection pipes.

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Randy Postre
 Contractor Representative
[Signature]
 Signature
Anna Searleson
 Geotechnology, Inc.
[Signature]
 Engineer's Signature

AMS
 Company
4-19-12
 Date
4-23-12
 Date

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 4/20/12

TIME: Arrive: 6:30 AM Depart: 3:15 PM Travel: 1.0 hr Total: 9.5 hrs (^{0.25 hr} for lunch)
Weather: Sunny, 65° AM, 60° PM ^{Cloudy/Windy/Rain} Contractor: AMS Subcontr./Supplier: Belt Construction
Equipment Working: D6N Dozer, D6H Dozer, 325C Excavator, 9520 Tractor, Two 1812C Pans,
Site Activities / Observations / Contacts / Notes: Water Truck, 290LC-9 Excavator

Randy and I uncovered the manhole located NE of Pond D. The flowline in the bottom of the manhole (flow from the outfall structure) measured 10.5' from top of lid. The flowline of the drainage pipe entering the manhole measured 5.75'. The top of the concrete invert in the manhole measured 9.1'. Therefore, there is only $\approx 5.0'$ to drop the drainage pipe within the manhole. AMS may try to re-route the HDPE pipe to come in where the outfall drainage comes in; instead of filling the outfall drainage with flowable fill it would just be removed. This would prevent making a new entry into the manhole. We will discuss during the next meeting.

The D6N and D6H continued grading Section C and D. The 290LC-9 continued undercutting along the east embankment in Section D. The 325C moved undercut wet ash within the pond and continued cutting the south embankment in Section D, while filling the undercut trench with berm material. The 9520 continued cutting the north end of Section A and B, and filling the south end of Section A and B.

It began raining in the PM and the D6N re-graded the west end of the coal yard.

Additional Comments: _____

Randy Porter
Contractor Representative

AMS
Company

Anna Saindon
Signature

4-20-12
Date

Geotechnology, Inc.

4-23-12
Date

Anna Saindon
Engineer's Signature

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MEETING MINUTES



Hutsonville Power Station - Ash Pond D closure
Progress Meeting No. 5 Minutes
Tuesday, April 17, 2012

01 PUBLICATION			
Publish date:	2012-04-23	Submitted by:	P. Zinsious
Distribution:	E-mail only	Notes taken by:	P. Zinsious
Location:	Hutsonville Power Station	AMS-Charah File No.	HUT-APD-MTG-MIN-2012-04-10-PM-02
AER PO:	567523 R2	AMS-Charah Contract:	00030-01 AMS-Charah GL: 4116-06-6120

02 ATTENDEES				
01	Mr. Mike Wagstaff	Ameren	618-343-7790	mwagstaff@ameren.com
02	Mr. Joe Cravens	Geotechnology	314-568-6628	jcravens@geotechnology.com
03	Mr. Joe King	AAA Electric	N/A	N/A [Part time]
04	Mr. Jimmy Boone	AMS - ARM	502-574-5465	jboone@ashmanagementservices.com
05	Mr. Randy Porter	AMS - SM	502-554-5230	rporter@ashmanagementservices.com
06	Mr. Paul Zinsious	AMS - PCM	502-640-2918	pzinsious@ashmanagementservices.com

03 ABBREVIATIONS	
AER	Ameren Energy Resources
AMS	Ash Management Services
BNSF	Burlington
CBT	Computer Based Training
EOD	End of [the] Day
EOM	End of [the] month
EOW	End of [the] week
EDTS	Energy Delivery Transmission Services
EDC	Estimated Date [of] Completion
EWO	Extra Work Order
HDPE	High Density Polyethylene
HRS	Hours
LOTO	Lock Out Tag Out
NMA	National Maintenance Agreement
OSHA	Occupational Safety Health Administration
PCP	Perforated Collector Pipe
PO	Purchase Order
RHOM	Routine Handling, Operation, and Maintenance
SPOC	Single Point of Contact
T/M	Time and Materials
TBD	To Be Determined
TD	Transmission Dispatch
WPA	Worker Protection Assurance

04 DOCUMENTATION	
Minutes are documented weekly, and the publication have a "rolling record" of the immediate past three weeks. Each week the oldest drops off and the current week is added to the minutes. Items are categorized as either "NEW", "OPEN", "CLOSE", or in case the an item has to be re-published after closed the previous week - "REOPEN".	

05 SAFETY - HOUSEKEEPING	
01 ACCIDENTS OR INJURIES	
2012-04-17	OPEN - no issues.
2012-04-10	OPEN - no issues.
2012-04-03	OPEN - no issues. CORRECTED THE NUMBERING FOR THIS TOPIC
02 WORKER PROTECTION ASSURANCE	
2012-04-17	OPEN - no issues. AAA electric to be on site 04-17 to review electric switch gear room.
2012-04-10	OPEN - no issues.
2012-04-03	OPEN - no issues [electricians working on temporary power 04-03] Meter based LOTO by AMS. R. Porter did not want any work "hot" if meter base was to be put in. M. Wagstaff to contact Ameren Utilities for the meter, and come on site Monday or Thursday [see also action item].

03 EMPLOYEE DRUG TESTING

2012-04-17	OPEN - no issues. AMS worker scheduled for 04-18. Belt Construction 1x 04-17. Daylight Farms 3x 04-16. M. Wagstaff Indicated drug testing cost is borne by the subcontractors, notes in specifications.
2012-04-10	OPEN - no issues. Inquiry as to liner subcontractor [Chesapeake Containment]. Trained on schedule, some already trained.
2012-04-03	OPEN - no issues

04 AMS SAFETY

2012-04-17	OPEN - no issues. Next Safety Luncheon scheduled for 04-08.
2012-04-10	OPEN - no issues.
2012-04-03	OPEN - AMS submitted "Lessons Learned/Near Miss Report": Summary: Excavator was traveling across the east side of Ash Pond D when the left track sunk without warning. After a safety brief and going over the safe start and hazards of the task along with the inspection of proper rigging equipment, work proceeded to remove the excavator. The excavator came out without further incident. J. Tasich was on site and J. Cravens. There was no damage to the machine or any injuries. No work this portion of the site until further review. See report for more details.

05 HOUSEKEEPING

2012-04-17	OPEN - no issues. AMS to reinstall caution tape on south berm where wind blew down.
2012-04-10	OPEN - no issues
2012-04-03	OPEN - no issues

06 PLANT ACCESS - CBT BADGE

2012-04-17	OPEN - no issues. M. Wagstaff to investigate AMS consultant badges.
2012-04-10	OPEN - no issues
2012-04-03	AAA 2x electricians went this AM. Currently working on visitor as the badge form Newton not assigned to Hutsonville. Coordination in e-mail to ensure Newton assigns workers to Hutsonville. R. Porter reported various Ameren employees have been coming on site, such as substation maintenance. R. Porter and J. Cravens are monitoring this together.

07 VEHICLES ON SITE

2012-04-17	OPEN - no issues
2012-04-10	OPEN - no issues
2012-04-03	OPEN - no issues

08 OSHA LOG - WORK HOURS

2012-04-17	OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday]
0,746.00	RT
0,000.00	OT
0,746.00	TOTAL
2012-04-10	OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday]
0,522.00	RT
0,000.00	OT
0,522.00	TOTAL
2012-04-03	OPEN - total all hours [including subcontractors]
0,239.00	RT
0,000.00	OT
0,239.00	TOTAL

06 MANPOWER**01 CREW SIZE**

2012-04-17	OPEN - AMS and Belt Construction on site. Project addition of 1x Laborer and 1x Operator next week.
Current	
[00] Pipe	
[00] Mechanical	
[00] Electrical	
[00] Cement	
[00] Laborers	
[04] Operators	
[01] Teamsters	
[00] Survey	
[01] Foreman	[Full time]
[06] Total	

2012-04-10 OPEN - AMS and Belt Construction on site.

Current

[00] Pipe

[00] Mechanical

[00] Electrical

[00] Cement

[00] Laborers

[04] Operators

[01] Teamsters

[00] Survey

[01] Foreman [Full time]

[06] Total

2012-04-03 OPEN - AMS and Belt Construction on site.

Current

[00] Pipe

[00] Mechanical

[00] Electrical

[00] Cement

[00] Laborers

[04] Operators

[01] Teamsters

[00] Survey

[01] Foreman [Full time]

[06] Total

02 WORK HOURS

2012-04-17 OPEN - Standard hours

2012-04-10 OPEN - Standard hours

2012-04-03 OPEN - Standard hours

03 OVER TIME

2012-04-17 OPEN - If rains first week of long boom operation, will work OT second week - at AMS cost.

2012-04-10 OPEN - none projected

2012-04-03 OPEN - none projected. Advise GEO if change.

04 TRAILER [AND GENERAL CONDITIONS]

2012-04-17 OPEN - no issues. Communication line dead.

2012-04-10 OPEN - no issues. Power to trailers operational. Phone lines dead. M. Wagstaff to cancel order due to data service not available to the site by landline.

2012-04-03 OPEN - no issues. Power to trailer[s] this week. AMS employee trailer to move to trailer site 04-04.

07 PREVIOUS

01 SUBCONTRACTS

2012-04-17 OPEN - no issues. Koberstein in progress.

2012-04-10 OPEN - no issues

2012-04-03 OPEN - no issues

02 SUBMITTALS

2012-04-17 OPEN - no issues. In progress, J. Cravens and P. Zinsious to meet after the progress meeting. Resubmit with [corrected] specification numbers.

2012-04-10 OPEN - no issues. In progress, J. Cravens and P. Zinsious to finish out log. GEO to maintain the log. Submit in groups.

2012-04-03 OPEN - no issues. In progress.

08 MATERIAL

01 GENERAL

2012-04-17 OPEN - Liner sample tests not back from TRI.

2012-04-10 OPEN - Liner can be delivered early to the site if necessary.

2012-04-03 OPEN - M. Wagstaff concern on liner delivery. P. Zinsious contacted subcontractor, and liner has been manufactured, and is in Houston, TX. No issue with delivery [if required] within 30 D.

09	ADJACENT PROPERTIES
01	GENERAL
2012-04-17	OPEN - no issues. Excavation plan in progress.
2012-04-10	OPEN - no issues. Excavation plan scheduled for two weeks out.
2012-04-03	OPEN - no issues. AMS announced Koberstein Contracting as the pipe subcontractor, who will provide excavation plan.

10	QUALITY CONTROL
01	GENERAL
2012-04-17	OPEN - no issues
2012-04-10	OPEN - no issues
2012-04-03	OPEN - no issues
02	ASH
2012-04-17	OPEN - no quality issues. Ash proctors have been received. J. Cravens to review how to match results as one of the three has different characteristics.
2012-04-10	OPEN - no quality issues. Ash placement by scrapers. No issue on compaction. Tests to be taken when elevation is within 1 FT of finish grade. GEO has taken samples for proctors, and 1 of 2 test analysis have been returned.
2012-04-03	OPEN - no quality issues. Safety concern - reference Item No. 05.04-2012-04-03 above. A. Ridgely indicated survey shows settlement in Pond D as minimal - approximately 2/10 FT. AMS at this time indicated not an issue.
03	CLAY
2012-04-10	OPEN - no issues. Samples to be taken in next week or two [by AMS]. Analysis to follow the [revised] CQA plan.
2012-04-03	OPEN - no issues
2012-03-27	OPEN - no issues

11	SCHEDULE REVIEW
01	SCHEDULE
2012-04-17	OPEN - Review of schedule with actuals dates, activity look-ahead for two weeks, and critical path. [01] 04-16 - documented rain date. [02] 04-18 - silt fence installation. [03] 05-01 - two weeks estimated ash placement complete. [04] Outfall manhole access - AER permission to cut lock if no key provided.
2012-04-10	OPEN - Review of schedule with actuals dates, activity look-ahead for two weeks, and critical path. . AER to provide revised schedule next week. One rain date documented for 04-05.
2012-04-03	OPEN - No significant changes. AMS to update actuals and submittals. AER changed the description "piezometer" to "vent pipe" on the P6 schedule. M. Wagstaff concern addition of 17D to critical path by EWO-02 [reference Item No. 12.03-2012-04-03 below] as project is already "2x weeks behind schedule". Two week look ahead - pipe filling in Pond D.
02	TIME AND MATERIAL
2012-04-17	OPEN - no issues
2012-04-10	OPEN - no issues
2012-04-03	OPEN - no issues
03	COORDINATION
2012-04-17	OPEN - no issues
2012-04-10	OPEN - no issues. Hierarchy for call for site access - R. Porter, J. Craven, and then M. Wagstaff. Post sign on site.
2012-04-03	OPEN - no issues. Reference Item No. 05.06-2012-04-03 above regarding others access to plant. AMS to laminate sign and post. Reference Item No. 14.01.20-2012-04-03 below.

12	COST AND BUDGET
01	CHANGE REQUEST ISSUES
2012-04-17	OPEN - no issues. AMS to provide credit from AAA Electric on EWO-01.
2012-04-10	OPEN - Discussion and review of EWO's to be deferred to after the progress meeting.
2012-04-03	OPEN - AMS submitted EWO-02 and EWO-03. See Item No. 12.03 and 12.04
02	AMS PAY APPLICATION
2012-04-17	OPEN - M. Wagstaff indicated 10% will be held at the end on the job.
2012-04-10	OPEN - M. Wagstaff indicated the application has been received from AMS, and he has forwarded to J. Davis at AER for review.
2012-04-03	OPEN - in progress

03 EWO-02 - ASH PLACEMENT

2012-04-17 OPEN - M. Wagstaff has under review. Work is soft are will be long boom excavator on matts. Area will be 35 FT wide swath first week. Standard boom excavator for back fill. The cut from the clay berm will be pushed into the are of the soft ash excavation to bridge the area.

2012-04-10 OPEN - Discussion and review of EWO's to be deferred to after the progress meeting.

2012-04-03 NEW - AMS submitted EWO letter. M. Wagstaff requesting the description be changed from "ash placement" to "cap modification". This EWO is to include all changes from the plan changes to date. P. Zinsious indicated AMS to have AER "agree in principle" with the ash placement portion presented. AMS will provide spreadsheet showing changes of overall project such as the channels, berms, pump system, etc. M. Wagstaff question how AMS arrived at the 17D addition to the critical path. P. Zinsious to investigate calculation used. R. Porter reported there is a soft area approximately 50 FT x 1,000 FT located on the east and south perimeter of the pond. P. Zinsious indicated that J. Denham and J. Boone are In process of reviewing options, and would report back in a couple of days.

04 EWO-03 - COAL PILE

2012-04-17 OPEN - M. Wagstaff to forward EWO.

2012-04-10 OPEN - Discussion and review of EWO's to be deferred to after the progress meeting. However, AER approved this work.

2012-04-03 NEW - AMS submitted EWO letter. M. Wagstaff indicated AER has to review as other options for site may affect the decision.

05 EWO-04 - PIPE RELOCATION

2012-04-17 OPEN - M. Wagstaff approved orally. AMS reports there are tow lines in the berm, one to be relocated, and the other portions of previous line left in the berm when replaced earlier. M. Wagstaff will provide elevations at specific stations on the line for relocation. Some of the pipe has been backfilled with bottom ash, and the old line has areas encased in concrete. Areas encased in concrete to remain in place. AMS indicated the new culvert at the road crossing [between Pond A and Pond D] will be lowered [field elevations] to get underneath pipe line. Pipe may create voids if buried in the ash pond, so it was determined to dispose of the pipe removed off-site, and estimated 6-7 dumpsters for pipe disposal, also approved. Short piece of pipe from the AER yard will be connected to the manhole with a repair-type mechanical compression clamp.

2012-04-10 OPEN - Discussion and review of EWO's to be deferred to after the progress meeting.

2012-04-03

NEW - R. Porter briefly explained the procedure to excavate and move the line inside the berm. M. Wagstaff requested "pothole" to locate.

05 EWO-05 - ELECTRICAL REVISION

2012-04-17 OPEN - in progress.

2012-04-10 OPEN - Discussion and review of EWO's to be deferred to after the progress meeting.

2012-04-03 NEW - M. Wagstaff indicated drawings to be released 04-03.

13 ACTION ITEMS - AER**01 AMEREN [AER]**

2012-04-17

[03] Fire protection [OPEN - pumps off in plant so cannot use basements - team to review pit next to coal pile "push wall". The gathering place is guard shack by the trailers. [OPEN - J. Tasich described area and supplies for emergency shelter in old switchgear room - in progress]

[20] Drawing S-386 SHT 5 RF - the survey coordinates are reversed. [OPEN - Hanson to provide revised drawing - in progress]

[23] NEW - M. Wagstaff to provide drawings for the existing MCC.

2012-04-10

[03] Fire protection [OPEN - pumps off in plant so cannot use basements - team to review pit next to coal pile "push wall". The gathering place is guard shack by the trailers. [OPEN - J. Tasich described area and supplies for emergency shelter in old switchgear room]

[20] Drawing S-386 SHT 5 RF - the survey coordinates are reversed. [OPEN - Hanson to provide revised drawing]

[21] M. Wagstaff to contact Ameren Utilities for the meter. [CLOSED]

[22] Mailbox and delivery thereof status.[CLOSED - M. Wagstaff reports all mail now goes to Newton]

2012-04-03

[03] Fire protection [OPEN - pumps off in plant so cannot use basements - team to review pit next to coal pile "push wall". The gathering place is guard shack by the trailers. [OPEN - J. Tasich reviewed location, and has proposed option. Will review 04-03]

[17] ACAD files to AMS [CLOSED - AER transmitted disc]

[18] AER to print full size schedule [CLOSED]

[19] Flood plain permit [CLOSED - AMS will publish AER info]

[20] Drawing S-386 SHT 5 RF - the survey coordinates are reversed. [NEW - AER to get revised]

[21] M. Wagstaff to contact Ameren Utilities for the meter.

[22] Mailbox and delivery thereof status.

14	ACTION ITEMS - AMS
01	ASH MANAGEMENT [AMS]
2012-04-17	[06] RFI-01 roadway clarification [CLOSED - correct RFI No. 9]
2012-04-10	[20] [REOPEN] P. Zinsious to provide draft.
2012-04-10	[04] Cost review – relocation flume and change to cap [when receive revised drawings] [OPEN – General discussion topo reference previous commentary above in Item No. 10.02-2012-03-27 - communication will be essential during ash placement to track changes.] [CLOSED - differed to discussion after progress meeting]
2012-04-10	[05] Cost review – HDPE line relocation [when receive revised drawings] [OPEN – line to be moved to inside of the pond area, as pipe will get "shorter" by virtue of shorter run . [CLOSED - differed to discussion after progress meeting]
2012-04-10	[06] RFI-01 roadway clarification [OPEN - AMS not received]
2012-04-10	[16] Submittal log [OPEN - AMS submit EOW] [CLOSED - reference above in submittals]
2012-04-10	[19] All documents to be copied [e-mailed] to Mr. Joe Cravens - M. Wagstaff representative on site.[CLOSED - e-mails will be copied/forwarded]
2012-04-10	[20] Site entry signage [CLOSED - provide draft]
2012-04-03	[04] Cost review – relocation flume and change to cap [when receive revised drawings] [OPEN – General discussion topo reference previous commentary above in Item No. 10.02-2012-03-27 - communication will be essential during ash placement to track changes.]
2012-04-03	[05] Cost review – HDPE line relocation [when receive revised drawings] [OPEN – line to be moved to inside of the pond area, as pipe will get "shorter" by virtue of shorter run . [In progress]
2012-04-03	[06] RFI-01 roadway clarification [OPEN - AMS in progress]
2012-04-03	[16] Submittal log [OPEN - AMS submit EOW] [In progress - couple days out]
2012-04-03	[19] All documents to be copied [e-mailed] to Mr. Joe Cravens - M. Wagstaff representative on site.
2012-04-03	[20] Site entry signage

15	PRODUCTION
01	GENERAL
2012-04-17	OPEN - no issues
2012-04-10	OPEN - no issues
2012-04-03	OPEN - no issues
02	ASH
2012-04-17	OPEN - no issues. Estimated 38,996 CY EOD 04-16.
2012-04-10	OPEN - no issues. Estimated 28,076 CY EOD 04-09.
2012-04-03	OPEN - no issues - 10,300 CY as of 03-03. Estimated 13,968 CY EOD.
03	CLAY
2012-04-17	OPEN - no issues - this activity not begun.
2012-04-10	OPEN - no issues - this activity not begun. Borrow site agreement signing 04-10. [corrected minutes date date]
2012-04-03	OPEN - no issues - this activity not begun. Borrow site in process closing on agreements.

16	DOCUMENTS TRANSMITTED
2012-04-17	[01] AMS - Contact List HUT-APD-CON-20120-04-17
2012-04-10	[01] AMS - Contact List HUT-APD-CON-20120-04-10
2012-04-10	[02] AMS - Submittal Breakout Report [previously issued at Pre-Con] dated 20120-01-31.
2012-04-10	[03] AER - J. Craven submittal log draft spreadsheet.
2012-04-03	[01] AMS - EWO-02 - ash placement to AER and GEO
2012-04-03	[02] AMS - EWO-03 - coal pile to AER and GEO
2012-04-03	[03] AMS - Lessons Learned/Near Miss Report [Incident dated 2012-04-20]
2012-04-03	[04] AMS - Contact list [next print out 11x17]

17	DOCUMENTS REVIEW ONLY
	2012-04-17 None
	2012-04-10 None
	2012-04-03 None

18	NEXT PROGRESS MEETING
	Next meeting will be held in one week - Tuesday, April 24, 2012 at Hutsonville

19	DISTRIBUTION - STANDARD
	AER
01	Mr. Mike Wagstaff
02	Mr. Mike Stewart
03	Mr. Bob Muesenfechter
	GEO
01	Ms. Anna Saindon
02	Mr. Eric Neuner
03	Mr. Joe Cravens
	AMS
01	Mr. Jimmy Boone
02	Mr. John Denham
03	Mr. Joko Tasich
04	Mr. Randy Porter

If there are any corrections, modifications, additions, or deletions please notify the sender by e-mail at pzinious@ashmanagementservices.com

PHOTO LOG



Photograph 1 ▲ - Preparing route to move coal pile facing north



Photograph 2 ▲ - Preparing route to move coal pile facing west

All photographs taken by Joseph Cravens of Geotechnology, Inc. between April 16 and April 20, 2012

JRC



Photograph 3 ▲ - Grading coal in Ash Pond D facing northwest



Photograph 4 ▲ - Removing coal from coal pile facing west

All photographs taken by Joseph Cravens of Geotechnology, Inc. between April 16 and April 20, 2012

JRC



Photograph 5 ▲ - Undercutting soft ash in Quadrant D facing west



Photograph 6 ▲ - Installing silt fence facing northeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between April 16 and April 20, 2012

JRC



Photograph 7 ▲ - Removing ADS pipe and exposing 18" HDPE drainage pipe facing east



Photograph 8 ▲ - ADS pipe removed facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between April 16 and April 20, 2012

JRC



Photograph 9 ▲ - Undercutting south side of Quadrant C facing northeast



Photograph 10 ▲ - Overview of Ash Pond D facing southeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between April 16 and April 20, 2012



Photograph 11 ▲ - Overview of Ash Pond D facing east



Photograph 12 ▲ - Grading coal yard facing southeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between April 16 and April 20, 2012

JRC



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Energy Resources

FROM: Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DATE: May 1, 2012

SUBJECT: Weekly Summary Report for April 23, 2012 to April 27, 2012

PROJECT: Hutsonville Ash Pond D Closure
Crawford County, Hutsonville, Illinois
Geotechnology Project No. J019896.01

The following is a weekly summary of the site activities at the referenced site.

Weather

The weather was generally sunny. Temperature (°F) lows ranged from 35 to 65°F, and temperature highs ranged from 68 to 75°F.

Construction Activities

Ash grading, undercutting of soft areas, ADS corrugated pipe removal, and 18-inch HDPE gravity drainage pipe excavation occurred this week. Ash and embankment grading occurred in all quadrants of Ash Pond D. The main fill area was in the south end of Quadrant A and B. Excess berm material was stockpiled outside of the pond. The AMS entry signs were placed at the plant entrance and by the job trailers. On April 26, 2012, a Sky Track 6036 Forklift and a Wacker RT Trench Roller was delivered. Two samples were taken from the embankment material for material testing. Four test pits were excavated to depths of approximately 8 to 13 feet below ground surface. The material found in the test pits were generally red to brown silty clays, underlain by red fine to silty, or coarse sands at various depths. Refer to the attached daily reports for additional information regarding the test pits. The test pits indicate that a dewatering system will be needed before the excavation of the trench.

Equipment and Personnel On-Site

CAT D6N Bulldozer
CAT D6H Bulldozer
CAT 325C Excavator
John Deere 9520 Tractor with 2-1812C John Deere Scrapers (Pans)
Hyundai 290 LC-9 Long Reach Excavator
Sky Track 6036 Forklift
Wacker RT Trench Roller
Water Truck

Geotechnology, Inc. – Joe Cravens
Ash Management Services, LLC (AMS) – Randy Porter, Robert Dunkley, and James Marks
Belt Construction, Inc. – Jared Belt, Nick Walker, Kevin Flynn, Brad Bolenbaugh, and Marc Downs
Charah – Joe Tasich
Visitors –Refer to the Visitor's Log for visitors, dates, and times.
Refer to the meeting minutes for additional personnel.

Meetings

The weekly progress meeting was held on Tuesday, April 24, 2012. Refer to the attached meeting minutes for additional information.

Photographs

A photograph log with select photographs obtained this week is attached.

Materials

Ash and embankment material within the footprint of Ash Pond D (quadrants A, B, C, and D) was graded. The geomembrane is estimated to be delivered on April 30, 2012.

Testing/Sampling

Two samples of the embankment material were obtained to run Standard Proctor tests. The first sample was obtained from the south embankment at approx. Station 21+00, and the second sample was obtained from the east embankment at approx. Station 15+00.

Calibration Records

Calibration information was not obtained this week.

Signature of CQA Officer

Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

A handwritten signature in black ink, appearing to read "Anna Saindon", is written over a horizontal line.

DAILY REPORTS

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: JO19896.01 Task: 2370
 Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: - Client: Ameren ER Date: 4/23/12

TIME: Arrive: 6:30 AM Depart: 4:30 PM Travel: 1.0 hr Total: 10.75 hrs (0.25 hr for lunch)
 Weather: Sunny, 35° AM, 68° PM Contractor: AMS Subcontr./Supplier: Belt Construction
 Equipment Working: D6N Dozer, D6H Dozer, 325C Excavator, 9520 Tractor, 2-1812C Pans,
 Site Activities / Observations / Contacts / Notes: Water Truck, 290 LC-9 Excavator
 Updated Equipment and Personnel: _____ Company: _____

<u>Jared Belt - Cat D6N Dozer</u>	<u>Belt</u>
<u>Nick Walker - 9520 Tractor with 2-1812C Pans</u>	<u>Belt</u>
<u>Kevin Flynn - Cat 325C Excavator</u>	<u>Belt</u>
<u>Brad Bolenbaugh - Cat D6H Dozer (Not on-site today - Dr. Appt.)</u>	<u>Belt</u>
<u>Marc Downs - Hyundai 290 LC-9 Excavator</u>	<u>Belt</u>
<u>Robert Dunkley - Water Truck / School Bus</u>	<u>AMS</u>
<u>James Marks - None (AMS Pickup Truck)</u>	<u>AMS</u>

The 9520 continued cutting the north end of Section A and B, and filling the south end of Section A and B. The D6N graded ash and berm material in Section D, and graded around stakes in Section A and B. The 290 LC-9 continued undercutting along the south and east embankments in Section D. The 325C spread out berm material within the pond, and continued cutting the south embankment. Around the SE corner of the embankments, the cut material was thrown outside of the pond, instead of inside, because they are running out of room in this area to work the material. This berm material may be used in the Cap, but would have to be approved. Berm Material: Primarily Brown, Silty CLAY-CL, with large amounts of sand and gravel to cobbles.

James Marks (AMS Laborer) began work today. He piled up the old ADS pipe for pickup. Joko on site today to observe activities. Randy made
 Additional Comments: a grade rod with RR iron and chains.
D6N tested it out in the PM in the coal yard.

Randy Kostra AMS
 Contractor Representative Company
Anna Sandon 4-23-12
 Signature Date
Mike Sudds 4-30-12
 Geotechnolgy, Inc. Date
 Engineer's Signature

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 4/24/12

TIME: Arrive: 6:30 AM Depart: 4:45 PM Travel: 1.0 hr Total: 11.0 (0.25 hr for lunch)
Weather: Sunny, 45° AM, Cloudy 70° PM Contractor: AMS Subcontr./Supplier: Belt Construction
Equipment Working: D6N Dozer, D6H Dozer, 325C Excavator, 9520 Tractor, 2-1812C Pans,
Site Activities / Observations / Contacts / Notes: Water Truck, 290 LC-9 Excavator

The 325C removed the temporary ADS corrugated drainage pipes from the north to south entrances in south Section A and B. Then the 325C began cutting the east embankment, filling the east undercut trench, and placing the excess berm material outside of the pond. The 290 LC-9 continued undercutting along the east embankment in Section D. The 9520 continued cutting the north end of Section A and B, and filling the existing ditch running east to west across Section A and B. The D6H continued grading Section C and D. The D6N continued grading Section C and D, as well as the existing ditch as it was filled. The entire south embankment has been cut down to expose the HDPE gravity drain pipe. The old ADS drainage pipe is continuously layed outside the pond.

Jeff Basing, Lynn Elpers, and Tony Anderson, with Koberstein Contracting, Inc., visited the site to discuss the perforated collection pipe (PCP), outfall structure demo and modification, paved ditch, gutter, bentonite, and junction box. They will get trained this week and begin the outfall structure next week. The concrete from the structure will be incorporated into the fill, and the steel will be taken to the plant.

Shelby, Jimmy, and Paul were on site all day to observe activities. AAA Electric was on site to observe the MCC plans and work in the switchgear room. Any dewatering on site will more than likely be pumped into Pond B. Any excess spoils on-site from Pond D (soil) will have to be lost on site. Joko on-site all day. He put supplies in the storm shelter and will finalize a plan. Submittals need

Additional Comments: to be accelerated to get the project back on schedule.

Kandy Padre
Contractor Representative

AMS
Company 4-24-12

Anna Samdon
Signature

Date 4-30-12

[Signature]
Geotechnology, Inc.
Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 4/25/12

TIME: Arrive: 6:30 AM Depart: 4:30 PM Travel: 1.0 hr Total: 10.75 hrs (0.25 hr for lunch)
Weather: Sunny, 55° AM, Cloudy 70° PM Contractor: AMS Subcontr./Supplier: Belt Construction
Equipment Working: D6N Dozer, D6H Dozer, 325C Excavator, 9520 Tractor, 2-1812C Pans,
Site Activities / Observations / Contacts / Notes: Water Truck, 290 LC-9 Excavator

The D6H continued grading Section C and D. The D6N continued grading Section D and south Section B. The 9520 continued cutting the north end of Section A and B, and filling the south end of Section A and B. The 290 LC-9 continued undercutting along the east embankment in Section B. The 325C continued cutting the east embankment, and filling the east undercut trench, and stockpiling excess berm material outside of the pond. The 325C also moved cut material within the pond along the south embankment.

Along the east embankment, the old ADS corrugated gravity drainage pipe is located outside the 18" HDPE pipe, as opposed to inside of the pipe along the south embankment.

The 290 LC-9 will be here an additional week to dig the trench in Ash Pond A.

James Marks put up the AMS entry signs at the plant entrance, and by the job trailers.

Mike Burch, with Freitag-Weinhardt, Inc., visited to discuss scheduling of the installation of the HDPE pipes (discharge) and the dewatering sumps (D5).

Randy checked grades in the field along the embankments with a laser level.

Dust Control being performed on a daily basis.

Additional Comments: Currently evaluating the issue with the stockpile material.

Randy Portec
Contractor Representative
Signature Anna Sanden
Geotechnology Inc.
Engineer's Signature

AMS
Company
Date 4-25-12
Date 4-30-12

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 4/26/12

TIME: Arrive: 6:30 AM Depart: 4:15 PM Travel: 1.0 hr Total: 10.5 hrs (0.25 hr for lunch)
Weather: Sunny, 65° AM, 75° PM Contractor: AMS Subcontr./Supplier: Belt Construction
Equipment Working: D6N Dozer, D6H Dozer, 325C Excavator, 9520 Tractor, 2-1812C Pans,
Site Activities / Observations / Contacts / Notes: Water Truck, 290 LC-9 Excavator

The D6H continued grading south Section A and B, while covering the broken north end geotubes and grading placed fill. The D6N continued grading Section D, and south Section B. The 9520 continued cutting the north end of Section A and B, and filling south end of Section A and B. The 9520 also cut the soil/ash mix along the NE embankment, so it could be covered with ash in the center of the pond, while leaving a small berm along the NE embankment to catch water runoff. The 290LC-9 continued under cutting along the east embankment in Section B (including undercutting around the outfall structure). The 325C continued cutting the east embankment, while exposing the 18" HDPE gravity pipe.

Deliveries: Sky Track 6036 Forklift and Wacker RT Trench Roller.

James gathered old geotube material in Section C, and placed by old ADS pipe.

Samples were obtained in the embankment material for proctors at $\approx 21+00$ and $\approx 15+00$.

John Boyer with B&T Drainage visited. He will supply AMS with a sewer laser.

In the PM, the 290LC-9 got stuck in the NE section of the pond, just NW of the outfall structure. The 325C gathered crane mats, and the D6N pulled it out with a cable. ~ Short delay in production. The usage

Additional Comments: of the embankment material has been determined.

Randy Poole
Contractor Representative
Signature

AMS
Company
Date 4-26-12
Date 4-30-12

Anna Somdon
Geotechnology, Inc.
Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: — Client: Ameren ER Date: 4/27/12

TIME: Arrive: 6:30 AM Depart: 4:30 PM Travel: 1.0 hr Total: 11.0 hrs (met with B&T over lunch)
 Weather: Sunny, 40° AM, 70° PM Contractor: AMS Subcontr./Supplier: Belt Construction
 Equipment Working: D6N Dozer, D6H Dozer, 325C Excavator, 9520 Tractor, 2-1812C Pans,
 Site Activities / Observations / Contacts / Notes: Water Truck, 290 LC-9 Excavator

The 9520 continued cutting and filling within Section A and B. The D6H graded Section A, and the D6N graded Section A, C, and D. The 290 LC-9 moved wet undercut ash in Section D to dry over the weekend. The 325C finished cutting the east berm, and began cutting the NE Berm. The 325C also dug 4 test pits along the proposed line for the groundwater collection pipe to evaluate material. John Boyer with B&T was here to observe the pits.

Test Pit 1 South of - Center of Pond A 0-5' Red, Silty CLAY 5-8' Red, Fine SAND 8-10' Brown, Fine to Coarse SAND GWT = 8.0' Could not keep pit open after 8.0'	Test Pit 3 South of - Center of Pond D 0-1.5' Black, Coal Fines 1.5'-6' Red, Fine SAND 6-8' Brown, Fine to Coarse SAND GWT = 8.0' Terminated at 8'	The water and the sand will cause many problems in digging the trench. A dewatering system will have to be implemented before excavation.
Test Pit 2 South of - Between Pond A and B 0-2' Brown, Silty CLAY 2-10' Red, Fine to Silty SAND GWT = 10', Sandstone = 10' Terminated at 10'	Test Pit 4 South of - SE Corner of Pond D 0-13' Brown, Silty CLAY GWT = 13' Terminated at 13'	This may cause significant changes in the schedule... More time required.

Additional Comments: Jimmy Boone and John Denham here in the AM to observe the site.

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Randy Porter
 Contractor Representative

Ana Spender
 Signature
 Geotechnology, Inc.
[Signature]
 Engineer's Signature

AMS
 Company
4-27-12
 Date
4-30-12
 Date

Hutsonville Ash Pond D Closure – Test Pits for Groundwater Collection Pipe

Test Pit 1

Location: South of – Center of Ash Pond A

Profile: 0 - 5' Red, Silty CLAY trace Sand
 5 - 8' Red, Fine SAND with Silt
 8 - 10' Brown, Fine to Coarse SAND with Gravel

GWT = 8'

Bedrock = unknown

Termination ~ 10' (could not keep test pit open)

Test Pit 2

Location: South of – Between Ash Pond A and Ash Pond B

Profile: 0 - 2' Brown, Silty CLAY trace Sand
 2 - 10' Red, Fine to Silty SAND

GWT = 10'

Bedrock = Sandstone at 10'

Termination = 10'

Test Pit 3

Location: South of – Center of Ash Pond D

Profile: 0 - 1.5' Black, Coal Fines
 1.5 - 6' Red, Fine SAND with Silt
 6 - 8' Brown, Fine to Coarse SAND with Gravel

GWT = 8'

Bedrock = unknown

Termination = 8'

Test Pit 4

Location: South of – SE Corner of Ash Pond D

Profile: 0 - 13' Brown, Silty CLAY trace Sand

GWT = 13'

Bedrock = unknown

Termination = 13'

MEETING MINUTES



Hutsonville Power Station - Ash Pond D closure
Progress Meeting No. 6 Minutes
Tuesday, April 24, 2012

01	PUBLICATION			
	Publish date:	2012-04-30	Submitted by:	P. Zinsious
	Distribution:	E-mail only	Notes taken by:	P. Zinsious
	Location:	Hutsonville Power Station	AMS-Charah File No.	HUT-APD-MTG-MIN-2012-04-24-PM-06
	AER PO:	567523 R2	AMS-Charah Contract:	00030-01 AMS-Charah GL: 4116-06-6120

02	ATTENDEES			
01	Mr. Mike Wagstaff	Ameren	618-343-7790	mwagstaff@ameren.com
02	Mr. Joe Cravens	Geotechnology	314-568-6628	j_cravens@geotechnology.com
03	Mr. Jeff Busing	Koberstein	812-215-0778	N/A [Part time]
04	Mr. Lynn Elpers	Koberstein	812-215-5002	N/A [Part time]
05	Mr. Tony Anderson	Koberstein	N/A	N/A [Part time]
06	Mr. Joe King	AAA Electric	812-208-0464	N/A [Part time]
07	Mr. Joko Tasich	Charah	502-649-7633	jtasich@charah.com
08	Mr. Jimmy Boone	AMS - ARM	502-574-5465	jboone@ashmanagementservices.com
09	Mr. Randy Porter	AMS - SM	502-554-5230	rporter@ashmanagementservices.com
10	Mr. Paul Zinsious	AMS - PCM	502-640-2918	pzinsious@ashmanagementservices.com

03 ABBREVIATIONS	
AER	Ameren Energy Resources
AMS	Ash Management Services
BNSF	Burlington
CBT	Computer Based Training
EOD	End of [the] Day
EOM	End of [the] month
EOW	End of [the] week
EDTS	Energy Delivery Transmission Services
EDC	Estimated Date [of] Completion
EWO	Extra Work Order
HDPE	High Density Polyethylene
HRS	Hours
LOTO	Lock Out Tag Out
NMA	National Maintenance Agreement
OSHA	Occupational Safety Health Administration
PCP	Perforated Collector Pipe
PO	Purchase Order
RHOM	Routine Handling, Operation, and Maintenance
SPOC	Single Point of Contact
T/M	Time and Materials
TBD	To Be Determined
TD	Transmission Dispatch
WPA	Worker Protection Assurance

04 DOCUMENTATION	
Minutes are documented weekly, and the publication have a "rolling record" of the immediate past three weeks. Each week the oldest drops off and the current week is added to the minutes. Items are categorized as either "NEW", "OPEN", "CLOSE", or in case the an item has to be re-published after closed the previous week - "REOPEN".	

05 SAFETY - HOUSEKEEPING	
01 ACCIDENTS OR INJURIES	
2012-04-24	OPEN - no issues.
2012-04-17	OPEN - no issues.
2012-04-10	OPEN - no issues.

02 WORKER PROTECTION ASSURANCE

2012-04-24 OPEN - no issues. AAA electric to be on site 04-24 again to review electric MCC/switch gear room.
 2012-04-17 OPEN - no issues. AAA electric to be on site 04-17 to review electric switch gear room.
 2012-04-10 OPEN - no issues.

03 EMPLOYEE DRUG TESTING

2012-04-24 OPEN - no issues. Koberstein 5x workers to be scheduled for 04-27.
 2012-04-17 OPEN - no issues. AMS worker scheduled for 04-18. Belt Construction 1x 04-17. Daylight Farms 3x 04-16. M. Wagstaff indicated drug testing cost is borne by the subcontractors, notes in specifications.
 2012-04-10 OPEN - no issues. Inquiry as to liner subcontractor [Chesapeake Containment]. Trained on schedule, some already trained.

04 AMS SAFETY

2012-04-24 OPEN - no issues.
 2012-04-17 OPEN - no issues. Next Safety Luncheon scheduled for 04-08.
 2012-04-10 OPEN - no issues.

05 HOUSEKEEPING

2012-04-24 OPEN - no issues.
 2012-04-17 OPEN - no issues. AMS to reinstall caution tape on south berm where wind blew down.
 2012-04-10 OPEN - no issues

06 PLANT ACCESS - CBT BADGE

2012-04-24 OPEN - no issues. AMS received AER consultant badges.
 2012-04-17 OPEN - no issues. M. Wagstaff to investigate AMS consultant badges.
 2012-04-10 OPEN - no issues

07 VEHICLES ON SITE

2012-04-24 OPEN - no issues
 2012-04-17 OPEN - no issues
 2012-04-10 OPEN - no issues

08 OSHA LOG - WORK HOURS

2012-04-24 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 04-23
 1,051.50 RT
0,000.00 OT
 1,051.50 TOTAL
 2012-04-17 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday]
 0,746.00 RT
0,000.00 OT
 0,746.00 TOTAL
 2012-04-10 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday]
 0,522.00 RT
0,000.00 OT
 0,522.00 TOTAL

06 MANPOWER**01 CREW SIZE**

2012-04-24 OPEN - AMS and Belt Construction on site. Project addition of Koberstein next week.
 Current
 [00] Pipe
 [00] Mechanical
 [00] Electrical
 [00] Cement
 [00] Laborers
 [04] Operators
 [01] Teamsters
 [00] Survey
[01] Foreman [Full time]
[06] Total

2012-04-17 OPEN - AMS and Belt Construction on site. Project addition of 1x Laborer and 1x Operator next week.

Current Addition of CM/GEO

[00] Pipe

[00] Mechanical

[00] Electrical

[00] Cement

[01] Laborers

[05] Operators

[01] Teamsters

[00] Survey

[01] CM/GEO

[01] Foreman [Full time]

[09] Total

2012-04-10 OPEN - AMS and Belt Construction on site.

Current

[00] Pipe

[00] Mechanical

[00] Electrical

[00] Cement

[00] Laborers

[04] Operators

[01] Teamsters

[00] Survey

[01] Foreman [Full time]

[06] Total

02 WORK HOURS

2012-04-24 OPEN - Standard hours - 7:00 AM CT to 3:30 AM CT

2012-04-17 OPEN - Standard hours

2012-04-10 OPEN - Standard hours

03 OVER TIME

2012-04-24 OPEN - Referencing 04-17 commentary, current production is 100 FT/D and is good rate, no OT projected.

2012-04-17 OPEN - If rains first week of long boom operation, will work OT second week - at AMS cost.

2012-04-10 OPEN - none projected

04 TRAILER [AND GENERAL CONDITIONS]

2012-04-24 OPEN - no issues.

2012-04-17 OPEN - no issues. Communication line dead.

2012-04-10 OPEN - no issues. Power to trailers operational. Phone lines dead. M. Wagstaff to cancel order due to data service not available to the site by landline.

07 PREVIOUS

01 SUBCONTRACTS

2012-04-24 OPEN - no issues. Koberstein in progress.

2012-04-17 OPEN - no issues. Koberstein in progress.

2012-04-10 OPEN - no issues

02 SUBMITTALS

2012-04-24 OPEN - no issues. In progress - liner sample tests results from TRI under review by GEO

2012-04-17 OPEN - no issues. In progress, J. Cravens and P. Zinsious to meet after the progress meeting. Resubmit with [corrected] specification numbers.

2012-04-10 OPEN - no issues. In progress, J. Cravens and P. Zinsious to finish out log. GEO to maintain the log. Submit in groups.

08 MATERIAL

01 GENERAL

2012-04-24 OPEN - [ref. Item No. 07.02-2012-04-24 above].

2012-04-17 OPEN - Liner sample tests not back from TRI.

2012-04-10 OPEN - Liner can be delivered early to the site if necessary.

09 ADJACENT PROPERTIES

01 GENERAL

2012-04-24	OPEN - no issues. Excavation plan submitted by Koberstein [part time at meeting]. [01] General discussion trench width. [02] Stockpile top soil. [03] 80 FT/D production rate. Duration of work projected 50D. [04] Pump groundwater to Pond A or Pond B. [05] Alignment of pipe is flexible [for filed conditions]. Curve or "angle" OK. [06] KCI recommended double cleanouts for ease. AER indicated single [as designed] OK. [07] AER reviewed pipe can go directly into the manhole [shown on drawings as adjacent]. [08] Spoils can be "lost" on the berm embankments.
2012-04-17	OPEN - no issues. Excavation plan in progress.
2012-04-10	OPEN - no issues. Excavation plan scheduled for two weeks out.

10 QUALITY CONTROL

01 GENERAL

2012-04-24	OPEN - no issues
2012-04-17	OPEN - no issues
2012-04-10	OPEN - no issues

02 ASH

2012-04-24	OPEN - no quality issues. R. Porter report the wet ash in the east area of the pond is going to require 2-3 days [stacked] to drain the water off. J. Boone indicated this area of pond is further away from the discharge inlet, thus reason for the fines [not settle out in other areas of the pond]. The wet ash is being stacked and spread out to dry.
2012-04-17	OPEN - no quality issues. Ash proctors have been received. J. Cravens to review how to match results as one of the three has different characteristics.
2012-04-10	OPEN - no quality issues. Ash placement by scrapers. No issue on compaction. Tests to be taken when elevation is within 1 FT of finish grade. GEO has taken samples for proctors, and 1 of 2 test analysis have been returned.

03 CLAY

2012-04-24	OPEN - no issues.
2012-04-17	OPEN - no issues. [added entry for this date]
2012-04-10	OPEN - no issues. Samples to be taken in next week or two [by AMS]. Analysis to follow the [revised] CQA plan.

11 SCHEDULE REVIEW

01 SCHEDULE

2012-04-24	OPEN - Review of schedule 04-18. [01] Schedule to be adjusted and corrected for end date calculations. [02] 05-02 - Pipe relocation start. [03] 05-04 - Massmann to survey. [04] 05-07 - Begin demolition outfall structure. AMS to set scrap steel in plant yard. Duration 2D include flowable fill. [05] 05-07 - Illini Drilled to mob to site for cap vents. [06] 05-29 - Projected start date for the PCP. End date projection 09-11.
2012-04-17	OPEN - Review of schedule with actuals dates, activity look-ahead for two weeks, and critical path. [01] 04-16 - documented rain date. [02] 04-18 - silt fence installation. [03] 05-01 - two weeks estimated ash placement complete. [04] Outfall manhole access - AER permission to cut lock if no key provided.
2012-04-10	OPEN - Review of schedule with actuals dates, activity look-ahead for two weeks, and critical path. . AER to provide revised schedule next week. One rain date documented for 04-05.

02 TIME AND MATERIAL

2012-04-24	OPEN - no issues
2012-04-17	OPEN - no issues
2012-04-10	OPEN - no issues

03 COORDINATION

2012-04-24	OPEN - no issues. Signs on site [ref. Item No. 14.20-2012-04-24 below].
2012-04-17	OPEN - no issues
2012-04-10	OPEN - no issues. Hierarchy for call for site access - R. Porter, J. Craven, and then M. Wagstaff. Post sign on site.

01 CHANGE REQUEST ISSUES

2012-04-24 OPEN - no issues.
 2012-04-17 OPEN - no issues. AMS to provide credit from AAA Electric on EWO-01.
 2012-04-10 OPEN - Discussion and review of EWO's to be deferred to after the progress meeting.

02 AMS PAY APPLICATION

2012-04-24 OPEN - M. Wagstaff indicated 10% will be held at the end on the job. AMS no issue. CLOSED
 2012-04-17 OPEN - M. Wagstaff indicated 10% will be held at the end on the job.
 2012-04-10 OPEN - M. Wagstaff indicated the application has been received from AMS, and he has forwarded to J. Davis at AER for review.

03 EWO-02 - ASH PLACEMENT - CAP MODIFICATIONS

2012-04-24 OPEN - AER to provide interim e-mail stating approval for this work to AMS.
 2012-04-17 OPEN - M. Wagstaff has under review. Work is soft are will be long boom excavator on matts. Area will be 35 FT wide swath first week. Standard boom excavator for back fill. The cut from the clay berm will be pushed into the are of the soft ash excavation to bridge the area.
 2012-04-10 OPEN - Discussion and review of EWO's to be deferred to after the progress meeting.

04 EWO-03 - COAL PILE

2012-04-17 OPEN - Work completed. Some areas graded to "original soil" under coal pile. AMS will wait for rain to determine location of the drainage trenches. AER to provide interim e-mail stating approval for this work to AMS.
 2012-04-17 OPEN - M. Wagstaff to forward EWO.
 2012-04-10 OPEN - Discussion and review of EWO's to be deferred to after the progress meeting. However, AER approved this work.

05 EWO-04 - PIPE RELOCATION

2012-04-24 OPEN - M. Wagstaff published elevations. [Current progress: pipe exposed along the south and at turn of east side pond.] AER to provide interim e-mail stating approval for this work to AMS.
 2012-04-17 OPEN - M. Wagstaff approved orally. AMS reports there are tow lines in the berm, one to be relocated, and the other portions of previous line left in the berm when replaced earlier. M. Wagstaff will provide elevations at specific stations on the line for relocation. Some of the pipe has been backfilled with bottom ash, and the old line has areas encased in concrete. Areas encased in concrete to remain in place. AMS indicated the new culvert at the road crossing [between Pond A and Pond D] will be lowered [field elevations] to get underneath pipe line. Pipe may create voids if buried in the ash pond, so it was determined to dispose of the pipe removed off-site, and estimated 6-7 dumpsters for pipe disposal, also approved. Short piece of pipe from the AER yard will be connected to the manhole with a repair-type mechanical compression clamp.
 2012-04-10 OPEN - Discussion and review of EWO's to be deferred to after the progress meeting.

06 EWO-05 - ELECTRICAL REVISION

2012-04-24 OPEN - in progress. AAA to be on site to inspect MCC /switchgear room. Meeting after [part of] this progress meeting.
 2012-04-17 OPEN - in progress
 2012-04-10 OPEN - Discussion and review of EWO's to be deferred to after the progress meeting.

01 AMEREN [AER]

2012-04-24
 [03] Fire protection [CLOSED - Old switchgear room will be emergency shelter. J. Tasich ahs supplies to set in place 04-24]. Signs will be posted, and a plan will be finalized.
 [20] Drawing S-386 SHT 5 RF - the survey coordinates are reversed. [OPEN - Hanson to provide revised drawing - in progress]
 [23] NEW - M. Wagstaff to provide drawings for the existing MCC. [OPEN - drawings received. AAA may require additional drawings. M. Wagstaff offered to post on ftp.
 2012-04-17
 [03] Fire protection [OPEN - pumps off in plant so cannot use basements - team to review pit next to coal pile "push wall". The gathering place is guard shack by the trailers. [OPEN - J. Tasich described area and supplies for emergency shelter in old switchgear room - in progress]
 [20] Drawing S-386 SHT 5 RF - the survey coordinates are reversed. [OPEN - Hanson to provide revised drawing - in progress]
 [23] NEW - M. Wagstaff to provide drawings for the existing MCC.
 2012-04-10
 [03] Fire protection [OPEN - pumps off in plant so cannot use basements - team to review pit next to coal pile "push wall". The gathering place is guard shack by the trailers. [OPEN - J. Tasich described area and supplies for emergency shelter in old switchgear room]
 [20] Drawing S-386 SHT 5 RF - the survey coordinates are reversed. [OPEN - Hanson to provide revised drawing]
 [21] M. Wagstaff to contact Ameren Utilities for the meter. [CLOSED]
 [22] Mailbox and delivery thereof status.[CLOSED - M. Wagstaff reports all mail now goes to Newton]

14	ACTION ITEMS - AMS
01	ASH MANAGEMENT [AMS]
2012-04-24	[20] [REOPEN] P. Zinsious to provide draft. CLOSED - signs on site, ready to be installed].
2012-04-17	[06] RFI-01 roadway clarification [CLOSED - correct RFI No. 9]
	[20] [REOPEN] P. Zinsious to provide draft.
2012-04-10	[04] Cost review – relocation flume and change to cap [when receive revised drawings] [OPEN – General discussion topo reference previous commentary above in Item No. 10.02-2012-03-27 - communication will be essential during ash placement to track changes.] [CLOSED - differed to discussion after progress meeting]
	[05] Cost review – HDPE line relocation [when receive revised drawings] [OPEN – line to be moved to inside of the pond area, as pipe will get "shorter" by virtue of shorter run . [CLOSED - differed to discussion after progress meeting]
	[06] RFI-01 roadway clarification [OPEN - AMS not received]
	[16] Submittal log [OPEN - AMS submit EOW] [CLOSED - reference above in submittals]
	[19] All documents to be copied [e-mailed] to Mr. Joe Cravens - M. Wagstaff representative on site.[CLOSED - e-mails will be copied/forwarded]
	[20] Site entry signage [CLOSED - provide draft]

15	PRODUCTION
01	GENERAL
2012-04-24	OPEN - no issues
2012-04-17	OPEN - no issues
2012-04-10	OPEN - no issues
02	ASH
2012-04-24	OPEN - no issues. Estimated 55,452 CY EOD 04-23. General discussion CY are estimates and more than likely under-reported. AER inquired how AMS plan ash to grade - projection is site may possibly balance. M. Wagstaff concern ash placement may not make schedule.
2012-04-17	OPEN - no issues. Estimated 38,996 CY EOD 04-16.
2012-04-10	OPEN - no issues. Estimated 28,076 CY EOD 04-09.
03	CLAY
2012-04-24	OPEN - no issues - this activity not begun.
2012-04-17	OPEN - no issues - this activity not begun.
2012-04-10	OPEN - no issues - this activity not begun. Borrow site agreement signing 04-10. [corrected minutes date date]

16	DOCUMENTS TRANSMITTED
2012-04-24	[01] AMS - Electrical drawing package [1x copy 23 x 36] to AAA
	[02] AMS - Schedule dated 04-18
	[03] AMS - Koberstein [1x copy] to AER "Excavation Plan"
	[04] AMS - Contact list HUT-APD-CON-2012-04-24
2012-04-17	[01] AMS - Contact List HUT-APD-CON-20120-04-17
2012-04-10	[01] AMS - Contact List HUT-APD-CON-20120-04-10
	[02] AMS - Submittal Breakout Report [previously issued at Pre-Con] dated 20120-01-31.
	[03] AER - J. Craven submittal log draft spreadsheet.

17	DOCUMENTS REVIEW ONLY
2012-04-24	None
2012-04-17	None
2012-04-10	None

18

NEXT PROGRESS MEETING

Next meeting will be held in one week - Tuesday, May 01, 2012 at Hutsonville

19

DISTRIBUTION - STANDARD**AER**

- 01 Mr. Mike Wagstaff
- 02 Mr. Mike Stewart
- 03 Mr. Bob Muesenfechter

GEO

- 01 Ms. Anna Saindon
- 02 Mr. Eric Neuner
- 03 Mr. Joe Cravens

AMS

- 01 Mr. Jimmy Boone
- 02 Mr. John Denham
- 03 Mr. Joko Tasich
- 04 Mr. Randy Porter

If there are any corrections, modifications, additions, or deletions please notify the sender by e-mail at pzinsious@ashmanagementservices.com

PHOTOGRAPH LOG



Photograph 1 ▲ - Cutting south embankment facing southeast



Photograph 2 ▲ - Undercutting wet ash in south embankment facing west

All photographs taken by Joseph Cravens of Geotechnology, Inc. between April 23 and April 27, 2012

JRC



Photograph 3 ▲ - Removing temporary ADS drainage pipe in Quadrant B facing northeast



Photograph 4 ▲ - Grading Quadrant C facing south

All photographs taken by Joseph Cravens of Geotechnology, Inc. between April 23 and April 27, 2012

JRC



Photograph 5 ▲ - Stockpiling embankment material facing south



Photograph 6 ▲ - AMS sign at front entrance facing northeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between April 23 and April 27, 2012

JRC



Photograph 7 ▲ - Grading Quadrant D facing north



Photograph 8 ▲ - North tip of Ash Pond D facing southeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between April 23 and April 27, 2012

JRC



Photograph 9 ▲ - Long reach excavator stuck in wet ash, northeast corner of Ash Pond D facing northeast



Photograph 10 ▲ - Test Pit 1 excavation facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between April 23 and April 27, 2012



Photograph 11 ▲ - Test Pit 1 excavation facing east



Photograph 12 ▲ - Test Pit 1 after being backfilled facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between April 23 and April 27, 2012



Photograph 13 ▲ - Test Pit 2 excavation facing west



Photograph 14 ▲ - Test Pit 2 excavation facing west

All photographs taken by Joseph Cravens of Geotechnology, Inc. between April 23 and April 27, 2012

JRC



Photograph 15 ▲ - Test Pit 3 excavation facing west



Photograph 16 ▲ - Test Pit 4 excavation facing southwest

All photographs taken by Joseph Cravens of Geotechnology, Inc. between April 23 and April 27, 2012

JRC



Photograph 17 ▲ - Overview of Ash Pond D facing southeast



Photograph 18 ▲ - Overview of Ash Pond D facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between April 23 and April 27, 2012

JRC



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Energy Resources

FROM: Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DATE: May 7, 2012

SUBJECT: Weekly Summary Report for April 30, 2012 to May 4, 2012

PROJECT: Hutsonville Ash Pond D Closure
Crawford County, Hutsonville, Illinois
Geotechnology Project No. J019896.01

The following is a weekly summary of the site activities at the referenced site.

Weather

The weather was generally cloudy with periods of rain. Temperature (°F) lows ranged from 60 to 70°F, and temperature highs ranged from 70 to 88°F. The rain caused production delays on May 1 and May 4, 2012.

Construction Activities

Ash grading, undercutting of soft areas, geomembrane delivery, ADS corrugated pipe removal, and 18-inch HDPE gravity drainage pipe excavation occurred this week. Ash and embankment grading occurred in all quadrants of Ash Pond D. The main fill area was in the south end of Quadrant A and B. Geomembrane was delivered and stored according to the CQA plan.



Weekly Summary Report
May 7, 2012
Page 2

J019896.01

Equipment and Personnel On-Site

CAT D6N Bulldozer
CAT D6H Bulldozer
CAT 325C Excavator
John Deere 9520 Tractor with 2-1812C John Deere Scrapers (Pans)
Hyundai 290 LC-9 Long Reach Excavator
Sky Track 6036 Forklift
Wacker RT Trench Roller
Water Truck

Geotechnology, Inc. – Joe Cravens
Ash Management Services, LLC (AMS) – Randy Porter, Robert Dunkley, and James Marks
Belt Construction, Inc. – Jared Belt, Nick Walker, Kevin Flynn, Brad Bolenbaugh, and Marc Downs
Charah – Joe Tasich
Visitors –Refer to the Visitor's Log for visitors, dates, and times.
Refer to the meeting minutes for additional personnel.

Meetings

The weekly progress meeting was held on Tuesday, May 1, 2012. Refer to the attached meeting minutes for additional information.

Photographs

A photograph log with select photographs obtained this week is attached.

Materials

Ash and embankment material within the footprint of Ash Pond D (quadrants A, B, C, and D) was graded. The geomembrane was delivered on April 30 and May 1, 2012.

Testing/Sampling

Sampling and testing did not occur this week.

Weekly Summary Report
May 7, 2012
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J019896.01

Calibration Records

Calibration information was not obtained this week.

Signature of CQA Officer

Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.



DAILY REPORTS

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: — Client: Ameren ER Date: 4/30/12

TIME: Arrive: 6:30 AM Depart: 4:15 PM Travel: 1.0 hr Total: 10.5 hrs (0.25 hr for lunch)
 Weather: Partly Cloudy, 65° AM, 80° PM Contractor: AMS Subcontr./Supplier: Belt Construction
 Equipment Working: D6N Dozer, D6H Dozer, 325C Excavator, 9520 Tractor, 2-1812C Pans,
 Site Activities / Observations / Contacts / Notes: Water Truck, 290LC-9 Excavator, Sky Trak 6036 Forklift

The D6N continued grading Section C and D. The D6H continued grading Section A. The 9520 continued cutting and filling ash within Section A and B. The 290LC-9 moved undercut ash in Section B and D to dry. The 325C moved undercut ash in Section C and D, and continued cutting the NE embankment.

60 of the 72 rolls of geomembrane were delivered (5 trucks, 12 rolls/truck). Brad Bolenbaugh unloaded the rolls with the forklift and placed them in the construction yard.

Truck 1	Truck 2	Truck 3	Truck 4	Truck 5	
108162809	108162804	108162779	108162858	108162863	Any defects (visual) were recorded. Randy received all the papers for each delivery. All rolls were labeled correctly and will be checked with the roll spreadsheet accordingly.
108162783	108162807	108162812	108162864	108162821	
108162801	108162833	108162778	108162855	108162862	
108162802	108162813	108162793	108162856	108162859	
108162784	108162831	108162776	108162841	108162861	
108162805	108162819	108162777	108162857	108162860	
108162842	108162815	108162785	108162868	108162788	
108162792	108162818	108162791	108162827	108162781	
108162794	108162830	108162787	108162786	108162790	
108162806	108162832	108162789	108162780	108162836	
108162803	108162829	108162814	108162867	108162865	
108162835	108162839	108162808	108162866	108162782	

Additional Comments: John Boyer with B&T visited to discuss bidding.

Randy Poelke
 Contractor Representative
 Signature: Anna Saindon
 Geotechnology, Inc.
 Engineer's Signature

AMS
 Company
 Date: 4-30-12
 Date: 5-7-12

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 5/1/12

TIME: Arrive: 6:30 AM Depart: 3:15 PM Travel: 1.0 hr Total: 9.5 hrs (0.25 hr for lunch)
Weather: Foggy/Cloudy, 60° AM, 75° PM Contractor: AMS Subcontr./Supplier: Belt Construction
Equipment Working: D6N Dozer, D6H Dozer, 325C Excavator, 9520 Tractor, 2-1812C Pans,
Site Activities / Observations / Contacts / Notes: 290LC-9 Excavator, Sky Trak 6036 Forklift

The 325C spread out cut berm and ash material in Section B and D. The 290LC-9 undercut wet ash along the NE embankment in Section B. The D6N and D6H graded Section A and B. The D6H uncovered an old HDPE drainage pipe in Section B. It was used for temporary drainage for the old existing road running west to east across the pond. It had been abandoned and therefore ripped out and incorporated into the fill. No dust control required today; Robert Dunkley had the day off.

The last of the geomembrane was delivered (72 rolls on-site).

Truck 6
108162840 Dave Valentine (Charah) attended the meeting with Joko.
108162828
108162817 Mike, Paul, and Joe King observed the Pond C junction box and the elec.
108162834 building near the water tank to plan running new electric.
108162824
108162820 More stoplogs need to be put in the outfalls of Pond A and B.
108162825
108162837 It began raining at 9:30 am and work was terminated at 10:30 am.
108162838 No Production after 10:30 am.
108162822
108162823 B&T Drainage should submit their bid in the next couple days.
108162816

Additional Comments: If the trenches for the collector pipe exceed 20', an engineered plan is required.

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Randy Poelzer AMS
Contractor Representative Company
Signature Anna Spindler Date 5-1-12
Geotechnolgy, Inc. Date 5-7-12
Engineer's Signature

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: — Client: Ameren ER Date: 5/2/12

TIME: Arrive: 6:30 AM Depart: 4:00 PM Travel: 1.0 hr Total: 10.5 hrs (no lunch)
 Weather: Sunny, 70° AM, 88° PM Contractor: AMS Subcontr./Supplier: Belt Construction
 Equipment Working: D6N Dozer, D6H Dozer, 325C Excavator, 9520 Tractor, 2-1812C Pans,
 Site Activities / Observations / Contacts / Notes: 290 LC-9 Excavator, Water Truck

The oil was changed in the 9520, and one of the 1812C Pans was dropped due to the following: speed up cutting and filling since the distance to move the material has reduced, not efficient to use two pans for the cut/fill that remains, and less chance of getting stuck in the wet material. The D6N and D6H continued grading Section A and B. The 325C cut down the north end of the pond to grade, until enough space was provided from the fence line for the dozers to take over. After, the 325C continued cutting the NE embankment. The 290LC-9 continued undercutting along the NE embankment. The 9520 continued cutting and filling Section A and B, primarily working in Section B.

Two 40 YD dumpsters will be delivered tomorrow for disposing of the old ADS corrugated pipe on the south side of Pond D, along with remaining geotube material.

James Marks began taking down the gate in the chain link fence, beside the box culvert, on the west side of the pond.

A dumptruck will be on-site tomorrow to test how much material can be loaded in one truck, to determine how many trucks will be required for the CBS.

Important Dates: Liner Pre. Con. Meeting - 5/22/12, Liner Mob. and Setup - 5/29/12,
 Begin installation of Geomembrane - 5/30/12.

Additional Comments: _____

<u>Ready Porter</u>	<u>AMS</u>
Contractor Representative	Company
<u>Anna Spindler</u>	<u>5-2-12</u>
Signature	Date
Geotechnology, Inc.	<u>5-7-12</u>
<u>Joe Cravens</u>	Date
Engineer's Signature	

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: — Client: Ameren ER Date: 5/3/12

TIME: Arrive: 6:30 AM Depart: 4:30 PM Travel: 1.0 hr Total: 10.75 hr (0.25 hr for lunch)
 Weather: Sunny, 70° AM, 85° PM Contractor: AMS Subcontr./Supplier: Belt Construction
 Equipment Working: D6N Dozer, D6H Dozer, 325C Excavator, 9520 Tractor, 1812C Pan,
 Site Activities / Observations / Contacts / Notes: Water Truck, 290LC-9 Excavator

The 9520 continued cutting and filling within Section A and B, as well as filling the northern portion of Section C. The D6N graded Section B and D. The D6H graded Section B and D, as well as the eastern portion of Section C. The 325C continued cutting the NE embankment, and moved wet undercut ash in Section B and D. The 290LC continued undercutting along the NE embankment, and moved wet undercut ash in B.

A dumptruck (Fawnlane Trucking) was brought to the site to test how many excavator buckets it can carry, without exceeding the load limit. The bucket on the 325C is 60" at 2.33 CY. At 4 buckets, the weight was approx. 15 tons. At 5 buckets (max), the weight was approx. 16.5 tons. When the dumptruck came back to the site after weighing, the load was $\approx 31,700 \text{ lb} \approx 15.85 \text{ tons}$. Therefore, each dumptruck used for the CBS can carry 5 buckets of material, or $\approx 16 \text{ tons}$ and be within the loading limits. This will help AMS to develop a more accurate schedule for moving the CBS.

The 40 yd dumpsters were delivered today to dispose of the old ADS corrugated pipe and remaining geotube materials. They were placed on the south side of Pond D, along the gravel road. They will be loaded tomorrow by the 325C.

James Marks began filling the dumpster with small pieces.
 Jimmy Boone here today to observe site activities.

Additional Comments: Geomembrane Pre-Con Meeting
moved to 5/8/12.

Kathy Porter
 Contractor Representative

AMS
 Company

Anna Sandoz
 Signature

5-3-12
 Date

Geotechnology, Inc.
Joe Cravens

5-7-12
 Date

Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 5/4/12

TIME: Arrive: 6:30 AM Depart: 11:00 AM Travel: 1.0 hr Total: 5.5 hrs
Weather: Cloudy, 70° AM, Cloudy/Rain, 60° PM Contractor: AMS Subcontr./Supplier: Belt Construction
Equipment Working: D6N Dozer, D6H Dozer, 325C Excavator, 9520 Tractor, 1812C Pan,
Site Activities / Observations / Contacts / Notes: Water Truck, 290LC-9 Excavator

The D6H continued grading Section D. The D6N continued grading Section B, and filled undercut areas with embankment material. The 325C filled the dumpsters with the old ADS corrugated pipe and remaining geotube material, and continued cutting the NE embankment along with moving undercut ash in Section B. The 290LC-9 continued undercutting along the NE embankment, and moved ash in Section B. The 9520 did not perform cutting and filling. Instead, the 9520 drove around in all 4 Sections, smoothing out the ash surface with one 1812C Pan, for preparation for the rain. This will allow the site to drain better.

James cleaned up areas around existing grade stakes in Section C and D.

It began raining at 9:30 AM and work ceased at 10:00 AM.
No Production after 10:00 AM.

Additional Comments: _____

Randy Porten Contractor Representative
AMS Company
5-4-12 Date
Anna Swindon Signature
Geotechnology, Inc. Date
5-7-12 Date
the hick Engineer's Signature

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MEETING MINUTES



Hutsonville Power Station - Ash Pond D closure
Progress Meeting No. 7 Minutes
Tuesday, May 1, 2012

01	PUBLICATION					
	Publish date:	2012-05-07	Submitted by:	P. Zinsious		
	Distribution:	E-mail only	Notes taken by:	P. Zinsious		
	Location:	Hutsonville Power Station	AMS-Charah File No.	HUT-APD-MTG-MIN-2012-05-01-PM-07		
	AER PO:	567523 R2	AMS-Charah Contract:	00030-01	AMS-Charah GL:	4116-06-6120

02	ATTENDEES			
01	Mr. Mike Wagstaff	Ameren	618-343-7790	mwagstaff@ameren.com
02	Mr. Joe Cravens	Geotechnology	314-568-6628	j_cravens@geotechnology.com
03	Mr. Joe King	AAA Electric	812-208-0464	N/A [Part time]
04	Mr. David Valentine	Charah	502-548-6449	dvalentine@charah.com
05	Mr. Joko Tasich	Charah	502-649-7633	jtasich@charah.com
04	Mr. John Denham	AMS - RM	502-609-0278	jdenham@ashmanagementservices.com
07	Mr. Jimmy Boone	AMS - ARM	502-574-5465	jboone@ashmanagementservices.com
08	Mr. Randy Porter	AMS - SM	502-554-5230	rporter@ashmanagementservices.com
09	Mr. Paul Zinsious	AMS - PCM	502-640-2918	pzinsious@ashmanagementservices.com

03 ABBREVIATIONS	
AER	Ameren Energy Resources
AMS	Ash Management Services
BNSF	Burlington
CBT	Computer Based Training
EOD	End of [the] Day
EOM	End of [the] month
EOW	End of [the] week
EDTS	Energy Delivery Transmission Services
EDC	Estimated Date [of] Completion
EWO	Extra Work Order
HDPE	High Density Polyethylene
HRS	Hours
LOTO	Lock Out Tag Out
NMA	National Maintenance Agreement
OSHA	Occupational Safety Health Administration
PCP	Perforated Collector Pipe
PO	Purchase Order
RHOM	Routine Handling, Operation, and Maintenance
SPOC	Single Point of Contact
T/M	Time and Materials
TBD	To Be Determined
TD	Transmission Dispatch
WPA	Worker Protection Assurance

04 DOCUMENTATION	
Minutes are documented weekly, and the publication have a "rolling record" of the immediate past three weeks. Each week the oldest drops off and the current week is added to the minutes. Items are categorized as either "NEW", "OPEN", "CLOSE", or in case the an item has to be re-published after closed the previous week - "REOPEN".	

05 SAFETY - HOUSEKEEPING	
01 ACCIDENTS OR INJURIES	
2012-05-01	OPEN - no issues.
2012-04-24	OPEN - no issues.
2012-04-17	OPEN - no issues.
02 WORKER PROTECTION ASSURANCE	
2012-05-01	OPEN - no issues. AAA electric to be on site 05-01 to go over EWO details.
2012-04-24	OPEN - no issues. AAA electric to be on site 04-24 again to review electric MCC/switch gear room.
2012-04-17	OPEN - no issues. AAA electric to be on site 04-17 to review electric switch gear room.

03 EMPLOYEE DRUG TESTING

2012-05-01	OPEN - no issues. Illini Drilled 2x workers to be scheduled for 05-07.
2012-04-24	OPEN - no issues. Koberstein 5x workers to be scheduled for 04-27.
2012-04-17	OPEN - no issues. AMS worker scheduled for 04-18. Belt Construction 1x 04-17. Daylight Farms 3x 04-16. M. Wagstaff indicated drug testing cost is borne by the subcontractors, notes in specifications.

04 AMS SAFETY

2012-05-01	OPEN - no issues. M. Wagstaff requested [in EWO] 'stop log' adjustments in Pond A and Pond B. AMS workers will receive water training for this work. Next week is the monthly safety luncheon.
2012-04-24	OPEN - no issues.
2012-04-17	OPEN - no issues. Next Safety Luncheon scheduled for 04-08.

05 HOUSEKEEPING

2012-05-01	OPEN - no issues. AMS policy all workers drug test before on AMS site. J. Tasich to set up site in Robinson, IL. Nomenclature for drug testing is such that a positive result = bad [drugs found] whereas a negative result = good [no drugs found].
2012-04-24	OPEN - no issues.
2012-04-17	OPEN - no issues. AMS to reinstall caution tape on south berm where wind blew down.

06 PLANT ACCESS - CBT BADGE

2012-05-01	OPEN - no issues. Badges [consultant] switch over no-issue. J. Denham requested AER provide gate log once a month.
2012-04-24	OPEN - no issues. AMS received AER consultant badges.
2012-04-17	OPEN - no issues. M. Wagstaff to investigate AMS consultant badges.

07 VEHICLES ON SITE

2012-05-01	OPEN - no issues
2012-04-24	OPEN - no issues
2012-04-17	OPEN - no issues

08 OSHA LOG - WORK HOURS

2012-05-01	OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 04-30
1,327.00	RT
<u>0,000.00</u>	OT
1,327.00	TOTAL
2012-04-24	OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 04-23
1,051.50	RT
<u>0,000.00</u>	OT
1,051.50	TOTAL
2012-04-17	OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday]
0,746.00	RT
<u>0,000.00</u>	OT
0,746.00	TOTAL

06 MANPOWER**01 CREW SIZE**

2012-05-01 OPEN - AMS and Belt Construction on site. Koberstein declined. Corrected count for 04-24 below.

Current

[01] Geotechnology

[00] Pipe

[00] Mechanical

[00] Electrical

[00] Cement

[00] Laborers

[05] Operators

[01] Teamsters

[00] Survey

[01] Foreman [Full time]

[08] Total

2012-04-24 OPEN - AMS and Belt Construction on site. Project addition of Koberstein next week.

Current

[00] Pipe

[00] Mechanical

[00] Electrical

[00] Cement

[00] Laborers

[04] Operators [05] Operators

[01] Teamsters

[00] Survey

[01] Foreman [Full time]

[06] Total [07] Total

2012-04-17	OPEN - AMS and Belt Construction on site. Project addition of 1x Laborer and 1x Operator next week.
Current	Addition of CM/GEO
[00] Pipe	
[00] Mechanical	
[00] Electrical	
[00] Cement	
[01] Laborers	
[05] Operators	
[01] Teamsters	
[00] Survey	
[01] CM/GEO	
[01] Foreman	[Full time]
[09] Total	

02 WORK HOURS

2012-05-01	OPEN - Standard hours - 7:00 AM CT to 3:30 PM CT. Corrected time below.
2012-04-24	OPEN - Standard hours - 7:00 AM CT to 3:30 AM CT-PM CT
2012-04-17	OPEN - Standard hours

03 OVER TIME

2012-05-01	OPEN - None projected.
2012-04-24	OPEN - Referencing 04-17 commentary, current production is 100 FT/D and is good rate, no OT projected.
2012-04-17	OPEN - If rains first week of long boom operation, will work OT second week - at AMS cost.

04 TRAILER [AND GENERAL CONDITIONS]

2012-05-01	OPEN - no issues.
2012-04-24	OPEN - no issues.
2012-04-17	OPEN - no issues. Communication line dead.

07 PREVIOUS

01 SUBCONTRACTS

2012-05-01	OPEN - no issues. Koberstein declined. Replacement subcontractor in review - BT Drainage.
2012-04-24	OPEN - no issues. Koberstein in progress.
2012-04-17	OPEN - no issues. Koberstein in progress.

02 SUBMITTALS

2012-05-01	OPEN - no issues. In progress - M. Wagstaff request mechanical submittal be checked for missing pump information. AER has returned mechanical, electrical, and liner submittals.
2012-04-24	OPEN - no issues. In progress - liner sample tests results from TRI under review by GEO
2012-04-17	OPEN - no issues. In progress, J. Cravens and P. Zinsious to meet after the progress meeting. Resubmit with [corrected] specification numbers.

08 MATERIAL

01 GENERAL

2012-05-01	OPEN - no issues. All HDPE liner on site [72 rolls] as of 05-01.
2012-04-24	OPEN - [ref. Item No. 07.02-2012-04-24 above].
2012-04-17	OPEN - Liner sample tests not back from TRI.

09 ADJACENT PROPERTIES AND PCP LINE

01 GENERAL

2012-05-01	OPEN - BT Drainage [01] Deepest projected part of excavation is 22-23 FT. [02] J. Denham indicated the rock may not dig, requested AER consider raising the line above the bedrock line.
2012-04-24	OPEN - no issues. Excavation plan submitted by Koberstein [part time at meeting]. [01] General discussion trench width. [02] Stockpile top soil. [03] 80 FT/D production rate. Duration of work projected 50D. [04] Pump groundwater to Pond A or Pond B. [05] Alignment of pipe is flexible [for filled conditions]. Curve or "angle" OK. [06] KCI recommended double cleanouts for ease. AER indicated single [as designed] OK. [07] AER reviewed pipe can go directly into the manhole [shown on drawings as adjacent]. [08] Spoils can be "lost" on the berm embankments.
2012-04-17	OPEN - no issues. Excavation plan in progress.

10	QUALITY CONTROL
01	GENERAL
2012-05-01	OPEN - no issues
2012-04-24	OPEN - no issues
2012-04-17	OPEN - no issues
02	ASH
2012-05-01	OPEN - no issues. On going process.
2012-04-24	OPEN - no quality issues. R. Porter report the wet ash in the east area of the pond is going to require 2-3 days [stacked] to drain the water off. J. Boone indicated this area of pond is further away from the discharge inlet, thus reason for the fines [not settle out in other areas of the pond]. The wet ash is being stacked and spread out to dry.
2012-04-17	OPEN - no quality issues. Ash proctors have been received. J. Cravens to review how to match results as one of the three has different characteristics.
03	CLAY
2012-05-01	OPEN - no issues.
2012-04-24	OPEN - no issues.
2012-04-17	OPEN - no issues. [added entry for this date]

11	SCHEDULE REVIEW
01	SCHEDULE
2012-05-01	OPEN - Review of schedule 04-30. [01] Schedule critical path and look ahead reviewed. [02] Actual percent completion on ash pond sectors: A = 90%, B = 70%, C = 90%, D = 75%. [03] Activity No. 106 cap vents still scheduled for 05-14 as shown on 04-30 schedule. [04] Compaction testing for ash and surveying to be coordinated for same time if possible. Surveyor can come out twice. [05] Build pads for cap vent drill rig. [06] Discussion on the liner schedule and Memorial Day holiday. Verify day after the holiday.
2012-04-24	OPEN - Review of schedule 04-18. [01] Schedule to be adjusted and corrected for end date calculations. [02] 05-02 - Pipe relocation start. [03] 05-04 - Massmann to survey. [04] 05-07 - Begin demolition outfall structure. AMS to set scrap steel in plant yard. Duration 2D include flowable fill. [05] 05-07 - Illini Drilled to mob to site for cap vents. [06] 05-29 - Projected start date for the PCP. End date projection 09-11.
2012-04-17	OPEN - Review of schedule with actuals dates, activity look-ahead for two weeks, and critical path. [01] 04-16 - documented rain date. [02] 04-18 - silt fence installation. [03] 05-01 - two weeks estimated ash placement complete. [04] Outfall manhole access - AER permission to cut lock if no key provided.
02	TIME AND MATERIAL
2012-05-01	OPEN - no issues
2012-04-24	OPEN - no issues
2012-04-17	OPEN - no issues
03	COORDINATION
2012-05-01	OPEN - no issues.
2012-04-24	OPEN - no issues. Signs on site [ref. Item No. 14.20-2012-04-24 below].
2012-04-17	OPEN - no issues

12	COST AND BUDGET
01	CHANGE REQUEST ISSUES
2012-05-01	OPEN - no issues.
2012-04-24	OPEN - no issues.
2012-04-17	OPEN - no issues. AMS to provide credit from AAA Electric on EWO-01.
02	AMS PAY APPLICATION
2012-05-01	OPEN - M. Wagstaff indicated signed off with AER, should be reviewed by EOW. Invoice for stored materials on the HDPE liner.
2012-04-24	OPEN - M. Wagstaff indicated 10% will be held at the end on the job. AMS no issue. CLOSED
2012-04-17	OPEN - M. Wagstaff indicated 10% will be held at the end on the job.
03	EWO-02 - ASH PLACEMENT - CAP MODIFICATIONS
2012-05-01	OPEN - In progress. Spoils can go into Ash Pond D, and on the slopes as clean. Material opt be monitored by GEO and AMS. Consensus is the ash will balance.
2012-04-24	OPEN - AER to provide interim e-mail stating approval for this work to AMS.
2012-04-17	OPEN - M. Wagstaff has under review. Work is soft are will be long boom excavator on matts. Area will be 35 FT wide swath first week. Standard boom excavator for back fill. The cut from the clay berm will be pushed into the are of the soft ash excavation to bridge the area.

04 EWO-03 - COAL PILE	
2012-05-01	OPEN - Work completed. Area to be observed for drainage. Date corrected below 04-24.
2012-04-24	OPEN - Work completed. Some areas graded to "original soil" under coal pile. AMS will wait for rain to determine location of the drainage trenches. AER to provide interim e-mail stating approval for this work to AMS.
2012-04-17	OPEN - M. Wagstaff to forward EWO.
05 EWO-04 - PIPE RELOCATION	
2012-05-01	OPEN - In progress. Pipe is exposed, and ready to begin lowering. AMS recommending removal of the pipe to be demolished and filled
2012-04-24	OPEN - M. Wagstaff published elevations. [Current progress: pipe exposed along the south and at turn of east side pond.] AER to provide interim e-mail stating approval for this work to AMS.
2012-04-17	OPEN - M. Wagstaff approved orally. AMS reports there are tow lines in the berm, one to be relocated, and the other portions of previous line left in the berm when replaced earlier. M. Wagstaff will provide elevations at specific stations on the line for relocation. Some of the pipe has been backfilled with bottom ash, and the old line has areas encased in concrete. Areas encased in concrete to remain in place. AMS indicated the new culvert at the road crossing [between Pond A and Pond D] will be lowered [field elevations] to get underneath pipe line. Pipe may create voids if buried in the ash pond, so it was determined to dispose of the pipe removed off-site, and estimated 6-7 dumpsters for pipe disposal, also approved. Short piece of pipe from the AER yard will be connected to the manhole with a repair-type mechanical compression clamp.
06 EWO-05 - ELECTRICAL REVISION	
2012-05-01	OPEN - in progress. Meeting after progress meeting with AAA Electric.
2012-04-24	OPEN - in progress. AAA to be on site to inspect MCC /switchgear room. Meeting after [part of] this progress meeting.
2012-04-17	OPEN - in progress

13	ACTION ITEMS - AER
01 AMEREN [AER]	
2012-05-01	[20] Drawing S-386 SHT 5 RF - the survey coordinates are reversed. [OPEN - Hanson to provide revised drawing - in progress]
	[23] NEW - M. Wagstaff to provide drawings for the existing MCC. [OPEN - drawings received. AAA may require additional drawings. M. Wagstaff offered to post on ftp. [CLOSED - reminder site cleared 5th of month by AER]
2012-04-24	[03] Fire protection [CLOSED - Old switchgear room will be emergency shelter. J. Tasich ahs supplies to set in place 04-24]. Signs will be posted, and a plan will be finalized.
	[20] Drawing S-386 SHT 5 RF - the survey coordinates are reversed. [OPEN - Hanson to provide revised drawing - in progress]
	[23] NEW - M. Wagstaff to provide drawings for the existing MCC. [OPEN - drawings received. AAA may require additional drawings. M. Wagstaff offered to post on ftp.
2012-04-17	[03] Fire protection [OPEN - pumps off in plant so cannot use basements - team to review pit next to coal pile "push wall". The gathering place is guard shack by the trailers. [OPEN - J. Tasich described area and supplies for emergency shelter in old switchgear room - in progress]
	[20] Drawing S-386 SHT 5 RF - the survey coordinates are reversed. [OPEN - Hanson to provide revised drawing - in progress]
	[23] NEW - M. Wagstaff to provide drawings for the existing MCC.

14	ACTION ITEMS - AMS
01 ASH MANAGEMENT [AMS]	
2012-05-01	None
2012-04-24	[20] [REOPEN] P. Zinsious to provide draft. CLOSED - signs on site, ready to be installed].
2012-04-17	[06] RFI-01 roadway clarification [CLOSED - correct RFI No. 9]
	[20] [REOPEN] P. Zinsious to provide draft.

15	PRODUCTION
01 GENERAL	
2012-05-01	OPEN - no issues
2012-04-24	OPEN - no issues
2012-04-17	OPEN - no issues
02 ASH	
2012-05-01	OPEN - no issues. Estimated 70,988 CY EOD 04-30.
2012-04-24	OPEN - no issues. Estimated 55,452 CY EOD 04-23. General discussion CY are estimates and more than likely under-reported. AER inquired how AMS plan ash to grade - projection is site may possibly balance. M. Wagstaff concern ash placement may not make schedule.
2012-04-17	OPEN - no issues. Estimated 38,996 CY EOD 04-16.
03 CLAY	
2012-05-01	OPEN - no issues - this activity not begun.
2012-04-24	OPEN - no issues - this activity not begun.
2012-04-17	OPEN - no issues - this activity not begun.

16	DOCUMENTS TRANSMITTED	
2012-05-01	[01] AMS - Schedule dated 04-30 - critical path [02] AMS - Schedule dated 04-30 - look ahead [03] AMS - Schedule dated 04-30 - full [03] AMS - Value Engineering Submittal VES-01 - Bentonite cap option [04] AMS - Contact list HUT-APD-CON-2012-04-30	
2012-04-24	[01] AMS - Electrical drawing package [1x copy 23 x 36] to AAA [02] AMS - Schedule dated 04-18 [03] AMS - Koberstein [1x copy] to AER "Excavation Plan" [04] AMS - Contact list HUT-APD-CON-2012-04-24	
2012-04-17	[01] AMS - Contact List HUT-APD-CON-20120-04-17	

17	DOCUMENTS REVIEW ONLY	
2012-05-01	None	
2012-04-24	None	
2012-04-17	None	

18	NEXT PROGRESS MEETING	
	Next meeting will be held in one week - Tuesday, May 08, 2012 at Hutsonville [safety luncheon]	

19	DISTRIBUTION - STANDARD	
	AER	
01	Mr. Mike Wagstaff	
02	Mr. Mike Stewart	
03	Mr. Bob Muesenfechter	
	GEO	
01	Ms. Anna Saindon	
02	Mr. Eric Neuner	
03	Mr. Joe Cravens	
	AMS	
01	Mr. Jimmy Boone	
02	Mr. John Denham	
03	Mr. Joko Tasich	
04	Mr. Randy Porter	

If there are any corrections, modifications, additions, or deletions please notify the sender by e-mail at pzinsious@ashmanagementservices.com

PHOTO LOG



Photograph 1 ▲ - 40 mil HDPE geomembrane delivery facing south



Photograph 2 ▲ - Unloading 40 mil HDPE geomembrane facing south

All photographs taken by Joseph Cravens of Geotechnology, Inc. between April 30 and May 4, 2012



Photograph 3 ▲ - Example of dimple in roll facing east



Photograph 4 ▲ - Geomembrane storage area facing northeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between April 30 and May 4, 2012

JRC



Photograph 5 ▲ - Quadrant A facing southeast



Photograph 6 ▲ - Grading Quadrant B facing northeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between April 30 and May 4, 2012

JRC



Photograph 7 ▲ - Removing gate adjacent to box culvert facing southeast



Photograph 8 ▲ - Wet ash along northeast embankment facing north

All photographs taken by Joseph Cravens of Geotechnology, Inc. between April 30 and May 4, 2012



Photograph 9 ▲ - Overview of Ash Pond D facing southeast



Photograph 10 ▲ - Overview of Ash Pond D facing southeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between April 30 and May 4, 2012



Photograph 11 ▲ - Overview of Ash Pond D facing east



Photograph 12 ▲ - Overview of Ash Pond D facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between April 30 and May 4, 2012



Photograph 13 ▲ - Overview of Ash Pond D facing northeast



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Energy Resources

FROM: Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DATE: May 15, 2012

SUBJECT: Weekly Summary Report for May 7, 2012 to May 11, 2012

PROJECT: Hutsonville Ash Pond D Closure
Crawford County, Hutsonville, Illinois
Geotechnology Project No. J019896.01

The following is a weekly summary of the site activities at the referenced site.

Weather

The weather was generally cloudy with periods of rain. Temperature (°F) lows ranged from 50 to 70°F, and temperature highs ranged from 72 to 78°F. The rain caused production delays on May 7, 2012.

Construction Activities

Ash grading, undercutting of soft areas, trenching through Ash Pond A and 18-inch HDPE gravity drainage pipe relocation occurred this week. Ash and embankment grading occurred in all quadrants of Ash Pond D. Compaction occurred on the west half of Ash Pond D. This area was tested for moisture and density on May 10 and May 11, 2012. Refer to compaction field forms for additional information. Soft areas continue to be cut and material spread to dry. A trench was dug through Ash Pond A for drainage. The 18-inch HDPE gravity drainage pipe was relocated to the new grade.

Equipment and Personnel On-Site

2-CAT D6N Bulldozer
CAT D6H Bulldozer
CAT 325C Excavator
John Deere 9520 Tractor with 2-1812C John Deere Scrapers (Pans)
Hyundai 290 LC-9 Long Reach Excavator
Sky Track 6036 Forklift
Wacker RT Trench Roller
Water Truck

Geotechnology, Inc. – Joe Cravens
Ash Management Services, LLC (AMS) – Randy Porter, Robert Dunkley, Anthony Driver, and James Marks
Belt Construction, Inc. – Jared Belt, Nick Walker, Kevin Flynn, Brad Bolenbaugh, and Marc Downs
Charah – Joe Tasich
Visitors –Refer to the Visitor's Log for visitors, dates, and times.
Refer to the meeting minutes for additional personnel.

Meetings

The weekly progress meeting was held on Tuesday, May 8, 2012. Refer to the attached meeting minutes for additional information.

Photographs

A photograph log with select photographs obtained this week is attached.

Materials

Ash and embankment material within the footprint of Ash Pond D (quadrants A, B, C, and D) was graded.

Testing/Sampling

Moisture and density testing occurred on May 10 and May 11, 2012. Refer to compaction field forms for additional information.

Calibration Records

Calibration information was obtained for equipment from Massmann Surveying this week.

Signature of CQA Officer

Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.



DAILY REPORTS

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: — Client: Ameren ER Date: 5/7/12

TIME: Arrive: 6:30 AM Depart: 4:00 PM Travel: 1.0 hr Total: 10.25 hrs (0.25 hr for lunch)

Weather: Cloudy, 70° AM, 78° PM Contractor: AMS Subcontr./Supplier: Belt Construction

Equipment Working: 325C Excavator, 290LC-9 Excavator

Site Activities / Observations / Contacts / Notes:

Rain Day: No significant production in Ash Pond D. (EWO and Random Work).

The 290LC-9 dug the trench in Ash Pond A, from the north side of Pond A within the geotubes, to the south side of Pond A next to the weir (outfall), per EWO-06. The 325C cut the geotubes (SE corner) in Pond A and spread out Ash. The stoplogs and aluminum guard were placed in the Pond A outfall structure. Until water training is completed, the stoplogs cannot be placed in the Pond B outfall structure.

The 325C cut into the south embankment in Pond D, and pushed a hole through, underneath the HDPE pipe to allow the water to drain that was ponded along the cut embankment. Then the 325C had to remove some of the ADS pipe out of the dumpsters so they could be legally hauled off. Last, the 325C dug a hole in the SW corner of Section C to bury fill that was piled next to the fence line on the west side of Section C. However, as digging continued, more and more fill was uncovered. This will create a problem when digging for the Gutter and Anchor Trench in this area. The fill that was already dug up was buried, but the open hole created from digging up the fill was left open for Mike to see. It appears the fill continues into the gravel roadway. Fill consists of concrete, rebar, steel plates, and clay bricks.

Belt had another DoN delivered, totalling 3 Dozers on site. Anthony Driver (AMS Focus) was here to train with Randy. Jared and Nick did

Additional Comments: maint. on their equipment. They will begin HDPE pipe relocation tomorrow.

Randy Poetoe
 Contractor Representative

AMS
 Company

Anna Snyder
 Signature

Geotechnology, Inc.
 Engineer's Signature

5-7-12
 Date

5-14-12
 Date

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: — Client: Ameren ER Date: 5/8/12

TIME: Arrive: 6:30 AM Depart: 4:45 PM Travel: 1.0 hr Total: 10.75 hrs (0.5 hr for lunch)

Weather: Sunny, 60°AM, 73°PM Contractor: AMS Subcontr./Supplier: Belt Construction

Equipment Working: 2-D6N Dozers, D6H Dozer, 325C Excavator, 290 LC-9 Excavator

Site Activities / Observations / Contacts / Notes: _____

The 325C began digging the new grade for the existing 18" HDPE Gravity Drainage Pipe. Pipe Slope: from $\approx 26+75$ to $23+00$ is 1.67%. Pipe Slope: from $23+00$ to $11+00$ is 0.42%. Total pipe relocation length = 1575'. James Marks checked the grades within the trench with a sewer laser. The D6N (Jared Belt) continued grading Section B. The D6N (Brad Bolenbaugh) regraded the coal yard to promote drainage. The D6H (Nick Walker) continued grading Section D. In the PM, the D6H was parked and Nick took over the D6N because Brad had a Dr. Appt. The D6N (Nick Walker) continued grading Section B. The 290 LC-9 continued grading, moving, and undercutting ash in Section B. Once all of the new grade for the HDPE pipe is completed, the pipe will be moved as a whole into the graded trench.

Anthony Driver will remain on site to train with Randy for ≈ 2 months. He is also a pipe specialist and will be good to have his expertise when laying the PCP. AMS had a 2nd pickup truck delivered on site for Anthony's use.

The 9520 was not in use today (too wet to be efficient). This is the last week the 290LC-9 will be on site. It is unknown if Marc Downs will remain as an operator.

Ryan Clark (Chesapeake Containment Systems, Inc.) and Bill (Illini Drilled Foundations, Inc.) joined the Progress Meeting to discuss the liner and cap vents, respectively. Cap Vent Drilling will begin next Monday (5/14/12). A dumptruck will be required for the fill found in Section C, and dig tests will be performed to determine

Additional Comments: the extent of the fill along the fence.
EWO-05 and EWO-07 will be combined.

<u>Randy Porter</u> Contractor Representative <u>[Signature]</u> Signature Geotechnology, Inc. <u>[Signature]</u> Engineer's Signature	<u>AMS</u> Company <u>5-8-12</u> Date <u>5-14-12</u> Date
--	--

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 5/9/12

TIME: Arrive: 6:30 AM Depart: 4:45 PM Travel: 1.0 hr Total: 11.0 hrs (0.25 hr for lunch)
Weather: Sunny, 58° AM, 72° PM Contractor: AMS Subcontr./Supplier: Belt Construction
Equipment Working: 2-D6N Dozers, D6H Dozer, 325C Excavator, 9520 Tractor, 1-1812C Pan,
Site Activities / Observations / Contacts / Notes: Water Truck, 290 LC-9 Excavator

The D6N (Brad) performed finish grading in Section C. The D6N (Jared) performed finish grading in Section A. The D6H continued grading Section B. The 325C continued cutting the new grade for the 18" HDPE Gravity Drainage Pipe. James Marks checked grade with a sewer and rotating laser, and Anthony Driver supervised. The 9520 performed cutting and filling in Section B. The 290 LC-9 continued undercutting wet ash and moving ash and embankment material in Section B.

The 9520 with one (1) full pan will be rolling the west side of the pond to be tested for compaction tomorrow morning. Stakes within this perimeter will be removed.

Austin (Lamac) will be here Friday to stake the cap vent locations with offsets.

The new grade for the HDPE pipe should be completed tomorrow, and they will begin moving the pipe to its new grade. Before the 18" HDPE pipe is moved, they will uncover and dispose of the existing drainage pipe between the outfall structure and the MH in Section B. After removal of the pipe, they will brake the entry of the 18" HDPE into the MH so this end will be free for the pipe relocation. Once the pipe is at its new grade, it will be directed into the MH in the same hole where the drainage pipe from the outfall structure entered the MH. Sometime during this process, the outfall structure will be demolished and buried, except for the steel which will be taken out of the pond.

Additional Comments: Compaction testing will begin tomorrow - 5/10/12.

Randy P. Pate
Contractor Representative
Anna S. Sander
Signature
Geotechnology, Inc.
Paul Smith
Engineer's Signature
Company: AMS
Date: 5-9-12
Date: 5-14-12

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FIELD OBSERVATION REPORT

Representative: Joe Cravens / Ron Williams Project No.: J019896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: — Client: Ameren ER Date: 5/10/12

TIME: Arrive: 6:30 AM Depart: 1545 Travel: 1.0 hr Total: 10.25
 Weather: Sunny, 58°AM, 75°PM Contractor: AMS Subcontr./Supplier: Belt Construction
 Equipment Working: 2-D6N Dozers, 325C Excavator, 9520 Tractor, 1-1812C Pan, Water Truck,
 Site Activities / Observations / Contacts / Notes: 290 LC-9 Excavator

The D6N (Jared) continued finish grading in Section A and B. The D6N (Brad) continued finish grading Section A and B, and grading Section D. The 325C continued digging the new grade for the 18" HDPE Pipe, with James checking grade with a sewer and rotating laser, with Anthony supervising. The 9520 began rolling the west side of the pond in Section A and C with one full pan and a drag blade. The Water Truck went in front of the tractor to wet the ash for better compaction. The 290 LC-9 continued moving undercut ash to dry in Section B. The 325C had a hydraulic hose break. While Jared left to get a new hose, Kevin operated the D6N in the meantime. Since Randy is already Water-Trained, he went ahead and put the stoplogs in Pond B, which completes EWO-06. Lamac will now survey the Cap Vents on 5/18/12, and Illini Drilling will begin on 5/21/12 due to material delivery. Tim Wilson arrived today to begin compaction testing in Section A. Up until I left, his readings were all over 100% for the grid points tested. Ron Williams arrived today as well to take my place tomorrow. I familiarized him with the site, personnel, and duties. — JRC
 D6N (JARED) AND D6N (BRAD) AND 9520 (WICK) CONTINUED EXCAVATION AND MATERIAL REMOVAL. WATER TRUCK CONTINUED TO HYDRATE SUBGRADE IN AREAS A & C; 325C (KEVIN) REMOVED OUTFALL DRAIN PIPE & MANHOLE (TO BE MODIFIED) AT BASE INGRESS POSITION AND EXPOSED REMNANT BELOW PIPE END—UPPER CORRUGATED PIPE BREACHED DURING THIS EXCAVATION PROCEDURE AND WATER FLOW CONTINUED IN ADJACENT, EXCAVATED END-OF-TRENCH POSITION. FOUR DIGIPHOTOS. TWENTY-ONE COMPACTION TESTS ACCOMPLISHED RANGING FROM 99% TO 114% OF MAX STANDARD PROCTOR (35 HITS) SPEL WALKWAY & PLATFORM REMOVED FROM OUTFALL STRUCTURE. — REW
 Additional Comments: COMPACTION TESTING TO CONTINUE DURING NEXT SHIFT

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

Contractor Representative: AMS Company: AMS
 Signature: Anna Spindon Date: 5-10-12
 Geotechnology, Inc. Date: 5-14-12
 Engineer's Signature: —

FIELD OBSERVATION REPORT

Representative: RON WILLIAMS Project No.: JO19896.01 Task: 2370
Equipment & ID No.: — Project Name: HUTSONVILLE ASH POND D CLOSURE
Vehicle: 4103 Zone: — Client: AMEREN ER Date: 05/11/2012

TIME: Arrive: 0645 Depart: 1545 Travel: 4.0 Total: 12.5

Weather: SUNNY, 50° Contractor: AMS Subcontr./Supplier: BELT CONSTRUCTION

Equipment Working: TWO D6N DOZERS, 325C EXCAVATOR, 952C TRACTOR, 1-1812C PUMP, WATER TRUCK,

Site Activities / Observations / Contacts / Notes: ONE DIGI FOTO FROM TOP OF WATER STORAGE TANK. 290LC-9 EXCAVATOR

THE 952C CONTINUED EXCAVATION, REMOVAL,
AND RECONSTRUCTION GRADING FOR SECTIONS B AND D. D6N CONTINUED FINAL GRADING IN SECTIONS
C AND D AND BOTH MOVED TO NORTHEAST PERIMETER/SECTION B AND STARTED/CONTINUED FINAL
GRADING TOWARD & ADJACENT TO 290LC-9 EXCAVATOR WHICH CONTINUED TO REMOVE
AND STOCKPILE FROM SECTION B; ALL SECTION B WORK SOUTH AND WEST OF OUTFALL STRUCTURE.
325C EXCAVATOR: MANHOLE AND HDPE AND FLEX PLASTIC PIPE CONCRETE UNION BLOCK FOR
PIPES WAS DEMOLISHED SUCH THAT PIPES @ UNION REMOVED, SPLICE REMOVED, AND HDPE PIPE
LIFTED VIA STRAP AND PLACED INTO ADJACENT TRENCH, THEN PROCEED TO REMOVE HDPE
FROM ORIGINAL BENCHED POSITION AND TRANSFERRED INTO EXCAVATED TRENCH FOR FULL
LENGTH - PERIMETERS OF SECTION B TO SECTION D TO SECTION C, SLACK REMOVED
AND HDPE CENTERED IN TRENCH ALIGNMENT (15 DIGI FOTOS). ABOVE GRADE COVER & CONCRETE
PAD PULLED FROM MONITORING WELL AND RISER PIPE EXPOSED (2 DIGI FOTOS). EXCAVATION
AND REMOVAL OF OUTFALL STRUCTURE - TO - MANHOLE (H) CLAY PIPE ACCOMPLISHED AND
NORTH SIDE OF OUTFALL STRUCTURE EXPOSED (3 DIGI FOTOS). CONTINUED EXCAVATING AROUND
OUTFALL STRUCTURE AND CLAY PIPE TRENCH ALIGNMENT TO FACILITATE DEMOLITION/
REMOVAL/BURIAL FOR REMNANT DEBRIS (3 DIGI FOTOS). LAMAC ENG/SURVEYING SHOOTS
TOP OF HDPE PIPE FOR AS BUILT DRAWING: NUMEROUS POINTS ON ALIGNMENT TO END
NEAR MANHOLE [TO BE MODIFIED] AND ON FLOWLINE OF GULL INGRESS INTO MANHOLE.
D6N AND 325C PLACING AND TRACKING SOIL ONTO EXPOSED ASH SURFACES GENERALLY
SOUTH AND EAST OF REMNANT OUTFALL STRUCTURE/DEBRIS AS 290LC-9 CONTINUES
TO EXCAVATE AND STOCKPILE SATURATED ASH MATERIAL IN SECTION B. TWO DIGI FOTOS
FROM TOP OF WATER STORAGE TANK. NOTE THIS ITEM: APPROXIMATELY 1 FOOT OF REMNANT
CONCRETE TO BE REMOVED FROM EXPOSED TOP OF OUTFALL STRUCTURE DEBRIS DIGI FOTOS #384-#390

Additional Comments: _____

Contractor Representative: Anna Samolun Company: AMS
Signature: Anna Samolun Date: 5-11-12
Geotechnology, Inc. Date: 5-14-12
Engineer's Signature: Ron Williams

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MEETING MINUTES



Hutsonville Power Station - Ash Pond D closure
Progress Meeting No. 8 Minutes
Tuesday, May 8, 2012

01	PUBLICATION		
	Publish date:	2012-05-09	Submitted by: P. Zinsious
	Distribution:	E-mail only	Notes taken by: P. Zinsious
	Location:	Hutsonville Power Station	AMS-Charah File No. HUT-APD-MTG-MIN-2012-05-08-PM-08
	AER PO:	567523 R2	AMS-Charah Contract: 00030-01 AMS-Charah GL: 4116-06-6120

02	ATTENDEES		
01	Mr. Mike Wagstaff	Ameren	618-343-7790 mwagstaff@ameren.com
02	Mr. Joe Cravens	Geotechnology	314-568-6628 j_cravens@geotechnology.com
03	Ms. Anna Saindon	Geotechnology	314-581-6286 a_saindon@geotechnology.com
04	Mr. Ryan Clark	Chesapeake	410-913-3390 rclark@ccsliners.com
05	Mr. Bill Kelly	Illini Drilled	217-304-1521 bill@illinidrilling.com [part time after]
06	Mr. Joko Tasich	Charah	502-649-7633 jtasich@charah.com
07	Mr. Anthony Driver	AMA - Focus	502-448-4463 adriver@ashmanagementservices.com
08	Mr. Jimmy Boone	AMS - ARM	502-574-5465 jboone@ashmanagementservices.com
09	Mr. Randy Porter	AMS - SM	502-554-5230 rporter@ashmanagementservices.com
10	Mr. Paul Zinsious	AMS - PCM	502-640-2918 pzinsious@ashmanagementservices.com

03

ABBREVIATIONS	
AER	Ameren Energy Resources
AMS	Ash Management Services
BNSF	Burlington
CBT	Computer Based Training
EAP	Emergency Action Plan
EOD	End of [the] Day
EOM	End of [the] month
EOW	End of [the] week
EDTS	Energy Delivery Transmission Services
EDC	Estimated Date [of] Completion
EWO	Extra Work Order
HDPE	High Density Polyethylene
HRS	Hours
LOTO	Lock Out Tag Out
NMA	National Maintenance Agreement
OSHA	Occupational Safety Health Administration
PCP	Perforated Collector Pipe
PO	Purchase Order
RHOM	Routine Handling, Operation, and Maintenance
SPOC	Single Point of Contact
T/M	Time and Materials
TBD	To Be Determined
TD	Transmission Dispatch
WPA	Worker Protection Assurance

04	DOCUMENTATION	
	Minutes are documented weekly, and the publication have a "rolling record" of the immediate past three weeks. Each week the oldest drops off and the current week is added to the minutes. Items are categorized as either "NEW", "OPEN", "CLOSE", or in case the an item has to be re-published after closed the previous week - "REOPEN".	

05	SAFETY - HOUSEKEEPING	
01	ACCIDENTS OR INJURIES	
	2012-05-08	OPEN - no issues.
	2012-05-01	OPEN - no issues.
	2012-04-24	OPEN - no issues.

02 WORKER PROTECTION ASSURANCE

2012-05-08 OPEN - no issues.

2012-05-01 OPEN - no issues. AAA electric to be on site 05-01 to go over EWO details.

2012-04-24 OPEN - no issues. AAA electric to be on site 04-24 again to review electric MCC/switch gear room.

03 EMPLOYEE DRUG TESTING

2012-05-08 OPEN - no issues. Illini Drilled 1x workers to be scheduled for 05-08. AER to schedule 1x worker for Massmann and 2x TSI workers by EOM.

2012-05-01 OPEN - no issues. Illini Drilled 2x workers to be scheduled for 05-07.

2012-04-24 OPEN - no issues. Koberstein 5x workers to be scheduled for 04-27.

04 AMS SAFETY

2012-05-08 OPEN - no issues. Water training to take place today for work on Pond A and B [some work already completed before water in the areas of work on Pond A].

J. Tasich reported on site specific emergency action plan [EAP]:

[01] Shelter areas has supplies.

[02] AMS will have cleaned out [dirt from varmints, etc...].

[03] Signs will be posted by next week.

[04] EAP will be reviewed at the safety luncheon [today].

AMS stepped out of meeting for a corporate "all-hands" safety conference call commemorating the following:

[01] Charah/AMS 2,000,000 [two million] man-hours without lost time milestone.

[02] Mine Safety Health Administration [MSHA] Sentinel of Safety Award for no lost time incidents in 2010 at Charah's Brickey's limestone grinding facility [we are supplier to Ameren Missouri].

[03] North Carolina Department of Labor Gold Level Safety Achievement Award for the Charah Roxboro site [a large site where Charah manages fly ash, bottom ash, gypsum, and landfill projects].

2012-05-01 OPEN - no issues. M. Wagstaff requested [in EWO] "stop log" adjustments in Pond A and Pond B. AMS workers will receive water training for this work. Next week is the monthly safety luncheon.

2012-04-24 OPEN - no issues.

05 HOUSEKEEPING

2012-05-08 OPEN - no issues.

2012-05-01 OPEN - no issues. AMS policy all workers drug test before on AMS site. J. Tasich to set up site in Robinson, IL. Nomenclature for drug testing is such that a positive result = bad [drugs found] whereas a negative result = good [no drugs found].

2012-04-24 OPEN - no issues.

06 PLANT ACCESS - CBT BADGE

2012-05-08 OPEN - no issues. M. Wagstaff e-mailed 6x WKS gate log to J. Denham, and he requested every 2x WKS. M. Wagstaff inquired on CC - for now J. Denham and P. Zinsious.

2012-05-01 OPEN - no issues. Badges [consultant] switch over no-issue. J. Denham requested AER provide gate log once a month.

2012-04-24 OPEN - no issues. AMS received AER consultant badges.

07 VEHICLES ON SITE

2012-05-08 OPEN - no issues. GEO to bring "gator" [utility vehicle] on site. AMS to bring second pick up truck on site for A. Driver. AMS will provide safety flags for both vehicles.

2012-05-01 OPEN - no issues

2012-04-24 OPEN - no issues

08 OSHA LOG - WORK HOURS

2012-05-08 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 05-07

1,555.50 RT

0,000.00 OT

1,555.50 TOTAL

2012-05-01 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 04-30

1,327.00 RT

0,000.00 OT

1,327.00 TOTAL

2012-04-24 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 04-23

1,051.50 RT

0,000.00 OT

1,051.50 TOTAL

06 MANPOWER [HEAD COUNT]

01 CREW SIZE

2012-05-08 OPEN - AMS and Belt Construction on site. AMS Focus [training program] Site Manager Mr. Anthony Driver on site.

Current Correction in crew size for 05-01 below [not discussed at the meeting]

[01] Geotechnology [work hours not

[00] Pipe

[00] Mechanical

[00] Electrical

[00] Cement

[01] Laborers

[05] Operators

[01] Teamsters

[00] Survey

[02] Foreman [Full time]

[10] Total

2012-05-01 OPEN - AMS and Belt Construction on site. Koberstein declined. Corrected count for 04-24 below.

Current

[01] Geotechnology

[00] Pipe

[00] Mechanical

[00] Electrical

[00] Cement

~~[00] Laborers~~ [01] Laborers

[05] Operators

[01] Teamsters

[00] Survey

[01] Foreman [Full time]

~~[00] Total~~ [09] Total

2012-04-24 OPEN - AMS and Belt Construction on site. Project addition of Koberstein next week.

Current

[00] Pipe

[00] Mechanical

[00] Electrical

[00] Cement

[00] Laborers

~~[04] Operators~~ [05] Operators

[01] Teamsters

[00] Survey

[01] Foreman [Full time]

~~[06] Total~~ [07] Total

02 WORK HOURS

2012-05-08 OPEN - Standard hours - 7:00 AM CT to 3:30 PM CT. Chesapeake may work extended hours.

2012-05-01 OPEN - Standard hours - 7:00 AM CT to 3:30 PM CT. Corrected time below.

2012-04-24 OPEN - Standard hours - 7:00 AM CT to 3:30 AM CT-PM CT

03 OVER TIME

2012-05-08 OPEN - None projected at this time. Referencing Item No. 06.02-2012-05-07 above - Chesapeake may have OT.

2012-05-01 OPEN - None projected.

2012-04-24 OPEN - Referencing 04-17 commentary, current production is 100 FT/D and is good rate, no OT projected.

04 TRAILER [AND GENERAL CONDITIONS]

2012-05-08 OPEN - no issues.

2012-05-01 OPEN - no issues.

2012-04-24 OPEN - no issues.

07 PREVIOUS

01 SUBCONTRACTS

2012-05-08 OPEN - no issues. BT Drainage in progress.

2012-05-01 OPEN - no issues. Koberstein declined. Replacement subcontractor in review - BT Drainage.

2012-04-24 OPEN - no issues. Koberstein in progress.

02 SUBMITTALS

2012-05-08	OPEN - no issues. In progress - P. Zinsious to revise log information by EOW and review mechanical.
2012-05-01	OPEN - no issues. In progress - M. Wagstaff request mechanical submittal be checked for missing pump information. AER has returned mechanical, electrical, and liner submittals.
2012-04-24	OPEN - no issues. In progress - liner sample tests results from TRI under review by GEO

08 MATERIAL**01 GENERAL**

2012-05-01	OPEN - no issues. See below for meetings.
2012-05-01	OPEN - no issues. All HDPE liner on site [72 rolls] as of 05-01.
2012-04-24	OPEN - [ref. Item No. 07.02-2012-04-24 above].

02 GEOMEMBRANE PRE-CON MEETING

2012-05-08	NEW - Meeting during Progress Meeting with Mr. Ryan Clark - Chesapeake Containment [CCS]. [01] 05-29 first day of deployment. [02] Mobilization will take place prior to first day of deployment. Badges, drug testing, and safety training required before. [03] Safety glasses to have foam gasket. [04] CCS discussed proposed panel layout and Geotechnology agreed that given the low slope (5%) that downslope orientation is not as critical. CCS to provide revised proposed panel layout. [05] All CCS vehicles will need magnetic signage. [06] CCS trailer can be left on-site. [07] AMS to provide operator for deployment. [08] AMS lag from liner start to clay placement is about 6 days. [09] CCS will have tensiometer certifications on-site and provided to Geotechnology. [10] All pipe boots are to be welded to HDPE gas vent pipe as shown in detail. [11] There are some repairs needed in the existing HDPE lined ponds. CCS will patch while on-site. [12] CCS [NMA] site extension has been filed, process of finalize site meeting and agreement with local labor union. [13] Expected manpower on-site is 12x workers working 10 hours+/- per day, 6x days a week with 7th day as a make-up day. [14] Any disturbed are requiring re-compaction to be looked at on case-by-case basis with GEO/AER. [15] Mr. Matt Garland - CCS General Superintendent will be coordinating the final schedule. [16] R. Clark will go out to pond to inspect progress and check on condition of delivered materials.
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03 CAP VENT PRE-CON MEETING

2012-05-08	NEW - Meeting after Progress Meeting with Mr. Bill Kelly - Illini Drilled Foundations [IDF]. [01] 05-14 first day of deployment. [02] Discussion of submittal and installation of the cap vents. [03] IDF will have different size spacers on site to accommodate change in the bore hole size. [04] Drill rig will have approximately 50 FT tall mast. [05] IDF can adjust mast a few degrees to accommodate for the slope on the ash pond. If required AMS will level out area. [06] Any disturbed are requiring re-compaction to be looked at on case-by-case basis with GEO/AER. [07] Duration estimated at 3x days for all cap vents. [08] Safety glasses to have foam gasket. [09] B. Kelly will go out to pond to inspect progress and check slope.
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09 ADJACENT PROPERTIES AND PCP LINE**01 GENERAL**

2012-05-08	OPEN - [01] Excavation plan is to be prepared by professional engineer. [02] VES-01 for Bentonite M. Wagstaff indicated is approved [reference 12.1.09-2012-05-08 EWO-09 below]. [03] P. Zinsious indicated manhole as shown on drawings not a standard size. Brief discussion - M. Wagstaff indicated any [close] standard size is acceptable if the buoyancy calculations are approved. [04] Review of process if the rock is not "dig-able". M. Wagstaff indicated that Hanson understands the rock may not "dig". Once work begins, and if the rock does not "dig", the PCP can be raised [partially] or all the way out of the rock and set on the rock. Elevation [and alignment] can be made in the field. Pump structure can be made in sorter ring height to accommodate the change in elevations if necessary.
2012-05-01	OPEN - BT Drainage [01] Deepest projected part of excavation is 22-23 FT. [02] J. Denham indicated the rock may not dig, requested AER consider raising the line above the bedrock line.

2012-04-24 OPEN - no issues. Excavation plan submitted by Koberstein [part time at meeting].
 [01] General discussion trench width.
 [02] Stockpile top soil.
 [03] 80 FT/D production rate. Duration of work projected 50D.
 [04] Pump groundwater to Pond A or Pond B.
 [05] Alignment of pipe is flexible [for filed conditions]. Curve or "angle" OK.
 [06] KCI recommended double cleanouts for ease. AER indicated single [as designed] OK.
 [07] AER reviewed pipe can go directly into the manhole [shown on drawings as adjacent].
 [08] Spoils can be "lost" on the berm embankments.

10 QUALITY CONTROL

01 GENERAL

2012-05-08 OPEN - no issues
 2012-05-01 OPEN - no issues
 2012-04-24 OPEN - no issues

02 ASH

2012-05-08 OPEN - no issues. On going process. Compaction testing possibly scheduled for 05-09.
 2012-05-01 OPEN - no issues. On going process.
 2012-04-24 OPEN - no quality issues. R. Porter report the wet ash in the east area of the pond is going to require 2-3 days [stacked] to drain the water off. J. Boone indicated this area of pond is further away from the discharge inlet, thus reason for the fines [not settle out in other areas of the pond]. The wet ash is being stacked and spread out to dry.

03 CLAY

2012-05-08 OPEN - no issues.
 2012-05-01 OPEN - no issues.
 2012-04-24 OPEN - no issues.

11 SCHEDULE REVIEW

01 SCHEDULE

2012-05-08 OPEN - Review of schedule to date.
 [01] Documented rain days: 05-04 and 05-07. P. Zinsious published e-mail with dates [on 05-07 shows total 5x days so far].
 [02] Actual percent completion on ash pond sectors: A = 95%, B = 75%, C = 95%, D = 80%
 [03] 05-08 - Geomembrane Pre-Con Meeting [with AER and GEO during the Charah/AMS conference call].
 [04] 05-10 - projected date for GEO compaction testing.
 [05] 05-11 - J. Cravens off-site. GEO to have 2x men: Tim and Ron.
 [06] 05-14 - Massmann on site to survey ash cap certification and fence alignment for AER.
 [07] 05-14 - Lamac on site to survey/locate cap vents.
 [08] 05-29 - Chesapeake to begin work.
 2012-05-01 OPEN - Review of schedule 04-30.
 [01] Schedule critical path and look ahead reviewed.
 [02] Actual percent completion on ash pond sectors: A = 90%, B = 70%, C = 90%, D = 75%.
 [03] Activity No. 106 cap vents still scheduled for 05-14 as shown on 04-30 schedule.
 [04] Compaction testing for ash and surveying to be coordinated for same time if possible. Surveyor can come out twice.
 [05] Build pads for cap vent drill rig.
 [06] Discussion on the liner schedule and Memorial Day holiday. Verify day after the holiday.
 2012-04-24 OPEN - Review of schedule 04-18.
 [01] Schedule to be adjusted and corrected for end date calculations.
 [02] 05-02 - Pipe relocation start.
 [03] 05-04 - Massmann to survey.
 [04] 05-07 - Begin demolition outfall structure. AMS to set scrap steel in plant yard. Duration 2D include flow able fill.
 [05] 05-07 - Illini Drilled to mob to site for cap vents.
 [06] 05-29 - Projected start date for the PCP. End date projection 09-11.

02 TIME AND MATERIAL

2012-05-08 OPEN - no issues
 2012-05-01 OPEN - no issues
 2012-04-24 OPEN - no issues

03 COORDINATION

2012-05-08 OPEN - no issues.
 2012-05-01 OPEN - no issues.
 2012-04-24 OPEN - no issues. Signs on site [ref. Item No. 14.20-2012-04-24 below].

12.0	COST AND BUDGET
01	CHANGE REQUEST ISSUES
2012-05-08	OPEN - EWO list reviewed, numbers and descriptions to be corrected in minutes.
2012-05-01	OPEN - no issues.
2012-04-24	OPEN - no issues.
02	AMS PAY APPLICATION
2012-05-08	OPEN - M. Wagstaff approved the draft pay-app for submittal as invoice. AMS to send copy of draft to J. Cravens.
2012-05-01	OPEN - M. Wagstaff indicated signed off with AER, should be reviewed by EOW. Invoice for stored materials on the HDPE liner.
2012-04-24	OPEN - M. Wagstaff indicated 10% will be held at the end on the job. AMS no issue. CLOSED
12.1	EXTRA WORK ORDERS
01	EWO-01 ELECTRIC TEMPORARY
2012-05-08	Work is completed. Cost was audited with subcontractor, AMS to provide partial credit [reference EWO-08 below].
02	EWO-02 ASH PLACEMENT - CAP MODIFICATIONS
2012-05-08	OPEN - In progress. Spoils can go into Ash Pond D, and on the slopes as clean. Material opt be monitored by GEO and AMS. Consensus is the ash will balance.
2012-05-01	OPEN - In progress. Spoils can go into Ash Pond D, and on the slopes as clean. Material opt be monitored by GEO and AMS. Consensus is the ash will balance.
2012-04-24	OPEN - AER to provide interim e-mail stating approval for this work to AMS.
03	EWO-03 COAL PILE
2012-05-08	OPEN - Work completed [05-08 dozer working to fine grade area], final grade for drainage to be finished.
2012-05-01	OPEN - Work completed. Area to be observed for drainage. Date corrected below 04-24.
2012-04-24	OPEN - Work completed. Some areas graded to "original soil" under coal pile. AMS will wait for rain to determine location of the drainage trenches. AER to provide interim e-mail stating approval for this work to AMS.
04	EWO-04 PIPE RELOCATION
2012-05-08	OPEN - work in progress. AMS briefly described process of moving pipe from existing elevation into the new trench. Pipe will be slinger on the end at current elevation and at the new elevation. Connector fitting for the manhole fitting on site 05-08.
2012-05-01	OPEN - In progress. Pipe is exposed, and ready to begin lowering. AMS recommending removal of the pipe to be demolished and filled with
2012-04-24	OPEN - M. Wagstaff published elevations. [Current progress: pipe exposed along the south and at turn of east side pond.] AER to provide interim e-mail stating approval for this work to AMS.
05	EWO-05 ELECTRIC FEEDER
2012-05-08	OPEN - in progress. AMS setting up meeting to audit price with AAA Electric. M. Wagstaff request combine EWO with EWO-07.
2012-05-01	OPEN - in progress. Meeting after progress meeting with AAA Electric.
2012-04-24	OPEN - in progress. AAA to be on site to inspect MCC /switchgear room. Meeting after [part of] this progress meeting.
06	EWO-06 POND A TRENCH
2012-05-08	NEW - Work completed for trench excavation. The weir structure "stop logs" are to be installed in Pond A and Pond B.
07	EWO-07 ELECTRIC OVERHEAD
2012-05-08	NEW - in progress. AMS setting up meeting to audit price with AAA Electric. M. Wagstaff request combine EWO with EWO-07.
08	EWO-08 CREDIT TO EWO-01
2012-05-08	NEW - In progress [reference above].
09	EWO-09 BENTONITE VES-01
2012-05-08	NEW - M. Wagstaff indicated approval. Hanson has provided submittal review, and AMS in process of reply.
10	EWO-10 FLOW-ABLE FILL CREDIT
2012-05-08	NEW - Discussed previously [reference Item No. 09.01-2012-04-24 No. 07] pipe can be removed and go direct to manhole, eliminating the flow-able fill.
11	EWO-11 BUILDING SPOILS REMOVAL
2012-05-08	NEW - Excavation along Station 29+00 at fence line uncovered building spoil material within limits of the ash pond. M. Wagstaff requested exploratory holes dug along the fence line to determine the extent of the foreign material. AMS will dig holes at 100 FT intervals, and if something is uncovered will go to 50 FT intervals to determine the extent of the material. AMS will excavate the material to a predetermined depth by GEO/AER. Material excavated out will be disposed of within the ash pond, in the are east section where lower elevations are still being worked. A dump truck will have to be used to transport the material within the pond. Material adjacent to the pond that extends under the road is to remain in place and not to be disturbed.

13	ACTION ITEMS - AER	
01	AMEREN [AER]	
	2012-05-08	[20] Drawing S-386 SHT 5 RF - the survey coordinates are reversed. [OPEN - Hanson to provide revised drawing - in progress]
	2012-05-01	[20] Drawing S-386 SHT 5 RF - the survey coordinates are reversed. [OPEN - Hanson to provide revised drawing - in progress]
	2012-04-24	[23] NEW - M. Wagstaff to provide drawings for the existing MCC. [OPEN - drawings received. AAA may require additional drawings. M. Wagstaff offered to post on ftp. [CLOSED - reminder site cleared 5th of month by AER]
	2012-05-08	[03] Fire protection [CLOSED - Old switchgear room will be emergency shelter. J. Tasich has supplies to set in place 04-24]. Signs will be posted, and a plan will be finalized.
	2012-05-01	[20] Drawing S-386 SHT 5 RF - the survey coordinates are reversed. [OPEN - Hanson to provide revised drawing - in progress]
	2012-04-24	[23] NEW - M. Wagstaff to provide drawings for the existing MCC. [OPEN - drawings received. AAA may require additional drawings. M. Wagstaff offered to post on ftp.
14	ACTION ITEMS - AMS	
01	ASH MANAGEMENT [AMS]	
	2012-05-08	None
	2012-05-01	None
	2012-04-24	[20] [REOPEN] P. Zinsious to provide draft. CLOSED - signs on site, ready to be installed].
15	PRODUCTION	
01	GENERAL	
	2012-05-08	OPEN - no issues
	2012-05-01	OPEN - no issues
	2012-04-24	OPEN - no issues
02	ASH	
	2012-05-08	OPEN - no issues. Estimated 77,320 CY EOD 05-07.
	2012-05-01	OPEN - no issues. Estimated 70,988 CY EOD 04-30.
	2012-04-24	OPEN - no issues. Estimated 55,452 CY EOD 04-23. General discussion CY are estimates and more than likely under-reported. AER inquired how AMS plan ash to grade - projection is site may possibly balance. M. Wagstaff concern ash placement may not make schedule.
03	CLAY	
	2012-05-08	OPEN - no issues - this activity not begun.
	2012-05-01	OPEN - no issues - this activity not begun.
	2012-04-24	OPEN - no issues - this activity not begun.
16	DOCUMENTS TRANSMITTED	
	2012-05-08	None
	2012-05-01	[01] AMS - Schedule dated 04-30 - critical path [02] AMS - Schedule dated 04-30 - look ahead [03] AMS - Schedule dated 04-30 - full [03] AMS - Value Engineering Submittal VES-01 - Bentonite cap option [04] AMS - Contact list HUT-APD-CON-2012-04-30
	2012-04-24	[01] AMS - Electrical drawing package [1x copy 23 x 36] to AAA [02] AMS - Schedule dated 04-18 [03] AMS - Koberstein [1x copy] to AER "Excavation Plan" [04] AMS - Contact list HUT-APD-CON-2012-04-24
17	DOCUMENTS REVIEW ONLY	
	2012-05-08	None
	2012-05-01	None
	2012-04-24	None

18

NEXT PROGRESS MEETING

Next meeting will be held in one week - Tuesday, May 15, 2012 at Hutsonville

19

DISTRIBUTION - STANDARD**AER**

- 01 Mr. Mike Wagstaff
- 02 Mr. Mike Stewart
- 03 Mr. Bob Muesenfechter

GEO

- 01 Ms. Anna Saindon
- 02 Mr. Eric Neuner
- 03 Mr. Joe Cravens

AMS

- 01 Mr. Jimmy Boone
- 02 Mr. John Denham
- 03 Mr. Joko Tasich
- 04 Mr. Randy Porter

If there are any corrections, modifications, additions, or deletions please notify the sender by e-mail at pzinsious@ashmanagementservices.com

PHOTO LOG



Photograph 1 ▲ - Digging trench in Ash Pond A facing west



Photograph 2 ▲ - Trench completed in Ash Pond A facing northwest

Photographs taken by Joseph Cravens (May 7-10, 2012) and Ron Williams (May 10-11, 2012) of Geotechnology, Inc.

JRC



Photograph 3 ▲ - Digging new grade for 18" HDPE pipe facing east



Photograph 4 ▲ - Grading Quadrant B facing southeast

Photographs taken by Joseph Cravens (May 7-10, 2012) and Ron Williams (May 10-11, 2012) of Geotechnology, Inc.

JRC



Photograph 5 ▲ - Final grading Quadrant A facing east



Photograph 6 ▲ - Placing stop logs in Ash Pond B outfall facing southwest

Photographs taken by Joseph Cravens (May 7-10, 2012) and Ron Williams (May 10-11, 2012) of Geotechnology, Inc.

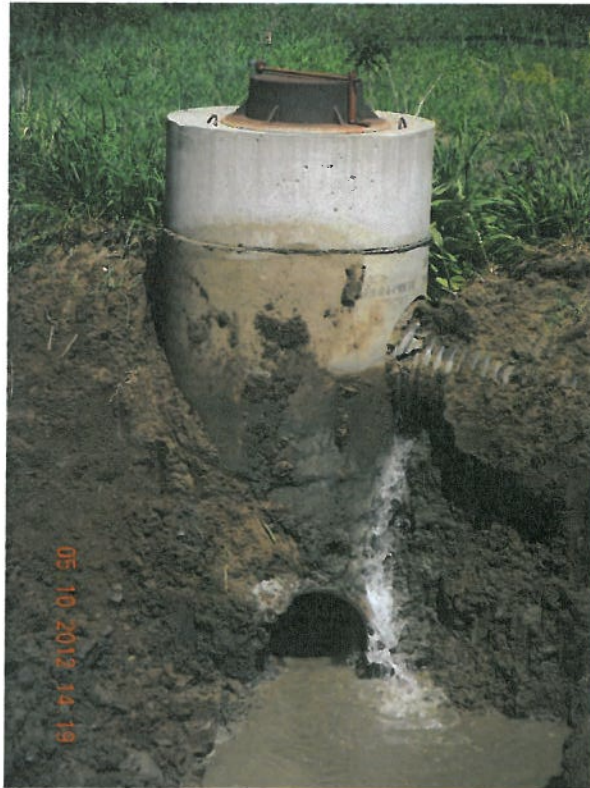


Photograph 7 ▲ - Rolling Quadrants A and C facing south



Photograph 8 ▲ - Compaction testing facing east

Photographs taken by Joseph Cravens (May 7-10, 2012) and Ron Williams (May 10-11, 2012) of Geotechnology, Inc.



Photograph 9 ▲ - Removing drainage pipe from outfall structure facing northeast



Photograph 10 ▲ - 18" HDPE pipe relocation facing southeast

Photographs taken by Joseph Cravens (May 7-10, 2012) and Ron Williams (May 10-11, 2012) of Geotechnology, Inc.

JRC



Photograph 11 ▲ - Overview of Ash Pond D facing southeast



Photograph 12 ▲ - Overview of Ash Pond D facing east

Photographs taken by Joseph Cravens (May 7-10, 2012) and Ron Williams (May 10-11, 2012) of Geotechnology, Inc.

JRC



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Energy Resources

FROM: Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DATE: May 21, 2012

SUBJECT: Weekly Summary Report for May 14, 2012 to May 18, 2012

PROJECT: Hutsonville Ash Pond D Closure
Crawford County, Hutsonville, Illinois
Geotechnology Project No. J019896.01

The following is a weekly summary of the site activities at the referenced site.

Weather

The weather was generally sunny and dry. Temperature (°F) lows ranged from 55 to 70°F, and temperature highs ranged from 76 to 84°F. Weather delays did not occur this week.

Construction Activities

Ash grading, 18-inch HDPE gravity drainage pipe relocation, compaction testing, and surveying, and west fence line cleanup occurred this week. Ash and embankment grading occurred generally on the eastern half of Ash Pond D. Compaction testing generally occurred on the eastern half of Ash Pond D on May 16 and May 17, 2012. Refer to compaction field forms for additional information. Massmann Surveying surveyed ash grade on the western portion of Ash Pond D. Lamac Engineering Co. surveyed the seven cap vent locations. The 18-inch HDPE gravity drainage pipe was backfilled at its new grade, except for the last 50 ft. of pipe besides the manhole. This section of pipe was left uncovered until the manhole ingress is completed. The fill that was found along the west fence line in Quadrant C, consisting of concrete, brick, rebar, and steel plates, was excavated and buried in the center, eastern half of the pond. Approx. 1 ft. of ash and remaining vegetation was removed along the west fence line, and was replaced with embankment material. The box culvert connecting Pond D and Pond C was cleaned, and the proposed rip rap pad and slopes were roughed in at the box culvert egress. More of the old ADS corrugated pipe was removed and disposed of throughout the perimeter of the pond.

Equipment and Personnel On-Site

2-CAT D6N Bulldozer
CAT D6H Bulldozer
CAT 325C Excavator
John Deere 9520 Tractor with 2-1812C John Deere Scrapers (Pans)
Hyundai 290 LC-9 Long Reach Excavator (demobilized on May 15, 2012)
Sky Track 6036 Forklift
Wacker RT Trench Roller
Water Truck
Watson 1500 Drill Rig (Illini Drilling)

Geotechnology, Inc. – Joe Cravens
Ash Management Services, LLC (AMS) – Randy Porter, Jimmy Boone, Robert Dunkley, Anthony Driver, and James Marks
Belt Construction, Inc. – Jared Belt, Nick Walker, Kevin Flynn, Brad Bolenbaugh, and Shelby Belt
Charah, Inc. – Joe Tasich
Massmann Surveying – Gary Delf and Rick Koeac
Lamac Engineering Co. – Jake Lewis and John Porter
Visitors –Refer to the Visitor's Log for visitors, dates, and times.
Refer to the meeting minutes for additional personnel.

Meetings

The weekly progress meeting was held on Tuesday, May 15, 2012. Refer to the attached meeting minutes for additional information.

Photographs

A photograph log with select photographs obtained this week is attached.

Materials

Ash and embankment material within the footprint of Ash Pond D on the eastern half was graded.

Testing/Sampling

Moisture and density testing occurred on May 16 and May 17, 2012. Refer to compaction field forms for additional information. Survey of the ash pond grade on the western half of Ash Pond D occurred May 14, 2012. Survey of the cap vent locations occurred May 17, 2012.

Weekly Summary Report
May 21, 2012
Page 3

J019896.01

Calibration Records

Calibration information was not obtained for equipment this week.

Signature of CQA Officer

Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.



DAILY REPORTS

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 5/14/12

TIME: Arrive: 6:30 AM Depart: 4:30 PM Travel: 1.0 hr Total: 10.75 hrs (0.25 hr for lunch)
Weather: Sunny, 65° AM, 80° PM Contractor: AMS Subcontr./Supplier: Belt Construction
Equipment Working: 2-D6N Dozers, 9520 Tractor, 1-1812C Pan, 290 LC-9 Excavator, Water Truck,
Site Activities / Observations / Contacts / Notes: 325C Excavator

The D6N (Brad) backfilled the relocated 18" HDPE Pipe along the south embankment in Section C, spread out cut embankment material for the scraper to pick up in Section B, and performed finish grading in Section D. The D6N (Iared) graded Section B, and performed finish grading in Section D. The 9520 cut ash and embankment material in Section B, and moved the cut material to the last major fill area located at the center axis of all the Sections. The 9520 also began cutting material in Section D. The 290 LC-9 (Kevin) moved the remaining wet ash in Section B for decanting. The 325C began backfilling the relocated 18" HDPE Pipe along the south embankment in Section D.

Gary and Rick with Massmann Surveying were here to survey (check) the grid points that were tested for compaction on the west side of the Pond in Section A and C.

Anthony and James checked PGL grades with a rotating laser in Section B and D, where the PGL stakes were offset.

The entire 18" HDPE Pipe has been relocated and the slope was checked by Lamac. The entire pipe has a positive fall towards the manhole. The materials for ingress into the manhole should be here Thursday. The old ADS pipe still remains in the east embankment.

Marc Downs was laid off last Friday (5/11/12) and the 290 LC-9 will leave tomorrow (5/15/12).

Additional Comments: The old pipe for the MW was cut off, capped, and buried 3' under grade.

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

Randy Proctor AMS
Contractor Representative Company
Randy Proctor 5-14-12
Signature Date
Anna Sandlen 5-21-12
Geotechnology, Inc. Date
[Signature]
Engineer's Signature

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: JO19896.01 Task: 2370
 Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: - Client: Ameren ER Date: 5/15/12

TIME: Arrive: 6:30 AM Depart: 6:00 PM Travel: 1.0 hr Total: 12.25 hrs (0.25 hr for lunch)

Weather: Sunny, 70° AM, 82° PM Contractor: AMS Subcontr./Supplier: Belt Construction

Equipment Working: 2 - D6N Dozers, 325C Excavator, 9520 Tractor, 1-18/2C Pan, Water Truck

Site Activities / Observations / Contacts / Notes: _____

The D6N (Brad) graded Section B, and performed finish grading in Section D. The D6N (Jared) graded Section B, performed finish grading in Section D, and graded the embankment material over the backfilled relocated 18" HDPE Pipe along the south and east berms in Section C and D. The grades along the embankment were checked by Randy and James with a rotating laser. The 325C finished backfilling the 18" HDPE Pipe and leveling the stockpiled berm material, as well as ripping out the old ADS Drainage Pipe that remained in the east embankment. The last 50' of HDPE Pipe was left open towards the manhole in Section B to allow the pipe to be moved, if needed, when sealing the pipe into the manhole occurs. The 9520 continued cutting embankment material in Section C and D, and filling the major fill area along the Section B and D axis, or border. James cleaned the 290LC-9 and it was hauled off site. Jake and Randy setup the signs for the emergency shelter.

Steve Bluemner was here with Mike, and we gave Steve a tour of the site, as well as inspected Ponds B, C, and D, and the Bottom Ash Pond. I had a meeting with Paul to discuss edits for current submittals and dates for future submittals, and went over AAA's bid changes for the overhead electric and electric feeders. This will be relayed onto Mike when determining if the bid will be accepted or not. John Boyer's (BTD) bid was accepted. However, all HDPE Piping might be switched to DR PVC pipe due to the excavation conditions. *Field Adjustment: the ash grade was left 6" high between Sta. 22+00 and 23+00 in order to cover the relocated HDPE Pipe. The slope in this area was adjusted accordingly. For the rest of this week,

Additional Comments: Belt is working 10 hour days in order to complete ash placement by Friday.

Randy Porter
 Contractor Representative
Anna Saindon
 Signature
 Geotechnology, Inc.
 Engineer's Signature

AMS
 Company
5-15-12
 Date
5-21-12
 Date

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 5/16/12

TIME: Arrive: 6:30 AM Depart: 6:15 PM Travel: 1.0 hr Total: 12.5 hrs (0.25 hr for lunch)

Weather: Sunny, 70° AM, 80° PM Contractor: AMS Subcontr./Supplier: Belt Construction
Equipment Working: 2-D6N Dozers, 325C Excavator, 9520 Tractor, 1-1812C Pan, Water Truck

Site Activities / Observations / Contacts / Notes:

The D6N (Brad) continued grading Section B. The D6N (Jared) continued grading Section B, and performed finish grading in Section D and along the south and east embankments. The D6N also cleaned up excess material along the west fence line. The 9520 continued filling the major fill area along Section B and D axis, and performed cutting in Section B, NE embankment, south embankment, and along the west fence line. After cutting 1.0' along the fence line, the 9520 filled the cut area with embankment material. The 325C completed cutting the NE embankment, and spreading out piled ash in Section B. All embankments surrounding the Pond are now to grade. The 325C removed the remaining concrete casing beside the manhole in Section B and buried it in the major fill area. The 325C ripped out the remaining old ADS Pipe in the SW corner in Section C. It was removed up to 2.5' from the gate in the fence. The two full dumpsters were hauled off and a third dumpster was brought in. The 325C filled it with ADS Pipe. The 325C went along the south embankment, smoothing out the crest and the slope with a crane mat. The 325C dug test holes along the west fence line to determine the volume of fill that was found, consisting of concrete, bricks, steel plates, and rebar. Once the perimeter of the fill was determined, it was dug out and piled in Section C. A dumptruck was brought in and the 325C loaded the fill. The dumptruck dumped the fill in the major fill area. After the fill was moved, the 9520 piled embankment material beside the hole to be filled. It will be filled tomorrow morning. James, Randy, and Anthony checked PGL grades with the laser. Tim Wilson was here for compaction testing.
Note: Samples were taken from the CBS for physical and chemical testing on Monday.

Additional Comments: Randy will be off the next 2 days.
Jimmy Boone to replace him.

Randy Puster
Contractor Representative

AMS
Company

Anna Saridon
Signature
Geotechnology, Inc.

5-16-12
Date
5-21-12
Date

Anna Saridon
Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: JO19896.01 Task: 2370
 Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: - Client: Ameren ER Date: 5/17/12

TIME: Arrive: 6:30 AM Depart: 6:00 PM Travel: 1.0 hr Total: 12.25 hrs (0.25 hr for lunch)

Weather: Sunny, 55° AM, 76° PM Contractor: AMS Subcontr./Supplier: Belt Construction

Equipment Working: 2-D6N Dozers, 325C Excavator, 9520 Tractor, 1-1812C Pan, Water Truck

Site Activities / Observations / Contacts / Notes: Jimmy Boone as Site Supervisor for Randy.

The D6H still remains on the site, but it hasn't been used and is parked in the const. yard.

The D6N (Brad) continued grading Section B. The D6N (Jared) continued finish grading Section

D, grading Section B, and cleaned up more excess material along the west fence line. The 325C

filled the excavated hole beside the west fence line in Section C with embankment material,

and leveled the placed embankment material along the entire fence line with a crane mat. The

325C also removed the additional precast box connected to the box culvert on the west side

of the pond, and dug a 6'x6' pad in front of the box culvert, with 1:1 slopes, for riprap.

At lunch, the 325C moved remaining crane mats in the pond to the construction yard and

parked the equipment. Kevin Flynn (Belt) was laid off afterwards (not enough excavator

work left). The 9520 finished scraping and filling along the west fence line, continued

cutting high spots in Section B, cutting stockpiled embankment material outside of the pond,

and filling the major fill area along Section B and D axis.

Remaining Personnel: Lamac staked the cap vent locations with 25' offsets.

Tim Wilson finished 2nd Phase of Compaction Testing. There

are approx. 40 points left to test. Illini Drilling had their

drill rig delivered - Watson 1500. Illini will drill the

dewatering wells for BTD next week after the cap vents.

Robert Dunkley (AMS) - Teamster Shelby Belt was here to meet with AMS. Anthony Driver

James Marks (AMS) - Laborer will be leaving this job site after this week. Johnny McGrew

trained with Joko - new AMS operator for the CBS.

Additional Comments: James picked up remaining debris
along the west fence line.

Anthony Driver

Contractor Representative

A.M.S.

Company 5-17-12

Signature

Anna Samdon

Date

5-21-12

Geotechnology, Inc.

Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 5/18/12

TIME: Arrive: 6:30 AM Depart: 3:30 PM Travel: 1.0 hr Total: 9.75 hrs (0.25 hr for lunch)

Weather: Sunny, 55° AM, 84° PM Contractor: AMS Subcontr./Supplier: Belt Construction

Equipment Working: 2- D6N Dozers, 9520 Tractor, 1-1812C Pan, Water Truck

Site Activities / Observations / Contacts / Notes: —

All equipment focused their work in Section B. Both D6N Dozers performed finish grading in Section B. The 9520 continued cutting high spots in B, and filling the major fill area on the Section B and D border. James Marks cleaned the 325C and D6H in the yard. Robert Dunkley focused Dust Control in Section B.

Jimmy Boone didn't come to the site today; Anthony Driver was the temporary Super.

No additional visitors, deliveries, schedule updates, or work items.

The Pond should be to grade by Monday or Tuesday.

Additional Comments: —

Anthony Driver AMS
Contractor Representative Company
Anthony Driver Signature Date 5-18-12
Anna Samdon Date 5-21-12
Geotechnology, Inc. Date
Anna Samdon Engineer's Signature

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Hutsonville Power Station - Ash Pond D closure
Progress Meeting No. 9 Minutes
Tuesday, May 15, 2012

01 PUBLICATION	
Publish date: 2012-05-18 Distribution: E-mail only Location: Hutsonville Power Station AER PO: 567523 R2	Submitted by: P. Zinsious Notes taken by: P. Zinsious AMS-Charah File No. HUT-APD-MTG-MIN-2012-05-15-PM-08 AMS-Charah Contract: 00030-01 AMS-Charah GL: 4116-06-6120

02	ATTENDEES			
01	Mr. Mike Wagstaff	Ameren	618-343-7790	mwagstaff@ameren.com
03	Mr. Steve Bluemner	Ameren	314-972-4160	sbluemner@ameren.com
02	Mr. Joe Cravens	Geotechnology	314-568-6628	j_cravens@geotechnology.com
04	Mr. John Boyer	BT Drainage	217-822-6593	john@btdrainage.com
06	Mr. Joko Tasich	Charah	502-649-7633	jtasich@charah.com
08	Mr. Jimmy Boone	AMS - ARM	502-574-5465	jboone@ashmanagementservices.com
09	Mr. Randy Porter	AMS - SM	502-554-5230	rporter@ashmanagementservices.com
10	Mr. Paul Zinsious	AMS - PCM	502-640-2918	pzinsious@ashmanagementservices.com

03 ABBREVIATIONS	
AER AMS BNSF CBT EAP EOD EOM EOW EDTS EDC EWO HDPE HRS LOTO NMA OSHA PCP PO RHOM SPOC T/M TBD TD WPA	Ameren Energy Resources Ash Management Services Burlington Computer Based Training Emergency Action Plan End of [the] Day End of [the] month End of [the] week Energy Delivery Transmission Services Estimated Date [of] Completion Extra Work Order High Density Polyethylene Hours Lock Out Tag Out National Maintenance Agreement Occupational Safety Health Administration Perforated Collector Pipe Purchase Order Routine Handling, Operation, and Maintenance Single Point of Contact Time and Materials To Be Determined Transmission Dispatch Worker Protection Assurance

04 DOCUMENTATION	
	Minutes are documented weekly, and the publication have a "rolling record" of the immediate past three weeks. Each week the oldest drops off and the current week is added to the minutes. Items are categorized as either "NEW", "OPEN", "CLOSE", or in case the an Item has to be re-published after closed the previous week - "REOPEN".

05 SAFETY - HOUSEKEEPING	
01 ACCIDENTS OR INJURIES	
2012-05-15 2012-05-08 2012-05-01	OPEN - no issues. OPEN - no issues. OPEN - no issues.
02 WORKER PROTECTION ASSURANCE	
2012-05-15 2012-05-08 2012-05-01	OPEN - no issues. None projected for 2x week look ahead or for Illini Drilled [IDF]. OPEN - no issues. OPEN - no issues. AAA electric to be on site 05-01 to go over EWO details.

06 MANPOWER [HEAD COUNT]

01 CREW SIZE

2012-05-15 OPEN - AMS and Belt Construction on site. AMS Focus [training program] Site Manager Mr. Anthony Driver on site.

Current General discussion on what the AMS-Charah focus program is to train site Managers.

[01] Geotechnology [work hours not included in OSHA Log above]

[00] Pipe

[00] Mechanical

[00] Electrical

[00] Cement

[01] Laborers

[04] Operators [long boom operator not required]

[01] Teamsters

[00] Survey

[02] Foreman [Full time]

[09] Total

2012-05-08 OPEN - AMS and Belt Construction on site. AMS Focus [training program] Site Manager Mr. Anthony Driver on site.

Current Correction in crew size for 05-01 below [not discussed at the meeting]

[01] Geotechnology [work hours not

[00] Pipe

[00] Mechanical

[00] Electrical

[00] Cement

[01] Laborers

[05] Operators

[01] Teamsters

[00] Survey

[02] Foreman [Full time]

[10] Total

2012-05-01 OPEN - AMS and Belt Construction on site. Koberstein declined. Corrected count for 04-24 below.

Current

[01] Geotechnology

[00] Pipe

[00] Mechanical

[00] Electrical

[00] Cement

~~[00] Laborers~~ [01] Laborers

[05] Operators

[01] Teamsters

[00] Survey

[01] Foreman [Full time]

~~[08] Total~~ [09] Total

02 WORK HOURS

2012-05-15 OPEN - Standard hours - 7:00 AM CT to 3:30 PM CT. Belt to work 4x D 10x HRS due to dry weather [Internal cost to AMS]. When Chesapeake comes on board, they may work 12x HRS a day maximum due to instrumentation calibration procedures required in the specifications.

2012-05-08 OPEN - Standard hours - 7:00 AM CT to 3:30 PM CT. Chesapeake may work extended hours.

2012-05-01 OPEN - Standard hours - 7:00 AM CT to 3:30 PM CT. Corrected time below.

03 OVER TIME

2012-05-15 OPEN - Belt has projected OT per Item No. 06.02-2012-0515 above.

2012-05-08 OPEN - None projected at this time. Referencing Item No. 06.02-2012-05-07 above - Chesapeake may have OT.

2012-05-01 OPEN - None projected.

04 TRAILER [AND GENERAL CONDITIONS]

2012-05-15 OPEN - no issues.

2012-05-08 OPEN - no issues.

2012-05-01 OPEN - no issues.

07 PREVIOUS

01 SUBCONTRACTS

2012-05-15 OPEN - no issues. BT Drainage by EOW.

2012-05-08 OPEN - no issues. BT Drainage in progress.

2012-05-01 OPEN - no issues. Koberstein declined. Replacement subcontractor in review - BT Drainage.

[13] Dewatering will be by well point. Illini Drilled will drill well points [next week].

[14] Issue of water volume from the dewatering operation. Could possibly be millions of gallons. J. Boyer indicated amount not known, but possibly the areas of the bedrock in a "valley" might be able to be pumped down, but this depends on the length of the "valley". Pumps in the well points will operate 24/7, in any order, one or more at a time. In the beginning all pumps will be operating. This may create an issue for the adjacent property owner [farmer] who pumps ground water for irrigation.

[15] Issue of water volume disposal into the ponds. M. Wagstaff will research what is required for pumping into the ponds and what is required for the pond elevation relative sampling of the discharge by AER [and paid for by AER].

[16] The well point will pump system will have safety fence, light, and the power cord above ground in a conduit.

[17] Delivery of the dewatering sump structures are 2 WKS [after approval].

[18] Discussion of the diameter and the thickness of the manhole barrel. M. Wagstaff indicated as long as buoyancy [reference Item NO. 09.01-2012-05-08-03 below] good, alternates will be acceptable. Possible options are larger base and matt [concrete] at base such as a 4 FT DIA MH with larger base [J. Boyer indicated may install larger base for BTB Insurance].

09 ADJACENT PROPERTIES AND PCP LINE

01 GENERAL

2012-05-15 OPEN -
[01] See Item No. 08.04-2012-05-15 for PCP Pre-Con Meeting and submission of the Excavation Plan.
[02] Corrected ring description below in body of text.
[03] No tax exemption if materials not purchased in Illinois.

2012-05-08 OPEN -
[01] Excavation plan is to be prepared by professional engineer.
[02] VES-01 for Bentonite M. Wagstaff indicated is approved [reference 12.1.09-2012-05-08 EWO-09 below].
[03] P. Zinsious indicated manhole as shown on drawings not a standard size. Brief discussion - M. Wagstaff indicated any [close] standard size is acceptable if the buoyancy calculations are approved.
[04] Review of process if the rock is not "dig-able". M. Wagstaff indicated that Hanson understands the rock may not "dig". Once work begins, and if the rock does not "dig", the PCP can be raised [partially] or all the way out of the rock and set on the rock. Elevation [and alignment] can be made in the field. Pump structure can be made in ~~shorter~~ shorter ring height to accommodate the change in elevations if necessary.

2012-05-01 OPEN - BT Drainage
[01] Deepest projected part of excavation is 22-23 FT.
[02] J. Denham indicated the rock may not dig, requested AER consider raising the line above the bedrock line.

10 QUALITY CONTROL

01 GENERAL

2012-05-15 OPEN - no issues
2012-05-08 OPEN - no issues
2012-05-01 OPEN - no issues

02 ASH

2012-05-15 OPEN - no issues. J. Cravens Section A and C approximately 50 point for ash compaction density tests have been performed to date. All test have to date have passed in the range of 99% to 114% compaction. GEO technician Mr. Tim Wilson will be back on site tomorrow [05-16]. Massmann is to download files for GEO locations.

2012-05-08 OPEN - no issues. On going process. Compaction testing possibly scheduled for 05-09.

2012-05-01 OPEN - no issues. On going process.

03 CLAY

2012-05-15 OPEN - no issues. Samples taken yesterday [05-14]. The physical analysis will be by Holcomb and the chemical analysis will be by ARDL. Results should be in by next mid-week or before.

2012-05-08 OPEN - no issues.

2012-05-01 OPEN - no issues.

11 SCHEDULE REVIEW

01 SCHEDULE

2012-05-15 OPEN - Review of schedule to date. M. Wagstaff on vacation 05-15 to 05-22.
[01] Actual percent completion on ash pond sectors: A = 100%, B = 90%, C = 100%, D = 85%
[02] 05-11 - Lamac survey for "as-built" [record drawings] of the pipe relocation.
[03] 05-29 - BTB start date projection for PCP.
[04] Brief discussion electrical [AAA] and mechanical [FWI] scope.

2012-05-08 OPEN - Review of schedule to date.
[01] Documented rain days: 05-04 and 05-07. P. Zinsious published e-mail with dates [on 05-07 shows total 5x days so far].
[02] Actual percent completion on ash pond sectors: A = 95%, B = 75%, C = 95%, D = 80%
[03] 05-08 - Geomembrane Pre-Con Meeting [with AER and GEO during the Charah/AMS conference call].
[04] 05-10 - projected date for GEO compaction testing.

06	EWO-06	POND A TRENCH
2012-05-15	No issues. Work 100% complete.	
2012-05-08	NEW - Work completed for trench excavation. The weir structure "stop logs" are to be installed in Pond A and Pond B.	
07	EWO-07	ELECTRIC OVERHEAD
2012-05-15	OPEN - in progress. AMS and AAA meeting yesterday [05-14], review after Progress Meeting.	
2012-05-08	NEW - in progress. AMS setting up meeting to audit price with AAA Electric. M. Wagstaff request combine EWO with EWO-07.	
08	EWO-08	CREDIT TO EWO-01
2012-05-15	OPEN - in progress.	
2012-05-08	NEW - in progress [reference above].	
09	EWO-09	BENTONITE VES-01
2012-05-15	OPEN - in progress. M. Wagstaff indicated that yesterday [05-14] Hanson approved the AMS response comments to the Hanson submittal review. GSE to provide pricing and AMS to calculate EWO.	
2012-05-08	NEW - M. Wagstaff indicated approval. Hanson has provided submittal review, and AMS in process of reply.	
10	EWO-10	FLOW-ABLE FILL CREDIT
2012-05-15	OPEN - in progress.	
2012-05-08	NEW - Discussed previously [reference Item No. 09.01-2012-04-24 No. 07] pipe can be removed and go direct to manhole, eliminating the flow-able fill.	
11	EWO-11	BUILDING SPOILS REMOVAL
2012-05-15	OPEN - in progress. AMS to dig test holes by EOW.	
2012-05-08	NEW - Excavation along Station 29+00 at fence line uncovered building spoil material within limits of the ash pond. M. Wagstaff requested exploratory holes dug along the fence line to determine the extent of the foreign material. AMS will dig holes at 100 FT intervals, and if something is uncovered will go to 50 FT intervals to determine the extent of the material. AMS will excavate the material to a predetermined depth by GEO/AER. Material excavated out will be disposed of within the ash pond, in the are east section where lower elevations are still being worked. A dump truck will have to be used to transport the material within the pond. Material adjacent to the pond that extends under the road is to remain in place and not to be disturbed.	

13 ACTION ITEMS - AER [25]

01	AMEREN [AER]
2012-05-15	[20] Drawing S-386 SHT 5 RF - the survey coordinates are reversed. [CLOSED - drawing issued]
	[24] Research with Hanson PVC verses HDPE for the PCP [reference Item No. 08.04-2012-05-15-09].
	[25] Research with Hanson alignment of the discharge piping structure at the outfall man hole. AER original design took into consideration a "mixing zone". R. Porter indicated since the line pipe relocation alignment can be direct. Discussion of the grade to be field adjusted around the box if new location is approved.
2012-05-08	[20] Drawing S-386 SHT 5 RF - the survey coordinates are reversed. [OPEN - Hanson to provide revised drawing - in progress]
2012-05-01	[20] Drawing S-386 SHT 5 RF - the survey coordinates are reversed. [OPEN - Hanson to provide revised drawing - in progress]
	[23] NEW - M. Wagstaff to provide drawings for the existing MCC. [OPEN - drawings received. AAA may require additional drawings. M. Wagstaff offered to post on ftp. [CLOSED - reminder site cleared 5th of month by AER]

14 ACTION ITEMS - AMS [21]

01	ASH MANAGEMENT [AMS]
2012-05-15	[21] BTD/AMS VES-02 for PVC verses HDPE for the PCP [reference Item No. 08.04-2012-05-15-09].
2012-05-08	None
2012-05-01	None

15 PRODUCTION

01	GENERAL
2012-05-15	OPEN - no issues
2012-05-08	OPEN - no issues
2012-05-01	OPEN - no issues

MEETING MINUTES



Hutsonville Power Station - Ash Pond D closure Progress Meeting No. 9 Minutes Tuesday, May 15, 2012

01	PUBLICATION	Publish date: 2012-05-18 Distribution: E-mail only Location: Hutsonville Power Station AER PO: 567523 R2	Submitted by: P. Zinsious Notes taken by: P. Zinsious AMS-Charah File No. HUT-APD-MTG-MIN-2012-05-15-PM-08 AMS-Charah Contract: 00030-01 AMS-Charah GL: 4116-06-6120
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02	ATTENDEES				
01	Mr. Mike Wagstaff	Ameren	618-343-7790	mwagstaff@ameren.com	
03	Mr. Steve Bluemner	Ameren	314-972-4160	sbluemner@ameren.com	
02	Mr. Joe Cravens	Geotechnology	314-568-6628	j_cravens@geotechnology.com	
04	Mr. John Boyer	BT Drainage	217-822-6593	john@btdrainage.com	
06	Mr. Joko Tasich	Charah	502-649-7633	jtasich@charah.com	
08	Mr. Jimmy Boone	AMS - ARM	502-574-5465	jboone@ashmanagementservices.com	
09	Mr. Randy Porter	AMS - SM	502-554-5230	rporter@ashmanagementservices.com	
10	Mr. Paul Zinsious	AMS - PCM	502-640-2918	pzinsious@ashmanagementservices.com	

03

ABBREVIATIONS	
AER	Ameren Energy Resources
AMS	Ash Management Services
BNSF	Burlington
CBT	Computer Based Training
EAP	Emergency Action Plan
EOD	End of [the] Day
EOM	End of [the] month
EOW	End of [the] week
EDTS	Energy Delivery Transmission Services
EDC	Estimated Date [of] Completion
EWO	Extra Work Order
HDPE	High Density Polyethylene
HRS	Hours
LOTO	Lock Out Tag Out
NMA	National Maintenance Agreement
OSHA	Occupational Safety Health Administration
PCP	Perforated Collector Pipe
PO	Purchase Order
RHOM	Routine Handling, Operation, and Maintenance
SPOC	Single Point of Contact
T/M	Time and Materials
TBD	To Be Determined
TD	Transmission Dispatch
WPA	Worker Protection Assurance

04	DOCUMENTATION	Minutes are documented weekly, and the publication have a "rolling record" of the immediate past three weeks. Each week the oldest drops off and the current week is added to the minutes. Items are categorized as either "NEW", "OPEN", "CLOSE", or in case the an item has to be re-published after closed the previous week - "REOPEN".
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05	SAFETY - HOUSEKEEPING	<table> <tr> <td data-bbox="186 1675 217 1709">01</td><td data-bbox="240 1675 435 1709">ACCIDENTS OR INJURIES</td><td data-bbox="240 1715 505 1793"> 2012-05-15 OPEN - no issues. 2012-05-08 OPEN - no issues. 2012-05-01 OPEN - no issues. </td></tr> <tr> <td data-bbox="186 1814 217 1848">02</td><td data-bbox="240 1814 529 1848">WORKER PROTECTION ASSURANCE</td><td data-bbox="240 1854 1029 1932"> 2012-05-15 OPEN - no issues. None projected for 2x week look ahead or for Illini Drilled [IDF]. 2012-05-08 OPEN - no issues. 2012-05-01 OPEN - no issues. AAA electric to be on site 05-01 to go over EWO details. </td></tr> </table>	01	ACCIDENTS OR INJURIES	2012-05-15 OPEN - no issues. 2012-05-08 OPEN - no issues. 2012-05-01 OPEN - no issues.	02	WORKER PROTECTION ASSURANCE	2012-05-15 OPEN - no issues. None projected for 2x week look ahead or for Illini Drilled [IDF]. 2012-05-08 OPEN - no issues. 2012-05-01 OPEN - no issues. AAA electric to be on site 05-01 to go over EWO details.
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03 EMPLOYEE DRUG TESTING

2012-05-15	OPEN - no issues. J. Boone Indicated Chesapeake Containment will have list by next Progress Meeting. Some workers will already have AER badges in good standing. BT Drainage will have projection today [05-15]. The borrow site [CBS] will not require AER badge/CBT/DT, only AMS safety training.
2012-05-08	OPEN - no issues. Illini Drilled 1x workers to be scheduled for 05-08. AER to schedule 1x worker for Massmann and 2x TSI workers by EOM.
2012-05-01	OPEN - no issues. Illini Drilled 2x workers to be scheduled for 05-07.

04 AMS SAFETY

2012-05-15	OPEN - no issues. J. Tasich reported on site specific emergency action plan [EAP]: [01] Shelter area to be cleaned today [05-15], and will be on going procedure. [02] Water training was completed for installation of the "stop logs". [03] Refining Item No. 05.05-2012-05-15 below, bees swarming on GEO trailer, have been sprayed. Workers for AMS are to note on their new employee form allergies such as to bee stings. The employee is required to notify the Site Manager of such allergies. In the case of a bee [or insect sting], each worker is responsible to carry their own medication, such as an "epi-pen" [Epinephrine Auto-Injectors] accordingly.
2012-05-08	OPEN - no issues. Water training to take place today for work on Pond A and B [some work already completed before water in the areas of work on Pond A]. J. Tasich reported on site specific emergency action plan [EAP]: [01] Shelter areas has supplies. [02] AMS will have cleaned out [dirt from varmints, etc...]. [03] Signs will be posted by next week. [04] EAP will be reviewed at the safety luncheon [today]. AMS stepped out of meeting for a corporate "all-hands" safety conference call commemorating the following: [01] Charah/AMS 2,000,000 [two million] man-hours without lost time milestone. [02] Mine Safety Health Administration [MSHA] Sentinel of Safety Award for no lost time incidents in 2010 at Charah's Brickey's limestone grinding facility [we are supplier to Ameren Missouri]. [03] North Carolina Department of Labor Gold Level Safety Achievement Award for the Charah Roxboro site [a large site where Charah manages fly ash, bottom ash, gypsum, and landfill projects].
2012-05-01	OPEN - no issues. M. Wagstaff requested [in EWO] 'stop log' adjustments in Pond A and Pond B. AMS workers will receive water training for this work. Next week is the monthly safety luncheon.

05 HOUSEKEEPING

2012-05-15	OPEN - See Item No. 05.04-2012-05-15 above regarding bees swarming at GEO trailer.
2012-05-08	OPEN - no issues.
2012-05-01	OPEN - no issues. AMS policy all workers drug test before on AMS site. J. Tasich to set up site in Robinson, IL. Nomenclature for drug testing is such that a positive result = bad [drugs found] whereas a negative result = good [no drugs found].

06 PLANT ACCESS - CBT BADGE

2012-05-15	OPEN - no issues. Projection 1x to 2x at EOW, possibly 10x for BT. M. Wagstaff to issue gate log again. P. Zinsious request copy [not received].
2012-05-08	OPEN - no issues. M. Wagstaff e-mailed 6x WKS gate log to J. Denham, and he requested every 2x WKS. M. Wagstaff inquired on CC - for now J. Denham and P. Zinsious.
2012-05-01	OPEN - no issues. Badges [consultant] switch over no-issue. J. Denham requested AER provide gate log once a month.

07 VEHICLES ON SITE

2012-05-15	OPEN - no issues
2012-05-08	OPEN - no issues. GEO to bring "gator" [utility vehicle] on site. AMS to bring second pick up truck on site for A. Driver. AMS will provide safety flags for both vehicles.
2012-05-01	OPEN - no issues

08 OSHA LOG - WORK HOURS

2012-05-15	OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 05-014 No incidents or accidents. 1,945.50 RT 0,000.00 OT 1,945.50 TOTAL
2012-05-08	OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 05-07 1,555.50 RT 0,000.00 OT 1,555.50 TOTAL
2012-05-01	OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 04-30 1,327.00 RT 0,000.00 OT 1,327.00 TOTAL

01 CREW SIZE

2012-05-15 OPEN - AMS and Belt Construction on site. AMS Focus [training program] Site Manager Mr. Anthony Driver on site.

Current General discussion on what the AMS-Charah focus program is to train site Managers.

[01] Geotechnology [work hours not included in OSHA Log above]

[00] Pipe

[00] Mechanical

[00] Electrical

[00] Cement

[01] Laborers

[04] Operators [long boom operator not required]

[01] Teamsters

[00] Survey

[02] Foreman [Full time]

[09] Total

2012-05-08 OPEN - AMS and Belt Construction on site. AMS Focus [training program] Site Manager Mr. Anthony Driver on site.

Current Correction in crew size for 05-01 below [not discussed at the meeting]

[01] Geotechnology [work hours not

[00] Pipe

[00] Mechanical

[00] Electrical

[00] Cement

[01] Laborers

[05] Operators

[01] Teamsters

[00] Survey

[02] Foreman [Full time]

[10] Total

2012-05-01 OPEN - AMS and Belt Construction on site. Koberstein declined. Corrected count for 04-24 below.

Current

[01] Geotechnology

[00] Pipe

[00] Mechanical

[00] Electrical

[00] Cement

~~[00] Laborers~~ [01] Laborers

[05] Operators

[01] Teamsters

[00] Survey

[01] Foreman [Full time]

~~[09] Total~~ [09] Total

02 WORK HOURS

2012-05-15 OPEN - Standard hours - 7:00 AM CT to 3:30 PM CT. Belt to work 4x D 10x HRS due to dry weather [internal cost to AMS]. When Chesapeake comes on board, they may work 12x HRS a day maximum due to instrumentation calibration procedures required in the specifications.

2012-05-08 OPEN - Standard hours - 7:00 AM CT to 3:30 PM CT. Chesapeake may work extended hours.

2012-05-01 OPEN - Standard hours - 7:00 AM CT to 3:30 PM CT. Corrected time below.

03 OVER TIME

2012-05-15 OPEN - Belt has projected OT per Item No. 06.02-2012-0515 above.

2012-05-08 OPEN - None projected at this time. Referencing Item No. 06.02-2012-05-07 above - Chesapeake may have OT.

2012-05-01 OPEN - None projected.

04 TRAILER [AND GENERAL CONDITIONS]

2012-05-15 OPEN - no issues.

2012-05-08 OPEN - no issues.

2012-05-01 OPEN - no issues.

01 SUBCONTRACTS

2012-05-15 OPEN - no issues. BT Drainage by EOW.

2012-05-08 OPEN - no issues. BT Drainage in progress.

2012-05-01 OPEN - no issues. Koberstein declined. Replacement subcontractor in review - BT Drainage.

02 SUBMITTALS

2012-05-15	OPEN - no issues. In progress - P. Zinsious to meet with J. Cravens today [05-15] to review log. Pump information to be re-submitted [again] due to identification.
2012-05-08	OPEN - no issues. In progress - P. Zinsious to revise log information by EOW and review mechanical.
2012-05-01	OPEN - no issues. In progress - M. Wagstaff request mechanical submittal be checked for missing pump information. AER has returned mechanical, electrical, and liner submittals.

08 MATERIAL**01 GENERAL**

20120-05-15	OPEN - R. Porter reports pipe ordered for relocation connection to the manhole. Details in Item No. 12.1.04-2012-05-15 below.
20120-05-08	OPEN - no issues. See below for meetings. [date corrected]
20120-05-01	OPEN - no issues. All HDPE liner on site [72 rolls] as of 05-01.

02 GEOMEMBRANE PRE-CON MEETING

20120-05-15	OPEN - no issues.
20120-05-08	NEW - Meeting during Progress Meeting with Mr. Ryan Clark - Chesapeake Containment [CCS]. [01] 05-29 first day of deployment. [02] Mobilization will take place prior to first day of deployment. Badges, drug testing, and safety training required before. [03] Safety glasses to have foam gasket. [04] CCS discussed proposed panel layout and Geotechnology agreed that given the low slope (5%) that downslope orientation is not as critical. CCS to provide revised proposed panel layout. [05] All CCS vehicles will need magnetic signage. [06] CCS trailer can be left on-site. [07] AMS to provide operator for deployment. [08] AMS lag from liner start to clay placement is about 6 days. [09] CCS will have tensiometer certifications on-site and provided to Geotechnology. [10] All pipe boots are to be welded to HDPE gas vent pipe as shown in detail. [11] There are some repairs needed in the existing HDPE lined ponds. CCS will patch while on-site. [12] CCS [NMA] site extension has been filed, process of finalize site meeting and agreement with local labor union. [13] Expected manpower on-site is 12x workers working 10 hours+/- per day, 6x days a week with 7th day as a make-up day. [14] Any disturbed are requiring re-compaction to be looked at on case-by-case basis with GEO/AER. [15] Mr. Matt Garland - CCS General Superintendent will be coordinating the final schedule. [16] R. Clark will go out to pond to inspect progress and check on condition of delivered materials.

03 CAP VENT PRE-CON MEETING

20120-05-15	OPEN - Mobilization date moved to 05-21.
20120-05-08	NEW - Meeting after Progress Meeting with Mr. Bill Kelly - Illini Drilled Foundations [IDF]. [01] 05-14 first day of deployment. [02] Discussion of submittal and installation of the cap vents. [03] IDF will have different size spacers on site to accommodate change in the bore hole size. [04] Drill rig will have approximately 50 FT tall mast. [05] IDF can adjust mast a few degrees to accommodate for the slope on the ash pond. If required AMS will level out area. [06] Any disturbed are requiring re-compaction to be looked at on case-by-case basis with GEO/AER. [07] Duration estimated at 3x days for all cap vents. [08] Safety glasses to have foam gasket. [09] B. Kelly will go out to pond to inspect progress and check slope.

04 PERFORATED COLLECTOR PIPE [PCP] PRE-CON MEETING

20120-05-15	NEW - Meeting after Progress Meeting with Mr. John Boyer - B&T Drainage [BTD] [01] M. Wagstaff inquired as to small business status. J. Boyer indicated no, as past 3x years BTD did under \$ 28M. [02] Presentation of the "Excavation Work Plan for the Perforated Collector Pipe". [03] General review by all. [04] Plan to be edited for GCL. Was not presented as GCL, as not approved. [05] M. Wagstaff indicated alignment of PCP is flexible. [06] PCP can go direct into the Dewatering Sumps, "A-Lock" type seal with clamp. [07] J. Boyer concerned over Monitoring Well No. 2 [MW-2]. AER indicated see when get to that point if demo. [08] Spoils transfer by "tag-team" excavators. However, there may be no spoils above the GCL elevation. [09] General discussion that welding HDPE inside the trench boxes is a safety issue due to small work area, water, and access. J. Boyer proposed a PVC pipe option. The focus for this alternate is safety, but there is a possible cost savings as well. The pipe thickness could be an DR 14 [approximate thickness 3/4 IN] or DR 18 [approximate thickness 1/2 IN] per J. Boyer. There is flexibility in the shorter pieces of pipe, the mechanical connections, primarily her would be "bell and spigot". BTD to research price for PVC, and AER to review with Hanson. [10] If the bedrock cannot dug with and excavator, then pipeline can be raised. This creates issue with the manholes [dewatering sumps - reference Item No. 09.01-2012-05-08 below] height. If they cannot be adjusted with the ring[s], then area they protrude above the plan grade can be adjusted in the field. Barrel heights come in 16 IN, 32 IN, or 48 IN heights. [11] Projected manpower is 3x Operators [or more] and 3x Laborers. [12] Duration is approximately 30x D.
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[13] Dewatering will be by well point. Illini Drilled will drill well points [next week].

[14] Issue of water volume from the dewatering operation. Could possibly be millions of gallons. J. Boyer indicated amount not known, but possibly the areas of the bedrock in a "valley" might be able to be pumped down, but this depends on the length of the "valley". Pumps in the well points will operate 24/7, in any order, one or more at a time. In the beginning all pumps will be operating. This may create an issue for the adjacent property owner [farmer] who pumps ground water for irrigation.

[15] Issue of water volume disposal into the ponds. M. Wagstaff will research what is required for pumping into the ponds and what is required for the pond elevation relative sampling of the discharge by AER [and paid for by AER].

[16] The well point will pump system will have safety fence, light, and the power cord above ground in a conduit.

[17] Delivery of the dewatering sump structures are 2 WKS [after approval].

[18] Discussion of the diameter and the thickness of the manhole barrel. M. Wagstaff indicated as long as buoyancy [reference Item NO. 09.01-2012-05-08-03 below] good, alternates will be acceptable. Possible options are larger base and matt [concrete] at base such as a 4 FT DIA MH with larger base [J. Boyer indicated may install larger base for BTB insurance].

09 ADJACENT PROPERTIES AND PCP LINE

01 GENERAL

2012-05-15 OPEN -

[01] See Item No. 08.04-2012-05-15 for PCP Pre-Con Meeting and submission of the Excavation Plan.

[02] Corrected ring description below in body of text.

[03] No tax exemption if materials not purchased in Illinois.

2012-05-08 OPEN -

[01] Excavation plan is to be prepared by professional engineer.

[02] VES-01 for Bentonite M. Wagstaff indicated is approved [reference 12.1.09-2012-05-08 EWO-09 below].

[03] P. Zinsious indicated manhole as shown on drawings not a standard size. Brief discussion - M. Wagstaff indicated any [close] standard size is acceptable if the buoyancy calculations are approved.

[04] Review of process if the rock is not "dig-able". M. Wagstaff indicated that Hanson understands the rock may not "dig". Once work begins, and if the rock does not "dig", the PCP can be raised [partially] or all the way out of the rock and set on the rock. Elevation [and alignment] can be made in the field. Pump structure can be made in shorter ring height to accommodate the change in elevations if necessary.

2012-05-01 OPEN - BT Drainage

[01] Deepest projected part of excavation is 22-23 FT.

[02] J. Denham indicated the rock may not dig, requested AER consider raising the line above the bedrock line.

10 QUALITY CONTROL

01 GENERAL

2012-05-15 OPEN - no issues

2012-05-08 OPEN - no issues

2012-05-01 OPEN - no issues

02 ASH

2012-05-15 OPEN - no issues. J. Cravens Section A and C approximately 50 point for ash compaction density tests have been performed to date. All test have to date have passed in the range of 99% to 114% compaction. GEO technician Mr. Tim Wilson will be back on site tomorrow [05-16]. Massmann is to download files for GEO locations.

2012-05-08 OPEN - no issues. On going process. Compaction testing possibly scheduled for 05-09.

2012-05-01 OPEN - no issues. On going process.

03 CLAY

2012-05-15 OPEN - no issues. Samples taken yesterday [05-14]. The physical analysis will be by Holcomb and the chemical analysis will be by ARDL. Results should be in by next mid-week or before.

2012-05-08 OPEN - no issues.

2012-05-01 OPEN - no issues.

11 SCHEDULE REVIEW

01 SCHEDULE

2012-05-15 OPEN - Review of schedule to date. M. Wagstaff on vacation 05-15 to 05-22.

[01] Actual percent completion on ash pond sectors: A = 100%, B = 90%, C = 100%, D = 85%

[02] 05-11 - Lamac survey for "as-built" [record drawings] of the pipe relocation.

[03] 05-29 - BTB start date projection for PCP.

[04] Brief discussion electrical [AAA] and mechanical [FWI] scope.

2012-05-08 OPEN - Review of schedule to date.

[01] Documented rain days: 05-04 and 05-07. P. Zinsious published e-mail with dates [on 05-07 shows total 5x days so far].

[02] Actual percent completion on ash pond sectors: A = 95%, B = 75%, C = 95%, D = 80%

[03] 05-08 - Geomembrane Pre-Con Meeting [with AER and GEO during the Charah/AMS conference call].

[04] 05-10 - projected date for GEO compaction testing.

	[05] 05-11 - J. Cravens off-site. GEO to have 2x men: Tim and Ron.
	[06] 05-14 - Massmann on site to survey ash cap certification and fence alignment for AER.
	[07] 05-14 - Lamac on site to survey/locate cap vents.
	[08] 05-29 - Chesapeake to begin work.
2012-05-01	OPEN - Review of schedule 04-30.
	[01] Schedule critical path and look ahead reviewed.
	[02] Actual percent completion on ash pond sectors: A = 90%, B = 70%, C = 90%, D = 75%.
	[03] Activity No. 106 cap vents still scheduled for 05-14 as shown on 04-30 schedule.
	[04] Compaction testing for ash and surveying to be coordinated for same time if possible. Surveyor can come out twice.
	[05] Build pads for cap vent drill rig.
	[06] Discussion on the liner schedule and Memorial Day holiday. Verify day after the holiday.

02 TIME AND MATERIAL

2012-05-15	OPEN - no issues
2012-05-08	OPEN - no issues
2012-05-01	OPEN - no issues

03 COORDINATION

2012-05-15	OPEN - no issues
2012-05-08	OPEN - no issues.
2012-05-01	OPEN - no issues.

12.0 COST AND BUDGET

01 CHANGE REQUEST ISSUES

2012-05-15	OPEN - no issues.
2012-05-08	OPEN - EWO list reviewed, numbers and descriptions to be corrected in minutes.
2012-05-01	OPEN - no issues.

02 AMS PAY APPLICATION

2012-05-15	OPEN - AMS submitted pay application. M. Wagstaff indicated no issues, and that the revised AER PO is in process.
2012-05-08	OPEN - M. Wagstaff approved the draft pay-app for submittal as invoice. AMS to send copy of draft to J. Cravens.
2012-05-01	OPEN - M. Wagstaff indicated signed off with AER, should be reviewed by EOW. Invoice for stored materials on the HDPE liner.

12.1 EXTRA WORK ORDERS

01 EWO-01 ELECTRIC TEMPORARY

2012-05-15	No issues. 100% complete.
2012-05-08	Work is completed. Cost was audited with subcontractor, AMS to provide partial credit [reference EWO-08 below].

02 EWO-02 ASH PLACEMENT - CAP MODIFICATIONS

2012-05-15	No issues. In progress.
2012-05-08	OPEN - In progress. Spoils can go into Ash Pond D, and on the slopes as clean. Material opt be monitored by GEO and AMS. Consensus is the ash will balance.
2012-05-01	OPEN - In progress. Spoils can go into Ash Pond D, and on the slopes as clean. Material opt be monitored by GEO and AMS. Consensus is the ash will balance.
2012-04-24	OPEN - AER to provide interim e-mail stating approval for this work to AMS.

03 EWO-03 COAL PILE

2012-05-15	No issues. 100% complete.
2012-05-08	OPEN - Work completed [05-08 dozer working to fine grade area], final grade for drainage to be finished.
2012-05-01	OPEN - Work completed. Area to be observed for drainage. Date corrected below 04-24.

04 EWO-04 PIPE RELOCATION

2012-05-15	OPEN - work in progress. R. Porter reports pipe is ordered for the connection, and scheduled for installation next week on Monday [05-21]. The connection to the manhole will be a short piece of SDR 35 PVC pipe connected to the HDPE with a stainless steel repair coupling. The interior of the manhole will be patched with non-shrink grout, the exterior with the "A-Lock" ring and concrete. Details will be provided on the plan and profile record drawings for this line.
2012-05-08	OPEN - work in progress. AMS briefly described process of moving pipe from existing elevation into the new trench. Pipe will be slinger on the end at current elevation and at the new elevation. Connector fitting for the manhole fitting on site 05-08.
2012-05-01	OPEN - In progress. Pipe is exposed, and ready to begin lowering. AMS recommending removal of the pipe to be demolished and filled with

05 EWO-05 ELECTRIC FEEDER

2012-05-15	OPEN - In progress. AMS and AAA meeting yesterday [05-14], review after Progress Meeting.
2012-05-08	OPEN - in progress. AMS setting up meeting to audit price with AAA Electric. M. Wagstaff request combine EWO with EWO-07.
2012-05-01	OPEN - in progress. Meeting after progress meeting with AAA Electric.

06	EWO-06	POND A TRENCH
2012-05-15	No issues. Work 100% complete.	
2012-05-08	NEW - Work completed for trench excavation. The weir structure "stop logs" are to be installed in Pond A and Pond B.	
07	EWO-07	ELECTRIC OVERHEAD
2012-05-15	OPEN - in progress. AMS and AAA meeting yesterday [05-14], review after Progress Meeting.	
2012-05-08	NEW - in progress. AMS setting up meeting to audit price with AAA Electric. M. Wagstaff request combine EWO with EWO-07.	
08	EWO-08	CREDIT TO EWO-01
2012-05-15	OPEN - in progress.	
2012-05-08	NEW - In progress [reference above].	
09	EWO-09	BENTONITE VES-01
2012-05-15	OPEN - in progress. M. Wagstaff indicated that yesterday [05-14] Hanson approved the AMS response comments to the Hanson submittal review. GSE to provide pricing and AMS to calculate EWO.	
2012-05-08	NEW - M. Wagstaff indicated approval. Hanson has provided submittal review, and AMS in process of reply.	
10	EWO-10	FLOW-ABLE FILL CREDIT
2012-05-15	OPEN - in progress.	
2012-05-08	NEW - Discussed previously [reference Item No. 09.01-2012-04-24 No. 07] pipe can be removed and go direct to manhole, eliminating the flow-able fill.	
11	EWO-11	BUILDING SPOILS REMOVAL
2012-05-15	OPEN - in progress. AMS to dig test holes by EOW.	
2012-05-08	NEW - Excavation along Station 29+00 at fence line uncovered building spoil material within limits of the ash pond. M. Wagstaff requested exploratory holes dug along the fence line to determine the extent of the foreign material. AMS will dig holes at 100 FT intervals, and if something is uncovered will go to 50 FT intervals to determine the extent of the material. AMS will excavate the material to a predetermined depth by GEO/AER. Material excavated out will be disposed of within the ash pond, in the are east section where lower elevations are still being worked. A dump truck will have to be used to transport the material within the pond. Material adjacent to the pond that extends under the road is to remain in place and not to be disturbed.	

13 ACTION ITEMS - AER [25]

01	AMEREN [AER]
2012-05-15	[20] Drawing S-386 SHT 5 RF - the survey coordinates are reversed. [CLOSED - drawing issued]
	[24] Research with Hanson PVC verses HDPE for the PCP [reference Item No. 08.04-2012-05-15-09].
	[25] Research with Hanson alignment of the discharge piping structure at the outfall man hole. AER original design took into consideration a "mixing zone". R. Porter indicated since the line pipe relocation alignment can be direct. Discussion of the grade to be field adjusted around the box if new location is approved.
2012-05-08	[20] Drawing S-386 SHT 5 RF - the survey coordinates are reversed. [OPEN - Hanson to provide revised drawing - in progress]
2012-05-01	[20] Drawing S-386 SHT 5 RF - the survey coordinates are reversed. [OPEN - Hanson to provide revised drawing - in progress]
	[23] NEW - M. Wagstaff to provide drawings for the existing MCC. [OPEN - drawings received. AAA may require additional drawings. M. Wagstaff offered to post on ftp. [CLOSED - reminder site cleared 5th of month by AER]

14 ACTION ITEMS - AMS [21]

01	ASH MANAGEMENT [AMS]
2012-05-15	[21] BTD/AMS VES-02 for PVC verses HDPE for the PCP [reference Item No. 08.04-2012-05-15-09].
2012-05-08	None
2012-05-01	None

15 PRODUCTION

01	GENERAL
2012-05-15	OPEN - no issues
2012-05-08	OPEN - no issues
2012-05-01	OPEN - no issues

02 ASH

2012-05-15 OPEN - no issues. Estimated 89,098 CY EOD 05-14
 2012-05-08 OPEN - no issues. Estimated 77,320 CY EOD 05-07.
 2012-05-01 OPEN - no issues. Estimated 70,988 CY EOD 04-30.

03 CLAY

2012-05-15 OPEN - no issues - this activity not begun.
 2012-05-08 OPEN - no issues - this activity not begun.
 2012-05-01 OPEN - no issues - this activity not begun.

16 DOCUMENTS TRANSMITTED

2012-05-15 [01] BTD - Excavation Work Plan for the Perforated Collector Pipe [5x to 6x copies]
 [02] BTD - Certification [for above].
 2012-05-08 None
 2012-05-01 [01] AMS - Schedule dated 04-30 - critical path
 [02] AMS - Schedule dated 04-30 - look ahead
 [03] AMS - Schedule dated 04-30 - full
 [03] AMS - Value Engineering Submittal VES-01 - Bentonite cap option
 [04] AMS - Contact list HUT-APD-CON-2012-04-30

17 DOCUMENTS REVIEW ONLY

2012-05-15 None
 2012-05-08 None
 2012-05-01 None

18 NEXT PROGRESS MEETING

Next meeting will be held in one week - Tuesday, May 22, 2012 at Hutsonville

19 DISTRIBUTION - STANDARD**AER**

01 Mr. Mike Wagstaff
 02 Mr. Mike Stewart
 03 Mr. Bob Muesenfechter

GEO

01 Ms. Anna Saindon
 02 Mr. Eric Neuner
 03 Mr. Joe Cravens

AMS

01 Mr. Jimmy Boone
 02 Mr. John Denham
 03 Mr. Joko Tasich
 04 Mr. Randy Porter

If there are any corrections, modifications, additions, or deletions please notify the sender by e-mail at pzinsious@ashmanagementservices.com

PHOTO LOG



Photograph 1 ▲ - Relocated 18" HDPE pipe facing east



Photograph 2 ▲ - Relocated 18" HDPE pipe facing west

All photographs taken by Joseph Cravens of Geotechnology, Inc. between May 14 and May 18, 2012

JRC



Photograph 3 ▲ - Backfilling relocated 18" HDPE pipe facing west



Photograph 4 ▲ - Final grading Quadrant D facing north

All photographs taken by Joseph Cravens of Geotechnology, Inc. between May 14 and May 18, 2012

JRC



Photograph 5 ▲ - Massmann surveying grid points facing northwest



Photograph 6 ▲ - Abandoning monitoring well facing northeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between May 14 and May 18, 2012

JRC



Photograph 7 ▲ - Cutting south embankment facing northeast



Photograph 8 ▲ - Water seeps in Quadrant D facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between May 14 and May 18, 2012

JRC



Photograph 9 ▲ - Removing concrete casing by manhole facing east



Photograph 10 ▲ - Moisture/density testing facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between May 14 and May 18, 2012

JRC



Photograph 11 ▲ - Preparing box culvert pad facing north



Photograph 12 ▲ - Watson 1500 drill rig facing northwest

All photographs taken by Joseph Cravens of Geotechnology, Inc. between May 14 and May 18, 2012

JRC



Photograph 13 ▲ - Sewer pipe for manhole ingress facing northwest



Photograph 14 ▲ - Final grading Quadrant B facing northwest

All photographs taken by Joseph Cravens of Geotechnology, Inc. between May 14 and May 18, 2012

JRC



Photograph 15 ▲ - Overview Ash Pond D facing southeast



Photograph 16 ▲ - Overview Ash Pond D facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between May 14 and May 18, 2012



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Energy Resources

FROM: Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DATE: May 29, 2012

SUBJECT: Weekly Summary Report for May 21, 2012 to May 25, 2012

PROJECT: Hutsonville Ash Pond D Closure
Crawford County, Hutsonville, Illinois
Geotechnology Project No. J019896.01

The following is a weekly summary of the site activities at the referenced site.

Weather

The weather was generally sunny and dry. Temperature (°F) lows ranged from 55 to 76°F, and temperature highs ranged from 73 to 92°F. Weather delays did not occur this week.

Construction Activities

Ash grading, cap vent installation, dewatering well installation, pipe relocation with manhole ingress, compaction testing, and surveying occurred this week. Ash and embankment finish grading occurred on the eastern half of Ash Pond D. After grading was completed, Ash Pond D was smooth drum rolled in preparation for the geomembrane placement. The pipe and fittings for the relocated HDPE pipe and manhole ingress were installed, concrete was placed over the connections and ingress, and the remainder of the exposed HDPE pipe was backfilled, completing EWO-04. Compaction testing generally occurred on the eastern half of Ash Pond D on May 23, 2012. Refer to compaction field forms for additional information. Massmann Surveying surveyed final ash grade on the eastern portion of Ash Pond D on May 23, 2012. Every grid point tested and surveyed was approved, and Ash Management Services, LLC was given the notice-to-proceed to begin the geomembrane placement. Lamac Engineering Co. surveyed the location for the perforated collector pipe (PCP). Seven cap vents were installed by Illini Drilled Foundations, Inc. on May 21 and May 22, 2012. Refer to Daily Reports for more information. Illini also installed four dewatering wells for the PCP; two wells south of Pond A, and two wells south of Pond D.. Refer to Daily Reports for more information. B&T Drainage began pumping well number two, discharging groundwater into Ash Pond B.

Equipment and Personnel On-Site

2-CAT D6N Bulldozer
CAT D6H Bulldozer
CAT 325C Excavator
CAT 330D Excavator
CAT 613C Water Truck
John Deere 9520 Tractor with 2-1812C John Deere Scraper (Pan)
Sky Track 6036 Forklift
Wacker RT Trench Roller
John Deere 410J Backhoe
Case 580 Backhoe
Ingersoll Rand SD-122DX Roller
Watson 1500 Drill Rig (Illini Drilling)
Water Truck (Dust Control)

Geotechnology, Inc. – Joe Cravens, Tim Wilson, Anna Saindon
Ash Management Services, LLC (AMS) – Randy Porter, Jon Dietzel, Jimmy Boone, Robert Dunkley, James Marks, Shawn McClaskey, Brad Bolenbaugh, and Johnny McGrew
Belt Construction, Inc. – Jared Belt, Nick Walker, Kevin Flynn, and Shelby Belt
Charah, Inc. – Joe Tasich
Massmann Surveying – Gary Delf and Rick Koeac
Lamac Engineering Co. – Jake Lewis
Illini Drilled Foundations, Inc. – Nick Roberts, Ernie Thomas, Troy Harwood, and Chuck Hines
B&T Drainage – John Boyer, Chase Boyer, and Eric Blankenship
Visitors –Refer to the Visitor's Log for visitors, dates, and times.
Refer to the meeting minutes for additional personnel.

Meetings

The weekly progress meeting was held on Tuesday, May 22, 2012. Refer to the attached meeting minutes for additional information.

Photographs

A photograph log with select photographs obtained this week is attached.

Materials

Ash and embankment material within the footprint of Ash Pond D on the eastern half was graded.

Testing/Sampling

Moisture and density testing occurred on May 23, 2012. Refer to compaction field forms for additional information. Survey of the final ash pond grade on the eastern half of Ash Pond D occurred May 23, 2012. Survey of the PCP location occurred May 22, 2012.

Calibration Records

Calibration information was not obtained for equipment this week.

Signature of CQA Officer

Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.



DAILY REPORTS

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: JO19896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: — Client: Ameren ER Date: 5/21/12

TIME: Arrive: 6:30 AM Depart: 6:30 PM Travel: 1.0 hr Total: 12.75 hr (0.25 hr for lunch)

Weather: Partly Cloudy, 60° AM, 73° PM Contractor: AMS Subcontr./Supplier: Belt/Illini/BTD

Equipment Working: 2-D6N Dozers, 9520 Tractor, 1-1812C Pan, 325C Excavator, Water Truck,

Site Activities / Observations / Contacts / Notes: 1500 Watson Drill Rig, 410J Backhoe

Belt Construction/AMS:

The D6N (Brad) continued finish grading Section B. The D6N (Jared) continued finish grading Section B and D, and graded the stockpiled embankment material to allow the scraper to pick it up, as well as performed embankment restoration. The 9520 cut embankment material outside the Pond along the south and east embankments, and moved it to the major fill area along the axis of Section B and D. The 325C (Johnny McGrew) assisted with moving the 18" HDPE Pipe and the SDR-35 PVC Pipe for the manhole ingress. The HDPE and PVC pipes had to be cut to adjust the alignment of the PVC Pipe and to make the 90° fitting work. The stainless steel/rubber water main fitting was too small for the HDPE Pipe. A Fern Co. coupling was ordered and the manhole ingress and pipe relocation will be completed tomorrow. James Marks, Randy Porter, and Jonathan Dietzel assisted with the pipe. Jon Dietzel is with AMS's focus group and will be working under Randy for the next 2-8 weeks.

Illini Drilled Foundations/B&T Drainage:

BTD (John Boyer and Eric Blankenship) brought a John Deere 410J Backhoe to assist Illini since they will be drilling the dewatering wells. The 410J (Eric) moved Illini's cuttings to the major fill area, and moved/poured the rock for the cap vents. Illini - Troy Harwood (Field Operations Manager), Nick Roberts (Driller), Ernie Thomas (Helper). The HDPE Pipe (4" perforated), filter sock, and centralizers, did not arrive till this afternoon. Therefore, all holes (7 cap vents) were drilled first. Two of the holes stayed open without casing, so they used an 18" Auger. All other holes required casing, so they used a 24" Auger. Two loads of rock was delivered for the backfill. Four of the seven cap vents completed (#1, 2, 4, and 5).

Additional Comments: Will copy all the Driller's records
tomorrow for details.

Randy Porter
 Contractor Representative

AMS
 Company 5-21-12

Anna Snendon
 Signature
 Geotechnology, Inc.

5-28-12
 Date

—
 Engineer's Signature

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: — Client: Ameren ER Date: 5/22/12

TIME: Arrive: 6:30 AM Depart: 7:15 PM Travel: 1.0 hr Total: 13.75 hrs (no lunch)
 Weather: Sunny, 55° AM, 78° PM Contractor: AMS Subcontr./Supplier: Belt/Illini/BTD/Lamac
 Equipment Working: 1-D6N Dozer, 9520 Tractor, 1-1812C Pan, 325C Excavator, Water Truck, Sky Trak
 Site Activities / Observations / Contacts / Notes: 6036 Forklift, 1500 Watson Drill Rig, 410J Backhoe
Belt Construction/AMS:

The D6N (Jared) continued grading the stockpiled embankment material outside the Pond along the east embankment to allow the material to be picked up by the scraper. The D6N also performed embankment restoration, finish grading in the last fill area along the axis of Section B and D, and covered the 18" HDPE Pipe to the fitting connecting the SDR 35 PVC Pipe. The 9520 finished cutting the material along the east embankment, filling the last fill area, and graded the entire pond with the drag blade. * Ash placement and finish grading has been completed. The only remaining earthwork consists of the remaining work around the manhole. The 325C (Brad) assisted with the HDPE Pipe manhole ingress by lifting pipes when necessary. The 6036 (Brad) also assisted with the ingress by hauling materials including concrete bags and fittings. Randy, James, and Jared put on the new pipe fitting (force main coupling), hooked up pipes, and poured the concrete collar around the SDR 35 ingress into the manhole. James put up orange fence around the box culvert. The concrete collar around the coupling and 45° Fitting will be completed tomorrow, as well as backfilling the pipes. AMS hired another laborer - Shawn McClaskey. He did CBT training with Joko and was badged at Newton. James and Shawn began taking down the mesh on the west side fence.

Lamac Engineering:

Jake Lewis staked the locations for the PCP every 50', with 30' offsets. On the east end, south of Pond D, the PCP was too close to the wood line. Therefore, on the west end of Pond D, the PCP was offset 10' north at the kink, and the PCP was offset 20' north on the east side of Pond D at the end of pipe. The PCP location in between these points was adjusted accordingly. An as-built will be produced.

Additional Comments: 1 of 2 Next Page

Randy Poetree
 Contractor Representative

AMS
 Company 5-22-12

Anna Samson
 Signature
 Geotechnology, Inc.

5-25-12
 Date

Anna Samson
 Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: - Client: Ameren ER Date: 5/22/12

TIME: Arrive: - Depart: - Travel: - Total: -
 Weather: - Contractor: - Subcontractor/Supplier: -
 Equipment Working: REFER TO PAGE ONE (1)

Site Activities / Observations / Contacts / Notes:

Illini Drilled Foundations / BTD:

All 7 cap vents have been drilled and installed. The driller's records were copied, which contain the shaft depths, diameters, and numbers. The filter socks on the 4" HDPE vents covered all of the perforations, with the centralizers acting as clamps. River rock was used to backfill the vents. The top cap vent assemblies came pre-fabricated per detail 5 of sheet 10 of drawing 5-386 (Rev. G), except for the top threaded cap and mesh strainer cap. These will be shipped and installed tomorrow. The assemblies were welded to the top of the vents with a McElroy Pit Bull 14 Fusion Machine. The 4101 (Eric) removed the auger cuttings, backfilled the cap vents, and assisted with moving drilling equipment. John Boyer delivered 4 slotted 18" casings for the dewatering wells. Illini drilled 3 dewatering wells and installed the casings. Dewatering Wells: 2 wells south of Pond A and 2 wells south of Pond D. The cuttings from the most eastern well (next to Wabash River) consisted of clayey material. The cuttings from the other 2 western wells were sandy material. The casings were backfilled with pea gravel up to 10', and the upper 10' with river rock. All wells were drilled to bedrock. Wells were drilled with a 30" and/or 36" Auger. Illini will return on Friday to drill the last well. BTD will install the pumps next week, and they will have to be monitored daily. The water will be pumped into Ash Pond B, as long as it can keep up with drainage.

Misc.:

Wacker RT Trench Roller picked up (never used). Delivered: Ingersoll Rand (IR) 5D-122DX Steel Drum Roller and CAT 613C Water Truck to assist Roller. Jon Dietzel and Johnny at CBS today. As of today, Brad Bolenbaugh is now an AMS operator. Belt will begin demolishing the rest of the week, but will leave a D6N Dozer.

Additional Comments: AAA's Overhead and Feeder Bid is still under review for acceptance.

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<u>Randy Porter</u>	<u>AMS</u>
Contractor Representative	Company
<u>Anna Sgindon</u>	<u>5-22-12</u>
Signature	Date
<u>Anna Sgindon</u>	<u>5-28-12</u>
Geotechnology, Inc.	Date
<u>Anna Sgindon</u>	
Engineer's Signature	

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: JO19896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 5/23/12

TIME: Arrive: 6:30 AM Depart: 6:00 PM Travel: 1.0 hr Total: 12.25 hrs (0.25 hr for lunch)

Weather: Sunny, 63°AM, 80°PM Contractor: AMS Subcontr./Supplier: Lamac/Massmann

Equipment Working: D6N Dozer, 325C Excavator, 6036 Forklift, SD-122DX Roller, 613C Water Truck,

Site Activities / Observations / Contacts / Notes: Water Truck (Dust Control)

AMS:

The 325C (Brad) placed rock around the remainder of the exposed 18" HDPE pipe. The 6036 (Brad) used the bucket attachment for mixing concrete for the pipe fillings. Randy, Jon, James, and Shawn mixed and placed a thick collar of concrete around the manhole ingress and the pipe fitting/coupling (HDPE to PVC). The D6N (Brad) backfilled the remaining exposed pipes and graded around the manhole, completing EW0-04. The D6N also smoothed out the remaining wet area in Section B. The 325C removed remaining materials off the pond and mobilized outside the embankment to finish disposing of the remaining ADS pipe when another dumpster arrives. The SD-122DX (Brad) began rolling Pond D, while the 613C (Johnny) watered ahead of the roller. James and Shawn continued removing the mesh on the west fence, pulled the remaining grade stakes in the Pond, cleaned around each cap vent, and walked the Pond picking up visible debris. Randy and Jon put back all the PGL stakes from their offsets. The old ingress hole on the manhole was blocked off and filter fabric was used to prevent sediment from entering the manhole.

Lamac:

Jake Lewis finished staking the PCP every 50', with 30' offsets.

Massman:

Gary and Rick completed surveying the ash grade points.

Compaction:

Tim Wilson completed compaction testing.

Misc:

Anna Saindon (CQA Officer) will inspect site tomorrow.

Additional Comments: Currently, CCS is scheduled to work 6 days/week, considering no delays.

Randy Porter
Contractor Representative

AMS
Company

Anna Saindon
Signature

5-23-12
Date

Geotechnology, Inc.
Engineer's Signature

5-28-12
Date

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: - Client: Ameren ER Date: 5/24/12

TIME: Arrive: 6:30 AM Depart: 5:45 PM Travel: 1.0 hr Total: 12 hrs (0.25 hr for lunch)

Weather: Sunny, 62° AM, 92° PM Contractor: AMS Subcontr./Supplier: Illini/BTD/Belt

Equipment Working: D6N Dozer, 410J Backhoe, 6036 Lift, 5D-122DX Roller, 613C Water Truck,

Site Activities / Observations / Contacts / Notes: Water Truck (Dust Control), 330D Excavator, Watson 1500
Illini Drilled Foundations / BTD:

Driller - Chuck Hines, Helper - Troy Harwood. They drilled the fourth well, most western well, south of Pond A. They had to drill a few trial holes with the Watson 1500 to get to the desired depth, passed the cut of the PCP. Dewatering Wells (west to east): D1, D2, D3, D4, with D1 and D2 south of Pond A, and D3 and D4 south of Pond D. D3 was moved across the gravel road and re-drilled to achieve greater depth. 330D (John Boyer-BTD) dug a test pit before drilling D3 to ensure bedrock was at a greater depth. Well Depths: D1 = 16', D2 = 29', D3 = 16', D4 = 22'. When re-drilling D3, a 8"-12" ductile iron pipe was punctured, but it was an abandoned water line to the SE Deep Well. The 410J (John Boyer and Chase Boyer) backfilled the well casings with pea gravel and backfilled test pits. Illini hauled off all parts and equipment except for the drill rig, which was parked in the yard and will be picked up later. Illini will abandon and re-drill MW2 at a later date. After drilling was completed, the 330D (John) dug more test pits south of Pond A to determine depth of rock, and the water table. Rock ranged from 7.5' to 11.0', the soil was generally clay overlying sand, and there was minimal water. The 410J (Chase) filled in these test pits. BTD brought in a CAT XQO Generator and a 7.5HP TSURUMI Pump with a 4" discharge. The pump was placed in D2 and was discharged into Pond B. The pump will remain on until tomorrow to determine its affect on the GWL.

AMS: D6N (Brad) and 6036 (Johnny) smoothed out rough areas in Pond D. 5D-122DX (Brad) continued rolling Pond D and the 613C (Johnny) continued watering. Shawn continued taking down the fence and flagged the cap vents. James was off today. A 4th dumpster was brought in, and the 3rd one was hauled off.

Additional Comments: Belt demobilized 1-D6N and D6H.
Rolling to be completed tomorrow.

<u>Randy Toole</u> Contractor Representative <u>Anna Saindon</u> Signature Geotechnology, Inc. <u>Anna Saindon</u> Engineer's Signature	<u>AMS</u> Company <u>5-24-12</u> Date <u>5-28-12</u> Date
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ORIGINAL - FILE COPIES: 1-JOB SITE 1-ACCOUNTING
 Anna Saindon (CQA Officer, Geotechnology) onsite inspection. *Anna Saindon*

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 5/25/12

TIME: Arrive: 6:30 AM Depart: 12:45 PM Travel: 1.0 hr Total: 7.25 hrs (no lunch)

Weather: Partly Cloudy, 76° AM, 90° PM Contractor: AMS Subcontr./Supplier: BTD

Equipment Working: 325C Excavator, SD-122 DX Roller, 6036 Forklift, Water Truck (Dust Control)

Site Activities / Observations / Contacts / Notes: CCS and GEO to be on site next week.

An additional \approx 15 personnel.

BTD:

Chase Boyer checked groundwater levels in the Wells and fueled the generator to continue pumping. AMS will shut the pump off at the end of the day.

AMS:

Shawn and James filled in Pond around the cap vents and finished taking down the west fence line. SD-122 DX (Brad) completed rolling Pond D. The 6036 (Brad) helped Ameren load equipment and materials. The 325C (Brad) partially loaded the dumpster with ADS pipe. Johnny was off today. Randy left early and Jon Dietzel stayed the whole day. The parts from the west fence line will be moved to the construction yard.

Demobilized:

325C, 2-1812C Scrapers, SD-122 DX, Watson 1500 Drill Rig

Delivery:

Yesterday - BTD 330D Excavator, Today - AMS Case 580 Backhoe

Equipment and Personnel Update:

AMS - 6036 Forklift, Water Truck, D6N Dozer, 613C Water Truck, 580 Backhoe

Randy, Jon, James, Shawn, Johnny, Brad, Robert

BTD - 330D Excavator, 410J Backhoe

John and Chase

Additional Comments: Yesterday Shawn and Johnny re-fenced generator/pump and provided lights, fire ext., and spill kit.

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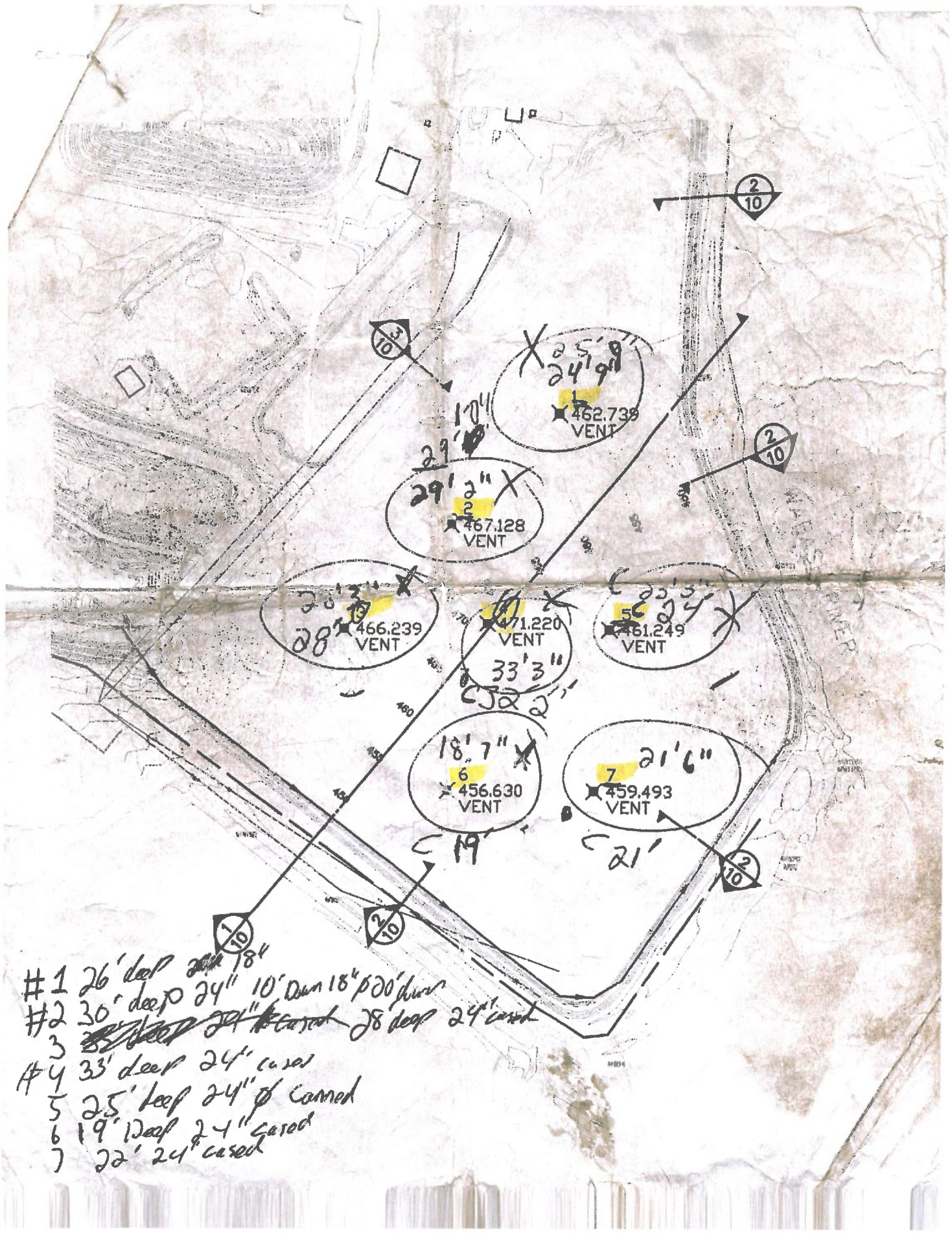
Jon Dietzel
Contractor Representative

Anna Saindon
Signature
Geotechnology, Inc.

Engineer's Signature

AMS
Company

25 May 2012
Date
5-28-12
Date



- #1 26' deep 24" 18"
- #2 30' deep 24" 10' down 18" p 20' down
- #3 ~~30' deep 24" 18"~~ 28' deep 24" 18"
- #4 33' deep 24" 18"
- #5 25' deep 24" 18"
- #6 19' deep 24" 18"
- #7 22' 24" 18"

ILLINOI DRILLED FOUNDATIONS, INC.

Drilled Shafts • Auger Cast Piles • Driven Piles

Tel: 217-402-5763 • Fax: 217-402-4460 • e-mail: info@illindrilled.com • Website: illindrilling.com

CAISSON FIELD RECORD

Project 12-19 Superintendent _____
 Address _____ Foreman _____
 Date _____ Equipment 1500
 This report by: Em'e in _____ copies
 Caisson location _____ Caisson mark _____
 Date started 5-21 Date finished 5-22
 Date bottom observed 5-22 Date concrete placed _____

Design Measurements	Field Measurements
Top Elevation	<u>0</u>
Bottom Elevation	<u>-26'</u>
Caisson Length	<u>26'</u>
Shaft Diameter	<u>24"</u>
Bell Diameter	<u>-</u>
Concrete Volume	<u>-</u>
Grout Volume	<u>-</u>
Lin. Ft. Rock Drilled	<u>26'</u>
Total Depth Drilled	
Field Engineer	
General Contractor	<u>Realty</u>
Remarks:	

Sketch not to scale

14512 Perryville Road, P.O. Box 1351 Danville, IL 61834

ILLINOI DRILLED FOUNDATIONS, INC.

Drilled Shafts • Auger Cast Piles • Driven Piles

Tel: 217-402-5763 • Fax: 217-402-4460 • e-mail: info@illindrilled.com • Website: illindrilling.com

CAISSON FIELD RECORD

Project 12-19 Superintendent _____
 Address _____ Foreman _____
 Date _____ Equipment 1500
 This report by: Em'e in _____ copies
 Caisson location _____ Caisson mark _____
 Date started 5-21 Date finished 5-22
 Date bottom observed 5-22 Date concrete placed _____

Design Measurements	Field Measurements
Top Elevation	<u>0</u>
Bottom Elevation	<u>-30'</u>
Caisson Length	<u>30'</u>
Shaft Diameter	<u>24"</u>
Bell Diameter	<u>-</u>
Concrete Volume	<u>-</u>
Grout Volume	<u>-</u>
Lin. Ft. Rock Drilled	<u>-</u>
Total Depth Drilled	<u>30'</u>
Field Engineer	
General Contractor	<u>Realty</u>
Remarks:	

Sketch not to scale

14512 Perryville Road, P.O. Box 1351 Danville, IL 61834

ILLINOI DRILLED FOUNDATIONS, INC.

Drilled Shafts • Auger Cast Piles • Driven Piles
Tel: 217-442-4765 • Fax: 217-442-4440 • e-mail: info@illindrilled.com • Website: illindrilled.com

CAISSON FIELD RECORD

Project _____ Superintendent _____
Address _____ Foreman _____
Date 5-22 Equipment 1500
This report by: Emo in _____ copies
Caisson location 3 Caisson mark _____
Date started 5-21 Date finished 5-22
Date bottom observed 5-22 Date concrete placed _____

Design Measurements	Field Measurements
Top Elevation	<u>0</u>
Bottom Elevation	<u>-28'</u>
Caisson Length	<u>28'</u>
Shaft Diameter	<u>24"</u>
Bell Diameter	<u>-</u>
Concrete Volume	<u>-</u>
Grout Volume	<u>-</u>
Lin. Ft. Rock Drilled	<u>-</u>
Total Depth Drilled	<u>28'</u>
Field Engineer	<u>Emo</u>
General Contractor	
Remarks:	

Sketch not to scale

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CAISSON FIELD RECORD

Project _____ Superintendent _____
Address _____ Foreman _____
Date 5-22 Equipment 1500
This report by: Emo in _____ copies
Caisson location 4 Caisson mark _____
Date started 5-21 Date finished 5-22
Date bottom observed 5-22 Date concrete placed _____

Design Measurements	Field Measurements
Top Elevation	<u>0</u>
Bottom Elevation	<u>-33'</u>
Caisson Length	<u>33'</u>
Shaft Diameter	<u>24"</u>
Bell Diameter	<u>-</u>
Concrete Volume	<u>-</u>
Grout Volume	<u>-</u>
Lin. Ft. Rock Drilled	<u>-</u>
Total Depth Drilled	<u>33'</u>
Field Engineer	<u>Emo</u>
General Contractor	
Remarks:	

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ILLINI DRILLED FOUNDATIONS, INC.

Drilled Shafts • Auger Cast Piles • Driven Piles
Tel: 217-402-8765 • Fax: 217-402-8440 • e-mail: info@illindrilling.com • Website: illindrilling.com

CAISSON FIELD RECORD

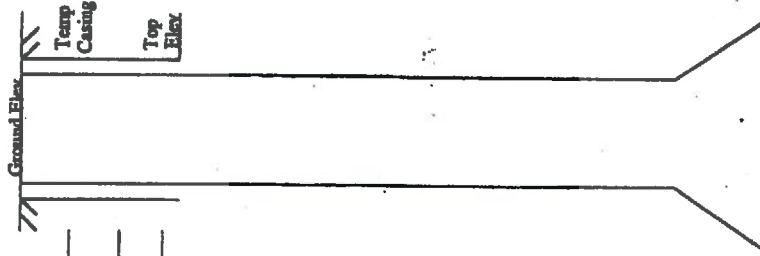
Project _____ Superintendent _____
Address _____ Foreman _____
Date 5-22 Equipment 1500
This report by: ELME in _____ copies
Caisson location 5 Caisson mark _____
Date started 5-21 Date finished 5-22
Date bottom observed 5-22 Date concrete placed _____

Design Measurements

Top Elevation _____
Bottom Elevation 0
Caisson Length -25'
Shaft Diameter 25"
Bell Diameter 24"
Concrete Volume _____
Grout Volume _____
Lin. Ft. Rock Drilled _____
Total Depth Drilled 25'

Field Engineer Randy
General Contractor _____

Remarks:



Sketch not to scale

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CAISSON FIELD RECORD

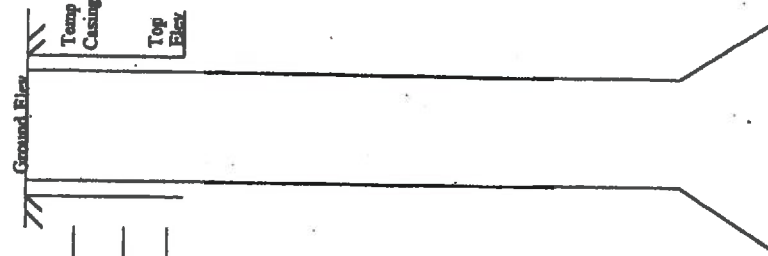
Project _____ Superintendent _____
Address _____ Foreman _____
Date _____ Equipment _____
This report by: ELME in _____ copies
Caisson location 6 Caisson mark _____
Date started 5-21 Date finished 5-22
Date bottom observed 5-22 Date concrete placed _____

Design Measurements

Top Elevation _____
Bottom Elevation 0
Caisson Length -19'
Shaft Diameter 19"
Bell Diameter 24"
Concrete Volume _____
Grout Volume _____
Lin. Ft. Rock Drilled _____
Total Depth Drilled 19'

Field Engineer Randy
General Contractor _____

Remarks:



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ILLINI DRILLED FOUNDATIONS, INC.

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Tel: 217-442-4755 • Fax: 217-442-4440 • e-mail: info@illini-drilled.com • Website: illinidrilling.com

CAISSON FIELD RECORD

Project _____ Superintendent _____
 Address _____ Foreman _____
 Date 5-22 Equipment 1500
 This report by: ENR in _____ copies
 Caisson location _____ Caisson mark _____
 Date started 5-21 Date finished 5-22
 Date bottom observed 5-22 Date concrete placed _____

Design Measurements	Field Measurements
Top Elevation	<u>0</u>
Bottom Elevation	<u>22'</u>
Caisson Length	<u>22'</u>
Shaft Diameter	<u>24"</u>
Bell Diameter	<u>—</u>
Concrete Volume	<u>—</u>
Grout Volume	<u>—</u>
Lin. Ft. Rock Drilled	<u>—</u>
Total Depth Drilled	<u>22'</u>
Field Engineer	<u>[Signature]</u>
General Contractor	_____
Remarks:	_____

Ground Elev. _____ Temp Casing _____ Top Elev. _____
 Sketch not to scale

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CAISSON FIELD RECORD

Project _____ Superintendent _____
 Address _____ Foreman _____
 Date _____ Equipment _____
 This report by: _____ in _____ copies
 Caisson location _____ Caisson mark _____
 Date started _____ Date finished _____
 Date bottom observed _____ Date concrete placed _____

Design Measurements	Field Measurements
Top Elevation	_____
Bottom Elevation	_____
Caisson Length	_____
Shaft Diameter	_____
Bell Diameter	_____
Concrete Volume	_____
Grout Volume	_____
Lin. Ft. Rock Drilled	_____
Total Depth Drilled	_____
Field Engineer	_____
General Contractor	_____
Remarks:	_____

Ground Elev. _____ Temp Casing _____ Top Elev. _____
 Sketch not to scale

14512 Paryeville Road, P.O. Box 1351 Danville, IL 61834

MEETING MINUTES



Hutsonville Power Station - Ash Pond D closure
Progress Meeting No. 10 Minutes
Tuesday, May 22, 2012

01	PUBLICATION					
	Publish date:	2012-05-28	Submitted by:	P. Zinsious		
	Distribution:	E-mail only	Notes taken by:	P. Zinsious		
	Location:	Hutsonville Power Station	AMS-Charah File No.	HUT-APD-MTG-MIN-2012-05-22-PM-10		
	AER PO:	567523 R2	AMS-Charah Contract:	00030-01	AMS-Charah GL:	4116-06-6120

02	ATTENDEES			
01	Mr. Mike Wagstaff	Ameren	618-343-7790	mwagstaff@ameren.com
02	Mr. Michael Bollinger	Ameren	314-554-3652	mbollinger@ameren.com
03	Mr. Joe Cravens	Geotechnology	314-568-6628	j_cravens@geotechnology.com
04	Mr. John Boyer	BT Drainage	217-822-6593	john@btdrainage.com
05	Mr. Jake Lewis	Lamac Engineering	618-263-8285	jlewis@lamac.net [part time]
06	Mr. Joko Tasich	Charah	502-649-7633	jtasich@charah.com
07	Mr. John Denham	AMS - RM	502-609-0278	idenham@ashmanagementservices.com
08	Mr. Jimmy Boone	AMS - ARM	502-574-5465	jboone@ashmanagementservices.com
09	Mr. Randy Porter	AMS - SM	502-554-5230	rporter@ashmanagementservices.com
10	Mr. Paul Zinsious	AMS - PCM	502-640-2918	pzinsious@ashmanagementservices.com

03 ABBREVIATIONS	
AER	Ameren Energy Resources
AMS	Ash Management Services
BNSF	Burlington
CBT	Computer Based Training
EAP	Emergency Action Plan
EOD	End of [the] Day
EOM	End of [the] month
EOW	End of [the] week
EDTS	Energy Delivery Transmission Services
EDC	Estimated Date [of] Completion
EWO	Extra Work Order
HDPE	High Density Polyethylene
HRS	Hours
LOTO	Lock Out Tag Out
NMA	National Maintenance Agreement
OSHA	Occupational Safety Health Administration
PCP	Perforated Collector Pipe
PO	Purchase Order
RHOM	Routine Handling, Operation, and Maintenance
SPOC	Single Point of Contact
T/M	Time and Materials
TBD	To Be Determined
TD	Transmission Dispatch
WPA	Worker Protection Assurance

04 DOCUMENTATION	
Minutes are documented weekly, and the publication have a "rolling record" of the immediate past three weeks. Each week the oldest drops off and the current week is added to the minutes. Items are categorized as either "NEW", "OPEN", "CLOSE", or in case the an item has to be re-published after closed the previous week - "REOPEN".	

05 SAFETY - HOUSEKEEPING	
01 ACCIDENTS OR INJURIES	
2012-05-22	OPEN - no issues.
2012-05-15	OPEN - no issues.
2012-05-08	OPEN - no issues.
02 WORKER PROTECTION ASSURANCE	
2012-05-22	OPEN - no issues. None projected for 2x week look ahead. Chesapeake Containment [CCS] will use generators.
2012-05-15	OPEN - no issues. None projected for 2x week look ahead or for Illini Drilled [IDF].
2012-05-08	OPEN - no issues.

03 EMPLOYEE DRUG TESTING

2012-05-22	OPEN - no issues. BT Drainage count in progress. 1x AMS yesterday DT at Robinson [05-21] and 1x AMS today [05-22].
2012-05-15	OPEN - no issues. J. Boone indicated Chesapeake Containment will have list by next Progress Meeting. Some workers will already have AER badges in good standing. BT Drainage will have projection today [05-15]. The borrow site [CBS] will not require AER badge/CBT/DT, only AMS safety training.
2012-05-08	OPEN - no issues. Illini Drilled 1x workers to be scheduled for 05-08. AER to schedule 1x worker for Massmann and 2x TSI workers by EOM.

04 AMS SAFETY

2012-05-22	OPEN - no issues. Next safety luncheon is 06-12. [01] J. Tasich briefing on glove usage for material handling and look out for insects/varmints. [02] Bees at trailer are eradicated. [03] J. Denham briefing on cooling stations, 2x will be set up. [04] Brief discussion on hydrating. Energy drinks not encouraged due to caffeine content. [05] Review of Charah/AMS safety awards [ref. Item No. 05.04-2012-05-08.01,02,03 below]. [06] No cooling station at CBS as workers [operators] in equipment with AC.
2012-05-15	OPEN - no issues. J. Tasich reported on site specific emergency action plan [EAP]: [01] Shelter area to be cleaned today [05-15], and will be on going procedure. [02] Water training was completed for installation of the "stop logs". [03] Refining Item No. 05.05-2012-05-15 below, bees swarming on GEO trailer, have been sprayed. Workers for AMS are to note on their new employee form allergies such as to bee stings. The employee is required to notify the Site Manager of such allergies. In the case of a bee [or insect sting], each worker is responsible to carry their own medication, such as an "epi-pen" [Epinephrine Auto-Injectors] accordingly.
2012-05-08	OPEN - no issues. Water training to take place today for work on Pond A and B [some work already completed before water in the areas of work on Pond A]. J. Tasich reported on site specific emergency action plan [EAP]: [01] Shelter areas has supplies. [02] AMS will have cleaned out [dirt from varmints, etc...]. [03] Signs will be posted by next week. [04] EAP will be reviewed at the safety luncheon [today]. AMS stepped out of meeting for a corporate "all-hands" safety conference call commemorating the following: [01] Charah/AMS 2,000,000 [two million] man-hours without lost time milestone. [02] Mine Safety Health Administration [MSHA] Sentinel of Safety Award for no lost time incidents in 2010 at Charah's Brickey's limestone grinding facility [we are supplier to Ameren Missouri]. [03] North Carolina Department of Labor Gold Level Safety Achievement Award for the Charah Roxboro site [a large site where Charah manages fly ash, bottom ash, gypsum, and landfill projects].

05 HOUSEKEEPING

2012-05-22	OPEN - No issues. M. Wagstaff inquire about CCS and liner material. CCS will have dumpster and AMS will help keep clean.
2012-05-15	OPEN - See Item No. 05.04-2012-05-15 above regarding bees swarming at GEO trailer.
2012-05-08	OPEN - no issues.

06 PLANT ACCESS - CBT BADGE

2012-05-22	OPEN - no issues. M. Wagstaff to issue gate log. DT info listed above. Item No. 05.03.
2012-05-15	OPEN - no issues. Projection 1x to 2x at EOW, possibly 10x for BT. M. Wagstaff to issue gate log again. P. Zinsious request copy [not received].
2012-05-08	OPEN - no issues. M. Wagstaff e-mailed 6x WKS gate log to J. Denham, and he requested every 2x WKS. M. Wagstaff inquired on CC - for now J. Denham and P. Zinsious.

07 VEHICLES ON SITE

2012-05-22	OPEN - no issues. Brief review of workers bused to ash pond work site by AMS.
2012-05-15	OPEN - no issues
2012-05-08	OPEN - no issues. GEO to bring "gator" [utility vehicle] on site. AMS to bring second pick up truck on site for A. Driver. AMS will provide safety flags for both vehicles.

08 OSHA LOG - WORK HOURS

2012-05-22	OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 05-21 No incidents or accidents. 0,0000.00 RT <u>0,000.00</u> OT 2,347.50 TOTAL [time not split out RT/OT]
2012-05-15	OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 05-014 No incidents or accidents. 1,945.50 RT <u>0,000.00</u> OT 1,945.50 TOTAL
2012-05-08	OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 05-07 1,555.50 RT <u>0,000.00</u> OT 1,555.50 TOTAL

01 CREW SIZE

2012-05-22 OPEN - AMS and Belt Construction on site. AMS Focus [training program] Site Manager Mr. Anthony Driver on site.
 Current General discussion on what the AMS-Charah focus program is to train site Managers.

[01] Geotechnology [work hours not included in OSHA Log above]

[00] Pipe

[00] Mechanical

[00] Electrical

[00] Cement

[03] Laborers

[05] Operators [long boom operator not required]

[01] Teamsters

[00] Survey

[02] Foreman [Full time] [Mr. John Dietzel new Charah/AMS Focus Site Manager on project].

[12] Total

2012-05-15 OPEN - AMS and Belt Construction on site. AMS Focus [training program] Site Manager Mr. Anthony Driver on site.
 Current General discussion on what the AMS-Charah focus program is to train site Managers.

[01] Geotechnology [work hours not included in OSHA Log above]

[00] Pipe

[00] Mechanical

[00] Electrical

[00] Cement

[01] Laborers

[04] Operators [long boom operator not required]

[01] Teamsters

[00] Survey

[02] Foreman [Full time]

[09] Total

2012-05-08 OPEN - AMS and Belt Construction on site. AMS Focus [training program] Site Manager Mr. Anthony Driver on site.
 Current Correction in crew size for 05-01 below [not discussed at the meeting]

[01] Geotechnology [work hours not

[00] Pipe

[00] Mechanical

[00] Electrical

[00] Cement

[01] Laborers

[05] Operators

[01] Teamsters

[00] Survey

[02] Foreman [Full time]

[10] Total

02 WORK HOURS

2012-05-22 OPEN - Standard hours - 7:00 AM CT to 3:30 PM CT. Belt started to work 10x HRS [internal cost to AMS] last Tuesday [05-15] and will continue until finished. CCS still on track for OT. No work on site Memorial Day holiday [observed Monday 05-28].

2012-05-15 OPEN - Standard hours - 7:00 AM CT to 3:30 PM CT. Belt to work 4x D 10x HRS due to dry weather [internal cost to AMS]. When Chesapeake comes on board, they may work 12x HRS a day maximum due to instrumentation calibration procedures required in the specifications.

2012-05-08 OPEN - Standard hours - 7:00 AM CT to 3:30 PM CT. Chesapeake may work extended hours.

03 OVER TIME

2012-05-22 OPEN - Belt has projected OT per Item No. 06.02, and will de-mob on Friday [05-25].

2012-05-15 OPEN - Belt has projected OT per Item No. 06.02-2012-0515 above.

2012-05-08 OPEN - None projected at this time. Referencing Item No. 06.02-2012-05-07 above - Chesapeake may have OT.

04 TRAILER [AND GENERAL CONDITIONS]

2012-05-22 OPEN - no issues.

2012-05-15 OPEN - no issues.

2012-05-08 OPEN - no issues.

07	PREVIOUS
01	SUBCONTRACTS 2012-05-22 OPEN - no issues. BT Drainage has contract [CLOSED]. 2012-05-15 OPEN - no issues. BT Drainage by EOW. 2012-05-08 OPEN - no issues. BT Drainage in progress.
02	SUBMITTALS 2012-05-22 OPEN - no issues. In progress - P. Zinsious submitted to J. Cravens today updated cover sheets and log. 2012-05-15 OPEN - no issues. In progress - P. Zinsious to meet with J. Cravens today [05-15] to review log. Pump information to be re-submitted [again] due to identification. 2012-05-08 OPEN - no issues. In progress - P. Zinsious to revise log information by EOW and review mechanical.
08	MATERIAL
01	GENERAL 2012-05-22 OPEN - R. Porter reports all material in, however bands too long [will resolve]. 2012-05-15 OPEN - R. Porter reports pipe ordered for relocation connection to the manhole. Details in Item No. 12.1.04-2012-05-15 below. 2012-05-08 OPEN - no issues. See below for meetings. [date corrected]
02	GEOMEMBRANE PRE-CON MEETING 2012-05-22 OPEN - no issues. GEO inspection on Thursday [05-24]. 2012-05-15 OPEN - no issues. 2012-05-08 NEW - Meeting during Progress Meeting with Mr. Ryan Clark - Chesapeake Containment [CCS]. [01] 05-29 first day of deployment. [02] Mobilization will take place prior to first day of deployment. Badges, drug testing, and safety training required before. [03] Safety glasses to have foam gasket. [04] CCS discussed proposed panel layout and Geotechnology agreed that given the low slope (5%) that downslope orientation is not as critical. CCS to provide revised proposed panel layout. [05] All CCS vehicles will need magnetic signage. [06] CCS trailer can be left on-site. [07] AMS to provide operator for deployment. [08] AMS lag from liner start to clay placement is about 6 days. [09] CCS will have tensiometer certifications on-site and provided to Geotechnology. [10] All pipe boots are to be welded to HDPE gas vent pipe as shown in detail. [11] There are some repairs needed in the existing HDPE lined ponds. CCS will patch while on-site. [12] CCS [NMA] site extension has been filed, process of finalize site meeting and agreement with local labor union. [13] Expected manpower on-site is 12x workers working 10 hours+/- per day, 6x days a week with 7th day as a make-up day. [14] Any disturbed are requiring re-compaction to be looked at on case-by-case basis with GEO/AER. [15] Mr. Matt Garland - CCS General Superintendent will be coordinating the final schedule. [16] R. Clark will go out to pond to inspect progress and check on condition of delivered materials.
03	CAP VENT PRE-CON MEETING 2012-05-22 OPEN - Drilling completed on Monday [05-21]. 2012-05-15 OPEN - Mobilization date moved to 05-21. 2012-05-08 NEW - Meeting after Progress Meeting with Mr. Bill Kelly - Illini Drilled Foundations [IDF]. [01] 05-14 first day of deployment. [02] Discussion of submittal and installation of the cap vents. [03] IDF will have different size spacers on site to accommodate change in the bore hole size. [04] Drill rig will have approximately 50 FT tall mast. [05] IDF can adjust mast a few degrees to accommodate for the slope on the ash pond. If required AMS will level out area. [06] Any disturbed are requiring re-compaction to be looked at on case-by-case basis with GEO/AER. [07] Duration estimated at 3x days for all cap vents. [08] Safety glasses to have foam gasket. [09] B. Kelly will go out to pond to inspect progress and check slope.
04	PERFORATED COLLECTOR PIPE [PCP] PRE-CON MEETING 2012-05-22 OPEN - Meeting during Progress Meeting with Mr. John Boyer. [01] Open discussion of safety concern due to wet/damp installation and welding of HDPE in the trench. [02] M. Wagstaff indicated Hanson concern damage of pipe when installed. [03] AMS to provide PVC Value Engineering Submittal [substitution]. J. Boyer indicated cost estimated at \$ 500 more. [04] P. Zinsious indicated pipe will not be damaged. J. Boyer stated can run "mandrel test" after pipe installation. [05] Existing Ameren MW-2 probably not able to be saved. 2012-05-15 NEW - Meeting after Progress Meeting with Mr. John Boyer - B&T Drainage [BTD] [01] M. Wagstaff inquired as to small business status. J. Boyer indicated no, as past 3x years BTD did under \$ 28M. [02] Presentation of the "Excavation Work Plan for the Perforated Collector Pipe". [03] General review by all. [04] Plan to be edited for GCL. Was not presented as GCL, as not approved. [05] M. Wagstaff indicated alignment of PCP is flexible.

[06] PCP can go direct into the Dewatering Sumps, "A-Lock" type seal with clamp.

[07] J. Boyer concerned over Monitoring Well No. 2 [MW-2]. AER indicated see when get to that point if demo.

[08] Spoils transfer by "tag-team" excavators. However, there may be no spoils above the GCL elevation.

[09] General discussion that welding HDPE inside the trench boxes is a safety issue due to small work area, water, and access. J. Boyer proposed a PVC pipe option. The focus for this alternate is safety, but there is a possible cost savings as well. The pipe thickness could be an DR 14 [approximate thickness 3/4 IN] or DR 18 [approximate thickness 1/2 IN] per J. Boyer. There is flexibility in the shorter pieces of pipe, the mechanical connections, primarily her would be "bell and spigot". BTd to research price for PVC, and AER to review with Hanson.

[10] If the bedrock cannot dug with and excavator, then pipeline can be raised. This creates issue with the manholes [dewatering sumps - reference Item No. 09.01-2012-05-08 below] height. If they cannot be adjusted with the ring[s], then area they protrude above the plan grade can be adjusted in the field. Barrel heights come in 16 IN, 32 IN, or 48 IN heights.

[11] Projected manpower is 3x Operators [or more] and 3x Laborers.

[12] Duration is approximately 30x D.

[13] Dewatering will be by well point. Illini Drilled will drill well points [next week].

[14] Issue of water volume from the dewatering operation. Could possibly be millions of gallons. J. Boyer indicated amount not known, but possibly the areas of the bedrock in a "valley" might be able to be pumped down, but this depends on the length of the "valley". Pumps in the well points will operate 24/7, in any order, one or more at a time. In the beginning all pumps will be operating. This may create an issue for the adjacent property owner [farmer] who pumps ground water for irrigation.

[15] Issue of water volume disposal into the ponds. M. Wagstaff will research what is required for pumping into the ponds and what is required for the pond elevation relative sampling of the discharge by AER [and paid for by AER].

[16] The well point will pump system will have safety fence, light, and the power cord above ground in a conduit.

[17] Delivery of the dewatering sump structures are 2 WKS [after approval].

[18] Discussion of the diameter and the thickness of the manhole barrel. M. Wagstaff indicated as long as buoyancy [reference Item NO. 09.01-2012-05-08-03 below] good, alternates will be acceptable. Possible options are larger base and matt [concrete] at base such as a 4 FT DIA MH with larger base [J. Boyer indicated may install larger base for BTd Insurance].

09 ADJACENT PROPERTIES AND PCP LINE

01 GENERAL

2012-05-22 OPEN -
[01] P. Zinsious reported Mr. Wampler [Wampler Farms].
[02] Open discussion of License Agreement and boundary line alignment off approximately 80FT.
[03] M. Wagstaff indicated no issue. AMS to show on drawing.

2012-05-15 OPEN -
[01] See Item No. 08.04-2012-05-15 for PCP Pre-Con Meeting and submission of the Excavation Plan.
[02] Corrected ring description below in body of text.
[03] No tax exemption if materials not purchased in Illinois.

2012-05-08 OPEN -
[01] Excavation plan is to be prepared by professional engineer.
[02] VES-01 for Bentonite M. Wagstaff indicated is approved [reference 12.1.09-2012-05-08 EWO-09 below].
[03] P. Zinsious indicated manhole as shown on drawings not a standard size. Brief discussion - M. Wagstaff indicated any [close] standard size is acceptable if the buoyancy calculations are approved.
[04] Review of process if the rock is not "dig-able". M. Wagstaff indicated that Hanson understands the rock may not "dig". Once work begins, and if the rock does not "dig", the PCP can be raised [partially] or all the way out of the rock and set on the rock. Elevation [and alignment] can be made in the field. Pump structure can be made in ~~shorter~~ shorter ring height to accommodate the change in elevations if necessary.

10 QUALITY CONTROL

01 GENERAL

2012-05-22 OPEN - no issues
2012-05-15 OPEN - no issues
2012-05-08 OPEN - no issues

02 ASH

2012-05-22 OPEN - no issues. All ash compaction density test have passed [over 90% density], some areas at PGL have to be tested. GEO to issue report. Mr. Tim Wilson [GEO] and Massmann to be on site 05-22. Ash pond elevations at 98% to grade [as determined by the 02-06 drawings], some spots high. General discussion "zig" [valley] in final grade per plan.

2012-05-15 OPEN - no issues. J. Cravens Section A and C approximately 50 point for ash compaction density tests have been performed to date. All test have to date have passed in the range of 99% to 114% compaction. GEO technician Mr. Tim Wilson will be back on site tomorrow [05-16]. Massmann is to download files for GEO locations.

2012-05-08 OPEN - no issues. On going process. Compaction testing possibly scheduled for 05-09.

03 CLAY

2012-05-22 OPEN - no issues - sample analysis submitted.

2012-05-15 OPEN - no issues. Samples taken yesterday [05-14]. The physical analysis will be by Holcomb and the chemical analysis will be by ARDL. Results should be in by next mid-week or before.

2012-05-08 OPEN - no issues.

11 SCHEDULE REVIEW

01 SCHEDULE

2012-05-22	OPEN - Review of schedule to date. [01] Actual percent completion on ash pond sectors: A = 100%, B = 98%, C = 100%, D = 98% [02] 05-22 cap vents projected to 05-25. [03] 05-29 - BTD start date projection for PCP. [04] 05-21 - BTD to begin drilling de-watering wells. Pumping possibly 24/7 if required. [05] 05-22 - AMS to begin removing fencing along ash pond leaving poles. [06] 05-26 - Smooth drum roll ash placement ,no vibration, and addition of water for moisture content. [07] Box culvert demolition complete.
2012-05-15	OPEN - Review of schedule to date. M .Wagstaff on vacation 05-15 to 05-22. [01] Actual percent completion on ash pond sectors: A = 100%, B = 90%, C = 100%, D = 85% [02] 05-11 - Lamac survey for "as-built" [record drawings] of the pipe relocation. [03] 05-29 - BTD start date projection for PCP. [04] Brief discussion electrical [AAA] and mechanical [FWI] scope.
2012-05-08	OPEN - Review of schedule to date. [01] Documented rain days: 05-04 and 05-07. P. Zinsious published e-mail with dates [on 05-07 shows total 5x days so far]. [02] Actual percent completion on ash pond sectors: A = 95%, B = 75%, C = 95%, D = 80% [03] 05-08 - Geomembrane Pre-Con Meeting [with AER and GEO during the Charah/AMS conference call]. [04] 05-10 - projected date for GEO compaction testing. [05] 05-11 - J. Cravens off-site. GEO to have 2x men: Tim and Ron. [06] 05-14 - Massmann on site to survey ash cap certification and fence alignment for AER. [07] 05-14 - Lamac on site to survey/locate cap vents. [08] 05-29 - Chesapeake to begin work.

02 TIME AND MATERIAL

2012-05-22	OPEN - no issues
2012-05-15	OPEN - no issues
2012-05-08	OPEN - no issues

03 COORDINATION

2012-05-22	OPEN - no issues. R. Porter to get with G. Musch to fill the water tank.
2012-05-15	OPEN - no issues
2012-05-08	OPEN - no issues.

12.0 COST AND BUDGET

01 CHANGE REQUEST ISSUES

2012-05-22	OPEN - no issues.
2012-05-15	OPEN - no issues.
2012-05-08	OPEN - EWO list reviewed, numbers and descriptions to be corrected in minutes.

02 AMS PAY APPLICATION

2012-05-22	OPEN - no issues.
2012-05-15	OPEN - AMS submitted pay application. M. Wagstaff indicated no issues, and that the revised AER PO is in process.
2012-05-08	OPEN - M. Wagstaff approved the draft pay-app for submittal as invoice. AMS to send copy of draft to J. Cravens.

12.1 EXTRA WORK ORDERS

01 EWO-01 ELECTRIC TEMPORARY

2012-05-22	Deferred.
2012-05-15	No issues. 100% complete.
2012-05-08	Work is completed. Cost was audited with subcontractor, AMS to provide partial credit [reference EWO-08 below].

02 EWO-02 ASH PLACEMENT - CAP MODIFICATIONS

2012-05-22	Deferred.
2012-05-15	No issues. In progress.
2012-05-08	OPEN - In progress. Spoils can go into Ash Pond D, and on the slopes as clean. Material opt be monitored by GEO and AMS. Consensus is the ash will balance.

03 EWO-03 COAL PILE

2012-05-22	Deferred.
2012-05-15	No issues. 100% complete.
2012-05-08	OPEN - Work completed [05-08 dozer working to fine grade area], final grade for drainage to be finished.

04	EWO-04	PIPE RELOCATION
	2012-05-22	Deferred.
	2012-05-15	OPEN - work in progress. R. Porter reports pipe is ordered for the connection, and scheduled for installation next week on Monday [05-21]. The connection to the manhole will be a short piece of SDR 35 PVC pipe connected to the HDPE with a stainless steel repair coupling. The interior of the manhole will be patched with non-shrink grout, the exterior with the "A-Lock" ring and concrete. Details will be provided on the plan and profile record drawings for this line.
	2012-05-08	OPEN - work in progress. AMS briefly described process of moving pipe from existing elevation into the new trench. Pipe will be slinger on the end at current elevation and at the new elevation. Connector fitting for the manhole fitting on site 05-08.
05	EWO-05	ELECTRIC FEEDER
	2012-05-22	Deferred.
	2012-05-15	OPEN - in progress. AMS and AAA meeting yesterday [05-14], review after Progress Meeting.
	2012-05-08	OPEN - in progress. AMS setting up meeting to audit price with AAA Electric. M. Wagstaff request combine EWO with EWO-07.
06	EWO-06	POND A TRENCH
	2012-05-22	Deferred.
	2012-05-15	No issues. Work 100% complete.
	2012-05-08	NEW - Work completed for trench excavation. The weir structure "stop logs" are to be installed in Pond A and Pond B.
07	EWO-07	ELECTRIC OVERHEAD
	2012-05-22	Deferred.
	2012-05-15	OPEN - in progress. AMS and AAA meeting yesterday [05-14], review after Progress Meeting.
	2012-05-08	NEW - in progress. AMS setting up meeting to audit price with AAA Electric. M. Wagstaff request combine EWO with EWO-07.
08	EWO-08	CREDIT TO EWO-01
	2012-05-22	Deferred.
	2012-05-15	OPEN - in progress.
	2012-05-08	NEW - In progress [reference above].
09	EWO-09	BENTONITE VES-01
	2012-05-22	Deferred.
	2012-05-15	OPEN - in progress. M. Wagstaff indicated that yesterday [05-14] Hanson approved the AMS response comments to the Hanson submittal review. GSE to provide pricing and AMS to calculate EWO.
	2012-05-08	NEW - M. Wagstaff indicated approval. Hanson has provided submittal review, and AMS in process of reply.
10	EWO-10	FLOW-ABLE FILL CREDIT
	2012-05-22	Deferred.
	2012-05-15	OPEN - in progress.
	2012-05-08	NEW - Discussed previously [reference Item No. 09.01-2012-04-24 No. 07] pipe can be removed and go direct to manhole, eliminating the flow-able fill.
11	EWO-11	BUILDING SPOILS REMOVAL
	2012-05-22	Deferred. No other issues, test holes revealed.
	2012-05-15	OPEN - in progress. AMS to dig test holes by EOW.
	2012-05-08	NEW - Excavation along Station 29+00 at fence line uncovered building spoil material within limits of the ash pond. M. Wagstaff requested exploratory holes dug along the fence line to determine the extent of the foreign material. AMS will dig holes at 100 FT intervals, and if something is uncovered will go to 50 FT intervals to determine the extent of the material. AMS will excavate the material to a predetermined depth by GEO/AER. Material excavated out will be disposed of within the ash pond, in the are east section where lower elevations are still being worked. A dump truck will have to be used to transport the material within the pond. Material adjacent to the pond that extends under the road is to remain in place and not to be disturbed.

13	ACTION ITEMS - AER [25]	
01	AMEREN [AER]	
	2012-05-22	Discussion of collection box pipe alignment direct to the manhole.
	2012-05-15	
	[20]	Drawing S-386 SHT 5 RF - the survey coordinates are reversed. [CLOSED - drawing issued]
	[24]	Research with Hanson PVC verses HDPE for the PCP [reference Item No. 08.04-2012-05-15-09].
	[25]	Research with Hanson alignment of the discharge piping structure at the outfall man hole. AER original design took into consideration a "mixing zone". R. Porter indicated since the line pipe relocation alignment can be direct. Discussion of the grade to be field adjusted around the box if new location is approved.
	2012-05-08	
	[20]	Drawing S-386 SHT 5 RF - the survey coordinates are reversed. [OPEN - Hanson to provide revised drawing - in progress]

14	ACTION ITEMS - AMS [21]	
01	ASH MANAGEMENT [AMS]	
	2012-05-22	In progress.
	2012-05-15	
	[21] BTD/AMS VES-02 for PVC verses HDPE for the PCP [reference Item No. 08.04-2012-05-15-09].	
	2012-05-08	
	None	
15	PRODUCTION	
01	GENERAL	
	2012-05-22	OPEN - no issues
	2012-05-15	OPEN - no issues
	2012-05-08	OPEN - no issues
02	ASH	
	2012-05-22	OPEN - no issues. Estimated 101,074 CY EOD 05-21.
	2012-05-15	OPEN - no issues. Estimated 89,098 CY EOD 05-14.
	2012-05-08	OPEN - no issues. Estimated 77,320 CY EOD 05-07.
03	CLAY	
	2012-05-22	OPEN - no issues - this activity not begun.
	2012-05-15	OPEN - no issues - this activity not begun.
	2012-05-08	OPEN - no issues - this activity not begun.
16	DOCUMENTS TRANSMITTED	
	2012-05-15	[01] BTD - AMS - Contact list HUT-APD-CON-2012-05-21
	2012-05-15	[01] BTD - Excavation Work Plan for the Perforated Collector Pipe [5x to 6x copies]
		[02] BTD - Certification [for above].
	2012-05-08	None
17	DOCUMENTS REVIEW ONLY	
	2012-05-22	Large format drawing for alignment review of PCP.
	2012-05-08	None
	2012-05-08	None
18	NEXT PROGRESS MEETING	
	Next meeting will be held in one week - Tuesday, May 29, 2012 at Hutsonville	
19	DISTRIBUTION - STANDARD	
	AER	
01	Mr. Mike Wagstaff	
02	Mr. Mike Stewart	
03	Mr. Bob Muesenfechter	
	GEO	
01	Ms. Anna Saindon	
02	Mr. Eric Neuner	
03	Mr. Joe Cravens	
	AMS	
01	Mr. Jimmy Boone	
02	Mr. John Denham	
03	Mr. Joko Tasich	
04	Mr. Randy Porter	

If there are any corrections, modifications, additions, or deletions please notify the sender by e-mail at pzinsious@ashmanagementservices.com

PHOTOGRAPH LOG



Photograph 1 ▲ - Fill in Quadrant B facing southeast



Photograph 2 ▲ - Drilling cap vents facing west

All photographs taken by Joseph Cravens of Geotechnology, Inc. between May 21 and May 25, 2012

JRC



Photograph 3 ▲ - Cap vent filter sock and centralizer facing northeast



Photograph 4 ▲ - Installing cap vent facing south

All photographs taken by Joseph Cravens of Geotechnology, Inc. between May 21 and May 25, 2012



Photograph 5 ▲ - Connecting HDPE pipe to PVC pipe facing northeast



Photograph 6 ▲ - Compaction testing facing north

All photographs taken by Joseph Cravens of Geotechnology, Inc. between May 21 and May 25, 2012

JRC



Photograph 7 ▲ - Rolling Ash Pond D facing north



Photograph 8 ▲ - Manhole inlet facing northeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between May 21 and May 25, 2012

JRC



Photograph 9 ▲ - Monitoring Well 2 – to be moved, facing north



Photograph 10 ▲ - Cap vent facing northwest

All photographs taken by Joseph Cravens of Geotechnology, Inc. between May 21 and May 25, 2012

JRC



Photograph 11 ▲ - Overview of Ash Pond D facing southeast



Photograph 12 ▲ - Overview of Ash Pond D facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between May 21 and May 25, 2012

JRC



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Energy Resources

FROM: Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DATE: June 6, 2012

SUBJECT: Weekly Summary Report for May 29, 2012 to June 2, 2012

PROJECT: Hutsonville Ash Pond D Closure
Crawford County, Hutsonville, Illinois
Geotechnology Project No. J019896.01

The following is a weekly summary of the site activities at the referenced site.

Weather

The weather was generally sunny and dry. Temperature (°F) lows ranged from 51 to 70°F, and temperature highs ranged from 61 to 85°F. Weather delay due to rain occurred on May 31, 2012.

Construction Activities

Anchor trench construction and 40 mil HDPE geomembrane installation occurred this week. The anchor trench has been excavated along the northern half of Quadrant A, all of Quadrant B, and the eastern side of Quadrant D. IDOT FA-01 sand for anchor trench backfill, and 4-inch double walled, HDPE perforated pipe with most of the associated pipe materials for anchor trench drainage was delivered to the site. Part of the anchor trench in Quadrant A, with the 4-inch HDPE pipe, had been backfilled. Chesapeake Containment Systems, Inc. installed 40 mil HDPE geomembrane liner in parts of Quadrants A, B, and C. Geotechnology, Inc. observed quality control of the installation. Refer to geomembrane documentation for more details. Dewatering for the proposed perforated collector pipe excavation continues in well number 1 and 2, located south of Ash Pond A.



Weekly Summary Report
June 6, 2012
Page 2

J019896.01

Equipment and Personnel On-Site

CAT D6N Bulldozer
CAT 330D Excavator
CAT 613C Water Truck
CAT 279C Skid Steer (rubber track)
John Deere 624H Front End Loader
John Deere 9520 Tractor
John Deere 6430 Tractor
Sky Track 6036 Forklift
John Deere 410J Backhoe
Case 580 Backhoe
Water Truck (Dust Control)

Geotechnology, Inc. – Joe Cravens, Tim Wilson, Steve Graham, and Anna Saindon
Ash Management Services, LLC (AMS) – Randy Porter, Jon Dietzel, Jimmy Boone, Robert Dunkley, James Marks, Shawn McClaskey, Brad Bolenbaugh, and Johnny McGrew
Charah, Inc. – Joe Tasich
Chesapeake Containment Systems, Inc – Jose Valverde, Barbarito Flores, Daniel Gonzales, Leroy Smith, Phet Vongkhamchanh, Jose Flores, Alberto Ortiz, Manuel Gonzales, Israel Gonzales, Erik Sefton, Blake Bunting, Matthew Watts, and Ryan Clark
Daylight Land Management – Adam Ziliak and Billy Georges
B&T Drainage – John Boyer and Chase Boyer
Visitors –Refer to the Visitor's Log for visitors, dates, and times.
Refer to the meeting minutes for additional personnel.

Meetings

The weekly progress meeting was held on Tuesday, May 29, 2012. Refer to the attached meeting minutes for additional information.

Photographs

A photograph log with select photographs obtained this week is attached.

Materials

40 mil HDPE geomembrane was installed on site. Materials for the 4-inch HDPE double walled pipe and IDOT FA-01 sand was delivered on site for the anchor trench.

Testing/Sampling

Geomembrane destructive and non-destructive testing and sampling occurred this week. Refer to geomembrane documentation for additional details.

Calibration Records

Calibration information was obtained for Chesapeake's tensiometer this week.

Signature of CQA Officer

Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

A handwritten signature in dark ink, appearing to read "Anna Saindon", is written over a horizontal line.

DAILY REPORTS

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 5/29/12

TIME: Arrive: 6:30 AM Depart: 6:45 PM Travel: 1.0 hr Total: 13.25 hrs (no lunch)

Weather: Sunny, 70° AM, 85° PM Contractor: AMS Subcontr./Supplier: CCS/BTD

Equipment Working: 6036 Forklift, 580 Backhoe, Water Truck

Site Activities / Observations / Contacts / Notes: _____

AMS:

The 6036 loaded the remaining ADS Pipe in the dumpster, moved the remaining west fence parts to the construction yard, and loaded the crane mats on site to be taken to the CBS. The two laborers assisted the 6036 and setup the temporary snow fence south of Ash Pond B for the construction easement. The 580 began digging the anchor trench in the NW corner of Section A in Pond D. Any ash spoils from the trench will be dumped into Pond A. Personnel on site: Brad, Shawn, James, and Robert. Jon and Johnny worked at the CBS today.

BTD:

Chase Boyer came in to check the groundwater levels and fuel the generator. Delivery - John Deere 624H Front End Loader. BTD will use PVC instead of HDPE for the PCP.

CCS:

Chesapeake Containment Systems, Inc. arrived on site and received CBT and badges from Newton. Personnel began loading sandbags, preparing testing apparatus, and preparing materials. They will begin laying geomembrane rolls, or panels, tomorrow. They plan to work 6-10's. Personnel on Site: Jose Valverde (Super), Barbarito Flores (QC), Daniel Gonzales, Leroy Smith, Phet Vongkhamchanh, Jose Flores, Alberto Ortiz, Manuel Gonzales, Israel Gonzales, Erik Sefton, Blake Bunting, Matthew Watts.

Misc:

MW2 will be drilled and installed next week by a local drilling company. The existing MW2 will be torn out during the PCP excavation. Personnel from Geotechnology on site this week: Anna Gairdon, Tim Wilson, Steve Graham.

Additional Comments: _____

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

Randy Poetic
Contractor Representative

Anna Gairdon
Signature
Geotechnology, Inc.

Anna Gairdon
Engineer's Signature

AMS
Company

5-29-12
Date
6-4-12
Date

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 5/30/12

TIME: Arrive: 6:30 AM Depart: 6:30 PM Travel: 1.0 hr Total: 12.75 hrs (0.25 hr for lunch)

Weather: Sunny, 62° AM, 81° PM Contractor: AMS Subcontr./Supplier: CCS/GEO

Equipment Working: 6036 Forklift, 580 Backhoe, Water Truck

Site Activities / Observations / Contacts / Notes: _____

AMS:

The 580 continued digging the anchor trench for the geomembrane in Section A. The 6036 was used for deploying the liner rolls for geomembrane placement, as well as staging liner rolls. The laborers setup cooling stations for CCS, cleaned out debris in the anchor trench, checked grade in the anchor trench, and took down an additional section of the west fence line.

CCS:

The panel layout was changed: Full length rolls (750') will be used across the entire south end of the Pond, running south/north. The remaining north end of the Pond will have panels running south/north, and will be cut to fit as required to cover the northern portion. CCS estimates this will save two days worth of seaming. They began placing panels in the northern portion of the Pond in Section A, and run parallel to the west fence line. All seams are hot wedge double track fusion welds, welded by an automatic fusion welder. Extrusion welding is only performed where fusion welding is not possible, such as pipe penetrations, patches, and repairs. The site was very dusty and it was difficult keeping the seams clean. Therefore, the Water Truck was used to suppress the dust as the liner was being placed.

GEO (Geotechnology):

Steve went to the Newton Power Station for a CBT refresher, his drug testing was current. Both Steve and Tim will overlook CCS's QC for geomembrane placement, panel numbering, length, and area, extrusion and double fusion seaming (welding), shear and peel testing, air and vacuum testing, etc. Geotechnology will keep records of all mentioned items on a daily basis, as well as collect destruct samples for archive.

Additional Comments: Additional Personnel on-site:
Jon (AMS) and Johnny (AMS).

Randy Postea AMS
Contractor Representative Company
6-11-12
Signature Date
Anna Sardon
Geotechnology Inc. Date
6-11-12
Engineer's Signature

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 5/31/12

TIME: Arrive: 6:30 AM Depart: 3:45 PM Travel: 1.0 hr Total: 10 hrs (0.25 hr for lunch)
Weather: Sunny, 54° AM, Cloudy/Rain 67° PM Contractor: AMS Subcontr./Supplier: CCS/GEO
Equipment Working: 6036 Forklift, 580 Backhoe, Water Truck
Site Activities / Observations / Contacts / Notes: —

AMS:

The 580 continued digging the anchor trench in Section B and D. The 6036 continued deploying liner rolls for geomembrane placement, and staged liner rolls for the southern half of the pond. The laborers continued checking grade in the anchor trench.

CCS:

The partial panels for the northern portion of Pond D have been placed. CCS made up more sand bags, began air testing on the west side of the northern portion heading east, and cleaned up excess material. They will begin placing full length panels (750') in the southern portion of the pond tomorrow. They were rained out and could not complete a full day. Note: All seam overlaps are shingled in the direction of the downslope.

Misc:

The local Pit Run Sand does not meet the specifications for oversized particles. Therefore, the washed, fine sand used to fill the sand bags will be used for the anchor trench fill.

Refer to Geotechnology's Data Sheets for geomembrane details.

Additional Comments: —

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Randy Portee
Contractor Representative
Randy Portee
Signature
Anna Saindon
Geotechnology, Inc.
[Signature]
Engineer's Signature

AMS
Company
5-31-12
Date
6-4-12
Date

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: JO19896.01 Task: 2370
 Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: - Client: Ameren ER Date: 6/1/12

TIME: Arrive: 6:30 AM Depart: 6:45 PM Travel: 1.0 hr Total: 12.75 hrs (0.5 hr for lunch)
 Weather: cloudy, 54° AM, 61° PM Contractor: AMS Subcontr./Supplier: CCS/GEO/BTD/DLM
 Equipment Working: 6036 Forklift, 580 Backhoe, 330 D Excavator, 6430 Tractor

Site Activities / Observations / Contacts / Notes:

AMS:

The 580 finished digging the anchor trench on the east side of Section B and D, and the south, west side of Section A. The remaining anchor trench to be dug is located in Section C, and the south side of Section D. The 580 also pulled the west fence posts in Section A, and they were taken to the construction yard. The 6036 staged liner rolls and sand bags across Pond D. Delivery: 3500' of 4" double wall pipe (AASHTO M252 S) with Class II perforations and filter socks, with 4" snap tees and end caps. The pipe was unloaded with the 6036 and staged in Pond D. The 4" perforated pipe will be placed in the anchor trench. The solid wall pipe for the 4" tees have not been delivered yet. A CAT 279C Skid Steer (rubber track) was also delivered and will be used to backfill the anchor trench. 10 loads of FA-01 sand was delivered for anchor trench. The laborers assisted with the anchor trench, pulling fence posts, and removed snow fence in temp. easement.

CCS:

It was too windy to deploy panels today. However, sand bags were made, air testing was completed in the northern section of panels (P1-P45), and they began patching/repairing areas in the northern section by extrusion welding. Destruct samples were cut and they began shear and peel testing. GEO took care of archive and lab samples. Refer to Geotech. data sheets for details. Note: spark testing will be performed for the cap vent boots, and they will patch holes in Pond A and Pond B.

BTD:

John and Chase Boyer installed another pump in dewatering well 1. Both pumps are now being discharged into Pond A. Well 1 dropped water level in a matter of minutes. Therefore, only well 2 will be pumped 24/7, and well 1 pumped only as needed. Well 2 was shut off briefly, but the water level rose quickly, and, therefore, will remain on.

Additional Comments: DLM: Adam Zilick and Billy Georges
unloaded 40 bales of hay with a John Deere 6430 Tractor.

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Randy Porter
 Contractor Representative

Anna Saindon
 Signature

Geotechnology, Inc.
 Engineer's Signature

AMS
 Company

6-1-12
 Date

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: JO19896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 6/2/12

TIME: Arrive: 6:30 AM Depart: 5:00 PM Travel: 1.0 hr Total: 11.25 hrs (0.25 hr for lunch)
Weather: Sunny, 51° AM, 70° PM Contractor: AMS Subcontr./Supplier: CCS/GEO
Equipment Working: 6036 Forklift, 279C Skid Steer, Water Truck
Site Activities / Observations / Contacts / Notes: —

AMS:

The 6036 continued deploying liner rolls for geomembrane placement. The 4" perforated pipe for the anchor trench was staged along the northern section of geomembrane panels. Each snap coupling was duck taped to insure integrity when placing pipe in the trench. After the tape, the filter socks were overlapped and zip tied. Any holes found in the filter socks were also duck taped to prevent sediment from entering the perforations. Part of the pipe was laid in the trench from Sta. 37+50 to Sta. 40+00. The 279C backfilled the trench in the west end of Section A with FA-01 sand.

CCS:

CCS began deploying panels in the southern section of Pond D. There was a misunderstanding of the length of the geomembrane rolls, and when they began deploying panels in the southern section, they were 50' short of reaching the PGL on the south end of the pond, thinking the rolls were 750', but they are 700'. Therefore, there will be a 50' strip on the south end of the pond that needs to be covered. It was too windy in the PM to deploy panels, so they continued double fusion seaming, air testing, shear and peel testing on destructs, patching, and clean up. GEO will be mailing the first set destructs to the TRI Lab in Austin, TX this weekend. Ryan Clark (VP) was here to observe site activities.

Additional Comments: —

Landy Porter
Contractor Representative
Handwritten Signature
Signature
Anna Saindon
Geotechnology Inc.
Handwritten Signature
Engineer's Signature

AMS
Company
6-2-12
Date
6-4-12
Date

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MEETING MINUTES



Hutsonville Power Station - Ash Pond D Closure
Progress Meeting No. 11 Minutes
Tuesday, May 29, 2012

01 PUBLICATION

Publsh date:	2012-06-04	Submitted by:	P. Zinsious
Distribution:	E-mail only	Notes taken by:	P. Zinsious
Location:	Hutsonville Power Station	AMS-Charah File No.	HUT-APD-MTG-MIN-2012-05-29-PM-11
AER PO:	567523 R3	AMS-Charah Contract:	00030-01 AMS-Charah GL: 4116-06-6120

02 ATTENDEES

01	Mr. Mike Wagstaff	Ameren	618-343-7790	mwagstaff@ameren.com
02	Ms. Anna Saindon	Geotechnology	314-997-7440	a_saindon@geotechnology.com
03	Mr. Joe Cravens	Geotechnology	314-568-6628	j_cravens@geotechnology.com
04	Mr. Bret Brown	Charah	812-454-5603	bbrown@charah.com
05	Mr. Joko Tasich	Charah	502-649-7633	jtasich@charah.com
06	Mr. John Denham	AMS - RM	502-609-0278	jdenham@ashmanagementservices.com
07	Mr. Jimmy Boone	AMS - ARM	502-574-5465	jboone@ashmanagementservices.com
08	Mr. Randy Porter	AMS - SM	502-554-5230	rporter@ashmanagementservices.com
09	Mr. Paul Zinsious	AMS - PCM	502-640-2918	pzinsious@ashmanagementservices.com

03 ABBREVIATIONS

AER	Ameren Energy Resources
AMS	Ash Management Services
BNSF	Burlington
CBT	Computer Based Training
EAP	Emergency Action Plan
EOD	End of [the] Day
EOM	End of [the] month
EOW	End of [the] week
EDTS	Energy Delivery Transmission Services
EDC	Estimated Date [of] Completion
EWO	Extra Work Order
HDPE	High Density Polyethylene
HRS	Hours
LOTO	Lock Out Tag Out
NMA	National Maintenance Agreement
OSHA	Occupational Safety Health Administration
PCP	Perforated Collector Pipe
PO	Purchase Order
RHOM	Routine Handling, Operation, and Maintenance
SPOC	Single Point of Contact
T/M	Time and Materials
TBD	To Be Determined
TD	Transmission Dispatch
WPA	Worker Protection Assurance

04 DOCUMENTATION

Minutes are documented weekly, and the publication have a "rolling record" of the immediate past three weeks. Each week the oldest drops off and the current week is added to the minutes. Items are categorized as either "NEW", "OPEN", "CLOSE", or in case the an item has to be re-published after closed the previous week - "REOPEN".

05 SAFETY - HOUSEKEEPING

01 ACCIDENTS OR INJURIES

2012-05-29	OPEN - no issues.
2012-05-22	OPEN - no issues.
2012-05-15	OPEN - no issues.

02 WORKER PROTECTION ASSURANCE

2012-05-29	OPEN - no issues. None projected for 2x week look ahead.
2012-05-22	OPEN - no issues. None projected for 2x week look ahead. Chesapeake Containment [CCS] will use generators.
2012-05-15	OPEN - no issues. None projected for 2x week look ahead or for Illini Drilled [IDF].

03 EMPLOYEE DRUG TESTING

2012-05-29	OPEN - no issues. P. Zinsious reports that Jasper County Health has been good to work with, very flexible. CCS has 12x and BTB 3x workers at Newton today [05-29]. A. Saindon reports 1x worker from TSI to schedule TBD.
2012-05-22	OPEN - no issues. BT Drainage count in progress. 1x AMS yesterday DT at Robinson [05-21] and 1x AMS today [05-22].
2012-05-15	OPEN - no issues. J. Boone indicated Chesapeake Containment will have list by next Progress Meeting. Some workers will already have AER badges in good standing. BT Drainage will have projection today [05-15]. The borrow site [CBS] will not require AER badge/CBT/DT, only AMS safety training.

04 AMS SAFETY

2012-05-29	OPEN - no issues. [01] J. Tasich briefing heat exhaustion and dehydration. [02] J. Tasich review of insects. [03] J. Denham briefing schedule cooling stations when work is begun 05-30 - 2x 10 FT x 10 FT for CCS and 1x 10 FT x 10 FT general. [04] Next safety luncheon is 06-12. M. Wagstaff will not be able to attend.
2012-05-22	OPEN - no issues. Next safety luncheon is 06-12. [01] J. Tasich briefing on glove usage for material handling and look out for insects/varmints. [02] Bees at trailer are eradicated. [03] J. Denham briefing on cooling stations, 2x will be set up. [04] Brief discussion on hydrating. Energy drinks not encouraged due to caffeine content. [05] Review of Charah/AMS safety awards [ref. Item No. 05.04-2012-05-08.01,02,03 below]. [06] No cooling station at CBS as workers [operators] in equipment with AC.
2012-05-15	OPEN - no issues. J. Tasich reported on site specific emergency action plan [EAP]: [01] Shelter area to be cleaned today [05-15], and will be on going procedure. [02] Water training was completed for installation of the "stop logs". [03] Refining Item No. 05.05-2012-05-15 below, bees swarming on GEO trailer, have been sprayed. Workers for AMS are to note on their new employee form allergies such as to bee stings. The employee is required to notify the Site Manager of such allergies. In the case of a bee [or insect sting], each worker is responsible to carry their own medication, such as an "epi-pen" [Epinephrine Auto-Injectors] accordingly.

05 HOUSEKEEPING

2012-05-29	OPEN - Dumpster for CCS - P. Zinsious to investigate.
2012-05-22	OPEN - No issues. M. Wagstaff inquire about CCS and liner material. CCS will have dumpster and AMS will help keep clean.
2012-05-15	OPEN - See Item No. 05.04-2012-05-15 above regarding bees swarming at GEO trailer.

06 PLANT ACCESS - CBT BADGE

2012-05-29	OPEN - R. Porter reports getting difficult to monitor the gate with both himself and Joe on the site. AER requires frequent access to the substation. Sometimes the entities accessing the site do not have proper PPE or identification signs on their vehicles. R. Porter also reports they are not calling the numbers on the entrance sign and at the trailers to access the site. There has also been unknown vehicle accessing the site. M. Wagstaff indicated that re-activation of the gate is an option. General discussion that gate is good idea, but does not prevent access to the plant. Consensus is that using the gate when no one is at the trailers will at least force direction of traffic around to where vehicles can be seen from the work site.
2012-05-22	OPEN - no issues. M. Wagstaff to issue gate log. DT info listed above. Item No. 05.03.
2012-05-15	OPEN - no issues. Projection 1x to 2x at EOW, possibly 10x for BTB. M. Wagstaff to issue gate log again. P. Zinsious request copy [not received].

07 VEHICLES ON SITE

2012-05-29	OPEN - no issues.
2012-05-22	OPEN - no issues. Brief review of workers bused to ash pond work site by AMS.
2012-05-15	OPEN - no issues

08 OSHA LOG - WORK HOURS

2012-05-29	OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 05-28 No incidents or accidents. 2,255.50 RT <u>0,168.00</u> OT 2,423.50 TOTAL
2012-05-22	OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 05-21 No incidents or accidents. 0,000.00 RT <u>0,000.00</u> OT 2,347.50 TOTAL [time not split out RT/OT]
2012-05-15	OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 05-014 No incidents or accidents. 1,945.50 RT <u>0,000.00</u> OT 1,945.50 TOTAL

06 MANPOWER [HEAD COUNT]

01 CREW SIZE

2012-05-29 AMS, Chesapeake Containment [CCS], and BT Drainage [BTD] on site.
Belt Construction [BCI] and Illini Drilled [IDF] have demobilized.

[04] Geotechnology [work hours not included in OSHA Log above - 2x this AM, 4x by EOD]

[00] Pipe

[00] Mechanical

[00] Electrical

[00] Cement

[15] Laborers [BTD 1x, AMS 2x, IDF 2x, CCS 11x]

[04] Operators [BTD 1x, AMS 2x, IDF 2x]

[01] Teamsters

[00] Survey

[03] Foreman [Full time] [Mr. John Dietzel new Charah/AMS Focus Site Manager on project] [CCS 1x]

[27] Total

2012-05-22 OPEN - AMS and Belt Construction on site. AMS Focus [training program] Site Manager Mr. Anthony Driver on site.

Current General discussion on what the AMS-Charah focus program is to train site Managers.

[01] Geotechnology [work hours not included in OSHA Log above]

[00] Pipe

[00] Mechanical

[00] Electrical

[00] Cement

[03] Laborers

[05] Operators [long boom operator not required]

[01] Teamsters

[00] Survey

[02] Foreman [Full time] [Mr. John Dietzel new Charah/AMS Focus Site Manager on project].

[12] Total

2012-05-15 OPEN - AMS and Belt Construction on site. AMS Focus [training program] Site Manager Mr. Anthony Driver on site.

Current General discussion on what the AMS-Charah focus program is to train site Managers.

[01] Geotechnology [work hours not included in OSHA Log above]

[00] Pipe

[00] Mechanical

[00] Electrical

[00] Cement

[01] Laborers

[04] Operators [long boom operator not required]

[01] Teamsters

[00] Survey

[02] Foreman [Full time]

[09] Total

02 WORK HOURS

2012-05-29 OPEN - Standard hours - 7:00 AM CT to 3:30 PM CT. CCS still on track for OT. No work Memorial Day holiday [Monday 05-28].

2012-05-22 OPEN - Standard hours - 7:00 AM CT to 3:30 PM CT. Belt started to work 10x HRS [internal cost to AMS] last Tuesday [05-15] and will continue until finished. CCS still on track for OT. No work on site Memorial Day holiday [observed Monday 05-28].

2012-05-15 OPEN - Standard hours - 7:00 AM CT to 3:30 PM CT. Belt to work 4x D 10x HRS due to dry weather [internal cost to AMS]. When Chesapeake comes on board, they may work 12x HRS a day maximum due to instrumentation calibration procedures required in the specifications.

03 OVER TIME

2012-05-29 OPEN - CCS work hours 7:00 AM CT to 5:30 PM CT.

2012-05-22 OPEN - Belt has projected OT per Item No. 06.02, and will de-mob on Friday [05-25].

2012-05-15 OPEN - Belt has projected OT per Item No. 06.02-2012-0515 above.

04 TRAILER [AND GENERAL CONDITIONS]

2012-05-29 OPEN - no issues.

2012-05-22 OPEN - no issues.

2012-05-15 OPEN - no issues.

07 PREVIOUS

01 SUBCONTRACTS

2012-05-29 OPEN - no issues.

2012-05-22 OPEN - no issues. BT Drainage has contract [CLOSED].

2012-05-15 OPEN - no issues. BT Drainage by EOW.

02 SUBMITTALS

20120-05-29	Submittal log as published by GEO on 05-25 distributed. General discussion. [01] Submittal log copies distributed. [02] Submittal log last two on list review by AER. [03] Seed/mulch submittal under review by AER. [04] VES-01 to be returned by AER. [05] VES-02 M. Wagstaff orally approved. [06] SWP3 for APD submitted by AMS as matter of record. [07] AMS to submit dewatering sump 05-30. [08] J. Denham and P. Zinsious overview of submittals not required at this time, some at the end of the project. [08] Massmann to certify subgrade and set spots to patch. [09] Discussion liner anchor trench.
2012-05-22	OPEN - no issues. In progress - P. Zinsious submitted to J. Cravens today updated cover sheets and log.
2012-05-15	OPEN - no issues. In progress - P. Zinsious to meet with J. Cravens today [05-15] to review log. Pump information to be re-submitted [again] due to identification.

08 MATERIAL**01 GENERAL**

20120-05-29	OPEN - R. Porter reports all material in, for pipe relocation connection and complete. [CLOSED]
20120-05-22	OPEN - R. Porter reports all material in, however bands too long [will resolve].
20120-05-15	OPEN - R. Porter reports pipe ordered for relocation connection to the manhole. Details in Item No. 12.1.04-2012-05-15 below.

02 GEOMEMBRANE PRE-CON MEETING

20120-05-29	OPEN - J. Denham indicated certifications required for fork lift drivers. R. Porter reports has certifications, same as when unloading the liner.
20120-05-22	OPEN - no issues. GEO inspection on Thursday [05-24].
20120-05-15	OPEN - no issues.

03 CAP VENT PRE-CON MEETING

20120-05-29	OPEN - Everything complete except the strainers, which will be installed after the clay cap.
20120-05-22	OPEN - Drilling completed on Monday [05-21].
20120-05-15	OPEN - Mobilization date moved to 05-21.

04 PERFORATED COLLECTOR PIPE [PCP] PRE-CON MEETING

20120-05-29	OPEN - Discussion during Progress Meeting: [01] M. Wagstaff reports sequence for new monitoring well: [01] Install new monitoring well next week 06-04 by local subcontractor Todd Skinner [worked at Newton]. [02] Will not require safety training by AMS. Will wear PPE, and sign in. [03] New well depth 15 FT to 18 FT. [04] When well is developed in 2x weeks, EC Lab will sample both wells. [05] When samples approved, old well can be abandoned. [06] AMS to remove when excavating the PCP, projected 06-18. No impact to schedule. [02] Water from dewatering well [points] discharged into Pond B. R. Porter indicated Pond A has 3 FT freeboard, concerned with stirring up [ash] and Pond A being full. [03] M. Wagstaff indicated Pond A is where discharge is to go, take advantage of delay in sampling.
20120-05-22	OPEN - Meeting during Progress Meeting with Mr. John Boyer. [01] Open discussion of safety concern due to wet/damp installation and welding of HDPE in the trench. [02] M. Wagstaff indicated Hanson concern damage of pipe when installed. [03] AMS to provide PVC Value Engineering Submittal [substitution]. J. Boyer indicated cost estimated at \$ 500 more. [04] P. Zinsious indicated pipe will not be damaged. J. Boyer stated can run "mandrel test" after pipe installation. [05] Existing Ameren MW-2 probably not able to be saved,
20120-05-15	NEW - Meeting after Progress Meeting with Mr. John Boyer - B&T Drainage [BTD] [01] M. Wagstaff inquired as to small business status. J. Boyer indicated no, as past 3x years BTD did under \$ 28M. [02] Presentation of the "Excavation Work Plan for the Perforated Collector Pipe". [03] General review by all. [04] Plan to be edited for GCL. Was not presented as GCL, as not approved. [05] M. Wagstaff indicated alignment of PCP is flexible. [06] PCP can go direct into the Dewatering Sumps, "A-Lock" type seal with clamp. [07] J. Boyer concerned over Monitoring Well No. 2 [MW-2]. AER indicated see when get to that point if demo. [08] Spoils transfer by "tag-team" excavators. However, there may be no spoils above the GCL elevation. [09] General discussion that welding HDPE inside the trench boxes is a safety issue due to small work area, water, and access. J. Boyer proposed a PVC pipe option. The focus for this alternate is safety, but there is a possible cost savings as well. The pipe thickness could be an DR 14 [approximate thickness 3/4 IN] or DR 18 [approximate thickness 1/2 IN] per J. Boyer. There is flexibility in the shorter pieces of pipe, the mechanical connections, primarily her would be "bell and spigot". BTD to research price for PVC, and AER to review with Hanson. [10] If the bedrock cannot dug with and excavator, then pipeline can be raised. This creates issue with the manholes [dewatering sumps - reference Item No. 09.01-2012-05-08 below] height. If they cannot be adjusted with the ring[s], then area they protrude above the plan grade can be adjusted in the field. Barrel heights come in 16 IN, 32 IN, or 48 IN heights.

- [11] Projected manpower is 3x Operators [or more] and 3x Laborers.
 [12] Duration is approximately 30x D.
 [13] Dewatering will be by well point. Illini Drilled will drill well points [next week].
 [14] Issue of water volume from the dewatering operation. Could possibly be millions of gallons. J. Boyer indicated amount not known, but possibly the areas of the bedrock in a "valley" might be able to be pumped down, but this depends on the length of the "valley". Pumps in the well points will operate 24/7, in any order, one or more at a time. In the beginning all pumps will be operating. This may create an issue for the adjacent property owner [farmer] who pumps ground water for irrigation.
- [15] Issue of water volume disposal into the ponds. M. Wagstaff will research what is required for pumping into the ponds and what is required for the pond elevation relative sampling of the discharge by AER [and paid for by AER].
 [16] The well point will pump system will have safety fence, light, and the power cord above ground in a conduit.
 [17] Delivery of the dewatering sump structures are 2 WKS [after approval].
 [18] Discussion of the diameter and the thickness of the manhole barrel. M. Wagstaff indicated as long as buoyancy [reference Item NO. 09.01-2012-05-08-03 below] good, alternates will be acceptable. Possible options are larger base and matt [concrete] at base such as a 4 FT DIA MH with larger base [J. Boyer indicated may install larger base for BTB Insurance].

09 ADJACENT PROPERTIES AND PCP LINE

01 GENERAL

- 2012-05-29 OPEN - Review of Lamac drawing of PCP alignment survey.
 [01] West area by License Agreement offset mover 80 FT due to coordination with boundary line/survey/drawings.
 [02] East area by License Agreement offset mover 80 FT.
 [03] East portion of PCP moved 10 FT to 20 FT due to trees and berm area.
 [04] M. Wagstaff only concerns are depth to remain and pond embankment global stability during excavation.
 [05] M. Wagstaff no issue with overall plan, but requested submit in a RFI.
- 2012-05-22 OPEN -
 [01] P. Zinsious reported Mr. Wampler [Wampler Farms].
 [02] Open discussion of License Agreement and boundary line alignment off approximately 80FT.
 [03] M. Wagstaff indicated no issue. AMS to show on drawing.
- 2012-05-15 OPEN -
 [01] See Item No. 08.04-2012-05-15 for PCP Pre-Con Meeting and submission of the Excavation Plan.
 [02] Corrected ring description below in body of text.
 [03] No tax exemption if materials not purchased in Illinois.

10 QUALITY CONTROL

01 GENERAL

- 2012-05-29 OPEN - no issues. Poor material form areas at anchor trench excavation can be disposed of in Pond A.
 2012-05-22 OPEN - no issues
 2012-05-15 OPEN - no issues

02 ASH

- 2012-05-29 OPEN - work complete. P. Zinsious request copy of Massmann survey files. AER indicated by EOW.
 2012-05-22 OPEN - no issues. All ash compaction density test have passed [over 90% density], some areas at PGL have to be tested. GEO to issue report. Mr. Tim Wilson [GEO] and Massmann to be on site 05-22. Ash pond elevations at 98% to grade [as determined by the 02-06 drawings], some spots high. General discussion "zig" [valley] in final grade per plan.
 2012-05-15 OPEN - no issues. J. Cravens Section A and C approximately 50 point for ash compaction density tests have been performed to date. All test have to date have passed in the range of 99% to 114% compaction. GEO technician Mr. Tim Wilson will be back on site tomorrow [05-16]. Massmann is to download files for GEO locations.

03 CLAY

- 2012-05-29 OPEN - Borrow material analysis submitted show acceptable as both clay cover and vegetative material. Clay projected 06-11.
 2012-05-22 OPEN - no issues - sample analysis submitted.
 2012-05-15 OPEN - no issues. Samples taken yesterday [05-14]. The physical analysis will be by Holcomb and the chemical analysis will be by ARDL. Results should be in by next mid-week or before.

11 SCHEDULE REVIEW

01 SCHEDULE

- 2012-05-29 OPEN - Review of schedule 06-01 handed out and 2 WK Look Ahead.
 [01] 06-05 - BTB to possibly begin.
 [02] 06-11 - Clay projected.
 [03] CBS Grubbing and road work this week.
 [04] During clay placement cap vents will be beamed and flagged.
 [05] License agreement "snow fence" installation.
 [06] Remove AER fence last minute for security.
 [07] Liner installation projected to progress at 8D duration, about 2D per 25% of area.
 [08] Activity No. 174 change to 05-29.
 [09] Dewatering progressing.
 [10] Ash Pond D 100% rolled and ready.

2012-05-22	OPEN - Review of schedule to date. [01] Actual percent completion on ash pond sectors: A = 100%, B = 98%, C = 100%, D = 98% [02] 05-22 cap vents projected to 05-25. [03] 05-29 - BTD start date projection for PCP. [04] 05-21 - BTD to begin drilling de-watering wells. Pumping possibly 24/7 if required. [05] 05-22 - AMS to begin removing fencing along ash pond leaving poles. [06] 05-26 - Smooth drum roll ash placement ,no vibration, and addition of water for moisture content. [07] Box culvert demolition complete.
2012-05-15	OPEN - Review of schedule to date. M .Wagstaff on vacation 05-15 to 05-22. [01] Actual percent completion on ash pond sectors: A = 100%, B = 90%, C = 100%, D = 85% [02] 05-11 - Lamac survey for "as-built" [record drawings] of the pipe relocation. [03] 05-29 - BTD start date projection for PCP. [04] Brief discussion electrical [AAA] and mechanical [FWI] scope.
02	TIME AND MATERIAL
2012-05-29	OPEN - no issues
2012-05-22	OPEN - no issues
2012-05-15	OPEN - no issues
03	COORDINATION
2012-05-29	OPEN - no issues. R. Porter to get with G. Musch to fill the water tank this week.
2012-05-22	OPEN - no issues. R. Porter to get with G. Musch to fill the water tank.
2012-05-15	OPEN - no issues

12.0	COST AND BUDGET
01	CHANGE REQUEST ISSUES
2012-05-29	OPEN - no issues.
2012-05-22	OPEN - no issues.
2012-05-15	OPEN - no issues.
02	AMS PAY APPLICATION
2012-05-29	OPEN - no issues.
2012-05-22	OPEN - no issues.
2012-05-15	OPEN - AMS submitted pay application. M. Wagstaff indicated no issues, and that the revised AER PO is in process.
12.1	EXTRA WORK ORDERS
01	EWO-01 ELECTRIC TEMPORARY
2012-05-29	No issues. Work 100% complete.
2012-05-22	Deferred.
2012-05-15	No issues. 100% complete.
02	EWO-02 ASH PLACEMENT - CAP MODIFICATIONS
2012-05-29	No issues. Work completing. AMS to include in draft of pay-app on 06-05.
2012-05-22	Deferred.
2012-05-15	No issues. In progress.
03	EWO-03 COAL PILE
2012-05-29	No issues. Work 100% complete.
2012-05-22	Deferred.
2012-05-15	No issues. 100% complete.
04	EWO-04 PIPE RELOCATION
2012-05-29	No issues. Work 100% complete.
2012-05-22	Deferred.
2012-05-15	OPEN - work in progress. R. Porter reports pipe is ordered for the connection, and scheduled for installation next week on Monday [05-21]. The connection to the manhole will be a short piece of SDR 35 PVC pipe connected to the HDPE with a stainless steel repair coupling. The interior of the manhole will be patched with non-shrink grout, the exterior with the "A-Lock" ring and concrete. Details will be provided on the plan and profile record drawings for this line.
05	EWO-05 ELECTRIC FEEDER
2012-05-29	OPEN - in progress. M. Wagstaff review and will have list of questions 05-29.
2012-05-22	Deferred.
2012-05-15	OPEN - in progress. AMS and AAA meeting yesterday [05-14], review after Progress Meeting.
06	EWO-06 POND A TRENCH
2012-05-29	No issues. Work 100% complete.
2012-05-22	Deferred.
2012-05-15	No issues. Work 100% complete.

07	EWO-07	ELECTRIC OVERHEAD
	2012-05-29	OPEN - in progress. M. Wagstaff review and will have list of questions 05-29.
	2012-05-22	Deferred.
	2012-05-15	OPEN - in progress. AMS and AAA meeting yesterday [05-14], review after Progress Meeting.
08	EWO-08	CREDIT TO EWO-01
	2012-05-29	OPEN - in progress.
	2012-05-22	Deferred.
	2012-05-15	OPEN - in progress.
09	EWO-09	BENTONITE VES-01
	2012-05-29	OPEN - in progress. Approved. AMS to provide cost account.
	2012-05-22	Deferred.
	2012-05-15	OPEN - in progress. M. Wagstaff indicated that yesterday [05-14] Hanson approved the AMS response comments to the Hanson submittal review. GSE to provide pricing and AMS to calculate EWO.
10	EWO-10	FLOW-ABLE FILL CREDIT
	2012-05-29	OPEN - in progress. Work in area complete. AMS to provide cost account.
	2012-05-22	Deferred.
	2012-05-15	OPEN - in progress.
11	EWO-11	BUILDING SPOILS REMOVAL
	2012-05-29	OPEN - in progress. No further spoils found, AMS to provide cost account.
	2012-05-22	Deferred. No other issues, test holes revealed.
	2012-05-15	OPEN - in progress. AMS to dig test holes by EOW.

13 ACTION ITEMS - AER [25]

01	AMEREN [AER]
	2012-05-29 Pipe alignment direct to the manhole M. Wagstaff indicated discussion with Hanson and no issues with alignment and connection proposed by AMS. Work is considered a field change and no RFI required, only show final layout of Record Drawings. M. Wagstaff requested Lamac shoot final elevations.
	2012-05-22 Discussion of collection box pipe alignment direct to the manhole.
	2012-05-15
	[20] Drawing S-386 SHT 5 RF - the survey coordinates are reversed. [CLOSED - drawing issued]
	[24] Research with Hanson PVC verses HDPE for the PCP [reference Item No. 08.04-2012-05-15-09].
	[25] Research with Hanson alignment of the discharge piping structure at the outfall man hole. AER original design took into consideration a "mixing zone". R. Porter indicated since the line pipe relocation alignment can be direct. Discussion of the grade to be field adjusted around the box if new location is approved.

14 ACTION ITEMS - AMS [21]

01	ASH MANAGEMENT [AMS]
	2012-05-29 In progress.
	2012-05-22 In progress.
	2012-05-15
	[21] BTD/AMS VES-02 for PVC verses HDPE for the PCP [reference Item No. 08.04-2012-05-15-09].

15 PRODUCTION

01	GENERAL
	2012-05-29 OPEN - no issues
	2012-05-22 OPEN - no issues
	2012-05-15 OPEN - no issues
02	ASH
	2012-05-29 OPEN - no issues. Estimated 101,938 CY EOD 05-22 [completion date CY based on load count, not an actual measurement]
	2012-05-22 OPEN - no issues. Estimated 101,074 CY EOD 05-21
	2012-05-15 OPEN - no issues. Estimated 89,098 CY EOD 05-14
03	CLAY
	2012-05-29 OPEN - no issues - this activity not begun.
	2012-05-22 OPEN - no issues - this activity not begun.
	2012-05-15 OPEN - no issues - this activity not begun.

16 DOCUMENTS TRANSMITTED

2012-05-29	[01] AMS - Contact list HUT-APD-CON-2012-05-29
	[02] AMS - Schedule dated 05-25 - critical Path
	[03] AMS - Schedule dated 05-25 - full
	[04] GEO - Submittal Log [previous issue via e-mail 05-25]
	[05] LEC - drawing "Revision to Collection Layout"
	2012-05-25 22 [01] BTB AMS - Contact list HUT-APD-CON-2012-05-21 [Corrected 05-29]

2012-05-15	[01] BTD - Excavation Work Plan for the Perforated Collector Pipe [5x to 6x copies]
	[02] BTD - Certification [for above].

17 DOCUMENTS REVIEW ONLY

2012-05-29	None
2012-05-22	Large format drawing for alignment review of PCP.
2012-05-08	None

18 NEXT PROGRESS MEETING

Next meeting will be held in one week - Tuesday, June 5, 2012 at Hutsonville

19 DISTRIBUTION - STANDARD

AER

- 01 Mr. Mike Wagstaff
- 02 Mr. Mike Stewart
- 03 Mr. Bob Muesenfechter

GEO

- 01 Ms. Anna Saindon
- 02 Mr. Eric Neuner
- 03 Mr. Joe Cravens

AMS

- 01 Mr. Jimmy Boone
- 02 Mr. John Denham
- 03 Mr. Joko Tasich
- 04 Mr. Randy Porter

If there are any corrections, modifications, additions, or deletions please notify the sender by e-mail at pzinsious@ashmanagementservices.com

PHOTOGRAPH LOG



Photograph 1 ▲ - Geomembrane anchor trench facing west



Photograph 2 ▲ - Geomembrane installation facing southeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between May 29 and June 2, 2012

JRC



Photograph 3 ▲ - Double wedge seaming facing northeast



Photograph 4 ▲ - Burn out in seam facing southeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between May 29 and June 2, 2012



Photograph 5 ▲ - Geomembrane installation facing north



Photograph 6 ▲ - Air testing seam facing north

All photographs taken by Joseph Cravens of Geotechnology, Inc. between May 29 and June 2, 2012



Photograph 7 ▲ - Perforated 4" drainage pipe for anchor trench facing northwest



Photograph 8 ▲ - FA-01 sand for anchor trench facing northwest

All photographs taken by Joseph Cravens of Geotechnology, Inc. between May 29 and June 2, 2012



Photograph 9 ▲ - Typical geomembrane repair facing south



Photograph 10 ▲ - Peel testing on destructs facing west

All photographs taken by Joseph Cravens of Geotechnology, Inc. between May 29 and June 2, 2012



Photograph 11 ▲ - Tacking patch to geomembrane with a lyster facing south



Photograph 12 ▲ - Grinding edge of patch for good deal facing northeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between May 29 and June 2, 2012



Photograph 13 ▲ - Extrusion welding repair facing east



Photograph 14 ▲ - Destruct testing, archiving and shipping facing southwest



Photograph 15 ▲ - Backfilling anchor trench facing northwest



Photograph 16 ▲ - Backfilling anchor trench with drainage pipe facing southeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between May 29 and June 2, 2012



Photograph 17 ▲ - Overview Ash Pond D facing east



Photograph 18 ▲ - Overview Ash Pond D facing southeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between May 29 and June 2, 2012



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Energy Resources

FROM: Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DATE: June 12, 2012

SUBJECT: Weekly Summary Report for June 4, 2012 to June 9, 2012

PROJECT: Hutsonville Ash Pond D Closure
Crawford County, Hutsonville, Illinois
Geotechnology Project No. J019896.01

The following is a weekly summary of the site activities at the referenced site.

Weather

The weather was generally sunny and dry. Temperature (°F) lows ranged from 54 to 72°F, and temperature highs ranged from 66 to 88°F. Weather delay did not occur this week.

Construction Activities

Anchor trench construction and 40 mil HDPE geomembrane installation occurred this week. The remainder of the anchor trench has been excavated, excluding the outlet drainage trenches. Part of the anchor trench in Quadrant A and B, containing the 4-inch HDPE perforated drainage pipe, has been backfilled with IDOT FA-01 sand. Chesapeake Containment Systems, Inc. completed installation of the 40 mil HDPE geomembrane liner in all quadrants of Ash Pond D. Typical repairs on the geomembrane liner continue. Geotechnology, Inc. observed quality control of the installation. Refer to geomembrane documentation for more details. Dewatering for the proposed perforated collector pipe excavation continues in well number 2, located south of Ash Pond A. The replacement monitoring well MW-2R, was installed on June 4, 2012 by Skinner Limited. See daily reports for additional information.

Equipment and Personnel On-Site

CAT D6N Bulldozer
CAT 330D Excavator
CAT 613C Water Truck
CAT 279C Skid Steer (rubber track)
Bomag BW 172 PDB-2 Roller
John Deere 624H Front End Loader
John Deere 9520 Tractor
John Deere 410J Backhoe
Sky Track 6036 Forklift
Case 580 Backhoe
Water Truck (Dust Control)

Geotechnology, Inc. – Joe Cravens, Tim Wilson, Steve Graham, and Anna Saindon
Ash Management Services, LLC (AMS) – Randy Porter, Jon Dietzel, Jimmy Boone, Robert Dunkley, James Marks, Shawn McClaskey, Brad Bolenbaugh, Greg Siverly, and Jeremy Shorter
Charah, Inc. – Joe Tasich
Chesapeake Containment Systems, Inc – Jose Valverde, Barbarito Flores, Daniel Gonzales, Phet Vongkhamchanh, Jose Flores, Alberto Ortiz, Manuel Gonzales, Israel Gonzales, Erik Sefton, Blake Bunting, and Matthew Watts
Daylight Land Management – Adam Ziliak and Billy Georges
B&T Drainage – John Boyer and Chase Boyer
Skinner Limited – Todd Skinner, Adam Bruce, Allan Denk, and Jeff Walsh
Visitors –Refer to the Visitor's Log for visitors, dates, and times.
Refer to the meeting minutes for additional personnel.

Meetings

The weekly progress meeting was held on Tuesday, June 5, 2012. Refer to the attached meeting minutes for additional information.

Photographs

A photograph log with select photographs obtained this week is attached.

Materials

40 mil HDPE geomembrane was installed on site. Additional IDOT FA-01 sand and 4-inch HDPE drainage pipe was delivered on site for the anchor trench.

Testing/Sampling

Geomembrane destructive and non-destructive testing and sampling occurred this week. Refer to geomembrane documentation for additional details.

Calibration Records

Calibration information was not obtained this week.

Signature of CQA Officer

Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.



DAILY REPORTS

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 6/4/12

TIME: Arrive: 6:30 AM Depart: 6:30 PM Travel: 1.0 hr Total: 12.75 hrs (0.25 hr for lunch)
Weather: Partly Cloudy, 60° AM, Rain 66° PM Contractor: AMS Subcontr./Supplier: CCS/GEO/DLM/Skinner
Equipment Working: 6036 Forklift, Water Truck, CME 550 Drill Rig, 6430 Tractor
Site Activities / Observations / Contacts / Notes: AMS:

The 6036 continued deploying liner rolls on the southern section of the pond. Due to the recent rain events, the entire eastern anchor trench is filled with water. They began pumping the water from the trench into the Water Truck, and using it for dust control on the pond. Johnny McGrew is no longer an AMS operator. 10 more loads of FA-01 sand was delivered.

CCS:

They continued placing geomembrane panels on the southern section of the pond, double fusion seaming (welding), and conducting peel and shear tests on destructs. No air testing or extrusion welding performed today. Refer to Geotechnology's data sheets for more information. Leroy Smith is no longer working on the job site.

Skinner, Ltd.:

Skinner Limited drilled and installed MW-2R. Personnel - Todd Skinner (driller), Adam Bruce, Allan Denk, Jeff Walsh. MW-2R is located 13' north of MW-2, and approx. 19'-20' south of Ash Pond A's embankment toe. The well was drilled to 18' and was continuously sampled with a split-spoon. The subsurface generally consisted of sand (0-17.5'), overlying glacial till. The well was drilled with 4 1/4" H.S. augers, and standard AWD rods. Well Installation: 0-3' concrete, 3-5' bentonite seal (chips), 5'-7' sand, 7'-18' screen (11.0'). The well stickup has a casing and is surrounded by 3 bollards. The well was not able to be developed due to the adjacent dewatering wells.

DLM: Adam Ziliak and Billy Georges delivered more

Additional Comments: hay and demobilized their John Deere 6430 Tractor.

Randy Packer
Contractor Representative

Anna Sajdak
Signature
Geotechnology, Inc.

Anna Sajdak
Engineer's Signature

AMS
Company

6-4-12
Date
6-10-12
Date

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 6/5/12

TIME: Arrive: 6:30 AM Depart: 5:00 PM Travel: 1.0 hr Total: 11.25 hrs (0.25 hr for lunch)

Weather: Sunny, 65° AM, 77° PM Contractor: AMS Subcontr./Supplier: CCS/GEO

Equipment Working: 6036 Forklift, 279C Skid Steer, Water Truck

Site Activities / Observations / Contacts / Notes: —

AMS:

The 6036 continued deploying liner rolls on the southern section of the pond, and staged more rolls on the east side of the pond. The 279C was used to move materials along the anchor trench. The laborers continued pumping water from the anchor trench on the east side, into the water truck, and discharged the water into Ash Pond C. They also assisted CCS for geomembrane placement. AMS trained two operators and they will begin work tomorrow.

CCS:

They continued deploying geomembrane panels on the southern section of the pond, double fusion seaming (welding), and staging sand bags. They deployed 12 rolls today, and approx. 50 rolls to date. There was no patching/repairing, extrusion welding, destructive testing, or non-destructive testing today. Refer to Geotechnology's data sheets for more information.

Misc.:

The details of the PCP should be worked out next week, and excavation should begin on 6/18/12. Clay placement should begin on 6/11/12, pending geomembrane certification.

Additional Comments: —

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Randy Porter AMS
Contractor Representative Company
Randy Porter Date 6-5-12
Signature Anna Saindon Date 6-10-12
Geotechnology, Inc.
Anna Saindon
Engineer's Signature

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 6/6/12

TIME: Arrive: 6:30 AM Depart: 5:45 PM Travel: 1.0 hr Total: 12 hrs (0.25 hr for lunch)
Weather: Sunny, 54° AM, 78° PM Contractor: AMS Subcontr./Supplier: CCS/GEO
Equipment Working: 6036 Forklift, 580 Backhoe, 279C Skid Steer, Water Truck
Site Activities / Observations / Contacts / Notes: _____

AMS:

The 6036 continued deploying liner rolls on the southern section of the pond, and staged liner rolls on the south end of the pond. The 580 began digging the anchor trench on the south end of the pond. The only part of the anchor trench that remains to be excavated is on the south and west end of Section C. The 279C placed sand bedding for the 4" perforated pipe in the NE portion of the anchor trench, forcing the remaining water in the trench towards the east. The laborers continued pumping water from the anchor trench on the east side of the pond into the water truck, and using it for dust control on the pond. Shawn McClaskey is no longer an AMS laborer. AMS's new operators are Greg Siverly and Jeremy Shorter.

CCS:

They finished deploying geomembrane panels on the southern section, going towards the east side of the pond. The areas left to cover are a 50' strip on the south and west end of the pond. All the panels placed have been seamed. No air testing took place today. They began vacuum testing repairs on the north side of the pond, and continued patching/repairing panels with extrusion welding. Three destructs were failed in the lab for peel incursion. DT-7, 12, and 19 were retested by cutting additional samples 10' on both sides of the original 1'x3' DT on the same seam. The retested samples passed in the field per GM19 requirements, and the lab samples were sent out. If lab results extend passed the weekend, only panels P-1 to P-9 will be allowed to be covered with vegetative cover, pending vacuum testing.

Additional Comments: _____

<u>Randy Porter</u> Contractor Representative	<u>AMS</u> Company
<u>Anna Sandon</u> Signature	<u>6-6-12</u> Date
<u>Anna Sandon</u> Geotechnology, Inc.	<u>6-10-12</u> Date
<u>Anna Sandon</u> Engineer's Signature	

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: - Client: Ameren ER Date: 6/7/12

TIME: Arrive: 6:30 AM Depart: 7:45 PM Travel: 1.0 hr Total: 14 hrs (0.25 hr for lunch)

Weather: Sunny, 59°AM, 80°PM Contractor: AMS Subcontr./Supplier: CCS/GEO

Equipment Working: 6036 Forklift, 580 Backhoe, 279C Skid Steer, Water Truck

Site Activities / Observations / Contacts / Notes: _____

AMS:

The 6036 continued deploying liner rolls on the south and west ends of the pond. The 279C removed anchor trench spoils on the northern end of Section A, and stockpiled the spoils outside the pond on the NW corner. The 580 finished digging the anchor trench on the south end of the pond, and began digging the anchor trench on the west side of Section C. The 580 also removed anchor trench spoils on the west end of Section A, and regraded the sloped pad in front of the box culvert before deploying geomembrane. The 4" solid-walled subdrainage pipe for the anchor trench cleanouts were delivered along with additional IDOT FA-01 Sand for the anchor trench backfill.

CCS:

They completed deploying geomembrane panels on Ash Pond D. All the panels deployed have been double fusion welded at the seams. After seaming, the panels were pulled back on the west side of Section C in order to complete the excavation of the anchor trench. Vacuum testing, patching and repairing, and extrusion welding continued on the northern section of panels. Air testing continued on the southern section of panels. After further review, it was found that destruct sample DS-2 did not meet GM19 requirements. Therefore, a new sample was cut, field tested, and sent to TRI labs. If the new sample does not have passing results, this will delay clay placement on 6/11/12. Currently, the date has not been changed.

Additional Comments: The date for PCP excavation has been moved up to 6/13/12.

Randy Proctor
 Contractor Representative
Anna Saindon
 Signature
 Geotechnology, Inc.
 Engineer's Signature

AMS
 Company
6-7-12
 Date
6-11-12
 Date

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 6/8/12

TIME: Arrive: 6:00 AM Depart: 6:30 PM Travel: 1.0 hr Total: 13.25 hrs (0.25 hr for lunch)

Weather: Sunny, 70° AM, 88° PM Contractor: AMS Subcontr./Supplier: CCS/GEO/BTD

Equipment Working: 580 Backhoe, 279C Skid Steer, 624H Front End Loader

Site Activities / Observations / Contacts / Notes: _____

AMS:

The 580 finished digging the anchor trench on the west side of Section C. The anchor trench excavation is now complete. The 279C began backfilling the anchor trench and 4" perforated drainage pipe on the north and northeast side of Section A with FA-01 sand. A plate compactor was delivered and used to compact the backfilled anchor trench. Joko was here and finished training the truckers for the CBS route. The following are potential drivers for next week: James Griffith, Robbx Sanders, Gary Lamb, James Urfer, Lee Edington, Kim Edington, James Elledge, Scotty Comer, Greg Lingorfelder, Frank Walton, Tom Sager, and Ralph McReynolds (12 Total).

CCS:

They continued patches/repairs and vacuum testing on the northern section of panels. Panels P-1 to P-17 (NW Section A) has been fully repaired and tested. This area was outlined with sand bags and is ready for clay placement, pending the approval of the results from DS-2 retest. Air testing was completed in the southern section. Air testing remaining: South and West strip. They began patches/repairs in the southern section and destructs were marked and cut.

BTD:

The 624H unloaded two trench boxes and John refueled the generator. A Bomag BW 172 PDB-2 single drum, pad foot roller with cutting blade was delivered.

Additional Comments: _____

Landy Pae AMS
Contractor Representative Company
Landy Pae 6-8-12
Signature Date
Hanna Saindon 6-11-12
Geotechnology, Inc. Date
Hanna Saindon
Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 6/9/12

TIME: Arrive: 6:00 AM Depart: 4:45 PM Travel: 1.0 hr Total: 11.0 hrs (0.75 hr for lunch)
Weather: Sunny, 72° AM, 88° PM Contractor: AMS Subcontr./Supplier: CCS/GEO
Equipment Working: 279C Skid Steer, 580 Backhoe, 6036 Forklift
Site Activities / Observations / Contacts / Notes: _____

AMS:

The 279C and 580 continued backfilling the anchor trench and 4" perforated drainage pipe on the NE side of Section A, and the north side of Section B. A plate compactor was used to compact the backfilled anchor trench. The 6036 staged drainage pipe around the anchor trench and removed excess materials outside the pond to the construction yard. PGL stakes with 3' marks, and grid stakes with 3' marks were placed in Section A for clay placement on Monday.

CCS:

Air testing has been completed and CCS continued repairing, vacuum testing, and testing destructs in the southern section of panels in the pond, and the west and south 50' strip of panels. DS-2 retest had passing results and panels P-1 to P-17 have been approved for clay placement. A CQA Certification form for panels P-1 to P-17 will be issued before clay placement.

Additional Comments: _____

Randy Porter AMS
Contractor Representative Company
Randy Porter 6-9-12
Signature Date
Anna Saindon
Geotechnology, Inc. 6-11-12
Date
Anna Saindon
Engineer's Signature

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MEETING MINUTES



Hutsonville Power Station - Ash Pond D Closure
Progress Meeting No. 12 Minutes
Tuesday, June 5, 2012

01	PUBLICATION	
Publish date:	2012-06-11	Submitted by: P. Zinsious
Distribution:	E-mail only	Notes taken by: P. Zinsious
Location:	Hutsonville Power Station	AMS-Charah File No. HUT-APD-MTG-MIN-2012-06-05-PM-11
AER PO:	567523 R3	AMS-Charah Contract: 00030-01 AMS-Charah GL: 4116-06-6120

02	ATTENDEES [ALPHA BY COMPANY]					
NO.	SAL	FIRST	LAST	COMPANY	PHONE	E-MAIL
01	Mr.	Joe	King	AAA Electric	812-208-0464	sandy.tincher@aaaelectricofth.com
02	Mr.	Bob	Muesenfechter	Ameren	314-681-2287	bmuesenfechter@ameren.com
03	Mr.	Mike	Wagstaff	Ameren	618-343-7790	mwagstaff@ameren.com
04	Mr.	Jimmy	Boone	AMS - ARM	502-574-5465	iboone@ashmanagementservices.com
05	Mr.	Paul	Zinsious	AMS - PCM	502-640-2918	pzinsious@ashmanagementservices.com
06	Mr.	John	Denham	AMS - RM	502-609-0278	idenham@ashmanagementservices.com
07	Mr.	Randy	Porter	AMS - SM	502-554-5230	rporter@ashmanagementservices.com
08	Mr.	John	Boyer	B&T Drainage	217-822-6593	john@btdrainage.com
09	Mr.	Joko	Tasich	Charah	502-649-7633	jtasich@charah.com
10	Mr.	Mike	Burch	Freitag-Weinhardt	812-208-1771	mburch@freitaginc.com
11	Mr.	Joe	Cravens	Geotechnology	314-568-6628	j_cravens@geotechnology.com
12	Ms.	Anna	Saindon	Geotechnology	314-997-7440	a_saindon@geotechnology.com
13	Mr.	Travis	Hunt	S&T Construction	812-234-2243	stdirt1@hotmail.com

03	ABBREVIATIONS		
AER	Ameren Energy Resources	OSHA	Occupational Safety Health Administration
AMS	Ash Management Services	PCP	Perforated Collector Pipe
BNSF	Burlington	PO	Purchase Order
CBT	Computer Based Training	RHOM	Routine Handling, Operation, and Maintenance
EAP	Emergency Action Plan	SPOC	Single Point of Contact
EOD	End of [the] Day	T/M	Time and Materials
EOM	End of [the] month	TBD	To Be Determined
EOW	End of [the] week	TD	Transmission Dispatch
EDTS	Energy Delivery Transmission Services	WPA	Worker Protection Assurance
EDC	Estimated Date [of] Completion		
EWO	Extra Work Order		
HDPE	High Density Polyethylene		
HRS	Hours		
LOTO	Lock Out Tag Out		
NMA	National Maintenance Agreement		

04	DOCUMENTATION	
Minutes are documented weekly, and the publication have a "rolling record" of the immediate past three weeks. Each week the oldest drops off and the current week is added to the minutes. Items are categorized as either "NEW", "OPEN", "CLOSE", or in case the an item has to be re-published after closed the previous week - "REOPEN".		

05	SAFETY - HOUSEKEEPING	
01	ACCIDENTS OR INJURIES	
2012-06-05	OPEN - no issues.	
2012-05-29	OPEN - no issues.	
2012-05-22	OPEN - no issues.	
02	WORKER PROTECTION ASSURANCE	
2012-06-05	OPEN - no issues. None projected for 2x week look ahead.	
2012-05-29	OPEN - no issues. None projected for 2x week look ahead.	
2012-05-22	OPEN - no issues. None projected for 2x week look ahead. Chesapeake Containment [CCS] will use generators.	
03	EMPLOYEE DRUG TESTING	
2012-06-05	OPEN - no issues. AMS has sent 2x employees. M. Wagstaff sent thank you e-mail to JCH. P. Zinsious suggested inviting them to a safety luncheon.	
2012-05-29	OPEN - no issues. P. Zinsious reports that Jasper County Health has been good to work with, very flexible. CCS has 12x and BTD 3x workers at Newton today [05-29]. A. Saindon reports 1x worker from TSI to schedule TBD.	
2012-05-22	OPEN - no issues. BT Drainage count in progress. 1x AMS yesterday DT at Robinson [05-21] and 1x AMS today [05-22].	

04 AMS SAFETY

2012-06-05	OPEN - no issues. [01] J. Denham reported on 1x AMS operator who was not operating safety while operating the [all terrain] fork lift on 06-01. Worker was suspended for unsafe actions and not wearing a seat belt and is currently under review. AMS has a zero tolerance policy, and if the review proves accurate, the worker will be terminated. Official response and [incident] violation report should be ready by 06-06. [02] General discussion safety concerns for the vegetative cover hauling [soil materials from the borrow site]. P. Zinsious indicated signs will be placed on Illinois Route 1 northbound and southbound lanes where trucks entering the highway. Currently Illinois is working on the bridge deck that crosses over Raccoon Creek on the haul route. Truckers will not be allowed to deviate from the route and travel the "back way" into the borrow site to avoid the work at the bridge deck. Estimated time of this work on the bridge deck is 6x to 8x Wks. [03] B. Muesenfechter concern that open liner anchor trenches could be a potential tripping hazard and indicated previous issue at Coffeen [Ameren power plant]. M. Wagstaff indicated depends on trench. J. Denham indicated caution tape will be placed at trenches, on the exterior, as the interior has liner, and cannot penetrate the liner [with posts]. [04] Cooling stations are set up.
2012-05-29	OPEN - no issues. [01] J. Tasich briefing heat exhaustion and dehydration. [02] J. Tasich review of insects. [03] J. Denham briefing schedule cooling stations when work is begun 05-30 - 2x 10 FT x 10 FT for CCS and 1x 10 FT x 10 FT general. [04] Next safety luncheon is 06-12. M. Wagstaff will not be able to attend.
2012-05-22	OPEN - no issues. Next safety luncheon is 06-12. [01] J. Tasich briefing on glove usage for material handling and look out for insects/varmints. [02] Bees at trailer are eradicated. [03] J. Denham briefing on cooling stations, 2x will be set up. [04] Brief discussion on hydrating. Energy drinks not encouraged due to caffeine content. [05] Review of Charah/AMS safety awards [ref. Item No. 05.04-2012-05-08.01,02,03 below]. [06] No cooling station at CBS as workers [operators] in equipment with AC.

05 HOUSEKEEPING

2012-06-05	OPEN - M. Wagstaff concern regarding small pieces of liner. J. Boone indicated daily cleanup.
2012-05-29	OPEN - Dumpster for CCS - P. Zinsious to investigate.
2012-05-22	OPEN - No issues. M. Wagstaff inquire about CCS and liner material. CCS will have dumpster and AMS will help keep clean.

06 PLANT ACCESS - CBT

2012-06-05	OPEN - M. Wagstaff reports that Ameren [Services] will begin transmission line work [between Kansas and Illinois], and will be using the coal yard at the Hutsonville plant as storage. Ameren will provide a guard for 12 HR shifts. The contacts at Ameren as Mr. Jim Williams [over the GENCO division] and Mr. Bob Simmons who will be the site SPOC. Work to begin the middle of June 2012. J. Boone indicated concern over coordination of trucks hauling into the site, and M. Wagstaff said no issue, as the trucks can come in through the gate by the [west] PCP line.
2012-05-29	OPEN - R. Porter reports getting difficult to monitor the gate with both himself and Joe on the site. AER requires frequent access to the substation. Sometimes the entities accessing the site do not have proper PPE or identification signs on their vehicles. R. Porter also reports they are not calling the numbers on the entrance sign and at the trailers to access the site. There has also been unknown vehicle accessing the site. M. Wagstaff indicated that re-activation of the gate is an option. General discussion that gate is good idea, but does not prevent access to the plant. Consensus is that using the gate when no one is at the trailers will at least force direction of traffic around to where vehicles can be seen from the work site.
2012-05-22	OPEN - no issues. M. Wagstaff to issue gate log. DT info listed above. Item No. 05.03.

07 VEHICLES ON SITE

2012-06-05	OPEN - no issues. Both GEO and CCS have "gators" on site.
2012-05-29	OPEN - no issues.
2012-05-22	OPEN - no issues. Brief review of workers bused to ash pond work site by AMS.

08 OSHA LOG - WORK HOURS

2012-06-05	OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 06-04. No incidents or accidents. 2,543.50 RT 0,436.50 OT 2,980.00 TOTAL
2012-05-29	OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 05-28 No incidents or accidents. 2,255.50 RT 0,168.00 OT 2,423.50 TOTAL
2012-05-22	OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 05-21 No incidents or accidents. 0,000.00 RT 0,000.00 OT 2,347.50 TOTAL [time not split out]

06 MANPOWER [HEAD COUNT]

01 CREW SIZE

2012-06-05 AMS, Chesapeake Containment [CCS], and BT Drainage [BTD] on site.

[03] Geotechnology [work hours not included in OSHA Log above]

[00] Pipe

[00] Mechanical

[00] Electrical

[00] Cement

[12] Laborers [AMS 2x, CCS 10x]

[02] Operators [AMS 2x]

[01] Teamsters

[00] Survey

[03] Foreman [Full time] [Mr. John Dietzel new Charah/AMS Focus Site Manager on project] [CCS 1x]

[21] Total

2012-05-29 AMS, Chesapeake Containment [CCS], and BT Drainage [BTD] on site.
Belt Construction [BCI] and Illini Drilled [IDF] have demobilized.

[04] Geotechnology [work hours not included in OSHA Log above - 2x this AM, 4x by EOD]

[00] Pipe

[00] Mechanical

[00] Electrical

[00] Cement

[15] Laborers [BTD 1x, AMS 2x, IDF 2x, CCS 11x]

[04] Operators [BTD 1x, AMS 2x, IDF 2x]

[01] Teamsters

[00] Survey

[03] Foreman [Full time] [Mr. John Dietzel new Charah/AMS Focus Site Manager on project] [CCS 1x]

[27] Total

2012-05-22 OPEN - AMS and Belt Construction on site. AMS Focus [training program] Site Manager Mr. Anthony Driver on site.

Current General discussion on what the AMS-Charah focus program is to train site Managers.

[01] Geotechnology [work hours not included in OSHA Log above]

[00] Pipe

[00] Mechanical

[00] Electrical

[00] Cement

[03] Laborers

[05] Operators [long boom operator not required]

[01] Teamsters

[00] Survey

[02] Foreman [Full time] [Mr. John Dietzel new Charah/AMS Focus Site Manager on project].

[12] Total

02 WORK HOURS

2012-06-05 OPEN - Standard hours - 7:00 AM CT to 3:30 PM CT. CCS still on track for OT.

2012-05-29 OPEN - Standard hours - 7:00 AM CT to 3:30 PM CT. CCS still on track for OT. No work Memorial Day holiday [Monday 05-28].

2012-05-22 OPEN - Standard hours - 7:00 AM CT to 3:30 PM CT. Belt started to work 10x HRS [internal cost to AMS] last Tuesday [05-15] and will continue until finished. CCS still on track for OT. No work on site Memorial Day holiday [observed Monday 05-28].

03 OVER TIME

2012-05-22 OPEN - CCS work hours 6:00 AM CT to 4:30 to 6:30 PM CT

2012-05-22 OPEN - Belt has projected OT per Item No. 06.02, and will de-mob on Friday [05-25].

2012-05-15 OPEN - Belt has projected OT per Item No. 06.02-2012-0515 above.

04 TRAILER [AND GENERAL CONDITIONS]

2012-06-05 OPEN - no issues.

2012-05-29 OPEN - no issues.

2012-05-22 OPEN - no issues.

07 PREVIOUS

01 SUBCONTRACTS

2012-06-05 OPEN - no issues.

2012-05-29 OPEN - no issues.

2012-05-22 OPEN - no issues. BT Drainage has contract [CLOSED].

02 SUBMITTALS

20120-06-05	<p>Submittal log as published by GEO on 06-2 distributed. General discussion.</p> <p>[01] Submittal log copies distributed.</p> <p>[02] Seed/mulch submittal under review by AER returned.</p> <p>[03] VES-01 to be returned by AER returned.</p> <p>[04] VES-02 M. Wagstaff orally approved returned.</p> <p>[05] SWP3 for APD submitted by AMS as matter of record original signed on 02-28.</p> <p>[06] AMS to submitted dewatering sump under AER review.</p>
20120-05-29	<p>Submittal log as published by GEO on 05-25 distributed. General discussion.</p> <p>[01] Submittal log copies distributed.</p> <p>[02] Submittal log last two on list review by AER.</p> <p>[03] Seed/mulch submittal under review by AER.</p> <p>[04] VES-01 to be returned by AER.</p> <p>[05] VES-02 M. Wagstaff orally approved.</p> <p>[06] SWP3 for APD submitted by AMS as matter of record.</p> <p>[07] AMS to submit dewatering sump 05-30.</p> <p>[08] J. Denham and P. Zinsious overview of submittals not required at this time, some at the end of the project.</p> <p>[08] Massmann to certify subgrade and set spots to patch.</p> <p>[09] Discussion liner anchor trench.</p>
2012-05-22	OPEN - no issues. In progress - P. Zinsious submitted to J. Cravens today updated cover sheets and log.

08 MATERIAL**01 GENERAL**

20120-06-05	OPEN - no issues.
20120-05-29	OPEN - R. Porter reports all material in, for pipe relocation connection and complete. [CLOSED]
20120-05-22	OPEN - R. Porter reports all material in, however bands too long [will resolve].

02 GEOMEMBRANE PRE-CON

20120-06-05	<p>Open - no issues.</p> <p>[01] A. Saindon reviewing tests, looks good. However test results for areas will not be ready until about 4:00 PM CT on 06-07.</p> <p>[02] Using stakes on positioned by sandbags and leaving the sandbags in place are acceptable per A. Saindon.</p>
20120-05-29	OPEN - J. Denham indicated certifications required for fork lift drivers. R. Porter reports has certifications, same as when unloading the liner.
20120-05-22	OPEN - no issues. GEO inspection on Thursday [05-24].

03 CAP VENT PRE-CON

2012-06-05	OPEN - no issues. [corrected date errors of "20120" below]
2012-05-29	OPEN - Everything complete except the strainers, which will be installed after the clay cap.
2012-05-22	OPEN - Drilling completed on Monday [05-21].

04 PERFORATED COLLECTOR PIPE [PCP] PRE-CON MEETING

2012-06-05	<p>OPEN - Discussion during Progress Meeting:</p> <p>[01] M. Wagstaff concern on the PCP alignment and liquefaction [due to seismic] of the soil near the pond berm. There was no specification provided by Ameren, and for now the alignment look good, will go with Hanson.</p> <p>[02] J. Boyer reports at area of DS-1 hit shallow sandstone, about 20 FT west from location. Will status once excavation begins if a new location or higher elevation will be required.</p> <p>[03] M. Wagstaff reports that new well MW-2R could not develop due to dewatering.</p> <p>[02] P. Zinsious reports that review of PCP alignment allow for power poles to stay in place [Ameren does not need to remove for now].</p>
20120-05-29	<p>OPEN - Discussion during Progress Meeting:</p> <p>[01] M. Wagstaff reports sequence for new monitoring well:</p> <p>[01] Install new monitoring well next week 06-04 by local subcontractor Todd Skinner [worked at Newton].</p> <p>[02] Will not require safety training by AMS. Will wear PPE, and sign in.</p> <p>[03] New well depth 15 FT to 18 FT.</p> <p>[04] When well is developed in 2x weeks, EC Lab will sample both wells.</p> <p>[05] When samples approved, old well can be abandoned.</p> <p>[06] AMS to remove when excavating the PCP, projected 06-18. No impact to schedule.</p> <p>[02] Water from dewatering well [points] discharged into Pond B. R. Porter indicated Pond A has 3 FT freeboard, concerned with stirring up [ash] and Pond A being full.</p> <p>[03] M. Wagstaff indicated Pond A is where discharge is to go, take advantage of delay in sampling.</p>
20120-05-22	<p>OPEN - Meeting during Progress Meeting with Mr. John Boyer.</p> <p>[01] Open discussion of safety concern due to wet/damp installation and welding of HDPE in the trench.</p> <p>[02] M. Wagstaff indicated Hanson concern damage of pipe when installed.</p> <p>[03] AMS to provide PVC Value Engineering Submittal [substitution]. J. Boyer indicated cost estimated at \$ 500 more.</p> <p>[04] P. Zinsious indicated pipe will not be damaged. J. Boyer stated can run "mandrel test" after pipe installation.</p> <p>[05] Existing Ameren MW-2 probably not able to be saved.</p>

09 ADJACENT PROPERTIES AND PCP LINE	
01 GENERAL	
2012-06-05	OPEN - Discussion during Progress Meeting: [01] J. Boone reports Mr. Duane Wampler has communicated not happy with fence alignment. [02] AMS has mover the fence back. J. Cravens has been in contact with Wampler. [03] J. Boyer indicated collector tile work in about two weeks [will need coordination with Mr. Wampler]. [04] J. Boyer reports only need in week in this area, as shallow. [05] M. Wagstaff will be in contact with Mr. Wampler to resolve.
2012-05-29	OPEN - Review of Lamac drawing of PCP alignment survey. [01] West area by License Agreement offset mover 80 FT due to coordination with boundary line/survey/drawings. [02] East area by License Agreement offset mover 80 FT. [03] East portion of PCP moved 10 FT to 20 FT due to trees and berm area. [04] M. Wagstaff only concerns are depth to remain and pond embankment global stability during excavation. [05] M. Wagstaff no issue with overall plan, but requested submit in a RFI.
2012-05-22	OPEN - [01] P. Zinsious reported Mr. Wampler [Wampler Farms]. [02] Open discussion of License Agreement and boundary line alignment off approximately 80FT. [03] M. Wagstaff indicated no issue. AMS to show on drawing.

10 QUALITY CONTROL	
01 GENERAL	
2012-06-05	OPEN - no issues
2012-05-29	OPEN - no issues. Poor material form areas at anchor trench excavation can be disposed of in Pond A.
2012-05-22	OPEN - no issues
02 ASH	
2012-06-05	OPEN - Survey information sent to Lamac, for A. Ridgely to determine the delta.
2012-05-29	OPEN - work complete. P. Zinsious request copy of Massmann survey files. AER indicated by EOW.
2012-05-22	OPEN - no issues. All ash compaction density test have passed [over 90% density], some areas at PGL have to be tested. GEO to Issue report. Mr. Tim Wilson [GEO] and Massmann to be on site 05-22. Ash pond elevations at 98% to grade [as determined by the 02-06 drawings], some spots high. General discussion "zig" [valley] in final grade per plan.
03 CLAY	
2012-06-05	OPEN - no issues begin placement on 06-11.
2012-05-29	OPEN - Borrow material analysis submitted show acceptable as both clay cover and vegetative material. Clay projected 06-11.
2012-05-22	OPEN - no issues - sample analysis submitted.

11 SCHEDULE REVIEW	
01 SCHEDULE	
2012-06-05	OPEN - Review of schedule 06-01 handed out [01] B. Muesenfechter presented "First Planner" . [02] Open discussion and review of "First Planner" process with the Build Team present. [03] Review of draft "First Planner" look-ahead. Individual activity review with modifications of dates and "Last Planner" assignments.
2012-05-29	OPEN - Review of schedule 06-01 handed out and 2 WK Look Ahead. [01] 06-05 - BTD to possibly begin. [02] 06-11 - Clay projected. [03] CBS Grubbing and road work this week. [04] During clay placement cap vents will be beamed and flagged. [05] License agreement "snow fence" installation. [06] Remove AER fence last minute for security. [07] Liner installation projected to progress at 8D duration, about 2D per 25% of area. [08] Activity No. 174 change to 05-29. [09] Dewatering progressing. [10] Ash Pond D 100% rolled and ready.
2012-05-22	OPEN - Review of schedule to date. [01] Actual percent completion on ash pond sectors: A = 100%, B = 98%, C = 100%, D = 98% [02] 05-22 cap vents projected to 05-25. [03] 05-29 - BTD start date projection for PCP. [04] 05-21 - BTD to begin drilling de-watering wells. Pumping possibly 24/7 if required. [05] 05-22 - AMS to begin removing fencing along ash pond leaving poles. [06] 05-26 - Smooth drum roll ash placement ,no vibration, and addition of water for moisture content. [07] Box culvert demolition complete.

02 TIME AND MATERIAL

2012-06-05 OPEN - no issues
 2012-05-29 OPEN - no issues
 2012-05-22 OPEN - no issues

03 COORDINATION

2012-06-05 OPEN - no issues
 2012-05-29 OPEN - no issues. R. Porter to get with G. Musch to fill the water tank this week.
 2012-05-22 OPEN - no issues. R. Porter to get with G. Musch to fill the water tank.

12.0 COST AND BUDGET**01 CHANGE REQUEST ISSUES**

2012-06-05 OPEN - no issues.
 2012-05-29 OPEN - no issues.
 2012-05-22 OPEN - no issues.

02 AMS PAY APPLICATION

2012-06-05 OPEN - no issues, draft revised on 06-05 few items to revise.
 2012-05-29 OPEN - no issues.
 2012-05-22 OPEN - no issues.

12.1 EXTRA WORK ORDERS**01 EWO-01 ELECTRIC TEMPORARY**

2012-06-05 CLOSE
 2012-05-29 No issues. Work 100% complete.
 2012-05-22 Deferred.

02 EWO-02 ASH PLACEMENT - CAP

2012-06-05 OPEN - ash placement work 100% complete.
 2012-05-29 No issues. Work completing. AMS to include in draft of pay-app on 06-05.
 2012-05-22 Deferred.

03 EWO-03 COAL PILE

2012-06-05 CLOSE
 2012-05-29 No issues. Work 100% complete.
 2012-05-22 Deferred.

04 EWO-04 PIPE RELOCATION

2012-06-05 CLOSE
 2012-05-29 No issues. Work 100% complete.
 2012-05-22 Deferred.

05 EWO-05 ELECTRIC FEEDER

2012-06-05 OPEN - in progress. AER and AAA review after Progress Meeting today [06-05].
 2012-05-29 OPEN - in progress. M. Wagstaff review and will have list of questions 05-29.
 2012-05-22 Deferred.

06 EWO-06 POND A TRENCH

2012-06-05 CLOSE
 2012-05-29 No issues. Work 100% complete.
 2012-05-22 Deferred.

07 EWO-07 ELECTRIC OVERHEAD

2012-06-05 OPEN - in progress. AER and AAA review after Progress Meeting today [06-05].
 2012-05-29 OPEN - in progress. M. Wagstaff review and will have list of questions 05-29.
 2012-05-22 Deferred.

08 EWO-08 CREDIT TO EWO-01

2012-06-05 CLOSE - include in pay-app.
 2012-05-29 OPEN - in progress.
 2012-05-22 Deferred.

09	EWO-09	BENTONITE VES-01
	2012-06-05	CLOSE - include in pay-app.
	2012-05-29	OPEN - in progress. Approved. AMS to provide cost account.
	2012-05-22	Deferred.
10	EWO-10	FLOW-ABLE FILL CREDIT
	2012-06-05	CLOSE - Include in pay-app.
	2012-05-29	OPEN - in progress. Work in area complete. AMS to provide cost account.
	2012-05-22	Deferred.
11	EWO-11	BUILDING SPOILS REMOVAL
	2012-06-05	OPEN - in progress. No further spoils found, AMS to provide cost account.
	2012-05-29	OPEN - in progress. No further spoils found, AMS to provide cost account.
	2012-05-22	Deferred. No other issues, test holes revealed.
12	EWO-12	PCP Survey
	2012-06-05	NEW - AMS coordinate Lamac to survey "as-built" for the PCP installation.

13 ACTION ITEMS - AER [25]

01 AMEREN [AER]

	2012-06-05	CLOSE
	2012-05-29	Pipe alignment direct to the manhole M. Wagstaff indicated discussion with Hanson and no issues with alignment and connection proposed by AMS. Work is considered a field change and no RFI required, only show final layout of Record Drawings. M. Wagstaff requested Lamac shoot final elevations.
	2012-05-22	Discussion of collection box pipe alignment direct to the manhole.
	2012-05-15	
		[20] Drawing S-386 SHT 5 RF - the survey coordinates are reversed. [CLOSED - drawing issued]
		[24] Research with Hanson PVC verses HDPE for the PCP [reference item No. 08.04-2012-05-15-09].
		[25] Research with Hanson alignment of the discharge piping structure at the outfall man hole. AER original design took into consideration a "mixing zone". R. Porter indicated since the line pipe relocation alignment can be direct. Discussion of the grade to be field adjusted around the box if new location is approved.

14 ACTION ITEMS - AMS [21]

01 ASH MANAGEMENT [AMS]

	2012-06-05	In progress.
	2012-05-29	In progress.
	2012-05-22	In progress.

15 PRODUCTION

01 GENERAL

	2012-06-05	OPEN - no issues
	2012-05-29	OPEN - no issues
	2012-05-22	OPEN - no issues

02 ASH

	2012-06-05	OPEN - ash placement work 100% complete.
	2012-05-29	OPEN - no issues. Estimated 101,938 CY EOD 05-22 [completion date CY based on load count, not an actual measurement]
	2012-05-22	OPEN - no issues. Estimated 101,074 CY EOD 05-21

03 CLAY

	2012-06-05	OPEN - no issues [projected start 06-11].
	2012-05-29	OPEN - no issues - this activity not begun.
	2012-05-22	OPEN - no issues - this activity not begun.

16	DOCUMENTS TRANSMITTED
2012-06-05	[01] AMS - Contact list HUT-APD-CON-2012-06-05 [02] AMS - Schedule dated 06-01 - critical Path [03] AMS - Schedule dated 06-01 - data date [04] AMS - Schedule dated 06-01 - look ahead [05] AER - Last Planner presentation [06] AMS - last planner schedule draft [07] GEO - Submittal Log published 06-01 [08] BTD - revised buoyancy calculations to Mr. Wagstaff only
2012-05-29	[01] AMS - Contact list HUT-APD-CON-2012-05-29 [02] AMS - Schedule dated 05-25 - critical Path [03] AMS - Schedule dated 05-25 - full [04] GEO - Submittal Log [previous issue via e-mail 05-25] [05] LEC - drawing "Revision to Collection Layout"
2012-05-15 22	[01] BTD AMS - Contact list HUT-APD-CON-2012-05-21 [Corrected 05-29]

17	DOCUMENTS REVIEW ONLY
2012-06-05	None
2012-05-29	None
2012-05-22	Large format drawing for alignment review of PCP.

18	NEXT PROGRESS MEETING
	Next meeting will be held in one week - Tuesday, June 12, 2012 at Hutsonville

19	DISTRIBUTION - STANDARD
	AER
01	Mr. Mike Wagstaff
02	Mr. Mike Stewart
03	Mr. Bob Muesenfechter
	GEO
01	Ms. Anna Saindon
02	Mr. Eric Neuner
03	Mr. Joe Cravens
	AMS
01	Mr. Jimmy Boone
02	Mr. John Denham
03	Mr. Joko Tasich
04	Mr. Randy Porter

If there are any corrections, modifications, additions, or deletions please notify the sender by e-mail at pzinsious@ashmanagementservices.com

PHOTOGRAPH LOG



Photograph 1 ▲ - Installing geomembrane facing northeast



Photograph 2 ▲ - Installing monitoring well MW-2R facing northwest

All photographs taken by Joseph Cravens of Geotechnology, Inc. between June 4 and June 9, 2012



Photograph 3 ▲ - Fusion seaming geomembrane facing southeast



Photograph 4 ▲ - Soil samples from monitoring well MW-2R facing south

All photographs taken by Joseph Cravens of Geotechnology, Inc. between June 4 and June 9, 2012

JRC



Photograph 5 ▲ - Installing monitoring well MW-2R facing northeast



Photograph 6 ▲ - Placing pipe bedding in anchor trench facing southeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between June 4 and June 9, 2012



Photograph 7 ▲ - Vacuum testing extrusion welds facing southeast



Photograph 8 ▲ - Extrusion welding repairs facing northeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between June 4 and June 9, 2012



Photograph 9 ▲ - Air test on fusion weld facing west



Photograph 10 ▲ - Compaction in anchor trench facing north

All photographs taken by Joseph Cravens of Geotechnology, Inc. between June 4 and June 9, 2012



Photograph 11 ▲ - Overview of Ash Pond D facing southeast



Photograph 12 ▲ - Overview of Ash Pond D facing southeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between June 4 and June 9, 2012



Photograph 13 ▲ - Overview of Ash Pond D facing east



Photograph 14 ▲ - Overview of Ash Pond D facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between June 4 and June 9, 2012



Photograph 15 ▲ - Overview of Ash Pond D facing northeast



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Energy Resources

FROM: Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DATE: June 19, 2012

SUBJECT: Weekly Summary Report for June 11, 2012 to June 15, 2012

PROJECT: Hutsonville Ash Pond D Closure
Crawford County, Hutsonville, Illinois
Geotechnology Project No. J019896.01

The following is a weekly summary of the site activities at the referenced site.

Weather

The weather was generally sunny and dry. Temperature (°F) lows ranged from 55 to 72°F, and temperature highs ranged from 75 to 88°F. A weather delay occurred on June 11, 2012 due to afternoon storms.

Construction Activities

Anchor trench construction, 40 mil HDPE geomembrane installation, groundwater collection system installation, and clay placement occurred this week. The anchor trench has been excavated, excluding the outlet drainage trenches. The 4-inch HDPE perforated drainage pipe placement within the anchor trench and backfilling of the drainage pipe and trench continue. The outlet drainage trench excavations begun. Chesapeake Containment Systems, Inc. (CCS) completed testing and repairs on the geomembrane liner, as well as liner repairs in Ash Pond A and B then demobilized. Geotechnology, Inc. observed quality control of the geomembrane work. Refer to geomembrane documentation for more details. B&T Drainage began construction of the groundwater collection system. This included the installation of dewatering sump DS-1, perforated collector pipe PCP-1, and clean out CO-1. Due to the variable bedrock elevations on the south end of the property, DS-1 was set approx. 9.0' higher than the original design and PCP-1 was installed at a +0.40% grade running from DS-1 to CO-1. Similar field adjustments are expected and were previously approved by Hanson Professional Services for the construction of the groundwater collection system. Lamac Engineering Co. surveyed portions of the groundwater collection system. Dewatering for the proposed PCP excavation continues in

well number 2 and in the additional temporary well installed this week next to DS-1, located south of Ash Pond A. Fawn Lane Transit, Inc. and Belt Construction, Inc. began clay placement on the north portion of Quadrant A. Ten to 15 trucks were used to haul clay material to Ash Pond D. The vegetative cover is being placed in a single three foot lift, and a representative from TSI Engineering, Inc. observed quality control for the clay placement procedure. Refer to clay placement documentation for more details.

Equipment and Personnel On-Site

CAT D6N Bulldozer
CAT 330D Excavator
CAT 613C Water Truck
Bomag BW 172 PDB-2 Roller
John Deere 624H Front End Loader
John Deere 450 LC Excavator
John Deere 9520 Tractor
John Deere 410J Backhoe
Sky Track 6036 Forklift
Case 580 Backhoe
Water Truck (Dust Control)

Geotechnology, Inc. – Joe Cravens, Tim Wilson, Steve Graham, and Anna Saindon
TSI Engineering, Inc. – Andrew DeClue
Ash Management Services, LLC (AMS) – Randy Porter, Jon Dietzel, Jimmy Boone, Robert Dunkley, James Marks, Brad Bolenbaugh, Greg Siverly, Jeremy Shorter, Blake Bunting, and Eric Sefton
Belt Construction, Inc. (BCI) – Jared Belt
Lamac Engineering Co. – Austin Ridgley
Charah, Inc. – Joe Tasich
Chesapeake Containment Systems, Inc. (CCS) – Jose Valverde, Barbarito Flores, Daniel Gonzales, Phet Vongkhamchanh, Jose Flores, Alberto Ortiz, Manuel Gonzales, Israel Gonzales, and Matt Watts
B&T Drainage (BTD) – John Boyer, Scott Boyer, Brian Schaefer, Brent Neibauer, Michael Switzer, and Michael Dashiell
Fawn Lane Transit, Inc. (FLT) – Kim Edington, Scott Comer, James Elledge, Frank Walton, Jim Urfer, Gary Lamb, Robbx Sanders, Greg Lingorfelder, Tom Sager, James Griffith, Eric Bierman, and Greg Cornwell
Visitors – Refer to the Visitor's Log for visitors, dates, and times.
Refer to the meeting minutes for additional personnel.

Meetings

The weekly progress meeting was held on Tuesday, June 12, 2012. Refer to the attached meeting minutes for additional information.

Photographs

A photograph log with select photographs obtained this week is attached.

Materials

40 mil HDPE geomembrane was repaired on site. Clay for the vegetative layer, IDOT FA-01 sand, IDOT CA-7 aggregate, dewatering sump manhole base and sections, and 8-inch C900 DR18 PVC perforated pipe with filter sock and fittings were delivered.

Testing/Sampling

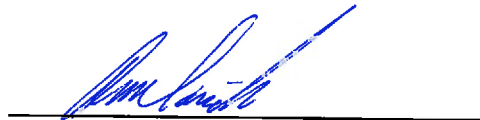
Geomembrane destructive and non-destructive testing and sampling was completed this week. Refer to geomembrane documentation for additional details.

Calibration Records

Calibration information was not obtained this week.

Signature of CQA Officer

Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.



DAILY REPORTS

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 6/11/12

TIME: Arrive: 6:30 AM Depart: 3:45 PM Travel: 1.0 hr Total: 10 hrs (0.25 hr for lunch)
Weather: Partly Cloudy, 72° AM, Rain 75° PM Contractor: AMS Subcontr./Supplier: CCS/GEQ/TSI/FLT/Belt
Equipment Working: 580 Backhoe, D6N Dozer, Water Truck
Site Activities / Observations / Contacts / Notes: —

AMS:

The 580 dug an outlet trench from the anchor trench at Sta. 8+00, and pulled the fence posts out on the west side of Section C and placed them in the construction yard. The 613C Water Truck was demobilized and mobilized to the CBS. As of 6/11/12, Matt Watts and Blake Bunting are no longer with CCS and are now AMS laborers.

CCS:

The destructive samples have been completed and mailed to TRI Labs. Patches and repairs continue.

Belt Construction:

Jared Belt began clay placement on the geomembrane liner with the D6N in the NW area of Section A. The clay is being placed with a 3' lift. Area Covered: P-1 to P-5, P-7, and P-9.

FLT (Fawn Lane Transit, Inc.):

They have 10 trucks cycling between the CBS and APD. Drivers: Kim Edington, Scott Comer, James Elledge, Frank Walton, Jim Urfer, Gary Lamb, Robbx Sanders, Greg Lingorfelder, Tom Sager, and James Griffith. 112 Loads Delivered - 11 cy/truck*

TSI:

Andrew DeClue arrived and is in charge of quality control of the clay placement.

Additional Comments: The site work ended at approx. 2:30 PM due to thunderstorms.

Randy Porter
Contractor Representative

AMS
Company 6-11-12

Anna Saindon
Signature
Geotechnology Inc.

Date
6-11-12

—
Engineer's Signature

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

FIELD OBSERVATION REPORT

Representative: Andrew DeClue Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: #7 Zone: — Client: Geo-technology Date: 6-11-12

TIME: Arrive: 6:45 Depart: 2:45 Travel: 1.0 Total: 9.0 (.5 hr. lunch)
Weather: 80's Contractor: AMS Subcontr./Supplier: —
Equipment Working: —

Site Activities / Observations / Contacts / Notes: Contracting using D6N to begin
placing 3-Foot coverage layer over Panels: P-1 thru P-5, P-7, and P-9. Material
placed was a silty to lean clay soil with roots. Soil was placed in such a way
to prevent Geo-Membrane from wrinkling or being ripped or punctured. It began to
rain at 2:00 PM, job was rained out at 2:30 PM.

Additional Comments: _____

Andrew DeClue AMS
Contractor Representative Company
Signature Andrew DeClue Date 6-11-12
Geotechnology, Inc. Date 6/11/12
Engineer's Signature _____

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 6/12/12

TIME: Arrive: 6:30 AM Depart: 6:15 PM Travel: 1.0 hr Total: 12.25 hrs (0.5 hr for lunch)
Weather: Sunny, 71° AM, 83° PM Contractor: AMS Subcontr./Supplier: CCS/GEO/TSI/FLT/BCI
Equipment Working: 580 Backhoe, 6036 Forklift, D6N Dozer, Water Truck
Site Activities / Observations / Contacts / Notes: —

AMS:

Correction to yesterday's FOR - The 580 dug an outlet trench at Sta. 10+00, not 8+00. Today, the pipe was placed in the outlet trench and backfilled. An outlet trench was also dug at Sta. 14+00. The 580 finished backfilling the 4" drainage pipe in the anchor trench in Section B. The 6036 staged more drainage pipe around the anchor trench. 10 more loads of FA-01 sand were delivered. The 279C Skid Steer was demobilized. Matt Watts is no longer an AMS employee. Now, Blake Bunting and Eric Sefton are the new laborers.

CCS/GEO:

They continued vacuum testing, repairs, cleanup, and welded the cap vent boots. The boots will be spark tested tomorrow. TRI finished all the destructs. Failures: DT-34, 50, 72, and 84 B. Samples will be retested and mailed off tomorrow. They will repair the holes in the liners of Pond A and B tomorrow. The 9 remaining liner rolls were hauled off site.

FLT/BCI/TSI:

Continue clay placement. They plan to add an additional 5 dump trucks to the cycle by the end of the week (15 total). Area = P-1 to P-10, Loads = 178

Misc.:

Miller Construction Co. will begin mobilizing equipment and materials to the coal yard and a guard will be on-site. This is an Ameren subcontractor and
Additional Comments: is not affiliated with the project;
records will not be kept of their equip. or personnel.

Randy Postel AMS
Contractor Representative Company
[Signature] Date 6-12-11
Anna Sachelon Date 6-18-12
Geotechnology, Inc.
[Signature] Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Andrew DeChic Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: #17 Zone: — Client: Geotechnology Date: 6-12-12

TIME: Arrive: 6:45 Depart: 5:30 Travel: 1.0 Total: 11.75 (.5 hr. lunch)
Weather: 70-90's Sunny Contractor: AMS Subcontr./Supplier: —
Equipment Working: —

Site Activities / Observations / Contacts / Notes: Belt Construction continuing to place
3' Fill over Geo-Membrane Panels with DG. Soil is being trucked in from off
site borrow Area. Material is a silty to lean clay with roots. Material is being
placed in such away to prevent Geo-membrane from wrinkling and/or being
ripped or punctured. Fill was placed on Panels P-1 thru P-10, with the main
Focus on Filling towards North edge of Pond.

Additional Comments: —

Andrew DeChic
Contractor Representative
Signature Andrew DeChic
Geotechnology, Inc.
Engineer's Signature
Company AMS
Date 6-12-12
Date 6/12/12
Date

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 6/13/12

TIME: Arrive: 6:00 AM Depart: 6:00 PM Travel: 1.0 hr Total: 12.75 hrs (0.25 hr for lunch)
Weather: Sunny, 55° AM, 80° PM Contractor: AMS Subcontr./Supplier: BTD/CCS/GEO/TSI/FLT/BCI
Equipment Working: 580 Backhoe, D6N Dozer, 330D Excavator, 450LC Excavator, 410J Backhoe, 624H F.E.L.,
Site Activities / Observations / Contacts / Notes: Water Truck

AMS:

The 580 finished backfilling the anchor trench and the 4" drainage pipe on the east side of Section D, and began backfilling on the south side of Section D and the west side of Section C.

BTD:

Personnel - John Boyer, Scott Boyer, Brian Schaefer, Brent Neibauer, Michael Switzer, Michael Dashiell.
Delivery - John Deere 450 LC Excavator, IDOT CA-7 Aggregate, Precast Manhole, 8" Perforated
DR18 water main pipe - PVC C900 1120 (bell and spigot) with filter sock and couplings. The pit
for DS-2 was excavated. However, the pit repeatedly caved in due to the water rushing into the
excavation. Therefore, the pit was backfilled and they will continue to dewater this area. The pit for
DS-1 was excavated next. At approx 11.0', the GWT and the top of sandstone was encountered. The
excavator ripped through approx. 2.0' of sandstone and encountered hard shale (not rippable). BTD
is utilizing rock bucket teeth for the bedrock. A final depth of 13.23' was reached and the trench box
(shoring) for the manhole was set. At this depth, this puts the flowline of the PCP at the surface of
the sandstone, or 4" into the sandstone. Approval for this elevation did not come until late in the
day and the shoring had to be taken out so the pit could be cleaned out again, and the shoring could
be reset. For a shoring system, BTD is utilizing the drag-box excavation method to install the pipeline.
Additionally, trenches will be sloped at 1.5:1 to 12' depth, then continued down with trench boxes. Boxes
utilized (stackable): 8'x12' and 8'x20'. CA-7 backfill will be placed in 8" lifts.

CCS/GEO:

Finished cleanup, retesting destructs, mailing destructs, repairs, vacuum testing, and spark testing.
Holes in Pond A and B liners were fixed and CCS demobilized; will return only if TRI fail more destructs.

FLT/BCI/TSI: Clay Placement -

Additional Comments: Ared = P-1 to P-10, P-12, P-14, and P-15
Loods = 152

Randy Poetex

Contractor Representative

Signature

Anna Sanden

Geotechnology, Inc.

Engineer's Signature

HA AMS

Company

Date

6-13-12

Date

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FIELD OBSERVATION REPORT

Representative: Andrew DeChic Project No.: 5019296.01 Task: 2370
Equipment & ID No.: - Project Name: Hutchville Ash Pond D closure
Vehicle: 7 Zone: - Client: Geotechnology Date: 6-13-12

TIME: Arrive: 6:45 Depart: 5:15 Travel: 1.0 Total: 11.5 (1/2 hr. lunch)

Weather: 50-80's Sunny Contractor: AMS Subcontr./Supplier: -

Equipment Working: -

Site Activities / Observations / Contacts / Notes: Belt Construction continuing to place
3 Foot of coverage Fill over Geo-Membrane. using DG to place Fill in such a way
to prevent Geo-Membrane from wrinkling and/or being ripped or torn. Material is a silty,
to lean clay with roots being hauled in from offsite borrow area. Fill is being placed
on Panels: P-1 thru P-10, P-12, P-14, & P-15. After lunch they focused on filling
towards North edge of Pond.

Additional Comments: _____

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Andrew DeChic
Contractor Representative
Signature [Signature]
Geotechnology, Inc.
Company AMS
Date 6-13-12
Date 6/13/12
Engineer's Signature _____

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 6/14/12

TIME: Arrive: 6:00 AM Depart: 6:00 PM Travel: 1.0 hr Total: 12.75 hrs (0.25 hr for lunch)
Weather: Sunny, 55° AM, 82° PM Contractor: AMS Subcontr./Supplier: BTD/CCS/GEO/FLT/BCI/TSI
Equipment Working: 580 Backhoe, D6N Dozer, 330D Excavator, 450 LC Excavator, 410J Backhoe, BW 172 Roller,
Site Activities / Observations / Contacts / Notes: 624 H Front End Loader, Water Truck

AMS:

The 580 finished backfilling the anchor trench on the west side of Section A and C. The southern trench will be backfilled tomorrow. Additional IDOT FA-01 sand was delivered.

BTD:

The manhole shoring was reset in the pit for DS-1, and the manhole base and one precast section was installed. Approx. 8" of CA-7 stone was used for the manhole bedding. CA-7 was backfilled around the manhole to 1.0' above the inverts, and trench material was used for backfill to the ground surface. Refer to 5-386, Sheet 12, Details 3 and 4 for the following approved deviations: the sump can be bedded in CA-7, not concrete-bridged to sandstone; since the manhole doesn't have a perforated base, it doesn't have to be wrapped with geotextile and the CA-7 pack also does not have to be wrapped with geotextile. An 8" slotted PVC pipe (vertical) was left next to DS-1 for necessary dewatering (casing for pump). The measured flowline and sump floor were 9.90' and 12.24', respectively, from the ground surface. Based on a surface elevation of 451.40, their elevations are 441.50 and 439.16, respectively. This makes the as-built and planned elevation difference to be 9.16'. The manhole, base, steps, and inverts comply with the specifications. They began construction for PCP-1, beginning at DS-1 running west to CO-1. Approx. 150' of 8" C900 was laid (halfway between DS-1 and CO-1). When they began running pipe from DS-1, the rock ledge dropped off and the sandstone was not encountered again until approx 100' of pipe was laid. Water was pumped out of the trench as required as the trench progressed. Due to the elev. change of DS-1, the grade of the PCP between DS-1 and CO-1 changed as well. The PCP between DS-1 and CO-1 is being laid with a grade of 0.40% (std. minimum slope requirement for gravity fed lines). Refer to 5-386, Sheet 8, for this grade change.

Additional Comments: Next Page

Randy Pate AMS
Contractor Representative Company
Randy Pate 6-14-12
Signature Date
Anna Saindon 6-18-12
Geotechnology, Inc. Date
Anna Saindon
Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 6/14/12

TIME: Arrive: _____ Depart: _____ Travel: _____ Total: _____
Weather: _____ Contractor: _____ Subcontr./Supplier: _____
Equipment Working: _____
Site Activities / Observations / Contacts / Notes: _____

BTD (cont.):

They are utilizing a sewer laser to run the PCP at 0.40%, beginning at the manhole invert. All pipe being laid contains perforations and filter sock. Besides the grade, the PCP installation, bedding, haunching, and backfills remain unchanged (refer to 5-386, Sheet 12, Detail 8). Lamac will be on-site tomorrow to survey the PCP.

CCS/GEO:

The failed destruct was retested (DS-84B), repaired, extrusion welded, and vacuum tested.

FLT/BCI/TSI:

Clay Placement - the north tip of the pond has been covered and now the clay is being placed to the south along Section A, Area = P1-P16, Loads = 160. 11 Trucks are now utilized in the cycle. Additional Personnel (FLT): Eric Bierman

Additional Comments: _____

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Randy Poston AMS
Contractor Representative Company
Randy Poston 6-14-12
Signature Date
Anna Savindgn 6-18-12
Geotechnology, Inc. Date
[Signature]
Engineer's Signature

FIELD OBSERVATION REPORT

Representative: Andrew DeClue Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hazenville Ash Pond D Closure
Vehicle: 7 Zone: — Client: Geotechnology Date: 6-14-12

TIME: Arrive: 6:45 Depart: 5:30 Travel: 1.0 Total: 11.75 (.5 hr lunch)

Weather: 50-80's Sunny Contractor: AMS Subcontr./Supplier: —

Equipment Working: —

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place
3 Feet of coverage Fill over Geo-Membrane. Material is a silt to lean clay with
roots being hauled in from offsite borrow Area. Belt using D6 to place Fill in
such a way that Geo-membrane doesn't wrinkle and/or become ripped/torn.
Fill was placed on Panels: P-1 thru P-16. By noon they had finished placing
Fill to North edge of Pond. They then focused on heading Southward starting on approved
Panels.

Additional Comments: —

Andrew DeClue AMS
Contractor Representative Company
Signature Andrew DeClue Date 6/14/12
Geotechnology, Inc. Date
Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: — Client: Ameren ER Date: 6/15/12

TIME: Arrive: 6:00 AM Depart: 5:30 PM Travel: 1.0 hr Total: 12.25 hrs ^(0.25 hr for lunch)
 Weather: Sunny, 61° AM, 88° PM Contractor: AMS Subcontr./Supplier: BTD/Lamac/FLT/BCI/TSI
 Equipment Working: 580 Backhoe, D6N Dozer, 330D Excavator, 450LC Excavator, 410J Backhoe, BW 172 Roller,
 Site Activities / Observations / Contacts / Notes: 624H Front End Loader, Water Truck

AMS:

The 580 stockpiled the western anchor trench spoils on the NW corner of Pond D.

BTD/Lamac:

PCP-1 has been completed. The trench was excavated, bedded with CA-7, the 8" collector pipe with nonwoven geotextile filter sock was installed, haunched with CA-7, and backfilled with CA-7 and trench material. CO-1 was installed (non-perforated) and has sufficient stickup with a water tight cap. Tyler Union 8" 90° Md fittings are used for the cleanout. The concrete slab and bollard will be installed towards completion (refer to S-386 Sheet 12, Detail 6). PCP-1 was laid at +0.40% from DS-1 invert to CO-1, and the section was compacted. The CO elevation shot with the grade laser is at 443.48. Lamac also shot in PCP-1 at the DS-1 invert, 150' west of DS-1, and at CO-1. BTD continues dewatering in well 2 and in the temporary well next to DS-1. They plan to install additional dewatering wells before DS-2 excavation. Additional 8" perforated DR-18, PVC C900 pipe was delivered. Length = 117'

FLT/BCI/TSI:

Clay Placement - Section A. Panels P-1 to P-45 (northern section) have now been approved for cover. Additional Personnel (FLT): Greg Cornwell; 12 trucks total. They plan to add 4 additional trucks to the cycle next week. The 9520 was demobilized. The excavator loading the trucks at the CBS broke down and FLT could not complete their 10 hour production. This will be fixed tomorrow. Area = P-3 to P-5, P-7, P-9, P-11, P-12, and P-14 to P-16. Loads = 144

Additional Comments: _____

Kandy Lamac
 Contractor Representative

AMS
 Company

Amos Samson
 Signature
 Geotechnology, Inc.

6-15-12
 Date
6-18-12
 Date

Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Andrew DeChoe Project No.: 5019896.01 Task: 2370
Equipment & ID No.: — Project Name: Huntsville Ash Pond D closure
Vehicle: 7 Zone: — Client: Geotechnical Date: 6-15-12

TIME: Arrive: 6:30 Depart: 4:00 Travel: 1.0 Total: 10.5 (1/2 hr lunch)

Weather: 50-80's Sunny Contractor: AMS Subcontr./Supplier: —

Equipment Working: —

Site Activities / Observations / Contacts / Notes: Belt Construction continuing to Place

3 Foot of Coverage Fill over Geo-Membrane. Using D6 to push Fill (Silt-Loam clay Material)
being hauled in from offsite borrow area. Material is being placed in such a way as to
prevent Geo-Membrane from wrinkling and/or ripped or torn. Material being placed
on Panels P-3 thru P-5, P-7, 9, 11, 12, 14-16.

Additional Comments: —

Andrew DeChoe
Contractor Representative
Signature
Geotechnology, Inc.

AMS
Company
Date 6-15-12
6/15/12
Date

Engineer's Signature

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MEETING MINUTES



Hutsonville Power Station - Ash Pond D Closure
Progress Meeting No. 13 Minutes
Tuesday, June 12, 2012

01	PUBLICATION				
	Publish date:	2012-06-18	Submitted by:	P. Zinsious	
	Distribution:	E-mail only	Notes taken by:	P. Zinsious	
	Location:	Hutsonville Power Station	AMS-Charah File No.	HUT-APD-MTG-MIN-2012-06-12-PM-13	
	AER PO:	567523 R4	AMS-Charah Contract:	00030-01	AMS-Charah GL: 4116-06-6120

02 ATTENDEES [ALPHA BY COMPANY]							
NO.	SAL	FIRST	LAST	COMPANY	PHONE	E-MAIL	
01	Mr.	Steve	Bluemner	Ameren	314-972-4160	sbluemner@ameren.com	
02	Mr.	Bob	Muesenfechter	Ameren	314-681-2287	bmuesenfechter@ameren.com	
03	Mr.	Bob	Simmons	Ameren	217-412-6384	rsimmons@ameren.com	
04	Mr.	Paul	Zinsious	AMS - PCM	502-640-2918	pzinsious@ashmanagementservices.com	
05	Mr.	Randy	Porter	AMS - SM	502-554-5230	rporter@ashmanagementservices.com	
06	Mr.	Joe	Cravens	Geotechnology	314-568-6628	j_cravens@geotechnology.com	
07	Mr.	Austin	Ridgely	Lamac	618-263-8290	aridgely@lamac.net	

03	ABBREVIATIONS			
	AER	Ameren Energy Resources	OSHA	Occupational Safety Health Administration
	AMS	Ash Management Services	PCP	Perforated Collector Pipe
	BNSF	Burlington	PO	Purchase Order
	CBT	Computer Based Training	RHOM	Routine Handling, Operation, and Maintenance
	EAP	Emergency Action Plan	SPOC	Single Point of Contact
	EOD	End of [the] Day	T/M	Time and Materials
	EOM	End of [the] month	TBD	To Be Determined
	EOW	End of [the] week	TD	Transmission Dispatch
	EDTS	Energy Delivery Transmission Services	WPA	Worker Protection Assurance
	EDC	Estimated Date [of] Completion		
	EWO	Extra Work Order		
	HDPE	High Density Polyethylene		
	HRS	Hours		
	LOTO	Lock Out Tag Out		
	NMA	National Maintenance Agreement		

04 DOCUMENTATION	
Minutes are documented weekly, and the publication have a "rolling record" of the immediate past two weeks. Each week the oldest drops off and the current week is added to the minutes. Items are categorized as either "NEW", "OPEN", "CLOSE", or in case the an item has to be re-published after closed the previous week - "REOPEN". Minutes format changed for Progress Meeting No. 13 deleting and combining certain items for brevity and to abbreviate documentation. Currently the item numbers remained the same for tracking purposes.	

05 SAFETY - HOUSEKEEPING	
02 WORKER PROTECTION ASSURANCE	
2012-06-12	OPEN - no issues. None projected for 2x week look ahead.
2012-06-05	OPEN - no issues. None projected for 2x week look ahead.
03 EMPLOYEE DRUG TESTING	
2012-06-12	OPEN - no issues. AMS projects 2x teamsters [Fawn lane], 2x laborers [already have CBT - but AMS DT they will go to Robinson].
2012-06-05	OPEN - no issues. AMS has sent 2x employees. M. Wagstaff sent thank you e-mail to JCH. P. Zinsious suggested inviting them to a safety luncheon.
04 AMS SAFETY	
20120-06-12	OPEN - no issues.
	[01] 1x worker terminated and replaced an operator for safety concerns - AMS zero tolerance policy.
	[02] Borrow haul route signage installed on roadway.
	[03] Spotters for trucks on site, 1x to 2x laborers. Additional spotters if/as required.
	[04] Cooling stations are set up.
	[05] J. Tasich on site 06-11. Training 2x laborers today [06-12].
	[06] Training tomorrow [06-13] for AMS site-specific.

2012-06-05 OPEN - no issues.
 [01] J. Denham reported on 1x AMS operator who was not operating safety while operating the [all terrain] fork lift on 06-01. Worker was suspended for unsafe actions and not wearing a seat belt and is currently under review. AMS has a zero tolerance policy, and if the review proves accurate, the worker will be terminated. Official response and [incident] violation report should be ready by 06-06.
 [02] General discussion safety concerns for the vegetative cover hauling [soil materials form the borrow site]. P. Zinsious indicated signs will be placed on Illinois Route 1 northbound and southbound lanes where trucks entering the highway. Currently Illinois is working on the bridge deck that crosses over Raccoon Creek on the haul route. Truckers will not be allowed to deviate from the route and travel the "back way" into the borrow site to avoid the work at the bridge deck. Estimated time of this work on the bridge deck is 6x to 8x Wks.
 [03] B. Muesenfechter concern that open liner anchor trenches could be a potential tripping hazard and indicated previous issue at Coffeen [Ameren power plant]. M. Wagstaff indicated depends on trench. J. Denham indicated caution tape will be placed at trenches, on the exterior, as the interior has liner, and cannot penetrate the liner [with posts].
 [04] Cooling stations are set up.

05 HOUSEKEEPING

2012-06-12 OPEN - AMS will have walk through today [06-12] for cleanup.
 2012-06-05 OPEN - M. Wagstaff concern regarding small pieces of liner. J. Boone indicated daily cleanup.

06 PLANT ACCESS - CBT

2012-06-12 OPEN - B. Simmons Ameren services general discussion of plant access and projected work:
 [01] Subcontractor [Miller] and Ameren will use entire coal yard.
 [02] Possible set trailer next week, possible same electric service usage.
 [03] Project is capacity and clearance scope until through EOY [Hutsonville, Palmyra to Indiana areas].
 [04] Starting 06-14 guard from 6:00 AM CT to 6:30 PM CT, then 24/7 when conductors stored/staged on site.
 [05] Parking on far west lot, up to 15x personal vehicles.
 [06] Subcontractor will not have AER badges, guard will have list update for workers on project. They will only have to show driver's license.
 [07] B. Simmons indicated workers not allowed beyond designated area, if caught outside area, will be terminated.
 [08] M. Wagstaff is SPOC for this project to the APD project.
 [09] Borrow haul traffic only concern.
 [10] D. Curlin contact for Miller.
 2012-06-05 OPEN - M. Wagstaff reports that Ameren [Services] will begin transmission line work [between Kansas and Illinois], and will be using the coal yard at the Hutsonville plant as storage. Ameren will provide a guard for 12 HR shifts. The contacts at Ameren as Mr. Jim Williams [over the GENCO division] and Mr. Bob Simmons who will be the site SPOC. Work to begin the middle of June 2012. J. Boone indicated concern over coordination of trucks hauling into the site, and M. Wagstaff said no issue, as the trucks can come in through the gate by the [west] PCP line.

08 OSHA LOG - WORK HOURS

2012-06-12 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 06-11.
 No incidents or accidents.
 3,304.00 RT
 0,700.50 OT
 4,004.50 TOTAL
 2012-06-05 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 06-04.
 No incidents or accidents.
 2,543.50 RT
 0,436.50 OT
 2,980.00 TOTAL

06 MANPOWER [HEAD COUNT]

01 CREW SIZE

2012-06-12 AMS, Chesapeake Containment [CCS], BT Drainage [BTD], and returning Belt Construction [BCI] on site.

[04] Geotechnology [work hours not included in OSHA Log above]
 [00] Pipe
 [00] Mechanical
 [00] Electrical
 [00] Cement
 [09] Laborers [AMS 3x, CCS 6x]
 [02] Operators [AMS 1x, BCI 1x]
 [11] Teamsters [FLT 10x borrow haul trucking]
 [00] Survey
 [03] Foreman [Full time] [Mr. John Dietzel new Charah/AMS Focus Site Manager on project] [CCS 1x]
 [29] Total

2012-06-05 AMS, Chesapeake Containment [CCS], and BT Drainage [BTD] on site.

[03] Geotechnology [work hours not included in OSHA Log above]
 [00] Pipe
 [00] Mechanical
 [00] Electrical
 [00] Cement
 [12] Laborers [AMS 2x, CCS 10x]
 [02] Operators [AMS 2x]
 [01] Teamsters
 [00] Survey
 [03] Foreman [Full time] [Mr. John Dietzel new Charah/AMS Focus Site Manager on project] [CCS 1x]
 [21] Total

02 WORK HOURS AND OVERTIME

2012-06-12 OPEN - Standard hours - 7:00 AM CT to 3:30 PM CT. CCS still on track for OT. Fawn Lane trucking 10 HR.
 2012-06-05 OPEN - Standard hours - 7:00 AM CT to 3:30 PM CT. CCS still on track for OT.

04 TRAILER - GENERAL CONDITIONS - COORDINATION - VEHICLES

2012-06-12 OPEN - no issues. GEO/CCS "gators" leaving this week.
 2012-06-05 OPEN - no issues.

07 PREVIOUS**01 SUBCONTRACTS**

2012-06-12 OPEN - no issues.
 2012-06-05 OPEN - no issues.

02 SUBMITTALS

20120-06-12 Submittal log as published by GEO on 06-09 distributed. General discussion.
 [01] Submittal log copies distributed.
 [02] Discussion CA-7 sample for PCP coarse aggregate.
 [03] No Issues.
 20120-06-05 Submittal log as published by GEO on 06-2 distributed. General discussion.
 [01] Submittal log copies distributed.
 [02] Seed/mulch submittal under review by AER returned.
 [03] VES-01 to be returned by AER returned.
 [04] VES-02 M. Wagstaff orally approved returned.
 [05] SWP3 for APD submitted by AMS as matter of record original signed on 02-28.
 [06] AMS to submitted dewatering sump under AER review.

08 MATERIAL**01 GENERAL**

2012-06-12 OPEN - no issues. [corrected dates below 20120].
 2012-06-05 OPEN - no issues.

02 GEOMEMBRANE PRE-CON

2012-06-12 OPEN - no issues.
 2012-06-05 Open - no issues.
 [01] A. Saindon reviewing tests, looks good. However test results for areas will not be ready until about 4:00 PM CT on 06-07.
 [02] Using stakes on positioned by sandbags and leaving the sandbags in place are acceptable per A. Saindon.

03 CAP VENT PRE-CON

2012-06-12 OPEN - no issues.
 2012-06-05 OPEN - no issues. [corrected date errors of "20120" below]

04 PERFORATED COLLECTOR PIPE [PCP] PRE-CON MEETING

2012-06-12 OPEN - Discussion during Progress Meeting:
 [01] Lamac to perform record drawing "as-built" survey for AER direct, instead of through AMS.
 [02] P. Zinsious presented M. Wagstaff concern over the global stability of the PCP trench and Hanson response that proposed new alignment is not acceptable due to the close proximity.
 [03] R. Porter indicated if higher elevation of excavation, the trench may not be as wide. General consensus of the team is a "wait-and-see" approach [due to the many factors involved].
 [04] MW-2R remains undeveloped due to dewatering.
 [05] BTD to begin PCP on 06-13 in AM. Estimated production rates [provided by BTD for scheduling meeting at Ameren] are shallow = 40 FT/D, average 60 FT/D, and deep(er) = 80 FT/D.
 2012-06-05 OPEN - Discussion during Progress Meeting:
 [01] M. Wagstaff concern on the PCP alignment and liquefaction [due to seismic] of the soil near the pond berm. There was no specification provided by Ameren, and for now the alignment look good, will go with Hanson.
 [02] J. Boyer reports at area of DS-1 hit shallow sandstone, about 20 FT west from location. Will status once excavation begins if a new location or higher elevation will be required.
 [03] M. Wagstaff reports that new well MW-2R could not develop due to dewatering.
 [02] [04] P. Zinsious reports that review of PCP alignment allow for power poles to stay in place [Ameren does not need to remove for now].

09 ADJACENT PROPERTIES AND PCP LINE**01 GENERAL**

2012-06-12 OPEN - Discussion during Progress Meeting:
 [01] AMS has removed fencing for now.
 [02] M. Wagstaff will be in contact with Mr. Wampler to resolve.
 2012-06-05 OPEN - Discussion during Progress Meeting:
 [01] J. Boone reports Mr. Duane Wampler has communicated not happy with fence alignment.
 [02] AMS has mover the fence back. J. Cravens has been in contact with Wampler.
 [03] J. Boyer indicated collector tile work in about two weeks [will need coordination with Mr. Wampler].
 [04] J. Boyer reports only need in week in this area, as shallow.
 [05] M. Wagstaff will be in contact with Mr. Wampler to resolve.

10	QUALITY CONTROL	
03	CLAY	
2012-06-12	OPEN - Roots being pulled out of the material.	
2012-06-05	OPEN - no issues begin placement on 06-11.	
11	SCHEDULE REVIEW	
01	SCHEDULE	
2012-06-12	OPEN - Review of schedule 06-07 handed out [01] B. Muesenfechter presented "First Planner". [02] Open discussion and review of "First Planner" process with Lamac. [03] J. Cravens out 07-13, and P. Zinsious vacation 06-21 - 06-28. [04] Two critical work areas, the clay placement and the PCP. [05] Baseline SC changed to 10-11. Currently SC in projected 10-24. [06] P. Zinsious indicated AMS to increase trucks for borrow haul from 10x to 15x. [07] PCP projected now to start 06-13, will help schedule. [08] Weather days coded.	
2012-06-05	OPEN - Review of schedule 06-01 handed out [01] B. Muesenfechter presented "First Planner". [02] Open discussion and review of "First Planner" process with the Build Team present. [03] Review of draft "First Planner" look-ahead. Individual activity review with modifications of dates and "Last Planner" assignments.	
12.0	COST AND BUDGET	
02	AMS PAY APPLICATION - CHANGE REQUEST	
2012-06-12	OPEN - no issues. AMS sent SOV to M. Wagstaff.	
2012-06-05	OPEN - no issues, draft revised on 06-05 few items to revise.	
12.1	EXTRA WORK ORDERS	
11	EWO-11 BUILDING SPOILS REMOVAL	
2012-06-12	OPEN - In progress.	
2012-06-05	OPEN - In progress. No further spoils found, AMS to provide cost account.	
12	EWO-12 PCP Survey	
2012-06-12	CLOSE - Lamac to go direct to AER.	
2012-06-05	NEW - AMS coordinate Lamac to survey "as-built" for the PCP installation.	
13	EWO-13 Electrical feeder/overhead	
2012-06-12	NEW - combined EWO-05 and 07 per AER. AMS to have pricing in day or two.	
13	ACTION ITEMS - AER [25]	
01	AMEREN [AER]	
2012-06-12	NONE	
2012-06-05	CLOSE	
14	ACTION ITEMS - AMS [21]	
01	ASH MANAGEMENT [AMS]	
2012-06-12	NONE	
2012-06-05	In progress.	
15	PRODUCTION	
03	CLAY	
2012-06-12	OPEN - Trucks are hauling 11 CY. Currently 10x trucks. Placement as of 06-11 is 1,232 CY.	
2012-06-05	OPEN - no issues [projected start 06-11].	

16	DOCUMENTS TRANSMITTED
2012-06-12	[01] AMS - Contact list HUT-APD-CON-2012-06-12 [CORRECTION BELOW 06-05] [02] AMS - Schedule dated 06-07 - critical Path [03] AER - Schedule dated 06-07 - look ahead [04] AER - Last Planner presentation [to A. Ridgely from AMS only]. [05] AMS - last planner schedule draft [06] GEO - Submittal Log published 06-09
2012-06-05	[01] AMS - Contact list HUT-APD-CON-2012-06-05 [02] AMS - Schedule dated 06-01 - critical Path [03] AMS - Schedule dated 06-01 - data date [04] AMS - Schedule dated 06-01 - look ahead [05] AER - Last Planner presentation [06] AMS - last planner schedule draft [07] GEO - Submittal Log published 06-01 [08] BTD - revised buoyancy calculations to Mr. Wagstaff only [09] Fence layout option VES-03 [CORRECTION 06-12 added Item No. 09]

17	DOCUMENTS REVIEW ONLY
2012-06-12	None
2012-06-05	None

18	NEXT PROGRESS MEETING
Next meeting will be held in one week - Tuesday, June 19, 2012 at Hutsonville	

19	DISTRIBUTION - STANDARD
AER	
01	Mr. Mike Wagstaff
02	Mr. Mike Stewart
03	Mr. Bob Muesenfechter
GEO	
01	Ms. Anna Saindon
02	Mr. Eric Neuner
03	Mr. Joe Cravens
AMS	
01	Mr. Jimmy Boone
02	Mr. John Denham
03	Mr. Joko Tasich
04	Mr. Randy Porter

If there are any corrections, modifications, additions, or deletions please notify the sender by e-mail at pzinsious@ashmanagementservices.com

PHOTOGRAPH LOG



Photograph 1 - Root removal during clay placement facing west



Photograph 2 - Drainage pipe placement in anchor trench facing northeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between June 11 and June 15, 2012



Photograph 3 ▲ - 8-inch perforated DR18 PVC C900 pipe for PCP facing northwest



Photograph 4 ▲ - Spark testing cap vent boots facing south

All photographs taken by Joseph Cravens of Geotechnology, Inc. between June 11 and June 15, 2012



Photograph 5 ▲ - Clay placement in Quadrant A facing north



Photograph 6 ▲ - Manhole shoring at DS-1 facing west

All photographs taken by Joseph Cravens of Geotechnology, Inc. between June 11 and June 15, 2012



Photograph 7 ▲ - Installing DS-1 manhole facing west



Photograph 8 ▲ - Installing PCP-1 facing west

All photographs taken by Joseph Cravens of Geotechnology, Inc. between June 11 and June 15, 2012



Photograph 9 ▲ - Manhole interior DS-1 facing southwest



Photograph 10 ▲ - Installing CO-1 facing northwest

All photographs taken by Joseph Cravens of Geotechnology, Inc. between June 11 and June 15, 2012



Photograph 11 ▲ - Overview of Ash Pond D facing southeast



Photograph 12 ▲ - Overview of Ash Pond D facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between June 11 and June 15, 2012

JRC



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Energy Resources

FROM: Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DATE: June 19, 2012

SUBJECT: Weekly Summary Report for June 11, 2012 to June 15, 2012

PROJECT: Hutsonville Ash Pond D Closure
Crawford County, Hutsonville, Illinois
Geotechnology Project No. J019896.01

The following is a weekly summary of the site activities at the referenced site.

Weather

The weather was generally sunny and dry. Temperature (°F) lows ranged from 55 to 72°F, and temperature highs ranged from 75 to 88°F. A weather delay occurred on June 11, 2012 due to afternoon storms.

Construction Activities

Anchor trench construction, 40 mil HDPE geomembrane installation, groundwater collection system installation, and clay placement occurred this week. The anchor trench has been excavated, excluding the outlet drainage trenches. The 4-inch HDPE perforated drainage pipe placement within the anchor trench and backfilling of the drainage pipe and trench continue. The outlet drainage trench excavations begun. Chesapeake Containment Systems, Inc. (CCS) completed testing and repairs on the geomembrane liner, as well as liner repairs in Ash Pond A and B then demobilized. Geotechnology, Inc. observed quality control of the geomembrane work. Refer to geomembrane documentation for more details. B&T Drainage began construction of the groundwater collection system. This included the installation of dewatering sump DS-1, perforated collector pipe PCP-1, and clean out CO-1. Due to the variable bedrock elevations on the south end of the property, DS-1 was set approx. 9.0' higher than the original design and PCP-1 was installed at a +0.40% grade running from DS-1 to CO-1. Similar field adjustments are expected and were previously approved by Hanson Professional Services for the construction of the groundwater collection system. Lamac Engineering Co. surveyed portions of the groundwater collection system. Dewatering for the proposed PCP excavation continues in

well number 2 and in the additional temporary well installed this week next to DS-1, located south of Ash Pond A. Fawn Lane Transit, Inc. and Belt Construction, Inc. began clay placement on the north portion of Quadrant A. Ten to 15 trucks were used to haul clay material to Ash Pond D. The vegetative cover is being placed in a single three foot lift, and a representative from TSI Engineering, Inc. observed quality control for the clay placement procedure. Refer to clay placement documentation for more details.

Equipment and Personnel On-Site

CAT D6N Bulldozer
CAT 330D Excavator
CAT 613C Water Truck
Bomag BW 172 PDB-2 Roller
John Deere 624H Front End Loader
John Deere 450 LC Excavator
John Deere 9520 Tractor
John Deere 410J Backhoe
Sky Track 6036 Forklift
Case 580 Backhoe
Water Truck (Dust Control)

Geotechnology, Inc. – Joe Cravens, Tim Wilson, Steve Graham, and Anna Saindon
TSI Engineering, Inc. – Andrew DeClue
Ash Management Services, LLC (AMS) – Randy Porter, Jon Dietzel, Jimmy Boone, Robert Dunkley, James Marks, Brad Bolenbaugh, Greg Siverly, Jeremy Shorter, Blake Bunting, and Eric Sefton
Belt Construction, Inc. (BCI) – Jared Belt
Lamac Engineering Co. – Austin Ridgley
Charah, Inc. – Joe Tasich
Chesapeake Containment Systems, Inc. (CCS) – Jose Valverde, Barbarito Flores, Daniel Gonzales, Phet Vongkhamchanh, Jose Flores, Alberto Ortiz, Manuel Gonzales, Israel Gonzales, and Matt Watts
B&T Drainage (BTD) – John Boyer, Scott Boyer, Brian Schaefer, Brent Neibauer, Michael Switzer, and Michael Dashiell
Fawn Lane Transit, Inc. (FLT) – Kim Edington, Scott Comer, James Elledge, Frank Walton, Jim Urfer, Gary Lamb, Robbx Sanders, Greg Lingorfelder, Tom Sager, James Griffith, Eric Bierman, and Greg Cornwell
Visitors – Refer to the Visitor's Log for visitors, dates, and times.
Refer to the meeting minutes for additional personnel.

Meetings

The weekly progress meeting was held on Tuesday, June 12, 2012. Refer to the attached meeting minutes for additional information.

Photographs

A photograph log with select photographs obtained this week is attached.

Materials

40 mil HDPE geomembrane was repaired on site. Clay for the vegetative layer, IDOT FA-01 sand, IDOT CA-7 aggregate, dewatering sump manhole base and sections, and 8-inch C900 DR18 PVC perforated pipe with filter sock and fittings were delivered.

Testing/Sampling


Geomembrane destructive and non-destructive testing and sampling was completed this week. Refer to geomembrane documentation for additional details.

Calibration Records

Calibration information was not obtained this week.

Signature of CQA Officer

Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.



DAILY REPORTS

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 6/11/12

TIME: Arrive: 6:30 AM Depart: 3:45 PM Travel: 1.0 hr Total: 10 hrs (0.25 hr for lunch)
Weather: Partly Cloudy, 72° AM, 75° PM Contractor: AMS Subcontr./Supplier: CCS/Geo/TSI/FLT/Belt
Equipment Working: 580 Backhoe, D6N Dozer, Water Truck
Site Activities / Observations / Contacts / Notes: —

AMS:

The 580 dug an outlet trench from the anchor trench at Sta. 8+00, and pulled the fence posts out on the west side of Section C and placed them in the construction yard. The 613C Water Truck was demobilized and mobilized to the CBS. As of 6/11/12, Matt Watts and Blake Bunting are no longer with CCS and are now AMS laborers.

CCS:

The destructive samples have been completed and mailed to TRI Labs. Patches and repairs continue.

Belt Construction:

Jared Belt began clay placement on the geomembrane liner with the D6N in the NW area of Section A. The clay is being placed with a 3' lift. Area Covered: P-1 to P-5, P-7, and P-9.

FLT (Fawn Lane Transit, Inc.):

They have 10 trucks cycling between the CBS and APD. Drivers: Kim Edington, Scott Comer, James Elledge, Frank Walton, Jim Urfer, Gary Lamb, Robb Sanders, Greg Lingorfelder, Tom Sager, and James Griffith. 112 Loads Delivered - 11 cy/truck *

TSI:

Andrew DeClue arrived and is in charge of quality control of the clay placement.

Additional Comments: The site work ended at approx. 2:30 PM due to thunderstorms.

Randy Porter
Contractor Representative
Anna Saindon
Signature
Geotechnology Inc.
—
Engineer's Signature

AMS
Company
6-11-12
Date
6-18-12
Date

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: - Client: Ameren ER Date: 6/12/12

TIME: Arrive: 6:30 AM Depart: 6:15 PM Travel: 1.0 hr Total: 12.25 hrs (0.5 hr for lunch)
 Weather: Sunny, 71° AM, 83° PM Contractor: AMS Subcontr./Supplier: CCS/GEO/TSI/FLT/BCI
 Equipment Working: 580 Backhoe, 6036 Forklift, D6N Dozer, Water Truck
 Site Activities / Observations / Contacts / Notes: _____

AMS:

Correction to yesterday's FOR - The 580 dug an outlet trench at Sta. 10+00, not 8+00. Today, the pipe was placed in the outlet trench and backfilled. An outlet trench was also dug at Sta. 14+00. The 580 finished backfilling the 4" drainage pipe in the anchor trench in Section B. The 6036 staged more drainage pipe around the anchor trench. 10 more loads of FA-01 sand were delivered. The 279C Skid Steer was demobilized. Matt Watts is no longer an AMS employee. Now, Blake Bunting and Eric Sefton are the new laborers.

CCS/GEO:

They continued vacuum testing, repairs, cleanup, and welded the cap vent boots. The boots will be spark tested tomorrow. TRI finished all the destructs. Failures: DT-34, 50, 72, and 84 B. Samples will be retested and mailed off tomorrow. They will repair the holes in the liners of Pond A and B tomorrow. The 9 remaining liner rolls were hauled off site.

FLT/BCI/TSI:

Continue clay placement. They plan to add an additional 5 dump trucks to the cycle by the end of the week (15 total). Area = P-1 to P-10, Loads = 178

Misc.:

Miller Construction Co. will begin mobilizing equipment and materials to the coal yard and a guard will be on-site. This is an Ameren subcontractor and
 Additional Comments: is not affiliated with the project;
records will not be kept of their equip. or personnel.

Randy Porter
 Contractor Representative

AMS
 Company

Anna Sachdev
 Signature

Geotechnology, Inc.
 Engineer's Signature

6-12-11
 Date

6-18-12
 Date

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: — Client: Ameren ER Date: 6/13/12

TIME: Arrive: 6:00 AM Depart: 6:00 PM Travel: 1.0 hr Total: 12.75 hrs ^(0.25 hr for lunch)
 Weather: Sunny, 55° AM, 80° PM Contractor: AMS Subcontr./Supplier: BTD/CCS/GEO/TSI/FLT/BCI
 Equipment Working: 580 Backhoe, D6N Dozer, 330D Excavator, 450LC Excavator, 410J Backhoe, 624H F.E.L.,
 Site Activities / Observations / Contacts / Notes: Water Truck

AMS:

The 580 finished backfilling the anchor trench and the 4" drainage pipe on the east side of Section D, and began backfilling on the south side of Section D and the west side of Section C.

BTD:

Personnel - John Boyer, Scott Boyer, Brian Schaefer, Brent Neibauer, Michael Switzer, Michael Dashiell.
Delivery - John Deere 450 LC Excavator, IDOT CA-7 Aggregate, Precast Manhole, 8" Perforated
DR18 water main pipe - PVC C900 1120 (bell and spigot) with filter sock and couplings. The pit
for DS-2 was excavated. However, the pit repeatedly caved in due to the water rushing into the
excavation. Therefore, the pit was backfilled and they will continue to dewater this area. The pit for
DS-1 was excavated next. At approx 11.0', the GWT and the top of sandstone was encountered. The
excavator ripped through approx 2.0' of sandstone and encountered hard shale (not rippable). BTD
is utilizing rock bucket teeth for the bedrock. A final depth of 13.23' was reached and the trench box
(shoring) for the manhole was set. At this depth, this puts the flowline of the PCP at the surface of
the sandstone, or 4" into the sandstone. Approval for this elevation did not come until late in the
day and the shoring had to be taken out so the pit could be cleaned out again, and the shoring could
be reset. For a shoring system, BTD is utilizing the drag-box excavation method to install the pipeline.
Additionally, trenches will be sloped at 1.5:1 to 12' depth, then continued down with trench boxes. Boxes
utilized (stackable): 8'x12' and 8'x20'. CA-7 backfill will be placed in 8" lifts.

CCS/GEO:

Finished cleanup, retesting destructs, mailing destructs, repairs, vacuum testing, and spark testing.
Holes in Pond A and B liners were fixed and CCS demobilized; will return only if TRI fail more destructs.

FLT/BCI/TSI: Clay Placement -

Additional Comments: Area = P-1 to P-10, P-12, P-14, and P-15
Loads = 152

Randy Poetox
 Contractor Representative

HA
 Company

Anna Sanyal
 Signature

Geotechnology, Inc.

Engineer's Signature

6-13-12
 Date

Date

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: - Client: Ameren ER Date: 6/14/12

TIME: Arrive: 6:00 AM Depart: 6:00 PM Travel: 1.0 hr Total: 12.75 hrs (0.25 hr for lunch)
 Weather: Sunny, 55° AM, 82° PM Contractor: AMS Subcontr./Supplier: BTD/CCS/GEO/FLT/BCI/TSI
 Equipment Working: 580 Backhoe, D6N Dozer, 330D Excavator, 450 LC Excavator, 410J Backhoe, BW 172 Roller,
 Site Activities / Observations / Contacts / Notes: 624 H Front End Loader, Water Truck

AMS:

The 580 finished backfilling the anchor trench on the west side of Section A and C. The southern trench will be backfilled tomorrow. Additional IDOT FA-01 sand was delivered.

BTD:

The manhole shoring was reset in the pit for DS-1, and the manhole base and one precast section was installed. Approx. 8" of CA-7 stone was used for the manhole bedding. CA-7 was backfilled around the manhole to 1.0' above the inverts, and trench material was used for backfill to the ground surface. Refer to 5-386, Sheet 12, Details 3 and 4 for the following approved deviations: the sump can be bedded in CA-7, not concrete-bridged to sandstone; since the manhole doesn't have a perforated base, it doesn't have to be wrapped with geotextile and the CA-7 pack also does not have to be wrapped with geotextile. An 8" slotted PVC pipe (vertical) was left next to DS-1 for necessary dewatering (casing for pump). The measured flowline and sump floor were 9.90' and 12.24', respectively, from the ground surface. Based on a surface elevation of 451.40, their elevations are 441.50 and 439.16, respectively. This makes the as-built and planned elevation difference to be 9.16'. The manhole, base, steps, and inverts comply with the specifications. They began construction for PCP-1, beginning at DS-1 running west to CO-1. Approx. 150' of 8" C900 was laid (halfway between DS-1 and CO-1). When they began running pipe from DS-1, the rock ledge dropped off and the sandstone was not encountered again until approx 100' of pipe was laid. Water was pumped out of the trench as required as the trench progressed. Due to the elev change of DS-1, the grade of the PCP between DS-1 and CO-1 changed as well. The PCP between DS-1 and CO-1 is being laid with a grade of 0.40% (std. minimum slope requirement for gravity fed lines). Refer to 5-386, Sheet 8, for this grade change.

Additional Comments: Next Page

Randy Pate
Contractor Representative

AMS
Company

Anna Saindon
Signature
Geotechnology, Inc.

[Signature]
Engineer's Signature

6-14-12
Date
6-18-12
Date

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: 0019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 6/14/12

TIME: Arrive: - Depart: - Travel: - Total: -
Weather: - Contractor: - Subcontr./Supplier: -
Equipment Working: -
Site Activities / Observations / Contacts / Notes: REFER TO PAGE 1

BTD (cont.):

They are utilizing a sewer laser to run the PCP at 0.40%, beginning at the manhole invert. All pipe being laid contains perforations and filter sock. Besides the grade, the PCP installation, bedding, haunching, and backfills remain unchanged (refer to 5-386, Sheet 12, Detail 8). Lamac will be on-site tomorrow to survey the PCP.

CCS/GEO:

The failed destruct was retested (DS-84B), repaired, extrusion welded, and vacuum tested.

FLT/BCI/TSI:

Clay Placement - the north tip of the pond has been covered and now the clay is being placed to the south along Section A, Area = P1-P16, Loads = 160. 11 Trucks are now utilized in the cycle. Additional Personnel (FLT): Eric Bierman

Additional Comments: -

Randy Porter AMS
Contractor Representative Company
Randy Porter 6-14-12
Signature Date
Anna Saindon 6-18-12
Geotechnology, Inc. Date
Michael Lee
Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: — Client: Ameren ER Date: 6/15/12

TIME: Arrive: 6:00 AM Depart: 5:30 PM Travel: 1.0 hr Total: 12.25 hrs (0.25 hr for lunch)
 Weather: Sunny, 61° AM, 88° PM Contractor: AMS Subcontr./Supplier: BTD/Lamac/FLT/BCI/TSI
 Equipment Working: 580 Backhoe, D6N Dozer, 330D Excavator, 450LC Excavator, 410J Backhoe, BW 172 Roller,
 Site Activities / Observations / Contacts / Notes: 624H Front End Loader, Water Truck

AMS:

The 580 stockpiled the western anchor trench spoils on the NW corner of Pond D.

BTD/Lamac:

PCP-1 has been completed. The trench was excavated, bedded with CA-7, the 8" collector pipe with nonwoven geotextile filter sock was installed, haunched with CA-7, and backfilled with CA-7 and trench material. CO-1 was installed (non-perforated) and has sufficient stickup with a water tight cap. Tyler Union 8" 90° M/I fittings are used for the cleanout. The concrete slab and bollard will be installed towards completion (refer to S-386, Sheet 12, Detail 6). PCP-1 was laid at +0.40% from DS-1 invert to CO-1, and the section was compacted. The CO elevation shot with the grade laser is at 443.48. Lamac also shot in PCP-1 at the DS-1 invert, 150' west of DS-1, and at CO-1. BTD continues dewatering in well 2 and in the temporary well next to DS-1. They plan to install additional dewatering wells before DS-2 excavation. Additional 8" perforated DR-18, PVC C900 pipe was delivered. Length = 117'

FLT/BCI/TSI:

Clay Placement - Section A. Panels P-1 to P-45 (northern section) have now been approved for cover. Additional Personnel (FLT): Greg Cornwell; 12 trucks total. They plan to add 4 additional trucks to the cycle next week. The 9520 was demobilized. The excavator loading the trucks at the CBS broke down and FLT could not complete their 10 hour production. This will be fixed tomorrow. Area = P-3 to P-5, P-7, P-9, P-11, P-12, and P-14 to P-16. Loads = 144

Additional Comments: _____

Kathy Felt
Contractor Representative

AMS
Company 6-15-12

Anna Saindon
Signature

6-18-12
Date

Anna Saindon
Geotechnology, Inc.
Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Andrew DeClue Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: #7 Zone: — Client: Geo-technology Date: 6-11-12

TIME: Arrive: 6:45 Depart: 2:45 Travel: 1.0 Total: 9.0 (.5 hr. lunch)

Weather: 80's Contractor: AMS Subcontr./Supplier: —

Equipment Working: —

Site Activities / Observations / Contacts / Notes: Contracting using D6N to begin
placing 3-foot coverage layer over Panels: P-1 thru P-5, P-7, and P-9. Material
placed was a silty to lean clay soil with roots. Soil was placed in such a way
to prevent Geo-Membrane from wrinkling or being ripped or punctured. It began to
rain at 2:00 PM, job was rained out at 2:30 PM.

Additional Comments: _____

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Andrew DeClue AMS
Contractor Representative Company
[Signature] 6-11-12
Signature Date
[Signature] 6/11/12
Geotechnology, Inc. Date
[Signature] 6/18/12
Engineer's Signature

FIELD OBSERVATION REPORT

Representative: Andrew DeChic Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: #7 Zone: — Client: Geotechnology Date: 6-12-12

TIME: Arrive: 6:45 Depart: 5:30 Travel: 1.0 Total: 11.75 (.5 hr. lunch)
Weather: 70-90's Sunny Contractor: AMS Subcontr./Supplier: —
Equipment Working: —

Site Activities / Observations / Contacts / Notes: Belt Construction continuing to place
3' Fill over Geo-Membrane Panels with DG. Soil is being trucked in from off
site borrow Area. Material is a silty to lean clay with roots. Material is being
placed in such away to prevent Geo-Membrane from wrinkling and/or being
ripped or punctured. Fill was placed on Panels P-1 thru P-10, with the main
Focus on Filling towards North edge of Pond.

Additional Comments: —

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Andrew DeChic AMS
Contractor Representative Company
Signature Date 6-12-12
Geotechnology, Inc. Date 6/18/12
Engineer's Signature

FIELD OBSERVATION REPORT

Representative: Andrew DeChe Project No.: 3019296.01 Task: 8370
Equipment & ID No.: - Project Name: Hutchville Ash Pond D Closure
Vehicle: 7 Zone: - Client: Geotechnology Date: 6-13-12

TIME: Arrive: 6:45 Depart: 5:15 Travel: 1.0 Total: 11.5 (1/2 hr. lunch)

Weather: 50-80's Sunny Contractor: AMS Subcontr./Supplier: -

Equipment Working: -

Site Activities / Observations / Contacts / Notes: Belt Construction continuing to place

3 Foot of coverage fill over Geo-Membrane. Using DG to place fill in such a way
to prevent Geo-Membrane from wrinkling and/or being ripped or torn. Material is a silty
to lean clay with roots being hauled in from offsite borrow area. Fill is being placed
on Panels: P-1 thru P-10, P-12, P-14, & P-15. After lunch they focused on filling
towards North edge of Pond.

Additional Comments: -

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Andrew DeChe Contractor Representative
AMS Company
Signature 6-13-12
Geotechnology, Inc. Date 6/13/12
6/18/12 Engineer's Signature

FIELD OBSERVATION REPORT

Representative: Andrew DeClue Project No.: J019816.01 Task: 2370
Equipment & ID No.: — Project Name: Hazenville Ash Pond D Closure
Vehicle: 7 Zone: — Client: Geotechnology Date: 6-14-12

TIME: Arrive: 6:45 Depart: 5:30 Travel: 1.0 Total: 11.75 (1.5 hr lunch)

Weather: 50-80's Sunny Contractor: AMS Subcontr./Supplier: —

Equipment Working: —

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place
3 Feet of coverage fill over Geo-Membrane. Material is a silt to lean clay with
roots being hauled in from offsite borrow Area. Belt using DB to place fill in
such a way that Geo-Membrane doesn't wrinkle and/or become ripped/torn.
Fill was placed on Panels: P-1 thru P-16. By noon they had finished placing
fill to North edge of Pond. They then focused on heading southward starting on approved
Panels.

Additional Comments: —

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

Andrew DeClue AMS
Contractor Representative Company
Signature Andrew DeClue Date 6/14/12
Geotechnology, Inc. 6/18/12
Engineer's Signature Date

FIELD OBSERVATION REPORT

Representative: Andrew DeChie Project No.: 3019896.01 Task: 9370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D closure
Vehicle: 7 Zone: — Client: Geotechnology Date: 6-15-12

TIME: Arrive: 6:30 Depart: 4:00 Travel: 1.0 Total: 10.5 (1/2 hr. lunch)

Weather: 50-80's Sunny Contractor: AMS Subcontr./Supplier: —

Equipment Working: —

Site Activities / Observations / Contacts / Notes: Belt Construction continuing to Place

3 Foot of Coverge Fill over Geo-Membrane. Using D6 to push Fill (Silt-Loam clay, Material)
being hauled in from offsite Borrow area. Material is being placed in such a way, as to
prevent Geo-Membrane from wrinkling and/or ripped or torn. Material being placed
on Panels P-3 thru P-5, P-7, 9, 11, 12, 14-16.

Additional Comments: —

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

Andrew DeChie Contractor Representative
AMS Company
6-15-12 Date
6/15/12 Date
Geotechnology Inc.
6/18/12 Date
— Engineer's Signature

MEETING MINUTES



Hutsonville Power Station - Ash Pond D Closure
Progress Meeting No. 13 Minutes
Tuesday, June 12, 2012

01	PUBLICATION			
	Publish date:	2012-06-18	Submitted by:	P. Zinsious
	Distribution:	E-mail only	Notes taken by:	P. Zinsious
	Location:	Hutsonville Power Station	AMS-Charah File No.	HUT-APD-MTG-MIN-2012-06-12-PM-13
	AER PO:	567523 R4	AMS-Charah Contract:	00030-01 AMS-Charah GL: 4116-06-6120

02 ATTENDEES [ALPHA BY COMPANY]						
NO.	SAL	FIRST	LAST	COMPANY	PHONE	E-MAIL
01	Mr.	Steve	Bluemner	Ameren	314-972-4160	sbluemner@ameren.com
02	Mr.	Bob	Muesenfechter	Ameren	314-681-2287	bmuesenfechter@ameren.com
03	Mr.	Bob	Simmons	Ameren	217-412-6384	rsimmons@ameren.com
04	Mr.	Paul	Zinsious	AMS - PCM	502-640-2918	pzinsious@ashmanagementservices.com
05	Mr.	Randy	Porter	AMS - SM	502-554-5230	rporter@ashmanagementservices.com
06	Mr.	Joe	Cravens	Geotechnology	314-568-6628	j_cravens@geotechnology.com
07	Mr.	Austin	Ridgely	Lamac	618-263-8290	aridgely@lamac.net

03

ABBREVIATIONS			
AER	Ameren Energy Resources	OSHA	Occupational Safety Health Administration
AMS	Ash Management Services	PCP	Perforated Collector Pipe
BNSF	Burlington	PO	Purchase Order
CBT	Computer Based Training	RHOM	Routine Handling, Operation, and Maintenance
EAP	Emergency Action Plan	SPOC	Single Point of Contact
EOD	End of [the] Day	T/M	Time and Materials
EOM	End of [the] month	TBD	To Be Determined
EOW	End of [the] week	TD	Transmission Dispatch
EDTS	Energy Delivery Transmission Services	WPA	Worker Protection Assurance
EDC	Estimated Date [of] Completion		
EWO	Extra Work Order		
HDPE	High Density Polyethylene		
HRS	Hours		
LOTO	Lock Out Tag Out		
NMA	National Maintenance Agreement		

04 DOCUMENTATION	
Minutes are documented weekly, and the publication have a "rolling record" of the immediate past two weeks. Each week the oldest drops off and the current week is added to the minutes. Items are categorized as either "NEW", "OPEN", "CLOSE", or in case the an item has to be re-published after closed the previous week - "REOPEN". Minutes format changed for Progress Meeting No. 13 deleting and combining certain items for brevity and to abbreviate documentation. Currently the item numbers remained the same for tracking purposes.	

05 SAFETY - HOUSEKEEPING	
02 WORKER PROTECTION ASSURANCE	
2012-06-12	OPEN - no issues. None projected for 2x week look ahead.
2012-06-05	OPEN - no issues. None projected for 2x week look ahead.
03 EMPLOYEE DRUG TESTING	
2012-06-12	OPEN - no issues. AMS projects 2x teamsters [Fawn lane], 2x laborers [already have CBT - but AMS DT they will go to Robinson].
2012-06-05	OPEN - no issues. AMS has sent 2x employees. M. Wagstaff sent thank you e-mail to JCH. P. Zinsious suggested inviting them to a safety luncheon.
04 AMS SAFETY	
20120-06-12	OPEN - no issues.
	[01] 1x worker terminated and replaced an operator for safety concerns - AMS zero tolerance policy.
	[02] Borrow haul route signage installed on roadway.
	[03] Spotters for trucks on site, 1x to 2x laborers. Additional spotters if/as required.
	[04] Cooling stations are set up.
	[05] J. Tasich on site 06-11. Training 2x laborers today [06-12].
	[06] Training tomorrow [06-13] for AMS site-specific.

2012-06-05 OPEN - no issues.
 [01] J. Denham reported on 1x AMS operator who was not operating safety while operating the [all terrain] fork lift on 06-01. Worker was suspended for unsafe actions and not wearing a seat belt and is currently under review. AMS has a zero tolerance policy, and if the review proves accurate, the worker will be terminated. Official response and [incident] violation report should be ready by 06-06.
 [02] General discussion safety concerns for the vegetative cover hauling [soil materials from the borrow site]. P. Zinsious indicated signs will be placed on Illinois Route 1 northbound and southbound lanes where trucks entering the highway. Currently Illinois is working on the bridge deck that crosses over Raccoon Creek on the haul route. Truckers will not be allowed to deviate from the route and travel the "back way" into the borrow site to avoid the work at the bridge deck. Estimated time of this work on the bridge deck is 6x to 8x Wks.
 [03] B. Muesenfechter concern that open liner anchor trenches could be a potential tripping hazard and indicated previous issue at Coffeen [Ameren power plant]. M. Wagstaff indicated depends on trench. J. Denham indicated caution tape will be placed at trenches, on the exterior, as the interior has liner, and cannot penetrate the liner [with posts].
 [04] Cooling stations are set up.

05 HOUSEKEEPING

2012-06-12 OPEN - AMS will have walk through today [06-12] for cleanup.
 2012-06-05 OPEN - M. Wagstaff concern regarding small pieces of liner. J. Boone indicated daily cleanup.

06 PLANT ACCESS - CBT

20120-06-12 OPEN - B. Simmons Ameren services general discussion of plant access and projected work:
 [01] Subcontractor [Miller] and Ameren will use entire coal yard.
 [02] Possible set trailer next week, possible same electric service usage.
 [03] Project is capacity and clearance scope until through EOY [Hutsonville, Palmyra to Indiana areas].
 [04] Starting 06-14 guard form 6:00 AM CT to 6:30 PM CT, then 24/7 when conductors stored/staged on site.
 [05] Parking on far west lot, up to 15x personal vehicles.
 [06] Subcontractor will not have AER badges, guard will have list update for workers on project. They will only have to show driver's license.
 [07] B. Simmons indicated workers not allowed beyond designated area, if caught outside area, will be terminated.
 [08] M. Wagstaff is SPOC for this project to the APD project.
 [09] Borrow haul traffic only concern.
 [10] D. Curlin contact for Miller.
 2012-06-05 OPEN - M. Wagstaff reports that Ameren [Services] will begin transmission line work [between Kansas and Illinois], and will be using the coal yard at the Hutsonville plant as storage. Ameren will provide a guard for 12 HR shifts. The contacts at Ameren as Mr. Jim Williams [over the GENCO division] and Mr. Bob Simmons who will be the site SPOC. Work to begin the middle of June 2012. J. Boone indicated concern over coordination of trucks hauling into the site, and M. Wagstaff said no issue, as the trucks can come in through the gate by the [west] PCP line.

08 OSHA LOG - WORK HOURS

2012-06-12 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 06-11.
 No incidents or accidents.
 3,304.00 RT
 0,700.50 OT
 4,004.50 TOTAL
 2012-06-05 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 06-04.
 No incidents or accidents.
 2,543.50 RT
 0,436.50 OT
 2,980.00 TOTAL

06 MANPOWER [HEAD COUNT]

01 CREW SIZE

2012-06-12 AMS, Chesapeake Containment [CCS], BT Drainage [BTD], and returning Belt Construction [BCI] on site.

[04] Geotechnology [work hours not included in OSHA Log above]
 [00] Pipe
 [00] Mechanical
 [00] Electrical
 [00] Cement
 [09] Laborers [AMS 3x, CCS 6x]
 [02] Operators [AMS 1x, BCI 1x]
 [11] Teamsters [FLT 10x borrow haul trucking]
 [00] Survey
 [03] Foreman [Full time] [Mr. John Dietzel new Charah/AMS Focus Site Manager on project] [CCS 1x]
 [29] Total

2012-06-05 AMS, Chesapeake Containment [CCS], and BT Drainage [BTD] on site.

[03] Geotechnology [work hours not included in OSHA Log above]
 [00] Pipe
 [00] Mechanical
 [00] Electrical
 [00] Cement
 [12] Laborers [AMS 2x, CCS 10x]
 [02] Operators [AMS 2x]
 [01] Teamsters
 [00] Survey
 [03] Foreman [Full time] [Mr. John Dietzel new Charah/AMS Focus Site Manager on project] [CCS 1x]
 [21] Total

02 WORK HOURS AND OVERTIME

2012-06-12 OPEN - Standard hours - 7:00 AM CT to 3:30 PM CT. CCS still on track for OT. Fawn Lane trucking 10 HR.
 2012-06-05 OPEN - Standard hours - 7:00 AM CT to 3:30 PM CT. CCS still on track for OT.

04 TRAILER - GENERAL CONDITIONS - COORDINATION - VEHICLES

2012-06-12 OPEN - no issues. GEO/CCS "gators" leaving this week.
 2012-06-05 OPEN - no issues.

07 PREVIOUS**01 SUBCONTRACTS**

2012-06-12 OPEN - no issues.
 2012-06-05 OPEN - no issues.

02 SUBMITTALS

20120-06-12 Submittal log as published by GEO on 06-09 distributed. General discussion.
 [01] Submittal log copies distributed.
 [02] Discussion CA-7 sample for PCP coarse aggregate.
 [03] No issues.
 20120-06-05 Submittal log as published by GEO on 06-2 distributed. General discussion.
 [01] Submittal log copies distributed.
 [02] Seed/mulch submittal under review by AER returned.
 [03] VES-01 to be returned by AER returned.
 [04] VES-02 M. Wagstaff orally approved returned.
 [05] SWP3 for APD submitted by AMS as matter of record original signed on 02-28.
 [06] AMS to submitted dewatering sump under AER review.

08 MATERIAL**01 GENERAL**

2012-06-12 OPEN - no issues. [corrected dates below 20120].
 2012-06-05 OPEN - no issues.

02 GEOMEMBRANE PRE-CON

2012-06-12 OPEN - no issues.
 2012-06-05 Open - no issues.
 [01] A. Saindon reviewing tests, looks good. However test results for areas will not be ready until about 4:00 PM CT on 06-07.
 [02] Using stakes on positioned by sandbags and leaving the sandbags in place are acceptable per A. Saindon.

03 CAP VENT PRE-CON

2012-06-12 OPEN - no issues.
 2012-06-05 OPEN - no issues. [corrected date errors of "20120" below]

04 PERFORATED COLLECTOR PIPE [PCP] PRE-CON MEETING

2012-06-12 OPEN - Discussion during Progress Meeting:
 [01] Lamac to perform record drawing "as-built" survey for AER direct, instead of through AMS.
 [02] P. Zinsious presented M. Wagstaff concern over the global stability of the PCP trench and Hanson response that proposed new alignment is not acceptable due to the close proximity.
 [03] R. Porter indicated if higher elevation of excavation, the trench may not be as wide. General consensus of the team is a "wait-and-see" approach [due to the many factors involved].
 [04] MW-2R remains undeveloped due to dewatering.
 [05] BTD to begin PCP on 06-13 in AM. Estimated production rates [provided by BTD for scheduling meeting at Ameren] are shallow = 40 FT/D, average 60 FT/D, and deep[er] = 80 FT/D.
 2012-06-05 OPEN - Discussion during Progress Meeting:
 [01] M. Wagstaff concern on the PCP alignment and liquefaction [due to seismic] of the soil near the pond berm. There was no specification provided by Ameren, and for now the alignment look good, will go with Hanson.
 [02] J. Boyer reports at area of DS-1 hit shallow sandstone, about 20 FT west from location. Will status once excavation begins if a new location or higher elevation will be required.
 [03] M. Wagstaff reports that new well MW-2R could not develop due to dewatering.
 [04] P. Zinsious reports that review of PCP alignment allow for power poles to stay in place [Ameren does not need to remove for now].

09 ADJACENT PROPERTIES AND PCP LINE**01 GENERAL**

2012-06-12 OPEN - Discussion during Progress Meeting:
 [01] AMS has removed fencing for now.
 [02] M. Wagstaff will be in contact with Mr. Wampler to resolve.
 2012-06-05 OPEN - Discussion during Progress Meeting:
 [01] J. Boone reports Mr. Duane Wampler has communicated not happy with fence alignment.
 [02] AMS has mover the fence back. J. Cravens has been in contact with Wampler.
 [03] J. Boyer indicated collector tile work in about two weeks [will need coordination with Mr. Wampler].
 [04] J. Boyer reports only need in week in this area, as shallow.
 [05] M. Wagstaff will be in contact with Mr. Wampler to resolve.

10		QUALITY CONTROL
03	CLAY	
2012-06-12	OPEN	Roots being pulled out of the material.
2012-06-05	OPEN	no issues begin placement on 06-11.
11		SCHEDULE REVIEW
01	SCHEDULE	
2012-06-12	OPEN	Review of schedule 06-07 handed out [01] B. Muesenfechter presented "First Planner". [02] Open discussion and review of "First Planner" process with Lamac. [03] J. Cravens out 07-13, and P. Zinsious vacation 06-21 - 06-28. [04] Two critical work areas, the clay placement and the PCP. [05] Baseline SC changed to 10-11. Currently SC in projected 10-24. [06] P. Zinsious indicated AMS to increase trucks for borrow haul from 10x to 15x. [07] PCP projected now to start 06-13, will help schedule. [08] Weather days coded.
2012-06-05	OPEN	Review of schedule 06-01 handed out [01] B. Muesenfechter presented "First Planner". [02] Open discussion and review of "First Planner" process with the Build Team present. [03] Review of draft "First Planner" look-ahead. Individual activity review with modifications of dates and "Last Planner" assignments.
12.0		COST AND BUDGET
02	AMS PAY APPLICATION - CHANGE REQUEST	
2012-06-12	OPEN	no issues. AMS sent SOV to M. Wagstaff.
2012-06-05	OPEN	no issues, draft revised on 06-05 few items to revise.
12.1		EXTRA WORK ORDERS
11	EWO-11 BUILDING SPOILS REMOVAL	
2012-06-12	OPEN	in progress.
2012-06-05	OPEN	in progress. No further spoils found, AMS to provide cost account.
12	EWO-12 PCP Survey	
2012-06-12	CLOSE	Lamac to go direct to AER.
2012-06-05	NEW	AMS coordinate Lamac to survey "as-built" for the PCP installation.
13	EWO-13 Electrical feeder/overhead	
2012-06-12	NEW	combined EWO-05 and 07 per AER. AMS to have pricing in day or two.
13		ACTION ITEMS - AER [25]
01	AMEREN [AER]	
2012-06-12	NONE	
2012-06-05	CLOSE	
14		ACTION ITEMS - AMS [21]
01	ASH MANAGEMENT [AMS]	
2012-06-12	NONE	
2012-06-05	In progress.	
15		PRODUCTION
03	CLAY	
2012-06-12	OPEN	Trucks are hauling 11 CY. Currently 10x trucks. Placement as of 06-11 is 1,232 CY.
2012-06-05	OPEN	no issues [projected start 06-11].

16	DOCUMENTS TRANSMITTED
2012-06-12	[01] AMS - Contact list HUT-APD-CON-2012-06-12 [CORRECTION BELOW 06-05] [02] AMS - Schedule dated 06-07 - critical Path [03] AER - Schedule dated 06-07 - look ahead [04] AER - Last Planner presentation [to A. Ridgely from AMS only]. [05] AMS - last planner schedule draft [06] GEO - Submittal Log published 06-09
2012-06-05	[01] AMS - Contact list HUT-APD-CON-2012-06-05 [02] AMS - Schedule dated 06-01 - critical Path [03] AMS - Schedule dated 06-01 - data date [04] AMS - Schedule dated 06-01 - look ahead [05] AER - Last Planner presentation [06] AMS - last planner schedule draft [07] GEO - Submittal Log published 06-01 [08] BTD - revised buoyancy calculations to Mr. Wagstaff only [09] Fence layout option VES-03 [CORRECTION 06-12 added Item No. 09]

17	DOCUMENTS REVIEW ONLY
2012-06-12	None
2012-06-05	None

18	NEXT PROGRESS MEETING
Next meeting will be held in one week - Tuesday, June 19, 2012 at Hutsonville	

19	DISTRIBUTION - STANDARD
AER 01 Mr. Mike Wagstaff 02 Mr. Mike Stewart 03 Mr. Bob Muesenfechter GEO 01 Ms. Anna Saindon 02 Mr. Eric Neuner 03 Mr. Joe Cravens AMS 01 Mr. Jimmy Boone 02 Mr. John Denham 03 Mr. Joko Tasich 04 Mr. Randy Porter	

If there are any corrections, modifications, additions, or deletions please notify the sender by e-mail at pzinsious@ashmanagementservices.com

PHOTOGRAPH LOG



Photograph 1 ▲ - Root removal during clay placement facing west



Photograph 2 ▲ - Drainage pipe placement in anchor trench facing northeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between June 11 and June 15, 2012



Photograph 3 ▲ - 8-inch perforated DR18 PVC C900 pipe for PCP facing northwest



Photograph 4 ▲ - Spark testing cap vent boots facing south

All photographs taken by Joseph Cravens of Geotechnology, Inc. between June 11 and June 15, 2012



Photograph 5 ▲ - Clay placement in Quadrant A facing north



Photograph 6 ▲ - Manhole shoring at DS-1 facing west

All photographs taken by Joseph Cravens of Geotechnology, Inc. between June 11 and June 15, 2012



Photograph 7 ▲ - Installing DS-1 manhole facing west



Photograph 8 ▲ - Installing PCP-1 facing west

All photographs taken by Joseph Cravens of Geotechnology, Inc. between June 11 and June 15, 2012

JRC



Photograph 9 ▲ - Manhole interior DS-1 facing southwest



Photograph 10 ▲ - Installing CO-1 facing northwest

All photographs taken by Joseph Cravens of Geotechnology, Inc. between June 11 and June 15, 2012

JRC



Photograph 11 ▲ - Overview of Ash Pond D facing southeast



Photograph 12 ▲ - Overview of Ash Pond D facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between June 11 and June 15, 2012



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Energy Resources

FROM: Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DATE: July 5, 2012

SUBJECT: Weekly Summary Report for June 25, 2012 to June 29, 2012

PROJECT: Hutsonville Ash Pond D Closure
Crawford County, Hutsonville, Illinois
Geotechnology Project No. J019896.01

The following is a weekly summary of the site activities at the referenced site.

Weather

The weather was generally sunny and dry. Temperature (°F) lows ranged from 52 to 77°F, and temperature highs ranged from 86 to 108°F. Weather delays did not occur this week.

Construction Activities

Anchor trench construction, groundwater collection system installation, fence removal, anchor trench spoil transportation, embankment grading, and clay placement occurred this week. Anchor trench construction included riprap splash pads and rodent guards for the anchor trench outlet toe drains along the northeast and east embankments of Ash Pond D. B&T Drainage continued construction of the groundwater collection system. This included the completion of dewatering sump DS-2, perforated collector pipe PCP-2 and PCP-3, additional cleanout CO-1A and CO-1B, and dewatering. Grades for PCP-2 and PCP-3 were altered due to shallow bedrock. Refer to daily reports for additional information. Lamac Engineering Co. surveyed grades for the groundwater collection system. Ash Management Services, Inc. removed portions of the fence south of Ash Pond B for the temporary construction easement and transported anchor trench spoils from Ash Pond D to Ash Pond A. Fawn Lane Transit, Inc. and Belt Construction, Inc. continue clay placement in Quadrant A. Approximately 15-16 trucks were used to haul clay material to Ash Pond D. The vegetative cover is being placed in a single three foot lift, and a representative from TSI Engineering, Inc. observed quality control for the clay placement procedure. Refer to clay placement documentation for more details. Belt Construction, Inc. also

performed clearing and grading on the northeast embankment of Ash Pond D, providing a more gradual slope and promoting surface drainage.

Equipment and Personnel On-Site

CAT D6N Bulldozer
CAT D5G Bulldozer
CAT 330D Excavator
Bomag BW 172 PDB-2 Roller
John Deere 624H Front End Loader
John Deere 450 LC Excavator
John Deere 410J Backhoe
Case 580 Backhoe
Water Truck (Dust Control)

Geotechnology, Inc. – Joe Cravens
TSI Engineering, Inc. – Andrew DeChue
Ash Management Services, LLC (AMS) – Randy Porter, Matt Dishman, Robert Dunkley, James Marks, Brad Bolenbaugh, Greg Siverly, Jeremy Shorter, Blake Bunting, and Eric Sefton
Belt Construction, Inc. (BCI) – Jared Belt
Lamac Engineering Co. – Austin Ridgley and Steve Anderson
Charah, Inc. – Joe Tasich
B&T Drainage (BTD) – John Boyer, Scott Boyer, Chase Boyer, Colby Boyer, Brian Schaefer, Brent Neibauer, Michael Switzer, and Michael Dashiell
Fawn Lane Transit, Inc. (FLT) – Kim Edington, Lee Edington, Scott Comer, James Elledge, Jim Urfer, Gray Lamb, Greg Lingorfelder, Tom Sager, Eric Bierman, Robert Shehorn, Billie Meadows, John Niles, Brian Griffith, Bob Smithenry, Alan Ruholl, and Patrick Wentz
Visitors – Refer to the Visitor's Log for visitors, dates, and times.
Refer to the meeting minutes for additional personnel.

Meetings

The weekly progress meeting was held on Tuesday, June 26, 2012. Refer to the attached meeting minutes for additional information.

Photographs

A photograph log with select photographs obtained this week is attached.

Materials

Clay for the vegetative layer, IDOT CA-7 aggregate, 3x6 riprap for anchor trench drains, and rodent guards were delivered.

Testing/Sampling

Testing and sampling did not occur this week.

Calibration Records

Calibration information was not obtained this week.

Signature of CQA Officer

Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.



DAILY REPORTS

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 6/25/12

TIME: Arrive: 6:00 AM Depart: 5:45 PM Travel: 1.0 hr Total: 12.5 hrs (0.25 hr for lunch)
Weather: Partly Cloudy, 72° AM, Sunny, 95° PM Contractor: AMS Subcontr./Supplier: BTD/FLT/BCI/TSI
Equipment Working: 580 Backhoe, D6N Dozer, 330D Excavator, 450 LC Excavator, 624 H F.E.L., Water Truck

Site Activities / Observations / Contacts / Notes: _____

AMS:

AMS continued removing the chain link fence and pulling posts south of Ash Pond B for the temporary construction easement for the PCP excavation. AMS has a new focus manager that will work at both the CBS and APD - Matt Dishman.

BTD:

The PCP-2 excavation, installation, and backfill continues from DS-2 to DS-1, currently still running at a 0.50% grade towards DS-1. Unless a rock ledge is reached, there will not be a cleanout required between DS-1 and DS-2. An additional pump was placed in the DS-2 manhole to aid dewatering south of Ash Pond A. Due to the significant amount of sand and water flowing into the trench box, the foundation is undercut and approx. 3.0' of CA-7 is being used for the pipe bedding. The pipe haunching and backfill remains the same. Refer to S-386, Sheet 12, Detail 8 for the pipe installation profile. Lamac will survey the PCP tomorrow, wherever the pipe is exposed, for as-built data. Length = 120'

FLT/BCI/TSI:

Clay Placement - South bound on Section A. Two Additional Trucks - Alan Ruhoff and Patrick Wente. Area = P-23, 25, 26, 27, and 46 to 55. Loads = 227

Additional Comments: _____

Randy Peter
Contractor Representative

Anna Sanderson
Signature

Geotechnology, Inc.

Engineer's Signature

AMS
Company

6-25-12
Date

7-5-12
Date

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 6/26/12

TIME: Arrive: 6:00 AM Depart: 5:45 PM Travel: 1.0 hr Total: 12.5 hrs (0.25 hr for lunch)
Weather: Sunny, 61° AM, 86° PM Contractor: AMS Subcontr./Supplier: BTD/Lamac/FLT/BCI/TSI
Equipment Working: 580 Backhoe, D6N Dozer, 330D Excavator, 450LC Excavator, 624H Front End Loader,
Site Activities / Observations / Contacts / Notes: 410J Backhoe, BW172 Roller, Water Truck

AMS:

AMS completed removing the chain link fence south of Ash Pond B for the temporary construction easement for the PCP excavation. All the posts were pulled and the holes were backfilled.

BTD/Lamac:

The PCP-2 excavation and installation was completed. The rest of the PCP-2 backfill and compaction should be completed tomorrow. Field Change: due to the field adjusted DS-1 elevation, the PCP-2 grade had to be field adjusted as well. There was also a shale rock ledge encountered and a cleanout (CO-1A) was installed between DS-1 and DS-2. PCP-2 runs west from DS-2 as follows: DS-2, 150' @ +0.50%, 3' @ 0.50%, 22.5° fitting → 14' → 22.5° fitting, 3' @ 0.50%, tee for CO-1A, and then the rest of the pipe ran +0.50% to DS-1 from the tee. Austin Ridgley and Steve Anderson with Lamac surveyed the flowlines in DS-2, PCP-2 before and after the 22.5° fittings, and MW-2R. Additional IDOT CA-7 aggregate was delivered. Dewatering continues around DS-2 and PCP-3 will begin tomorrow. Length = 140'.

FLT/BCI/TSI:

Clay Placement - South bound on Section A. BCI began stripping the NE embankment on APD (extra work for Ameren) and it will be slightly cut to provide a more gradual slope. The riprap splash pads for the anchor trench outlet drains will begin to be constructed on the NE berm tomorrow. Area = P-46 to 61, and 95. Loads = 240

Misc.: The riprap splash pads for the anchor trench outlet drains will not be Class B2 as indicated on the plans. They will be made of 3x6 riprap (Ameren approved).

Additional Comments: _____

Mark Porter
Contractor Representative

AMS
Company 6-26-12

Anna Samelson
Signature

7-5-12
Date

Geotechnology, Inc.

Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 6/27/12

TIME: Arrive: 6:00 AM Depart: 5:45 PM Travel: 1.0 hr Total: 12.5 hrs (0.25 hr for lunch)

Weather: Sunny, 53° AM, 98° PM Contractor: AMS Subcontr./Supplier: BTD/FLT/BCI/TSI

Equipment Working: 580 Backhoe, D6N Dozer, 330 D Excavator, 450 LC Excavator, 624 H Front End Loader,

Site Activities / Observations / Contacts / Notes: 410J Backhoe, BW 172 Roller, Water Truck

AMS:

Delivery - loads of 3x6 riprap. AMS worked on constructing the riprap splash pads for the anchor trench outlet toe drains along the northeast and east embankments of Pond D. 3x6 riprap was used instead of Class B2 and the pads were constructed 2' wide by 7' long (1' above the drain) by 6" deep (cut into the embankment). The rodent guards for the drains have not been delivered yet.

BTD:

Delivery - more 8" perforated C900 DR18 PVC pipe. The pipe was staged south of Pond D. PCP-2 backfill and compaction was completed, excluding the area around the DS-2 manhole. BTD began PCP-3 excavation, installation, and backfill. PCP-3 grade began at 1.75 % running east from the DS-2 manhole. At approx. 44' east of DS-2, a hard rock ledge was encountered, and the PCP had to come up to clear the ledge and begin a new grade. An additional cleanout was installed at the new grade (CO-1B). Field Change: PCP-3 runs east from DS-2 as follows: DS2, 44' @ +1.75 %, 22.5° fitting → 13' → 22.5° fitting, 3' @ 0.50 %, tee for CO-1B, and then continues +0.50 % from tee. The majority of PCP-3 is keyed into sandstone. John Boyer shot various grades for the PCP and field tile. Lamac will survey the PCP tomorrow for the as-built. Length = 100'

FLT/BCI/TSI:

Clay Placement - South bound on Section A. BCI continued stripping and cutting the NE embankment on Pond D. FLT Additional Personnel: Bob Smithenry, this makes a total of 16 trucks cycling between CBS and APD. Area = P-46 to 61, and 95. Loads = 235

Additional Comments: _____

Randy Poettr
Contractor Representative

Randy Poettr
Signature

Anna Spindler
Geotechnology, Inc.
Engineer's Signature

AMS
Company
6-27-12
Date
7-5-12
Date

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: JO19896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 6/28/12

TIME: Arrive: 6:00 AM Depart: 5:30 PM Travel: 1.0 hr Total: 12.25 hrs (0.25 hr for lunch)
Weather: Sunny, 70° AM, 105° PM Contractor: AMS Subcontr./Supplier: BTD/Lamac/FLT/BCI/TSI
Equipment Working: 580 Backhoe, D6N Dozer, 330D Excavator, 450 LC Excavator, 624H Front End Loader,
Site Activities / Observations / Contacts / Notes: 410J Backhoe, BW 172 Roller, Water Truck

AMS:

Delivery - Retent Guards for the anchor trench outlet toe drains. The riprap splash pads for the anchor trench outlet toe drains were completed along the northeast and east embankments of Pond D. The riprap pads along the south embankment will be constructed at a later date. Sandbags were staged along the liner for both vegetative cover stakes and to hold it in place from contraction and expansion. The 580 cleaned all the paved roads (plant entrance to construction yard) and regraded the gravel plant entrance. The 580 also began moving the stockpiled anchor trench spoils from the northwest corner of Pond D to the southeast corner of the geotubes in Pond A.

BTD/Lamac:

Delivery - loads of IDOT CA-7 aggregate. BTD continued PCP-3 excavation, installation, backfill, and compaction. PCP-3 continues at a +0.50% grade running east from CO-1B. The PCP was laid until the first Kink was reached located southwest of Pond B. The dewatering wells (pumps and slotted casings) and manhole shoring were removed from around DS-2. BTD began backfilling around the DS-2 manhole. More sections of the manhole will be installed tomorrow. Currently, there is no dewatering south of Pond A. Austin and Steve with Lamac surveyed the additional cleanout CO-1B and points along PCP-3. Length = 200'.

FLT/BCI/TSI:

Clay Placement - South bound on Section A. BCI completed stripping and grading, producing a more gradual slope, the northeast embankment on Pond D. Area = P-46 to 61, and 95. Loads = 226

Additional Comments: _____

Randy Poole
Contractor Representative

AMS
Company 6-28-19

Anna Singula
Signature
Geotechnology, Inc.

Date
7-5-12
Date

Joe Cravens
Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: JO19896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsanville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 6/29/12

TIME: Arrive: 6:30 AM Depart: 2:00 PM Travel: 1.0 hr Total: 8.5 hrs (no lunch)
Weather: Sunny, 77° AM, 108° PM Contractor: AMS Subcontr./Supplier: BTD/FLT/BCI/TSI
Equipment Working: 580 Backhoe, D6N Dozer, 330D Excavator, 450 LC Excavator, 624H Front End Loader,
Site Activities / Observations / Contacts / Notes: 410J Backhoe, BW 172 Roller, D5G Dozer, Water Truck

AMS:

The rodent guards for the anchor trench outlet toe drains were installed on the NE and E berms.
The 580 continued moving the stockpiled anchor trench spoils from the NW corner of APD to the SE corner of the geotubes in APA.

BTD:

Delivery - CAT D5G Dozer. Chase Boyer on-site today. Two manhole sections were added to DS-2 and the manhole top was placed. DS-2 backfill was completed. BTD began finish grading PCP-1, 2, and 3. No pipe was laid today.

FLT/BCI/TSI:

Clay Placement - South bound Section A. Another entrance to the Pond was added on the west side along the Section A and C boundary line.

Area = P-46 to 61, and 95.

Loads = 148

Additional Comments: _____

Randy Poole
Contractor Representative

Anna Saindon
Signature

Geotechnology, Inc.

Engineer's Signature

AMS
Company

6-29-12
Date

7-5-12
Date

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FIELD OBSERVATION REPORT

Representative: Andrew DeClue Project No.: JO1989601 Task: 2370
Equipment & ID No.: — Project Name: Huntsville Ash Pond D Closure
Vehicle: 7 Zone: — Client: Geotechnology Date: 6-25-12

TIME: Arrive: 6:45 Depart: 5:00 Travel: 1.0 Total: 10.75 ($\frac{1}{2}$ hr. lunch)

Weather: 60-80's Contractor: AMS Subcontr./Supplier: —

Equipment Working: —

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place 3 foot
coverage fill over Geo-Membrane. Using D6 to spread fill being hauled in from offsite
borrow area. Fill is placed in such a way to prevent Geo-Membrane from wrinkling and/or
being punctured or torn. Fill is placed on Panels P-23, 25 thru 27, 46-55.

Additional Comments: —

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Andrew DeClue
Contractor Representative
Andrew DeClue
Signature
Geotechnology, Inc.
Andrew DeClue
Engineer's Signature

AMS
Company
6-25-12
Date
6/25/12
Date

FIELD OBSERVATION REPORT

Representative: Andrew DeChie Project No.: 3019896.00 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D closure
 Vehicle: 7 Zone: — Client: Geotechnology Date: 6-26-12

TIME: Arrive: 7:00 Depart: 5:15 Travel: 1.0 Total: 10.75 ($\frac{1}{2}$ hr. lunch)
 Weather: 60-80's Contractor: AMS Subcontr./Supplier: —
 Equipment Working: —

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place 3 foot
coverage fill over Geo-Membrane. Using D6 to spread fill being hauled in from offsite
Barrow Area. Fill is being placed in such a way to prevent Geo-Membrane from
wrinkling and/or being punctured or ripped. Fill was placed on Panels: P-46-61, 95.

Additional Comments: _____

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Andrew DeChie AMS
 Contractor Representative Company
Andrew DeChie 6-26-12
 Signature Date
Andrew DeChie 6/26/12
 Geotechnology Inc. Date
Andrew DeChie
 Engineer's Signature

FIELD OBSERVATION REPORT

Representative: Andrew DeClue Project No.: 5019896.00 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 7 Zone: - Client: Geotechnology Date: 6-27-12

TIME: Arrive: 6:45 Depart: 5:15 Travel: 1.0 Total: 11:30 (1/2 hr lunch)
Weather: 50-80's Contractor: AMS Subcontr./Supplier: -
Equipment Working: -

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place fill of
minimum 3 feet over Geo-membrane using Db to spread fill being hauled in from
offsite borrow area. Fill is being placed in such a way to prevent Geo-membrane from
wrinkling and/or being ripped or punctured. Fill being placed on Panels P-46 thru 61, 95.

Additional Comments: _____

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Andrew DeClue AMS
Contractor Representative Company
Andrew DeClue 6-27-12
Signature Date
Andrew DeClue 6/27/12
Geotechnology Inc. Date
Andrew DeClue
Engineer's Signature

FIELD OBSERVATION REPORT

Representative: Andrew DeClue Project No.: JO19896.00 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 7 Zone: — Client: Geotechnology Date: 6-28-12

TIME: Arrive: 6:45 Depart: 5:00 Travel: 1.0 Total: 11.25 (1/2 hr lunch)
Weather: 70-100's Contractor: AMS Subcontr./Supplier: —
Equipment Working: —

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place 3foot
Coverage Fill over Geo-Membrane. Using D6 to spread Fill being hauled in from
offsite borrow area. Fill is being placed in such a way to prevent Geo-Membrane from
being wrinkled and/or being ripped or punctured. Fill being placed on Panels:
P-46 thru 61, 95.

Additional Comments: _____

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Andrew DeClue
Contractor Representative
[Signature]
Signature
Geotechnology, Inc.
[Signature]
Engineer's Signature

AMS
Company
6-28-12
Date
6/28/12
Date

FIELD OBSERVATION REPORT

Representative: Andrew DeClu Project No.: 3019896.00 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 7 Zone: — Client: Geotechnology Date: 6-29-12

TIME: Arrive: 7:00 Depart: 1:30 Travel: 1.0 Total: 7.5
Weather: 70-100 Contractor: AMS Subcontr./Supplier: —
Equipment Working: —

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place 3 Foot
minimum coverage Fill over Geo-Membrane. Using D6 to spread Fill being hauled in
from off-site Borrow area. Fill is being placed in such a way to prevent Geo-Membrane
from wrinkling and/or torn or punctured. Fill placed on Panels: P-46 thru 61, 95

Additional Comments: _____

[Signature]
Contractor Representative

AMS
Company

[Signature]
Signature

6-29-12
Date

[Signature]
Geotechnology, Inc.

6/29/12
Date

[Signature]
Engineer's Signature

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MEETING MINUTES



Hutsonville Power Station - Ash Pond D Closure
Progress Meeting No. 15 Minutes
Tuesday, June 26, 2012

01 PUBLICATION

Publish date:	2012-07-02	Submitted by:	JRD
Distribution:	E-mail only	Notes taken by:	JRD
Location:	Hutsonville Power Station	AMS-Charah File No.	HUT-APD-MTG-MIN-2012-06-26-PM-15-JRD
AER PO:	567523 R4	AMS-Charah Contract:	00030-01 AMS-Charah GL: 4116-06-6120

02 ATTENDEES [ALPHA BY COMPANY]

NO.	SAL	FIRST	LAST	COMPANY	PHONE	E-MAIL
01	Mr.	Mike	Wagstaff	Ameren	618-406-3478	mwagstaff@ameren.com
02	Mr.	Jimmy	Boone	AMS - ARM	502-574-5465	jboone@ashmanagementservices.com
03	Mr.	John	Denham	AMS - RM	502-609-0278	idenham@ashmanagementservices.com
04	Mr.	Randy	Porter	AMS - SM	502-554-5230	rporter@ashmanagementservices.com
05	Mr.	Matt	Dishman	Charah - FOCUS	502-287-9163	jdishman@charah.com
06	Mr.	Joe	Cravens	Geotechnology	314-568-6628	jcravens@geotechnology.com

03 ABBREVIATIONS

AER	Ameren Energy Resources	OSHA	Occupational Safety Health Administration
AMS	Ash Management Services	PCP	Perforated Collector Pipe
BNSF	Burlington	PO	Purchase Order
CBT	Computer Based Training	RHOM	Routine Handling, Operation, and Maintenance
EAP	Emergency Action Plan	SPOC	Single Point of Contact
EOD	End of [the] Day	T/M	Time and Materials
EOM	End of [the] month	TBD	To Be Determined
EOW	End of [the] week	TD	Transmission Dispatch
EDTS	Energy Delivery Transmission Services	WPA	Worker Protection Assurance
EDC	Estimated Date [of] Completion		
EWO	Extra Work Order		
HDPE	High Density Polyethylene		
HRS	Hours		
LOTO	Lock Out Tag Out		
NMA	National Maintenance Agreement		

04 DOCUMENTATION

Minutes are documented weekly, and the publication have a "rolling record" of the immediate past two weeks. Each week the oldest drops off and the current week is added to the minutes. Items are categorized as either "NEW", "OPEN", "CLOSE", or in case the an item has to be re-published after closed the previous week - "REOPEN". Minutes format changed for Progress Meeting No. 13 deleting and combining certain items for brevity and to abbreviate documentation. Currently the item numbers remained the same for tracking purposes.

05 SAFETY - HOUSEKEEPING

02 WORKER PROTECTION ASSURANCE

2012-06-26 OPEN - no issues. None projected for 2x week look ahead.

03 EMPLOYEE DRUG TESTING

2012-06-26 OPEN - R. Porter scheduled two drivers for Fawn Lane Trucking at Newton.

04 AMS SAFETY

2012-06-26 [01] AER has FWI confined Space plan under review. J. Cravens to monitor confined space for AER, FWI responsible for safety.
 [02] B & T has corrected safety glasses.
 [03] General safety discussion. Keeping hydrated was discussed.
 [04] Joko Taisch on site Monday 6-25 and Friday 6-29.

05 HOUSEKEEPING

2012-06-26 OPEN - No issues.
 [01] One dumpster will remain onsite until it is full and then it will be removed.

06 PLANT ACCESS - CBT

2012-06-26 OPEN
 [01] Guard on site has been directed not to track/document/work for any of APD project. Guard has been directed to leave the site and lock the gate when AMS SM leaves. Guard will wait outside of gate if still on duty.
 [02] M. Wagstaff to confirm new agreements with a Ms. Holly and check on issue with locks.

08 OSHA LOG - WORK HOURS

2012-06-26 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 06-25.
No incidents or accidents.
4,268.00 RT
912 OT
5,185.00 TOTAL

06 MANPOWER [HEAD COUNT]**01 CREW SIZE**

2012-06-26 AMS, BT Drainage [BTD], Belt Construction [BCI] on site.
[02] Geotechnology [work hours not included in OSHA Log above]
[00] Pipe
[00] Mechanical
[00] Electrical
[00] Cement
[05] Laborers [AMS 3x, BTD 2x]
[04] Operators [AMS 1x, BCI 1x, BTD 2x]
[16] Teamsters [FLT 15x borrow haul trucking, AMS 1x]
[00] Survey
[02] Foreman [Full time] [2x]
[29] TOTAL

02 WORK HOURS AND OVERTIME

2012-06-26 OPEN - Standard hours - 7:00 AM CT to 5:30 PM CT. Project will be shut down Wednesday 7-4 for the for the 4th of July Holiday.

04 TRAILER - GENERAL CONDITIONS - COORDINATION - VEHICLES

2012-06-26 OPEN - no issues.

07 PREVIOUS**01 SUBCONTRACTS**

2012-06-26 OPEN - no issues.

02 SUBMITTALS

2012-06-26 Submittal log as published by GEO on 06-21 distributed.
[01] Submittal log copies distributed by e-mail, but no copy at meeting.
[02] Freitag submittal on Control Panel needed asap, due to required delivery lead time.

08 MATERIAL**01 GENERAL**

2012-06-26 OPEN
[01] Some HDPE Liner was returned.
[02] Structures and stone need to be completed and submitted.

09 ADJACENT PROPERTIES AND PCP LINE**01 GENERAL**

2012-06-26 OPEN - Discussion during Progress Meeting:
[01] MW-2 has been removed.
[02] Pipe installation is going well, with no current issues.
[03] No snow fence to be installed per Wampler, to help with irrigation.
[04] J. Boyer indicated working directly for Wampler to make field tile connections.
[08] Existing conflicting power/light poles have been removed, except for one.

10 QUALITY CONTROL**03 CLAY**

2012-06-26 OPEN - Roots being pulled out of the material as necessary.
[01] Section A should be completed 2-3 days ahead of schedule.
[02] AMS has changed schedule to begin clay placement in Area C in lieu of Section B, after Section A is complete.
[03] Belt to bring second dozer onsite around 7/9 to begin fine grading.

11 SCHEDULE REVIEW**01 SCHEDULE**

2012-06-26 OPEN - Review of Last Planner schedule 06-19 handed out
[01] AMS will change the next area of clay placement to Area C, in lieu of Area B as originally scheduled.
[02] AMS intends to begin concrete work ahead of schedule. This is the main reason for changing the area of clay placement on Pond D.

12.0 COST AND BUDGET**02 AMS PAY APPLICATION - CHANGE REQUEST**

2012-06-26 OPEN - M. Wagstaff reports pay-app "signed off" for May.

[01] MW has furnished backup information for revised P.O. to AMS. AMS to review and execute if correct.

[02] AMS to submit June Draft Pay Request at next meeting 7-3.

12.1 EXTRA WORK ORDERS**11 EWO-11 BUILDING SPOILS REMOVAL**

2012-06-26 OPEN - AMS to Investigate including the spoils [ash material] from the liner anchor trench excavation. JD & MW to review costs.

13 EWO-13 Electrical feeder/overhead

2012-06-26 OPEN - AMS presented hard copy of EWO for AER to review; MW evaluating.

14 EWO-14 FIELD TILE LOCATION

2012-06-26 Tiles to be field located between B&T and Wampler. Geotechnology and Ameren to approve proposed locations.

13 ACTION ITEMS - AER [25]**01 AMEREN [AER]**

2012-06-26 OPEN

[1] MW to complete submittal reviews; electrical

14 ACTION ITEMS - AMS [21]**01 ASH MANAGEMENT [AMS]**

2012-06-26 OPEN

[1] Concrete submittals needed asap.

15 PRODUCTION**03 CLAY**

2012-06-26 OPEN - Trucks are hauling 11 CY. Currently 15x trucks. Placement as of 06-25 is 21,318 CY.

16 DOCUMENTS TRANSMITTED

2012-06-26 [01] AMS - Last Planner schedule dated 06-19.

[02] GEO - Submittal Log published 06-21.

17 DOCUMENTS REVIEW ONLY

2012-06-26 NONE

18 NEXT PROGRESS MEETING

Next meeting will be held in one week - Tuesday, July 3, 2012 at Hutsonville

19 DISTRIBUTION - STANDARD**AER**

01 Mr. Mike Wagstaff

02 Mr. Mike Stewart

03 Mr. Bob Muesenfechter

GEO

01 Ms. Anna Saindon

02 Mr. Eric Neuner

03 Mr. Joe Cravens

AMS

01 Mr. Jimmy Boone

02 Mr. John Denham

03 Mr. Joko Tasich

04 Mr. Randy Porter

If there are any corrections, modifications, additions, or deletions please notify the sender by e-mail at pzinsious@ashmanagementservices.com

PHOTOGRAPH LOG



Photograph 1 ▲ - PCP-2 excavation facing west



Photograph 2 ▲ - Fence removal for temporary construction easement facing west

All photographs taken by Joseph Cravens of Geotechnology, Inc. between June 25 and June 29, 2012

JRC



Photograph 3 ▲ - Clay placement facing northwest



Photograph 4 ▲ - PCP-2 excavation facing west

All photographs taken by Joseph Cravens of Geotechnology, Inc. between June 25 and June 29, 2012

JRC



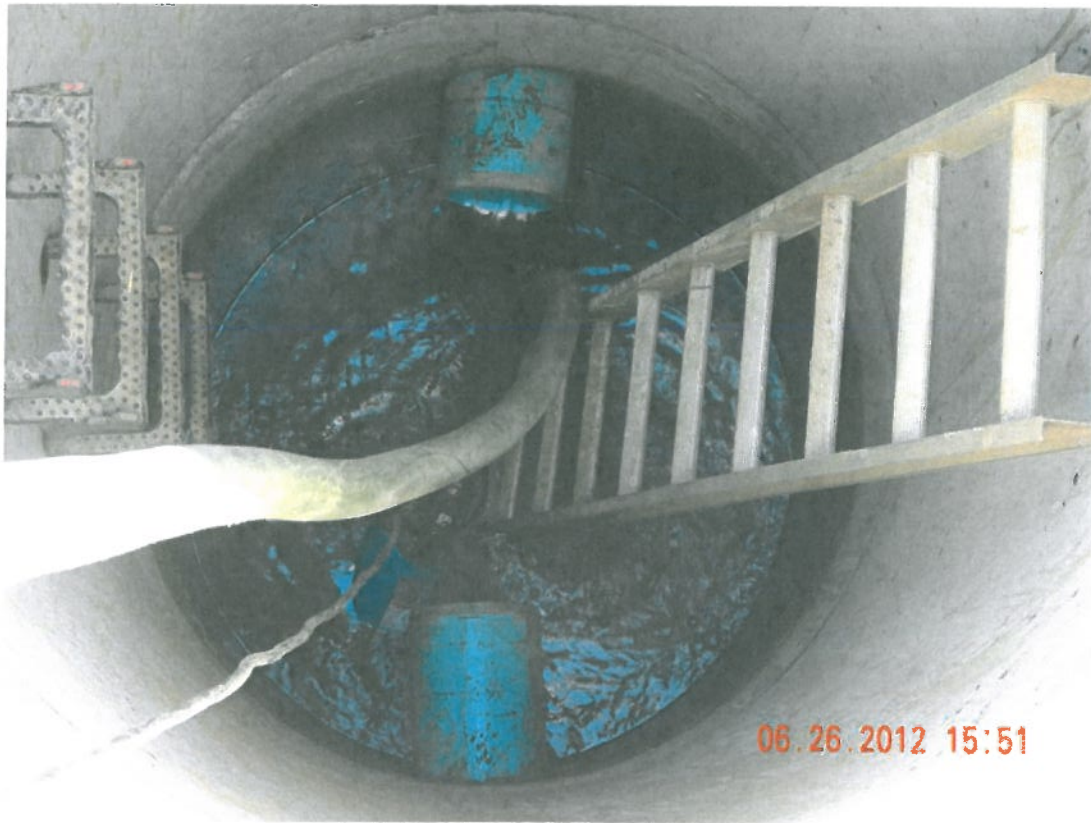
Photograph 5 ▲ - Survey of PCP-2 facing northeast



Photograph 6 ▲ - PCP-2 installation facing northwest

All photographs taken by Joseph Cravens of Geotechnology, Inc. between June 25 and June 29, 2012

JRC



Photograph 7 ▲ - DS-2 manhole interior facing southwest



Photograph 8 ▲ - Riprap splash pad for anchor trench drains facing southwest



Photograph 9 ▲ - PCP-3 compaction facing north



Photograph 10 ▲ - Clay placement facing northeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between June 25 and June 29, 2012

JRC



Photograph 11 ▲ - Grade work on PCP-1, PCP-2 and PCP-3 facing southeast



Photograph 12 ▲ - Overview of Ash Pond D facing south

All photographs taken by Joseph Cravens of Geotechnology, Inc. between June 25 and June 29, 2012



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Energy Resources

FROM: Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DATE: July 11, 2012

SUBJECT: Weekly Summary Report for July 2, 2012 to July 6, 2012

PROJECT: Hutsonville Ash Pond D Closure
Crawford County, Hutsonville, Illinois
Geotechnology Project No. J019896.01

The following is a weekly summary of the site activities at the referenced site.

Weather

The weather was generally sunny and dry. Temperature (°F) lows ranged from 72 to 79°F, and temperature highs ranged from 95 to 106°F. Weather delays did not occur this week. July 4, 2012 was taken as a holiday.

Construction Activities

Groundwater collection system installation, excavation of test pits, and clay placement occurred this week. B&T Drainage continued construction of the groundwater collection system. This included the completion of dewatering sump DS-3, beginning dewatering sump DS-4, perforated collector pipe PCP-3 and PCP-4, and dewatering. The location of the DS-3 manhole was offset west due to shallow bedrock. Grades for PCP-3 and PCP-4 were altered due to shallow bedrock. Test pits were excavated along the PCP-4 alignment to determine the depth of bedrock. Refer to daily reports for additional information. Lamac Engineering Co. surveyed grades for the groundwater collection system. Fawn Lane Transit, Inc. and Belt Construction, Inc. completed clay placement in Quadrant A and began clay placement in Quadrant C. Approximately 15-16 trucks were used to haul clay material to Ash Pond D. The vegetative cover is being placed in a single three foot lift, and a representative from TSI Engineering, Inc. observed quality control for the clay placement procedure. Refer to clay placement documentation for more details.



Weekly Summary Report
July 11, 2012
Page 2

J019896.01

Equipment and Personnel On-Site

CAT D6N Bulldozer
CAT D5G Bulldozer
CAT 330D Excavator
Bomag BW 172 PDB-2 Roller
John Deere 624H Front End Loader
John Deere 450 LC Excavator
John Deere 410J Backhoe
Case 580 Backhoe
Water Truck (Dust Control)

Geotechnology, Inc. – Joe Cravens
TSI Engineering, Inc. – Andrew DeClue
Ash Management Services, LLC (AMS) – Randy Porter, Robert Dunkley, James Marks, Brad Bolenbaugh, Greg Siverly, Jeremy Shorter, Blake Bunting, and Eric Sefton
Belt Construction, Inc. (BCI) – Jared Belt
Lamac Engineering Co. – Jake Lewis and Steve Anderson
Charah, Inc. – Joe Tasich
B&T Drainage (BTD) – John Boyer, Scott Boyer, Colby Boyer, Brian Schaefer, Brent Neibauer, Michael Switzer, Michael Dashiell, and Eric Blankenship
Fawn Lane Transit, Inc. (FLT) – Kim Edington, Lee Edington, Scott Comer, James Elledge, Jim Urfer, Gray Lamb, Greg Lingorfelter, Tom Sager, Eric Bierman, Robert Shehorn, Billie Meadows, John Niles, Brian Griffith, Bob Smithenry, Alan Ruholl, Patrick Wente, and Frank Draper
Visitors – Refer to the Visitor's Log for visitors, dates, and times.
Refer to the meeting minutes for additional personnel.

Meetings

The weekly progress meeting was held on Tuesday, July 3, 2012. Refer to the attached meeting minutes for additional information.

Photographs

A photograph log with select photographs obtained this week is attached.

Materials

Clay for the vegetative layer was delivered.

Testing/Sampling

Testing and sampling did not occur this week.

Calibration Records

Calibration information was not obtained this week.

Signature of CQA Officer

Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.



DAILY REPORTS

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 7/2/12

TIME: Arrive: 6:00 AM Depart: 5:45 PM Travel: 1.0 hr Total: 12.5 hrs (0.25 hr for lunch)
Weather: Sunny, 72° AM, 98° PM Contractor: AMS Subcontr./Supplier: BTD/Lamac/FLT/BCI/TSI
Equipment Working: D6N Dozer, 330D Excavator, 450 LC Excavator, 624H Front End Loader, 410J
Site Activities / Observations / Contacts / Notes: Backhoe, BW 172 Roller, D5G Dozer, Water Truck

AMS:

Performed housekeeping in construction yard and in trailer lot. Most of the personnel worked at the CBS. Matt Dishman is on vacation this week.

BTD/Lamac:

The D5-2 manhole had to be pumped to dewater the open trench for PCP-3. PCP-3 excavation, backfill, installation, compaction, and finish grading continues. The first and second kink (22.5° fittings) were installed southwest of Pond B. The kinks were moved 80' east per Lamac's revised drawings and to conform to the construction easement. This run of PCP continues at +0.50% towards CO-2, and is currently being placed 3' into the sandstone at the location of the kinks. The PCP-3 excavation ended at the 2nd kink southwest of Pond B. D5-3 excavation and PCP-4 excavation will begin before PCP-3 is completed. It is planned to run the PCP and 12" ADS tile at the same time, south of Pond B. Jake Lewis and Steve Anderson with Lamac surveyed PCP-3 before and after the kinks. Colby Boyer hauled off well casings and pumps. Length = 110'

FLT/BCI/TSI:

Clay Placement - Section A was completed and Section C was started.

Area = P-46 to 61, and 95

Loads = 228

Additional Comments: —

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

Randy Pector
Contractor Representative

Signature

Anna Sandon
Geotechnology, Inc.

Engineer's Signature

AMS
Company

Date

7-9-12
Date

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 7/3/12

TIME: Arrive: 6:00 AM Depart: 5:30 PM Travel: 1.0 hr Total: 12.0 hrs (0.5 hr for lunch)
Weather: Sunny, 75° AM, 95° PM Contractor: AMS Subcontr./Supplier: BTD/FLT/BCI/TSI
Equipment Working: D6N Dozer, 330D Excavator, 450LC Excavator, 624H Front End Loader, 410U
Site Activities / Observations / Contacts / Notes: Backhoe, BW 172 Roller, DSG Dozer, Water Truck

AMS:

All personnel worked at the CBS.

BTD:

Pumps and hoses were setup for dewatering south of Pond D. The dewatering was setup to discharge into Pond B. After dewatering began, all the water was pumped out of the wells in a matter of minutes, with very little excess water entering the wells. Therefore, dewatering ceased and will only be performed as needed south of Pond D. PCP pipe was staged and soaked south of Pond D. Finish Grading and compaction occurred on PCP-1, 2, and 3. No pipe laid.

FLT/BCI/TSI:

Clay Placement - Southbound Section C. A ~200' strip will be placed on the west side of Section C first to allow the construction of the paved gutter to begin.

Area = P-47 to 52, 95 to 98, and 103.

Loads = 238

Additional Comments: _____

Randy Pictor
Contractor Representative

[Signature]
Signature

[Signature]
Geotechnology Inc.

[Signature]
Engineer's Signature

AMS
Company

7-3-12
Date

7-3-12
Date

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 7/5/12

TIME: Arrive: 6:00 AM Depart: 5:45 PM Travel: 1.0 hr Total: 12.5 hrs (0.25 hr for lunch)
Weather: Sunny, 73° AM, 101° PM Contractor: AMS Subcontr./Supplier: BTD/FLT/BCI/TSI
Equipment Working: D6N Dozer, 330 D Excavator, 450 LC Excavator, 624H Front End Loader,
Site Activities / Observations / Contacts / Notes: 410J Backhoe, Water Truck

AMS:

All personnel worked at the CBS.

BTD:

The excavation for DS-3 was started and completed. Shallow sandstone was encountered and, therefore, DS-3 was offset approx. 10' west where the rock ledge dropped off. Manhole shoring was set and a slotted PVC pipe was placed in the shoring with CA-7 pack for dewatering. The DS-3 manhole base, and two sections were set and CA-7 was placed around the base for a drainage pack. The manhole is within $\approx 2'$ of grade. Lamac will survey tomorrow, PCP-4 excavation, installation, and backfill began. PCP-4 is run at $\pm 0.5\%$ from DS-3 to CO-2. If rock is encountered, the grade will be adjusted accordingly. Length = 70'

FLT/BCI/TSI:

Clay Placement - Southbound Section C.

Area = P-47 to 52, and 95 to 98.

Loads = 186.

Additional Comments: _____

Randy Doster
Contractor Representative

AMS
Company 7-5-12

Signature Anna Sarandon
Geotechnology, Inc.

Date 7-9-12
Date

Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 7/6/12

TIME: Arrive: 6:00 AM Depart: 3:45 PM Travel: 1.0 hr Total: 10.5 hrs (0.25 hr for lunch)
Weather: Sunny, 79° AM, 106° PM Contractor: AMS Subcontr./Supplier: BTD/Lamac/FLT/BCI/TSI
Equipment Working: D6N Dozer, 330D Excavator, 450 LC Excavator, 624 H Front End Loader, 410J
Site Activities / Observations / Contacts / Notes: Backhoe, BW 172 Roller, D5G Dozer, Water Truck
AMS:
All personnel worked at the CBS.

BTD/Lamac:

Continued PCP-4 Excavation, Installation, Backfill, and Compaction. Test pits were excavated between the SW corner of Pond D and the SE corner of Pond B. Bedrock depths varied from 5' to 7'. Therefore, PCP-4 will be adjusted accordingly to compensate for the shallow bedrock depths. 70' west of DS-3, PCP-4 is bedded into sandstone anywhere from 6" to 3'. Excavation of the rock became difficult and the grade of PCP-4 was adjusted. PCP-4 runs as follows: DS-3, 70' west at +0.5%, 60' west with a gradual raise of 8.13', back to +0.5% to Kink southwest of Pond D, and now at a +2.5% to Kink southeast of Pond B. The PCP-4 trench is being left open to a depth of $\approx 5'$ for the placement of the GCL. Steve Anderson and Jake Lewis with Lamac surveyed the flowlines in DS-3 and PCP-4 70' west of DS-3. Eric Blankenship took Michael Dashiell's spot for BTD. Length = 150'

FLT/BCI/TSI:

Clay Placement - Southbound Section C (reached the SW corner of Section C).
New Trucker - Frank Draper
Area = P-47 to 52, and 95 to 98.
Loads = 169

Additional Comments: _____

Randy Porter
Contractor Representative

AMS
Company 7-6-12

Anna Sandoz
Signature

Date 7-9-12
Date

Michael Dashiell
Geotechnology, Inc.
Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Andrew DeClue Project No.: 5019896.01 Task: 0370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 7 Zone: — Client: Geo-technology Date: 7-2-12

TIME: Arrive: 6:45 Depart: 5:15 Travel: 1.0 Total: 11.5 (1/2 hr. lunch)
 Weather: 70-100's Contractor: AMS Subcontr./Supplier: —
 Equipment Working: —

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place minimum
3 foot coverage fill over Geo-membrane. Using D6 to spread fill being hauled in
from offsite borrow Area. Fill is being placed in such a way to prevent Geo-membrane
from wrinkling and/or being ripped or punctured. Fill being placed on Panels: P-46
thru 61, 95.

Additional Comments: _____

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Andrew DeClue
Contractor Representative

Andrew DeClue
Signature

Andrew DeClue
Geotechnology, Inc.

Andrew DeClue
Engineer's Signature

7-2-12
Company

7-2-12
Date

7/2/12
Date

7/2/12
Date

FIELD OBSERVATION REPORT

Representative: Andrew DeCie Project No.: 3019896.01 Task: 2370
 Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 7 Zone: - Client: Geotechnology Date: 7-3-12

TIME: Arrive: 6:45 Depart: 5:15 Travel: 1.0 Total: 11.5 (1/2 hr. lunch)
 Weather: 60-100% Contractor: AMS Subcontr./Supplier: -
 Equipment Working: -

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place 3 foot
Minimum Coverage Fill over Geo-Membrane. Using D6 to place Fill being hauled in from
offsite Borrow area. Fill being placed in such a way to prevent Geo-membrane from wrinkling
and/or being torn or punctured. Fill being placed on Panels: P-47 thru 52, 95 thru 98, 103.

Additional Comments: _____

Andrew DeCie AMS
 Contractor Representative Company
Andrew DeCie 7-3-12
 Signature Date
Andrew DeCie 7/3/12
 Geotechnology, Inc. Date
Andrew DeCie
 Engineer's Signature

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

No. A **13847**

FIELD OBSERVATION REPORT

Representative: Andrew De Cle Project No.: 5019846.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 7 Zone: - Client: Geotechnology Date: 7-5-12

TIME: Arrive: 6:45 Depart: 5:15 Travel: 1.0 Total: 11.5 ($\frac{1}{2}$ hr. incl.)
Weather: 70-100 Contractor: AMS Subcontr./Supplier: -
Equipment Working: -

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place minimum
of 3 foot coverage fill over Geo-Membrane. Using D6 to spread fill being hauled
in from offsite borrow area. Fill being placed in such a way to prevent Geo-Membrane
from being wrinkled and/or being torn or punctured. Fill being placed on Panels:
P-47 thru 52, 95 thru 98.

Additional Comments: _____

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

Andrew De Cle AMS
Contractor Representative Company
Andrew De Cle 7-5-12
Signature Date
Andrew De Cle
Geotechnology, Inc.
Andrew De Cle
Engineer's Signature

FIELD OBSERVATION REPORT

Representative: Andrew DeChe Project No.: 5019896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D closure
 Vehicle: 7 Zone: — Client: Geotechnology Date: 7-6-12

TIME: Arrive: 6:45 Depart: 3:30 Travel: 1.0 Total: 9.75 ($\frac{1}{2}$ hr lunch)

Weather: 80-100 Contractor: AMS Subcontr./Supplier: —

Equipment Working: —

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place minimum
3 foot coverage fill over Geo-membrane using D6 to spread fill being hauled in from
offsite borrow area. Fill is being placed in such a way to prevent Geo-membrane from
wrinkling and/or being punctured or torn. Fill placed on Panels: P-47 thru 52, 95-98

Additional Comments: _____

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Randy Kest
Contractor Representative
[Signature]
Signature
AMS
Company
7-6-12
Date
7/6/12
Date
[Signature]
Geotechnology, Inc.
[Signature]
Engineer's Signature

MEETING MINUTES



Hutsonville Power Station - Ash Pond D Closure
Progress Meeting No. 16 Minutes
Tuesday, July 3, 2012

01	PUBLICATION		
	Publish date:	2012-07-09	Submitted by: PHZ
	Distribution:	E-mail only	Notes taken by: PHZ
	Location:	Hutsonville Power Station	AMS-Charah File No. HUT-APD-MTG-MIN-2012-07-03-PM-16
	AER PO:	567523 R4	AMS-Charah Contract: 00030-01 AMS-Charah GL: 4116-06-6120

02

ATTENDEES [ALPHA BY COMPANY]						
NO.	SAL	FIRST	LAST	COMPANY	PHONE	E-MAIL
01	Mr.	Mike	Wagstaff	Ameren	618-406-3478	mwagstaff@ameren.com
02	Mr.	Bob	Muesenfechter	Ameren	314-681-2287	bmuesenfechter@ameren.com
03	Mr.	Jimmy	Boone	AMS - ARM	502-574-5465	jboone@ashmanagementservices.com
04	Mr.	Paul	Zinsious	AMS - PCM	502-640-2918	pzinsious@ashmanagementservices.com
05	Mr.	Randy	Porter	AMS - SM	502-554-5230	rporter@ashmanagementservices.com
06	Mr.	Scott	Boyer	B&T Drainage	217-822-8373	N/A
07	Mr.	Joko	Tasich	Charah	502-649-7633	jtasich@charah.com
08	Mr.	Mike	Burch	Freitag	812-208-1771	mburch@freitaginc.com
09	Mr.	Joe	Cravens	Geotechnology	314-568-6628	jcravens@geotechnology.com

03	ABBREVIATIONS		
AER	Ameren Energy Resources	OSHA	Occupational Safety Health Administration
AMS	Ash Management Services	PCP	Perforated Collector Pipe
BNSF	Burlington	PO	Purchase Order
CBT	Computer Based Training	RHOM	Routine Handling, Operation, and Maintenance
EAP	Emergency Action Plan	SPOC	Single Point of Contact
EOD	End of [the] Day	T/M	Time and Materials
EOM	End of [the] month	TBD	To Be Determined
EOW	End of [the] week	TD	Transmission Dispatch
EDTS	Energy Delivery Transmission Services	WPA	Worker Protection Assurance
EDC	Estimated Date [of] Completion		
EWO	Extra Work Order		
HDPE	High Density Polyethylene		
HRS	Hours		
LOTO	Lock Out Tag Out		
NMA	National Maintenance Agreement		

04	DOCUMENTATION	
	Minutes are documented weekly, and the publication have a "rolling record" of the immediate past two weeks. Each week the oldest drops off and the current week is added to the minutes. Items are categorized as either "NEW", "OPEN", "CLOSE", or in case the an item has to be re-published after closed the previous week - "REOPEN". Minutes format changed for Progress Meeting No. 13 deleting and combining certain items for brevity and to abbreviate documentation. Currently the item numbers remained the same for tracking purposes.	

05	SAFETY - HOUSEKEEPING	
02	WORKER PROTECTION ASSURANCE	
	2012-07-03	OPEN - no issues. None projected for 2x week look ahead.
	2012-06-26	OPEN - no issues. None projected for 2x week look ahead.
03	EMPLOYEE DRUG TESTING	
	2012-07-03	OPEN - Freitag to schedule worker at Newton.
	2012-06-26	OPEN - R. Porter scheduled two drivers for Fawn Lane Trucking at Newton.
04	AMS SAFETY	
	20120-07-03	[01] Cooling stations in good order [as weather has been hot and dry]. [02] J. Tasich schedule today 07-03 on site, possible return on 07-06. [03] Safety luncheon scheduled for next Progress Meeting on 07-10. [04] Discussion on Charah/AMS policy to disable AM/FM radios is equipment to prevent distractions. [05] Discussion on Charah/AMS policy for backing equipment, and incident at another Charah site. [06] Discussion on Charah/AMS policy for cell phones [and associated electronics] for non-essential use to be kept in safe place, as electronics will not be allowed in the equipment. [07] Barricade areas to have either yellow or red tape with notification/identification tag. [08] BTd to tag/post confined spaces [4x DS, 1x MH, and 1x CB - collector box] [09] M. Wagstaff indicated Newton Plant has confined space signs for use on this project.

20120-06-26 [01] AER has FWI confined Space plan under review. J. Cravens to monitor confined space for AER, FWI responsible for safety.
 [02] B & T has corrected safety glasses.
 [03] General safety discussion. Keeping hydrated was discussed.
 [04] Joko Tasich on site Monday 6-25 and Friday 6-29.

05 HOUSEKEEPING

2012-07-03 OPEN - No issues.

2012-06-26 OPEN - No issues.

[01] One dumpster will remain onsite until it is full and then it will be removed.

06 PLANT ACCESS - CBT

20120-07-03 OPEN

[01] General discussion security guard. M. Wagstaff indicated that guard can leave anytime.

[02] R. Porter indicated no issues with the lock [Decatur Alarm?].

20120-06-26 OPEN

[01] Guard on site has been directed not to track/document/work for any of APD project. Guard has been directed to leave the site and lock the gate when AMS SM leaves. Guard will wait outside of gate if still on duty.

[02] M. Wagstaff to confirm new agreements with a Ms. Holly and check on issue with locks.

08 OSHA LOG - WORK HOURS

2012-07-03 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 07-02.

No incidents or accidents.

4,701.00 RT

1,006.50 OT

5,707.40 TOTAL

2012-06-26 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 06-25.

No incidents or accidents.

4,268.00 RT

912 OT

5,185.00 TOTAL

06 MANPOWER [HEAD COUNT]

01 CREW SIZE

2012-07-03 AMS, BT Drainage [BTD], Belt Construction [BCI] on site.

[02] Geotechnology [work hours not included in OSHA Log above]

[00] Pipe

[00] Mechanical

[00] Electrical

[00] Cement

[03] Laborers [AMS 1x, BTD 2x]

[03] Operators [AMS 0x, BCI 1x, BTD 2x]

[15] Teamsters [FLT 14x borrow haul trucking, AMS 1x]

[00] Survey

[02] Foreman [Full time] [AMS 1x, BTD 1x]

[25] TOTAL

2012-06-26 AMS, BT Drainage [BTD], Belt Construction [BCI] on site.

[02] Geotechnology [work hours not included in OSHA Log above]

[00] Pipe

[00] Mechanical

[00] Electrical

[00] Cement

[05] Laborers [AMS 3x, BTD 2x]

[04] Operators [AMS 1x, BCI 1x, BTD 2x]

[16] Teamsters [FLT 15x borrow haul trucking, AMS 1x]

[00] Survey

[02] Foreman [Full time] [2x]

[29] TOTAL

02 WORK HOURS AND OVERTIME

2012-07-03 OPEN - Standard hours - 7:00 AM CT to 5:30 PM CT. Project will be shut down Wednesday 7-4 for the for the 4th of July Holiday.

2012-06-26 OPEN - Standard hours - 7:00 AM CT to 5:30 PM CT. Project will be shut down Wednesday 7-4 for the for the 4th of July Holiday.

04 TRAILER - GENERAL CONDITIONS - COORDINATION - VEHICLES

2012-07-03 OPEN - no issues.

2012-06-26 OPEN - no issues.

07 PREVIOUS

01 SUBCONTRACTS

2012-07-03 OPEN - no issues.

2012-06-26 OPEN - no issues.

02 SUBMITTALS

- 20120-07-03 No change to Submittal log as published by GEO.
 [01] AMS to submit the collector box structure.
 [01] AMS to submit the CA-6 stone.
 [03] FWI "Baro Diver" sensor discussion - resubmit correct unit.
 [04] FWI to submit J. Barrett as qualified/certified HDPE welder/installer.
 [05] AMS to review with FWI the scope of the handheld devise for the DS controls.
- 20120-06-26 Submittal log as published by GEO on 06-21 distributed.
 [01] Submittal log copies distributed by e-mail, but no copy at meeting.
 [02] Freitag submittal on Control Panel needed asap, due to required delivery lead time.

08 MATERIAL**01 GENERAL**

- 2012-07-03 Large boulders found in excavations to be returned to area.
- 2012-06-26 OPEN
 [01] Some HDPE Liner was returned.
 [02] Structures and stone need to be completed and submitted.

09 ADJACENT PROPERTIES AND PCP LINE**01 GENERAL**

- 2012-07-03 Field collector tile
 [01] Alignment and elevation issue. J. Cravens to provide sketch. Review of drawings by team.
- 2012-06-26 OPEN - Discussion during Progress Meeting:
 [01] MW-2 has been removed.
 [02] Pipe installation is going well, with no current issues.
 [03] No snow fence to be installed per Wampler, to help with irrigation.
 [04] J. Boyer indicated working directly for Wampler to make field tile connections.
 [08] Existing conflicting power/light poles have been removed, except for one.

10 QUALITY CONTROL**03 CLAY**

- 2012-07-03 NONE
- 2012-06-26 OPEN - Roots being pulled out of the material as necessary.
 [01] Section A should be completed 2-3 days ahead of schedule.
 [02] AMS has changed schedule to begin clay placement in Area C in lieu of Section B, after Section A is complete.
 [03] Belt to bring second dozer onsite around 7/9 to begin fine grading.

11 SCHEDULE REVIEW**01 SCHEDULE**

- 20102-07-03 OPEN. Review of last planner by B. Muesenfechter.
 [01] M. Wagstaff on vacation 07-04 through WE.
 [02] M. Wagstaff requested for time being [while subcontractors on look-ahead] to attend the progress meeting.
 [03] Negative float now shown due to re-schedule.
 [04] Feedback required from AAA on scope and approval for the electrical EWO's by AER.
 [05] B. Muesenfechter brief review of fragnets for EWO's.
 [06] S. Boyer indicated needed field tile submittal information.
 [07] General review and discussion of DS PCP progress.
- 2012-06-26 OPEN - Review of Last Planner schedule 06-19 handed out
 [01] AMS will change the next area of clay placement to Area C, in lieu of Area B as originally scheduled.
 [02] AMS intends to begin concrete work ahead of schedule. This is the main reason for changing the area of clay placement on Pond D.

12.0 COST AND BUDGET**02 AMS PAY APPLICATION - CHANGE REQUEST**

- 2012-07-03 OPEN - P. Zinsious to submit draft pay-app for M. Wagstaff to review. M. Wagstaff back-up documents for EWO's to PO.
- 2012-06-26 OPEN - M. Wagstaff reports pay-app "signed off" for May.
 [01] MW has furnished backup information for revised P.O. to AMS. AMS to review and execute if correct.
 [02] AMS to submit June Draft Pay Request at next meeting 7-3.

12.1 EXTRA WORK ORDERS**11 EWO-11 BUILDING SPOILS REMOVAL**

- 2012-07-03 OPEN - AMS moving spoils materials as "fill-in" type work. Utilizing existing backhoe on site.
- 2012-06-26 OPEN - AMS to investigate including the spoils [ash material] from the liner anchor trench excavation. JD & MW to review costs.

13 EWO-13 Electrical feeder/overhead

- 2012-07-03 OPEN - M. Wagstaff reports Hanson has under review, and should have design drawing at EOW.
- 2012-06-26 OPEN - AMS presented hard copy of EWO for AER to review; MW evaluating.

14	EWO-14	FIELD TILE LOCATION
2012-07-03	Elevation could be an issues. M. Wagstaff indicated possible change in elevation no-issue. Team to review. AER not to pay for removal of shale. Elevation of field tile in lower than the PCP.	
2012-06-26	Tiles to be field located between B&T and Wampler. Geotechnology and Ameren to approve proposed locations.	

13 ACTION ITEMS - AER [25]

01	AMEREN [AER]
2012-07-03	[01] M. Wagstaff to complete submittal reviews; electrical
2012-06-26	OPEN [1] MW to complete submittal reviews; electrical

14 ACTION ITEMS - AMS [21]

01	ASH MANAGEMENT [AMS]
2012-07-03	[01] Concrete submittals ASAP - P. Zinsious to review.
2012-06-26	OPEN [1] Concrete submittals needed asap.

15 PRODUCTION

03	CLAY
2012-07-03	OPEN - Trucks are hauling 11 CY. Currently 15x trucks. Placement as of 07-02 is 33,165 CY. R. Porter presented sketch M/U.
2012-06-26	OPEN - Trucks are hauling 11 CY. Currently 15x trucks. Placement as of 06-25 is 21,318 CY.

16 DOCUMENTS TRANSMITTED

2012-07-03	[01] AER - Last Planner schedule dated 06-29. [02] AMS - Critical Path schedule dated 06-29
2012-06-26	[01] AMS - Last Planner schedule dated 06-19. [02] GEO - Submittal Log published 06-21.

17 DOCUMENTS REVIEW ONLY

2012-07-03	[01] SK-HUT-APD-006-R0 "Groundwater Collection - Section Breakouts" [02] SK-HUT-APD-004-R0 "Project Site - Pond - Quadrant Layout" with M/U to show progress to date of clay placement
2012-06-26	NONE

18 NEXT PROGRESS MEETING

Next meeting will be held in one week - Tuesday, July 10, 2012 at Hutsonville

19 DISTRIBUTION - STANDARD

AER

- 01 Mr. Mike Wagstaff
- 02 Mr. Mike Stewart
- 03 Mr. Bob Muesenfechter

GEO

- 01 Ms. Anna Salndon
- 02 Mr. Eric Neuner
- 03 Mr. Joe Cravens

AMS

- 01 Mr. Jimmy Boone
- 02 Mr. John Denham
- 03 Mr. Joko Tasich
- 04 Mr. Randy Porter

If there are any corrections, modifications, additions, or deletions please notify the sender by e-mail at pzinsious@ashmanagementservices.com

PHOTOGRAPH LOG



Photograph 1 ▲ - PCP-3 compaction facing north



Photograph 2 ▲ - PCP-3 installation facing east



Photograph 3 ▲ - Clay placement facing north



Photograph 4 ▲ - Clay placement facing east



Photograph 5 ▲ - DS-3 installation facing southwest



Photograph 6 ▲ - PCP-4 installation facing west

All photographs taken by Joseph Cravens of Geotechnology, Inc. between July 2 and July 6, 2012

JRC



Photograph 7 ▲ - Clay placement facing southwest



Photograph 8 ▲ - PCP-4 excavation facing west



Photograph 9 ▲ - Overview of Ash Pond D facing south



Photograph 10 ▲ - Overview of Ash Pond D facing south

All photographs taken by Joseph Cravens of Geotechnology, Inc. between July 2 and July 6, 2012

JRC



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Energy Resources

FROM: Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DATE: July 16, 2012

SUBJECT: Weekly Summary Report for July 9, 2012 to July 13, 2012

PROJECT: Hutsonville Ash Pond D Closure
Crawford County, Hutsonville, Illinois
Geotechnology Project No. J019896.01

The following is a weekly summary of the site activities at the referenced site.

Weather

The weather was generally sunny and dry. Temperature (°F) lows ranged from 70 to 75°F, and temperature highs ranged from 90 to 98°F. Weather delays did not occur this week.

Construction Activities

Groundwater collection system installation, remote vent and sump discharge pipe installation, electrical conduit installation, manhole coring, paved gutter excavation, electrical layout, and clay placement occurred this week. B&T Drainage continued construction of the groundwater collection system. This included work at dewatering sump DS-3 and DS-4, perforated collector pipe PCP-4, PCP-5, PCP-6, and dewatering. The collector trench was excavated south of Ash Pond A. The remote vents, sump discharge pipe, electrical feeder conduit, and the high and low voltage conduit were installed within the collector trench. DS-1 and DS-2 manholes were cored for the remote vents and the sump discharge pipe. Sump discharge pipe was welded before installation. The paved gutter excavation began and ash spoils excavated were transported to Ash Pond A. Lamac Engineering Co. surveyed grades for the groundwater collection system, paved gutter, and began staking slope diversion berms in Quadrant A. Fawn Lane Transit, Inc. and Belt Construction, Inc. continues clay placement in Quadrant C. Approximately 12 to 16 trucks were used to haul clay material to Ash Pond D. The vegetative cover is being placed in a single three foot lift, and a representative from TSI Engineering, Inc. observed quality control for the clay placement procedure. Refer to the daily reports for detailed information.

Equipment and Personnel On-Site

CAT D6N Bulldozer
CAT D5G Bulldozer
CAT 330D Excavator
Bomag BW 172 PDB-2 Roller
John Deere 624H Front End Loader
John Deere 450 LC Excavator
John Deere 410J Backhoe
Case 580 Backhoe
Kubota L245DT Tractor
Water Truck (Dust Control)

Geotechnology, Inc. – Joe Cravens, Steve Graham, and Anna Saindon
TSI Engineering, Inc. – Andrew DeClue
Ash Management Services, LLC (AMS) – Randy Porter, Matt Dishman, Robert Dunkley, Brad Bolenbaugh, Greg Siverly, Jeremy Shorter, Blake Bunting, and Eric Sefton
Charah, Inc. – Joe Tasich
Belt Construction, Inc. (BCI) – Jared Belt
Lamac Engineering Co. (LEC) – Jake Lewis and Steve Anderson
B&T Drainage (BTD) – John Boyer, Scott Boyer, Brian Schaefer, Brent Neibauer, Michael Switzer, Michael Dashiell, and Eric Blankenship
Fawn Lane Transit, Inc. (FLT) – Kim Edington, Lee Edington, Scott Comer, James Elledge, Jim Urfer, Gray Lamb, Greg Lingorfelter, Tom Sager, Eric Bierman, Robert Shehorn, Billie Meadows, John Niles, Brian Griffith, Bob Smithenry, Alan Ruholl, Patrick Wente, and Frank Draper
Freitag-Weinhardt, Inc. (FWI) – Mike Burch, Scott Burch, and Jarrod Barrett
AAA Electric, Inc. (AAA) – Joe King and Kyle Davidson
Visitors – Refer to the Visitor's Log for visitors, dates, and times.
Refer to the meeting minutes for additional personnel.

Meetings

The weekly progress meeting was held on Tuesday, July 10, 2012. Refer to the attached meeting minutes for additional information.

Photographs

A photograph log with select photographs obtained this week is attached.

Materials

Clay for the vegetative layer, manhole base and sections for DS-4, 3-inch HDPE DR11 for sump discharge, 1-inch HDPE pipe for remote vents, HDPE fittings, 2-inch schedule 80 stainless steel discharge pipe for sumps, 2-inch schedule 40 PVC conduit for high and low voltage junction box feed, 2-1/2 inch schedule 40 PVC conduit for the electrical feeder, welded wire fabric W1.4xW1.4 for the paved gutter, and IDOT CA-7 aggregate was delivered.

Testing/Sampling

Two samples of the clay vegetative layer on-site were obtained for analytical and geotechnical testing.

Calibration Records

Calibration information was not obtained this week.

Signature of CQA Officer

Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

A handwritten signature in black ink, appearing to read 'Anna Saindon', is written over a horizontal line.

DAILY REPORTS

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 7/9/12

TIME: Arrive: 6:00 AM Depart: 5:45 PM Travel: 1.0 hr Total: 12.5 hrs (0.25 hr for lunch)
Weather: Sunny, 72° AM, 90° PM Contractor: AMS Subcontr./Supplier: BTD/LEC/FLT/BCI/TSI/FWI
Equipment Working: D6N Dozer, 330D Excavator, 450 LC Excavator, 624H Front End Loader, BW 172
Site Activities / Observations / Contacts / Notes: Roller, D5G Dozer, Water Truck

AMS:

All personnel worked at the CBS. James Marks is no longer working for AMS. Matt Dishman is back on-site, temporarily full time.

BTD/LEC:

The excavation, installation, backfill, and compaction of PCP-4 continued. PCP-4 continues at a +2.5% from the Kink southwest of APP towards the Kink southeast of APB. After the Kink southeast of APB was reached, PCP-4 was ceased and will not continue until the 12" ADS Tile is delivered and can be ran parallel with PCP-3 and PCP-4 south of APB. Jake Lewis and Steve Anderson with LEC surveyed PCP-4 between the Kinks. PCP-5 excavation, installation, and backfill began. PCP-5 is being run at a +0.5% grade from DS-3 towards CO-3. Another section was added to DS-3 and DS-3 backfill continued. Dewatering was also setup in the DS-3 manhole and in the temporary casing adjacent to DS-3. A test pit was excavated at the location of CO-2 to determine the depth of bedrock for both the PCP and ADS Tile. The difference between the ADS flowline in the grade inlet southwest of DS-1 and the bedrock at CO-2 is 0.55', with the rock being the lower elevation. Rock breaking/ripping will be required. Delivery - MH base with sections and additional CA-7. Eric Blankenship is still here for Mike Dashiell. PCP-4 Length = 160', PCP-5 Length = 40', Total = 200'

FWI:

Freitag-Weinhardt, Inc. mobilized. Personnel - Scott Burch and Jarrod Barrett.

FLT/BCI/TSI:

Clay Placement - Southbound Section C.

Area = P-46 to P-49, and P-53 to P-59. Loads = 251

Additional Comments: _____

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

Randy Poetee
Contractor Representative
Randy Poetee
Signature
Anna Samdan
Geotechnology, Inc.
Engineer's Signature

AMS
Company
7-9-12
Date
7-16-12
Date

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 7/10/12

TIME: Arrive: 6:00 AM Depart: 5:45 PM Travel: 1.0 hr Total: 12.25 hrs (0.5 hr for lunch)
Weather: Sunny, 70° AM, 94° PM Contractor: AMS Subcontr./Supplier: BTD/LEC/FWI/FLT/BCI/TSI
Equipment Working: D6N Dozer, 330D Excavator, 450 LC Excavator, 624H Front End Loader, BW 172
Site Activities / Observations / Contacts / Notes: Roller, 410J Backhoe, D5G Dozer, Water Truck

AMS:

All personnel worked at the CBS.

BTD:

The excavation, installation, backfill, and compaction to GCL cap of PCP-5 continued. PCP-5 continues at a +0.5% grade from DS-3 to CO-3. Water has been an issue in the trench south of APD and dewatering continues in DS-3 manhole and adjacent to DS-3 manhole.

The boulders excavated south of APA were buried in the PCP-5 backfill. The backfill around DS-1 and DS-2 manholes was excavated to allow access for FWI to begin work. Length = 90'

LEC:

Lamac surveyed PCP-5 and staked out the E for the Paved Gutter with 25' % on the west side of APD, and began staking slope diversion berms in Section A.

FWI:

Delivery - 6000' of 3" HDPE DR11 for sump discharge, 1000' of 1" HDPE pipe for remote vents, HDPE fittings, 2" Sch. 80 stainless steel discharge pipe for sumps, 2 generators, and a job box (Konex). They will begin butt fusion welding tomorrow.

FLT/BCI/TSI:

Clay Placement - Southbound Section C.

Area = P-46 to P-62, and P-99 to P-102. Loads = 229

Misc.:

Collector conduit will be % 10' north of the as-built PCP for its entire length. PCS west poles will be % 5' south of the embankment toe.

Additional Comments: —

Randy Potts
Contractor Representative

AMS
Company

Anna Spindon
Signature

7-10-12
Date

Geotechnology, Inc.

7-16-12
Date

—
Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: 0019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 7/11/12

TIME: Arrive: 6:00 AM Depart: 5:45 PM Travel: 1.0 hr Total: 12.5 hrs (0.25 hr for lunch)
Weather: Sunny, 74° AM, 95° PM Contractor: AMS Subcontr./Supplier: BTD/LEC/FWI/FLT/BCI/TSI
Equipment Working: 580 Backhoe, D6N Dozer, 330 D Excavator, 450 LC Excavator, BW 172 Roller,
Site Activities / Observations / Contacts / Notes: 624H Front End Loader, 410J Backhoe, Water Truck
AMS:

The 580 graded the plant entrance and roadways. All other work performed at the CBS.

BTD:

PCP-5 excavation, installation, backfill, and compaction to GCL Cap was completed; Length = 113'. PCP-5 has a consistent grade of +0.5% from DS-3 to CO-3. CO-3 will be installed after completing PCP-6. Additional boulders from the west side of the PCP excavation were buried in PCP-5 excavation. The excavation of DS-4 began. The manhole shoring was set, and dewatering was setup inside the shoring, and adjacent to DS-4. BTD's new schedule: DS-4, PCP-6, CO-3, PCP-7, CO-4, GCL Cap, PCP-4/Tile, PCP-3/Tile, and CO-2 south of APB. Mike Dashiell is back on-site and John Boyer was here. The 410J Backhoe was demobilized. Field Change: The paved gutter on the west side of APD will now be a V-bottom. The flowline and top of slope elevations will remain the same. Refer to S-386, Sheet No. 11, Detail 2.

LEC:

The PCP-5 and additional slope diversion berms were surveyed.

FWI:

Two holes were cored in DS-1 and DS-2 manholes. The first hole is for the 1" HDPE pipe for the remote vents, and the second hole is for the 3" HDPE DR-11 for the sump discharge. The 1" and 3" holes are 1' and 3' below the ground surface, respectively. They began butt fusion welding the 3" HDPE DR-11. A McElroy No. 14 PitBull is being utilized for the butt fusion. (1" IPS - 4" DIPS pipe for the PitBull.). Length Fused = 200'.

FLT/BCI/TSI:

Clay Placement - Southbound Section C.

Additional Comments: Area = P-46 to P-62, 92, 93, 94, 99-102.
Loads = 261

Randy Pactor
Contractor Representative

AMS
Company 7-11-12

Anna Sandoz
Signature
Geotechnology, Inc.

Date
7-16-12
Date

Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: JO19896.01 Task: 2370
 Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: - Client: Ameren ER Date: 7/12/12

TIME: Arrive: 6:00 AM Depart: 5:30 Travel: 1.0 hr Total: 12 (.5 hr lunch)

Weather: Sunny, 72° AM, 98° PM Contractor: AMS Subcontr./Supplier: AAA/FWI/BTD/FLT/BCI/TSI

Equipment Working: D6N Dozer, 330D Excavator, 450 LC Excavator, BW 172 Roller, 624H Front End Loader,

Site Activities / Observations / Contacts / Notes: 410J Backhoe, L245DT Tractor, D5G Dozer, Water Truck

AMS:

Assisted BTD and performed work at the CBS.

AAA:

Joe King staked the layout for the 10 power poles for the overhead electric running from the MCC to APD, and the location of the west pump control panel. Tomorrow the west control panel rack assembly will be installed and they will begin the conduit for the electric feeder.

FWI:

Butt fusion welding 3" HDPE DR11 continued. Length Fused = 800'.

BTD:

D5-4 excavation was completed. The D5-4 manhole base and two sections were set and partially backfilled. PCP-6 excavation, installation, and backfill was started. PCP-6 runs at +3.5% from D5-4 towards CO-3. They began grading the paved gutter on the west side of APD. New Equipment: Kubota L245DT Tractor and another 410J Backhoe. Tomorrow they will begin excavating the conduit collector trench south of APA. Length = 60' feet

FLT/BCI/TSI:

Clay Placement - Southbound Section C.

Area = P-54 → 60 and P-92 → 94

Loads = 256

Additional Comments: Note: Paved Gutter Ash Spoils are dumped in Pond A.

Randy Poeta
 Contractor Representative

Anna Squiden
 Signature
 Geotechnology, Inc.

[Signature]
 Engineer's Signature

AMS
 Company

7-12-12
 Date
7-16-12
 Date

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FIELD OBSERVATION REPORT

Representative: STEPHEN GRAHAM Project No.: JO19896.01 Task: 2370
Equipment & ID No.: - Project Name: Hudsonville Ash Pond D closure
Vehicle: 4116 Zone: - Client: Ameren ER Date: 7/13/12

TIME: Arrive: 6:30 AM Depart: 5:15 Travel: 4.0 Total: 15.75 (1/2 lunch.)

Weather: 75° clear AM Contractor: AMS Subcontr./Supplier: AAA/TS/BTD/FWI/FLT/BCI

Equipment Working: D6N Dozer, 330D Excavator, 450 LC Excavator, BW 172 Roller, GX14 Front End Loader,

Site Activities / Observations / Contacts / Notes: 4116 J Backhoe, L245DT Tractor, D5G Dozer, Water Truck.

AMS:

Assisted BTD and performed work at the CBS.

AAA:

Joe King has a new helper Kyle Davidson. They brought in a trailer load of electrical conduit. Conduit was welded with polymer and set in conduit collector trench excavation south of Ash Pond A. Conduit extends from DSI to first kink and to rack assembly for west pump control panel. power cables not fed through conduit. Electricians left site after 8 hours. (1400)

FWI:

Bolt fusion welding 3" HDPE DR11 continue. HDPE remove vents and DR11 set in trench and layed in DSI and DSI2, however not adhered to concrete.

DR11 and remotevents run in trench from DSI to first kink and to rack assembly for pump control panel. FWI left site after 8 hours (1400)

BTD: No activity in PCP-6 area. AF on 450 LC Excavator being serviced and recharged.

Excavation of Conduit collector trench south of APA Complete, including trench to west pump control panel. Trench complete between DSI and first kink.

-Paved gutter excavation complete and final grade achieved using Kubota L245DT tractor. excess ash transported to APA. Paved gutter excavated between control point 138 to 143. wire mesh grids are delivered on site to be installed next week for concrete pour in paved gutter

FLT/BCI/TSI:

Clay Placement - Southbound Section C, Area = ~~Paved~~ Randy Port total soil loads: 231

Additional Comments: _____

Contractor Representative AMS 7-13-12

Signature Thang Saindon Date 7-16-12

Geotechnology Inc Date

Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Andrew DeCh Project No.: 3019296.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D closure
Vehicle: 7 Zone: - Client: Geotechnology Date: 7/9/12

TIME: Arrive: 6:30 Depart: 5:15 Travel: 1.0 Total: 11.75 (1/2 hr. lunch)
Weather: 70-90s Contractor: AMS Subcontr./Supplier: -
Equipment Working: -

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place
3 Foot coverage Fill over Geo-Membrane. Due to rain that site sat over
weekend, D6 spent 30-45 minutes skimming top inch or two off of Fill area. Then
D6 spreading Fill being hauled in from offsite Borrow Area. Fill is being placed
in such a way to prevent Geo-Membrane from being wrinkled and/or ripped
or punctured. Fill placed on Panels P-46 thru 49, 53 thru 59.

Additional Comments: _____

Andy DeCh
Contractor Representative

AMS
Company

Andy DeCh
Signature

7/9/12
Date

Geotechnology, Inc.

7/9/12
Date

Andy DeCh
Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Andrew DeClue Project No.: 5019896.01 Task: 2370
Equipment & ID No.: - Project Name: Huronville Ash Pond D closure
Vehicle: 7 Zone: - Client: Geotechnology Date: 7/10/10

TIME: Arrive: 6:45 Depart: 5:15 Travel: 1.0 Total: 11.5 ($\frac{1}{2}$ hr. each)
Weather: 70-90's Contractor: AMS Subcontr./Supplier: -
Equipment Working: -

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place 3 foot coverage fill over Geo-Membrane. Using D6 to spread fill being hauled in from offsite borrow area. Fill is being placed in such a way to prevent Geo-Membrane from being wrinkled and/or being ripped or punctured. Fill is placed on Panels P-46 thru 62, 99 thru 102.

Additional Comments: _____

Andrew DeClue
Contractor Representative
Signature
Geotechnology, Inc.
Engineer's Signature

AMS
Company
7-10-10
Date
7/10/12
Date

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FIELD OBSERVATION REPORT

Representative: Andrew DeClue Project No.: 3019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 7 Zone: - Client: Geotechnology Date: 7-11-12

TIME: Arrive: 6:45 Depart: 5:15 Travel: 1.0 Total: 11.5 (1/2 hr lunch)

Weather: 60-90's Contractor: AMS Subcontr./Supplier: -

Equipment Working: -

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place 3 foot
Coverage Fill over Geo-Membrane. Using D6 to spread Fill being hauled in from off-site
borrow area. Fill is placed in such a way to prevent Geo-Membrane from being wrinkled
and/or being ripped or punctured. Fill is placed on Panels: P-46 thru 62, 72 thru 94,
99 thru 102.

Additional Comments: _____

Randy Lutz AMS
Contractor Representative Company
[Signature] 7-11-12
Signature Date
[Signature] 7/11/12
Geotechnology, Inc. Date
[Signature]
Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Andrew DeChie Project No.: 5019896.01 Task: 2370
Equipment & ID No.: _____ Project Name: Hutsonville Ash Pond D Closure
Vehicle: 7 Zone: - Client: Geotechnology Date: 7/12/12

TIME: Arrive: 6:45 Depart: 5:15 Travel: 1.0 Total: 11.5 (1/2 hr. lunch)
Weather: 60-90s Contractor: AMS Subcontr./Supplier: _____
Equipment Working: _____

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place 3 foot
of coverage fill over Geo-Membrane. Using D6 to spread fill being hauled in from off-site
borrow area. Fill is being placed in such a way to prevent Geo-Membrane from being wrinkled and/or
torn or punctured. Fill being placed on panels: P-54 thru 60, 92 thru 94.

Additional Comments: _____

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Randy Boate AMS
Contractor Representative Company
Signature [Signature] Date 7-12-12
Geotechnology, Inc. [Signature] Date 7/15/12
Engineer's Signature

No. A **13853**

FIELD OBSERVATION REPORT

Representative: Andrew DeChe Project No.: 5019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond O closure
Vehicle: 7 Zone: — Client: Geotechnology Date: 7/13/12

TIME: Arrive: 6:45 Depart: 5:15 Travel: 1.0 Total: 11.5 (1/2 hr. lunch)

Weather: 70-90's Contractor: AMS Subcontr./Supplier: —

Equipment Working: —

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place 3 foot coverage fill over Geo-Membrane. Using D6 to spread fill being hauled in from offsite borrow Area. Fill is placed in such a way to prevent Geo-Membrane from becoming wrinkled and/or ripped or punctured. Fill being placed on Panels: P-57 thru 62

Additional Comments: —

[Signature]
Contractor Representative

Signature

Geotechnology, Inc.

Engineer's Signature

AMS
Company

Date

Date

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MEETING MINUTES



Hutsonville Power Station - Ash Pond D Closure
Progress Meeting No. 17 Minutes
Tuesday, July 10, 2012

01 PUBLICATION

Publish date:	2012-07-16	Submitted by:	PHZ
Distribution:	E-mail only	Notes taken by:	PHZ
Location:	Hutsonville Power Station	AMS-Charah File No.	HUT-APD-MTG-MIN-2012-07-10-PM-17
AER PO:	567523 R4	AMS-Charah Contract:	00030-01 AMS-Charah GL: 4116-06-6120

02 ATTENDEES [ALPHA BY COMPANY]

NO.	SAL	FIRST	LAST	COMPANY	PHONE	E-MAIL
01	Mr.	Joe	King	AAA Electric	812-208-0464	sandy.tincher@aaaelectricofth.com
02	Mr.	Mike	Wagstaff	Ameren	618-406-3478	mwagstaff@ameren.com
03	Mr.	Bob	Muesenfechter	Ameren	314-681-2287	bmuesenfechter@ameren.com
04	Mr.	Steve	Bluemner	Ameren	314-972-4160	sbluemner@ameren.com
05	Mr.	Matt	Dishman	AMS - Focus	502-287-9163	mdishman@charah.com
06	Mr.	Paul	Zinsious	AMS - PCM	502-640-2918	pzinsious@ashmanagementservices.com
07	Mr.	Randy	Porter	AMS - SM	502-554-5230	rporter@ashmanagementservices.com
08	Mr.	Scott	Boyer	B&T Drainage	217-822-8373	N/A
09	Mr.	Mike	Burch	Freitag	812-208-1771	mburch@freitaginc.com
10	Ms.	Anna	Saindon	Geotechnology	314-997-7440	a_saindon@geotechnology.com
11	Mr.	Joe	Cravens	Geotechnology	314-568-6628	j_cravens@geotechnology.com
12	Mr.	Travis	Hunt	S&T Construction	812-208-1150	stdirt1@hotmail.com

03 ABBREVIATIONS

AER	Ameren Energy Resources	OSHA	Occupational Safety Health Administration
AMS	Ash Management Services	PCP	Perforated Collector Pipe
BNSF	Burlington	PO	Purchase Order
CBT	Computer Based Training	RHOM	Routine Handling, Operation, and Maintenance
EAP	Emergency Action Plan	SPOC	Single Point of Contact
EOD	End of [the] Day	T/M	Time and Materials
EOM	End of [the] month	TBD	To Be Determined
EOW	End of [the] week	TD	Transmission Dispatch
EDTS	Energy Delivery Transmission Services	WPA	Worker Protection Assurance
EDC	Estimated Date [of] Completion		
EWO	Extra Work Order		
HDPE	High Density Polyethylene		
HRS	Hours		
LOTO	Lock Out Tag Out		
NMA	National Maintenance Agreement		

04 DOCUMENTATION

Minutes are documented weekly, and the publication have a "rolling record" of the immediate past two weeks. Each week the oldest drops off and the current week is added to the minutes. Items are categorized as either "NEW", "OPEN", "CLOSE", or in case the an item has to be re-published after closed the previous week - "REOPEN". Minutes format changed for Progress Meeting No. 13 deleting and combining certain items for brevity and to abbreviate documentation. Currently the item numbers remained the same for tracking purposes.

05 SAFETY - HOUSEKEEPING

02 WORKER PROTECTION ASSURANCE

2012-07-10	OPEN - no issues. None projected for 2x week look ahead.
2012-07-03	OPEN - no issues. None projected for 2x week look ahead.

03 EMPLOYEE DRUG TESTING

2012-07-10	OPEN - Freitag to schedule worker at Newton.
2012-07-03	OPEN - Freitag to schedule worker at Newton.

04 AMS SAFETY

2012-07-10	[01] Safety luncheon today. General topics per Charah/AMS policies as noted below on 07-03 Items no. 04, 06, and 06.
	[02] AMS to pick up confined space signs.
	[03] General safety discussion.
	[04] Joko Tasich schedule TBD.

~~20120-07-03~~ [01] Cooling stations in good order [as weather has been hot and dry].
 2012-07-03 [02] J. Tasich schedule today 07-03 on site, possible return on 07-06.
 [03] Safety luncheon scheduled for next Progress Meeting on 07-10.
 [04] Discussion on Charah/AMS policy to disable AM/FM radios is equipment to prevent distractions.
 [05] Discussion on Charah/AMS policy for backing equipment, and incident at another Charah site.
 [06] Discussion on Charah/AMS policy for cell phones [and associated electronics] for non-essential use to be kept in safe place, as electronics will not be allowed in the equipment.
 [07] Barricade areas to have either yellow or red tape with notification/identification tag.
 [08] BTD to tag/post confined spaces [4x DS, 1x MH, and 1x CB - collector box]
 [09] M. Wagstaff indicated Newton Plant has confined space signs for use on this project.

05 HOUSEKEEPING

2012-07-10 OPEN - No issues.
 2012-07-03 OPEN - No issues.

06 PLANT ACCESS - CBT

20120-07-10 OPEN
 [01] General discussion - no issues.
 [02] R. Porter clarified issue was with the lock and access by G. Musch.
 20120-07-03 OPEN
 [01] General discussion security guard. M. Wagstaff indicated that guard can leave anytime.
 [02] R. Porter indicated no issues with the lock [Decatur Alarm?].

08 OSHA LOG - WORK HOURS

2012-07-10 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 07-09.
 No incidents or accidents.
 4,992.00 RT
 1,046.50 OT
6,038.50 TOTAL
 2012-07-03 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 07-02.
 No incidents or accidents.
 4,701.00 RT
 1,006.50 OT
5,707.40 TOTAL

06 MANPOWER [HEAD COUNT]

01 CREW SIZE

2012-07-10 AMS, BT Drainage [BTD], Belt Construction [BCI], Freitag [FWI] on site. Introduction M. Dishman Charah/AMS FOCUS Site Manager.
 [02] Geotechnology [work hours not included in OSHA Log above]
 [02] Pipe
 [00] Mechanical
 [00] Electrical
 [00] Cement
 [04] Laborers [AMS 2x, BTD 2x]
 [03] Operators [BCI 1x, BTD 2x]
 [16] Teamsters [FLT 15x borrow haul trucking, AMS 1x]
 [00] Survey
 [03] Foreman [AMS 2x - Full time] [BTD 1x]
[30] TOTAL
 2012-07-03 AMS, BT Drainage [BTD], Belt Construction [BCI] on site.
 [02] Geotechnology [work hours not included in OSHA Log above]
 [00] Pipe
 [00] Mechanical
 [00] Electrical
 [00] Cement
 [03] Laborers [AMS 1x, BTD 2x]
 [03] Operators [AMS 0x, BCI 1x, BTD 2x]
 [15] Teamsters [FLT 14x borrow haul trucking, AMS 1x]
 [00] Survey
 [02] Foreman [Full time] [AMS 1x, BTD 1x]
[25] TOTAL

02 WORK HOURS AND OVERTIME

2012-07-10 OPEN - Standard hours - 7:00 AM CT to 5:30 PM CT.

2012-07-03 OPEN - Standard hours - 7:00 AM CT to 5:30 PM CT. Project will be shut down Wednesday 7-4 for the for the 4th of July Holiday.

04 TRAILER - GENERAL CONDITIONS - COORDINATION - VEHICLES

2012-07-10 OPEN - no issues.

2012-07-03 OPEN - no issues.

07 PREVIOUS**01 SUBCONTRACTS**

2012-07-10 OPEN - no issues. J. Griffith [Fawn Lane Trucking] partner stroke this week.

2012-07-03 OPEN - no issues.

02 SUBMITTALS

20120-07-10 Submittal log as published by GEO on 06-23 distributed.

[01] Submittal log review, and general conversation of codes.

[02] S. Boyer need field tile and submittal to continue. M. Wagstaff indicated that if pipe same as drawings

[12 In AASHTO], proceed. P. Zinsious to investigate status of submittal. Sand is same as before FA-1.

[03] M. Burch hand unit issue, P. Zinsious to review after PM. Baro driver submittal.

[04] AAA to submit same requirements [AER/AMS] for pole subcontractor [Plant Brothers] to AMS.

[05] AAA submit lift plan [form subcontractor] for crane for pole installation.

[06] AER review of FWI confined space plan in progress.

[07] FWI and BTd to review water removal form DS after PM.

20120-07-03 No change to Submittal log as published by GEO.

[01] AMS to submit the collector box structure.

[01] AMS to submit the CA-6 stone.

[03] FWI "Baro Diver" sensor discussion - resubmit correct unit.

[04] FWI to submit J. Barrett as qualified/certified HDPE welder/installer.

[05] AMS to review with FWI the scope of the handheld devise for the DS controls.

08 MATERIAL**01 GENERAL**

2012-07-10 General discussion City of Robinson not give the tax COE an extension as plant closing is not providing jobs. P. Zinsious indicated no impact to cost at this time, and will keep AER posted.

2012-07-03 Large boulders found in excavations to be returned to area.

09 ADJACENT PROPERTIES AND PCP LINE**01 GENERAL**

2012-07-10 OPEN - Discussion during Progress Meeting:

[01] S. Boyer indicated that bedrock should not be an issue for field tile installation. Requires submittals [see submittals].

J. cravens indicate elevation delta only about 0.55 FT to date.

[02] Pipe installation is going well, with no current issues. Discussed sequence [see schedule section].

2012-07-03 Field collector tile

[01] Alignment and elevation issue. J. Cravens to provide sketch. Review of drawings by team.

10 QUALITY CONTROL**03 CLAY**

2012-07-10 No issue. A. Saindon indicated that clay samples will be taken on site today for chemical and physical analysis.

2012-07-03 NONE

11 SCHEDULE REVIEW**01 SCHEDULE**

2012-07-10 OPEN. Review of last planner by B. Muesenfechter.

[01] General discussion introduction Last Planner: sequence, remaining duration units [RDU], and constraints.

Last Planner provides a look ahead, engages field supervision, fosters team involvement, commitments and accountability.

[02] Substantial completion is 09-28. Clay placement progressing early.

[03] Progress has improved two weeks in a row.

[04] General review and discussion of DS PCP progress.

20102-07-03 OPEN. Review of last planner by B. Muesenfechter.
 2012-07-03 [01] M. Wagstaff on vacation 07-04 through WE.
 [02] M. Wagstaff requested for time being [while subcontractors on look-ahead] to attend the progress meeting.
 [03] Negative float now shown due to re-schedule.
 [04] Feedback required from AAA on scope and approval for the electrical EWO's by AER.
 [05] B. Muesenfechter brief review of fragnets for EWO's.
 [06] S. Boyer indicated needed field tile submittal information.
 [07] General review and discussion of DS PCP progress.

12.0 COST AND BUDGET

02 AMS PAY APPLICATION - CHANGE REQUEST

2012-07-10 OPEN - M. Wagstaff indicated pay-app no issue.
 2012-07-03 OPEN - P. Zinsious to submit draft pay-app for M. Wagstaff to review. M. Wagstaff back-up documents for EWO's to PO.

12.1 EXTRA WORK ORDERS

11 EWO-11 BUILDING SPOILS REMOVAL

2012-07-10 OPEN - AMS moving spoils materials as "fill-in" continues in progress.
 2012-07-03 OPEN - AMS moving spoils materials as "fill-in" type work. Utilizing existing backhoe on site.

13 EWO-13 Electrical feeder/overhead

2012-07-10 OPEN - Final plans by EOW. M. Wagstaff has approved the EWO.
 2012-07-03 OPEN - M. Wagstaff reports Hanson has under review, and should have design drawing at EOW.

14 EWO-14 FIELD TILE LOCATION

2012-07-10 Non-issue. Reference Item No. 09.01 2012-07 above.
 2012-07-03 Elevation could be an issues. M. Wagstaff indicated possible change in elevation no-issue. Team to review.
 AER not to pay for removal of shale. Elevation of field tile in lower than the PCP.

13 ACTION ITEMS - AER [25]

01 AMEREN [AER]

2012-07-10 [01] Fencing VES and/or alignment options.
 [02] Electrical submittals under review.
 2012-07-03 [01] M. Wagstaff to complete submittal reviews; electrical.

14 ACTION ITEMS - AMS [21]

01 ASH MANAGEMENT

2012-07-10 [01] Concrete submittals in progress. P. Zinsious to meet with T. Hunt after PM.
 2012-07-03 [01] Concrete submittals ASAP - P. Zinsious to review.

15 PRODUCTION

03 CLAY

2012-07-10 OPEN - Trucks are hauling 11 CY. Currently 15x trucks. Placement as of 07-09 is 42,489 CY. R. Porter presented sketch M/U. LEC performed topographic outline survey to check clay placement estimation. AMS calculated [at time of the survey] 3,608 LD at 11 CY/LD = 39,688 CY. LEC survey area measured by 3 FT THK average calculated to 38,143 CY. This is a delta of only 1,545 CY, and the LD haul rate is agreed will continue to be 11 CY per truck.
 2012-07-03 OPEN - Trucks are hauling 11 CY. Currently 15x trucks. Placement as of 07-02 is 33,165 CY. R. Porter presented sketch M/U.

16 DOCUMENTS TRANSMITTED

2012-07-10 [01] AMS - Last Planner schedule dated 07-06.
 [02] AMS- Remaining Work schedule dated 07-06.
 [03] GEO - Submittal Log published 06-23.
 2012-07-03 [01] AER - Last Planner schedule dated 06-29.
 [02] AMS - Critical Path schedule dated 06-29

17 DOCUMENTS REVIEW ONLY

2012-07-10	[01] SK-HUT-APD-004-R0 "Project Site - Pond - Quadrant Layout" with M/U to show progress to date of clay placement
2012-07-03	[01] SK-HUT-APD-006-R0 "Groundwater Collection - Section Breakouts"
	[02] SK-HUT-APD-004-R0 "Project Site - Pond - Quadrant Layout" with M/U to show progress to date of clay placement

18 NEXT PROGRESS MEETING

Next meeting will be held in one week - Tuesday, July 17, 2012 at Hutsonville

19 DISTRIBUTION - STANDARD**AER**

01 Mr. Mike Wagstaff
02 Mr. Mike Stewart
03 Mr. Bob Muesenfechter

GEO

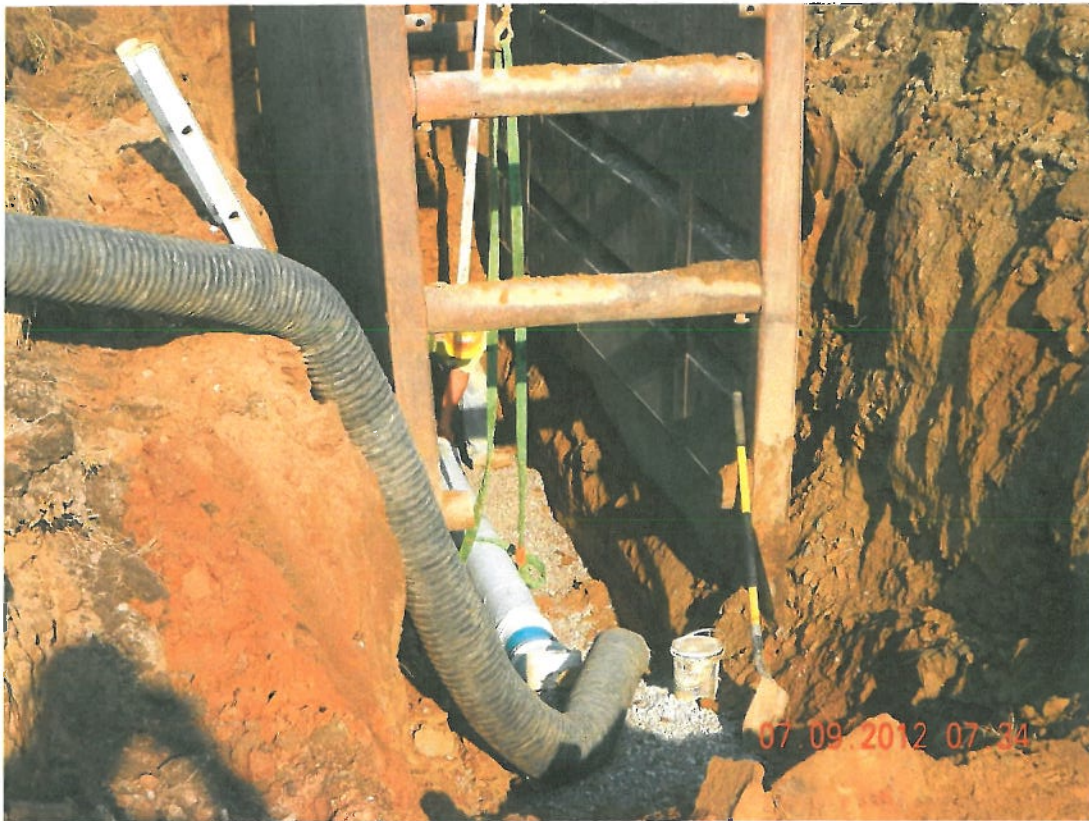
01 Ms. Anna Saindon
02 Mr. Eric Neuner
03 Mr. Joe Cravens

AMS

01 Mr. Jimmy Boone
02 Mr. John Denham
03 Mr. Joko Tasich
04 Mr. Randy Porter

If there are any corrections, modifications, additions, or deletions please notify the sender by e-mail at pzinsious@ashmanagementservices.com

PHOTOGRAPH LOG



Photograph 1 ▲ - PCP-4 installation facing west



Photograph 2 ▲ - Clay placement facing north

All photographs taken by Joseph Cravens and Steve Graham of Geotechnology, Inc. between July 9 and July 13, 2012

JRC



Photograph 3 ▲ - Clay placement facing northeast



Photograph 4 ▲ - Compaction near PCP-4 facing southeast



Photograph 5 ▲ - Clay placement facing west



Photograph 6 ▲ - Grading paved gutter facing north

All photographs taken by Joseph Cravens and Steve Graham of Geotechnology, Inc. between July 9 and July 13, 2012



Photograph 7 ▲ - Coring holes for sump discharge in DS-2 facing west

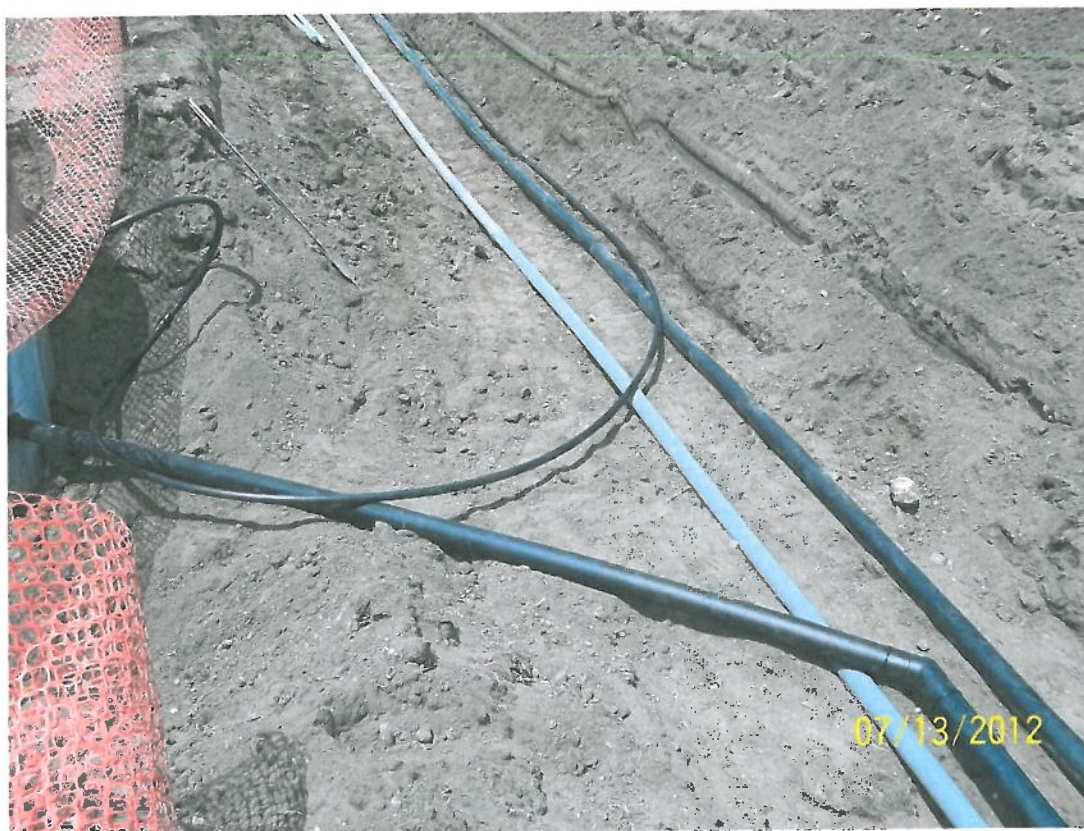


Photograph 8 ▲ - Typical HDPE pipe butt fusion weld facing south

All photographs taken by Joseph Cravens and Steve Graham of Geotechnology, Inc. between July 9 and July 13, 2012



Photograph 9 ▲ - Butt fusion welding 3-inch HDPE pipe facing west



Photograph 10 ▲ - Remote vent, sump discharge pipes, and electrical feeder conduit in collector trench facing west

All photographs taken by Joseph Cravens and Steve Graham of Geotechnology, Inc. between July 9 and July 13, 2012

JRC



Photograph 11 ▲ - Overview of collector trench south of Ash Pond A facing west



Photograph 12 ▲ - Overview of Ash Pond D facing south

All photographs taken by Joseph Cravens and Steve Graham of Geotechnology, Inc. between July 9 and July 13, 2012

JRC



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Energy Resources

FROM: Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DATE: July 24, 2012

SUBJECT: Weekly Summary Report for July 16, 2012 to July 20, 2012

PROJECT: Hutsonville Ash Pond D Closure
Crawford County, Hutsonville, Illinois
Geotechnology Project No. J019896.01

The following is a weekly summary of the site activities at the referenced site.

Weather

The weather was generally sunny and dry. Temperature (°F) lows ranged from 75 to 80°F, and temperature highs ranged from 85 to 102°F. Weather delays occurred on July 18, 2012 from a storm event that occurred the previous evening.

Construction Activities

Groundwater collection system installation, remote vent and sump discharge pipe installation, butt fusion welding, electrical conduit installation, manhole coring, paved gutter construction, paved gutter culvert installation, west pump control panel installation, dewatering sump assembly, and clay placement occurred this week. B&T Drainage continued construction of the groundwater collection system. This included work at dewatering sump DS-3 and DS-4, perforated collector pipe PCP-4, PCP-5, PCP-6, and PCP-7, clean out CO-3 and CO-4, and dewatering. Freitag-Weinhardt, Inc. and AAA Electric, Inc. installed the remote vents, sump discharge pipes, electrical feeder conduit, and the high and low voltage conduit within the collector trench. DS-1 and DS-2 manholes were cored for the installation of junction boxes and conduit drain. The paved gutter excavation west of Ash Pond D was completed, ash spoils excavated were transported to Ash Pond A, and ST Construction, Inc. performed the concrete work. Concrete testing (including slump, air entrainment, and cylinders) was performed by Patriot Engineering, Inc. The southwest culvert for the paved gutter was installed. The west pump control panel rack was assembled and installed. Dewatering sump assembly began, including threading and welding pipe, assembling valves and flanges, and wiring. Lamac

Engineering Co. surveyed grades for the groundwater collection system and the east paved ditch. Fawn Lane Transit, Inc. and Belt Construction, Inc. continued clay placement in Quadrant B. Approximately 16 trucks were used to haul clay material to Ash Pond D. The vegetative cover is being placed in a single three foot lift, and a representative from TSI Engineering, Inc. observed quality control for the clay placement procedure. Refer to the daily reports for detailed information.

Equipment and Personnel On-Site

CAT D6N Bulldozer
CAT D5G Bulldozer
CAT 330D Excavator
Bomag BW 172 PDB-2 Roller
John Deere 624H Front End Loader
John Deere 450 LC Excavator
John Deere 410J Backhoe
Case 580 Backhoe
Kubota L245DT Tractor
Water Truck (Dust Control)

Geotechnology, Inc. – Joe Cravens
TSI Engineering, Inc. – Andrew DeClue
Ash Management Services, LLC (AMS) – Randy Porter, Matt Dishman, Robert Dunkley, Greg Siverly, Jeremy Shorter, Blake Bunting, and Eric Sefton
Charah, Inc. – Joe Tasich
Belt Construction, Inc. (BCI) – Jared Belt
Lamac Engineering Co. (LEC) – Jake Lewis
B&T Drainage (BTD) – John Boyer, Scott Boyer, Colby Boyer, Brian Schaefer, Brent Neibauer, Michael Switzer, Michael Dashiell, and Eric Blankenship
Fawn Lane Transit, Inc. (FLT) – Kim Edington, Lee Edington, Scott Comer, James Elledge, Jim Urfer, Gray Lamb, Greg Lingorfelder, Tom Sager, Eric Bierman, Robert Shehorn, Billie Meadows, John Niles, Brian Griffith, Bob Smithenry, Alan Ruholl, Patrick Wente, Frank Draper, and Jason Byers
Freitag-Weinhardt, Inc. (FWI) – Scott Burch, Clay Cochran, and Jarrod Barrett
AAA Electric, Inc. (AAA) – Joe King and Kyle Davidson
ST Construction, Inc. (STC) – John Maetin, Jackie Hoover, Gary Hedges, Scott Hilton, and Robert Pressley
Patriot Engineering, Inc. (PEI) – Brandon McDonald and Thad Simpson
Visitors – Refer to the Visitor's Log for visitors, dates, and times.
Refer to the meeting minutes for additional personnel.

Meetings

The weekly progress meeting was held on Tuesday, July 17, 2012. Refer to the attached meeting minutes for additional information.

Photographs

A photograph log with select photographs obtained this week is attached.

Materials

Clay for the vegetative layer, IDOT Class SI concrete, Seal Tight Deck-O-Foam expansion joint filler, Right Pointe White Water Wax curing compound, and Sonolastic NP-1 elastomeric polyurethane joint sealant for the paved gutter, 12-inch ADS Pipe for paved gutter culvert and field tile, 12-inch flared-end sections, and dewatering sump assembly including four sump pumps and accessories. Refer to the submittals for the dewatering sump assembly models and specifications.

Testing/Sampling

Patriot Engineering, Inc. performed concrete testing, including slump and air entrainment testing. Four concrete cylinders were cast and retrieved for testing. Refer to the concrete testing records for additional information.

Calibration Records

Calibration information was not obtained this week.

Signature of CQA Officer

Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.



DAILY REPORTS

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: JO19896.01 Task: 2370
 Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: - Client: Ameren ER Date: 7/16/12

TIME: Arrive: 6:00 AM Depart: 5:30 PM Travel: 1.0 hr Total: 12.25 hrs (0.25 hr for lunch)
 Weather: Sunny, 76° AM, 94° PM Contractor: AMS Subcontr./Supplier: BTD/FWI/AAA/FLT/BCI/TSI
 Equipment Working: D6N Dozer, 330D Excavator, 450LC Excavator, 624H Front End Loader, BW 172 Roller, STC
 Site Activities / Observations / Contacts / Notes: 410J Backhoe, D5G Dozer, L245DT Tractor, Water Truck
AMS:

Assisted BTD, AAA, and performed work at the CBS.

BTD:

The excavation, installation, backfill, and compaction of PCP-6 was completed. PCP-6
runs as follows: DS-4, 60' west @ 3.5%, 80' west @ 3.0%, and @ 2.5% west to CO-3.
The installation of CO-3 was completed. Clearing for PCP-7 excavation began. Paved Gutter
excavation and grading on the west side of APD continues.

STC:

ST Construction, Inc. arrived on site. Personnel: John Maetin, Jackie Hoover, Gary Hedges,
Scott Hilton, and Robert Pressley. The V-bottom gutter was formed on the SW side of APD,
and the Welded Wire Fabric (6x6 W1.4xW1.4) was cut and will be floated in 2" from the
subgrade during pouring. Field Change: The 1.0' minimum depth between the top of the
slope and the flowline was approved not to be followed. Delivery - Seal Tight Deck-O-Foam
1/2" x 6" x 50' for expansion joint filler.

AAA:

Installed additional 2" and 2 1/2" Schedule 40 PVC Conduit. The 2 1/2" conduit will be the
electric feeder to the west pump control panel. The 2" conduit will run from each manhole
to the pump control panel, 2 lines per manhole. This will connect to the high and low
voltage junction boxes attached to the manhole. Refer to S-386, Sheet 12, Detail 4.

FWI:

Continued butt fusion welding 3" HDPE discharge pipe. Length = 800'.

FLT/BCI/TSI: Additional truck - Jason Byers.

Additional Comments: Clay Placement - Section C was
completed and began Section B. Loads = 219

Landy Peter
 Contractor Representative

AMS
 Company

Signature

Date

Geotechnology Inc.

Date

Engineer's Signature

Notice: The Geotechnology representative is on site solely to observe operations of the contractor
 identified, form opinions about the accuracy of those operations and report those opinions to the
 client. The presence and activities of the Geotechnology field representative do not relieve the
 contractor's obligation to meet contractual requirements. The contractor retains sole responsibility
 for site safety and the methods and sequence of construction.

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: JO19896.01 Task: 2370
 Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: - Client: Ameren ER Date: 7/17/12

TIME: Arrive: 6:00 AM Depart: 5:30 PM Travel: 1.0 hr Total: 12.5 hrs (no lunch) /PET
 Weather: Sunny, 78° AM, Rain, 98° PM Contractor: AMS Subcontr./Supplier: BTD/STC/AAA/FWI/LEC/FLT/
 Equipment Working: D6N Dozer, 330 D Excavator, 450 LC Excavator, 624 H Front End Loader, BW 172 BCI/TST
 Site Activities / Observations / Contacts / Notes: Roller, 410J Backhoe, D5G Dozer, L245DT Tractor, Water Truck
AMS:

Delivery - Thompson Pump for dewatering DS-1 and DS-2 to set sumps. Assisted BTD and STC.

BTD:

The excavation, installation, backfill, and compaction of PCP-7 began. PCP-7 is being laid at
a 0.90% grade heading east from DS-4. Paved Gutter excavation and grading continued on
the west side of APD. Another section of the box culvert draining into APC will have
to be removed to complete the gutter in this area. The excavation for the 12" ADS
Culvert (w/metal end sections) began which will drain the gutter on the SW corner of
Section C. The 12" Culvert will be placed under the existing 18" HDPE drainage pipe
and concrete casing. The manhole box around DS-4 was removed and DS-4 backfill
began. An additional trench box was delivered to stack for the PCP-7 excavation.

Dewatering continues adjacent to DS-4. Paved Gutter ash spoils dumping into APA
continued. Note: detectable warning tape will not be required for the PCP. L = 110'

STC:

They began pouring the Paved Gutter on the west side of Section C. The concrete is being
delivered from R&L Reddy Mix Concrete, Inc. out of Robinson, IL. The concrete ordered
is IDOT Class S1, 4000 psi, $\pm 4"$ slump, $\frac{W}{C}$ of 0.4, with 5-7% air-entraining agent.
The concrete finish is a smooth rubbed finish with broom. After finishing, Right Point
White Water Wax Curing Compound was applied. Due to excessive heat, they began
saw cutting contraction joints at 10' intervals ($1\frac{1}{2}"$ -2" depth). Seal Tight Deck-O-Foam
expansion joints were utilized ($\frac{1}{2}" \times 6"$). In areas of the gutter where the thickness...

Additional Comments:

NEXT PAGE

Randy Proctor
Contractor Representative

AMS
Company

Anna Sackel
Signature
Geotechnology, Inc.

7-17-12
Date
7-23-12
Date

Engineer's Signature

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 for site safety and the methods and sequence of construction.

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: JO19896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: — Client: Ameren ER Date: 7/17/12

TIME: Arrive: — Depart: — Travel: — Total: —
 Weather: — Contractor: — Subcontractor: — Supplier: —

Equipment Working: —

Site Activities / Observations / Contacts / Notes: —

STC/PEI (cont.):

... is greater than 6", the expansion joints will be doubled to achieve the full depth of the slab. Both expansion and contraction joints will receive Sonolastic NPI elastomeric, gun-grade polyurethane joint sealant. Burlap will be used to cover the concrete to prevent excessive heat and cracking. Patriot Engineering, Inc. will be used as the testing agency for the concrete due short notice of the concrete placement. Test results will be sent to Ameren and/or the CQA Officer. Brandon McDonald with PEI took 4 cylinders, one slump test (4½"), one air test (5.2%), all at a temperature of 85°. Three trucks total delivery - 1 (7 cy), 2 (8 cy) and 3 (6 cy), totalling 21 cy of concrete.

AAA:

The west pump control panel rack assembly was set in place. The 4" stainless steel conduit, to be used for electric feed from the MCC building to the overhead electric, was installed on the existing power pole beside the MCC building. No electric lines have been installed yet.

FWI:

Deliveries - The 4 sumps for the manholes have been delivered, including setup accessories such as the 12 float switches, 4 check valves, 4 flanged pitless adapters (tees), simplex controllers, 4 flow meters, 4 paddlewheel flow sensors, 4 transition reducers, and cables. Refer to project submittals for brands, models, and specifications. The Boro Diver level sensors and data loggers have not been received yet.

LEC: Surveyed flowlines in DS-4, CO-3, and PCP-7, along with the east Paved Ditch.

FLT/BCI/TSI:

Clay Placement - Eastbound on Section B.

Additional Comments: Area = P-29 to P-31, and 62 to 67.
Loads = 215

Lauch Padell
 Contractor Representative
Signature
 Geotechnology, Inc.
 Engineer's Signature

AMS
 Company
7-17-12
 Date
7-23-12
 Date

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: JO19896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 7/18/12

TIME: Arrive: 6:00 AM Depart: 5:30 PM Travel: 1.0 hr Total: 12.5 hrs (no lunch)
Weather: Sunny, 75° AM, 102° PM Contractor: AMS Subcontr./Supplier: BTD/STC/BCI/FWI/AAA
Equipment Working: D6N Dozer, 330 D Excavator, 450 LC Excavator, 624 H Front End Loader,
Site Activities / Observations / Contacts / Notes: 410 J Backhoe, D5G Dozer, Water Truck, 580 Backhoe

AMS:

The plant entrance and access roads were cleaned from the washout. The paved concrete gutter was re-covered with burlap and plastic; the cover had blown off from the storm. Silt fence was installed on the east side of the gutter to prevent further material washing down onto the gutter from the Pond. Housekeeping performed around job trailers.

BTD:

Setup numerous pumps in the PCP trench for dewatering due to the storm. The remaining dewatering wells were removed south of APD. The 12" ADS Culvert was installed on the SW corner of Section C. The flared end sections were installed on the culvert. Field Change: Plastic flared end sections were used instead of metal. The northern flared end will receive a concrete collar when the gutter is completed, and the southern flared end will drain into riprap which drains into the Paved Ditch. Delivery - 12" ADS Field Tile. The manhole boxes were taken apart and demobilized along with the slotted well casings.

STC:

Stripped gutter forms and saw cut contraction joints. Too wet to pour or form gutter. The curing compound was applied from the day before.

BCI:

Graded ash spoils dumped in APA to allow ash spoil dumping within the geotubes.

AAA: Cored DS-1 and DS-2 for the high and low voltage junction boxes, and the conduit drain. They also sized stainless steel fittings and link seals for the core holes.

FWI: The stainless steel (2") discharge pipe was threaded and the check valves were assembled. Clay Cochran established the

Additional Comments: confined space entry for the manholes.

FLT/TSI: No Production; Too Wet for Clay Placement.

Kathy Porter
Contractor Representative

AMS
Company 7-18-12

Anna Saindon
Signature
Geotechnology, Inc.

Date
7-23-12
Date

—
Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: - Client: Ameren ER Date: 7/19/12

TIME: Arrive: 6:00 AM Depart: 5:45 PM Travel: 1.0 hr Total: 12.5 hrs (0.25 hr for lunch) FLT/BCI/TSI
 Weather: Sunny, 80° AM, 101° PM Contractor: AMS Subcontr./Supplier: BTD/STC/FWI/LEC/PEI
 Equipment Working: D6N Dozer, 330 D Excavator, 450 LC Excavator, 624H Front End Loader, BW 172, 580,
 Site Activities / Observations / Contacts / Notes: Roller, 410J Backhoe, D5G Dozer, L245DT Tractor, Water Truck

AMS:

Layout was added to the staked slope diversion berms in Section A and the plant access roads were graded. Assisted BTD, STC, and poured the posts for the west pump control panel.

BTD:

The excavation, installation, backfill to GCL cap, and compaction of PCP-7 was completed. PCP-7 runs from DS-4 east to CO-4 at a +0.9% grade. L=210'. CO-4 was installed and backfilled. The V-bottom paved gutter was regraded on the west side of Section A due to the storm. Paved gutter ash spoils were transported to Ash Pond A.

STC:

The paved gutter on the west side of Section C was poured, finished, and cured. A concrete collar was poured around the 12" ADS Culvert on the SW corner of Section C. Expansion joints were placed every 30' and contraction joints were saw cut every 10'. The forms were stripped in the PM. They began forming, pouring, finishing, and curing the paved gutter on the west side of Section A. The gutter was slightly offset to drain directly into the existing box culvert to prevent an additional precast box section from being taken out. Three concrete batches from R&L Ready Mix were poured: 1(8cy), 2(6.5cy) and 3(8cy) totalling 22.5 cy.

PEI:

Thad Simpson took 4 cylinders, one Slump-5", one Air-5.5% all at 78°.

LEC:

Jake Lewis surveyed PCP-7 during installation.

FWI: Placed link seals on the remote vents in DS-1 and DS-2 and Fused 800' 3" HDPE.

FLT/BCI/TSI: Clay Placement - Eastbound Section B

Additional Comments: Area = P-29 to 33 and 63 to 67. Loads

AAA Electric had no production today. = 246

Larry Petee
Contractor Representative

AMS
Company

Anna Saindon
Signature

7-19-12
Date

Geotechnology, Inc.
Engineer's Signature

7-23-12
Date

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: — Client: Ameren ER Date: 7/20/12

TIME: Arrive: 6:00 AM Depart: 5:00 PM Travel: 1.0 hr Total: 11.75 hrs (0.25 hr for lunch)
 Weather: Sunny, 76° AM, Cloudy 85° PM Contractor: AMS Subcontr./Supplier: BTD/STC/PEI/FWI/FLT/BCI/TSI
 Equipment Working: D6N Dozer, 580 Backhoe, 330D Excavator, 450LC Excavator, 624 H Front End Loader,
 Site Activities / Observations / Contacts / Notes: BW 172 Roller, 410J Backhoe, D5G Dozer, Water Truck
AMS:

Continued transporting anchor trench spoils from the NW corner of APD to APA.

BTD:

Manhole sections including tops were set on DS-3 and DS-4. DS-3 and DS-4 were backfilled to GCL cap. Note: All of the precast manhole tops do not have mastic joint sealant applied yet because they will be pulled during sump pump installation. Mastic will be applied to the tops following sump pump installation. They began finish compaction and grading for the GCL cap, 5' below the ground surface, along PCP-4, PCP-5, PCP-6, and PCP-7. At a depth of 5', the PCP trench will be cut back an additional foot for GCL coverage. Note: As-Built lengths for PCP-5 240', PCP-6 180', and PCP-7 330'. Colby Boyer was here to haul off pumps, hoses, shoring, and generators. Equipment and materials were staged along PCP-3 and PCP-4.

STC:

The paved gutter on the north end of the box culvert on the west side of Section A was poured, finished, cured, saw cut, and the forms were stripped. Contraction joints are every 10' and expansion joints are every 30'. Contractions are 1½" - 2" deep, and expansions extend the full depth of the slab. Began forming gutter on the south end of the box culvert on the west side of Section A. Three concrete batches - 1(8cy), 2(8cy), 3(3cy) totalling 19 cy.

PEI:

Thad Simpson took 4 cylinders, one Slump - 4½", one Air - 6%, and a temperature of 77°.

FWI:

Continued staging and butt fusion welding 3" HDPE Sump Discharge. Length Fused = 960'

FLT/BCI/TSI: Section B, Area = 32 to 36, 66 to 69. L = 197

Additional Comments: All electrical conduit in collector trench will be spaced 12" and haunched with IDOT FA-01 Sand.

Randy Porter
Contractor Representative

AMS
Company

Anna Sairden
Signature

7-20-12
Date

Geotechnology, Inc.

7-23-12
Date

Engineer's Signature

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AAA had no production today.

FIELD OBSERVATION REPORT

Representative: Andrew DeClue Project No.: 2019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 7 Zone: — Client: Geotechnology Date: 7-16-12

TIME: Arrive: 6:45 Depart: 5:00 Travel: 1.0 Total: 11.25 (1/2 hr. lunch)
Weather: 70-90's Contractor: AMS Subcontr./Supplier: —
Equipment Working: —

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place 3 foot
coverage fill over Geo-Membrane. Using D6 to spread fill being hauled in from offsite
borrow area. Fill being placed in such a to prevent Geo-Membrane from becoming
wrinkled and/or being ripped or punctured. Fill placed on Panels: P-58 thru 62, 92
thru 94.

Additional Comments: _____

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Andrew DeClue
Contractor Representative
Signature
Geotechnology, Inc.
Engineer's Signature
Company AMS
Date 7-16-12
Date 7/16/12
Date

FIELD OBSERVATION REPORT

Representative: Andrew DeChe Project No.: J01989601 Task: 2370
 Equipment & ID No.: — Project Name: Hudsonville Ash Pond D Closure
 Vehicle: 7 Zone: — Client: Geotechnology Date: 7/17/12

TIME: Arrive: 6:45 Depart: 3:00 Travel: 1.0 Total: 9.25 (1/2 hr. lunch)

Weather: 70-90s Contractor: AMS Subcontr./Supplier: —

Equipment Working: —

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place 3 foot
coverage fill over Geo-membrane. Using D-6 to spread fill being hauled in from
off-site borrow area. Fill is being placed in such a way to prevent Geo-membrane
from being wrinkled and/or being ripped or punctured. Fill placed on Panels P-29 thru
31, 62 thru 67.

Rain Out @ 3:00 PM

Additional Comments: _____

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Andrew DeChe
 Contractor Representative
 Signature [Signature] Company AMS
Geotechnology, Inc.
 Engineer's Signature [Signature] Date 7-17-12
 Date 7/17/12

FIELD OBSERVATION REPORT

Representative: Andrew DeClue Project No.: J019896.01 Task: 2370
 Equipment & ID No.: - Project Name: Hutsonville Ash Pond D closure
 Vehicle: 7 Zone: - Client: Geotechnology Date: 7/18/12

TIME: Arrive: 6:45 Depart: 7:15 Travel: 1.0 Total: 1.5

Weather: 70-80s Contractor: _____ Subcontr./Supplier: _____

Equipment Working: _____

Site Activities / Observations / Contacts / Notes: Arrived on site and spoke with Joe Cravens
(Geotechnology) who said that AMS had called off clay placement due to amount of rain received
yesterday.

Additional Comments: _____

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Randy Contractor Representative Company AMS
[Signature] Signature Date 7-18-12
[Signature] Geotechnology, Inc. Date 7/18/12
[Signature] Engineer's Signature

FIELD OBSERVATION REPORT

Representative: Andrew DeClue Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Huntsville Ash Pond D.C. Closure
Vehicle: 7 Zone: - Client: Geotechnology Date: 7/19/12

TIME: Arrive: 6:45 Depart: 5:15 Travel: 1.0 Total: 11.5 (1/2 hr. incl.)

Weather: 70-100 Contractor: AMS Subcontr./Supplier: -

Equipment Working: -

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place 3 foot
Coverage Fill of Geo-Membrane. Spent 30-40 minutes in morning to dress up road onto
Fill for trucks. Using D6 to spread fill being hauled in from offsite borrow area. Fill
being placed in such a way to prevent Geo-Membrane from becoming wrinkled and/or being
ripped or punctured. Fill placed on Panels: P-29 thru 33, 63 thru 67.

Additional Comments: _____

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

Handy B
Contractor Representative
Handy B
Signature
AMS
Company
7/19/12
Date
7/19/12
Date
Handy B
Geotechnology, Inc.
Engineer's Signature

FIELD OBSERVATION REPORT

Representative: Andrew DeClue Project No.: 504896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 7 Zone: — Client: Geotechnology Date: 7-20-12

TIME: Arrive: 6:45 Depart: 4:30 Travel: 1.0 Total: 10.75 (1/2 hr. lunch)
Weather: 70-90s Contractor: AMS Subcontr./Supplier: —
Equipment Working: —

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place 3 foot coverage fill over Geo-Membrane. Using D6 to spread clay fill being hauled in from offsite borrow area. Fill being placed in such a way to prevent Geo-Membrane from becoming wrinkled and/or being ripped or punctured. Fill placed on Panels: P-32 thru 36, 66 thru 69.

Additional Comments: _____

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

Andrew DeClue AMS
Contractor Representative Company
Signature Date 7-20-12
Andrew DeClue
Geotechnology, Inc. Date 7/20/12
Andrew DeClue
Engineer's Signature

MEETING MINUTES



Hutsonville Power Station - Ash Pond D Closure
Progress Meeting No. 18 Minutes
Tuesday, July 17, 2012

01 PUBLICATION

Publish date:	2012-07-18	Submitted by:	PHZ
Distribution:	E-mail only	Notes taken by:	PHZ
Location:	Hutsonville Power Station	AMS-Charah File No.	HUT-APD-MTG-MIN-2012-07-17-PM-18
AER PO:	567523 R4	AMS-Charah Contract:	00030-01 AMS-Charah GL: 4116-06-6120

02 ATTENDEES [ALPHA BY COMPANY]

NO.	SAL	FIRST	LAST	COMPANY	PHONE	E-MAIL	Column1
01	Mr.	Joe	King	AAA Electric	812-208-0464	sandy.tincher@aaaelectricofth.com	
02	Mr.	Mike	Wagstaff	Ameren	618-406-3478	mwagstaff@ameren.com	
03	Mr.	Bob	Muesenfechter	Ameren	314-681-2287	bmuesenfechter@ameren.com	
04	Mr.	Paul	Zinsious	AMS - PCM	502-640-2918	pzinsious@ashmanagementservices.com	
05	Mr.	Randy	Porter	AMS - SM	502-554-5230	rporter@ashmanagementservices.com	
06	Mr.	Scott	Boyer	B&T Drainage	217-822-8373	N/A	
07	Mr.	Bret	Brown	Charah	812-454-5603	bbrown@charah.com	
08	Mr.	Scott	Burch	Freitag	812-208-1779	sburch@freitaginc.com	EM-TBD
09	Mr.	Joe	Cravens	Geotechnology	314-568-6628	j_cravens@geotechnology.com	

03 ABBREVIATIONS

AER	Ameren Energy Resources	OSHA	Occupational Safety Health Administration
AMS	Ash Management Services	PCP	Perforated Collector Pipe
BNSF	Burlington	PO	Purchase Order
CBT	Computer Based Training	RHOM	Routine Handling, Operation, and Maintenance
EAP	Emergency Action Plan	SPOC	Single Point of Contact
EOD	End of [the] Day	T/M	Time and Materials
EOM	End of [the] month	TBD	To Be Determined
EOW	End of [the] week	TD	Transmission Dispatch
EDTS	Energy Delivery Transmission Services	WPA	Worker Protection Assurance
EDC	Estimated Date [of] Completion		
EWO	Extra Work Order		
HDPE	High Density Polyethylene		
HRS	Hours		
LOTO	Lock Out Tag Out		
NMA	National Maintenance Agreement		

04 DOCUMENTATION

Minutes are documented weekly, and the publication have a "rolling record" of the immediate past two weeks. Each week the oldest drops off and the current week is added to the minutes. Items are categorized as either "NEW", "OPEN", "CLOSE", or in case the an item has to be re-published after closed the previous week - "REOPEN". Minutes format changed for Progress Meeting No. 13 deleting and combining certain items for brevity and to abbreviate documentation. Currently the item numbers remained the same for tracking purposes.

05 SAFETY - HOUSEKEEPING

02 WORKER PROTECTION ASSURANCE

2012-07-17	OPEN - no issues. J. King indicated will be a while before access to MCC is required. None projected for 2x week look ahead.
2012-07-10	OPEN - no issues. None projected for 2x week look ahead.

03 EMPLOYEE DRUG TESTING

2012-07-17	OPEN - FWI had 1x at Newton on 07-16. STC had 5x on 07-16.
2012-07-10	OPEN - Freitag to schedule worker at Newton.

04 AMS SAFETY

2012-07-17	<p>[01] J. Tasich on site 07-13. Schedule this week TBD.</p> <p>[02] R. Porter indicated will pick up signs today for confined space, but further discussion, M. Wagstaff indicated R. Spurgeon [Newton Senior Safety Supervisor] can bring with him when on-site tomorrow [tentatively 10:00 AM CT] for FWI confined space entry review. M. Wagstaff to coordinate the meeting with Mr. Spurgeon.</p> <p>[03] Relative the confined space entry for the DS, the lids will be removed on 07-17.</p> <p>[04] B. Muesenfechter inquired about emergency response. S. Burch described details for response [i.e. call 911, he is an EMT, access tripods, 02 monitor 100% of the time, etc...].</p> <p>[05] B. Muesenfechter inquired about barricade the PCP excavation. R. Porter reported this is done every day at the end of the day. The barricade consists of either tape and or/berms.</p> <p>[06] General comment on watching out for traffic as the site is very busy with trucks and the other Ameren contractors on site.</p>
2012-07-10	<p>[01] Safety luncheon today. General topics per Charah/AMS policies as noted below on 07-03 Items no. 04, 06, and 06.</p> <p>[02] AMS to pick up confined space signs.</p> <p>[03] General safety discussion.</p> <p>[04] Joko Tasich schedule TBD.</p>

05 HOUSEKEEPING

2012-07-17	OPEN - No issues. M. Wagstaff indicated site is dusty. Traffic level is high [see above] due to truck and Ameren [line] subcontractor.
2012-07-10	OPEN - No issues.

06 PLANT ACCESS - CBT

2012-07-17	No issues.
2012-07-10	<p>OPEN</p> <p>[01] General discussion - no issues.</p> <p>[02] R. Porter clarified issue was with the lock and access by G. Musch.</p>

08 OSHA LOG - WORK HOURS

2012-07-17	OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 07-02.
	No incidents or accidents.
5,481.00	RT
1,174.00	OT
6,655.00	TOTAL
2012-07-10	OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 07-09.
	No incidents or accidents.
4,992.00	RT
1,046.50	OT
6,038.50	TOTAL

06 MANPOWER [HEAD COUNT]**01 CREW SIZE**

2012-07-17	AMS, BT Drainage [BTD], Belt Construction [BCI], Freitag [FWI], and AAA Electric.
	[02] Geotechnology [work hours not included in OSHA Log above]
	[02] Pipe
	[00] Mechanical
	[02] Electrical
	[00] Cement
	[09] Laborers [AMS 2x, BTD 2x, STC 5x]
	[04] Operators [AMS 0x, BCI 1x, BTD 3x]
	[17] Teamsters [FLT 16x borrow haul trucking, AMS 1x]
	[00] Survey
	[03] Foreman [Full time] [AMS 2x, BTD 1x]
	[39] TOTAL
2012-07-10	AMS, BT Drainage [BTD], Belt Construction [BCI], Freitag [FWI] on site. Introduction M. Dishman Charah/AMS FOCUS Site Manager.
	[02] Geotechnology [work hours not included in OSHA Log above]
	[02] Pipe
	[00] Mechanical
	[00] Electrical
	[00] Cement
	[04] Laborers [AMS 2x, BTD 2x]
	[03] Operators [BCI 1x, BTD 2x]
	[16] Teamsters [FLT 15x borrow haul trucking, AMS 1x]
	[00] Survey
	[03] Foreman [AMS 2x - Full time] [BTD 1x]
	[30] TOTAL

02 WORK HOURS AND OVERTIME

2012-07-17 OPEN - Standard hours - 7:00 AM CT to 5:30 PM CT. Some subcontractors starting at 06:00 AM CT - STC, FWI, and BTd.
2012-07-10 OPEN - Standard hours - 7:00 AM CT to 5:30 PM CT.

04 TRAILER - GENERAL CONDITIONS - COORDINATION - VEHICLES

2012-07-17 OPEN - no issues.
2012-07-10 OPEN - no issues.

07 PREVIOUS**01 SUBCONTRACTS**

2012-07-17 OPEN - no issues. J. Griffith [Fawn Lane Trucking] update
2012-07-10 OPEN - no issues. J. Griffith [Fawn Lane Trucking] partner stroke this week.

02 SUBMITTALS

2012-07-17 [01] J. Cravens indicated will update 06-23 submittal log.
[02] M. Wagstaff discussion about accelerated work and time for submittal requirements. Look ahead in Last Planner.
[03] Field tile submittal P. Zinsious may have to resubmit.
[04] M. Burch hand unit issue, P. Zinsious to review after PM. Baro driver submittal. In progress.
[05] P. Zinsious indicated A. Saindon review of CA-6 submittal AASHTO qualification issue.
[06] AAA submit lift plan [form subcontractor] for crane for pole installation.
[07] AER review of FWI confined space plan in progress.
[08] Water removal from DS will by AMS. BTd to provide four plugs. No submittal.
[09] M. Wagstaff indicated AAA can submit the aluminum wire and the rest of the EWO as no major changes to design.
The 3 Phase size for wire is OK.
[10] J. King inquired about electrical hand-hold boxes if now required. M. Wagstaff review.
[11] J. King indicated AAA to use link seal to seal conduit penetrations.
[12] J. King review of location junction boxes - field locate. Orientation of DS [steps] varies per S. Boyer.
[13] J. King indicated AAA provide detectable warning tape. BTd will not required as pipe is deep.
[14] S. Burch inquired about DS pump control float elevation and weights.
[15] S. Burch indicated only two remote vents located on the drawings. FWI will install remote vents on all at no charge.
[16] S. Burch inquired about elevation of stand pipe for 2 IN discharge.
[17] S. Burch inquired about elevation of stand pipe for 2 IN discharge.
[18] Discussion of conduit and pipe above the GCL area.
[19] R. Porter request 200Z geotextile and RR-3 submittals [by AMS].

02 SUBMITTALS

2012-07-10 Submittal log as published by GEO on 06-23 distributed.
[01] Submittal log review, and general conversation of codes.
[02] S. Boyer need field tile and submittal to continue. M. Wagstaff indicated that if pipe same as drawings [12 in AASHTO], proceed. P. Zinsious to investigate status of submittal. Sand is same as before FA-1.
[03] M. Burch hand unit issue, P. Zinsious to review after PM. Baro driver submittal.
[04] AAA to submit same requirements [AER/AMS] for pole subcontractor [Plant Brothers] to AMS.
[05] AAA submit lift plan [form subcontractor] for crane for pole installation.
[06] AER review of FWI confined space plan in progress.
[07] FWI and BTd to review water removal form DS after PM.

08 MATERIAL**01 GENERAL**

2012-07-17 CLOSE - City of Robinson will not give the tax COE an extension.
2012-07-10 General discussion City of Robinson not give the tax COE an extension as plant closing is not providing jobs. P. Zinsious indicated no impact to cost at this time, and will keep AER posted.

09 ADJACENT PROPERTIES AND PCP LINE**01 GENERAL**

2012-07-17 OPEN - Discussion during Progress Meeting:
[01] S. Boyer confirmed bedrock should not be an issue for field tile installation.
[02] Pipe installation is going well, with no current issues. Discussed sequence [see schedule section].
2012-07-10 OPEN - Discussion during Progress Meeting:
[01] S. Boyer indicated that bedrock should not be an issue for field tile installation. Requires submittals [see submittals].
J. cravens indicate elevation delta only about 0.55 FT to date.
[02] Pipe installation is going well, with no current issues. Discussed sequence [see schedule section].

10 QUALITY CONTROL

2012-07-17	[01] M. Wagstaff concerned about heat and concrete pours. Subcontractor responsible concrete not to crack. [02] R. Porter indicated subcontractor will get burlap to cover the concrete to keep sun heating even more.
2012-07-10	No issue. A. Saindon indicated that clay samples will be taken on site today for chemical and physical analysis.

11 SCHEDULE REVIEW

2012-07-17	OPEN. Review of last planner by B. Muesenfechter. [02] P. Zinsious reiterated for time being [while subcontractors on look-ahead] to attend the progress meeting. [02] Schedule has improved substantial completion date to 09-24 due to clay placement progress. Quadrants A and C clay placement are now complete. [03] Critical path is the clay placement, but another long path is the work now for AAA, FWI and BTM on the PCP. [04] Last week PCP sequencing was modified. [05] Decision made by the team to keep future weather days the same. [06] LEC will be on site today [07-17] to survey the PCP [for AER], and stake the paved concrete ditch [for AMS]. [07] S. Boyer reports GCL not received. [08] Discussion on close out and commission. M. Wagstaff indicated per Specification 16951. [09] S. Burch indicated FWI will provide book at close out with a test results. [10] P. Zinsious will produce [write] brief commission/close out process. [11] S. Burch indicated hydrostatic test will be in sections, at 100 PSI. FWI also has records of all HDPE welds. [12] M. Wagstaff will produce [write] the system OM.
2012-07-10	OPEN. Review of last planner by B. Muesenfechter. [01] General discussion introduction Last Planner: sequence, remaining duration units [RDU], and constraints. Last Planner provides a look ahead, engages field supervision, fosters team involvement, commitments and accountability. [02] Substantial completion is 09-28. Clay placement progressing early. [03] Progress has improved two weeks in a row. [04] General review and discussion of DS PCP progress.

12.0 COST AND BUDGET**02 AMS PAY APPLICATION - CHANGE REQUEST**

2012-07-17	No issues.
2012-07-10	OPEN - M. Wagstaff indicated pay-app no issue.

12.1 EXTRA WORK ORDERS**11 EWO-11 BUILDING SPOILS REMOVAL**

2012-07-17	[01] AMS moving spoils from excavations of west side road [at paved ditch] of pond to Ash Pond A with wheel loader. [02] AMS moving spoils materials [from previous excavation] as "fill-in" continues in progress.
2012-07-10	OPEN - AMS moving spoils materials as "fill-in" continues in progress.

13 EWO-13 Electrical feeder/overhead

2012-07-17	[01] Final plans possibly 07-17. [02] M. Wagstaff indicated no significant changes to plans, minor variations.
2012-07-10	OPEN - Final plans by EOW. M. Wagstaff has approved the EWO.

14 EWO-14 FIELD TILE LOCATION

2012-07-17	Current non-issue. Reference Item No. 09.01-2012-07-17 above
2012-07-10	Non-issue. Reference Item No. 09.01 2012-07 above.

13 ACTION ITEMS - AER [25]**01 AMEREN [AER]**

2012-07-17	[01] Fencing VES and/or alignment options to be reviewed at later date. Currently AER will submit for security review. [02] Electrical submittals under review. [03] Concrete submittals under review. [04] S. Boyer requested review of 4 FT cut at paved ditch outfall. M. Wagstaff to review after PM.
2012-07-10	[01] Fencing VES and/or alignment options. [02] Electrical submittals under review.

14	ACTION ITEMS - AMS [21]
01	ASH MANAGEMENT
2012-07-17	[01] Field tile submittal.
	[02] Baro driver submittal.
2012-07-10	[01] Concrete submittals in progress. P. Zinsious to meet with T. Hunt after PM.

15	PRODUCTION
03	CLAY
2012-07-17	OPEN - FLT has currently 16x trucks. Placement as of 07-16 is 55,605 CY. R. Porter presented sketch M/U.
2012-07-10	OPEN - Trucks are hauling 11 CY. Currently 15x trucks. Placement as of 07-09 is 42,489 CY. R. Porter presented sketch M/U. LEC performed topographic outline survey to check clay placement estimation. AMS calculated [at time of the survey] 3,608 LD at 11 CY/LD = 39,688 CY. LEC survey area measured by 3 FT THK average calculated to 38,143 CY. This is a delta of only 1,545 CY, and the LD haul rate is agreed will continue to be 11 CY per truck.

16	DOCUMENTS TRANSMITTED
2012-07-17	[01] AER - Last Planner schedule dated 07-10
	[02] AMS - Critical Path schedule dated 07-12.
2012-07-10	[01] AMS - Last Planner schedule dated 07-06.
	[02] AMS- Remaining Work schedule dated 07-06.
	[03] GEO - Submittal Log published 06-23.

17	DOCUMENTS REVIEW ONLY
2012-07-17	[01] SK-HUT-APD-004-R0 "Project Site - Pond - Quadrant Layout" with M/U to show progress to date of clay placement
2012-07-10	[01] SK-HUT-APD-004-R0 "Project Site - Pond - Quadrant Layout" with M/U to show progress to date of clay placement

18	NEXT PROGRESS MEETING
	Next meeting will be held in one week - Tuesday, July 24, 2012 at Hutsonville

19	DISTRIBUTION - STANDARD
	AER
01	Mr. Mike Wagstaff
02	Mr. Mike Stewart
03	Mr. Bob Muesenfechter
	GEO
01	Ms. Anna Saindon
02	Mr. Eric Neuner
03	Mr. Joe Cravens
	AMS
01	Mr. Jimmy Boone
02	Mr. John Denham
03	Mr. Joko Tasich
04	Mr. Randy Porter
	SUBCONTRACTORS
01	S. Tincer
02	M. Burch
03	T. Boyer
04	T. Hunt
	AAA
	FWI
	BTD
	STC

If there are any corrections, modifications, additions, or deletions please notify the sender by e-mail at pzinsious@ashmanagementservices.com

PHOTOGRAPH LOG



Photograph 1 ▲ - Grading paved gutter facing north



Photograph 2 ▲ - Setting west pump control panel facing northeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between July 16 and July 20, 2012

JRC



Photograph 3 ▲ - Forming paved gutter facing north



Photograph 4 ▲ - PCP-6 compaction facing northwest

All photographs taken by Joseph Cravens of Geotechnology, Inc. between July 16 and July 20, 2012

JRC



Photograph 5 ▲ - Clay placement facing west



Photograph 6 ▲ - Forming paved gutter facing north

All photographs taken by Joseph Cravens of Geotechnology, Inc. between July 16 and July 20, 2012

JRC



Photograph 7 ▲ - Pouring paved gutter facing southwest



Photograph 8 ▲ - Concrete cylinder samples facing north

All photographs taken by Joseph Cravens of Geotechnology, Inc. between July 16 and July 20, 2012



Photograph 9 ▲ - Pouring paved gutter facing northwest



Photograph 10 ▲ - Pouring paved gutter facing southwest

All photographs taken by Joseph Cravens of Geotechnology, Inc. between July 16 and July 20, 2012

JRC



Photograph 11 ▲ - Curing paved gutter facing southeast



Photograph 12 ▲ - Curing paved gutter facing southwest

All photographs taken by Joseph Cravens of Geotechnology, Inc. between July 16 and July 20, 2012

JRC



Photograph 13 ▲ - DS-4 backfill facing west



Photograph 14 ▲ - Saw cutting paved gutter facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between July 16 and July 20, 2012

JRC



Photograph 15 ▲ - Overview Ash Pond D facing south



Photograph 16 ▲ - Overview Ash Pond D facing south



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Energy Resources

FROM: Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DATE: July 31, 2012

SUBJECT: Weekly Summary Report for July 23, 2012 to July 27, 2012

PROJECT: Hutsonville Ash Pond D Closure
Crawford County, Hutsonville, Illinois
Geotechnology Project No. J019896.01

The following is a weekly summary of the site activities at the referenced site.

Weather

The weather was generally sunny and dry. Temperature (°F) lows ranged from 72 to 81°F, and temperature highs ranged from 93 to 104°F. Weather delays did not occur this week.

Construction Activities

Groundwater collection system installation, field tile installation, deep well utility locate, collector trench excavation, GCL subgrade preparation, butt fusion welding, sump discharge pipe installation, sump pump assembly and installation, paved gutter construction, and clay placement occurred this week. B&T Drainage continued construction of the groundwater collection system. This included work at dewatering sump DS-1 and DS-2 and perforated collector pipe PCP-3 and PCP-4. This completed the installation of the PCP. Field tile installation continued south of Ash Pond A, deep well utilities were potholed northeast of Ash Pond D, collector trench excavation continued south of Ash Pond B, and the subgrade for the GCL was prepared along PCP-4, PCP-5, PCP-6, and PCP-7. Freitag-Weinhardt, Inc. continued butt fusion welding sump discharge pipes, installed sump discharge pipes in the collector trench, and assembled and installed the sump pumps in DS-1 and DS-2. ST Construction, Inc. completed the concrete work for the paved gutter west of Ash Pond D. Concrete testing (including slump, air entrainment, and cylinders) was performed by Patriot Engineering, Inc. Lamac Engineering Co. surveyed grades for the groundwater collection system, field tile, and surveyed the locations of the deep well utilities. Fawn Lane Transit, Inc. and Belt Construction, Inc. continued clay placement in Quadrant B. Approximately 16 to 18 trucks were used to haul clay material to Ash Pond D. The

vegetative cover is being placed in a single three foot lift, and a representative from TSI Engineering, Inc. observed quality control for the clay placement procedure. Refer to the daily reports for detailed information.

Equipment and Personnel On-Site

CAT D6N Bulldozer
CAT D5G Bulldozer
CAT 279C Skid Steer
CAT CS-323C Smooth Drum Roller
Bomag BW 172 PDB-2 Roller
John Deere 624H Front End Loader
John Deere 450 LC Excavator
John Deere 410J Backhoe
John Deere 225C LC Excavator
Case 580 Backhoe
Kubota L245DT Tractor
Water Truck (Dust Control)

Geotechnology, Inc. – Joe Cravens
TSI Engineering, Inc. – Andrew DeClue
Ameren Energy Resources – Richard Spurgeon
Ash Management Services, LLC (AMS) – Randy Porter, Matt Dishman, Robert Dunkley, Greg Siverly, Jeremy Shorter, Blake Bunting, and Eric Sefton
Charah, Inc. – Joe Tasich
Belt Construction, Inc. (BCI) – Jared Belt
Lamac Engineering Co. (LEC) – Jake Lewis
B&T Drainage (BTD) – John Boyer, Scott Boyer, Brian Schaefer, Brent Neibauer, Michael Switzer, Eric Blankenship, and Abel English
Fawn Lane Transit, Inc. (FLT) – Kim Edington, Lee Edington, Scott Comer, James Elledge, Jim Urfer, Gary Lamb, Greg Lingorfelter, Tom Sager, Eric Bierman, Robert Shehorn, Billie Meadows, John Niles, Brian Griffith, Bob Smithenry, Alan Ruholl, Lee Ruholl, Patrick Wente, Frank Draper, Jason Byers, and Aaron Gullett
Freitag-Weinhardt, Inc. (FWI) – Scott Burch and Jarrod Barrett
AAA Electric, Inc. (AAA) – None
ST Construction, Inc. (STC) – John Maetin, Jackie Hoover, Gary Hedges, Scott Hilton, and Robert Pressley
Patriot Engineering, Inc. (PEI) – Brandon McDonald
Visitors – Refer to the Visitor's Log for visitors, dates, and times.
Refer to the meeting minutes for additional personnel.

Meetings

The weekly progress meeting was held on Tuesday, July 24, 2012. Refer to the attached meeting minutes for additional information.

Photographs

A photograph log with select photographs obtained this week is attached.

Materials

Clay for the vegetative layer, 13 rolls of GSE GundSeal 30 mil Geosynthetic Clay Liner (GCL), Quik-Gel high yield powdered bentonite, IDOT Class SI concrete, and additional 3-inch HDPE sump discharge pipe.

Testing/Sampling

Patriot Engineering, Inc. performed concrete testing, including slump and air entrainment testing. Four concrete cylinders were cast and retrieved for testing. Refer to the concrete testing records for additional information.

Calibration Records

Calibration information was not obtained this week.

Signature of CQA Officer

Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.



DAILY REPORTS

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: - Client: Ameren ER Date: 7/23/12

TIME: Arrive: 6:00 AM Depart: 5:45 PM Travel: 1.0 hr Total: 12.5 hrs ^(0.25 hr for lunch)
 Weather: Sunny, 77° AM, 103° PM Contractor: AMS Subcontr./Supplier: BTD/STC/PEI/FWI/FLT BCI/TSI
 Equipment Working: D6N Dozer, 450LC Excavator, 225C LC Excavator, 624H Front End Loader, BW 172
 Site Activities / Observations / Contacts / Notes: Roller, 410J Backhoe, D5G Dozer, Water Truck

AMS:

Began dewatering D5-1 manhole with Thompson Pump for sump pump installation. The cured paved gutter was washed with the Water Truck to prepare for the NP-1 joint sealant application tomorrow. Matt Dishman is currently in Kentucky. Brad Bolenbaugh will be back next week.

BTD:

The excavation, installation, backfill, and compaction of PCP-4 continued. PCP-4 runs at +1.75% grade west towards CO-2. When PCP-4 construction passed the GCL Cap limit (+ Elev. 450) on the SE corner of Ash Pond B, the excavation and installation of the 12" ADS Field Tile was included with the PCP-4 construction. Utilities for the deep wells were potholed with a water vacuum excavation truck on the NE corner of APD where the Paved Ditch outfalls into the river. Abel English performed the potholing. Two power lines and one 8" water line was found, all at a depth of 48". Based on the current Cut of the Paved Ditch in this area, the utilities will become a issue. The CAT 330D Excavator was demobilized, and a Deere 225C LC mobilized.

STC:

The paved gutter on the south end of the box culvert on the west side of Section A was poured, finished, cured, saw cut, formed, and stripped. Batches - 1(8cy) 2(8cy) 3(8cy) totalling 24 cy.

PEI:

Brandon McDonald took 4 cylinders, one Slump - 4 3/4", one Air - 5%, and the temperature was 79°.

FWI:

Assembled sump pump mechanical: tees, pitless adaptors, couplings, paddlewheels w/saddle, 2" butt fusion welded for manhole exit, 3"-2" HDPE reducers, and stainless steel discharge.

Delivery - 1600' of 3" HDPE sump discharge pipe.

Additional Comments: AER - Richard Spurgeon (safety super)
inspected/evaluated Confined Space Entry for manholes.

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Randy Rector
 Contractor Representative
Randy Rector
 Signature
Anna Samson
 Geotechnology, Inc.
Anna Samson
 Engineer's Signature

AMS
 Company
7-23-12
 Date
7-30-12
 Date

AAA had no production today.

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 7/24/12

TIME: Arrive: 6:00 AM Depart: 5:30 PM Travel: 1.0 hr Total: 12.5 hrs (no lunch)
Weather: Partly Cloudy, 72° AM, 104° PM Contractor: AMS Subcontr./Supplier: BTD/STC/PEI/FWI/LEC FLT BCI TSI
Equipment Working: D6N Dozer, 450 LC Excavator, 225C LC Excavator, 624H Front End Loader, BW 172
Site Activities / Observations / Contacts / Notes: Roller, 410J Backhoe, D5G Dozer, Water Truck

AMS:

Finished pumping DS-1 and began pumping DS-2. All other work performed at the CBS.

BTD:

Completed PCP-4 excavation, installation, backfill, and compaction running at +1.75% west towards CO-2. CO-2 was installed and backfilled. The excavation, installation, backfill, and compaction of PCP-3 continued. PCP-3 runs at a -1.0% west from CO-2 towards the kink. 12" ADS Field Tile installation continues. Paved Gutter spoils were graded along the roadway and the 8" lines running into DS-1 were plugged for sump pump installation. Length = 160'.

STC:

Completed pouring, finishing, curing, saw cutting, and stripping the paved gutter south of the box culvert, west side Section A. Contraction joints are 10' and expansion joints are 30'. All joints were sealed with NP-1 joint sealant, completing the paved gutter. One batch - 8 cy.

PEI:

Brandon McDonald took 4 cylinders, one Slump - 3½", one Air - 5%, and the temperature was 83°.

FWI:

Setup tripod confined space entry manhole retrieval system w/harness and remote, four gas air monitor. Field Change: The paddlewheel in DS-1 will be 2' below the pitless adaptor. DS-1 Installation: Sump pump, 2" 55 discharge pipe, 2" check valve, off+on+alarm floats, paddlewheel, and pitless adaptor. The 502 divers have not been installed yet.

LEC:

Jake Lewis surveyed the manhole floors, CO-4, PCP-4, Field Tile, and deep well utilities.

FLT/BCI/TSI: Clay Placement - Eastbound Section B.

Additional Comments: Bob Shethorn is no longer cycling.

Area = P-37 to 39, 70 to 74. Loads = 255

Randy Bartel
Contractor Representative

[Signature]
Signature

Anna Swenden
Geotechnology, Inc.
Engineer's Signature

AMS
Company

7-24-12
Date
7-30-12
Date

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: - Client: Ameren ER Date: 7/25/12

TIME: Arrive: 6:00 AM Depart: 5:45 PM Travel: 1.0 hr Total: 12.5 hrs (0.25 hr for lunch)
 Weather: Sunny, 81° PM, 104° PM Contractor: AMS Subcontr./Supplier: BTD/FWI/FLT/BCI/TSI
 Equipment Working: D6N Dozer, 450LC Excavator, 225C LC Excavator, 624H Front End Loader, BW
 Site Activities / Observations / Contacts / Notes: 172 Roller, 410.1 Backhoe, 279C Skid Steer, Water Truck
AMS:

Completed dewatering DS-2 manhole. All other work performed at the CBS.

BTD:

Completed PCP-3 excavation, installation, backfill, and compaction running at -1.0% west from
CO-2 towards the kink southwest of Ash Pond B. This completes the excavation, installation,
initial backfill, and compaction of the groundwater collection system. The installation of the 12"
ADS field tile continues. The 8" collector lines running into DS-2 were plugged to allow the
installation of the sump pump. A CAT 279C Skid Steer and a CAT CS-323C Smooth Drum
Roller was mobilized. The GSE GundSeal Geosynthetic Clay Liner (Smooth HDPE 30 mil)
was delivered and the roll numbers are as follows:

140132157 140132161 140132165 and 140132169

140132158 140132162 140132166

140132159 140132163 140132167 13 Rolls Total *

140132160 140132164 140132168

The GCL was stored in the
car shed for weather protection.

FWI:

All manhole core holes for pipe/conduit will receive link seal. A bracket will be installed
towards the top of all the manholes for all the float and sensor wires/cables. DS-2 assembly
and installation: Sump pump, 2" SS discharge pipe, 2" check valve, off + on + alarm floats,
paddlewheel flow sensor, and pitless adaptor.

FLT/BCI/TSI: Clay Placement - Eastbound Section B.

Additional Comments: Area = P-39 to P-44 and P-74 to P-78.
Loads = 278

Randy Parker
 Contractor Representative

Anna Sajid
 Signature
 Geotechnology, Inc.

Engineer's Signature

AMS
 Company
7-25-12
 Date
7-30-12
 Date

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: JO19896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 7/26/12

TIME: Arrive: 6:00 AM Depart: 5:30 PM Travel: 1.0 hr Total: 12.25 hrs ^(0.25 hr for lunch)

Weather: Cloudy, 75° AM, 93° PM Contractor: AMS Subcontr./Supplier: BTD/FWI/FLT/BCI/TSI

Equipment Working: D6N Dozer, 450 LC Excavator, 225C LC Excavator, 624H Front End Loader, CS-

Site Activities / Observations / Contacts / Notes: 323C Roller, 410J Backhoe, D5G Dozer, Water Truck

AMS:

Added additional silt fence on the east side of the paved gutter and covered GCL with plastic.

All other work performed at the CBS. Matt Dishman will be overseeing Duck Creek next week.

BTD:

Continued 12" ADS Field Tile excavation, installation, and backfill heading west from PCP-3 towards the grade inlet manhole southwest of DS-1 along the south property fence line. The field tile is being installed at a 0.05% grade. The collector trench excavation continued from the kink southwest of Ash Pond B, south of APB, to the beginning location of the GCL placement southeast of APB. The GCL subgrade was graded and rolled along PCP-4, PCP-5, PCP-6, and PCP-7 at a depth of approx. 5'. The trench walls were cut back an additional foot for GCL placement. A depression was left around DS-3 and CO-4 for water accumulation in case of a rain event. Steps were installed in the DS-2 manhole base. The Bomag BW 172 Roller was demobilized. Powdered bentonite will be used for all GCL seams.

FWI:

Installed DS-1 and DS-2 sump discharge pipes in collection trench south of Ash Pond B.

Continued butt fusion welding 3" HDPE sump discharge pipe. Fused = 800', Laid = 1040'

AAA:

No Production; will return to the site next week.

FLT/BCI/TSI:

Clay Placement - Eastbound Section B. Began constructing a slope diversion berm in Section C.

Area = P-74 to P-78 and P-62 to P-63.

Loads = 276

Additional Comments: _____

Andy Pore
Contractor Representative

Anna Sandon
Signature
Geotechnology, Inc.

Andy Pore
Engineer's Signature

AMS
Company

7-26-12
Date
7-30-12
Date

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 7/27/12

TIME: Arrive: 6:00 AM Depart: 3:30 PM Travel: 1.0 hr Total: 10.25 hrs (0.25 hr for lunch)
Weather: Sunny, 75° AM, 98° PM Contractor: AMS Subcontr./Supplier: BTD/FWI/FLT/BCI/TSI
Equipment Working: D6N Dozer, 450LC Excavator, 225C LC Excavator, 624H Front End Loader, CS-
Site Activities / Observations / Contacts / Notes: 323C Roller, 410J Backhoe, D5G Dozer, Water Truck

AMS:

All work performed at the CBS.

BTD:

Continued the excavation, installation, backfill, and compaction of the 12" ADS Field Tile west from PCP-3, towards the grade inlet manhole southwest of DS-1, along the south property fence line. The field tile is being installed at a 0.05 % grade. The manhole tops and lids for DS-1 and DS-2 were reset onto the manholes for safety. GCL will begin next week.

FWI:

Continued staging and butt fusion welding 3" HDPE sump discharge pipes south of Ash Pond D. Threaded end caps and HDPE reducers (3"-2") were welded onto the DS-1 and DS-2 sump discharge pipe manhole entries for Hydrostatic Testing connections. Fittings were prepared for the Water Truck to perform Hydrostatic Testing. Fused = 640' + 10 joints for testing apparatus.

FLT/BCI/TSI:

Clay Placement - Eastbound Section B and slope diversion berms in Section A and Section C.
New Trucks - Aaron Gullett and Lee Ruhoff (18 trucks total).
Area = P-63, P-64, and P-78 to P-81.
Loads = 196

Additional Comments: _____

Randy Porter
Contractor Representative

Signature

Geotechnology Inc.

Engineer's Signature

AMS
Company

Date

Date

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FIELD OBSERVATION REPORT

Representative: Andrew DeClue Project No.: J019896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 7 Zone: — Client: Geotechnology Date: 7-23-12

TIME: Arrive: 6:30 Depart: 5:15 Travel: 1.0 Total: 11.75 (1/2 hr lunch)
 Weather: 70-100s Contractor: AMS Subcontr./Supplier: —

Equipment Working: —

Site Activities / Observations / Contacts / Notes: Belt Construction continuing to place 3 Foot
of coverage Fill over Geo/Membrane. using D6 to spread Fill being hauled in from offsite
borrow area. Fill is being placed in such a way to prevent Geomembrane from becoming
wrinkled and/or being ripped or fractured. Fill placed on panels: P-36, 37, 68 thru
72.

Additional Comments: —

Randy Lee AMS
 Contractor Representative Company
[Signature] 7-23-12
 Signature Date
[Signature] 7/23/12
 Geotechnology, Inc. Date
[Signature]
 Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Andrew DeClue Project No.: 5019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hudsonville Ash Pond D Closure
Vehicle: 7 Zone: - Client: Geotechnology Date: 7-24-12

TIME: Arrive: 6:45 Depart: 5:15 Travel: 1.0 Total: 11.5 (1/2 hr lunch)

Weather: 80-100s Contractor: AMS Subcontr./Supplier: -

Equipment Working: -

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place 3 foot coverage fill over Geo-Membrane. Using D6 to spread fill being hauled in from off-site borrow area. Fill is being placed in such a way to prevent Geo-Membrane from becoming wrinkled and/or being ripped or punctured. Fill is being placed on Panels: P-37 thru 39, 70 thru 74.

Additional Comments: _____

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Andrew DeClue
Contractor Representative
Signature
Geotechnology, Inc.
Engineer's Signature

AMS
Company
7-24-12
Date
7/24/12
Date

FIELD OBSERVATION REPORT

Representative: Andrew DeCine Project No.: 5019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D closure
Vehicle: 7 Zone: - Client: Geotechnology Date: 7/25/12

TIME: Arrive: 6:45 Depart: 5:15 Travel: 1.0 Total: 11.5 (1/2 hr. lunch)
Weather: 70-106 Contractor: AMS Subcontr./Supplier: -
Equipment Working: -

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place 3 foot
Coverage Fill over Geo-Membrane. Using D6 to place Fill being hauled in from offsite
borrow area. Fill is being placed in such a way to prevent Geo-Membrane from becoming
wrinkled and/or being torn or punctured. Fill placed on Panels: P-39 thru 44, 74 thru 78.

Additional Comments: _____

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Andrew DeCine
Contractor Representative
Signature
Geotechnology, Inc.
Engineer's Signature

AMS
Company
7-25-12
Date
7/25/12
Date

No. A **14368**

FIELD OBSERVATION REPORT

Representative: Andrew Decho Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 7 Zone: - Client: Geotechnology Date: 7-26-12

TIME: Arrive: 6:45 Depart: 5:15 Travel: 1.0 Total: 11.5 (1/2 hr lunch)
Weather: 80-90 Contractor: AMS Subcontr./Supplier: -
Equipment Working: -

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place 3 foot
coverage fill over Geo-Membrane, using D6 to spread fill being hauled in from offsite borrow
area. Fill is being placed in such a way to prevent Geo-Membrane from becoming wrinkled and/or
being ripped or punctured. Fill being placed on Panels: P-74 thru 78, 62 thru 63,

Additional Comments: _____

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Andrew Decho
Contractor Representative

Signature

Geotechnology, Inc.

Engineer's Signature

AMS
Company

Date

Date

FIELD OBSERVATION REPORT

Representative: Andrew DeCine Project No.: JO19896.01 Task: 2370
Equipment & ID No.: ✓ Project Name: Hutsonville Ash Pond D Closure
Vehicle: 7 Zone: - Client: Geotechnology Date: 7-27-12

TIME: Arrive: 6:30 Depart: 2:30 Travel: 1.0 Total: 9.0
Weather: 70-90's Contractor: AMS Subcontr./Supplier: -
Equipment Working: -

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place 3 Foot coverage Fill over Geo-Membrane. Using D6 to spread Fill being hauled in from off-site borrow area. Fill is being placed in such a way to prevent Geo-Membrane from becoming wrinkled and/or being ripped or punctured. Fill being placed on Panels: P-63 thru 64, 78 thru 81.

Additional Comments: _____

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Andrew DeCine
Contractor Representative
Andrew DeCine
Signature
Geotechnology, Inc.
Andrew DeCine
Engineer's Signature

AMS
Company
7-27-12
Date
7/27/12
Date

MEETING MINUTES



Hutsonville Power Station - Ash Pond D Closure
Progress Meeting No. 19 Minutes
Tuesday, July 24, 2012

01 PUBLICATION

Publish date:	2012-07-25	Submitted by:	PHZ
Distribution:	E-mail only	Notes taken by:	PHZ
Location:	Hutsonville Power Station	AMS-Charah File No.	HUT-APD-MTG-MIN-2012-07-24-PM-19
AER PO:	567523 R4	AMS-Charah Contract:	00030-01 AMS-Charah GL: 4116-06-6120

02 ATTENDEES [ALPHA BY COMPANY]

NO.	SAL	FIRST	LAST	COMPANY	PHONE	E-MAIL	Column1
01	Mr.	Joe	King	AAA Electric	812-208-0464	sandy.tincher@aaaelectricofth.com	
02	Mr.	Mike	Wagstaff	Ameren	618-406-3478	mwagstaff@ameren.com	
03	Mr.	Bob	Muesenfechter	Ameren	314-681-2287	bmuesenfechter@ameren.com	
04	Mr.	Jimmy	Boone	AMS - ARM	502-574-5465	jboone@ashmanagementservices.com	
05	Mr.	Randy	Porter	AMS - SM	502-554-5230	rporter@ashmanagementservices.com	
06	Mr.	Joe	Cravens	Geotechnology	314-568-6628	j_cravens@geotechnology.com	

03 ABBREVIATIONS

AER	Ameren Energy Resources	OSHA	Occupational Safety Health Administration
AMS	Ash Management Services	PCP	Perforated Collector Pipe
BNSF	Burlington	PO	Purchase Order
CBT	Computer Based Training	RHOM	Routine Handling, Operation, and Maintenance
EAP	Emergency Action Plan	SPOC	Single Point of Contact
EOD	End of [the] Day	T/M	Time and Materials
EOM	End of [the] month	TBD	To Be Determined
EOW	End of [the] week	TD	Transmission Dispatch
EDTS	Energy Delivery Transmission Services	WPA	Worker Protection Assurance
EDC	Estimated Date [of] Completion		
EWO	Extra Work Order		
HDPE	High Density Polyethylene		
HRS	Hours		
LOTO	Lock Out Tag Out		
NMA	National Maintenance Agreement		

04 DOCUMENTATION

Minutes are documented weekly, and the publication have a "rolling record" of the immediate past two weeks. Each week the oldest drops off and the current week is added to the minutes. Items are categorized as either "NEW", "OPEN", "CLOSE", or in case the an item has to be re-published after closed the previous week - "REOPEN". Minutes format changed for Progress Meeting No. 13 deleting and combining certain items for brevity and to abbreviate documentation. Currently the item numbers remained the same for tracking purposes.

05 SAFETY - HOUSEKEEPING

02 WORKER PROTECTION ASSURANCE

2012-07-24	OPEN - no issues.
2012-07-17	OPEN - no issues. J. King indicated will be a while before access to MCC is required. None projected for 2x week look ahead.

03 EMPLOYEE DRUG TESTING

2012-07-24	OPEN - no issues
2012-07-17	OPEN - FWI had 1x at Newton on 07-16. STC had 5x on 07-16.

04 AMS SAFETY

2012-07-24	[01] J. Tasich on site 07-25.
	[02] R. Porter has signs for confined space.
	[03] Site inspection by R. Spurgeon 07-23. E-mail form M. Wagstaff from R. Spurgeon with site visit report.
	[04] No issues with traffic as the site is very busy with trucks and the other Ameren contractors on site.

2012-07-17 [01] J. Tasich on site 07-13. Schedule this week TBD.
 [02] R. Porter indicated will pick up signs today for confined space, but further discussion, M. Wagstaff indicated R. Spurgeon [Newton Senior Safety Supervisor] can bring with him when on-site tomorrow [tentatively 10:00 AM CT] for FWI confined space entry review. M. Wagstaff to coordinate the meeting with Mr. Spurgeon.
 [03] Relative the confined space entry for the DS, the lids will be removed on 07-17.
 [04] B. Muesenfechter inquired about emergency response. S. Burch described details for response [i.e. call 911, he is an EMT, access tripods, 02 monitor 100% of the time, etc...].
 [05] B. Muesenfechter inquired about barricade the PCP excavation. R. Porter reported this is done every day at the end of the day. The barricade consists of either tape and or/berms.
 [06] General comment on watching out for traffic as the site is very busy with trucks and the other Ameren contractors on site.

05 HOUSEKEEPING

2012-07-24 OPEN - No issues.

2012-07-17 OPEN - No issues. M. Wagstaff indicated site is dusty. Traffic level is high [see above] due to truck and Ameren [line] subcontractor.

06 PLANT ACCESS - CBT

2012-07-24 No issues.

2012-07-17 No issues.

08 OSHA LOG - WORK HOURS

2012-07-24 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 07-23.

No incidents or accidents.

6,093.00 RT

1,258.50 OT

7,351.50 TOTAL

2012-07-17 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 07-02. 07-16.

No incidents or accidents.

5,481.00 RT

1,174.00 OT

6,655.00 TOTAL

06 MANPOWER [HEAD COUNT]

01 CREW SIZE

2012-07-24 AMS, BT Drainage [BTD], Belt Construction [BCI], Freitag [FWI], ST Construction [STC], and AAA Electric.

[02] Geotechnology [work hours not included in OSHA Log above]

[02] Pipe

[00] Mechanical

[01] Electrical

[00] Cement

[09] Laborers [AMS 2x, BTD 2x, STC 5x]

[03] Operators [AMS 0x, BCI 1x, BTD 2x]

[16] Teamsters [FLT 15x borrow haul trucking, AMS 1x]

[00] Survey

[03] Foreman [Full time] [AMS 2x, BTD 1x]

[36] TOTAL

2012-07-17 AMS, BT Drainage [BTD], Belt Construction [BCI], Freitag [FWI], and AAA Electric. **Correction for 07-24 added ST Construction [STC]**

[02] Geotechnology [work hours not included in OSHA Log above]

[02] Pipe

[00] Mechanical

[02] Electrical

[00] Cement

[09] Laborers [AMS 2x, BTD 2x, STC 5x]

[04] Operators [AMS 0x, BCI 1x, BTD 3x]

[17] Teamsters [FLT 16x borrow haul trucking, AMS 1x]

[00] Survey

[03] Foreman [Full time] [AMS 2x, BTD 1x]

[39] TOTAL

02 WORK HOURS AND OVERTIME

2012-07-24 OPEN - Standard hours - 7:00 AM CT to 5:30 PM CT. Some subcontractors starting at 06:00 AM CT - STC, FWI, and BTD.

2012-07-17 OPEN - Standard hours - 7:00 AM CT to 5:30 PM CT. Some subcontractors starting at 06:00 AM CT - STC, FWI, and BTD.

04 TRAILER - GENERAL CONDITIONS - COORDINATION - VEHICLES

2012-07-24 OPEN - no issues.

2012-07-17 OPEN - no issues.

07	PREVIOUS
01	SUBCONTRACTS
2012-07-24	OPEN - no issues.
2012-07-17	OPEN - no issues. J. Griffith [Fawn Lane Trucking] update
02	SUBMITTALS
20120-07-24	Submittal log as published by GEO on 07-21 distributed. [01] Submittal log review, and general conversation. [02] Collector box submittal issue [requires 5 IN holes]. AMS checking on status.
20120-07-17	[01] J. Cravens indicated will update 06-23 submittal log. [02] M. Wagstaff discussion about accelerated work and time for submittal requirements. Look ahead in Last Planner. [03] Field tile submittal P. Zinsious may have to resubmit. [04] M. Burch hand unit issue, P. Zinsious to review after PM. Baro driver submittal. In progress. [05] P. Zinsious indicated A. Saindon review of CA-6 submittal AASHTO qualification issue. [06] AAA submit lift plan [form subcontractor] for crane for pole installation. [07] AER review of FWI confined space plan in progress. [08] Water removal from DS will by AMS. BTD to provide four plugs. No submittal. [09] M. Wagstaff indicated AAA can submit the aluminum wire and the rest of the EWO as no major changes to design. The 3 Phase size for wire is OK. [10] J. King inquired about electrical hand-hold boxes if now required. M. Wagstaff review. [11] J. King indicated AAA to use link seal to seal conduit penetrations. [12] J. King review of location junction boxes - field locate. Orientation of DS [steps] varies per S. Boyer. [13] J. King indicated AAA provide detectable warning tape. BTD will not required as pipe is deep. [14] S. Burch inquired about DS pump control float elevation and weights. [15] S. Burch indicated only two remote vents located on the drawings. FWI will install remote vents on all at no charge. [16] S. Burch inquired about elevation of stand pipe for 2 IN discharge. [17] S. Burch inquired about elevation of stand pipe for 2 IN discharge. [18] Discussion of conduit and pipe above the GCL area. [19] R. Porter request 200Z geotextile and RR-3 submittals [by AMS].
08	MATERIAL
01	GENERAL
2012-07-24	NEW - listing for materials that have potential to impact schedule. [01] Overhead electrical [EWO-13] wire material [02] Collector box submittal.
2012-07-17	CLOSE - City of Robinson will not give the tax COE an extension.
09	ADJACENT PROPERTIES AND PCP LINE
01	GENERAL
2012-07-24	OPEN - Discussion during Progress Meeting: [01] No issues - work progressing well.
2012-07-17	OPEN - Discussion during Progress Meeting: [01] S. Boyer confirmed bedrock should not be an issue for field tile installation. [02] Pipe installation is going well, with no current issues. Discussed sequence [see schedule section].
10	QUALITY CONTROL
2012-07-24	[01] Concrete test breaks 1x in 7D and 2x in 28D. [02] A. Saindon to be onsite in the next 2x WKS for more clay samples.
2012-07-17	[01] M. Wagstaff concerned about heat and concrete pours. Subcontractor responsible concrete not to crack. [02] R. Porter indicated subcontractor will get burlap to cover the concrete to keep sun heating even more.
11	SCHEDULE REVIEW
2012-07-24	OPEN. Review of last planner by B. Muesenfechter. [01] Clay cap driving the schedule progress improvement. [02] Substantial completion date 09-17. [03] Paved ditch work on hold in area where conflict of elevation for water line [ref. 13.1 2012-07-24 Item No. 04]. [04] BTD pot holed the electrical lines and waterline. Lamac took elevation shots. [05] M. Wagstaff, J. Cravens and R. Porter to met with S. Boyer on GCL installation after the progress meeting. [06] M. Wagstaff, J. Cravens and R. Porter to met with FWI on HDPE hydro testing after the progress meeting. [07] J. Cravens reported on PCP progress dates.

2012-07-17 OPEN. Review of last planner by B. Muesenfechter.
 [02] P. Zinsious reiterated for time being [while subcontractors on look-ahead] to attend the progress meeting.
 [02] Schedule has improved substantial completion date to 09-24 due to clay placement progress.
 Quadrants A and C clay placement are now complete.
 [03] Critical path is the clay placement, but another long path is the work now for AAA, FWI and BTB on the PCP.
 [04] Last week PCP sequencing was modified.
 [05] Decision made by the team to keep future weather days the same.
 [06] LEC will be on site today [07-17] to survey the PCP [for AER], and stake the paved concrete ditch [for AMS].
 [07] S. Boyer reports GCL not received.
 [08] Discussion on close out and commission. M. Wagstaff indicated per Specification 16951.
 [09] S. Burch indicated FWI will provide book at close out with a test results.
 [10] P. Zinsious will produce [write] brief commission/close out process.
 [11] S. Burch indicated hydrostatic test will be in sections, at 100 PSI. FWI also has records of all HDPE welds.
 [12] M. Wagstaff will produce [write] the system OM.

12.0 COST AND BUDGET

02 AMS PAY APPLICATION - CHANGE REQUEST

2012-07-24 No issues.

2012-07-17 No Issues.

12.1 EXTRA WORK ORDERS

11 EWO-11 BUILDING SPOILS REMOVAL

2012-07-24 OPEN - AMS continues in progress.

2012-07-17 [01] AMS moving spoils from excavations of west side road [at paved ditch] of pond to Ash Pond A with wheel loader.

[02] AMS moving spoils materials [from previous excavation] as "fill-in" continues in progress.

13 EWO-13 Electrical feeder/overhead

2012-07-24 OPEN - J. King question on overhead change from aluminum to copper. AMS to provide cost by EOW.

2012-07-17 [01] Final plans possibly 07-17.

[02] M. Wagstaff indicated no significant changes to plans, minor variations.

14 EWO-14 FIELD TILE LOCATION

2012-07-24 No issue.

2012-07-17 Current non-issue. Reference Item No. 09.01-2012-07-17 above

13 ACTION ITEMS - AER [25]

01 AMEREN [AER]

2012-07-24 [01] Fencing VES and/or alignment options M. Wagstaff to check status.

[02] Electrical submittals under review.

[03] Concrete submittals under review.

[04] Lamac shot elevations pipe same elev. as 4 FT cut at paved ditch outfall. M. Wagstaff to review with Hanson reverse flow line.

2012-07-17 [01] Fencing VES and/or alignment options to be reviewed at later date. Currently AER will submit for security review.

[02] Electrical submittals under review.

[03] Concrete submittals under review.

[04] S. Boyer requested review of 4 FT cut at paved ditch outfall. M. Wagstaff to review after PM.

14 ACTION ITEMS - AMS [21]

01 ASH MANAGEMENT

2012-07-24 [01] Field tile submittal. Done 07-19.

[02] Baro driver submittal. Done 07-19.

2012-07-17 [01] Field tile submittal.

[02] Baro driver submittal.

15 PRODUCTION

03 CLAY

2012-07-24 OPEN - no issues

[01] Placement as of 07-23 is 65,549 CY.

[02] R. Porter presented sketch M/U.

[03] Roads are in good shape.

2012-07-17 OPEN - FLT has currently 16x trucks. Placement as of 07-16 is 55,605 CY. R. Porter presented sketch M/U.

16 DOCUMENTS TRANSMITTED

2012-07-24	[01] AER - Last Planner schedule dated 07-18. [02] AMS- Critical path schedule dated 07-18. [03] AMS- Contact list dated 07-20. [04] GEO - Submittal Log published 07-21.
2012-07-17	[01] AER - Last Planner schedule dated 07-10 [02] AMS - Critical Path schedule dated 07-12.

17 DOCUMENTS REVIEW ONLY

2012-07-24	[01] SK-HUT-APD-004-R0 "Project Site - Pond - Quadrant Layout" with M/U to show progress to date of clay placement
2012-07-17	[01] SK-HUT-APD-004-R0 "Project Site - Pond - Quadrant Layout" with M/U to show progress to date of clay placement

18 NEXT PROGRESS MEETING

Next meeting will be held in one week - Tuesday, July 31, 2012 at Hutsonville

19 DISTRIBUTION - STANDARD

AER	SUBCONTRACTORS	
01 Mr. Mike Wagstaff	01 S. Tincher	AAA
02 Mr. Mike Stewart	02 M. Burch	FWI
03 Mr. Bob Muesenfechter	03 T. Boyer	BTD
	04 T. Hunt	STC
GEO		
01 Ms. Anna Saindon		
02 Mr. Eric Neuner		
03 Mr. Joe Cravens		
AMS		
01 Mr. Jimmy Boone		
02 Mr. John Denham		
03 Mr. Joko Tasich		
04 Mr. Randy Porter		

If there are any corrections, modifications, additions, or deletions please notify the sender by e-mail at pzinsious@ashmanagementservices.com

PHOTOGRAPH LOG



Photograph 1 ▲ - Pouring paved gutter facing northwest



Photograph 2 ▲ - PCP-4 installation facing southwest



Photograph 3 ▲ - Potholing for deep well utilities facing northeast



Photograph 4 ▲ - Dewatering DS-1 facing northeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between July 23 and July 27, 2012

JRC



Photograph 5 ▲ - Field tile installation facing northwest



Photograph 6 ▲ - Confined space entry facing northeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between July 23 and July 27, 2012



Photograph 7 ▲ - Paved gutter completion facing southwest



Photograph 8 ▲ - DS-1 sump pump assembly installation facing east



Photograph 9 ▲ - Clay placement facing southeast



Photograph 10 ▲ - DS-2 sump pump assembly installation facing northeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between July 23 and July 27, 2012

JRC



Photograph 11 ▲ - GCL storage facing east



Photograph 12 ▲ - Slope diversion berm construction facing south

All photographs taken by Joseph Cravens of Geotechnology, Inc. between July 23 and July 27, 2012

JRC



Photograph 13 ▲ - Overview Ash Pond D facing southeast



Photograph 14 ▲ - Overview Ash Pond D facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between July 23 and July 27, 2012

JRC



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Energy Resources

FROM: Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DATE: August 6, 2012

SUBJECT: Weekly Summary Report for July 30, 2012 to August 3, 2012

PROJECT: Hutsonville Ash Pond D Closure
Crawford County, Hutsonville, Illinois
Geotechnology Project No. J019896.01

The following is a weekly summary of the site activities at the referenced site.

Weather

The weather was generally sunny and dry. Temperature (°F) lows ranged from 72 to 78°F, and temperature highs ranged from 95 to 101°F. Weather delays did not occur this week.

Construction Activities

Field tile installation, collector trench excavation and backfill, GCL subgrade preparation and installation, power pole utility locate, butt fusion welding, sump discharge pipe and remote vent installation, hydrostatic testing, electrical conduit installation, junction box installation, anchor trench spoil transportation, slope diversion berm construction, and clay placement occurred this week. B&T Drainage continued field tile installation, collector trench excavation and backfill, geosynthetic clay liner (GCL) subgrade preparation and installation along PCP-4, PCP-5, PCP-6, and PCP-7. Potholing occurred at the proposed locations for the power poles for existing utilities. Freitag-Weinhardt, Inc. continued butt fusion welding sump discharge pipes and installed the sump discharge pipes and remote vents in the collector trench. Hydrostatic testing of DS-1 and DS-2 sump discharge pipes occurred. AAA Electric, Inc. installed electrical conduit in the collector trench, electrical junction boxes at DS-1 and DS-2, and the west pump control panel. IDOT FA-01 sand was placed around the electrical conduit prior to backfilling the collector trench. Detectable utility tape was placed 12 to 18-inches below the ground surface above the sump discharge pipes and electrical conduit. Lamac Engineering Co. surveyed the locations of the slope diversion berms and letdown channel in Quadrant A and B. Ash Management Services, Inc. continued transporting anchor trench ash spoils from Ash Pond D to

Ash Pond A. Fawn Lane Transit, Inc. and Belt Construction, Inc. completed clay placement in Quadrant B and began clay placement in Quadrant D. Slope diversion berm construction continued in Quadrant A and B. Approximately 13 to 18 trucks were used to haul clay material to Ash Pond D. The vegetative cover is being placed in a single three foot lift, and a representative from TSI Engineering, Inc. observed quality control for the clay placement procedure. Refer to the daily reports for detailed information.

Equipment and Personnel On-Site

CAT D6N Bulldozer
CAT D5G Bulldozer
CAT 279C Skid Steer
CAT CS-323C Smooth Drum Roller
John Deere 450 LC Excavator
John Deere 410J Backhoe
Case 580 Backhoe
Kubota L245DT Tractor
Water Truck (Dust Control)

Geotechnology, Inc. – Joe Cravens
TSI Engineering, Inc. – Andrew DeClue
Ash Management Services, LLC (AMS) – Randy Porter, Robert Dunkley, Greg Siverly, Jeremy Shorter, Brad Bolenbaugh, Blake Bunting, and Eric Sefton
Charah, Inc. – Joe Tasich
Belt Construction, Inc. (BCI) – Jared Belt
Lamac Engineering Co. (LEC) – Jake Lewis
B&T Drainage (BTD) – John Boyer, Scott Boyer, Brian Schaefer, Brent Neibauer, Michael Switzer, Eric Blankenship, and Abel English
Fawn Lane Transit, Inc. (FLT) – Kim Edington, Lee Edington, Scott Comer, James Elledge, Jim Urfer, Gary Lamb, Greg Lingorfelder, Tom Sager, Eric Bierman, Robert Shehorn, Billie Meadows, John Niles, Brian Griffith, Bob Smithenry, Alan Ruholl, Lee Ruholl, Patrick Wente, Frank Draper, Jason Byers, and Aaron Gullett
Freitag-Weinhardt, Inc. (FWI) – Scott Burch and Jarrod Barrett
AAA Electric, Inc. (AAA) – Joseph King and Kyle Davidson
Visitors – Refer to the Visitor's Log for visitors, dates, and times.
Refer to the meeting minutes for additional personnel.

Meetings

The weekly progress meeting was held on Tuesday, July 31, 2012. Refer to the attached meeting minutes for additional information.

Photographs

A photograph log with select photographs obtained this week is attached.

Materials

Clay for the vegetative layer, IDOT FA-01 sand, electrical NEMA junction boxes, 3-inch HDPE pipe, and 8-inch HDPE pipe were delivered.

Testing/Sampling


The 3-inch HDPE sump discharge pipes for DS-1 and DS-2 were hydrostatic tested in accordance with ASTM F2164. Leaks were not observed in the sump discharge pipes. Refer to Freitag-Weinhardt, Inc.'s test documentation for detailed information.

Calibration Records

Calibration information was not obtained this week.

Signature of CQA Officer

Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.



DAILY REPORTS

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 7/30/12

TIME: Arrive: 6:00 AM Depart: 5:45 PM Travel: 1.0 hr Total: 12.5 hrs (0.25 hr for lunch)
Weather: Sunny, 78° AM, 100° PM Contractor: AMS Subcontr./Supplier: BTD/AAA/FWI/FLT/BCI/TSI
Equipment Working: D6N Dozer, 580 Backhoe, 450 LC Excavator, 225C LC Excavator, 624H Front End Loader,
Site Activities / Observations / Contacts / Notes: CS-323C Roller, 410J Backhoe, D5G Dozer, 279C Skid Steer,
AMS: Water Truck

The plant access roads and entrance were cleaned/graded. Continued transporting anchor trench ash spoils from the northwest corner of Ash Pond D to the southeast corner of the geotubes in Ash Pond A. Brad Bolenbaugh is back on site and Matt Dishman is temporarily off site.

BTD:

Final compaction for the GCL subgrade was completed along PCP-4, PCP-5, PCP-6, and PCP-7. The depressions around DS-3 and CO-4 were graded and compacted. The GCL deployment, backfill, grading, and compaction along PCP-4, PCP-5, PCP-6, and PCP-7 has been completed. The GCL has a minimum of 12" overlap along the sides of the trench, and all seams were sealed with powdered bentonite, including the seams around DS-3 + DS-4 manholes and CO-3 + CO-4 cleanouts. 10 GCL rolls were placed and are as follows: 140132157, 140132158, 140132159, 140132163, 140132164, 140132165, 140132166, 140132167, 140132168. BTD recorded the locations of the deployed rolls on S-386, Sheet No. 8. The trench was left open after approx. 2' of backfill was compacted to act as the collector trench for the remote vents, sump discharge pipes, and electrical conduit. The 624H Front End Loader was demobilized.

AAA:

Installed additional 2½" electrical feeder conduit in the collector trench south of APB. Installed additional 2" high/low voltage conduit in collector trench towards DS-1 and DS-2. Installed junction boxes on DS-1 and the conduit drain. Began spacing conduit in collector trench 12" apart.

FWI: Continued butt fusion welding 3" HDPE (L=240') and installed fittings/seals for Hydro Testing.

FLT/BCI/TSI: Clay Placement - East bound Section B. Continued constructing slope diversion berms in Section A and backfilled against paved gutter

Additional Comments: in Section A. Section B should be finished tomorrow. Area=P-79 to P-86. Loads = 311

Randy Porter
Contractor Representative

Anna Sunda
Signature

Geotechnology, Inc.
Engineer's Signature

AMS
Company

7-30-12
Date

8-6-12
Date

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 7/31/12

TIME: Arrive: 6:00 AM Depart: 6:00 PM Travel: 1.0 hr Total: 13 hrs (no lunch)
Weather: Sunny, 72° AM, 101° PM Contractor: AMS Subcontr./Supplier: BTD/FWI/AAA/LEC/FLT/BCI/T5I
Equipment Working: D6N Dozer, 580 Backhoe, 450LC Excavator, GS-323C Roller, 410J Backhoe,
Site Activities / Observations / Contacts / Notes: D5G Dozer, 279C Skid Steer, Water Truck

AMS:

Continued transporting anchor trench ash spoils from the northwest corner of Ash Pond D to the southeast corner of the geotubes in Ash Pond A. All other work performed at the CBS.

BTD:

The 12" ADS field tile excavation, installation, backfill, and compaction has been completed up to \approx 20' of the grade inlet manhole south of Ash Pond A, southwest of DS-1. The field tile runs at a -0.05% west to east. The field tile and field tile outfall onto the paved ditch cannot be completed until the collector trench construction is completed south of Ash Pond D. Until the field tile is completed, it will not be tied into the manhole southwest of DS-1. The collector trench excavation has been completed, tying together all the manholes. This excludes the trench towards the power poles for the electric feeder and the trench towards the east pump control panel. The collector trench south of APD is essentially the backfilled/compacted GCL. The HDPE pipes and electrical conduit will be installed on the north side of the trench in this area to be offset from the E of the PCP. They began demobilizing materials. No major work items can continue until FWI and AAA are finished in the collector trench, the new paved ditch design is complete, etc. BTD will only be on site as needed. Breakdown - CAT 450LC Excavator (2 hrs). Delivery - IDOT FA-01 Sand. Demobilized - CAT 225C LC Excavator.

AAA:

Completed spacing the electrical conduit in the collector trench 12" apart south of Ash Pond A. Installed high/low voltage junction boxes on DS-2 and the conduit drain. Hooked up the high/low voltage conduit to the junction boxes on DS-1 and DS-2. Installed additional 2 1/2" electrical feeder conduit in the collector trench south APB+APD.

Additional Comments: Next Page

Randy Pactor
Contractor Representative
Signature

AMS
Company 7-31-12

Anna Sandon
Geotechnology, Inc.
Engineer's Signature

Date 8-6-12
Date

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 7/31/12

TIME: Arrive: - Depart: - Travel: - Total: -
Weather: - Contractor: - Subcontr. Supplier: -
Equipment Working: -
Site Activities / Observations / Contacts / Notes: REFER TO PAGE 1

FWI:

Installed additional DS-1 and DS-2 3" HDPE sump discharge pipes in the collector trench south of Ash Pond B and Ash Pond D. Approx. 3100' of HDPE currently in the collector trench. Continued staging and butt fusion welding 3" HDPE sump discharge pipes south of Ash Pond D. DS-1 and DS-2 sump discharge pipes currently run east to DS-3. These two pipes were connected to form a single continuous pipe for Hydro Testing. DS-1 pipe has the water valve and the DS-2 pipe has the air valve. Both sump discharge pipes were filled with water and pressurized to 110 psi. After 15 minutes, the pressure dropped 3 lbs to 107 psi. During the time the pipes were pressurized, there were no visible leaks in any of the butt fusion welded joints. The pressure was released and the connection between DS-1 and DS-2 sump discharge pipes was cut, allowing the water to drain east of DS-3, completing the Hydrostatic Test per ASTM F 2164. The collector trench south of APA and APB can now be backfilled.

LEC:

Jake Lewis surveyed additional slope diversion berms in Section A and Section B, and surveyed the letdown channel / rock chute in Section B. Refer to S-386, Sheet II, Details 1 and 4.

FLT/BCI/TSI:

Clay Placement - Section B was completed and began placing East bound on Section D. Continued constructing slope diversion berms in Section A and backfilled against the paved gutter in Section A.

Area = P-63 to P-66 and P-78 to P-86.

Loads = 311

Additional Comments: -

Randy Pectae
Contractor Representative

AMS
Company

Anna Sanden
Signature

7-31-12
Date

Geotechnology, Inc.

8-6-12
Date

Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 8/1/12

TIME: Arrive: 6:00 AM Depart: 5:45 PM Travel: 1.0 hr Total: 12.5 hrs (0.25 hr for lunch)
Weather: Sunny, 75° AM, 98° PM Contractor: AMS Subcontr./Supplier: BTD/FWI/AAA/FLT/BCI/TSI
Equipment Working: D6N Dozer, 580 Backhoe, 410J Backhoe, DSG Dozer, CS-323C Roller, Water Truck
Site Activities / Observations / Contacts / Notes: -

AMS:

Continued transporting anchor trench ash spoils from the northwest corner of Ash Pond D to the southeast corner of the geotubes in Ash Pond A. The collector trench running to the west pump control panel was widened for the 5 runs of electrical conduit to achieve a 12" space between each conduit. Began the excavation for the wrap-around collector trench southeast of Ash Pond B for the 2½" electrical feeder for the west pump control panel to be connected to the overhead electric running along the power poles from the MCC building. All other work at the CBS.

BTD:

Personnel- Brian Schaefer and Michael Switzer. Haunching the electrical conduit with IDOT FA-1 Sand in the collector trench south of Ash Pond A was completed. The collector trench was backfilled, graded, and compacted to approx. 12" to 18" below the ground surface and then the mechanical (water) and electrical detectable tapes were placed within the collector trench over the appropriate piping. After the tape was in place, final backfill of the collector trench south of Ash Pond A began. Approx. 30' of trench was left open for DS-1 and 2, and the panel.

FWI:

Continued installing and butt fusion welding 3" HDPE Sump Discharge Pipes for DS-1, DS-2, and DS-3 in the collector trench south of Ash Pond D. Length Fused = 880'

AAA:

Installed the 2" high/low voltage conduit for DS-1 and DS-2, along with the 2½" electrical feeder conduit, up to the west pump control panel. Installed 2½" electrical feeder conduit and 2" high/low voltage conduit for DS-3 and DS-4 in the collector trench south of Ash Pond D.

FLT/BCI/TSI: Clay Placement- Eastbound Section D.

Additional Comments: Continued constructing slope diversion berms in Sec. A and B. Area = P-63 to P-71. Loads = 306

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

Randy Poole AMS
Contractor Representative Company
[Signature] 8-1-12
Signature Date
Anna Samdon 8-6-12
Geotechnology, Inc. Date
[Signature]
Engineer's Signature

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: - Client: Ameren ER Date: 8/2/12

TIME: Arrive: 6:00 AM Depart: 5:30 PM Travel: 1.0 hr Total: 12.25 hrs (0.25 hr for lunch)
 Weather: Sunny, 72° AM, 101° PM Contractor: AMS Subcontr./Supplier: BTD/FWI/AAA/FLT/BCI/TSI
 Equipment Working: D6N Dozer, 410J Backhoe, D5G Dozer, CS-323C Roller, 279C Skid Steer, Water Truck

Site Activities / Observations / Contacts / Notes: _____

AMS:

All work performed at the CBS.

BTD:

Completed final backfill and compaction of the collector trench south of Ash Pond A. Haunching the electrical conduit with IDOT FA-1 Sand in the collector trench south of Ash Pond B was completed. Began backfilling, grading, and compacting the collector trench approx. 12" to 18" below the ground surface and began installing the water and electrical detectable tapes in the collector trench over the appropriate piping. Final backfill of the collector trench south of Ash Pond B began. Began grading PCP spoils off of the south embankment of Ash Pond B. Note: The 3" HDPE Sump Discharge Pipes were also haunched with FA-1 sand in some areas due to the rocky backfill. The remaining GCL and other misc. materials were demobilized.

FWI:

The Zoeller sump pumps were delivered with standard 20' electrical cords. These cords are too short to reach the junction box in DS-2, DS-3, DS-4. If the cords were spliced in the field, it would void the pump's warranty. Therefore, the sump pump in DS-2 was taken out, and 3 pumps were sent to the manufacturer to have 35' cords installed. The electrical cords for the floats are also too short and will have to be replaced for DS-2, DS-3, DS-4. Continued installing and butt fusion welding 3" HDPE sump discharge pipes for DS-1, 2, 3, and 4 in the collector trench.

AAA:

Installed additional 2½" electrical feeder conduit in the wrap-around collector trench southeast of APB. Installed stainless steel conduit with PVC coating on the west pump control panel. Installed junction boxes for DS-1 and DS-2 on the west panel.

Additional Comments: FLT/BCI/TSI: Clay Placement -

Eastbound Section D. Area = P-63 to 69, P-92 to 94. Loads = 228

Randy Pictor
 Contractor Representative

AMS
 Company

Anna Saunders
 Signature

8-2-12
 Date

Geotechnology, Inc.

[Signature]
 Engineer's Signature

8-6-12
Date

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 8/3/12

TIME: Arrive: 6:00 AM Depart: 5:45 PM Travel: 1.0 hr Total: 12.5 hrs (0.25 hr for lunch)
Weather: Sunny, 74° AM, 95° PM Contractor: AMS Subcontr./Supplier: BTD/FWI/AAA/FLT/BCI/TSI
Equipment Working: D6N Dozer, 410J Backhoe, D5G Dozer, CS-323C Roller, 279C Skid Steer, Water Truck
Site Activities / Observations / Contacts / Notes: AMS: All work performed at the CBS.

BTD:

Personnel - Brian Schaefer, Abel English, John Boyer. Completed grading the PCP Spoils off of the south embankment of Ash Pond B. Began haunching the electrical conduit with IDOT FA-1 Sand in the collector trench south of Ash Pond D. Completed backfilling, grading, and compacting the collector trench approx. 12"-18" below the ground surface and installing the water and electrical detectable tapes in the collector trench over the appropriate piping south of Ash Pond B. Completed final backfill and compaction of the collector trench south of Ash Pond B. Began excavating the wrap-around collector trench southwest of Ash Pond D for the 2'x2" electrical feeder conduit for the east pump control panel to be connected to the overhead electric at the power pole southeast of Ash Pond B. Installed the conduit in the wrap-around collector trench. Completed potholing approx. 6' deep for existing utilities at the 10 power pole locations for the overhead electric running from the MCC building to southeast of Ash Pond B. A water vacuum excavation truck was utilized for potholing. Refer to E-386, Sheet I, Rev. D, 7-17-12 for the 10 proposed power pole locations. Added the last 16" precast section on-site to the DS-4 manhole.

FWI:

Continued installing and butt fusion welding 3" HDPE sump discharge pipes for DS-1, DS-2, DS-3, and DS-4 in the collector trench south of Ash Pond D. Installed the DS-1 and DS-2 1" HDPE Remote Vent pipes onto the west pump control panel with vent, mesh caps. Marked DS-3 for coring. Delivery - 8" HDPE pipe and 3" HDPE pipe. Length Fused = 680'

AAA:

Assembled the east pump control panel rack and staged conduit south of Ash Pond D.

FLT/BCI/TSI: Clay Placement - Eastbound Sec. D.

Additional Comments: Area = P-65 to P-71
Loads = 216

Randy Foster
Contractor Representative

Anna Sandon
Signature

Geotechnology, Inc.

Engineer's Signature

AMS
Company

8-3-12
Date

8-6-12
Date

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FIELD OBSERVATION REPORT

Representative: Andrew DeCine Project No.: 3019896.01 Task: 2370
 Equipment & ID No.: — Project Name: Harrisonville Ash Pond D closure
 Vehicle: 7 Zone: — Client: Geotechnology Date: 7/30/12

TIME: Arrive: 6:45 Depart: 5:15 Travel: 1.0 Total: 11.5 (1 1/2 hr. lunch)
 Weather: 60-90° Contractor: AMS Subcontr./Supplier: —
 Equipment Working: —

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place 3 foot
coverage fill over Geo-membrane. Using D6 to spread fill being hauled in from offsite
Borrow Area - Fill is being placed in such a way to prevent Geo-membrane from becoming
wrinkled and/or being punctured or torn. Fill placed on Panels: P-79 thru 86

Additional Comments: _____

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Andrew DeCine
Contractor Representative

Andrew DeCine
Signature

AMS
Geotechnology, Inc.

Andrew DeCine
Engineer's Signature

AMS
Company

7/30/12
Date

7/30/12
Date

FIELD OBSERVATION REPORT

Representative: Andrew DeClue Project No.: JO19896.01 Task: 2370
 Equipment & ID No.: - Project Name: Hudsonville Ash Pond D Closure
 Vehicle: 7 Zone: - Client: Geotechnology Date: 7/31/12

TIME: Arrive: 6:45 Depart: 5:15 Travel: 1.0 Total: 11.5 (1/2 hr. lunch)
 Weather: 70-90's Contractor: AMS Subcontr./Supplier: -
 Equipment Working: -

Site Activities / Observations / Contacts / Notes: Belt Construction continuing to place 3 Foot
of coverage Fill over Geo-Membrane. Using D6 to Spread Fill being hauled in from
offsite borrow area. Fill is being placed in such a way to prevent Geo-Membrane from
becoming wrinkled and/or being ripped or punctured. Fill placed on Panels: P- 62 thru
66 and 78 thru 86.

Additional Comments: _____

[Signature]
Contractor Representative

AMS
Company

[Signature]
Signature

7/31/12
Date

[Signature]
Geotechnology, Inc.

11/31/12
Date

[Signature]
Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Andrew DeCher Project No.: J019896.01 Task: 2370
 Equipment & ID No.: - Project Name: Hursenville Ash Pond D Closure
 Vehicle: 7 Zone: - Client: Geotechnology Date: 8-1-12

TIME: Arrive: 6:45 Depart: 5:15 Travel: 1.0 Total: 11.5 (1/2 hr. lunch)
 Weather: 70-90° Contractor: AMS Subcontr./Supplier: -

Equipment Working: -

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place
3 feet of coverage fill over Geo-Membrane. Using D6 to spread fill being hauled
in from offsite borrow area. Fill is being placed in such a way to prevent Geo-Membrane
from becoming wrinkled and/or being ripped or punctured. Fill placed on Panels:
P- 63 thru 71.

Additional Comments: _____

Andrew DeCher Contractor Representative
AMS Company
8-1-12 Date
8/1/12 Date
Geotechnology, Inc.
Andrew DeCher Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Andrew DeClue Project No.: 3019896.01 Task: 238
Equipment & ID No.: — Project Name: Huttsville Ash Pond D Closure
Vehicle: 7 Zone: — Client: Geotechnology Date: 8-2-12

TIME: Arrive: 6:45 Depart: 5:00 Travel: 1.0 Total: 11.25 (1/2 hr. lunch)
Weather: 70-90% Contractor: AMS Subcontr./Supplier: —
Equipment Working: —

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place 3 Foot
Coverage Fill over Geo-Membrane. Using D6 to spread Fill being hauled in from offsite
borrow area. Fill being placed in such a way to prevent Geo-Membrane from becoming wrinkled
and or becoming ripped or punctured. Spend first couple hours in morning filling in some
low spots on previously filled area. Fill placed on Panels: P-63 thru 69, 92 thru 94

Additional Comments: _____

Andrew DeClue
Contractor Representative

Signature

Geotechnology, Inc.

Engineer's Signature

AMS
Company

8-2-12

Date

8-2-12

Date

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FIELD OBSERVATION REPORT

Representative: Andrew DeClue Project No.: 3019896-01 Task: 2370
 Equipment & ID No.: _____ Project Name: Hutsonville Ash Pond D closure
 Vehicle: 7 Zone: - Client: Geotechnology Date: 8-3-12

TIME: Arrive: 6:45 Depart: 5:00 Travel: 1.0 Total: 11.25 (1/2 hr)
 Weather: 70-90s Contractor: AMS Subcontr./Supplier: -
 Equipment Working: -

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place
3Foot coverage Fill over Geo-Membrane. Using D6 to spread Fill being hauled
in From offsite borrow area. Fill is being placed in such a way to prevent Geo-Membrane
From becoming wrinkled and/or being torn and/or punctured. Fill being placed on panels
P-65 thru 71

Additional Comments: _____

[Signature] AMS
 Contractor Representative Company
[Signature] 8-3-12
 Signature Date
[Signature] 8/3/12
 Geotechnology, Inc. Date
[Signature]
 Engineer's Signature

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MEETING MINUTES



Hutsonville Power Station - Ash Pond D Closure
Progress Meeting No. 20 Minutes
Tuesday, July 31, 2012

01 PUBLICATION

Publish date:	2012-08-01	Submitted by:	PHZ
Distribution:	E-mail only	Notes taken by:	PHZ
Location:	Hutsonville Power Station	AMS-Charah File No.	HUT-APD-MTG-MIN-2012-07-31-PM-20
AER PO:	567523 R4	AMS-Charah Contract:	00030-01 AMS-Charah GL: 4116-06-6120

02 ATTENDEES [ALPHA BY COMPANY]

NO.	SAL	FIRST	LAST	COMPANY	PHONE	E-MAIL	Column1
01	Mr.	Joe	King	AAA Electric	812-208-0464	sandy.tincher@aaaelectricofth.com	
02	Mr.	Mike	Wagstaff	Ameren	618-406-3478	mwagstaff@ameren.com	
03	Mr.	Paul	Zinsious	AMS - PCM	502-640-2918	pzinsious@ashmanagementservices.com	
04	Mr.	John	Denham	AMS - RM	502-609-0278	idenham@ashmanagementservices.com	
05	Mr.	Randy	Porter	AMS - SM	502-554-5230	rporter@ashmanagementservices.com	
06	Mr.	Scott	Burch	Freitag	812-208-1779	sburch@freitaginc.com	
07	Mr.	Joe	Cravens	Geotechnology	314-568-6628	j_cravens@geotechnology.com	

03 ABBREVIATIONS

AER	Ameren Energy Resources	OSHA	Occupational Safety Health Administration
AMS	Ash Management Services	PCP	Perforated Collector Pipe
BNSF	Burlington	PO	Purchase Order
CBT	Computer Based Training	RHOM	Routine Handling, Operation, and Maintenance
EAP	Emergency Action Plan	SPOC	Single Point of Contact
EOD	End of [the] Day	T/M	Time and Materials
EOM	End of [the] month	TBD	To Be Determined
EOW	End of [the] week	TD	Transmission Dispatch
EDTS	Energy Delivery Transmission Services	WPA	Worker Protection Assurance
EDC	Estimated Date [of] Completion		
EWO	Extra Work Order		
HDPE	High Density Polyethylene		
HRS	Hours		
LOTO	Lock Out Tag Out		
NMA	National Maintenance Agreement		

04 DOCUMENTATION

Minutes are documented weekly, and the publication have a "rolling record" of the immediate past two weeks. Each week the oldest drops off and the current week is added to the minutes. Items are categorized as either "NEW", "OPEN", "CLOSE", or in case the an item has to be re-published after closed the previous week - "REOPEN". Minutes format changed for Progress Meeting No. 13 deleting and combining certain items for brevity and to abbreviate documentation. Currently the item numbers remained the same for tracking purposes.

05 SAFETY - HOUSEKEEPING

02 WORKER PROTECTION ASSURANCE

2012-07-31 OPEN - no issues.
 2012-07-24 OPEN - no issues.

03 EMPLOYEE DRUG TESTING

2012-07-31 OPEN - no issues. FLT 2x on Friday 07-27.
 2012-07-24 OPEN - no issues

04 AMS SAFETY

2012-07-31 [01] J. Tasich tentative schedule Wed 08-01 or Thu 08-02.
 [02] Next scheduled safety luncheon 08-14.
 [03] Cooling stations are set up, no issues.
 [04] M. Wagstaff to investigate status [official response] for confined space entry plan submittal.
 2012-07-24 [01] J. Tasich on site 07-25.
 [02] R. Porter has signs for confined space.
 [03] Site inspection by R. Spurgeon 07-23. E-mail form M. Wagstaff from R. Spurgeon with site visit report.
 [04] No issues with traffic as the site is very busy with trucks and the other Ameren contractors on site.

05 HOUSEKEEPING

2012-07-31 OPEN - No issues. Watch for blowing paper off of trucks.
 2012-07-24 OPEN - No issues.

06 PLANT ACCESS - CBT

2012-07-31 Zinsious badge not operational, M. Wagstaff to investigate.
 2012-07-24 No issues.

08 OSHA LOG - WORK HOURS

2012-07-31 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 07-30.
 No incidents or accidents.
 6,570.00 RT
 1,328.50 OT
7,898.50 TOTAL
 2012-07-24 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 07-23.
 No incidents or accidents.
 6,093.00 RT
 1,258.50 OT
7,351.50 TOTAL

05 MANPOWER [HEAD COUNT]**01 CREW SIZE**

2012-07-31 AMS, BT Drainage [BTD], Belt Construction [BCI], Freitag [FWI], and AAA Electric.
 [02] Geotechnology [work hours not included in OSHA Log above]
 [02] Lamac Engineering [part time]
 [02] Pipe
 [00] Mechanical
 [02] Electrical
 [00] Cement
 [04] Laborers [AMS 2x, BTD 2x]
 [04] Operators [AMS 1x, BCI 1x, BTD 2x]
 [19] Teamsters [FLT 18x borrow haul trucking, AMS 1x]
 [00] Survey
 [02] Foreman [Full time] [AMS 1x, BTD 1x]
[37] TOTAL
 2012-07-24 AMS, BT Drainage [BTD], Belt Construction [BCI], Freitag [FWI], ST Construction [STC], and AAA Electric.
 [02] Geotechnology [work hours not included in OSHA Log above]
 [02] Pipe
 [00] Mechanical
 [01] Electrical
 [00] Cement
 [09] Laborers [AMS 2x, BTD 2x, STC 5x]
 [03] Operators [AMS 0x, BCI 1x, BTD 2x]
 [16] Teamsters [FLT 15x borrow haul trucking, AMS 1x]
 [00] Survey
 [03] Foreman [Full time] [AMS 2x, BTD 1x]
[36] TOTAL

02 WORK HOURS AND OVERTIME

2012-07-31 OPEN - Standard hours - 7:00 AM CT to 5:30 PM CT. Some subcontractors starting at 06:00 AM CT.
 2012-07-24 OPEN - Standard hours - 7:00 AM CT to 5:30 PM CT. Some subcontractors starting at 06:00 AM CT - STC, FWI, and BTD.

04 TRAILER - GENERAL CONDITIONS - COORDINATION - VEHICLES

2012-07-31 OPEN - no issues.
 2012-07-24 OPEN - no issues.

07 PREVIOUS

01 SUBCONTRACTS

- 2012-07-31 OPEN - no issues. AAA has inquired if being signatory to NMA is required if subcontractor on site for a day or two. J. Denham briefly defined the NMA agreement with Ameren and clarified that it is required no matter what amount of time a subcontractor is on site.
- 2012-07-24 OPEN - no issues.

02 SUBMITTALS

- 20120-07-31 Submittal log as published by GEO on 07-28 distributed.
 [01] Submittal log review, and general conversation.
 [02] M. Wagstaff has forwarded collector box submittal to Hanson. BTD to forward hatch details.
 [03] R. Porter meeting with bated yesterday [07-30] regarding submittals.
 [04]
- 20120-07-24 Submittal log as published by GEO on 07-21 distributed.
 [01] Submittal log review, and general conversation.
 [02] Collector box submittal issue [requires 5 IN holes]. AMS checking on status.

08 MATERIAL

01 GENERAL

- 2012-07-31 NEW - listing for materials that have potential to impact schedule.
 [01] Overhead electrical [EWO-13] wire material has been submitted per P. Zinsious.
 [02] Collector box submittal has been submitted per P. Zinsious.
 [03] DS lids option to be submitted per R. Porter, round not large enough for pump to be removed. BTD looking into a lightweight aluminum hatch that can be sealed watertight.
 [04] S. Burch reports 3x pumps and 3x floats ordered/delivered have cords too short. Team brief conversation on options such as splices. FWI to investigate options. R. Porter and J. Cravens indicated that DS installation elevations are either right at or shallower than plan.
- 2012-07-24 NEW - listing for materials that have potential to impact schedule.
 [01] Overhead electrical [EWO-13] wire material
 [02] Collector box submittal.

09 ADJACENT PROPERTIES AND PCP LINE

01 GENERAL

- 2012-07-31 OPEN - Discussion during Progress Meeting:
 [01] Work being completed. GCL liner 100% installed.
 [02] R. Porter inquired about pulling cap off the clean-out, and future pulling on a riser pipe vertically installed as these clean-outs are. Recommended a mechanical joint [MJ] connection with cap. M. Wagstaff agreed. The PCP line now has total 6x clean-outs.
 [03] Reference EWO-15 for fence discussion.
- 2012-07-24 OPEN - Discussion during Progress Meeting:
 [01] No issues - work progressing well.

10 QUALITY CONTROL

- 2012-07-31 [01] No results from concrete testing returned to dated per J. Cravens.
 [02] Discussion on CA-6 gravel verses CA-6 stone. AER allow base of gravel with stone cap, but concern on interlocking. AMS to provide all "white" CA-6 stone for the aggregate roadways. J. Cravens to investigate if geotextile required to be tested per CQA plan.
 [03] M. Wagstaff concerned over the expansion of the HDPE pipe in the heat relative burial and connections. S. Burch indicated burial will be in the morning when pipe is cool.
 [04] M. Wagstaff inquired about installation of the GCL. J. Cravens indicated installation correct. Back fill is 18 IN to 24 IN over the GCL. No issues with the GCL and possible soil movement, as some overlaps of material about 5 FT. Seams were sealed with the Bentonite powder. Before placement of the GCL, the fill material was smooth-drum rolled.
 [05] Clay samples not taken this past week.
- 2012-07-24 [01] Concrete test breaks 1x in 7D and 2x in 28D.
 [02] A. Saindon to be onsite in the next 2x WKS for more clay samples.

11 SCHEDULE REVIEW

2012-07-31	OPEN. Review of last planner by M. Wagstaff. Major items: [01] GCL 100% [02] Field tile piping 100% [03] Paved gutter 100% [04] Clay Placement Area B 100% [05] Clay Placement Area C 100% [06] DS1 set pump 100% [07] Roadway aggregates submittal [process] 100%
2012-07-24	OPEN. Review of last planner by B. Muesenfechter. [01] Clay cap driving the schedule progress improvement. [02] Substantial completion date 09-17. [03] Paved ditch work on hold in area where conflict of elevation for water line [ref. 13.1 2012-07-24 Item No. 04]. [04] BTD pot holed the electrical lines and waterline. Lamac took elevation shots. [05] M. Wagstaff, J. Cravens and R. Porter to meet with S. Boyer on GCL Installation after the progress meeting. [06] M. Wagstaff, J. Cravens and R. Porter to meet with FWI on HDPE hydro testing after the progress meeting. [07] J. Cravens reported on PCP progress dates.

12.0 COST AND BUDGET

02 AMS PAY APPLICATION - CHANGE REQUEST

2012-07-31	AMS to submit draft pay-app. M. Wagstaff inquired about credit for PVC option [VES]. AMS confirmed inclusion.
2012-07-24	No issues.

12.1 EXTRA WORK ORDERS

11 EWO-11 BUILDING SPOILS REMOVAL

2012-07-31	OPEN - AMS continues in progress as "fill-in-work" [backhoe was moving materials today - 07-31].
2012-07-24	OPEN - AMS continues in progress.

13 EWO-13 Electrical feeder/overhead

2012-07-31	OPEN - M. Wagstaff, J. King, J. Denham, and P. Zinsious to meet after PM. See below EWO-15 for pole-gate location concern.
2012-07-24	OPEN - J. King question on overhead change from aluminum to copper. AMS to provide cost by EOW.

14 EWO-14 FIELD TILE LOCATION

2012-07-31	CLOSE - work in area and farmer should be done in 2x Wks.
2012-07-24	No issue.

15 EWO-15 FENCE ALIGNMENT

2012-07-31	NEW - AMS to present Value Engineering Submittal [VES-03] for fence alignment along Ash Pond D and adjacent property to Dement-Wampler farmland consisting of reuse of fence fabric, new and relocated gates, and new perimeter fence alignment. M. Wagstaff reported Mr. Duane Holley [AER Engineering] has approved alignment, and Mr. Jim Williams [AER Plant Operations] to review. Discussion of the overhead power pole locations and the proposed gates. J. Cravens has the approximate pole locations marked per plan.
------------	--

16 EWO-16 AGGREGATE STONE ROADWAY ALIGNMENT

2012-07-31	NEW - AMS to present Value Engineering Submittal [VES-03] for any aggregates stone road alignment.
------------	--

17 EWO-17 PAVED DITCH ALIGNMENT

2012-07-31	NEW - Paved ditch may be re-aligned due to elevation conflict with existing utilities. Reference Item No. 11-2012-07-24 No. 3 above, and Item No. 13-2012-07-24 No. 04 below. M. Wagstaff reviewing with Hanson, and will walk site after PM. Consideration of installation of drainage pipes across the aggregate roadway.
------------	---

13 ACTION ITEMS - AER [25]

01 AMEREN [AER]

2012-07-31	[01] Fencing VES and/or alignment options M. Wagstaff to check status. CLOSE - moved to EWO-15 above. [02] Electrical submittals have been returned, some re-submittals to review. [03] Concrete submittals under review. CLOSE AMS has received. [04] Paved ditch issue, M. Wagstaff to review with Hanson reverse flow line - CLOSE moved to EWO-17 above.
2012-07-24	[01] Fencing VES and/or alignment options M. Wagstaff to check status. [02] Electrical submittals under review. [03] Concrete submittals under review. [04] Lamac shot elevations pipe same elev. as 4 FT cut at paved ditch outfall. M. Wagstaff to review with Hanson reverse flow line.

14 ACTION ITEMS - AMS [21]**01 ASH MANAGEMENT [AMS]**

2012-07-31 [01] Electrical re-submittals.
2012-07-24 [01] Field tile submittal. Done 07-19.
[02] Baro driver submittal. Done 07-19.

15 PRODUCTION**03 CLAY**

2012-07-31 OPEN - no issues
[01] Placement as of 07-30 is 80,025 CY [7,275 LD].
[02] R. Porter presented sketch M/U for review of placement area progress.
2012-07-24 OPEN - no issues
[01] Placement as of 07-23 is 65,549 CY.
[02] R. Porter presented sketch M/U.
[03] Roads are in good shape.

16 DOCUMENTS TRANSMITTED

2012-07-31 [01] AER - Last Planner schedule dated 07-26 [publish date].
[02] GEO - Submittal Log published 07-28.
2012-07-24 [01] AER - Last Planner schedule dated 07-18.
[02] AMS- Critical path schedule dated 07-18.
[03] AMS- Contact list dated 07-20.
[04] GEO - Submittal Log published 07-21.

17 DOCUMENTS REVIEW ONLY

2012-07-31 [01] SK-HUT-APD-004-R0 "Project Site - Pond - Quadrant Layout" with M/U to show progress to date of clay placement
[02] S-386 RG M/U for fencing [after main PM].
2012-07-24 [01] SK-HUT-APD-004-R0 "Project Site - Pond - Quadrant Layout" with M/U to show progress to date of clay placement

18 NEXT PROGRESS MEETING

Next meeting will be held in one week - Tuesday, August 7, 2012 at Hutsonville

19 DISTRIBUTION - STANDARD**AER**

01 Mr. Mike Wagstaff
02 Mr. Mike Stewart
03 Mr. Bob Muesenfechter

SUBCONTRACTORS

01 S. Tincher AAA
02 M. Burch FWI
03 T. Boyer BTD
04 T. Hunt STC

GEO

01 Ms. Anna Saindon
02 Mr. Eric Neuner
03 Mr. Joe Cravens

AMS

01 Mr. Jimmy Boone
02 Mr. John Denham
03 Mr. Joko Tasich
04 Mr. Randy Porter

If there are any corrections, modifications, additions, or deletions please notify the sender by e-mail at pzinsious@ashmanagementservices.com

PHOTOGRAPH LOG



Photograph 1 ▲ - GCL subgrade compaction facing west



Photograph 2 ▲ - GCL deployment facing northeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between July 30 and August 3, 2012



Photograph 3 ▲ - GCL deployment facing northeast



Photograph 4 ▲ - GCL backfill facing west

All photographs taken by Joseph Cravens of Geotechnology, Inc. between July 30 and August 3, 2012

JRC



Photograph 5 ▲ - GCL backfill facing west



Photograph 6 ▲ - GCL seaming facing north

All photographs taken by Joseph Cravens of Geotechnology, Inc. between July 30 and August 3, 2012

JRC



Photograph 7 ▲ - Backfill against paved gutter facing north



Photograph 8 ▲ - DS-1 with junction boxes facing southwest



Photograph 9 ▲ - GCL backfill compaction facing west



Photograph 10 ▲ - Slope diversion berm construction facing south

All photographs taken by Joseph Cravens of Geotechnology, Inc. between July 30 and August 3, 2012

JRC



Photograph 11 ▲ - Clay placement facing east

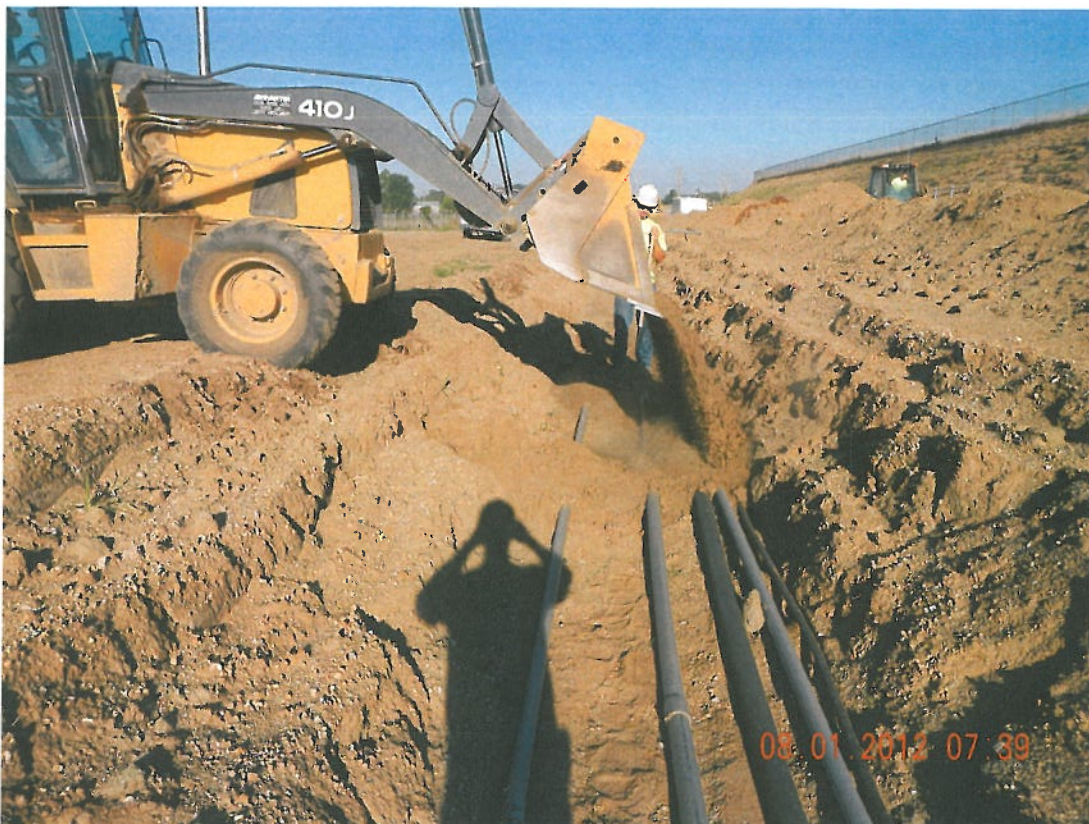


Photograph 12 ▲ - Hydrostatic pump test facing northeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between July 30 and August 3, 2012



Photograph 13 ▲ - Collector trench overview facing west



Photograph 14 ▲ - Sand placement in collector trench facing west

All photographs taken by Joseph Cravens of Geotechnology, Inc. between July 30 and August 3, 2012

JRC



Photograph 15 ▲ - Detectable utility tape in collector trench facing east



Photograph 16 ▲ - West pump control panel installation facing north

All photographs taken by Joseph Cravens of Geotechnology, Inc. between July 30 and August 3, 2012

JRC



Photograph 17 ▲ - Overview Ash Pond D facing south



Photograph 18 ▲ - Overview Ash Pond D facing south

All photographs taken by Joseph Cravens of Geotechnology, Inc. between July 30 and August 3, 2012



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Energy Resources

FROM: Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DATE: August 13, 2012

SUBJECT: Weekly Summary Report for August 6, 2012 to August 10, 2012

PROJECT: Hutsonville Ash Pond D Closure
Crawford County, Hutsonville, Illinois
Geotechnology Project No. J019896.01

The following is a weekly summary of the site activities at the referenced site.

Weather

The weather was generally sunny with periods of clouds and isolated thunderstorms. Temperature (°F) lows ranged from 65 to 71°F, and temperature highs ranged from 78 to 99°F. A weather delay occurred on August 9, 2012 from a storm event the previous evening.

Construction Activities

Field tile installation, collector trench excavation and backfill, butt fusion welding, sump discharge pipe and remote vent installation, sump pump assembly, hydrostatic testing, electrical conduit installation, junction box installation, east pump control panel installation, anchor trench spoil transportation, fence layout, slope diversion berm construction, and clay placement occurred this week. B&T Drainage completed field tile installation and collector trench excavation, and continued collector trench backfill and grading. The remote vents for cleanouts CO-3 and CO-4 were installed in the collector trench. Freitag-Weinhardt, Inc. completed butt fusion welding and installing sump discharge pipes for dewatering sumps DS-1, DS-2, DS-3, and DS-4. The remote vents for DS-3 and DS-4 were installed in the collector trench, and the sump pumps were assembled for DS-3 and DS-4. Hydrostatic testing of DS-1, DS-2, DS-3, and DS-4 sump discharge pipes occurred. AAA Electric, Inc. installed electrical conduit in the collector trench, electrical junction boxes at DS-3 and DS-4, and the east pump control panel. IDOT FA-01 sand was placed around the electrical conduit prior to backfilling the collector trench. Detectable utility tape was placed 12 to 18-inches below the ground surface above the sump discharge pipes and electrical conduit. Ash Management Services, Inc. completed transportation

of anchor trench ash spoils from Ash Pond D to Ash Pond A, completing EWO-11. Collins and Hermann, Inc. measured the layouts for the new chain link fence gates per EWO-15. Fawn Lane Transit, Inc. and Belt Construction, Inc. continued clay placement in Quadrant D. Slope diversion berm construction continued in Quadrant A and B. Approximately 13 to 16 trucks were used to haul clay material to Ash Pond D. The vegetative cover is being placed in a single three foot lift, and a representative from TSI Engineering, Inc. observed quality control for the clay placement procedure. Refer to the daily reports for detailed information.

Equipment and Personnel On-Site

CAT D6N Bulldozer
CAT D5G Bulldozer
CAT CS-323C Smooth Drum Roller
John Deere 450 LC Excavator
John Deere 410J Backhoe
Case 580 Backhoe
Kubota L245DT Tractor
Water Truck (Dust Control)

Geotechnology, Inc. – Joe Cravens
TSI Engineering, Inc. – Andrew DeClue
Ash Management Services, LLC (AMS) – Randy Porter, Matt Dishman, Robert Dunkley, Greg Siverly, Jeremy Shorter, Brad Bolenbaugh, Blake Bunting, and Eric Sefton
Charah, Inc. – Joe Tasich
Belt Construction, Inc. (BCI) – Jared Belt
B&T Drainage (BTD) – Brian Schaefer, Michael Switzer, and Michael Dashiell
Fawn Lane Transit, Inc. (FLT) – Kim Edington, Lee Edington, Scott Comer, James Elledge, Jim Urfer, Gary Lamb, Greg Lingorfelder, Tom Sager, Eric Bierman, Robert Shehorn, Billie Meadows, John Niles, Brian Griffith, Bob Smithenry, Alan Ruholl, Lee Ruholl, Patrick Wente, Frank Draper, Jason Byers, and Aaron Gullett
Freitag-Weinhardt, Inc. (FWI) – Scott Burch and Jarrod Barrett
AAA Electric, Inc. (AAA) – Joseph King and Kyle Davidson
Collins and Hermann, Inc. (CHI) – Jacob Williams
Visitors – Refer to the Visitor's Log for visitors, dates, and times.
Refer to the meeting minutes for additional personnel.

Meetings

The weekly progress meeting was held on Tuesday, August 7, 2012. Refer to the attached meeting minutes for additional information.

Photographs

A photograph log with select photographs obtained this week is attached.

Materials

Clay for the vegetative layer, IDOT FA-01 sand, Propex Geotex 861 geotextile, 1-inch HDPE remote vent pipe, and MJ mechanical fitting bolt-on caps were delivered.

Testing/Sampling

The 3-inch HDPE sump discharge pipes for DS-1, DS-2, DS-3, and DS-4 were hydrostatic tested in accordance with ASTM F2164. Leaks were not observed in the sump discharge pipes. Refer to Freitag-Weinhardt, Inc.'s test documentation for detailed information.

Calibration Records

Calibration information was obtained from Freitag-Weinhardt, Inc. for the Ashcroft Gauge used during the hydrostatic test.

Signature of CQA Officer

Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

A handwritten signature in black ink, appearing to read "Anna Saindon", is written over a solid black horizontal line.

DAILY REPORTS

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 8/6/12

TIME: Arrive: 6:00 AM Depart: 5:30 PM Travel: 1.0 hr Total: 12.25 hrs (0.25 hr for lunch)
Weather: Sunny, 71° AM, 94° PM Contractor: AMS Subcontr./Supplier: BTD, FWI, AAA, FLT, BCI, TSI
Equipment Working: D6N Dozer, 580 Backhoe, 450 LC Excavator, 410J Backhoe, D5G Dozer,
Site Activities / Observations / Contacts / Notes: CS-323C Roller, Water Truck

AMS:

Continued transporting anchor trench ash spoils from the northwest corner of Ash Pond D to the southeast corner of the geotubes in Ash Pond A. All other work performed at the CBS.

BTD:

Personnel - Brian Schaefer, Michael Switzer, and Michael Dashiell. Continued haunching the electrical conduit with IDOT FA-1 sand in the collector trench south of Ash Pond D. Continued backfilling, grading, and compacting the collector trench approx. 12" to 18" below the ground surface, and installing the water and electrical detectable tapes in the collector trench over the piping south of Ash Pond D. Began final backfill and compaction of collector trench south of Ash Pond D. Began the collector trench excavation east of Ash Pond D. The 450 LC excavator broke down again. The 279C skid steer was demobilized.

FWI:

The DS-3 and DS-4 manholes were cored for the 3" HDPE sump discharge pipes and the 1" HDPE remote vents. Additional pipe was staged in the collector trench.

AAA:

Power-Fish Pull Line was run through the 2" high and low voltage conduit between the DS-1 and DS-2 junction boxes, and the west pump control panel junction boxes. The DS-3 and DS-4 manholes were cored for the high and low voltage junction boxes and the conduit drain. Installed additional 2" high and low voltage conduit in the collector trench.

FLT/BCI/TSI:

Clay Placement - Eastbound Section D. Continued constructing slope diversion berms in Section A and B. Aired = P-68 to 72, P-92 to 94.

Additional Comments: Loads = ~~234~~ 242

Randy Porter
Contractor Representative

AMS
Company 8-6-12

Anna Saindon
Signature
Geotechnology, Inc.

8/13/12
Date

Anna Saindon
Engineer's Signature

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: — Client: Ameren ER Date: 8/7/12

TIME: Arrive: 6:00 AM Depart: 5:45 Travel: 1.0 hr Total: 12.5 hrs (0.25 hr for lunch)
 Weather: Sunny, 68° AM, 96° PM Contractor: AMS Subcontr./Supplier: BTD, FWI, AAA, FLT, BCI, TSI
 Equipment Working: D6N Dozer, 580 Backhoe, 450 LC Excavator, 410J Backhoe, D5G Dozer,
 Site Activities / Observations / Contacts / Notes: CS-323C Roller, Water Truck

AMS:

Continued transporting anchor trench ash spoils from the northwest corner of Ash Pond D to the southeast corner of the geotubes in Ash Pond A. All other work performed at the CBS.

BTD:

Continued haunching the electrical conduit with IDOT FA-1 sand in the collector trench south of Ash Pond D. Continued backfilling, grading, and compacting the collector trench approx. 12" to 18" below the ground surface, and installing the utility detectable tapes in the collector trench over the piping south of Ash Pond D. Completed final backfill and compaction of the collector trench up to DS-3. No further collector trench work can continue until additional 3" HDPE sump discharge are hydro tested. Completed the collector trench excavation east of Ash Pond D. Continued the excavation, installation, backfill, and compaction of the 12" ADS field tile south of Ash Pond B and D. Installed a single 12" tee in the field tile southwest of Ash Pond D to tie into Wampler's field tile. Began filling in low spots from the excavations south of Ash Pond A and B.

FWI:

Continued installing and butt fusion welding 3" HDPE sump discharge pipes in the collector trench south and east of Ash Pond D for DS-1, DS-2, DS-3, and DS-4. Installed 2" HDPE fittings + 3"-2" HDPE reducers for DS-3 and DS-4. Prepared fittings for Hydro Test. Fused = 520'.

AAA:

Installed link seals, conduit drains, and junction boxes on DS-3 and DS-4. Installed high and low voltage conduit in the collector trench to the junction boxes. Set the east pump control panel.

FLT/BCI/TSI: Clay Placement - East bound Section D.

Area = P-71 to P-75. Loads = 228

Additional Comments: Jacob Williams with Collins and Hermann, Inc. took measurements for the fences and gates.

Randy Pictor
Contractor Representative

Randy Pictor
Signature

AMS
Geotechnology, Inc.

Randy Pictor
Engineer's Signature

AMS
Company 8-7-12

8/13/12
Date

8/13/12
Date

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 8/8/12

TIME: Arrive: 6:00 AM Depart: 5:45 PM Travel: 1.0 hr Total: 12.25 hrs (0.5 hr for lunch)
Weather: Sunny, 67°AM, 95°PM Contractor: AMS Subcontr./Supplier: FWI/FLT/BCI/TSI
Equipment Working: D6N Dozer, 580 Backhoe, Water Truck
Site Activities / Observations / Contacts / Notes: —

AMS:

Completed transporting anchor trench ash spoils from the northwest corner of Ash Pond D to the southeast corner of the geotubes in Ash Pond A. This completes EWO-11 Building Spoils Removal. Excavated the collector trench towards the east pump control panel south of Ash Pond D. Cleaned/graded the plant access roads and entrance. All other work at CBS.

FWI:

Completed installing and butt fusion welding the 3" HDPE sump discharge pipes for DS-1, DS-2, DS-3, and DS-4 in the south and east collector trench. Hydrostatic Testing was completed for all four sump discharge HDPE pipes in accordance with ASTM F 2164. This excludes the four 2" HDPE connections at each manhole, and the four 3" HDPE connections at the collector box. These connections will be visually inspected prior to backfill and tested in-service. Hydro Test: All four sump discharge pipes were connected to allow a single hydro test for all four pipes. DS-1 contained the water valve, and DS-2, DS-3, and DS-4 contained bleed valves. The valve at DS-2 was pressurized and monitored. The pipe system was pressurized to 115 psi and dropped to 112 psi over 10 minutes, passing the test. No leaks in the discharge pipes observed.

Note: BTD and AAA were not on site today but will return tomorrow.

FLT/BCI/TSI: Clay Placement-Eastbound Section D Area = 72 to 77, 92 to 94.

Loads = 249

Additional Comments: All cleanouts will receive water-tight, M.I. mechanical fittings for the caps.

Randy Belter
Contractor Representative

AMS
Company

Randy Belter
Signature

8-8-12
Date

Randy Belter
Geotechnology, Inc.

8/13/12
Date

Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 8/9/12

TIME: Arrive: 6:00 AM Depart: 3:00 PM Travel: 1.0 hr Total: 10 hrs (no lunch)
Weather: Cloudy, 66° AM, 99° PM Contractor: AMS Subcontr./Supplier: FWI, AAA, BTD
Equipment Working: 450 LC Excavator, D5G Dozer, 410J Backhoe, CS-323C Roller

Site Activities / Observations / Contacts / Notes: —

AMS:

Disassembled remaining fence running north to south at the southwest corner of Ash Pond D. The fence posts will be pulled at a later date. The north/south fence line along the west side of Ash Pond D will no longer have to be reconstructed due to the new gates being installed between Bottom Ash Pond / Pond C, Pond C / Pond B, Pond B / south property line. Refer to EWO-15 for fence detail. Delivery: 4 Rolls of Propex Geotex 861 geotextile. Geotex badge numbers - 2022355105, 2022355188, 2022355382, and 2022355388.

FWI:

Installed 1" HDPE Remote Vents for DS-3, DS-4, in the collector trench south of Ash Pond D, installed the seals in the manholes, and ran the remote vents to the east pump control panel. Began threading the stainless steel sump discharge pipes for DS-3 and DS-4.

AAA:

Installed additional 2 1/2" electrical feeder conduit and 2" high/low voltage conduit in the collector trench south of Ash Pond D, and towards the east pump control panel.

BTD:

Completed the excavation, installation, backfill, and compaction of the 12" ADS field tile, excluding the connection to the grade inlet manhole southwest of DS-1. This will be completed after the paved ditch. Completed the excavation of the collector trench. Installed the saddle and compression fitting in CO-3, and installed the 1" HDPE Remote Vent from CO-3 to the east pump control panel. Completed haunching the electrical conduit with IDOT FA-1 sand in the collector trench. Continued placing detectable utility tape in the collector trench, along with backfilling, grading, and compacting. Delivery -

Additional Comments: IDOT FA-1 Sand, 1" HDPE pipe, and M4 mechanical fittings w/caps for cleanouts.

Randy Pickett
Contractor Representative

AMS
Company 8-19-12

—
Signature
—
Geotechnology, Inc.

8-13-12
Date

Engineer's Signature

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No Clay Placement due to the rain the night before.

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: - Client: Ameren ER Date: 8/10/12

TIME: Arrive: 6:00 AM Depart: 5:30 PM Travel: 1.0 hr Total: 12.25 hrs (0.25 hr for lunch)
 Weather: Sunny, 65° AM, 78° PM Contractor: AMS Subcontr./Supplier: BTD, FWI, FLT, BCI, TSI
 Equipment Working: D6N Dozer, 580 Backhoe, 450LC Excavator, 410J Backhoe, D5G Dozer, CS-323C
 Site Activities / Observations / Contacts / Notes: Roller, Water Truck, Kubota L245DT Tractor

AMS:

Cleaned/graded all plant access roads and entrance. All other work performed at CBS.

BTD:

Continued placing detectable utility tape 12"-18" below the ground surface over the 3" HDPE sump discharge pipes and the 1" HDPE remote vents in the collector trench south and east of Ash Pond D. Continued backfilling, grading, and compacting the collector trench south and east of Ash Pond D. Installed the end compression fitting in CO-4, with the saddle, and installed the 1" HDPE remote vent from CO-4 to the top of the embankment on the southeast corner of Ash Pond D. The bollard will be installed at this location when the cleanout bollards are installed. Installed the MJ mechanical fitting bolt-on cap onto CO-3. Reconstructed the anchor trench outlet toe drains (4" ADS) and rip rap pads on the east side of Ash Pond D that were damaged from the collector trench excavation. Began grading the south side of Ash Pond D for the paved ditch survey on Monday.

FWI:

Installed the 1" HDPE remote vents from DS-3 and DS-4 onto the east pump control panel with the 90° fittings and the mesh vent cap. Stubbed off the remote vent from CO-3 and will install the fittings and vent cap at a later date. Assembled the sump pump assemblies for DS-3 and DS-4. This included the threaded stainless steel sump discharge pipes (standpipes), sump pump connection, on/off/alarm floats, paddlewheel flow sensor with saddle, check valve, tee and pitless adaptor, and top caps.

FLT/BCI/TSI: Clay Placement - Eastbound Section D

Area = P-72 to 77, 92 to 94. Loads = 241

Additional Comments: Lamac, ST Construction, and Collins and Hermann to be on site next week.

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Randy Beloe
 Contractor Representative

Anna Saindon
 Signature

Geotechnology Inc.
 Engineer's Signature

AMS
 Company
8-10-12
 Date
8-13-12
 Date

AAA had no production.

FIELD OBSERVATION REPORT

Representative: Andrew DeChe Project No.: 5019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D/closure
Vehicle: 7 Zone: - Client: Geotech Date: 8-6-12

TIME: Arrive: 6:45 Depart: 5:15 Travel: 1.0 Total: 11.5 (1/2 hr. hrs)
Weather: 70-100% Contractor: AMS Subcontr./Supplier: -
Equipment Working: -

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place 3 foot coverage fill over Geo-Membrane. Using DG to spread fill being hauled in from offsite borrow area. Fill is being placed in such a way to prevent Geo-Membrane from becoming wrinkled and/or becoming ripped or punctured. Fill is placed on panels: P-68 thru 72, 92 thru 94.

Additional Comments: _____

Randy R
Contractor Representative
[Signature]
Signature
AMS
Company
8-6-12
Date
8/6/12
Date
[Signature]
Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Andrew DeClue Project No.: 3019896.01 Task: 2370
Equipment & ID No.: - Project Name: Harrisonville Ash Pond D Closure
Vehicle: 7 Zone: - Client: Geotechnology Date: 8-7-12

TIME: Arrive: 6:45 Depart: 5:15 Travel: 1.0 Total: 11.5 (Vahr. lunch)
Weather: 60-100 Contractor: AMS Subcontr./Supplier: -
Equipment Working: -

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place 3 foot
Coverage Fill over Geo-Membrane. Using D6 to spread Fill being hauled in from off-site
borrow area. Fill is being placed in such a way to prevent Geo-Membrane from becoming
wrinkled and/or being ripped or punctured. Fill is being placed on Panels: P-71 thru 75.

Additional Comments: _____

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Andrew DeClue
Contractor Representative
Signature
Geotechnology, Inc.
Engineer's Signature
Company
AMS
Date
8-7-12
Date
8/7/12

No. A 14377

FIELD OBSERVATION REPORT

Representative: Andrew DeChie Project No.: JO14896.01 Task: 2376
Equipment & ID No.: - Project Name: Hatsonville Ash Pond D Closure
Vehicle: 7 Zone: - Client: Geotechnology Date: 8-8-12

TIME: Arrive: 6:45 Depart: 5:00 Travel: 1.0 Total: 11.25
Weather: 60-90° Contractor: AMS Subcontr./Supplier: -
Equipment Working: -

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place 3 foot coverage fill over Geo-Membrane. Using D6 to place fill being hauled in from off-site borrow area. Fill is being placed in such a way to prevent Geo-Membrane from becoming wrinkled and/or being ripped or punctured. Fill placed on Panels: P- 72 thru 77, 92 thru 94.

Additional Comments: _____

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Andrew DeChie
Contractor Representative
Signature
Geotechnology Inc.
Engineer's Signature
Company AMS
Date 8-8-12
Date 8/8/12

No. A **14378**

FIELD OBSERVATION REPORT

Representative: Andrew DeClue Project No.: JO19896.01 Task: 2378
Equipment & ID No.: _____ Project Name: Hicksonville Ash Pond De/Insure
Vehicle: 7 Zone: - Client: Geotechnology Date: 8-10-12

TIME: Arrive: 6:45 Depart: 5:15 Travel: 1.0 Total: 11.0 ($\frac{1}{2}$ hr. lunch)
Weather: 60's - 80's Contractor: AMS Subcontr./Supplier: _____
Equipment Working: _____

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place 3 foot coverage fill over Geo-Membrane using D6 to place fill being hauled in from offsite borrow area. Fill is being placed in such a way to prevent Geo-Membrane from becoming wrinkled and/or being ripped or punctured. Fill being placed on Panels: P-72 thru 77, 92 thru 94

Additional Comments: _____

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Andrew DeClue
Contractor Representative
Signature
Geotechnology Inc.
Engineer's Signature

AMS
Company
Date 8-10-12
Date 8/10/12

MEETING MINUTES



Hutsonville Power Station - Ash Pond D Closure
Progress Meeting No. 21 Minutes
Tuesday, August 7, 2012

01 PUBLICATION

Publish date:	2012-08-08	Submitted by:	PHZ
Distribution:	E-mail only	Notes taken by:	PHZ
Location:	Hutsonville Power	AMS-Charah File No.	HUT-APD-MTG-MIN-2012-08-07-PM-21
AER PO:	567523 R4	AMS-Charah Contract:	00030-01 AMS-Charah 4116-06-6120

02 ATTENDEES [ALPHA BY COMPANY]

NO.	SAL	FIRST	LAST	COMPANY	PHONE	E-MAIL
01	Mr.	Joe	King	AAA Electric	812-208-0464	sandy.tincher@aaaelectricofth.com
02	Mr.	Jimmy	Boone	AMS - ARM	502-574-5465	iboone@ashmanagementservices.com
03	Mr.	Matt	Dishman	AMS - Focus	502-287-9163	mdishman@charah.com
04	Mr.	Paul	Zinsious	AMS - PCM	502-640-2918	pzinsious@ashmanagementservices.com
05	Mr.	Randy	Porter	AMS - SM	502-554-5230	rporter@ashmanagementservices.com
06	Mr.	Scott	Burch	Freitag	812-208-1779	sburch@freitaginc.com
07	Ms.	Anna	Saindon	Geotechnology	314-997-7440	a_saindon@geotechnology.com
08	Mr.	Joe	Cravens	Geotechnology	314-568-6628	j_cravens@geotechnology.com

03 ABBREVIATIONS

AER	Ameren Energy Resources	OSHA	Occupational Safety Health Administration
AMS	Ash Management Services	PCP	Perforated Collector Pipe
BNSF	Burlington	PO	Purchase Order
CBT	Computer Based Training	RHOM	Routine Handling, Operation, and Maintenance
EAP	Emergency Action Plan	SPOC	Single Point
EOD	End of [the] Day	T/M	Time and
EOM	End of [the] month	TBD	To Be
EOW	End of [the] week	TD	Transmission Dispatch
EDTS	Energy Delivery Transmission Services	WPA	Worker Protection Assurance
EDC	Estimated Date [of] Completion		
EWO	Extra Work Order		
HDPE	High Density Polyethylene		
HRS	Hours		
LOTO	Lock Out Tag Out		
NMA	National Maintenance Agreement		

04 DOCUMENTATION

Minutes are documented weekly, and the publication have a "rolling record" of the immediate past two weeks. Each week the oldest drops off and the current week is added to the minutes. Items are categorized as either "NEW", "OPEN", "CLOSE", or in case the an item has to be re-published after closed the previous week - "REOPEN". Minutes format changed for Progress Meeting No. 13 deleting and combining certain items for brevity and to abbreviate documentation. Currently the item numbers remained the same for tracking purposes.

05 SAFETY - HOUSEKEEPING

02 WORKER PROTECTION ASSURANCE

2012-08-07 OPEN - no issues. AAA does not project need for next 2x WKS.
 2012-07-31 OPEN - no issues.

03 EMPLOYEE DRUG TESTING

2012-08-07 OPEN - no issues. No workers tested this period [week].
 2012-07-31 OPEN - no issues. FLT 2x on Friday 07-27.

04 AMS SAFETY

2012-08-07 [01] J. Tasich on site 08-05.
 [02] Safety luncheon o 08-14 postponed to following week 08-21, e-mail will be sent out.
 [03] AMS has received AER official response for confined space entry plan submittal.
 [04] Cooling stations are set up, no issues.
 2012-07-31 [01] J. Tasich tentative schedule Wed 08-01 or Thu 08-02.
 [02] Next scheduled safety luncheon 08-14.
 [03] Cooling stations are set up, no issues.
 [04] M. Wagstaff to investigate status [official response] for confined space entry plan submittal.

05 HOUSEKEEPING

2012-08-07 OPEN - No issues.

2012-07-31 OPEN - No issues. Watch for blowing paper off of trucks.

06 PLANT ACCESS - CBT

2012-08-07 OPEN - No issues.

2012-07-31 Zinsious badge not operational, M. Wagstaff to investigate.

08 OSHA LOG - WORK HOURS

2012-08-07 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 08-06.

No incidents or accidents.

7,051.00 RT

1,409.00 OT

8,460.00 TOTAL

2012-07-31 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 07-30.

No incidents or accidents.

6,570.00 RT

1,328.50 OT

7,898.50 TOTAL**06 MANPOWER [HEAD COUNT]****01 CREW SIZE**

2012-08-07 Geotechnology [work hours not included in OSHA Log above]

NO.	COMPANY	SURVEYOR	TECHNICIAN	FOREMEN	OPERATORS	TEAMSTERS	LABORERS	PIPE FITTERS	ELECTRICIANS	TBD
01	AAA	0	0	0	0	0	0	0	2	0
02	AMS	0	0	2	1	1	1	0	0	0
03	BCI	0	0	0	1	0	0	0	0	0
04	BTD	0	0	0	2	0	1	0	0	0
05	FLT	0	0	0	0	14	0	0	0	0
06	FWI	0	0	0	0	0	0	2	0	0
07	GEO	0	2	0	0	0	0	0	0	0
08	LEC	0	0	0	0	0	0	0	0	0
09	Z-1	0	0	0	0	0	0	0	0	0
10	Z-2	0	0	0	0	0	0	0	0	0

Total on site: 29

2012-07-24 AMS, BT Drainage [BTD], Belt Construction [BCI], Freitag [FWI], ST Construction [STC], and AAA Electric.

[02] Geotechnology [work hours not included in OSHA Log above]

[02] Pipe

[00] Mechanical

[01] Electrical

[00] Cement

[09] Laborers [AMS 2x, BTD 2x, STC 5x]

[03] Operators [AMS 0x, BCI 1x, BTD 2x]

[16] Teamsters [FLT 15x borrow haul trucking, AMS 1x]

[00] Survey

[03] Foreman [Full time] [AMS 2x, BTD 1x]

[36] TOTAL**02 WORK HOURS AND OVERTIME**

2012-08-07 OPEN - Standard hours - 7:00 AM CT to 5:30 PM CT. Some subcontractors starting at 06:00 AM CT.

2012-07-31 OPEN - Standard hours - 7:00 AM CT to 5:30 PM CT. Some subcontractors starting at 06:00 AM CT.

04 TRAILER - GENERAL CONDITIONS - COORDINATION - VEHICLES

2012-08-07 OPEN - no issues.

2012-07-31 OPEN - no issues.

07	PREVIOUS
01	SUBCONTRACTS
2012-08-07	OPEN - no issues. AAA subcontractor Plant Brothers AMS review in progress.
2012-07-31	OPEN - no issues. AAA has inquired if being signatory to NMA is required if subcontractor on site for a day or two. J. Denham briefly defined the NMA agreement with Ameren and clarified that it is required no matter what amount of time a subcontractor is on site.
02	SUBMITTALS
20120-08-07	<p>Submittal log as published by GEO on 08-03 distributed.</p> <p>[01] Submittal log review, and general conversation.</p> <p>[02] A. Saindon to have geomembrane warranty reviewed by EOW.</p> <p>[03] J. Cravens reported that testing on the geotextile fabric non-woven will not be required [reference AMS HUT-SUB-023-03].</p> <p>[04] Collector box submittal review completed - CLOSE</p> <p>[05] Pump and float cord issue resolved by FWI - CLOSE</p> <p>[06] DS hatch [option] researched by R. Porter submitted and resolved.</p> <p>[07] J. King indicated some electrical submittals are critical - P. Zinsious to review.</p>
20120-07-31	<p>Submittal log as published by GEO on 07-28 distributed.</p> <p>[01] Submittal log review, and general conversation.</p> <p>[02] M. Wagstaff has forwarded collector box submittal to Hanson. LTD to forward hatch details.</p> <p>[03] R. Porter meeting with bated LTD yesterday [07-30] regarding submittals.</p>
08	MATERIAL
01	GENERAL
2012-08-07	<p>OPEN - listing for materials that have potential to impact schedule.</p> <p>[01] Overhead electrical [EWO-13] wire material [ref. Item No. 07.02-2012-08-07 No. 07 above].</p>
2012-07-31	<p>NEW - listing for materials that have potential to impact schedule.</p> <p>[01] Overhead electrical [EWO-13] wire material has been submitted per P. Zinsious.</p> <p>[02] Collector box submittal has been submitted per P. Zinsious.</p> <p>[03] DS lids option to be submitted per R. Porter, round not large enough for pump to be removed. LTD looking into a lightweight aluminum hatch that can be sealed watertight.</p> <p>[04] S. Burch reports 3x pumps and 3x floats ordered/delivered have cords too short. Team brief conversation on options such a splices.</p> <p>FWI to investigate options. R. Porter and J. Cravens indicated that DS installation elevations are either right at or shallower than plan.</p>
09	ADJACENT PROPERTIES AND PCP LINE
01	GENERAL
2012-08-07	<p>OPEN - Discussion during Progress Meeting:</p> <p>[01] No issues - work progressing well.</p>
2012-07-31	<p>OPEN - Discussion during Progress Meeting:</p> <p>[01] Work being completed. GCL liner 100% installed.</p> <p>[02] R. Porter inquired about pulling cap off the clean-out, and future pulling on a riser pipe vertically installed as these clean-outs are. Recommended a mechanical joint [MJ] connection with cap. M. Wagstaff agreed. The PCP line now has total 6x clean-outs.</p> <p>[03] Reference EWO-15 for fence discussion.</p>
10	QUALITY CONTROL
2012-08-07	<p>[01] No results form concrete testing returned to dated per J. Cravens.</p> <p>[02] J. Cravens reports geotextile is not required to be tested per CQA plan [ref. Item No. 07.02-2012-08-07 No. 03 above] - CLOSE.</p> <p>[03] M. Wagstaff concerned over the expansion of the HDPE pipe in the heat relative burial and connections. S. Burch indicated burial will be in the morning when pipe is cool. S. Burch indicated installation as described, no issues. CLOSE</p> <p>[04] FWI and AAA report no quality issues.</p> <p>[05] A. Saindon took 3x clay samples today [08-07]. Previous samples analysis passed, no issues. These sample test results will take longer as the samples will be subject to a "shake test" [a type of leachate test]. The result will be available in 2x weeks.</p>
2012-07-31	<p>[01] No results form concrete testing returned to dated per J. Cravens.</p> <p>[02] Discussion on CA-6 gravel verses CA-6 stone. AER allow base of gravel with stone cap, but concern on interlocking. AMS to provide all "white" CA-6 stone for the aggregate roadways. J. Cravens to investigate if geotextile required to be tested per CQA plan.</p> <p>[03] M. Wagstaff concerned over the expansion of the HDPE pipe in the heat relative burial and connections. S. Burch indicated burial will be in the morning when pipe is cool.</p> <p>[04] M. Wagstaff inquired about installation of the GCL. J. Cravens indicated installation correct. Back fill is 18 IN to 24 IN over the GCL. No issues with the GCL and possible soil movement, as some overlaps of material about 5 FT. Seams were sealed with the Bentonite powder. Before placement of the GCL, the fill material was smooth-drum rolled.</p> <p>[05] Clay samples not taken this past week.</p>

11 SCHEDULE REVIEW

2012-08-07	OPEN. Review of last planner by P. Zinsious. [01] AID 188 - Clay placement of Section D 30%. [02] AID 237a, 252a, 272a, 294a - DS lid on order [03] AID 206 - Paved ditch work on hold until Hanson information received. [04] AID 255a, 276, 279 - pump and float cord length issue resolved [05] AID 114, 420 - AAA waiting on EWO submittal review [06] AID 191 - APD berms 18% [07] AID EWO 16, EWO 16a - deleted activity as CA-6 stone to be used per plan [see EWO-16]
2012-07-31	OPEN. Review of last planner by M. Wagstaff. Major items: [01] GCL 100% [02] Field tile piping 100% [03] Paved gutter 100% [04] Clay Placement Area B 100% [05] Clay Placement Area C 100% [06] DS1 set pump 100% [07] Roadway aggregates submittal [process] 100%

12.0 COST AND BUDGET

02 AMS PAY APPLICATION - CHANGE REQUEST

2012-08-07	No issues. AMS submitted pay application this Monday.
2012-07-31	AMS to submit draft pay-app. M. Wagstaff inquired about credit for PVC option [VES]. AMS confirmed inclusion.

12.1 EXTRA WORK ORDERS

11 EWO-11 BUILDING SPOILS

2012-08-07	OPEN - AMS continues in progress as "fill-in-work", in progress.
2012-07-31	OPEN - AMS continues in progress as "fill-in-work" [backhoe was moving materials today - 07-31].

13 EWO-13 Electrical

2012-08-07	OPEN - AMS has submitted requested B/U information [on Friday 08-03].
2012-07-31	OPEN - M. Wagstaff, J. King, J. Denham, and P. Zinsious to meet after PM. See below EWO-15 for pole-gate location concern.

15 EWO-15 FENCE ALIGNMENT

2012-08-07	OPEN - J. Williams [Illinois representative for CHI] was on site this AM to walk through with R. Porter and price VES. Count on gates: 2x 24 FT and 1x 20 FT. R. Porter recommending guard rail at stilling basin [at culvert between Ash Pond D and Ash Pond C] where fence has been removed, and edge of basin is close to the roadway. CHI currently has a crew on site installing fence around the electrical substation. R. Porter is recommending work to start by EWO, but approval form AER is required.
2012-07-31	NEW - AMS to present Value Engineering Submittal [VES-03] for fence alignment along Ash Pond D and adjacent property to Dement-Wampler farmland consisting of reuse of fence fabric, new and relocated gates, and new perimeter fence alignment. M. Wagstaff reported Mr. Duane Holley [AER Engineering] has approved alignment, and Mr. Jim Williams [AER Plant Operations] to review. Discussion of the overhead power pole locations and the proposed gates. J. Cravens has the approximate pole locations marked per plan.

16 EWO-16 AGGREGATE STONE ROADWAY ALIGNMENT

2012-08-07	CLOSE - AMS to provide CA-6 stone per plans.
2012-07-31	NEW - AMS to present Value Engineering Submittal [VES-03] for any aggregates stone road alignment.

17 EWO-17 PAVED DITCH ALIGNMENT

2012-08-07	OPEN - Hanson to provide elevations. R. Porter has STC on hold until information received.
2012-07-31	NEW - Paved ditch may be re-aligned due to elevation conflict with existing utilities. Reference Item No. 11-2012-07-24 No. 3 above, and Item No. 13-2012-07-24 No. 04 below. M. Wagstaff reviewing with Hanson, and will walk site after PM. Consideration of installation of drainage pipes across the aggregate roadway.

13 ACTION ITEMS - AER [25]

01 AMEREN [AER]

2012-08-07	[01] Electrical submittals have been returned on 08-03. P. Zinsious to check remainder.
2012-07-31	[01] Fencing VES and/or alignment options M. Wagstaff to check status. CLOSE - moved to EWO-15 above. [02] Electrical submittals have been returned, some re-submittals to review. [03] Concrete submittals under review. CLOSE AMS has received. [04] Paved ditch issue, M. Wagstaff to review with Hanson reverse flow line - CLOSE moved to EWO-17 above.

14	ACTION ITEMS - AMS [21]	
01	ASH MANAGEMENT [AMS]	
2012-08-07	[01] Electrical re-submittals.	
2012-07-31	[01] Electrical re-submittals.	

15	PRODUCTION	
03	CLAY	
2012-08-07	OPEN - no issues [01] Placement as of 08-06 is 94,358 CY. [02] R. Porter presented sketch M/U for review of placement area progress - A. Saindon reviewed.	
2012-07-31	OPEN - no issues [01] Placement as of 07-30 is 80,025 CY [7,275 LD]. [02] R. Porter presented sketch M/U for review of placement area progress.	

16	DOCUMENTS TRANSMITTED	
2012-08-07	[01] AER - Last Planner schedule dated 08-02 [publish date]. [02] GEO - Submittal Log published 08-04.	
2012-07-31	[01] AER - Last Planner schedule dated 07-26 [publish date]. [02] GEO - Submittal Log published 07-28.	

17	DOCUMENTS REVIEW ONLY	
2012-08-07	[01] SK-HUT-APD-004-R0 "Project Site - Pond - Quadrant Layout" with M/U to show progress to date of clay placement	
2012-07-31	[01] SK-HUT-APD-004-R0 "Project Site - Pond - Quadrant Layout" with M/U to show progress to date of clay placement [02] S-386 RG M/U for fencing [after main PM].	

18	NEXT PROGRESS MEETING
Next meeting will be held in one week - Tuesday, August 14, 2012 at Hutsonville	

19	DISTRIBUTION - STANDARD	
AER		SUBCONTRACTORS
01 Mr. Mike Wagstaff	01 S. Tincher	AAA
02 Mr. Mike Stewart	02 M. Burch	FWI
03 Mr. Bob Muesenfechter	03 T. Boyer	BTD
04 Mr. Steve Bluemner	04 T. Hunt	STC
GEO		
01 Ms. Anna Saindon		
02 Mr. Eric Neuner		
03 Mr. Joe Cravens		
AMS		
01 Mr. Jimmy Boone		
02 Mr. John Denham		
03 Mr. Joko Tasich		
04 Mr. Randy Porter		

If there are any corrections, modifications, additions, or deletions please notify the sender by e-mail at pzinsious@ashmanagementservices.com

PHOTOGRAPH LOG



Photograph 1 ▲ - Clay placement facing northwest



Photograph 2 ▲ - Detectable utility tape in collector trench facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between August 6 and August 10, 2012

JRC



Photograph 3 ▲ - Slope diversion berm construction facing east



Photograph 4 ▲ - Collector trench excavation facing south



Photograph 5 ▲ - Collector trench facing east



Photograph 6 ▲ - Bleed valve at DS-2 for hydrostatic testing facing northeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between August 6 and August 10, 2012



Photograph 7 ▲ - Cleanout remote vent facing east



Photograph 8 ▲ - Anchor trench outlet toe drain repairs facing west



Photograph 9 ▲ - Overview Ash Pond D facing southeast



Photograph 10 ▲ - Overview Ash Pond D facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between August 6 and August 10, 2012

JRC



Photograph 11 ▲ - Overview Ash Pond D facing southeast



Photograph 12 ▲ - Overview Ash Pond D facing south

All photographs taken by Joseph Cravens of Geotechnology, Inc. between August 6 and August 10, 2012

JRC



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Energy Resources

FROM: Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DATE: August 20, 2012

SUBJECT: Weekly Summary Report for August 13, 2012 to August 17, 2012

PROJECT: Hutsonville Ash Pond D Closure
Crawford County, Hutsonville, Illinois
Geotechnology Project No. J019896.01

The following is a weekly summary of the site activities at the referenced site.

Weather

The weather was generally sunny with periods of clouds and isolated thunderstorms. Temperature (°F) lows ranged from 60 to 68°F, and temperature highs ranged from 79 to 90°F. A weather delay occurred on August 13 and 17, 2012 from storm events.

Construction Activities

Collector trench backfill, surveying, sump pump assembly and installation, butt fusion welding, electric and junction box installation, slope diversion berm construction, paved ditch construction, and clay placement occurred this week. B&T Drainage completed backfilling the collector trench and began grading the paved ditch south of Ash Pond D. Excavation of outfall swales and installation of the geotextile and rip rap occurred. ST Construction, Inc. began forming, pouring, finishing, and curing the paved ditch along the south side of Ash Pond D. Freitag-Weinhardt, Inc. continued installing sump pumps and associated piping. AAA Electric, Inc. installed electric lines in conduits on the west portion of the groundwater collector trench system and junction boxes on the east pump control panel. Lamac Engineering Co. surveyed slope diversion berms and the paved ditch. Massmann Surveying surveyed the 100-foot certification grid for the vegetative cover. Fawn Lane Transit, Inc. and Belt Construction, Inc. continued clay placement in Quadrant D. Slope diversion berm construction continued in Quadrant A and B. Approximately 13 to 16 trucks were used to haul clay material to Ash Pond D. The vegetative cover is being placed in a single three foot lift, and a representative from TSI

Engineering, Inc. observed quality control for the clay placement procedure. Refer to the daily reports for detailed information.

Equipment and Personnel On-Site

CAT D6N Bulldozer
CAT D5G Bulldozer
CAT CS-323C Smooth Drum Roller
John Deere 762B Paddlewheel Scraper
John Deere 450 LC Excavator
John Deere 410J Backhoe
Case 580 Backhoe
Kubota L245DT Tractor
Water Truck (Dust Control)

Geotechnology, Inc. – Joe Cravens
TSI Engineering, Inc. – Andrew DeClue
Ash Management Services, LLC (AMS) – Randy Porter, Robert Dunkley, Greg Siverly, Jeremy Shorter, Brad Bolenbaugh, Blake Bunting, Eric Sefton, John Denham, and Scott Sewel
Charah, Inc. – Joe Tasich
Belt Construction, Inc. (BCI) – Jared Belt
B&T Drainage (BTD) – Brian Schaefer, Michael Switzer, Michael Dashiell, and John Boyer
Fawn Lane Transit, Inc. (FLT) – Kim Edington, Lee Edington, Scott Comer, James Elledge, Jim Urfer, Gary Lamb, Greg Lingorfelter, Tom Sager, Eric Bierman, Robert Shehorn, Billie Meadows, Alan Ruholl, Lee Ruholl, Patrick Wente, Frank Draper, Frank Walton, Jason Byers, and Aaron Gullett
Freitag-Weinhardt, Inc. (FWI) – Scott Burch and Jarrod Barrett
AAA Electric, Inc. (AAA) – Joseph King and Kyle Davidson
Collins and Hermann, Inc. (CHI) – Jacob Williams
Lamac Engineering Co. (LEC) – Jake Lewis
Massmann Surveying – Rick Koeac
Daylight Land Management (DLM) – John Ziliak
ST Construction, Inc. (STC) – John Maetin, Gary Hedges, Scott Hilton, Robert Pressley, Kenneth Kientzel, and Mark Newlin
Visitors – Refer to the Visitor's Log for visitors, dates, and times.
Refer to the meeting minutes for additional personnel.

Meetings

The weekly progress meeting was held on Tuesday, August 14, 2012. Refer to the attached meeting minutes for additional information.

Photographs

A photograph log with select photographs obtained this week is attached.

Materials

Clay for the vegetative layer, IDOT FA-01 sand, RR-01 rip rap, RR-04 rip rap, Propex Geotex 861 geotextile, IDOT SI 4000 psi concrete, welded wire fabric W1.4xW1.4 reinforcement, fiberboard with Seal Tight Snap-Caps, Right Pointe White Water Wax curing compound, fencing, guardrails, and 502 Baro Diver level sensors were delivered.

Testing/Sampling


Testing and sampling did not occur this week.

Calibration Records

Calibration information was not obtained this week.

Signature of CQA Officer

Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.



DAILY REPORTS

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 8/13/12

TIME: Arrive: 6:00 AM Depart: 1:45 PM Travel: 1.0 hr Total: 8.75 (no lunch)
Weather: Cloudy w/ Rain, 68° AM, 80° PM Contractor: AMS Subcontr./Supplier: * None LEC, CHI, DLM
Equipment Working: None

Site Activities / Observations / Contacts / Notes: _____

AMS:
The rest of the geotextile was delivered (9 rolls), totaling 13 rolls. Badge Numbers:
2022355 242, 243, 247, 249, 252, 256, 260, 262, 264.
The 502 Baro Diver sensors were delivered for DS-1, DS-2, DS-3, and DS-4.

LEC:
Jake Lewis with Lamac surveyed additional slope diversion berms and the paved ditch.

CHI:
Jacob Williams with Collins and Hermann delivered all the fencing for the new gates.

DLM:
John Ziliak with Daylight Land Management toured the site to prepare for seeding+mulching.

Rain Day - No Production Occured. *

Additional Comments: _____

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

Randy Poetoe AMS
Contractor Representative Company
[Signature] Date 8-13-12
Signature Anna Sardon Date 8-20-12
Geotechnology, Inc.
[Signature] Engineer's Signature

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 8/14/12

TIME: Arrive: 6:00 AM Depart: 5:30 PM Travel: 1.0 hr Total: 12.0 hrs (0.5 hr for lunch)
Weather: Cloudy, 68° AM, Sunny 83° PM Contractor: AMS Subcontr./Supplier: BTD, FWI, FLT, BCI, TSI
Equipment Working: D6N Dozer, 580 Backhoe, 450 LC Excavator, 410J Backhoe, D5G Dozer,
Site Activities / Observations / Contacts / Notes: CS-323C Roller, 762B Scraper, Water Truck

AMS:

Staked cross-section layouts for slope diversion berms and letdown channels in Section A, B, C, and D. Graded plant access roads, plant entrance, and roadways on the pond cap for the dump trucks. Removed remaining fence posts and fence material from the southwest corner of Ash Pond D to the construction yard.

BTD:

Completed back-filling, grading, and compacting the collector trench south and east of Ash Pond D, excluding the four DS manholes and the proposed location of the collector box. Began grading the paved ditch south of Ash Pond D. The paved ditch will be offset approx. 9.0' to the north on the south side of Ash Pond D to bypass the utilities in the collector trench and to be aligned with the 12" ADS field tile outlet. Installed the MJ mechanical fitting bolt-on caps on CO-1, CO-1A, CO-1B, and CO-2. One more cap needs delivered for CO-4. Note: Only remote vents were installed for CO-3 and CO-4; the west end CO's were vented by drilling two 3/8" holes at the top of the pipe, directly below the MJ caps. Mobilized a John Deere 762B Paddle Wheel Scraper for grading along the south property.

FWI:

Reinstalled the sump pump and floats (on, off, alarm) with the longer cords in DS-2. Installed sump pump and assembly in DS-3 and fused the discharge outlet to the sump discharge pipe. Note: all floats and sump cords enter the high voltage junction box, and all paddlewheel and baro sensors enter the low voltage junction box. Applied seal protectant on the bracket for the three floats in all manholes. Note: Baro divers will be installed last due to being self-weighted, they do not attach

Additional Comments: to the standpipe, and they cannot be exposed to weather and must be wired immediately.

Randy Voltz
Contractor Representative

AMS
Company

Anna Saindon
Signature
Geotechnology, Inc.

8-14-12
Date
8-20-12
Date

Engineer's Signature

FLT/BCI/TSI: Clay Placement
Area = P-77 to 81. Section D
Loads = 242 Eastbound

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 8/15/12

TIME: Arrive: 6:00 AM Depart: 5:30 PM Travel: 1.0 hr Total: 12.25 hrs (0.25 hr for lunch)
Weather: Sunny, 60° AM, 88° PM Contractor: AMS Subcontr./Supplier: BTD, FWI, AAA, MMS, FLT, BCI, TSI
Equipment Working: D6N Dozer, 580 Backhoe, 450LC Excavator, 410J Backhoe, D5G Dozer, 762B
Site Activities / Observations / Contacts / Notes: Scraper, CS-323C Roller, L245DT Tractor, Water Truck

AMS:

Graded plant access roads, plant entrance, and performed housekeeping. All other work at the CBS.

BTD:

Excavated outfall swales to River at the paved ditch outfall section and the rock chute section off the northeast embankment of Ash Pond D. Geotextile was placed in the outfall swales for the rip rap pads (classes B2 and B4). Continued grading the paved ditch south of Ash Pond D. Backfilled around DS-3 and DS-4 manholes. A $\approx 6'$ area will be left open at the entry of the sump discharge pipes to inspect the final HDPE welds in-service at the time of commissioning the sump pumps. Delivery - IDOT CA-6 Fill for paved ditch and RR-1 rip rap for outfall swales.

FWI:

Butt fusion welded and installed the 90° fittings for the 1" HDPE remote vent for CO-3 on the east pump control panel and for CO-4 on top of the embankment at the southeast corner of Ash Pond D at the proposed bollard location. Installed the sump pump and assembly in DS-4 and fused the discharge outlet to the sump discharge pipe. Fused the discharge outlets to the sump discharge pipes at DS-1 and DS-2. Work completed until the collector box arrives.

AAA:

Pulled the high voltage electric for the sump pumps and the floats from the alarm control panel on the west pump control panel to the high voltage junction boxes at DS-1 and DS-2. No. 6 wires are used to power the sumps and No. 10 wires are used to power the floats.

MMS:

Rick Koec with Massmann surveyed the 100' grid for the Ash Pond D clay cap.

FLT/BCI/TSI: BCI cut the southeast embankment

Additional Comments: corner of Ash Pond D for use as fill for the paved ditch and regraded east embankment.

Randy Porter
Contractor Representative

AMS
Company

Anna Seaton
Signature

8-15-12
Date

Geotechnology, Inc.

8-20-12
Date

Engineer's Signature

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

ORIGINAL - FILE

COPIES:

1-JOB SITE

1-ACCOUNTING

Clay Placement - Eastbound Section D
Area = P-77 to 81, and P-92 to 94.
Loads = 195

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 8/16/12

TIME: Arrive: 6:00 AM Depart: 5:30 PM Travel: 1.0 hr Total: 12.25 hrs (0.25 hr for lunch)
Weather: Sunny, 66° AM, 90° PM Contractor: AMS Subcontr./Supplier: BTD, STC, AAA, FLT, BCI, TSI
Equipment Working: D6N Dozer, 580 Backhoe, 450 LC Excavator, 410J Backhoe, D5G Dozer, 762 B
Site Activities / Observations / Contacts / Notes: Scraper, CS-323C Roller, L245DT Tractor, Water Truck

AMS:
Graded Ash Pond D clay cap with a drag blade. All other work performed at the CBS.

BTD:
Continued grading and rolling the paved ditch on the south and east sides of Ash Pond D.
Placed rip rap in the outfall swales to river on top of the geotextile at the paved ditch outfall
section and the rock chute section off the northeast embankment of Ash Pond D. 6" of RR-01
(class B2) was placed for bedding and 16" of RR-04 (class B4) was placed on top. Refer to
5-386, Sheet 9, Detail 3 for outfall swale details. Placed CA-6 fill for the paved ditch bedding
south of Ash Pond D. Delivery - RR-01 rip rap, RR-04 rip rap, and CA-6 fill for paved ditch.

STC:
Personnel - John Maetin, Gary Hedges, Scott Hilton, Robert Pressley, Kenneth Kientzel, and Mark
Newlin. Began forming, pouring, finishing, and curing the paved ditch south of Ash Pond D.
All concrete delivered from R&L Ready Mix Concrete, Inc. Materials - IDOT SI 4000 psi concrete,
wire mesh reinforcement, and fiber board with Seal Tight Snap Caps for expansion joints. Right
Pointe White Water Wax was used for curing. All concrete has a broom finish. Expansion joints
are every 30' and contraction joints are every 10'. Refer to 5-386, Sheet 11, Detail 5 for paved
ditch details. Two trucks delivered - 1(7cy) and 2(8cy) totaling 15 cy.

AAA:
Installed high and low voltage conduit to the east pump control panel for DS-3 and DS-4.
Poured the posts for the east pump control panel and began installing junction boxes on the rack.
FLT/BCI/TSI: BCI continued constructing slope diversion berms in Section A and B, and
high spots on APD. Clay Placement - Eastbound Sec. D

Additional Comments: Areg = P-78 to 82, and P-90 to 94.
Loads = 249

Kandy Poetor AMS
Contractor Representative Company 8-16-12
Signature Anna Sander Date 8-20-12
Geotechnologist, Inc. Date
Engineer's Signature

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 8/7/12

TIME: Arrive: 6:00 AM Depart: 11:15 AM Travel: 1.0 Total: 6.25 hrs (no lunch)

Weather: Sunny, 65° AM, 79° AM Contractor: AMS Subcontr./Supplier: STC

Equipment Working: None

Site Activities / Observations / Contacts / Notes: _____

STC:

Saw cut contraction joints every 10' (2" depth) in the paved ditch that was poured yesterday.

Misc:

The hydrostatic testing for the HDPE welds at the collector box and the four DS manholes will not be required. These will be visually inspected and in-service tested at commission.

The pipe bollards at the cleanouts and the CO-4 remote vent will now be 7' long with 5' of stickup. The HDPE bollard covers are still required, but the 1" fiberglass stickup pipe with zipties will be omitted. Refer to S-386, Sheet 12, Detail 7 for pipe bollard details.

Angle iron will now be used for valve supports within the collector box.

The stilling basin will be omitted at the box culvert; rip rap will extend down to the box culvert without a rip rap berm. Refer to S-386, Sheet 11, Detail 6 for box culvert details.

The new fence gates and box culvert guard rail were approved. Collins & Hermann delivered the fence and rail materials.

Rain Day: Due to the storm event last night, no production occurred today.

Additional Comments: John Denham and Scott Sewell
with AMS toured the site.

Randy Pester
Contractor Representative

AMS
Company 8-17-12

Anna Sander
Signature

Date 8-20-12

Geotechnolgy, Inc.

Date

Engineer's Signature

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No. A 14384

FIELD OBSERVATION REPORT

Representative: Andrew DeClue Project No.: J09896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond DeClue
Vehicle: 7 Zone: - Client: Geotechnology Date: 8/14/12

TIME: Arrive: 6:45 Depart: 5:15 Travel: 1.0 Total: 11.5 (1 1/2 hr lunch)
Weather: 70-80's Contractor: AMS Subcontr./Supplier: -

Equipment Working: -

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place 3 foot
of coverage Fill over Geo-Membrane. Using DG to spread Fill being hauled in from offsite
borrow area. Fill is placed in such a way to prevent Geo-Membrane from becoming wrinkled
and/or being ripped or punctured. Fill placed on Panels P-77 thru 81.

Additional Comments: _____

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

Andrew DeClue
Contractor Representative
Signature
AMS
Company
Date
8/14/12
Date
Geotechnology Inc.
Engineer's Signature

No. A 14385

FIELD OBSERVATION REPORT

Representative: Andrew DeChe Project No.: 5019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closing
Vehicle: 7 Zone: - Client: Geotechnology Date: 8-15-12

TIME: Arrive: 6:45 Depart: 5:15 Travel: 1.0 Total: 11.0 (bhr-hrs)
Weather: 50's - 90's Contractor: AMS Subcontr./Supplier: -
Equipment Working: -

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place 3 foot
coverage fill over Geo-membrane. Using D6 to spread fill being hauled in from offsite borrow
area. Fill is being placed in such a way to prevent Geo-membrane from becoming wrinkled and or
becoming ripped or punctured. Fill is being placed on Panels P-77 thru 81, 92 thru 94

Additional Comments: _____

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

[Signature]
Contractor Representative
[Signature]
Signature
Geotechnology, Inc.
[Signature]
Engineer's Signature

AMS
Company
8/15/12
Date
8/15/12
Date

No. A **14386**

FIELD OBSERVATION REPORT

Representative: Andrew DeChe Project No.: JO19896.01 Task: 2370
Equipment & ID No.: - Project Name: Huntsville Ash Pond D closure
Vehicle: 7 Zone: - Client: Geotechnology Date: 8-16-12

TIME: Arrive: 6:45 Depart: 4:45 Travel: 1.0 Total: 10.75 (1/2 hr. lunch)
Weather: 60-90's Contractor: AMS Subcontr./Supplier: -
Equipment Working: -

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place 3 foot
coverage fill over Geo-Membrane. Using D6 to place fill being hauled in from offsite borrow
area. Fill being placed in such a way to prevent Geo-Membrane from becoming wrinkled
and/or being ripped or punctured. Fill placed on Panels: P-78 thru 82, 90 thru 94.

Additional Comments: _____

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

Randy AMS
Contractor Representative Company
Signature Randy Date 8-16-12
Geotechnology, Inc. Date 8/16/12
Engineer's Signature Randy

MEETING MINUTES



Hutsonville Power Station - Ash Pond D Closure
Progress Meeting No. 22 Minutes
Tuesday, August 14, 2012

01	PUBLICATION				
	Publish date:	2012-08-16	Submitted by:	PHZ	
	Distribution:	E-mail only	Notes taken by:	RMP	
	Location:	Hutsonville Power	AMS-Charah File No.	HUT-APD-MTG-MIN-2012-08-14-PM-22	
	AER PO:	567523 R4	AMS-Charah Contract:	00030-01	AMS-Charah 4116-06-6120

02	ATTENDEES [ALPHA BY COMPANY]						
	NO.	SAL	FIRST	LAST	COMPANY	PHONE	E-MAIL
	01	Mr.	Mike	Wagstaff	Ameren	618-406-3478	mwagstaff@ameren.com
	02	Mr.	Randy	Porter	AMS - SM	502-554-5230	rporter@ashmanagementservices.com
	03	Mr.	Joe	Cravens	Geotechnology	314-568-6628	j_cravens@geotechnology.com

03

ABBREVIATIONS			
AER	Ameren Energy Resources	OSHA	Occupational Safety Health Administration
AMS	Ash Management Services	PCP	Perforated Collector Pipe
BNSF	Burlington	PO	Purchase Order
CBT	Computer Based Training	RHOM	Routine Handling, Operation, and Maintenance
EAP	Emergency Action Plan	SPOC	Single Point
EOD	End of [the] Day	T/M	Time and
EOM	End of [the] month	TBD	To Be
EOW	End of [the] week	TD	Transmission Dispatch
EDTS	Energy Delivery Transmission Services	WPA	Worker Protection Assurance
EDC	Estimated Date [of] Completion		
EWO	Extra Work Order		
HDPE	High Density Polyethylene		
HRS	Hours		
LOTO	Lock Out Tag Out		
NMA	National Maintenance Agreement		

04	DOCUMENTATION	
	<p>Minutes are documented weekly, and the publication have a "rolling record" of the immediate past two weeks. Each week the oldest drops off and the current week is added to the minutes. Items are categorized as either "NEW", "OPEN", "CLOSE", or in case the an item has to be re-published after closed the previous week - "REOPEN". Minutes format changed for Progress Meeting No. 13 deleting and combining certain items for brevity and to abbreviate documentation. Currently the item numbers remained the same for tracking purposes.</p>	

05

SAFETY - HOUSEKEEPING	
02	WORKER PROTECTION ASSURANCE
2012-08-14	OPEN - no issues.
2012-08-07	OPEN - no issues. AAA does not project need for next 2x WKS.
03	EMPLOYEE DRUG TESTING
2012-08-14	OPEN - no issues. Schedule 1x worker for 08-15.
2012-08-07	OPEN - no issues. No workers tested this period [week].
04	AMS SAFETY
2012-08-14	[01] J. Tasich on site 08-12. [02] Next scheduled safety luncheon 08-21 [brauts - bring a side]. [03] Cooling stations are set up, no issues.
2012-08-07	[01] J. Tasich on site 08-05. [02] Safety luncheon o 08-14 postponed to following week 08-21, e-mail will be sent out. [03] AMS has received AER official response for confined space entry plan submittal. [04] Cooling stations are set up, no issues.
05	HOUSEKEEPING
2012-08-14	OPEN - No issues.
2012-08-07	OPEN - No issues.

06 PLANT ACCESS - CBT

2012-08-14 OPEN - No issues.

2012-08-07 OPEN - No issues.

08 OSHA LOG - WORK HOURS

2012-08-14 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 08-13

No incidents or accidents.

7,343.00 RT

1,461.00 OT

8,804.00 TOTAL

2012-08-07 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 08-06.

No incidents or accidents.

7,051.00 RT

1,409.00 OT

8,460.00 TOTAL**05 MANPOWER [HEAD COUNT]****01 CREW SIZE**

2012-08-14 Geotechnology [work hours not included in OSHA Log above]

NO.	COMPANY	SURVEYOR	TECHNICIAN	FOREMEN	OPERATORS	TEAMSTERS	LABORERS	PIPE FITTERS	ELECTRICIANS	TBD
01	AAA	0	0	0	0	0	0	0	0	0
02	AMS	0	0	1	1	1	2	0	0	0
03	BCI	0	0	0	1	0	0	0	0	0
04	BTD	0	0	0	2	0	1	0	0	0
05	FLT	0	0	0	0	14	0	0	0	0
06	FWI	0	0	0	0	0	0	2	0	0
07	GEO	0	2	0	0	0	0	0	0	0
08	LEC	0	0	0	0	0	0	0	0	0
09	Z-1	0	0	0	0	0	0	0	0	0
10	Z-2	0	0	0	0	0	0	0	0	0

Total on site: 27

2012-08-07 Geotechnology [work hours not included in OSHA Log above]

NO.	COMPANY	SURVEYOR	TECHNICIAN	FOREMEN	OPERATORS	TEAMSTERS	LABORERS	PIPE FITTERS	ELECTRICIANS	TBD
01	AAA	0	0	0	0	0	0	0	2	0
02	AMS	0	0	2	1	1	1	0	0	0
03	BCI	0	0	0	1	0	0	0	0	0
04	BTD	0	0	0	2	0	1	0	0	0
05	FLT	0	0	0	0	14	0	0	0	0
06	FWI	0	0	0	0	0	0	2	0	0
07	GEO	0	2	0	0	0	0	0	0	0
08	LEC	0	0	0	0	0	0	0	0	0
09	Z-1	0	0	0	0	0	0	0	0	0
10	Z-2	0	0	0	0	0	0	0	0	0

Total on site: 29**02 WORK HOURS AND OVERTIME**

2012-08-14 OPEN - Standard hours - 7:00 AM CT to 5:30 PM CT. Some subcontractors starting at 06:00 AM CT.

2012-08-07 OPEN - Standard hours - 7:00 AM CT to 5:30 PM CT. Some subcontractors starting at 06:00 AM CT.

04 TRAILER - GENERAL CONDITIONS - COORDINATION - VEHICLES

2012-08-14 OPEN - no issues.

2012-08-07 OPEN - no issues.

07	PREVIOUS
01	SUBCONTRACTS
2012-08-14	OPEN - no issues. AAA subcontractor Plant Brothers AMS review in progress.
2012-08-07	OPEN - no issues. AAA subcontractor Plant Brothers AMS review in progress.
02	SUBMITTALS
20120-08-14	<p>Submittal log was distributed as published by GEO on 08-10.</p> <p>[01] Submittal log review, and general conversation.</p> <p>[02] A. Saindon to have geomembrane warranty reviewed by EOW. OPEN</p> <p>[03] J. Cravens reported that testing on the geotextile fabric non-woven will not be required [reference AMS HUT-SUB-023-03]. OPEN</p> <p>[04] AMS resubmit B3 Rip Rap for letdown chutes and stilling basins.</p> <p>[05] Collector box submittal review completed - CLOSE Reinforcing steel in tops required.</p> <p>[06] DS hatch [option] researched by R. Porter submitted and resolved. Reinforcing steel in tops required.</p> <p>[07] J. King indicated some electrical submittals are critical - P. Zinsious to review. OPEN - In progress with Ameren.</p>
20120-08-07	<p>Submittal log as published by GEO on 08-03 distributed.</p> <p>[01] Submittal log review, and general conversation.</p> <p>[02] A. Saindon to have geomembrane warranty reviewed by EOW.</p> <p>[03] J. Cravens reported that testing on the geotextile fabric non-woven will not be required [reference AMS HUT-SUB-023-03].</p> <p>[04] Collector box submittal review completed - CLOSE</p> <p>[05] Pump and float cord issue resolved by FWI - CLOSE</p> <p>[06] DS hatch [option] researched by R. Porter submitted and resolved.</p> <p>[07] J. King indicated some electrical submittals are critical - P. Zinsious to review.</p>
08	MATERIAL
01	GENERAL
2012-08-14	<p>OPEN - listing for materials that have potential to impact schedule.</p> <p>[01] R. Porter to receive delivery date for collector box tomorrow [08-16].</p>
2012-08-07	<p>OPEN - listing for materials that have potential to impact schedule.</p> <p>[01] Overhead electrical [EWO-13] wire material [ref. Item No. 07.02-2012-08-07 No. 07 above].</p>
09	ADJACENT PROPERTIES AND PCP LINE
01	GENERAL
2012-08-14	<p>OPEN - Discussion during Progress Meeting:</p> <p>[01] Lamac [LEC] staked out for fence on property line [south side of property].</p>
2012-08-07	<p>OPEN - Discussion during Progress Meeting:</p> <p>[01] No Issues - work progressing well.</p>
10	QUALITY CONTROL
2012-08-14	[01] Results of 7D [seven day] break passed.
2012-08-07	<p>[01] No results form concrete testing returned to dated per J. Cravens.</p> <p>[02] J. Cravens reports geotextile is not required to be tested per CQA plan [ref. Item No. 07.02-2012-08-07 No. 03 above] - CLOSE.</p> <p>[03] M. Wagstaff concerned over the expansion of the HDPE pipe in the heat relative burial and connections. S. Burch indicated burial will be in the morning when pipe is cool. S. Burch indicated installation as described, no issues. CLOSE</p> <p>[04] FWI and AAA report no quality issues.</p> <p>[05] A. Saindon took 3x clay samples today [08-70]. Previous samples analysis passed, no issues. These sample test results will take longer as the samples will be subject to a "shake test" [a type of leachate test]. The result will be available in 2x weeks.</p>

2012-08-14	OPEN - Review of last planner by M. Wagstaff. Report by R. Porter: [01] 138 Fence work set post & install fence duration 4 days, waiting on start date from sub. [02] 139 Fence work set gates 1 day duration, waiting on start date from sub. [03] 188 Clay placement section -D finish date 8-24-12 used 2 rain days since last meeting. Completion 50%. [04] 191 Earthwork slope diversion berms start date 8-06-12 finish 8-31-12. Completion 18% - no change. [05] 192 Earthwork let down channels start date 8-20-12 finish 8-31-12. [06] 193 Earthwork rock chutes start date 8-22-12 finish 8-31-12. [07] 196 Earthwork finish grade start date 9-04-12 finish 9-07-12. [08] 198 Roadways resurface south perimeter road start date 7-27-12 finish 7-31-12. [09] 198A Roadways resurface interior plant roads start date 8-04-12 finish 8-07-12. [10] 199 Roadways new access road to control panel start date 7-27-12 finish 7-29-12. [11] 206 Concrete paved ditch prep. Started 8-14-12 finish 8-17-12. [12] 207 Concrete paved ditch form and pour start date 8-16-12 finish 8-24-12. [13] 208 Concrete paved ditch strip forms and backfill start date 8-27-12 finish 8-31-12. [14] 210 Ground cover mobilization start date 9-04-12 finish 9-04-12. [15] 211 Ground cover erosion control blanket & reinforced mat start date 9-04-12 finish 9-05-12. [16] 212 Ground cover hydro seed & mulch start date 9-06-12 finish 9-13-12. [17] 317 Install collector box 1 day duration, will receive call from County Materials for delivery date. [18] 370 Install 10 new power poles, waiting for delivery date from AAA.
2012-08-07	OPEN. Review of last planner by P. Zinsious. [01] AID 188 - Clay placement of Section D 30%. [02] AID 237a, 252a, 272a, 294a - DS lid on order [03] AID 206 - Paved ditch work on hold until Hanson information received. [04] AID 255a, 276, 279 - pump and float cord length issue resolved [05] AID 114, 420 - AAA waiting on EWO submittal review [06] AID 191 - APD berms 18% [07] AID EWO 16, EWO 16a - deleted activity as CA-6 stone to be used per plan [see EWO-16]

02 AMS PAY APPLICATION - CHANGE REQUEST

2012-08-14	No issues.
2012-08-07	No issues. AMS submitted pay application this Monday.

11 EWO-11 BUILDING SPOILS

2012-08-14	CLOSE - Work completed.
2012-08-07	OPEN - AMS continues in progress as "fill-in-work", in progress.

13 EWO-13 Electrical

2012-08-14	OPEN - no report.
2012-08-07	OPEN - AMS has submitted requested B/U information [on Friday 08-03].

15 EWO-15 FENCE ALIGNMENT

2012-08-14	OPEN - M. Wagstaff gave verbal approval, will notify P. Zinsious on 08-15.
2012-08-07	OPEN - J. Williams [Illinois representative for CHI] was on site this AM to walk through with R. Porter and price VES. Count on gates: 2x 24 FT and 1x 20 FT. R. Porter recommending guard rail at stilling basin [at culvert between Ash Pond D and Ash Pond C] where fence has been removed, and edge of basin is close to the roadway. CHI currently has a crew on site installing fence around the electrical substation. R. Porter is recommending work to start by EWO, but approval form AER is required.

17 EWO-17 PAVED DITCH ALIGNMENT

2012-08-14	OPEN - Will use CA-6 "gravel" on slopes. M. Wagstaff verbal approval of up to estimated \$ 3,000 [approximately 20 loads].
2012-08-07	OPEN - Hanson to provide elevations. R. Porter has STC on hold until information received.

01 AMEREN [AER]

2012-08-14	[01] Electrical submittals have been returned on 08-03. P. Zinsious to check remainder.
2012-08-07	[01] Electrical submittals have been returned on 08-03. P. Zinsious to check remainder.

14 ACTION ITEMS - AMS [21]**01 ASH MANAGEMENT [AMS]**

2012-08-14 [01] Electrical re-submittals. CLOSE
[02] B3 Rip Rap [ref. Item No. 07.02-2012-08-14 No. 04 above]
2012-08-07 [01] Electrical re-submittals.

15 PRODUCTION**03 CLAY**

2012-08-14 OPEN - no issues
[01] Placement as of 08-13 is 102,300 CY.
[02] R. Porter presented sketch M/U for review of placement area progress.
2012-08-07 OPEN - no issues
[01] Placement as of 08-06 is 94,358 CY.
[02] R. Porter presented sketch M/U for review of placement area progress - A. Saindon reviewed.

16 DOCUMENTS TRANSMITTED

2012-08-14 [01] AER - Last Planner schedule dated 08-07 [data date].
[02] GEO - Submittal Log published 08-10.
2012-08-07 [01] AER - Last Planner schedule dated 08-02 [publish date].
[02] GEO - Submittal Log published 08-04.

17 DOCUMENTS REVIEW ONLY

2012-08-14 [01] SK-HUT-APD-004-R0 "Project Site - Pond - Quadrant Layout" with M/U to show progress to date of clay placement
2012-08-07 [01] SK-HUT-APD-004-R0 "Project Site - Pond - Quadrant Layout" with M/U to show progress to date of clay placement

18 NEXT PROGRESS MEETING

Next meeting will be held in one week - Tuesday, August 21, 2012 at Hutsonville [safety luncheon]

19 DISTRIBUTION - STANDARD**AER**

01 Mr. Mike Wagstaff
02 Mr. Mike Stewart
03 Mr. Bob Muesenfechter
04 Mr. Steve Bluemner

SUBCONTRACTORS

01 S. Tinchner AAA
02 M. Burch FWI
03 T. Boyer BTD
04 T. Hunt STC

GEO

01 Ms. Anna Saindon
02 Mr. Eric Neuner
03 Mr. Joe Cravens

AMS

01 Mr. Jimmy Boone
02 Mr. John Denham
03 Mr. Joko Tasich
04 Mr. Randy Porter

If there are any corrections, modifications, additions, or deletions please notify the sender by e-mail at pzinsious@ashmanagementservices.com

PHOTOGRAPH LOG



Photograph 1 ▲ - Collector trench backfill facing northeast



Photograph 2 ▲ - DS-2 sump pump installation facing northeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between August 13 and August 17, 2012



Photograph 3 ▲ - Confined space entry at DS-2 manhole facing northeast



Photograph 4 ▲ - Collector trench backfill facing northeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between August 13 and August 17, 2012

JRC



Photograph 5 ▲ - Staking slope diversion berms and letdown channels facing north



Photograph 6 ▲ - Clay placement Quadrant D facing northwest

All photographs taken by Joseph Cravens of Geotechnology, Inc. between August 13 and August 17, 2012



Photograph 7 ▲ - Electric for sumps and floats facing northwest



Photograph 8 ▲ - Grading Ash Pond D cap facing southeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between August 13 and August 17, 2012



Photograph 9 ▲ - Paved ditch construction facing east



Photograph 10 ▲ - Paved ditch construction facing northwest

All photographs taken by Joseph Cravens of Geotechnology, Inc. between August 13 and August 17, 2012



Photograph 11 ▲ - Paved ditch construction facing northwest



Photograph 12 ▲ - Overview Ash Pond D facing south

All photographs taken by Joseph Cravens of Geotechnology, Inc. between August 13 and August 17, 2012

JRC



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Energy Resources

FROM: Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DATE: August 31, 2012

SUBJECT: Weekly Summary Report for August 20, 2012 to August 24, 2012

PROJECT: Hutsonville Ash Pond D Closure
Crawford County, Hutsonville, Illinois
Geotechnology Project No. J019896.01

The following is a weekly summary of the site activities at the referenced site.

Weather

The weather was generally clear and sunny with periods of cloudy skies. Temperature (°F) lows ranged from 55 to 66°F, and temperature highs ranged from 80 to 96°F. Weather delays did not occur this week.

Construction Activities

The following activities occurred this week: rock chute and letdown channel construction, paved ditch construction, outfall swale construction, field tile installation, collector box installation and piping, pipe bollard installation, electrical and pump control panel installation, subgrade preparation for gravel surfacing, slope diversion berm construction, and clay placement. Ash Management Services, LLC installed rock chutes with geotextile and rip rap, and began constructing letdown channels. B&T Drainage continued grading the paved ditch, placing fill for the paved ditch bedding, and backfilling against the paved ditch. Additional rip rap was placed in the outfall swales to the river. The new field tile was connected to the existing manhole south of Ash Pond A, completing the field tile installation. The collector box was installed adjacent to the existing outfall manhole on the northeast corner of Ash Pond D, and the outlet drainage pipe from the collector box to the manhole was installed. Freitag-Weinhardt, Inc. installed the sump discharge pipes and ball valves inside the collector box. ST Construction, Inc. continued paved ditch concrete construction along the south side of Ash Pond D. Concrete testing, including slump, air entrainment, and cast cylinders, was performed by Patriot Engineering, Inc. The pipe bollards were installed beside the groundwater collection system cleanouts. AAA Electric, Inc.

installed electrical lines in the conduit for the east portion of the groundwater collection system. Junction boxes and conduit were installed on the west and east pump control panels, and the ground rods were installed for both panels. Fawn Lane Transit, Inc. and Belt Construction, Inc. placed soil in Quadrant D for the vegetative cover. Subgrade preparation for the new roadways and gravel surfacing began. Slope diversion berm construction continued in Quadrant C and D. Approximately 12 to 16 trucks were used to haul clay material to Ash Pond D. The vegetative cover was placed in a single three foot lift, and a representative from TSI Engineering, Inc. observed quality control for the clay placement procedure. Refer to the daily reports for detailed information.

Equipment and Personnel On-Site

CAT D6N Bulldozer
CAT D5G Bulldozer
CAT CS-323C Smooth Drum Roller
John Deere 762B Paddlewheel Scraper
John Deere 450 LC Excavator
John Deere 410J Backhoe
John Deere 4020 Tractor
Case 580 Backhoe
Kubota L245DT Tractor
Water Truck (Dust Control)

Geotechnology, Inc. – Joe Cravens
TSI Engineering, Inc. – Andrew DeClue
Ash Management Services, LLC (AMS) – Randy Porter, Robert Dunkley, Greg Siverly, Jeremy Shorter, Brad Bolenbaugh, Blake Bunting, and Eric Sefton
Charah, Inc. – Joe Tasich
Belt Construction, Inc. (BCI) – Jared Belt
B&T Drainage (BTD) – Brian Schaefer, Michael Switzer, and Michael Dashiell
Fawn Lane Transit, Inc. (FLT) – Kim Edington, Lee Edington, Scott Comer, James Elledge, Jim Urfer, Gary Lamb, Greg Lingorfelder, Tom Sager, Eric Bierman, Robert Shehorn, Billie Meadows, John Niles, Brian Griffith, Bob Smithenry, Alan Ruholl, Lee Ruholl, Patrick Wente, Frank Draper, Jason Byers, and Aaron Gullett
Freitag-Weinhardt, Inc. (FWI) – Scott Burch and Jarrod Barrett
AAA Electric, Inc. (AAA) – Joseph King and Kyle Davidson
ST Construction, Inc. (STC) – John Maetin, Gary Hedges, Scott Hilton, Robert Pressley, Kenneth Kientzel, and Mark Newlin
Patriot Engineering, Inc. (PEI) – Thad Simpson
Visitors – Refer to the Visitor's Log for visitors, dates, and times.
Refer to the meeting minutes for additional personnel.

Meetings

The weekly progress meeting was held on Tuesday, August 21, 2012. Refer to the attached meeting minutes for additional information.

Photographs

A photograph log with select photographs obtained this week is attached.

Materials

Clay for the vegetative layer, IDOT CA-6 fill, RR-03 rip rap, RR-04 rip rap, IDOT SI 4000 psi concrete, fiberboard with Seal Tight Snap-Caps, Octocrete non-shrink grout, pipe bollards, bollard covers, and the precast collector box were delivered.

Testing/Sampling

Patriot Engineering, Inc. performed concrete testing for the paved ditch, including slump and air entrainment testing. Four concrete cylinders were cast and retrieved each day for testing. Refer to the concrete testing records for additional information.

Calibration Records

Calibration information was not obtained this week.

Signature of CQA Officer

 for

Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DAILY REPORTS

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 8/20/12

TIME: Arrive: 6:00 AM Depart: 5:30 PM Travel: 1.0 hr Total: 12.25 hrs ^(0.25 hr for lunch)
Weather: Sunny, 58° AM, 80° PM Contractor: AMS Subcontr./Supplier: BTD, STC, PEI, FLT, BCI, TSI
Equipment Working: D6N Dozer, 580 Backhoe, 450LC Excavator, 410J Backhoe, D5G Dozer, 762B
Site Activities / Observations / Contacts / Notes: Scraper, CS-323C Roller, L245DT Tractor, Water Truck

AMS:

Graded plant access roads and put up silt fence around the paved ditch south of Ash Pond D.

BTD:

Continued grading and rolling the subgrade for the paved ditch south and east of Ash Pond D. Placed additional rip rap in the outfall swales to river at the paved ditch outfall section and the rock chute section off the northeast embankment of Ash Pond D. Placed CA-6 fill for the paved ditch bedding south of Ash Pond D. Began backfilling against the paved ditch south of Ash Pond D. Backfilled around DS-1 and DS-2 manholes, and around the west and east pump control panels. Delivery - CA-6 fill, RR-04 riprap (B4), and the collector box.

STC:

Continued forming, stripping, pouring, finishing, and curing the paved ditch south of Ash Pond D. Expansion joints were placed every 30'. Three trucks delivered - 1(8cy), 2(8cy), 3(8cy) = 24cy

PEI:

Thad Simpson performed concrete testing for the paved ditch. 75°, 4 cylinders cast, and Slump = 3". The air entrainment testing apparatus is currently being repaired. Refer to the project CQA Plan for sampling/testing details. Test tolerances are being field approved.

FLT/BCI/TSI:

BCI backfilled against the paved gutter west of Section C. Additional clay fill was placed on the southwest side of Section C to compensate the shallow, relocated 18" HDPE drainage pipe. Began grading the subgrade for the new gravel road running to the east pump control panel south of Section C. Graded the south embankment of Ash Pond D.

Clay Placement - Eastbound Section D.

Additional Comments: Area = P81 to 84, and P-89.

Loads = 284

Randy Postee
Contractor Representative
Randy Postee
Signature

AMS
Company
8-20-12
Date

[Signature]
Geotechnology, Inc.
Engineer's Signature

Date

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: — Client: Ameren ER Date: 8/21/12

TIME: Arrive: 6:00 AM Depart: 5:45 PM Travel: 1.0 hr Total: 12.5 hrs (0.25 hr for lunch)
 Weather: Partly Cloudy, 55° AM, Sunny 86° PM Contractor: AMS Subcontr./Supplier: BTD, STC, PEI, FWI, FLT, BCI, TSI
 Equipment Working: D6N Dozer, 580 Backhoe, 450 LC Excavator, 410J Backhoe, D5G Dozer, 762B
 Site Activities / Observations / Contacts / Notes: Scraper, CS-323C Roller, L245DT Tractor, Water Truck
AMS:

Excavated 6'x6' pad and slopes for the stilling basin at the invert of the existing 2'x5' box culvert on the west side of Ash Pond D. Placed 8 oz. geotextile and RR-03 rip rap (Class B3) onto the excavated pad and slopes up to the box culvert. Delivery - RR-03 rip rap.

BTD:

Continued grading and rolling the subgrade for the paved ditch east of Ash Pond D. Continued placing CA-6 fill for the paved ditch bedding south of Ash Pond D. Excavated and installed the collector box northeast of Ash Pond D, south of the existing outfall manhole. Installed the 8" HDPE drainage pipe from the collector box to the outfall manhole. The collector box exit and the manhole entry received a concrete collar. The inside of the collector box and manhole will receive non-shrink grout.

STC:

Continued forming, stripping, pouring, finishing, curing, and saw cutting the paved ditch south of Ash Pond D. Three trucks delivered - $1(8cy) + 2(8cy) + 3(8cy) = 24cy$

PEI:

Thad Simpson performed concrete testing for the paved ditch. 78°, 4 cylinders cast, Air = 4.2%, and Slump = 2". A rain event occurred from 8:00 AM to 8:45 AM and, therefore, the first concrete truck's pour was delayed. Per ACI 305.1-06, the concrete mixing in the truck had passed its time limit. This also caused the 2" slump. Therefore, the pouring from the first truck was ceased and the remaining concrete was disposed of.

FWI: Butt fusion welded and installed the 3" HDPE ball valves for DS-1, DS-2, DS-3, and DS-4 in the collector box. Angle iron was installed

Additional Comments: as supports for the valves.

Electrofusion couplers were omitted in the box.

Kathy Pickel
Contractor Representative

Signature

AMS
Company

Date

Geotechnology, Inc.

Engineer's Signature

Date

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FLT/BCI/TSI: Clay Placement D
Area = P-81 to 84. Loads = 201

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 8/22/12

TIME: Arrive: 6:00 AM Depart: 5:30 PM Travel: 1.0 hr Total: 12.25 hrs (0.25 hr for lunch)
Weather: Sunny, 55° AM, 91° PM Contractor: AMS Subcontr./Supplier: BTD, STC, PEI, AAA, FLT, BCI, TSI
Equipment Working: D6N Dozer, 580 Backhoe, 450LC Excavator, 410J Backhoe, DSG Dozer, 762B Scraper,
Site Activities / Observations / Contacts / Notes: CS-322C Roller, L24SDT Tractor, 4020 Tractor, Water Truck

AMS:

Excavated the rock chute to the outfall swale to river off the northeast embankment of Ash Pond D. Placed 8 oz. geotextile and RR-03 rip rap into the rock chute. Note - the letdown channel Section C-C at the bottom of the rock chute will be omitted and the rock chute will extend down to the beginning of the outfall swale. Note - the stilling basins at the bottom of the rock chutes will be omitted and all chute containment berms will be 1.0' in height. The rock chute slopes will be as-built to match the current Ash Pond D embankment slopes. Silt fence was placed around the rip rap and the containment berms will be built at a later date.

BTD:

Continued grading the subgrade for the paved ditch east of Ash Pond D. Continued placing CA-6 fill for the paved ditch bedding south of Ash Pond D. Backfilled against the paved ditch and the collector box. Excavated for field tile installation south of Ash Pond A. Drilled holes for pipe bollards beside all the cleanouts and the remote vent for CO-4. Poured concrete collar for 8" HDPE drainage pipe inside existing outfall manhole. Sealed sump discharge pipes and 8" HDPE drainage pipe with Octocrete non-shrink grout inside the collector box northeast of Ash Pond D. Delivery - CA-6 fill, 7 pipe bollards, and Octocrete non-shrink grout.

STC:

Continued paved ditch concrete construction south of Ash Pond D. Set and poured the pipe bollards beside the cleanouts. Three trucks delivered - $1(8cy) + 2(8cy) + 3(8cy) = 24cy$

PEI:

Tested concrete for the paved ditch - Temp = 75°, Air = 4.5%, Slump = 3", and 4 cylinders cast.

AAA: Installed junction boxes on the east pump control

Additional Comments: panel and pulled measurements for the electric feeder from MCC to east and west PCS.

Contractor Representative

Signature

Company

Date

Geotechnology, Inc.

Engineer's Signature

Date

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ORIGINAL - FILE

COPIES:

1-JOB SITE

1-ACCOUNTING

FLT/BCI/TSI - Clay Placement D

Area = P-85 to 87. Loads = 247

Mobilize - John Deere 4020 Tractor

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: 0019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 8/23/12

TIME: Arrive: 6:00 AM Depart: 5:45 PM Travel: 1.0 hr Total: 12.5 hrs (0.25 hr for lunch)
Weather: Sunny, 58° AM, 93° PM Contractor: AMS Subcontr./Supplier: BTD, STC, PEI, AAA, FLT, BCI, TSI
Equipment Working: D6N Dozer, 580 Backhoe, 450LC Excavator, 410J Backhoe, D5G Dozer, 762B
Site Activities / Observations / Contacts / Notes: Scraper, CS-323C Roller, L245DT Tractor, Water Truck
AMS:

Constructed an additional rock chute to the box culvert riprap swale on the west side of Ash Pond D extending from the slope diversion berms. RR-03 riprap and 8 oz. geotextile were used in the rock chute. Graded the Ash Pond D cap with a drag blade. Delivery - RR03 riprap.

BTD:

Broke a entry hole into the existing grade inlet manhole southwest of DS-1 for the field tile. The new entry will contain the 12" ADS field tile and an existing 6" ADS field tile coming from the southern field. Note - the 6" ADS tile was plugged with soil. Both field tiles were installed and received a concrete collar in the grade inlet manhole. This completed the field tile work items. Backfilled against the grade inlet manhole, DS-1, west pump control panel, and paved ditch. Placed CA-6 fill for the paved ditch bedding. Delivery - CA-6 fill. Demobilized - John Deere 4020 tractor.

STC:

Continued paved ditch concrete construction south of Ash Pond D. Three trucks delivered - 24 cy.

PEI:

Tested concrete for the paved ditch - Temp = 73°, Air = 4.7%, Slump = 3 3/4", and 4 cylinders cast.

AAA:

Pulled the high voltage electric lines for the sump pump and floats from the pump junction box on the east pump control panel to the high voltage junction box on DS-4. Installed 3/4" SS conduit for the paddlewheel flow sensor and 1 1/4" SS conduit for the Diver level sensor onto the east pump control panel. Note - Herculine is used for all conduit length measurements.

FLT/BCI/TSI: An air bubble developed in the southeast corner of Section D towards clay placement completion. The embankment adjacent to the

Additional Comments: side of the anchor trench was excavated to release the air. Clay placement will continue tomorrow.

Kathy Porter
Contractor Representative
Signature

AMS
Company
8-23-12
Date

Geotechnology, Inc.
[Signature]
Engineer's Signature

Date

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Constructed slope diversion berms in Section C.
Clay Placement - Area = P-85 to P-87.
Loads = 242

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 8/24/12

TIME: Arrive: 6:00 AM Depart: 5:30 PM Travel: 1.0 hr Total: 12.25 hrs ^(0.25 hr for lunch)
Weather: Sunny, 66° AM, 96° PM Contractor: AMS Subcontr./Supplier: BTD, STC, PEI, AAA, FLT, BCI, TSI
Equipment Working: D6N Dozer, 580 Backhoe, 450LC Excavator, 410J Backhoe, D5G Dozer, 762 B
Site Activities / Observations / Contacts / Notes: Scraper, CS-323C Scraper, L245DT Tractor, Water Truck
AMS:

Began constructing letdown channel containment berms on the south side of Ash Pond D. Installed silt fence around the additional rock chute for the box culvert outfall swale on the west side of Ash Pond D. Backfilled against the paved ditch with outfall swale and rock chute spoils.

BTD:

Installed MJ mechanical fitting bolt-on cap on CO-4. Prepared bedding for cleanout and pipe bollard slabs. Note - the concrete slabs will now be SOG (slab-on-grade). Refer to S-386, Sheet 12, Details 5, 6, and 7 for cleanout/pipe bollard details. Placed CA-6 fill for bedding for the paved ditch. Backfilled against the paved ditch. Continued grading and rolling the paved ditch on the east side of Ash Pond D. Installed Foamular 250 moisture-resistant XPS insulation over the existing deep well utilities in the location of the paved ditch on the northeast side of Ash Pond D. Demobilized - CAT D5G Dozer.

STC:

Continued paved ditch concrete construction south of Ash Pond D. Four trucks delivered - 32 cy.

PEI:

Tested concrete for the paved ditch - Temp = 73°, Air = 3.8%, 5.6%, Slump = (before 25 cy) 3", (after 25 cy) 3 1/4", and 4 cylinders cast. * Due to the low air content from the first load, the second load was tested and had acceptable results; concrete pouring resumed.

AAA: Installed 3/4" SS conduit for the flow sensors and 1 1/4" SS conduit for the level sensors on the west pump control panel, as well as back panels and receptacle boxes. Installed ground rod and exothermic (cad) welded the ground cable to the ground rod at the west pump control panel.

FLT/BCI/TSI: Finished clay placement in Section D,

Additional Comments: completing the vegetative cover. Slope diversion berm construction in Sections C and D.

Contractor Representative
Signature

Company
Date 8-04-12

Geotechnology, Inc.
Engineer's Signature

Date

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Graded the subgrade for gravel roadways along the south property line and to the east pump control panel south section C.

No. A 14387

FIELD OBSERVATION REPORT

Representative: Andrew DeChe Project No.: J019896.01 Task: 2378
Equipment & ID No.: - Project Name: Hudsonville Ash Pond D Closure
Vehicle: 7 Zone: - Client: Geotechnology Date: 8-20-12

TIME: Arrive: 6:45 Depart: 5:15 Travel: 1.0 Total: 11.0 (1/2 hr. lunch)
Weather: 60-80's Contractor: AMS Subcontr./Supplier: -
Equipment Working: -

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place 3 feet
of Coverage Fill over Geo-Membrane, using D6 to spread Fill being hauled in from off-site
borrow area. Fill is being placed in such a way to prevent Geo-Membrane from becoming
wrinkled and/or being ripped or punctured. Fill placed on Panels: P-81 thru 84 and 89.

Additional Comments: _____

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Randy
Contractor Representative
Signature
Geotechnology, Inc.
Engineer's Signature
Company AMS
Date 8-20-12
Date 8/20/12

No. A **14388**

FIELD OBSERVATION REPORT

Representative: Andrew DeChe Project No.: J019296.01 Task: 2376
Equipment & ID No.: - Project Name: Horsenville Ash Pond D closure
Vehicle: 7 Zone: - Client: Geotechnology Date: 8-21-12

TIME: Arrive: 6:30 Depart: 5:15 Travel: 1.0 Total: 11.25 (1/2 hr. lunch)
Weather: 60-90's Contractor: AMS Subcontr./Supplier: -
Equipment Working: -

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place 3 foot of
coverage fill over Geo-Membrane using D6 to spread fill being hauled in from offsite
borrow area. Fill is being placed in such a way to prevent Geo-Membrane from becoming
wrinkled and/or becoming ripped or punctured. Fill placed on Panels: P-81 thru 84.

Additional Comments: _____

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Andrew DeChe
Contractor Representative
Signature
Geotechnology, Inc.
Engineer's Signature
AMS
Company
8/21/12
Date
8/21/12
Date

No. A 14389

FIELD OBSERVATION REPORT

Representative: Andrew DeChie Project No.: 5019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hudsonville Ash Pond D Closure
Vehicle: 7 Zone: - Client: Geotechnology Date: 8-21-12
22

TIME: Arrive: 6:45 Depart: 5:15 Travel: 1.0 Total: 11.5 (bkn lunch)
Weather: 60-90's Contractor: AMS Subcontr./Supplier: -
Equipment Working: -

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place
3 foot of coverage fill over Geo membrane. Using D6 to place fill being hauled in
from offsite borrow area. Fill is being placed in such a way to prevent Geo-membrane
from becoming wrinkled and or being torn or punctured. Fill being placed on panels
P-85 thru 87.

Additional Comments: _____

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[Signature] AMS
Contractor Representative Company 22
Signature [Signature] Date 8-21-12
Geotechnology Inc. Date 8/22/12
[Signature]
Engineer's Signature

FIELD OBSERVATION REPORT

Representative: Andrew DeClue Project No.: J019296.01 Task: 2370
 Equipment & ID No.: - Project Name: Hutsonville Ash Pond D closure
 Vehicle: 7 Zone: - Client: Geotechnology Date: 8-23-12

TIME: Arrive: 6:45 Depart: 3:30 Travel: 1.0 Total: 9.75
 Weather: 60-80's Contractor: AMS Subcontr./Supplier: -
 Equipment Working: -

Site Activities / Observations / Contacts / Notes: Belt construction continuing to place 3 foot
of coverage fill over Geo-membrane. Using D6 to spread fill being hauled in from
offsite borrow area. Fill is being placed in such a way to prevent Geo-membrane from becoming
wrinkled and/or becoming punctured or torn. Fill placed on Panels: P-85 thru 87.

Additional Comments: _____

Contractor Representative

Company

Signature

Date

Geotechnology Inc.

Date

Engineer's Signature

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No. A 14391

FIELD OBSERVATION REPORT

Representative: Andrew Deche Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hudsonville Ash Pond D Closure
Vehicle: 7 Zone: — Client: Geotechnology Date: 8-24-12

TIME: Arrive: 6:30 Depart: 11:00 Travel: 1.0 Total: 5.5
Weather: 70's Contractor: AMS Subcontr./Supplier: —
Equipment Working: —

Site Activities / Observations / Contacts / Notes: Belt Construction Finishing placing 3 foot
Coverage Fill over Geo-Membrane. Fill placed on Panels P-86 thru 87.

Additional Comments: _____

Andrew Deche
Contractor Representative

Andrew Deche
Signature

Geotechnology, Inc.
Engineer's Signature

AMS
Company

8-24-12
Date

8/24/12
Date

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ORIGINAL - FILE

COPIES:

1-JOB SITE

1-ACCOUNTING

MEETING MINUTES



Hutsonville Power Station - Ash Pond D Closure
Progress Meeting No. 23 Minutes
Tuesday, August 21, 2012

01	PUBLICATION			
	Publish date:	2012-08-27	Submitted by:	PHZ
	Distribution:	E-mail only	Notes taken by:	PHZ
	Location:	Hutsonville Power	AMS-Charah File No.	HUT-APD-MTG-MIN-2012-08-21-PM-23
	AER PO:	567523 R4	AMS-Charah Contract:	00030-01 AMS-Charah 4116-06-6120

02

ATTENDEES [ALPHA BY COMPANY]						
NO.	SAL	FIRST	LAST	COMPANY	PHONE	E-MAIL
01	Mr.	Joe	King	AAA Electric	812-208-0464	sandy.tincher@aaaelectricofth.com
02	Mr.	Mike	Wagstaff	Ameren	618-406-3478	mwagstaff@ameren.com
03	Mr.	Paul	Zinsious	AMS - PCM	502-640-2918	pzinsious@ashmanagementservices.com
04	Mr.	Randy	Porter	AMS - SM	502-554-5230	rporter@ashmanagementservices.com
05	Mr.	Joko	Tasich	Charah	502-649-7633	jtasich@charah.com
06	Mr.	Mike	Burch	Freitag	812-208-1771	mburch@freitaginc.com
07	Mr.	Joe	Cravens	Geotechnology	314-568-6628	jcravens@geotechnology.com

03

ABBREVIATIONS			
AER	Ameren Energy Resources	OSHA	Occupational Safety Health Administration
AMS	Ash Management Services	PCP	Perforated Collector Pipe
BNSF	Burlington	PO	Purchase Order
CBT	Computer Based Training	RHOM	Routine Handling, Operation, and Maintenance
EAP	Emergency Action Plan	SPOC	Single Point
EOD	End of [the] Day	T/M	Time and
EOM	End of [the] month	TBD	To Be
EOW	End of [the] week	TD	Transmission Dispatch
EDTS	Energy Delivery Transmission Services	WPA	Worker Protection Assurance
EDC	Estimated Date [of] Completion		
EWO	Extra Work Order		
HDPE	High Density Polyethylene		
HRS	Hours		
LOTO	Lock Out Tag Out		
NMA	National Maintenance Agreement		

04 DOCUMENTATION	
Minutes are documented weekly, and the publication have a "rolling record" of the immediate past two weeks. Each week the oldest drops off and the current week is added to the minutes. Items are categorized as either "NEW", "OPEN", "CLOSE", or in case the an item has to be re-published after closed the previous week - "REOPEN". Minutes format changed for Progress Meeting No. 13 deleting and combining certain items for brevity and to abbreviate documentation. Currently the item numbers remained the same for tracking purposes.	

05 SAFETY - HOUSEKEEPING	
02 WORKER PROTECTION ASSURANCE	
2012-08-21	OPEN - no issues. AAA project need for WPA next 2x WKS - 08-31. AMS and AAA to coordinate LOTO. M. Wagstaff to coordinate AER with Mr. Steve Bruner. Confirmation of WPA next Tuesday [08-21].
2012-08-14	OPEN - no issues.
03 EMPLOYEE DRUG TESTING	
2012-08-21	OPEN - no issues. Plant Brothers workers to be tested this period [week].
2012-08-14	OPEN - no issues. Schedule 1x worker for 08-15.
04 AMS SAFETY	
2012-08-21	[01] J. Tasich on site 08-21. Provided overview, safety reports: [01] PPE and safety processes look good - no issues. [02] Spotters [laborers] are rotating - no issues. [03] No confined space entry this look-ahead. [02] M. Wagstaff brief discussion regarding connection to Ash Pond C [pump station] WPA/LOTO. To be further discussed 08-21. [03] Plant Brothers to received site-specific safety training next week. [04] M. Wagstaff inquired about pump [control] panels. J. King to LOTO. [05] Brief discussion regarding final connection and testing of the DS pumps. M. Wagstaff concern about final discharge through the collector box until approval of discharge permit by IEPA. M. Wagstaff required the valves LOTO. FWI and R. Porter to coordinate.

2012-08-14 [01] J. Tasich on site 08-12.
 [02] Next scheduled safety luncheon 08-21 [brauts - bring a side].
 [03] Cooling stations are set up, no issues.

05 HOUSEKEEPING

2012-08-21 OPEN - No issues.
 2012-08-14 OPEN - No issues.

06 PLANT ACCESS - CBT

2012-08-21 OPEN - No issues.
 2012-08-14 OPEN - No issues.

08 OSHA LOG - WORK HOURS

2012-08-21 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 08-20.

No incidents or accidents.

7,771.00 RT
 1,523.00 OT
9,294.00 TOTAL

2012-08-14 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 08-13

No incidents or accidents.

7,343.00 RT
 1,461.00 OT
8,804.00 TOTAL

06 MANPOWER [HEAD COUNT]

01 CREW SIZE [Alpha by Company]

2012-08-21 Geotechnology [work hours not included in OSHA Log above]

NO.	COMPANY	SURVEYOR	TECHNICIAN	FOREMEN	OPERATORS	TEAMSTERS	LABORERS	PIPE FITTERS	ELECTRICIANS	TBD
01	AAA	0	0	0	0	0	0	0	1	0
02	AMS	0	0	1	1	1	2	0	0	0
03	BCI	0	0	0	1	0	0	0	0	0
04	BTD	0	0	0	2	0	1	0	0	0
05	FLT	0	0	0	0	14	0	0	0	0
06	FWI	0	0	0	0	0	0	2	0	0
07	GEO	0	2	0	0	0	0	0	0	0
08	LEC	0	0	0	0	0	0	0	0	0
09	STC	0	0	0	0	0	6	0	0	0
10	Z-2	0	0	0	0	0	0	0	0	0

Total on site: 34

2012-08-14 Geotechnology [work hours not included in OSHA Log above]

NO.	COMPANY	SURVEYOR	TECHNICIAN	FOREMEN	OPERATORS	TEAMSTERS	LABORERS	PIPE FITTERS	ELECTRICIANS	TBD
01	AAA	0	0	0	0	0	0	0	0	0
02	AMS	0	0	1	1	1	2	0	0	0
03	BCI	0	0	0	1	0	0	0	0	0
04	BTD	0	0	0	2	0	1	0	0	0
05	FLT	0	0	0	0	14	0	0	0	0
06	FWI	0	0	0	0	0	0	2	0	0
07	GEO	0	2	0	0	0	0	0	0	0
08	LEC	0	0	0	0	0	0	0	0	0
09	Z-1	0	0	0	0	0	0	0	0	0
10	Z-2	0	0	0	0	0	0	0	0	0

Total on site: 27

02 WORK HOURS AND OVERTIME

2012-08-21 OPEN - Standard hours - 7:00 AM CT to 5:30 PM CT. Some subcontractors starting at 06:00 AM CT. Labor Day holiday 09-03 - no work.
 2012-08-14 OPEN - Standard hours - 7:00 AM CT to 5:30 PM CT. Some subcontractors starting at 06:00 AM CT.

04 TRAILER - GENERAL CONDITIONS - COORDINATION - VEHICLES

2012-08-21 OPEN - no issues.
 2012-08-14 OPEN - no issues.

07	PREVIOUS
01	SUBCONTRACTS
2012-08-21	OPEN - no issues. P. Zinsious to track FWI CO.
2012-08-14	OPEN - no issues. AAA subcontractor Plant Brothers AMS review in progress.
02	SUBMITTALS
20120-08-21	<p>Submittal log was distributed as published by GEO on 08-18.</p> <p>[01] Submittal log review, and general conversation.</p> <p>[02] A. Saindon to have geomembrane warranty reviewed by EOW. CLOSE</p> <p>[03] J. Cravens reported that testing on the geotextile fabric non-woven will not be required [reference AMS HUT-SUB-023-03]. CLOSE</p> <p>[04] AMS resubmit B3 Rip Rap for letdown chutes and stilling basins. CLOSE</p> <p>[05] DS hatch [option] researched by R. Porter submitted and resolved. Reinforcing steel in tops required. M. Wagstaff done. CLOSE</p> <p>[06] Wire insulation discussion previous to PM with M. Wagstaff, J. King, and P. Zinsious.</p> <p>[07] General discussion on manuals for close-out:</p> <p>[01] M. Wagstaff requirement 1x copy digital and 1x copy hard bound</p> <p>[02] J. Cravens collected manuals from FWI for Omega and Zoeller, transmitted to P. Zinsious.</p> <p>[08] General discussion on record drawings for close out:</p> <p>[01] Schematics for panels to be included.</p> <p>[02] M. Wagstaff indicated that Lamac will probably do record drawings in AutoCAD.</p> <p>[03] AMS to provide 1x copy to AER, who will forward to LEC.</p>
20120-08-14	<p>Submittal log was distributed as published by GEO on 08-10.</p> <p>[01] Submittal log review, and general conversation.</p> <p>[02] A. Saindon to have geomembrane warranty reviewed by EOW. OPEN</p> <p>[03] J. Cravens reported that testing on the geotextile fabric non-woven will not be required [reference AMS HUT-SUB-023-03]. OPEN</p> <p>[04] AMS resubmit B3 Rip Rap for letdown chutes and stilling basins.</p> <p>[05] Collector box submittal review completed - CLOSE Reinforcing steel in tops required.</p> <p>[06] DS hatch [option] researched by R. Porter submitted and resolved. Reinforcing steel in tops required.</p> <p>[07] J. King indicated some electrical submittals are critical - P. Zinsious to review. OPEN - In progress with Ameren.</p>
08	MATERIAL
01	GENERAL
2012-08-21	<p>OPEN - listing for materials that have potential to impact schedule.</p> <p>[01] M. Burch reports Omega sensor to be ordered.</p> <p>[02] General discussion of Baro sensor to be in separate panel box. P. Zinsious recommended FWI research with vendor if placed is electrical panel would other signals/inductance create and issue.</p> <p>[03] Collector box holes for the DS lines are too small for Link-Seal. R. Porter recommended using non-shrink grout as used in other area of the projection man holes. P. Zinsious indicated the exterior could be also coated in a mastic to help seal the penetrations. M. Wagstaff indicated that the box still remains in the flood plain, even with the revised elevations and is to be sealed.</p>
2012-08-14	<p>OPEN - listing for materials that have potential to impact schedule.</p> <p>[01] R. Porter to receive delivery date for collector box tomorrow [08-16].</p>
09	ADJACENT PROPERTIES AND PCP LINE
01	GENERAL
2012-08-21	<p>OPEN - Discussion during Progress Meeting:</p> <p>[01] Lamac [LEC] staked out for fence on property line [south side of property]. CLOSE</p> <p>[02] R. Porter reported that Wampler has requested that [field drain] line be plugged. This line is off site, and not part of the scope of work, and is an issue with the agreement between AER and Wampler. M. Wagstaff to investigate.</p>
2012-08-14	<p>OPEN - Discussion during Progress Meeting:</p> <p>[01] Lamac [LEC] staked out for fence on property line [south side of property].</p>
10	QUALITY CONTROL
2012-08-21	<p>[01] No results form concrete testing returned. P. Zinsious to check with STC.</p> <p>[02] J. Cravens reports recent concrete pour slump was about 2 IN. Pour was held up due to rain, and truck wait time exceeded. Therefore approximately 2 CY wasted.</p> <p>[03] HDPE [field tile] no issues.</p> <p>[04] DS-3 ring height issues due to re-grade of the paved concrete ditch. J. king indicated drilling 2x more holes.</p>
2012-08-14	[01] Results of 7D [seven day] break passed.

11	SCHEDULE REVIEW
2012-08-21	<p>OPEN - Review of last planner by M. Wagstaff.</p> <p>[01] Rain day on 08-17.</p> <p>[02] Major changes commentary:</p> <p>[01] Not on LP - AID 199 S = 08-27, D = 2</p> <p>[01] Not on LP - AID 198 S = 08-27, D = 4</p> <p>[01] Not on LP - AID 198a S = 09-04, D = 3</p> <p>[03] Add AID 119a "Install fence and gate" S = 08-27, D = 4</p> <p>[04] Mark-up on LP, submitted to AER for change.</p>
2012-08-14	<p>OPEN - Review of last planner by M. Wagstaff. Report by R. Porter:</p> <p>[01] 138 Fence work set post & install fence duration 4 days, waiting on start date from sub.</p> <p>[02] 139 Fence work set gates 1 day duration, waiting on start date from sub.</p> <p>[03] 188 Clay placement section -D finish date 8-24-12 used 2 rain days since last meeting. Completion 50%.</p> <p>[04] 191 Earthwork slope diversion berms start date 8-06-12 finish 8-31-12. Completion 18% - no change.</p> <p>[05] 192 Earthwork let down channels start date 8-20-12 finish 8-31-12.</p> <p>[06] 193 Earthwork rock chutes start date 8-22-12 finish 8-31-12.</p> <p>[07] 196 Earthwork finish grade start date 9-04-12 finish 9-07-12.</p> <p>[08] 198 Roadways resurface south perimeter road start date 7-27-12 finish 7-31-12.</p> <p>[09] 198A Roadways resurface interior plant roads start date 8-04-12 finish 8-07-12.</p> <p>[10] 199 Roadways new access road to control panel start date 7-27-12 finish 7-29-12.</p> <p>[11] 206 Concrete paved ditch prep. Started 8-14-12 finish 8-17-12.</p> <p>[12] 207 Concrete paved ditch form and pour start date 8-16-12 finish 8-24-12.</p> <p>[13] 208 Concrete paved ditch strip forms and backfill start date 8-27-12 finish 8-31-12.</p> <p>[14] 210 Ground cover mobilization start date 9-04-12 finish 9-04-12.</p> <p>[15] 211 Ground cover erosion control blanket & reinforced mat start date 9-04-12 finish 9-05-12.</p> <p>[16] 212 Ground cover hydro seed & mulch start date 9-06-12 finish 9-13-12.</p> <p>[17] 317 Install collector box 1 day duration, will receive call from County Materials for delivery date.</p> <p>[18] 370 Install 10 new power poles, waiting for delivery date from AAA.</p>

12.0	COST AND BUDGET
02	<p>AMS PAY APPLICATION - CHANGE REQUEST</p> <p>2012-08-21 No issues.</p> <p>2012-08-14 No issues.</p>
12.1	EXTRA WORK ORDERS
13	<p>EWO-13 Electrical</p> <p>2012-08-21 CLOSE</p> <p>2012-08-14 OPEN - no report.</p>
15	<p>EWO-15 FENCE ALIGNMENT</p> <p>2012-08-21 OPEN - AMS to provide back-up information.</p> <p>2012-08-14 OPEN - M. Wagstaff gave verbal approval, will notify P. Zinsious on 08-15.</p>
17	<p>EWO-17 PAVED DITCH ALIGNMENT</p> <p>2012-08-21 OPEN - In progress.</p> <p>2012-08-14 OPEN - Will use CA-6 "gravel" on slopes. M. Wagstaff verbal approval of up to estimated \$ 3,000 [approximately 20 loads].</p>

13	ACTION ITEMS - AER [25]
01	<p>AMEREN [AER]</p> <p>2012-08-21 [01] Electrical submittals have been returned on 08-03. P. Zinsious to check remainder. CLOSE</p> <p>2012-08-14 [01] Electrical submittals have been returned on 08-03. P. Zinsious to check remainder.</p>

14	ACTION ITEMS - AMS [21]
01	<p>ASH MANAGEMENT [AMS]</p> <p>2012-02-21 [01] B3 Rip Rap [ref. Item No. 07.02-2012-08-14 No. 04 above] CLOSE</p> <p>2012-08-14 [01] Electrical re-submittals. CLOSE</p> <p>[02] B3 Rip Rap [ref. Item No. 07.02-2012-08-14 No. 04 above]</p>

15 PRODUCTION**03 CLAY**

2012-08-21 OPEN - no Issues
[01] Placement as of 08-20 is 112,970 CY.
[02] R. Porter presented sketch M/U for review of placement area progress.

2012-08-14 OPEN - no Issues
[01] Placement as of 08-13 is 102,300 CY.
[02] R. Porter presented sketch M/U for review of placement area progress.

16 DOCUMENTS TRANSMITTED

2012-08-21 [01] AER - Last Planner schedule dated 08-14 [data date].
[02] GEO - Submittal Log published 08-18.

2012-08-14 [01] AER - Last Planner schedule dated 08-07 [data date].
[02] GEO - Submittal Log published 08-10.

17 DOCUMENTS REVIEW ONLY

2012-08-21 [01] SK-HUT-APD-004-R0 "Project Site - Pond - Quadrant Layout" with M/U to show progress to date of clay placement

2012-08-14 [01] SK-HUT-APD-004-R0 "Project Site - Pond - Quadrant Layout" with M/U to show progress to date of clay placement

18 NEXT PROGRESS MEETING

Next meeting will be held in one week - Tuesday, August 28, 2012 at Hutsonville

19 DISTRIBUTION - STANDARD**AER**

01 Mr. Mike Wagstaff
02 Mr. Mike Stewart
03 Mr. Bob Muesenfechter
04 Mr. Steve Bluemner

SUBCONTRACTORS

01 S. Tincher AAA
02 M. Burch FWI
03 T. Boyer BTD
04 T. Hunt STC

GEO

01 Ms. Anna Saindon
02 Mr. Eric Neuner
03 Mr. Joe Cravens

AMS

01 Mr. Jimmy Boone
02 Mr. John Denham
03 Mr. Joko Tasich
04 Mr. Randy Porter

If there are any corrections, modifications, additions, or deletions please notify the sender by e-mail at pzinsious@ashmanagementservices.com

PHOTOGRAPH LOG



Photograph 1 ▲ - Construction of the outfall swale to the river facing north.



Photograph 2 ▲ - Grading for the paved ditch facing northeast.



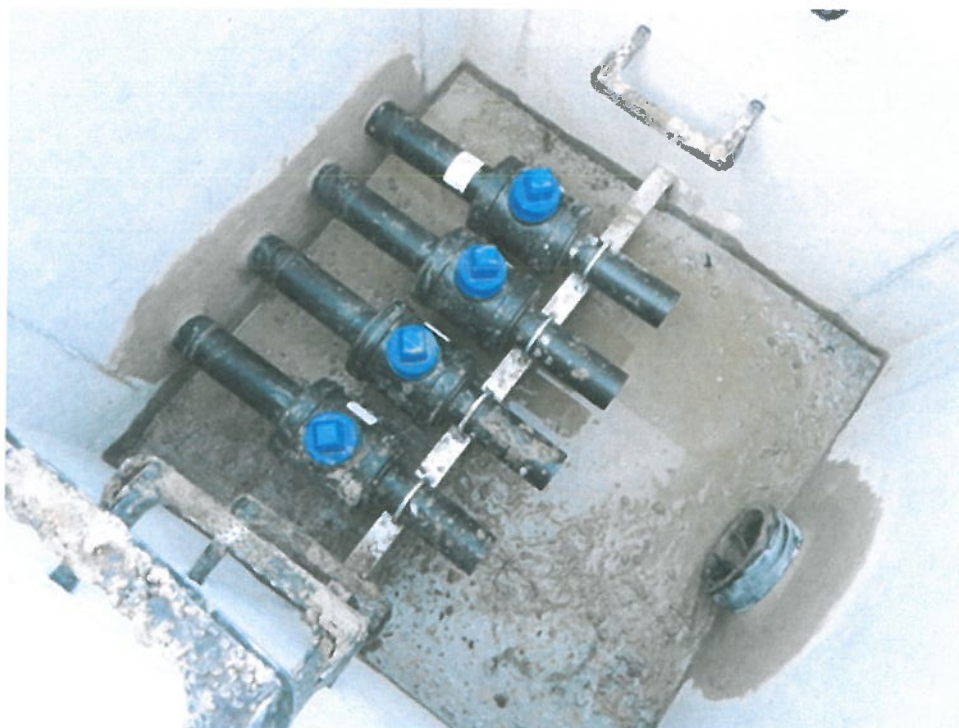
Photograph 3 ▲ - Typical finishing for the paved ditch facing east.



Photograph 4 ▲ - Placing IDOT CA-6 bedding for the paved ditch facing east.



Photograph 5 ▲ - Collector box precast installation facing east.



Photograph 6 ▲ - Collector box piping installation facing southwest.



Photograph 7 ▲ - Rock chute construction facing south.



Photograph 8 ▲ - Field tile installation facing northwest.



Photograph 9 ▲ - Completing clay placement facing northeast.



Photograph 10 ▲ - Slope diversion berm construction facing east.



Photograph 11 ▲ - Forming the paved ditch facing east.



Photograph 12 ▲ - Overview of Ash Pond D facing southeast.



Photograph 13 ▲ - Overview of Ash Pond D facing east.



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Energy Resources

FROM: Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DATE: September 6, 2012

SUBJECT: Weekly Summary Report for August 27, 2012 to August 31, 2012

PROJECT: Hutsonville Ash Pond D Closure
Crawford County, Hutsonville, Illinois
Geotechnology Project No. J019896.01

The following is a weekly summary of the site activities at the referenced site.

Weather

The weather was generally clear and sunny with periods of cloudy skies. Temperature (°F) lows ranged from 64 to 76°F, and temperature highs ranged from 88 to 96°F. Weather delays occurred on August 27 and 28, 2012 due to wet conditions.

Construction Activities

The following activities occurred this week: rock chute construction, paved ditch construction, vegetative cover potholing and surveying, power pole installation, electrical and pump control panel installation, fencing installation, guardrail installation, slope diversion berm construction, and subgrade preparation for gravel surfacing. Ash Management Services, LLC installed rock chutes with geotextile and rip rap, backfilled against the completed paved ditch, and excavated and backfilled collector trenches for the electrical feeder. B&T Drainage continued preparing the subgrade for the paved ditch and backfilling against the completed paved ditch. The vegetative cover over Ash Pond D was potholed to assess the vegetative layer thickness. Lamac Engineering CO. surveyed the potholed locations and staked the 100-ft. certification grid. ST Construction, Inc. continued paved ditch concrete construction along the south and east sides of Ash Pond D. Concrete testing, including slump, air entrainment, and cast cylinders, was performed by Patriot Engineering, Inc. Plant Brothers Excavating and Construction CO. installed power poles for the overhead electric to the groundwater collection system. AAA Electric, Inc. installed additional electrical conduit for the groundwater collection system, low voltage electric lines for sensors, mini power zone (MPZ) boxes, guy wire anchors for the power poles, and managed the

power pole installation. Collins and Hermann, Inc. installed new fencing, three gates, and a guardrail at the box culvert, completing EWO-15. Fawn Lane Transit, Inc. and Belt Construction, Inc. placed backfill against the completed paved ditch and continued slope diversion berm construction. Subgrade preparation for the new roadways and gravel surfacing continued. Approximately 12 to 16 trucks were used to haul clay material to Ash Pond D. Refer to the daily reports for detailed information.

Equipment and Personnel On-Site

CAT D6N Bulldozer
CAT D5G Bulldozer
CAT CS-323C Smooth Drum Roller
CAT 304C Mini Excavator
John Deere 762B Paddlewheel Scraper
John Deere 450 LC Excavator
John Deere 410J Backhoe
New Holland C232 Skid Steer
Case 580 Backhoe
Case 688G Telehandler
Kubota L245DT Tractor
Water Truck (Dust Control)

Geotechnology, Inc. – Joe Cravens
Ash Management Services, LLC (AMS) – Randy Porter, Paul Zinsious, Robert Dunkley, Greg Siverly, Jeremy Shorter, Brad Bolenbaugh, Blake Bunting, and Eric Sefton
Charah, Inc. – Joe Tasich
Belt Construction, Inc. (BCI) – Jared Belt
B&T Drainage (BTD) – Brian Schaefer, Michael Dashiell, and Abel English
Fawn Lane Transit, Inc. (FLT) – Kim Edington, Lee Edington, Scott Comer, James Elledge, Jim Urfer, Gary Lamb, Greg Lingorfelder, Tom Sager, Eric Bierman, Robert Shehorn, Billie Meadows, John Niles, Brian Griffith, Bob Smithenry, Alan Ruholl, Lee Ruholl, Patrick Wentte, Frank Draper, Jason Byers, and Aaron Gullett
Lamac Engineering CO. (LEC) – Austin Ridgley and Jake Lewis
AAA Electric, Inc. (AAA) – Joseph King and Kyle Davidson
ST Construction, Inc. (STC) – John Maetin, Gary Hedges, Scott Hilton, Robert Pressley, Kenneth Kientzel, and Mark Newlin
Patriot Engineering, Inc. (PEI) – Thad Simpson, Jim Wade, and Mark Wooten
Collins and Hermann, Inc. (CHI) – James Fox, Aaron Benjamin, and Chuck Rak
Plant Brothers Excavating and Construction CO. (PBC) – Mike Doss, Terry Mace, and Daniel VanDuyn
Visitors – Refer to the Visitor's Log for visitors, dates, and times.
Refer to the meeting minutes for additional personnel.

Meetings

The weekly progress meeting was held on Tuesday, August 28, 2012. Refer to the attached meeting minutes for additional information.

Photographs

A photograph log with select photographs obtained this week is attached.

Materials

The following materials were delivered this week: clay for slope diversion berms and backfill, timber power poles, MPZ electrical boxes, guy wire anchors, RR-03 rip rap, IDOT CA-6 fill, IDOT FA-1 sand, and IDOT SI 4000 psi concrete.

Testing/Sampling

Patriot Engineering, Inc. performed concrete testing for the paved ditch, including slump and air entrainment testing. Four concrete cylinders were cast and retrieved each day for testing. Refer to the concrete testing records for additional information.

Calibration Records

Calibration information was not obtained this week.

Signature of CQA Officer



Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DAILY REPORTS

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: JO19896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 8/27/12

TIME: Arrive: 6:00 AM Depart: 4:45 PM Travel: 1.0 hr Total: 11.5 hrs (0.25 hr for lunch)
Weather: Cloudy Rain, 74° AM, Sunny 88° PM Contractor: AMS Subcontr./Supplier: CHI, BCI, AAA, STC
Equipment Working: D6N Dozer, 580 Backhoe, C232 Skid Steer

Site Activities / Observations / Contacts / Notes: —AMS:

Cleaned and graded plant access roads for traffic. Placed reflective HDPE bollard covers on pipe bollards beside the cleanouts. Removed washed out soil from the paved gutter.

CHI:

Personnel - James Fox, Aaron Benjamin, and Chuck Rak. Mobilized - New Holland C232 Skid Steer. Drilled (12") and set all posts for the fence, gate, and guardrail per EW0-15: Fence Alignment. The fence and gate posts were set between the Bottom Ash Pond and Ash Pond C, between Ash Pond C and Ash Pond B, between Ash Pond B and the south property line, and along the south property line. The guard rail posts were set adjacent to the box culvert on the west side of Ash Pond D. Murphy Masonry, Inc. delivered all the concrete for the posts.

BCI:

Graded the northwest side of Ash Pond D for the turf reinforcement mat at the groin on the slope and swale. Continued constructing slope diversion berms in Section A.

AAA:

Installed the low voltage electrical lines for the paddlewheel flow sensor and the diver level sensor in the 2" PVC conduit for DS-1, DS-2, and DS-4. Note - DS-3 riser will have to be raised, along with the junction boxes, before electric can be installed at this location.

STC: Saw cut contraction joints in the paved ditch.

Additional Comments: Plant Bros. Co. mobilized equipment: Case 688G Telehandler and CAT 304C Mini Excavator.

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

Randy Postle
Contractor RepresentativeAnna Samolyn
Signature—
Geotechnology, Inc.
Engineer's SignatureAMS
Company8-27-12
Date
8-4-12
Date

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 8/28/12

TIME: Arrive: 6:00 AM Depart: 7:00 PM Travel: 1.0 hr Total: 13.75 hrs (0.25 hr for lunch)
Weather: Sunny, 64° AM, 93° PM Contractor: AMS Subcontr./Supplier: CHI, PBC, AAA, BCI, LEC, LTD
Equipment Working: D6N Dozer, 580 Backhoe, C232 Skid Steer, 304C Mini Ex., 688G Telehandler

Site Activities / Observations / Contacts / Notes:*** Vegetative Cover Thickness:**

Massmann's survey data for the clay cover was received and reviewed. The as-built ash elevations and as-built clay elevations provided an average clay thickness of 2.42', with a range from 0.79' to 4.50', having large areas across the pond with 1.5' to 2.5' of cover. The CGA Plan provides a cover tolerance of 0 to -0.4'. Therefore, based on the survey data, a large amount of fill is required to achieve the required cover thickness. To determine if the survey data was correct and/or there was settlement in the ash, test grid points were chosen across the pond. Austin with LEC staked the grid points and Abel with LTD potholed the points down to the liner by water excavation. LEC then shot the cover and liner elevations, and the cover thickness was measured. The test points, for the majority, matched Massmann's data. Therefore, this provides that the ash has experienced minimal settlement, and the clay cover has experienced significant settlement due to the live loads from the clay placement procedure. In summary, a large amount of clay will have to be placed to achieve the required cover thickness of 3.0', approx. 50,000 cy of material. — LEC will submit their findings by the end of the week and they are scheduled to restake the 100' grid across Ash Pond D with cut and fill grades for additional clay placement. It is estimated that this will extend the project 2 to 4 weeks. Nothing has been officialized at this time and work will proceed as scheduled.

AMS:

Placed silt fence around paved ditch and the subgrade for the new access road towards the east pump control panel. Added rip rap to the box culvert rock chute. Graded the plant access roads and entrance. Backfilled against the paved ditch with outfall swale and rock chute spoils from the northeast embankment of Ash Pond D.

Additional Comments: -**NEXT PAGE**Randy Poole
Contractor RepresentativeAMS
CompanyAnna Samdon
Signature
Geotechnology, Inc.8-28-12
Date
8-4-12
Date

Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 8/28/12

TIME: Arrive: - Depart: - Travel: - Total: -
Weather: - Contractor: REFER to PAGE 1 Subcontractor/Supplier: -
Equipment Working: -

Site Activities / Observations / Contacts / Notes: -

CHI:

Installed the guard rail at the box culvert on the west side of Ash Pond D. Installed the chain link fence and rails between the Bottom Ash Pond and Ash Pond C, Ash Pond C and Ash Pond B, Ash Pond B and the south property line, and along the south property line. Only the gates and barb wire remain to be installed. Note - all directions of the barb wire will be matched to existing fencing across the site.

PBC:

Plant Brothers Excavating & Construction Co. mobilized. Personnel - Mike Doss, Terry Mace, and Daniel Van Duyn. Delivery - timber power poles. The 10 proposed power poles from the MCC building to the southeast corner of Ash Pond B were drilled with a 24" auger and installed for overhead electric to the groundwater collection system per EWO-13. All backfill for the power poles was tamped. Drilled 12" holes beside the power poles for the guide wires. Completed the installation and demobilized the CAT 304C Mini Ex. and Case 688G Telehandler.

AAA:

Overseen the power pole installation. Delivery - Mini Power Zone (MPZ) junction boxes. Set anchors, assembled, and installed the MPZ boxes on the west and east pump control panels.

BCI:

Continued constructing slope diversion berms in all Quadrants of Ash Pond D.

Note: Paved ditch construction was delayed two days due to the rain over the weekend.

Additional Comments: CQA plan also requires a minimum thickness of 3 feet for vegetative cover.

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Randy Poetee
Contractor Representative
Randy Poetee
Signature
Geotechnology, Inc.
Engineer's Signature

AMS
Company
8-28-12
Date
9-4-12
Date

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: JO19896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 8/29/12

TIME: Arrive: 6:00 AM Depart: 5:45 PM Travel: 1.0 hr Total: 12.5 hrs (0.25 hr for lunch)
Weather: Sunny, 76°AM, 93°PM Contractor: AMS Subcontr./Supplier: CHI, AAA, BTD, STC, PEI, BCI, FLT
Equipment Working: D6N Dozer, 580 Backhoe, C232 Skid Steer, D5G Dozer, CS-323C Roller, Water Truck

Site Activities / Observations / Contacts / Notes:

AMS:

Excavated the wrap-around collector trenches for the electrical feeder, to the west and east pump control panels, in between Ash Pond D and Ash Pond B, to the power pole on the southeast corner of Ash Pond B. Haunched all conduit in the trenches with FA-1 sand, placed detectable tape over the conduit, and backfilled the collector trenches. Note- the collector trench crossing the gravel road followed E-386, Sheet 5, Detail 3. Backfilled against the paved ditch.

CHI:

Installed the new gates in between Bottom Ash Pond and Ash Pond C, Ash Pond C and Ash Pond B, and Ash Pond B and the south property line. Installed the barb wire on all the new fencing.

Completed EWO-15 Fence Alignment and demobilized the New Holland C232 Skid Steer.

AAA:

Installed 2½" electrical feeder PVC conduit in the wrap-around collector trenches to the power pole on the southeast corner of Ash Pond B. Installed the low voltage electric for the flow and level sensors in the conduit from D5-4 to the east pump control panel. Installed conduit to the single phase MPZ box on the east pump control panel.

BTD:

Graded the paved ditch subgrade, placed CA-6 fill for the paved ditch bedding, and backfilled against the paved ditch. Delivery - IDOT CA-6 Fill. Remobilized - CAT D5G Dozer.

STC: Continued forming, stripping, pouring, finishing, curing, saw cutting contraction joints, and sealing the paved ditch with NP-1 sealant southeast radius of Ash Pond D. 16 cy.

PEI: Tested concrete for the paved ditch - Will receive today's results next week.

BCI/FLT: Dumping and backfilling against the

Additional Comments: paved ditch south of Ash Pond D and constructing slope diversion berms.

Randy Paetee AMS
Contractor Representative Company
Randy Paetee 8-29-12
Signature Date
Anna Spindon 8-4-12
Geotechnology, Inc. Date
[Signature]
Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: — Client: Ameren ER Date: 8/30/12

TIME: Arrive: 6:00 AM Depart: 5:45 PM Travel: 1.0 hr Total: 12.5 hrs ^(0.25 hr for lunch)
 Weather: Sunny, 64° AM, 96° PM Contractor: AMS Subcontr./Supplier: AAA, BTD, STC, PEI, LEC, BCI, FLT
 Equipment Working: D6N Dozer, 580 Backhoe, D5G Dozer, CS-323C Roller, 762B Scraper, Water Truck

Site Activities / Observations / Contacts / Notes: —

AMS:

Backfilled wrap-around collector trenches in between Ash Pond D and Ash Pond B up to the power pole for overhead electric on the southeast corner of Ash Pond B. Backfilled against the west pump control panel, graded plant access roads, and began finish grading south of Ash Pond A.

AAA:

Installed the guide wire anchors for the new power poles. Installed the 2½" electric feeder PVC conduit into the single phase MPZ box on the west pump control panel. Exothermic welded the ground cable to the ground rod with CAD weld at the east pump control panel.

BTD:

Continued grading the paved ditch subgrade east of Ash Pond D, placing CA-6 fill for the paved ditch bedding, and backfilling against the paved ditch south of Ash Pond D.

STC:

Continued paved ditch concrete construction east of Ash Pond D. Three trucks delivered - 24 cy.

PEI:

Jim Wade tested paved ditch concrete - Temp = 61°, Slump = 4½", Air = 5.25%, and 4 cylinders.

LEC:

Austin Ridgley and Jake Lewis surveyed the 100' certification grid across the cap of Ash Pond D, with cuts/fills on the stakes. Clay placement will resume next week for additional cover.

BCI/FLT:

Continued dumping and backfilling against the paved ditch south of Ash Pond D and constructing slope diversion berms in all Quadrants.

Additional Comments: Areas across the site were prepared for hurricane effect rains this coming weekend.

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

<u>Randy Peter</u>	<u>AMS</u>
Contractor/Representative	Company
<u>[Signature]</u>	<u>8-30-12</u>
Signature	Date
<u>[Signature]</u>	<u>9-4-12</u>
Geotechnologist, Inc.	Date
<u>[Signature]</u>	
Engineer's Signature	

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 8/31/12

TIME: Arrive: 6:00 AM Depart: 3:30 PM Travel: 1.0 hr Total: 10.5 hrs (no lunch)
Weather: Partly Cloudy, 72° AM, 89° PM Contractor: AMS Subcontr./Supplier: AAA, BTD, STC, PEI, BCI, FLT
Equipment Working: D6N Dozer, 580 Backhoe, 410J Backhoe, L245DT Tractor, D5G Dozer, CG-323C Roller,
Site Activities / Observations / Contacts / Notes: 762 B Scraper, Water Truck

AMS:

Put up additional silt fence along the paved ditch. Backfilled against the power pole on the southeast corner of Ash Pond B. Constructed an additional rock chute with geotextile and rip rap on the letdown channel on the southern end of Ash Pond D. The rock chute will extend from the most southern slope diversion berms down to the paved ditch.

BTD:

Continued grading the paved ditch subgrade east of Ash Pond D, placing CA-6 fill for the paved ditch bedding, and backfilling against the paved ditch east of Ash Pond D. Added additional slab bedding at the pipe bollards and cleanouts to 4" below the HDPE bollard covers.

STC:

Continued paved ditch concrete construction east of Ash Pond D. Three trucks delivered - 24 cy.

PEI:

Mark Wooten tested paved ditch concrete - Temp=71°, Slump=2", Air=5.5%, and 4 cylinders cast.

AAA:

Installed 2½" stainless steel conduit onto power pole up to the disconnect for the electric feeder on the southeast corner of Ash Pond B. Installed ¾" stainless steel conduit onto the west pump control panel for the electric to the pumps, floats, and receptacles.

BCI/FLT:

Continued dumping and backfilling against the paved ditch south of Ash Pond D and constructing slope diversion berms in all Quadrants.

Additional Comments: _____

Randy Poole
Contractor Representative

AMS
Company

Signature

Date

Geotechnology, Inc.

Date

Engineer's Signature

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

MEETING MINUTES



Hutsonville Power Station - Ash Pond D Closure
Progress Meeting No. 24 Minutes
Tuesday, August 28, 2012

01 PUBLICATION					
Publish date:	2012-08-30	Submitted by:	PHZ		
Distribution:	E-mail only	Notes taken by:	PHZ		
Location:	Hutsonville Power	AMS-Charah File No.	HUT-APD-MTG-MIN-2012-08-28-PM-24		
AER PO:	567523 R4	AMS-Charah Contract:	00030-01	AMS-Charah	4116-06-6120

02 ATTENDEES [ALPHA BY COMPANY]						
NO.	SAL	FIRST	LAST	COMPANY	PHONE	E-MAIL
01	Mr.	Joe	King	AAA Electric	812-208-0464	sandy.tincher@aaaelectricofth.com
02	Mr.	Mike	Wagstaff	Ameren	618-406-3478	mwagstaff@ameren.com
03	Mr.	Paul	Zinsious	AMS - PCM	502-640-2918	pzinsious@ashmanagementservices.com
04	Mr.	Randy	Porter	AMS - SM	502-554-5230	rporter@ashmanagementservices.com
05	Mr.	Joe	Cravens	Geotechnology	314-568-6628	j_cravens@geotechnology.com

03	ABBREVIATIONS			
	AER	Ameren Energy Resources	OSHA	Occupational Safety Health Administration
	AMS	Ash Management Services	PCP	Perforated Collector Pipe
	BNSF	Burlington	PO	Purchase Order
	CBT	Computer Based Training	RHOM	Routine Handling, Operation, and Maintenance
	EAP	Emergency Action Plan	SPOC	Single Point
	EOD	End of [the] Day	T/M	Time and
	EOM	End of [the] month	TBD	To Be
	EOW	End of [the] week	TD	Transmission Dispatch
	EDTS	Energy Delivery Transmission Services	WPA	Worker Protection Assurance
	EDC	Estimated Date [of] Completion		
	EWO	Extra Work Order		
	HDPE	High Density Polyethylene		
	HRS	Hours		
	LOTO	Lock Out Tag Out		
	NMA	National Maintenance Agreement		

04 DOCUMENTATION	
Minutes are documented weekly, and the publication have a "rolling record" of the immediate past two weeks. Each week the oldest drops off and the current week is added to the minutes. Items are categorized as either "NEW", "OPEN", "CLOSE", or in case the an item has to be re-published after closed the previous week - "REOPEN". Minutes format changed for Progress Meeting No. 13 deleting and combining certain items for brevity and to abbreviate documentation. Currently the item numbers remained the same for tracking purposes.	

05 SAFETY - HOUSEKEEPING	
02 WORKER PROTECTION ASSURANCE	
2012-08-28	OPEN - no issues. AAA projection per revised schedule, M. Wagstaff to coordinate with J. King.
2012-08-21	OPEN - no issues. AAA project need for WPA next 2x WKS - 08-31. AMS and AAA to coordinate LOTO. M. Wagstaff to coordinate AER with Mr. Steve Bruner. Confirmation of WPA next Tuesday [08-21].
03 EMPLOYEE DRUG TESTING	
2012-08-28	OPEN - no issues. Schedule Daylight 1x worker for 09-04. Plant Brothers have been tested [on site today 08-28].
2012-08-21	OPEN - no issues. Plant Brothers workers to be tested this period [week].
04 AMS SAFETY	
2012-08-28	[01] J. Tasich on site schedule TBD. [02] No safety issues reported. [03] Plant Brothers power pole installation - M. Wagstaff inquire about strap/choker for pole installation. AAA indicated standard procedure. Rigging was inspected, new choker. Installation [using forklift], work progressing safety. [04] R. Porter has copy of forklift certification.
2012-08-21	[01] J. Tasich on site 08-21. Provided overview, safety reports: [01] PPE and safety processes look good - no issues. [02] Spotters [laborers] are rotating - no issues. [03] No confined space entry this look-ahead. [02] M. Wagstaff brief discussion regarding connection to Ash Pond C [pump station] WPA/LOTO. To be further discussed 08-21. [03] Plant Brothers to received site-specific safety training next week. [04] M. Wagstaff inquired about pump [control] panels. J. King to LOTO. [05] Brief discussion regarding final connection and testing of the DS pumps. M. Wagstaff concern about final discharge through the collector box until approval of discharge permit by IEPA. M. Wagstaff required the valves LOTO. FWI and R. Porter to coordinate.

05 HOUSEKEEPING

2012-08-28 OPEN - No issues.

2012-08-21 OPEN - No issues.

06 PLANT ACCESS - CBT BADGE

2012-08-28 OPEN - No issues.

2012-08-21 OPEN - No issues.

08 OSHA LOG - WORK HOURS

2012-08-28 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 08-13

No incidents or accidents.

8,354.00 RT

1,626.00 OT

9,980.00 TOTAL

2012-08-21 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 08-20.

No incidents or accidents.

7,771.00 RT

1,523.00 OT

9,294.00 TOTAL**06 MANPOWER [HEAD COUNT]****01 CREW SIZE [Alpha by Company]**

2012-08-28 Geotechnology [work hours not included in OSHA Log above]

NO.	COMPANY	SURVEYOR	TECHNICIAN	FOREMEN	OPERATORS	TEAMSTERS	LABORERS	PIPE FITTERS	ELECTRICIANS	IRON WRK
01	AAA	0	0	0	0	0	0	0	2	0
02	AMS	0	0	1	1	1	2	0	0	0
03	BCI	0	0	0	1	0	0	0	0	0
04	BTD	0	0	0	2	0	1	0	0	0
05	CHI	0	0	0	1	0	1	0	0	1
06	FLT	0	0	0	0	14	0	0	0	0
07	FWI	0	0	0	0	0	0	2	0	0
08	GEO	0	2	0	0	0	0	0	0	0
09	LEC	0	0	0	0	0	0	0	0	0
10	PLB	0	0	0	2	0	1	0	0	0
11	STC	0	0	0	0	0	6	0	0	0
12	Z-3	0	0	0	0	0	0	0	0	0

Total on site: 41

2012-08-21 Geotechnology [work hours not included in OSHA Log above]

NO.	COMPANY	SURVEYOR	TECHNICIAN	FOREMEN	OPERATORS	TEAMSTERS	LABORERS	PIPE FITTERS	ELECTRICIANS	TBD
01	AAA	0	0	0	0	0	0	0	1	0
02	AMS	0	0	1	1	1	2	0	0	0
03	BCI	0	0	0	1	0	0	0	0	0
04	BTD	0	0	0	2	0	1	0	0	0
05	FLT	0	0	0	0	14	0	0	0	0
06	FWI	0	0	0	0	0	0	2	0	0
07	GEO	0	2	0	0	0	0	0	0	0
08	LEC	0	0	0	0	0	0	0	0	0
09	STC	0	0	0	0	0	6	0	0	0
10	Z-2	0	0	0	0	0	0	0	0	0

Total on site: 34

02 WORK HOURS AND OVERTIME

2012-08-28 OPEN - Standard hours - 7:00 AM CT to 5:30 PM CT. Some subcontractors starting changed to 06:30 AM CT due to light [safety]. Labor Day holiday 09-03 - no work.

2012-08-21 OPEN - Standard hours - 7:00 AM CT to 5:30 PM CT. Some subcontractors starting at 06:00 AM CT. Labor Day holiday 09-03 - no work.

04 TRAILER - GENERAL CONDITIONS - COORDINATION - VEHICLES

2012-08-28 OPEN - no issues. Look ahead to removing trailers on 09-28.

2012-08-21 OPEN - no issues.

07	PREVIOUS	
01	SUBCONTRACTS	
2012-08-28	OPEN - no issues. P. Zinsious to track FWI CO. In progress, FWI will have EOW.	
2012-08-21	OPEN - no issues. P. Zinsious to track FWI CO.	
02	SUBMITTALS	
20120-08-28	<p>Submittal log was distributed as published by GEO on 08-25.</p> <p>[01] Submittal log review, and general conversation.</p> <p>[02] Wire insulation discussion previous to PM with M. Wagstaff, J. King, and P. Zinsious. CLOSE</p> <p>[03] P. Zinsious reports that AAA has confirmed receipt of everything needed to proceed with work.</p> <p>[04] AMS has received digital reader submittal form FWI. P. Zinsious to forward.</p> <p>[05] M. Wagstaff indicated that Lamac not confirmed yet for record drawings in AutoCAD.</p> <p>[06] R. Porter reports not having information yet from subcontractors on record drawings.</p>	
20120-08-21	<p>Submittal log was distributed as published by GEO on 08-18.</p> <p>[01] Submittal log review, and general conversation.</p> <p>[02] A. Saindon to have geomembrane warranty reviewed by EOW. CLOSE</p> <p>[03] J. Cravens reported that testing on the geotextile fabric non-woven will not be required [reference AMS HUT-SUB-023-03]. CLOSE</p> <p>[04] AMS resubmit B3 Rip Rap for letdown chutes and stilling basins. CLOSE</p> <p>[05] DS hatch [option] researched by R. Porter submitted and resolved. Reinforcing steel in tops required. M. Wagstaff done. CLOSE</p> <p>[06] Wire Insulation discussion previous to PM with M. Wagstaff, J. King, and P. Zinsious.</p> <p>[07] General discussion on manuals for close-out:</p> <p>[01] M. Wagstaff requirement 1x copy digital and 1x copy hard bound</p> <p>[02] J. Cravens collected manuals from FWI for Omega and Zoeller, transmitted to P. Zinsious.</p> <p>[08] General discussion on record drawings for close out:</p> <p>[01] Schematics for panels to be included.</p> <p>[02] M. Wagstaff indicated that Lamac will probably do record drawings in AutoCAD.</p> <p>[03] AMS to provide 1x copy to AER, who will forward to LEC.</p>	
08	MATERIAL	
01	GENERAL	
2012-08-28	<p>OPEN - listing for materials that have potential to impact schedule.</p> <p>[01] M. Burch reports Omega sensor to be ordered. AMS has submittal [ref. above 07.02.2012-08-28.04].</p> <p>[02] General discussion of Baro sensor to be in separate panel box. P. Zinsious recommended FWI research with vendor if placed is electrical panel would other signals/inductance create and issue. J. King has no feedback, but does not see this as an issue.</p> <p>[03] J. Craven presented report from Massmann survey of the clay grade and the calculated thickness of the clay. Review of the report shows several areas that did not seem to have the correct in place clay thickness relative to what clay had been placed. No determination was made if the data showed settlement in ash, clay [or both], or if there was error. After general discussion of the issue, it was determined that AMS would check the clay thickness in several areas.</p>	
2012-08-21	<p>OPEN - listing for materials that have potential to impact schedule.</p> <p>[01] M. Burch reports Omega sensor to be ordered.</p> <p>[02] General discussion of Baro sensor to be in separate panel box. P. Zinsious recommended FWI research with vendor if placed is electrical panel would other signals/inductance create and issue.</p> <p>[03] Collector box holes for the DS lines are too small for Link-Seal. R. Porter recommended using non-shrink grout as used in other area of the projection man holes. P. Zinsious indicated the exterior could be also coated in a mastic to help seal the penetrations. M. Wagstaff indicated that the box still remains in the flood plain, even with the revised elevations and is to be sealed.</p>	
09	ADJACENT PROPERTIES AND PCP LINE	
01	GENERAL	
2012-08-28	<p>OPEN - Discussion during Progress Meeting:</p> <p>[01] R. Porter reported that Wampler has requested that [field drain] line be plugged. This line is off site, and not part of the scope of work, and is an issue with the agreement between AER and Wampler. M. Wagstaff to investigate. In progress.</p>	
2012-08-21	<p>OPEN - Discussion during Progress Meeting:</p> <p>[01] Lamac [LEC] staked out for fence on property line [south side of property]. CLOSE</p> <p>[02] R. Porter reported that Wampler has requested that [field drain] line be plugged. This line is off site, and not part of the scope of work, and is an issue with the agreement between AER and Wampler. M. Wagstaff to investigate.</p>	

10 QUALITY CONTROL

2012-08-28	[01] No results form concrete testing returned. P. Zinsious to call STC. [02] DS-3 ring height issues due to re-grade of the paved concrete ditch. R. Porter to call BTd for update.
2012-08-21	[01] No results form concrete testing returned. P. Zinsious to check with STC. [02] J. Cravens reports recent concrete pour slump was about 2 IN. Pour was held up due to rain, and truck wait time exceeded. Therefore approximately 2 CY wasted. [03] HDPE [field tile] no issues. [04] DS-3 ring height issues due to re-grade of the paved concrete ditch. J. king indicated drilling 2x more holes.

11 SCHEDULE REVIEW

2012-08-28	OPEN - Review of last planner by M. Wagstaff. [AID = Activity Identification, S = successor, P = Predecessor, D = Duration and day] [01] Rain day on 08-27 and 08-28. [02] Major changes commentary: [01] Add AID 401 "Testing" S = 400, 218] P = 312b, 313c, 385, 395] D = 1D] Start 09-11 [02] Change LP form Zinsious to Porter on AID 111, 198, 198a, and 199 [03] All change were made to the LP sheet and full report submitted to AER. Below is highlight of changes/updates [alpha by LP]:
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NO.	LAST PLANNER	AID	ACTIVITY NAME	RDU	START	FINISH	PERCENT	COMMENT
01	AAA-King	124c	Install DS Baro...				50%	
02	AAA-King	279a	DS3 - Electrical wiring...		9/7/2012	9/7/2012		
03	AAA-King	301a	DS4 - Electrical...			8/29/2012	50%	
04	AAA-King	420	Install conduits...			8/29/2012		
05	AAA-King	430	PCS - East Pull Cables..				100%	
06	AAA-King	312b	PCS - East Wire...			9/10/2012		
07	AAA-King	400	Energize Power...			9/12/2012		
08	AAA-King	116	Procurement Receive...Group 3				100%	
09	AAA-King	117	Procurement Receive...Group 4				100%	
10	AAA-King	114	Procurement Receive...Group 1			9/4/2012		
11	AAA-King	313c	PCS - West - Wire...			9/10/2012		
12	AAA-King	318	PCP-PCR - electrical final checkout		9/14/2012			
13	AER-Wagstaff	EW015a	Ameren review AMS Fence...				100%	
14	AMS-Porter	188	Clay - Placement - SEC -D				100%	
15	AMS-Porter	199	Roadways - PCS access road	2	8/29/2012	8/30/2012		
16	AMS-Porter	198	Roadways - APD perimeter road		8/31/2012	9/6/2012		
17	AMS-Porter	111	Procurement - receive...aggregates			9/6/2012		
18	AMS-Porter	191	Earthwork APD - slope diversion...				50%	
19	AMS-Porter	193	Earthwork APD - rock chutes				75%	
20	BTd-Boyer	317	PCP-PCR - install discharge collector...				95%	J. Cravens
21	CHI-Williams	101	Procurement - issue - fence/gate				100%	R. Porter
22	CHI-Williams	119	Procurement - receive - fence/gate				100%	R. Porter
23	CHI-Williams	139	Fence - APD - install gate			8/31/2012	25%	R. Porter
24	FWI-Burch	316	PCP-PCR - Connect DS 1-4 piping...				100%	J. Cravens
25	FWI-Burch	300a	Install DS 1-4 external piping				100%	

2012-08-21	OPEN - Review of last planner by M. Wagstaff. [01] Rain day on 08-17. [02] Major changes commentary: [01] Not on LP - AID 199 S = 08-27, D = 2 [01] Not on LP - AID 198 S = 08-27, D = 4 [01] Not on LP - AID 198a S = 09-04, D = 3 [03] Add AID 119a "Install fence and gate" S = 08-27, D = 4 [04] Mark-up on LP, submitted to AER for change.
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12.0 COST AND BUDGET

02 AMS PAY APPLICATION - CHANGE REQUEST

2012-08-28	No issues. AMS to submit EOM draft.
2012-08-21	No issues.

12.1 EXTRA WORK ORDERS

15 EWO-15 FENCE ALIGNMENT

2012-08-28	OPEN - AMS to provide back-up information.
2012-08-21	OPEN - AMS to provide back-up information.

17 EWO-17 PAVED DITCH ALIGNMENT

2012-08-28	OPEN - In progress. AMS brining in clay [to fill in adjacent area to make grade].
2012-08-21	OPEN - In progress.

18	EWO-18	VENT PROTECTION RING
2012-08-28	NEW - AMS to provide information for ring to protect HDPE vents from damage by [tractor] bush hog [and/or trimmers].	
19	EWO-19	COMMISSIONING
2012-08-28	NEW - AMS to provide information for pumping Dewatering Sumps [DS] water from collector sump back to Ash Pond C during commissioning. This is due to IEPA permit not issued. Research what size pump [4 IN or 6 IN] or if a generator/pump combination is required. A confined space entry permit will be required to access the manhole for plugging to outfall line to the river. Projected duration is 2x WKS, operating 24/7 to be able to draw down the groundwater at the DS area for commissioning.	

13 ACTION ITEMS - AER [25]

01	AMEREN [AER]
2012-08-28	No report.
2012-08-21	[01] Electrical submittals have been returned on 08-03. P. Zinsious to check remainder. CLOSE

14 ACTION ITEMS - AMS [21]

01	ASH MANAGEMENT [AMS]
2012-08-28	No report.
2012-02-21	[01] B3 Rip Rap [ref. Item No. 07.02-2012-08-14 No. 04 above] CLOSE

15 PRODUCTION

03	CLAY
2012-08-28	OPEN - no issues [01] Placement as of 08-27 is 121,968 CY. [02] R. Porter presented sketch M/U for review of placement area progress.
2012-08-21	OPEN - no issues [01] Placement as of 08-20 is 112,970 CY. [02] R. Porter presented sketch M/U for review of placement area progress.

16 DOCUMENTS TRANSMITTED

2012-08-28	[01] AER - Last Planner schedule dated 08-21 [data date]. [02] GEO - Submittal Log published 08-25. [03] GEO - Massmann survey packet with GEO spreadsheet elevation point comparison. [04] AMS - revised contact list HUT-APD-CON-2012-08-27
2012-08-21	[01] AER - Last Planner schedule dated 08-14 [data date]. [02] GEO - Submittal Log published 08-18.

17 DOCUMENTS REVIEW ONLY

2012-08-28	[01] SK-HUT-APD-004-R0 "Project Site - Pond - Quadrant Layout" with M/U to show progress to date of clay placement
2012-08-21	[01] SK-HUT-APD-004-R0 "Project Site - Pond - Quadrant Layout" with M/U to show progress to date of clay placement

18 NEXT PROGRESS MEETING

Next meeting will be held in one week - Tuesday, September 4, 2012 at Hutsonville

19 DISTRIBUTION - STANDARD

AER	SUBCONTRACTORS	
01 Mr. Mike Wagstaff	01 S. Tincher	AAA
02 Mr. Mike Stewart	02 M. Burch	FWI
03 Mr. Bob Muesenfechter	03 T. Boyer	BTD
04 Mr. Steve Bluemner	04 T. Hunt	STC
GEO		
01 Ms. Anna Saindon		
02 Mr. Eric Neuner		
03 Mr. Joe Cravens		
AMS		
01 Mr. Jimmy Boone		
02 Mr. John Denham		
03 Mr. Joko Tasich		
04 Mr. Randy Porter		

If there are any corrections, modifications, additions, or deletions please notify the sender by e-mail at pzinsious@ashmanagementservices.com

PHOTOGRAPH LOG



Photograph 1 ▲ - Cleanout pipe bollards facing northwest



Photograph 2 ▲ - Installing new fence posts facing southeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between August 27 and August 31, 2012



Photograph 3 ▲ - Repairing storm damage at box culvert facing east



Photograph 4 ▲ - Power pole installation facing south



Photograph 5 ▲ - Installing fence facing southwest



Photograph 6 ▲ - Potholing to check vegetative layer thickness facing northeast



Photograph 7 ▲ - Installing PVC conduit for electric facing southwest



Photograph 8 ▲ - Paved ditch construction facing northeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between August 27 and August 31, 2012

JRC



Photograph 9 ▲ - Rock chute construction south of Ash Pond D facing north



Photograph 10 ▲ - Slope diversion berm construction facing west



Photograph 11 ▲ - Overview of Ash Pond D facing southeast



Photograph 12 ▲ - Overview of Ash Pond D facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between August 27 and August 31, 2012

JRC



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Energy Resources

FROM: Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DATE: September 10, 2012

SUBJECT: Weekly Summary Report for September 4, 2012 to September 7, 2012

PROJECT: Hutsonville Ash Pond D Closure
Crawford County, Hutsonville, Illinois
Geotechnology Project No. J019896.01

The following is a weekly summary of the site activities at the referenced site.

Weather

The weather was generally mostly cloudy to sunny with periods of fog and rain. Temperature (°F) lows ranged from 68 to 73°F, and temperature highs ranged from 82 to 93°F. Weather delays occurred each day this week due to storm events and wet conditions.

Construction Activities

The following activities occurred this week: repairing impacts from storm events, access road improvement and gravel surfacing, finish grading, additional rip rap wall construction, paved ditch construction, and electrical installations. Ash Management Services, LLC repaired impacts to the paved gutter, paved ditch, and plant access roads from the recent storm events. Access road improvement and gravel surfacing was performed on the existing gravel road south of Ash Pond A and Ash Pond B with geotextile and gravel. Finish grading was performed south of Ash Pond A to promote drainage to the west towards existing manholes. A rip rap wall was constructed along the paved gutter on the west side of Quadrant C to mitigate erosion. ST Construction, Inc. saw-cut contraction joints in the completed paved ditch. AAA Electric, Inc. installed additional stainless steel conduit on the east pump control panel for the junction boxes, guy wires for the power poles, and overhead spool insulators. The disconnect switch, stainless steel conduit, and weather head was installed onto the Ash Pond C service pole. All other subcontracted work items were delayed this week due to the recent storm events. Refer to the daily reports for detailed information.

Equipment and Personnel On-Site

CAT D6N Bulldozer
CAT D5G Bulldozer
CAT CS-323C Smooth Drum Roller
JLG 450AJ Articulating Boom Lift
John Deere 762B Paddlewheel Scraper
John Deere 450 LC Excavator
John Deere 410J Backhoe
Case 580 Backhoe
Kubota L245DT Tractor
Water Truck (Dust Control)

Geotechnology, Inc. – Joe Cravens
Ash Management Services, LLC (AMS) – Randy Porter, Robert Dunkley, Brad Bolenbaugh, Blake Bunting, and Eric Sefton
AAA Electric, Inc. (AAA) – Joseph King and Kyle Davidson
ST Construction, Inc. (STC) – Kenneth Kientzel
Visitors – Refer to the Visitor's Log for visitors, dates, and times.
Refer to the meeting minutes for additional personnel.

Meetings

The weekly progress meeting was held on Tuesday, September 4, 2012. Refer to the attached meeting minutes for additional information.

Photographs

A photograph log with select photographs obtained this week is attached.

Materials

The following materials were delivered this week: IDOT CA-6 gravel, IDOT CA-6 fill, RR-03 rip rap, ceramic spool insulators, aluminum aerial cable, and guy wires.

Testing/Sampling

Testing and sampling did not occur this week.

Calibration Records

Calibration information was not obtained this week.

Weekly Summary Report
September 10, 2012
Page 3

J019896.01

Signature of CQA Officer



Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DAILY REPORTS

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 9/4/12

TIME: Arrive: 6:30 AM Depart: 5:30 PM Travel: 1.0 hr Total: 11.75 hrs (0.25 hr for lunch)
Weather: Foggy, Sunny, 69° AM, Partly Cloudy, 93° Contractor: AMS Subcontr./Supplier: AAA, STC
Equipment Working: D6N Dozer, 580 Backhoe
Site Activities / Observations / Contacts / Notes: _____

AMS:

Cleaned washed out soil from the paved ditch on the south and east sides of Ash Pond D, and the paved gutter on the west side of Ash Pond D. Began access road improvement south of Ash Pond A and Ash Pond B along the property line. The subgrade for the gravel surfacing was graded south of Ash Pond A and Ash Pond B. IDOT 8oz. non-woven Propex geotextile was laid over the subgrade, and IDOT CA-6 roadpack was placed on top of the geotextile. Approx. 8" of CA-6 was placed and it was back dragged on top of the geotextile. After back dragging, a dozer was utilized to fine grade the CA-6. All gravel surfacing will be compacted at a later date with a steel drum roller. Refer to S-386, Sheet 2, Detail 1 for access road improvement details. Began finish grading south of Ash Pond A to allow surface drainage to the west towards the existing grade inlet manholes.

AAA:

Installed the disconnect onto the power pole located southwest of Ash Pond C for the new power to the pump in Ash Pond C. 2½" stainless steel conduit was installed onto the power pole on top of the disconnect for the overhead electrical feeder. Installed 1¼" and ¾" stainless steel conduit onto the east pump control panel for the junction boxes.

STC:

Saw cut remaining contraction joints in the paved ditch east of Ash Pond D.

Additional Comments: The site was too wet for FLT, BCI, STC, and BTD to perform work.

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

Randy Foster AMS
Contractor Representative Company 9-4-12
Signature Ann Sander Date 9-10-12
Geotechnology, Inc. Date
Engineer's Signature

FIELD OBSERVATION REPORT

Representative: Joe Gravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: - Client: Ameren ER Date: 9/5/12

TIME: Arrive: 6:30 AM Depart: 1:30 PM Travel: 1.0 hr Total: 8 hrs (no lunch)
 Weather: Sunny, 73° AM, Rain 70° PM Contractor: AMS Subcontr./Supplier: AAA
 Equipment Working: D6N Dozer, 450AJ Lift
 Site Activities / Observations / Contacts / Notes: _____

AMS:

Continued access road improvement south of Ash Pond A and Ash Pond B along the property line.
Gravel surfacing included geotextile over the subgrade and $\approx 8"$ of CA-6 over the geotextile.
Continued finish grading south of Ash Pond A to promote surface drainage to the west.

AAA:

Installed $1\frac{1}{4}"$ and $3\frac{3}{4}"$ stainless steel conduit onto the east pump control panel. Began installing
the guy wires for the power poles that will have unbalanced lateral loads from the overhead
electric lines. The anchors on the poles were installed approx. 1.0' from the top of the
pole. The guy wires connecting the pole and ground anchors are stainless steel $\frac{3}{8}"$ braided
cables. The overlap at the ground anchor follows the electrical code.
Mobilized - JLG 450AJ Articulating Boom Lift

Other:

It began raining in the PM again. Clay Placement has been called off until next week.
It is still too wet for FLT, BCI, STC, and BTD to perform work.

Additional Comments: _____

Pandy Portre
Contractor Representative

Anna Sander
Signature

Geotechnology, Inc.
Engineer's Signature

AMS
Company 9-5-12

9-10-12
Date

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 9/6/12

TIME: Arrive: 6:30 AM Depart: 4:30 PM Travel: 1.0 hr Total: 10.75 hrs (0.25 hr for lunch)
Weather: Foggy, 68° AM, Sunny, 82° PM Contractor: AMS Subcontr./Supplier: AAA
Equipment Working: 580 Backhoe, 450AJ Lift

Site Activities / Observations / Contacts / Notes:

AMS:

Due to the quantity of fill required on the west side of Section C, and the short distance between the PGL and the paved gutter, the slope from the paved gutter to the PGL would be too steep to maintain and mow. Therefore, AMS began constructing a rip rap wall between the PGL and the paved gutter on the west side of Section C. The proposed rip rap wall is made up of RR-03 rip rap and Propex Gestex 8 oz. geotextile overlying the subgrade. Fill was placed behind the rip rap wall to achieve the $\approx 3'$ cover at the PGL, as well as act as bedding for the rip rap wall. The wall was also extended around the flared end section of the drainage culvert at the end of the gutter at the southwest corner of Section C. The site was too wet for roadway construction. Delivery - RR-03 rip rap.

AAA:

Completed installing the guy wires for the power poles that will have unbalanced lateral loads from the overhead electric. Installed the spool insulators onto all the power poles for the base neutral messenger wire. Inspected the wiring for the spare 100A/3P breaker with starter in the coal conveyor MCC-1. All energized power running to the MCC-1 will be shut off during wire distribution, breaker replacement, and disconnect installation. Delivery - ceramic spool insulators and 3 conductor #4/0 AWG aluminum aerial cable. Installed the stainless steel weatherhead onto the conduit above the 600V, 200A/3P heavy duty non-fused disconnect switch at the Ash Pond C service pole.

Additional Comments: The site was too wet for FLT, BCI, STC, and BTD to perform work.

Randy Porter AMS
Contractor Representative Company
Randy Porter 9-6-12
Signature Date
Anna Saindon 9-10-12
Geotechnology, Inc. Date
[Signature]
Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 9/7/12

TIME: Arrive: 6:30 AM Depart: 3:30 PM Travel: 1.0 hr Total: 9.75 hrs (0.25 hr for lunch)
Weather: Sunny, 70° AM, 90° PM Contractor: AMS Subcontr./Supplier: None
Equipment Working: 580 Backhoe
Site Activities / Observations / Contacts / Notes: _____

AMS:

Continued constructing the rip rap wall between the PGL and the paved gutter on the west side of Section C. RR-03 rip rap overlying 8oz. geotextile was used to build the wall and fill was placed behind the wall for hedding and to achieve $\approx 3'$ of cover at the PGL. Continued site remediation on the paved gutter and ditch from recent storm events.

Other:

The site was too wet for FLT, BCI, STC, and BTD to perform work.

AAA had no production today.

No deliveries today.

Additional Comments: _____

Randy Porter
Contractor Representative

Randy Porter
Signature

Geotechnology, Inc.
Engineer's Signature

AMS
Company

9-7-12
Date

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MEETING MINUTES



Hutsonville Power Station - Ash Pond D Closure
Progress Meeting No. 25 Minutes
Tuesday, September 4, 2012

01 PUBLICATION

Publish date:	2012-09-05	Submitted by:	PHZ
Distribution:	E-mail only	Notes taken by:	PHZ
Location:	Hutsonville Power	AMS-Charah File No.	HUT-APD-MTG-MIN-2012-09-04-PM-25
AER PO:	567523 R4	AMS-Charah Contract:	00030-01 AMS-Charah 4116-06-6120

02 ATTENDEES [ALPHA BY COMPANY]

NO.	SAL	FIRST	LAST	COMPANY	PHONE	E-MAIL
01	Mr.	Joe	King	AAA Electric	812-208-0464	sandy.tincher@aaaelectricofth.com
02	Mr.	Mike	Wagstaff	Ameren	618-406-3478	mwagstaff@ameren.com
03	Mr.	Paul	Zinsious	AMS - PCM	502-640-2918	pzinsious@ashmanagementservices.com
04	Mr.	Randy	Porter	AMS - SM	502-554-5230	rporter@ashmanagementservices.com
05	Mr.	Joe	Cravens	Geotechnology	314-568-6628	j_cravens@geotechnology.com

03 ABBREVIATIONS

AER	Ameren Energy Resources	OSHA	Occupational Safety Health Administration
AMS	Ash Management Services	PCP	Perforated Collector Pipe
BNSF	Burlington	PO	Purchase Order
CBT	Computer Based Training	RHOM	Routine Handling, Operation, and Maintenance
EAP	Emergency Action Plan	SPOC	Single Point
EOD	End of [the] Day	T/M	Time and
EOM	End of [the] month	TBD	To Be
EOW	End of [the] week	TD	Transmission Dispatch
EDTS	Energy Delivery Transmission Services	WPA	Worker Protection Assurance
EDC	Estimated Date [of] Completion		
EWO	Extra Work Order		
HDPE	High Density Polyethylene		
HRS	Hours		
LOTO	Lock Out Tag Out		
NMA	National Maintenance Agreement		

04 DOCUMENTATION

Minutes are documented weekly, and the publication have a "rolling record" of the immediate past two weeks. Each week the oldest drops off and the current week is added to the minutes. Items are categorized as either "NEW", "OPEN", "CLOSE", or in case the an item has to be re-published after closed the previous week - "REOPEN". Minutes format changed for Progress Meeting No. 13 deleting and combining certain items for brevity and to abbreviate documentation. Currently the item numbers remained the same for tracking purposes.

05 SAFETY - HOUSEKEEPING

02 WORKER PROTECTION ASSURANCE

2012-09-04 OPEN:
 [01] J. King indicated that LOTO of MCC not sufficient, as other lines in.
 [02] M. Wagstaff to get with plant/local utility to review cut off power, and coordinate with J. King.

2012-08-28 OPEN - no issues. AAA projection per revised schedule, M. Wagstaff to coordinate with J. King.

03 EMPLOYEE DRUG TESTING

2012-09-04 OPEN - no issues. No testing scheduled.

2012-08-28 OPEN - no issues. Schedule Daylight 1x worker for 09-04. Plant Brothers have been tested [on site today 08-28].

04 AMS SAFETY

2012-09-04 [01] J. Tasich on site schedule TBD.
 [02] No safety issues reported.
 [03] Plant Brothers power pole installation - M. Wagstaff inquire about strap/choker for pole installation. AAA indicated standard procedure. Rigging was inspected, new choker. Installation [using forklift], work progressing safety. Work completed - CLOSE
 [04] Humidity is high [increased temperatures], discussion about keeping hydrated.
 [05] wind has damaged AMS cooling stations. R. Porter indicated will repair.
 [06] AAA bringing 45 FT articulated lift on site [for power pole work].

2012-08-28 [01] J. Tasich on site schedule TBD.
 [02] No safety issues reported.
 [03] Plant Brothers power pole installation - M. Wagstaff inquire about strap/choker for pole installation. AAA indicated standard procedure. Rigging was inspected, new choker. Installation [using forklift], work progressing safety.
 [04] R. Porter has copy of forklift certification.

05 HOUSEKEEPING

2012-09-04 OPEN - No issues.
 2012-08-28 OPEN - No issues.

06 PLANT ACCESS - CBT BADGE

2012-09-04 OPEN: No issues.
 [01] R. Porter reports wire for transmission project being delivered. Inquired about when guard would go 24/7.
 [02] R. Porter locking new gate, [no open areas to plant], and will provide updated lock count to AER.
 [03] M. Wagstaff indicated need to have locks also for disconnects.
 2012-08-28 OPEN - No issues.

08 OSHA LOG - WORK HOURS

2012-09-04 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 08-20.
 No incidents or accidents.
 8,854.00 RT
 1,705.00 OT
10,559.00 TOTAL
 2012-08-28 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 08-13
 No incidents or accidents.
 8,354.00 RT
 1,626.00 OT
9,980.00 TOTAL

06 MANPOWER [HEAD COUNT]

01 CREW SIZE [Alpha by Company]

2012-09-04 Geotechnology [work hours not included in OSHA Log above]

NO.	COMPANY	SURVEYOR	TECHNICIAN	FOREMEN	OPERATORS	TEAMSTERS	LABORERS	PIPE FITTERS	ELECTRICIANS	IRON WRK
01	AAA	0	0	0	0	0	0	0	2	0
02	AMS	0	0	1	1	1	2	0	0	0
03	BCI	0	0	0	1	0	0	0	0	0
04	BTD	0	0	0	2	0	0	0	0	0
05	CHI	0	0	0	1	0	1	0	0	1
06	FLT	0	0	0	0	14	0	0	0	0
07	FWI	0	0	0	0	0	0	0	0	0
08	GEO	0	1	0	0	0	0	0	0	0
09	LEC	0	0	0	0	0	0	0	0	0
10	PLB	0	0	0	2	0	1	0	0	0
11	STC	0	0	0	0	0	6	0	0	0
12	Z-3	0	0	0	0	0	0	0	0	0

Total on site: 37

2012-08-28 Geotechnology [work hours not included in OSHA Log above]

NO.	COMPANY	SURVEYOR	TECHNICIAN	FOREMEN	OPERATORS	TEAMSTERS	LABORERS	PIPE FITTERS	ELECTRICIANS	IRON WRK
01	AAA	0	0	0	0	0	0	0	2	0
02	AMS	0	0	1	1	1	2	0	0	0
03	BCI	0	0	0	1	0	0	0	0	0
04	BTD	0	0	0	2	0	1	0	0	0
05	CHI	0	0	0	1	0	1	0	0	1
06	FLT	0	0	0	0	14	0	0	0	0
07	FWI	0	0	0	0	0	0	2	0	0
08	GEO	0	2	0	0	0	0	0	0	0
09	LEC	0	0	0	0	0	0	0	0	0
10	PLB	0	0	0	2	0	1	0	0	0
11	STC	0	0	0	0	0	6	0	0	0
12	Z-3	0	0	0	0	0	0	0	0	0

Total on site: 41

02 WORK HOURS AND OVERTIME

2012-09-04 OPEN: No issues.
 [01] Standard hours - 7:00 AM CT to 5:30 PM CT. Some subcontractors starting changed to 07:00 AM CT due to light [safety]
 [02] Labor Day holiday 09-03 observed.

2012-08-28 OPEN - Standard hours - 7:00 AM CT to 5:30 PM CT. Some subcontractors starting changed to 06:30 AM CT due to light [safety]. Labor Day holiday 09-03 - no work.

04 TRAILER - GENERAL CONDITIONS - COORDINATION - VEHICLES

2012-09-04 OPEN: No issues.
[01] R. Porter reports electric utility bill for trailers transferred to Miller Construction.
[02] Look ahead to removing trailers on 09-28 to remain projected date.

2012-08-28 OPEN - no issues. Look ahead to removing trailers on 09-28.

07 PREVIOUS

01 SUBCONTRACTS

2012-09-04 OPEN - no issues. FWI CO in progress, will report when signature.

2012-08-28 OPEN - no issues. P. Zinsious to track FWI CO. In progress, FWI will have EOW.

02 SUBMITTALS

2012-09-04 Submittal log - no update.
[01] M. Wagstaff indicated bolt pattern and sealant for the DS hatch required. AMS to provide accordingly.
[02] P. Zinsious reports that AAA has confirmed receipt of everything needed to proceed with work. CLOSE
[03] AMS has received digital reader submittal form FWI. P. Zinsious to forward.
[04] M. Wagstaff indicated that Lamac not confirmed yet for record drawings in AutoCAD. Review in progress.
[05] R. Porter reports not having information yet from subcontractors on record drawings. In progress.

2012-08-28 Submittal log was distributed as published by GEO on 08-25.
[01] Submittal log review, and general conversation.
[02] Wire insulation discussion previous to PM with M. Wagstaff, J. King, and P. Zinsious. CLOSE
[03] P. Zinsious reports that AAA has confirmed receipt of everything needed to proceed with work.
[04] AMS has received digital reader submittal form FWI. P. Zinsious to forward.
[05] M. Wagstaff indicated that Lamac not confirmed yet for record drawings in AutoCAD.
[06] R. Porter reports not having information yet from subcontractors on record drawings.

08 MATERIAL

01 GENERAL

2012-09-04 OPEN - listing for materials that have potential to impact schedule.
[01] General discussion of Baro sensor to be in separate panel box. P. Zinsious recommended FWI research with vendor if placed is electrical panel would other signals/inductance create and issue. J. King has no feedback, but does not see this as an issue. CLOSE
[02] AMS presented copies of letter dated 08-31 "Clay issue recovery - Schedule and work plan":
[01] AMS committed to bring in additional clay to make grade elevations.
[02] M. Wagstaff inquired about QA/QC of grade. AMS will grade to stake and have Lamac check grade before seed and straw and the Massmann survey.
[03] Review of CQA requirement [page A-2] for tolerance is 0 FT to -0.4 FT. The maximum coverage is 3 FT.
[04] Clay recovery duration not shown as additional activities, the activity "fine grade" duration to be extended.
[05] M. Wagstaff inquired about scheduling overtime for placement of clay. Review of schedule indicates float. Considering the rain day taken today [09-04], this leaves only one rain day for the next week [as only two were used the recovery duration calculation as noted in the letter]. General discussion that next PM review of progress to determine overtime.

2012-08-28 OPEN - listing for materials that have potential to impact schedule.
[01] M. Burch reports Omega sensor to be ordered. AMS has submittal [ref. above 07.02.2012-08-28.04].
[02] General discussion of Baro sensor to be in separate panel box. P. Zinsious recommended FWI research with vendor if placed is electrical panel would other signals/inductance create and issue. J. King has no feedback, but does not see this as an issue.
[03] J. Craven presented report from Massmann survey of the clay grade and the calculated thickness of the clay. Review of the report shows several areas that did not seem to have the correct in place clay thickness relative to what clay had been placed. No determination was made if the data showed settlement in ash, clay [or both], or if there was error. After general discussion of the issue, it was determined that AMS would check the clay thickness in several areas.

09 ADJACENT PROPERTIES AND PCP LINE

01 GENERAL

2012-09-04 OPEN - Discussion during Progress Meeting:
[01] R. Porter reported that Wampler has requested that [field drain] line be plugged. This line is off site, and not part of the scope of work, and is an issue with the agreement between AER and Wampler. General discussion and M. Wagstaff approved proceed to plug line as indicated on drawings.

2012-08-28 OPEN - Discussion during Progress Meeting:
[01] R. Porter reported that Wampler has requested that [field drain] line be plugged. This line is off site, and not part of the scope of work, and is an issue with the agreement between AER and Wampler. M. Wagstaff to investigate. In progress.

10 QUALITY CONTROL

2012-09-04 [01] AMS received concrete field reports, and forwarded them .P. Zinsious to check on break reports.
[02] DS-3 ring height issues due to re-grade of the paved concrete ditch. R. Porter indicated will be delivered with other precast.

2012-08-28 [01] No results form concrete testing returned. P. Zinsious to call STC.
[02] DS-3 ring height issues due to re-grade of the paved concrete ditch. R. Porter to call BTB for update.

2012-09-04 OPEN - Review of last planner by M. Wagstaff. [AID = Activity Identification, S = successor, P = Predecessor, D = Duration and day]

[01] Rain date 09-04.

[02] Major changes commentary:

[01] Activities 221 and 222 activities to be scheduled out by software.

[02] Delete activities 185a, 185b, 186a, 186b, 187a, 187b, 188a, and 188b as the clay placement will not follow the original quadrant layout.

Work for the additional clay placement is included in the "fine grade" activity, and not shown as additional activities, only extending the activity "fine grade" duration [ref. 08.01.2012-09-04.04 above].

[03] All change were made to the LP sheet and full report submitted to AER. Below is highlight of changes/updates [alpha by LP]:

NO.	LAST PLANNER	AID	ACTIVITY NAME	RDU	START	FINISH	PERCENT	COMMENT
	AAA-King	385	WPA at Existing Coal...		9/7/2012			
	AAA-King	385a	WPA for APD...		9/7/2012			
	AAA-King	375	Pull power...		9/10/2012	9/11/2012		
	AAA-King	395	Tie-in Electrical...		9/10/2012	9/11/2012		
	AAA-King	390	WPA to Disconnect...		9/10/2012			
	AAA-King	380	Install new Power cables...		9/10/2012	9/11/2012		
	AAA-King	390a	Release WPA to Energize New...		9/11/2012			
	AAA-King	124c	Install DS Baro...				75%	Waiting on DS-3 ring
	AAA-King	279a	DS3 - Electrical wiring...					Waiting on DS-3 ring
	AAA-King	301a	DS4 - Electrical...				100%	
	AAA-King	420	Install conduits...				100%	
	AAA-King	114	Procurement - receive - electrical...				100%	AAA possession
	AAA-King	420a	Pull cables...		9/6/2012	9/7/2012		
	AAA-King	313b	PCS - West - Mount...				100%	
	AAA-King	313c	PCS - West - Wire...		8/31/2012		25%	
	AAA-King	312a	PCS - East - Mount...			8/29/2012	100%	
	AMS-Boone	183	Site prep - CBS...			9/21/2012		
	AMS-Porter	191	Earthwork APD - slope diversion...				90%	
	AMS-Porter	193	Earthwork APD - rock chutes				100%	
	AMS-Zinsious	218	Commission Pump System		9/18/2012			
	AMS-Zinsious	217	Substantial...			9/25/2012		
	AMS-Zinsious	219	Punch List - Walk...		9/25/2012	9/25/2012		
	AMS-Zinsious	220	Punch List - Work...		9/26/2012			
	BTD-Boyer	237a	DS1 - Precast - set lid			9/10/2012		
	BTD-Boyer	252a	DS2 - Precast - set lid			9/10/2012		
	BTD-Boyer	252a	DS4 - Precast - set lid			9/10/2012		
	CHI-Williams	139	Fence - APD - install gate			8/29/2012	100%	R. Porter
	DLF-Ziliak	127	Procurement...				100%	
	DLF-Ziliak	210	Ground cover - mob...		9/17/2012	9/17/2012		
	DLF-Ziliak	211	Ground cover - hydro...		9/18/2012			
	DLF-Ziliak	212	Ground cover - TRM...		9/18/2012			
	DLF-Ziliak	120	Procurement...			9/4/2012	100%	
	FWI-Burch	316a	Hydro...			9/18/2012		
	GEO-Saindon	11	Survey - APD - vegetative...	1 [duration]	9/18/2012	9/19/2012		
	GEO-Saindon	50a	Clay - certification (Final)		9/19/2012	9/21/2012		
	LEC-Ridgely	15	Survey - APD - final			9/17/2012		
	LEC-Ridgely	13	Survey - CBS...			9/18/2012		
	STC-Hunt	207	Concrete - paved ditch - form and...			9/14/2012	75%	
	STC-Hunt	208	Concrete - paved ditch -			9/14/2012		

2012-08-28 OPEN - Review of last planner by M. Wagstaff. [AID = Activity Identification, S = successor, P = Predecessor, D = Duration and day]

[01] Rain day on 08-27 and 08-28.

[02] Major changes commentary:

[01] Add AID 401 "Testing" S = 400, 218] P = 312b, 313c, 385, 395] D = 1D] Start 09-11

[02] Change LP form Zinsious to Porter on AID 111, 198, 198a, and 199

[03] All change were made to the LP sheet and full report submitted to AER. Below is highlight of changes/updates [alpha by LP]:

NO.	LAST PLANNER	AID	ACTIVITY NAME	RDU	START	FINISH	PERCENT	COMMENT
01	AAA-King	124c	Install DS Baro...				50%	
02	AAA-King	279a	DS3 - Electrical wiring...		9/7/2012	9/7/2012		
03	AAA-King	301a	DS4 - Electrical...			8/29/2012	50%	
04	AAA-King	420	Install conduits...			8/29/2012		
05	AAA-King	430	PCS - East Pull Cables..				100%	
06	AAA-King	312b	PCS - East Wire...			9/10/2012		
07	AAA-King	400	Energize Power...			9/12/2012		
08	AAA-King	116	Procurement Receive...Group 3				100%	
09	AAA-King	117	Procurement Receive...Group 4				100%	
10	AAA-King	114	Procurement Receive...Group 1			9/4/2012		

11	AAA-King	313c	PCS - West - Wire...			9/10/2012		
12	AAA-King	318	PCP-PCR - electrical final checkout		9/14/2012			
13	AER-Wagstaff	EW015a	Ameren review AMS Fence...				100%	
14	AMS-Porter	188	Clay - Placement - SEC -D				100%	
15	AMS-Porter	199	Roadways - PCS access road	2	8/29/2012	8/30/2012		
16	AMS-Porter	198	Roadways - APD perimeter road		8/31/2012	9/6/2012		
17	AMS-Porter	111	Procurement - receive...aggregates			9/6/2012		
18	AMS-Porter	191	Earthwork APD - slope diversion...				50%	
19	AMS-Porter	193	Earthwork APD - rock chutes				75%	
20	BTD-Boyer	317	PCP-PCR - install discharge collector...				95%	J. Cravens
21	CHI-Williams	101	Procurement - issue - fence/gate				100%	R. Porter
22	CHI-Williams	119	Procurement - receive - fence/gate				100%	R. Porter
23	CHI-Williams	139	Fence - APD - install gate			8/31/2012	25%	R. Porter
24	FWI-Burch	316	PCP-PCR - Connect DS 1-4 piping...				100%	J. Cravens
25	FWI-Burch	300a	Install DS 1-4 external piping				100%	

12.0 COST AND BUDGET

02 AMS PAY APPLICATION - CHANGE REQUEST

2012-09-04 No issues. AMS to submit EOM draft. Copy for M. Wagstaff today.
2012-08-28 No issues. AMS to submit EOM draft.

12.1 EXTRA WORK ORDERS

15 EWO-15 FENCE ALIGNMENT

2012-09-04 OPEN - AMS to provide back-up information. In progress.
2012-08-28 OPEN - AMS to provide back-up information.

17 EWO-17 PAVED DITCH ALIGNMENT

2012-09-04 OPEN - In progress.
2012-08-28 OPEN - In progress. AMS brining in clay [to fill in adjacent area to make grade].

18 EWO-18 VENT PROTECTION RING

2012-09-04 OPEN - M. Wagstaff has approved.
2012-08-28 NEW - AMS to provide information for ring to protect HDPE vents from damage by [tractor] bush hog [and/or trimmers].

19 EWO-19 COMMISSIONING

2012-09-04 OPEN - AMS to provide cost for installing a manifold at the collector box to tie together the DS discharge lines to a single discharge line. The single line will then be routed along the east berm of Ash Pond D to the existing Bottom Ash Pond, where water will be able to gravity flow into existing Ash Pond C. This temporary configuration will utilize the new DS pumps, eliminate confined space entry [for now] and will not require a generator/pump combination.
2012-08-28 NEW - AMS to provide information for pumping Dewatering Sumps [DS] water from collector sump back to Ash Pond C during commissioning. This is due to IEPA permit not issued. Research what size pump [4 IN or 6 IN] or if a generator/pump combination is required. A confined space entry permit will be required to access the manhole for plugging to outfall line to the river. Projected duration is 2x WKS, operating 24/7 to be able to draw down the groundwater at the DS area for commissioning.

20 EWO-020 ADDITIONAL RIP-RAP

2012-09-04 OPEN - AMS to provide cost for installing additional rip-rap [RR-3] and geotextile material as necessary to accommodate for grade adjusted in the clay cap along the west slope adjacent to the paved gutter. M. Wagstaff indicated that a 1:1 slope is acceptable in this area. R. Porter and M. Wagstaff to review in the field today.

13 ACTION ITEMS - AER [25]

01 AMEREN [AER]

2012-09-04 No report.
2012-08-28 No report.

14 ACTION ITEMS - AMS [21]

01 ASH MANAGEMENT [AMS]

2012-09-04 No report.
2012-08-28 No report.

15 PRODUCTION

03 CLAY

2012-09-04 OPEN - no issues
[01] Placement as of 08-31 is 127,138 CY.
[02] Additional clay to be placed to make grade elevations [ref. above 08.01.2012-08-28.03].

2012-08-28 OPEN - no issues
[01] Placement as of 08-27 is 121,968 CY.
[02] R. Porter presented sketch M/U for review of placement area progress.

16 DOCUMENTS TRANSMITTED

2012-09-04 [01] AER - Last Planner schedule dated 08-28 [data date].
[02] AMS - letter dated 08-31 "Clay issue recovery - Schedule and work plan"
[03] AMS - 1x 11x17 color copy of Lamac drawings from AMS letter dated 08-31 "Clay issue recovery - Schedule and work plan" to J. Cravens.
2012-08-28 [01] AER - Last Planner schedule dated 08-21 [data date].
[02] GEO - Submittal Log published 08-25.
[03] GEO - Massmann survey packet with GEO spreadsheet elevation point comparison.
[04] AMS - revised contact list HUT-APD-CON-2012-08-27

17 DOCUMENTS REVIEW ONLY

2012-09-04 None.
2012-08-28 [01] SK-HUT-APD-004-R0 "Project Site - Pond - Quadrant Layout" with M/U to show progress to date of clay placement

18 NEXT PROGRESS MEETING

Next meeting will be held in one week - Tuesday, September 11, 2012 at Hutsonville

19 DISTRIBUTION - STANDARD

AER

01 Mr. Mike Wagstaff
02 Mr. Mike Stewart
03 Mr. Bob Muesenfechter
04 Mr. Steve Bluemner

GEO

01 Ms. Anna Saindon
02 Mr. Eric Neuner
03 Mr. Joe Cravens

AMS

01 Mr. Jimmy Boone
02 Mr. John Denham
03 Mr. Joko Tasich
04 Mr. Randy Porter

SUBCONTRACTORS

01 S. Tinchier AAA
02 M. Burch FWI
03 T. Boyer BTD
04 T. Hunt STC

If there are any corrections, modifications, additions, or deletions please notify the sender by e-mail at pzinious@ashmanagementservices.com

PHOTOGRAPH LOG



Photograph 1 ▲ - Ash Pond C electric disconnect switch facing northwest



Photograph 2 ▲ - Guy wire installation facing southwest

All photographs taken by Joseph Cravens of Geotechnology, Inc. between September 3 and September 7, 2012

JRC



Photograph 3 ▲ - Removing washout material from paved ditch facing east



Photograph 4 ▲ - Gravel road surfacing facing northwest

All photographs taken by Joseph Cravens of Geotechnology, Inc. between September 3 and September 7, 2012

JRC



Photograph 5 ▲ - Gravel road surfacing facing west



Photograph 6 ▲ - Grading south of Ash Pond A facing northwest

All photographs taken by Joseph Cravens of Geotechnology, Inc. between September 3 and September 7, 2012

JRC



Photograph 7 ▲ - Placing rip rap for paved gutter facing northwest



Photograph 8 ▲ - Placing rip rap for paved gutter facing north



Photograph 9 ▲ - Overview of Ash Pond D facing southeast



Photograph 10 ▲ - Overview of Ash Pond D facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between September 3 and September 7, 2012

JRC



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Energy Resources

FROM: Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DATE: September 21, 2012

SUBJECT: Weekly Summary Report for September 10, 2012 to September 14, 2012

PROJECT: Hutsonville Ash Pond D Closure
Crawford County, Hutsonville, Illinois
Geotechnology Project No. J019896.01

The following is a weekly summary of the site activities at the referenced site.

Weather

The weather was generally mostly cloudy to sunny with periods of rain. Temperature (°F) lows ranged from 58 to 66°F, and temperature highs ranged from 75 to 88°F. Weather delays did not occur this week.

Construction Activities

The following activities occurred this week: repairing impacts from storm events, rip rap wall construction, cap vent protective ring installation, rock chute and rip rap splash pad construction, paved ditch construction, manhole section and lid installation, cleanout concrete slab construction, electrical installations, clay placement, slope diversion berm and letdown channel construction, and finish grading. Ash Management Services, LLC repaired impacts to the rock chutes, swales, paved gutter, and paved ditch from the recent storm events. Construction of the rip rap wall continued along the paved gutter on the west side of Quadrant C. The cap vent precast protective rings were installed, a rock chute was constructed for the paved gutter culvert drainage to the paved ditch, and rip rap pads for the anchor trench outlet toe drains were built on the south embankment of Ash Pond D. B&T Drainage prepared subgrade for the paved ditch and installed precast manhole sections, redesigned manhole lids, and the collector box lid. ST Construction, Inc. completed concrete paved ditch construction on the east side of Ash Pond D and the pipe bollard and cleanout concrete slabs. Concrete testing was performed by Patriot Engineering, Inc. AAA Electric, Inc. installed various electrical lines and equipment. Fawn Lane Transit, Inc. and Belt Construction, Inc. continued clay placement, construction of slope diversion berms and let-

down channels, and finish grading on the south and east sides of Ash Pond D. Approximately 11 trucks were used to haul clay material to Ash Pond D. Refer to the daily reports for additional information.

Equipment and Personnel On-Site

CAT D6N Bulldozer
CAT D5G Bulldozer
CAT CS-323C Smooth Drum Roller
JLG 450AJ Articulating Boom Lift
John Deere 762B Paddlewheel Scraper
John Deere 450 LC Excavator
John Deere 410J Backhoe
Case 580 Backhoe
Kubota L245DT Tractor
Water Truck (Dust Control)

Geotechnology, Inc. – Joe Cravens
Ash Management Services, LLC (AMS) – Randy Porter, Robert Dunkley, Brad Bolenbaugh, Greg Siverly, Jeremy Shorter, Blake Bunting, and Eric Sefton
Charah, Inc. – Joe Tasich
Belt Construction, Inc. (BCI) – Jared Belt
B&T Drainage (BTD) – Brian Schaefer and Michael Dashiell
AAA Electric, Inc. (AAA) – Joseph King and Kyle Davidson
ST Construction, Inc. (STC) – John Maetin, Gary Hedges, Scott Hilton, Robert Pressley, Kenneth Kientzel, and Mark Newlin
Patriot Engineering, Inc. (PEI) – Thad Simpson
Fawn Lane Transit, Inc. (FLT) – Lee Edington, Scott Comer, James Elledge, Jim Urfer, Gary Lamb, Tom Sager, Eric Bierman, Alan Ruholl, Patrick Wente, Frank Walton, and Greg Cornwell
Daylight Land Management (DLM) – Jon Ziliak
Visitors – Refer to the Visitor's Log for visitors, dates, and times.
Refer to the meeting minutes for additional personnel.

Meetings

The weekly progress meeting was held on Tuesday, September 11, 2012. Refer to the attached meeting minutes for additional information.

Photographs

A photograph log with select photographs obtained this week is attached.

Materials

The following materials were delivered this week: clay for the vegetative layer, four manhole sections, tops, and lids for the DS manholes, seven cap vent protective rings, precast top and aluminum hatch for the collector box, IDOT SI 4000 psi concrete, IDOT CA-6 gravel, IDOT CA-6 fill, and RR-03 rip rap.

Testing/Sampling

Patriot Engineering, Inc. performed concrete testing for the paved ditch, including slump and air entrainment testing. Four concrete cylinders were cast and retrieved each day for testing. Refer to the concrete testing records for additional information.

Calibration Records

Calibration information was not obtained this week.

Signature of CQA Officer



Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DAILY REPORTS

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: JO19896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 9/10/12

TIME: Arrive: 6:00 AM Depart: 6:00 PM Travel: 1.0 hr Total: 12.75 hrs (0.25 hr for lunch)

Weather: Sunny, 60° AM, 80° PM Contractor: AMS Subcontr./Supplier: AAA, FLT, BCI

Equipment Working: D6N Dozer, 580 Backhoe, 450AJ Lift, Water Truck

Site Activities / Observations / Contacts / Notes: _____

AMS:

Continued constructing the rip rap wall between the PGL and the paved gutter, as well as wrapped around the ends of the paved gutter, on the west side of Section C. RR-03 rip rap overlying 8 oz. non-woven geotextile was used to build the wall and fill was placed behind the wall for bedding and to achieve $\approx 3'$ of cover at the PGL. Site remediation: This past weekend brought an additional 3" of rain to the rain that was received last week. AMS repaired the additional rock chute on the south end of Ash Pond D that was washed out, and began removing the washed out material burying the paved gutter on the west side of Ash Pond D. Other areas that contain gullies and washouts and will need repaired include the entire paved ditch, outfall swales to river, additional rock chutes on the northeast and west sides, and the drainage areas for the anchor trench outlet toe drains.

AAA:

Began hanging the three phase (A,B,C) Priority Wire 4/0AWG AL 600V XLPE aerial cables and messenger cable from the MCC-1 service pole onto the new power poles heading south towards the pump control service pole on the southeast corner of Ash Pond B.

FLT/BCI:

Began the additional clay placement based on the survey data. Clay placement began between the first 2 east/west slope diversion berms on the south end of Ash Pond D, heading westbound. Began constructing letdown channels between the slope diversion berms.

Other:

Loads = 179

BTD delivery - 4 manhole sections for the DS manholes, 7 manhole sections for the cap vent rings, 4 manhole tops and aluminum

Additional Comments: hatch lids, and the collector box top and aluminum hatch.

Randy Porter
Contractor Representative

AMS
Company 9-10-12

Signature Ana Sandoz
Geotechnology, Inc.

Date 9-17-12
Date

Engineer's Signature

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: JO19896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: — Client: Ameren ER Date: 9/11/12

TIME: Arrive: 6:00 AM Depart: 5:45 PM Travel: 1.0 hr Total: 12.5 hrs (0.25 hr for lunch)
 Weather: Sunny, 59°AM, 86°PM Contractor: AMS Subcontr./Supplier: AAA, BTD, STC, PEI, FLT, BCI
 Equipment Working: D6N Dozer, 580 Backhoe, 450AJ Lift, D5G Dozer, 410J Backhoe, Water Truck

Site Activities / Observations / Contacts / Notes: _____

AMS:

Completed constructing the rip rap wall between the PGL and the paved gutter, as well as wrapped around the ends of the gutter, on the west side of Section C. Began installing the cap vent precast ring barriers. IDOT CA-6 fill was used as bedding for the ring barriers. Site remediation: Completed removing washed out material from the paved gutter.

AAA:

Continued hanging the three phase 4/0AWG aerial cables and messenger cable between the MCG-1 service pole and the pump control service pole on the southeast corner of Ash Pond B.

BTD:

Graded the washed out material on the south and east sides of Ash Pond D to allow vehicular traffic. Continued grading the paved ditch subgrade east of Ash Pond D.

STC:

Continued paved ditch concrete construction east of Ash Pond D. Three trucks delivered - 24 cy.

PEI:

Thad Simpson tested paved ditch concrete - Temp = 78°, Slump = 3", Air = 4.8%, and 4 cylinders cast.

FLT/BCI:

Ash Pond D was divided into 8 Sections to address the additional clay placement, or the clay issue recovery. Refer to the File - Clay Issue Recovery - JRC.pdf for the layout of the 8 Sections. Clay placement was completed in Section 1 and began in Section 2 heading westbound. Completed constructed letdown channels in Section 1 and Section 2.

Other:

Loads = 164

Pump commissioning has been extended to 9/28/12,

Additional Comments: which pushes substantial completion into the first week of October.

Landy Poetel
Contractor Representative

AMS
Company 9-11-12

Anna Saindon
Signature

9-12-12
Date

Geotechnology, Inc.

—
Date

—
Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 9/12/12

TIME: Arrive: 6:00 AM Depart: 5:30 PM Travel: 1.0 hr Total: 12.25 hrs ^(0.25 hr for lunch)
Weather: ^{Partly} Cloudy, 62° AM, 87° PM Contractor: AMS Subcontr./Supplier: AAA, BTD, STC, PEI, FLT, BCI, DLM
Equipment Working: D6N Dozer, 580 Backhoe, 450AJ Lift, D5G Dozer, 410J Backhoe, 450LC Excavator

Site Activities / Observations / Contacts / Notes:

AMS:

Completed installing the cap vent precast ring barriers with CA-6 fill bedding. Excavated and prepared the subgrade for the rock chute between the paved gutter culvert drain and the paved ditch. Excavated and built rip rap splash pads with class B2 rip rap for the anchor trench outlet toe drains on the south side of Ash Pond D. Refer to S-386, Sheet 10, Detail 2.

Site remediation: Began removing washed out material from the paved ditch south of Ash Pond D.

AAA:

Continued hanging the three phase, 4/0AWG aerial cables and messenger wire between the MCC-1 and pump control service poles. Pulled fishing rope through the 2 1/2" PVC conduit between the west and east pump control panels and the disconnect on the pump control service pole. Wired the floats from DS-4 in the pump control box on the east pump control panel.

BTD:

Continued grading the paved ditch subgrade and backfilling against the paved ditch on the east side of Ash Pond D. Completed constructing the bedding for the cleanout/bollard slabs. Grouted the bottom of the collector box with CW100 self-leveling grout up to the bottom of the 8" HDPE drainage outlet pipe. Installed manhole sections and tops onto the four DS manholes. Installed the collector box top and hatch onto the collector box. Site remediation: Rebuilt the outfall swale to river off of the northeast embankment of Ash Pond D.

STC:

Continued paved ditch concrete construction east of Ash Pond D. Four trucks delivered - 32 cy.

PEI: Tested paved ditch concrete - Temp = 78°, Slump = 3 1/4", 3", Air = 5.2%, and 4 cylinders cast.

FLT/BCI: Clay placement was completed in Section 2

Additional Comments: and began in Section 3. Site remediation:

Reconstructed slope diversion berms in Section 1, 2, and 3.

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Larry Porter
Contractor Representative

AMS
Company

Anna Sander
Signature

9-12-12
Date

Geotechnology, Inc.
Geotechnologist

9-12-12
Date

Engineer's Signature

Deliveries: CA-6 fill

Loads: 175

RR-03 rip rap
RR-04 rip rap

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J014896.01 Task: 2370
 Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: - Client: Ameren ER Date: 9/13/12

TIME: Arrive: 6:00 AM Depart: 7:30 PM Travel: 1.0 hr Total: 14.25 hrs (0.25 hr for lunch)
 Weather: Cloudy, 66° AM, Sunny 88° PM Contractor: AMS Subcontr./Supplier: AAA, BTG, STC, PEI, FLT, BCI
 Equipment Working: D6N Dozer, 580 Backhoe, 450AJ Lift, D5G Dozer, 410J Backhoe, 450 LC
 Site Activities / Observations / Contacts / Notes: Excavator, 762B Scraper, CS-323C Roller, Water Truck
AMS:

Continued building rip rap splash pads with class B2 rip rap for the anchor trench outlet toe drains on the south end of Ash Pond D. Began constructing the additional rock chute, with RR-03 rip rap and 8 oz. non-woven geotextile between the paved gutter culvert and the beginning of the paved ditch on the southwest side of Ash Pond D. Installed the stainless steel threaded caps and mesh strainer caps onto the cap vents. Site Remediation: Repaired the box culvert swale and rock chute on the west side of Ash Pond D, and repaired and added length to the additional rock chute on the northeast embankment of Ash Pond D.

AAA:
 Completed hanging the three phase 4/0AWG aerial cables and braided messenger cable between the MCC-1 and pump control service pole. Pulled the electric feeder, high voltage 4/0AWG cables with ground wire from the disconnect switch on the pump control service pole to the east pump control panel. Note- the overhead electric feed, three phase 480V is split into buried electric feed, single phase 240V when it leaves the disconnect and runs to the pump control panels. Pulled rope through the 2½" PVC conduit from the disconnect switch on the pump control service pole to the west pump control panel. When pulling the rope, the Power-fish pull line broke inside the PVC conduit. The conduit had to be excavated on the southeast corner of Ash Pond A to get the string out. Anchored the high and low junction boxes onto the new section of DS-1 manhole. Ameren shut off the power to the MCC-1 and the building was tagged (LO/TO) for electrical installations. After disconnecting the power, the fire alarm went off on the Fire Protection Valve House north of the MCC-1. Greg Musch shut off the fire alarm/disconnected.

Additional Comments: _____

NEXT PAGE

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

Contractor Representative Ready Pooled Company AMS
 Signature Anna Saindon Date 9-13-12
 Geotechnology, Inc. AMS Date 9-19-12
 Engineer's Signature _____

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: JO19896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: — Client: Ameren ER Date: 9/13/12

TIME: Arrive: — Depart: — Travel: — Total: —
 Weather: — Contractor: — Subcontractor/Supplier: —

Equipment Working: REFER TO PAGE 1

Site Activities / Observations / Contacts / Notes: —

BTD:

Completed grading the paved ditch subgrade, placing CA-6 fill for bedding, and backfilling against the paved ditch east of Ash Pond D. Installed the aluminum lids onto the four manhole precast tops. All lids were sealed with ConSeal CS102 butyl rubber sealant. Released the inflated plug in the new 12" ADS field tile and poured the concrete plug in the existing 15" ADS field tile in the grade inlet southwest of DS-1. Site Remediation: Repaired the outfall swale to river at the end of the paved ditch on the east side of Ash Pond D.

STC:

Completed forming, stripping, pouring, finishing, curing, and saw cutting the paved ditch. Poured the cleanout/bollard slabs along the south property line. Three trucks delivered - 24 cy.

PEI:

Tested concrete for the paved ditch - Temp = 81°, Slump = 3", Air = 5%, and 4 cylinders cast.

FLT/BCI:

Additional clay placement was completed in Section 3 and began in Section 4. Fill material for Section 4 was also gained from cutting the east and northeast embankments of Ash Pond D. Began building letdown channels on the north end of Ash Pond D in Section 3 and 4. Added fill and backfilled against the paved ditch on the south side of Ash Pond D. Began finish grading on the south and east sides of Ash Pond D, as well as the embankments. Loads = 167

DLM:

Jon Ziliak arrived to prepare for landscaping/seeding and mulching.

Additional Comments: —

Randy Porter Contractor Representative
Anna Sandon Signature
 Geotechnology, Inc.
— Engineer's Signature
 Company AMS
 Date 9-15-12
 Date 9-19-12

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 9/14/12

TIME: Arrive: 6:00 AM Depart: 4:15 PM Travel: 1.0 hr Total: 11.0 hrs (0.25 hr for lunch)
Weather: Cloudy Rain, 58° AM, Sunny 73° PM Contractor: AMS Subcontr./Supplier: AAA, STC, FLT, BCI
Equipment Working: D6N Dozer, 450AJ Lift, Water Truck

Site Activities / Observations / Contacts / Notes:

AMS:

Equip. maint. and inspection, spotting trucks, and housekeeping across the site.

AAA:

Began pulling the high voltage, electric feeder 4/0AWG cables with ground wire from the disconnect switch on the pump control service pole to the west pump control panel. During the pull, the rope broke leaving the electrical lines abandoned. Various locations of the 2½" PVC conduit was excavated, but the buried electric was not found. More locations of the conduit will be excavated next week to retrieve the electrical lines and finish the pull. Pulled the three phase 4/0AWG aerial cables and messenger cable into the PVC and stainless steel 4" conduit on the MCC-1 service pole, into the MCC-1 building, to the spare bay. W/PA was followed since the electric to the MCC-1 was disconnected. Anchored the 4" PVC conduit to the MCC-1 service pole. Pulled the high voltage, 4/0AWG electric feed through the 2½" stainless steel conduit on the Ash Pond C service pole, into the disconnect.

STC:

Sealed the expansion and contraction joints in the paved ditch with NP-1 sealant and stripped the ballard concrete slab forms. The slabs were cured after stripping. STC demobilized.

FLT/BCI:

Continued clay placement in Section 4 and began clay placement in Section 6. Continued cutting the east and northeast embankments of Ash Pond D for fill material in Section 4. Continued building letdown channels on the north end of Ash Pond D in Section 4. Loads = 121

Other:

The temporary discharge into the Bottom Ash Pond

Additional Comments: has been approved for commissioning.

Randy Porter AMS
Contractor Representative Company
[Signature] Date 9-14-12
Geotechnology, Inc. Date
Anna Samaha Engineer's Signature

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MEETING MINUTES



Hutsonville Power Station - Ash Pond D Closure

Progress Meeting No. 26 Minutes

Tuesday, September 11, 2012

01 PUBLICATION			
Publish date:	2012-09-13	Submitted by:	PHZ
Distribution:	E-mail only	Notes taken by:	PHZ
Location:	Hutsonville Power	AMS-Charah File No.	HUT-APD-MTG-MIN-2012-09-11-PM-26
AER PO:	567523 R4	AMS-Charah Contract:	00030-01 AMS-Charah 4116-06-6120

02	ATTENDEES [ALPHA BY COMPANY]						
	NO.	SAL	FIRST	LAST	COMPANY	PHONE	E-MAIL
	01	Mr.	Mike	Wagstaff	Ameren	618-406-3478	mwagstaff@ameren.com
	02	Mr.	Paul	Zinsious	AMS - PCM	502-640-2918	pzinsious@ashmanagementservices.com
	03	Mr.	Randy	Porter	AMS - SM	502-554-5230	rporter@ashmanagementservices.com
	04	Mr.	Matt	Pugh	Charah - PCM	502-639-8075	mpugh@charah.com
	05	Mr.	Joe	Cravens	Geotechnology	314-568-6628	j_cravens@geotechnology.com

03 ABBREVIATIONS			
AER	Ameren Energy Resources	OSHA	Occupational Safety Health Administration
AMS	Ash Management Services	PCP	Perforated Collector Pipe
BNSF	Burlington	PO	Purchase Order
CBT	Computer Based Training	RHOM	Routine Handling, Operation, and Maintenance
EAP	Emergency Action Plan	SPOC	Single Point
EOD	End of [the] Day	T/M	Time and
EOM	End of [the] month	TBD	To Be
EOW	End of [the] week	TD	Transmission Dispatch
EDTS	Energy Delivery Transmission Services	WPA	Worker Protection Assurance
EDC	Estimated Date [of] Completion		
EWO	Extra Work Order		
HDPE	High Density Polyethylene		
HRS	Hours		
LOTO	Lock Out Tag Out		
NMA	National Maintenance Agreement		

04 DOCUMENTATION		
Minutes are documented weekly, and the publication have a "rolling record" of the immediate past two weeks. Each week the oldest drops off and the current week is added to the minutes. Items are categorized as either "NEW", "OPEN", "CLOSE", or in case the an item has to be re-published after closed the previous week - "REOPEN". Minutes format changed for Progress Meeting No. 13 deleting and combining certain items for brevity and to abbreviate documentation. Currently the item numbers remained the same for tracking purposes.		

05 SAFETY - HOUSEKEEPING		
02 WORKER PROTECTION ASSURANCE		
2012-09-11	OPEN:	
	[01]	no date set for WPA, M. Wagstaff sent e-mail to S. Bruner.
2012-09-04	OPEN:	
	[01]	J. King indicated that LOTO of MCC not sufficient, as other lines in.
	[02]	M. Wagstaff to get with plant/local utility to review cut off power, and coordinate with J. King.
03 EMPLOYEE DRUG TESTING		
2012-09-11	OPEN:	
	[01]	None projected.
	[02]	AMS had random [company generated] drug test at the borrow site. No positives [return to work].
2012-09-04	OPEN - no issues. No testing scheduled.	
04 AMS SAFETY		
2012-09-11	[01]	J. Tasich on site schedule TBD. P. Zinsious to check when Joko or Dave Valentine will be on site next.
	[02]	No safety issues reported.
	[03]	Damaged AMS cooling stations will have to replaced, not repaired.
	[04]	AAA has 45 FT articulated lift on site [for power pole work]. Workers observe using harness and correct PPE.
	[05]	P. Zinsious indicated report that safety recall for harnesses [involuntary safety recall from 3M on a self-retracting lanyard. The SRL is manufactured by IKAR under the THOR label]. R. porter indicated AMS does not have this style on site.
	[06]	Brief discussion on the recent rains and muddy site.

2012-09-04 [01] J. Tasich on site schedule TBD.
 [02] No safety issues reported.
 [03] Plant Brothers power pole installation - M. Wagstaff inquire about strap/choker for pole installation. AAA indicated standard procedure. Rigging was inspected, new choker. Installation [using forklift], work progressing safety. Work completed - CLOSE
 [04] Humidity is high [increased temperatures], discussion about keeping hydrated.
 [05] wind has damaged AMS cooling stations. R. Porter Indicated will repair.
 [06] AAA bringing 45 FT articulated lift on site [for power pole work].

05 HOUSEKEEPING

2012-09-11 OPEN - No issues, other than mud from the rains.

2012-09-04 OPEN - No issues.

06 PLANT ACCESS - CBT BADGE

2012-09-11 OPEN: No issues.

[01] Inquired about when guard would go 24/7. To be determined. M. Wagstaff indicated cameras still active on site.

[02] R. Porter locking new gate, [no open areas to plant], and will provide updated lock count to AER of approximately 7x locks, 2x keys. M. Wagstaff indicated will discuss with Greg Musch as Ameren has several locks available on site.

[03] M. Wagstaff indicated locks also for disconnects can come from the plant.

2012-09-04 OPEN: No issues.

[01] R. Porter reports wire for transmission project being delivered. Inquired about when guard would go 24/7.

[02] R. Porter locking new gate, [no open areas to plant], and will provide updated lock count to AER.

[03] M. Wagstaff indicated need to have locks also for disconnects.

08 OSHA LOG - WORK HOURS

2012-09-11 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 08-13

No incidents or accidents.

9,085.00 RT

1,738.00 OT

10,823.00 TOTAL

2012-09-04 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 08-20.

No incidents or accidents.

8,854.00 RT

1,705.00 OT

10,559.00 TOTAL

06 MANPOWER [HEAD COUNT]

01 CREW SIZE [Alpha by Company]

2012-09-11 Geotechnology [work hours not included in OSHA Log above] Exact count in daily reports, make note if on site.

NO.	COMPANY	SURVEYOR	TECHNICIAN	FOREMEN	OPERATORS	TEAMSTERS	LABORERS	PIPE FITTERS	ELECTRICIANS	IRON WRK
01	AAA	0	0	0	0	0	0	0	2	0
02	AMS	0	0	1	1	1	2	0	0	0
03	BCI	0	0	0	1	0	0	0	0	0
04	BTD	0	0	0	0	0	0	0	0	0
05	CHI	0	0	0	0	0	0	0	0	1
06	FLT	0	0	0	0	10	0	0	0	0
07	FWI	0	0	0	0	0	0	0	0	0
08	GEO	0	1	0	0	0	0	0	0	0
09	LEC	0	0	0	0	0	0	0	0	0
10	PLB	0	0	0	0	0	0	0	0	0
11	STC	0	0	0	0	0	1	0	0	0
12	Z-3	0	0	0	0	0	0	0	0	0

Total on site: 21

2012-09-04 Geotechnology [work hours not included in OSHA Log above] Exact count in daily reports, make note if on site.

NO.	COMPANY	SURVEYOR	TECHNICIAN	FOREMEN	OPERATORS	TEAMSTERS	LABORERS	PIPE FITTERS	ELECTRICIANS	IRON WRK
01	AAA	0	0	0	0	0	0	0	2	0
02	AMS	0	0	1	1	1	2	0	0	0
03	BCI	0	0	0	1	0	0	0	0	0
04	BTD	0	0	0	2	0	0	0	0	0
05	CHI	0	0	0	1	0	1	0	0	1
06	FLT	0	0	0	0	14	0	0	0	0
07	FWI	0	0	0	0	0	0	0	0	0
08	GEO	0	1	0	0	0	0	0	0	0
09	LEC	0	0	0	0	0	0	0	0	0
10	PLB	0	0	0	2	0	1	0	0	0
11	STC	0	0	0	0	0	6	0	0	0
12	Z-3	0	0	0	0	0	0	0	0	0

Total on site: 37

02 WORK HOURS AND OVERTIME

2012-09-11	OPEN: No issues. [01] Standard hours - 7:00 AM CT to 5:30 PM CT. Going back to subcontractors starting 06:00 AM CT [at borrow site] to get started. Trucks to begin later. Safety awareness will be diligent regarding the time period.
2012-09-04	OPEN: No issues. [01] Standard hours - 7:00 AM CT to 5:30 PM CT. Some subcontractors starting changed to 07:00 AM CT due to light [safety] [02] Labor Day holiday 09-03 observed.

04 TRAILER - GENERAL CONDITIONS - COORDINATION - VEHICLES

2012-09-11	OPEN: No issues. [01] M. Wagstaff to check if electric utility bill for trailers transferred to Miller Construction. [02] Look ahead to removing GEO trailers on 09-28 to remain projected date. AMS to be determined.
2012-09-04	OPEN: No issues. [01] R. Porter reports electric utility bill for trailers transferred to Miller Construction. [02] Look ahead to removing trailers on 09-28 to remain projected date.

07 PREVIOUS**01 SUBCONTRACTS**

2012-09-11	OPEN - no issues. P. Zinsious to tracked in legal. FWI pay application shows CO and approved. CLOSE
2012-09-04	OPEN - no issues. FWI CO in progress, will report when signature.

02 SUBMITTALS

2012-09-11	Submittal log dated 09-08 distributed and reviewed. [01] M. Wagstaff indicated review or geo roll inventory [Item No. 21]. [02] M. Wagstaff indicated bolt pattern and sealant for the DS hatch required. AMS submitted 09-11. [03] AMS has received digital reader submittal form FWI. AMS submitted 09-11. [04] M. Wagstaff indicated that Lamac not confirmed yet for record drawings in AutoCAD. Review in progress. [05] R. Porter reports not having information yet from subcontractors on record drawings. In progress.
2012-09-04	Submittal log - no update. [01] M. Wagstaff indicated bolt pattern and sealant for the DS hatch required. AMS to provide accordingly. [02] P. Zinsious reports that AAA has confirmed receipt of everything needed to proceed with work. CLOSE [03] AMS has received digital reader submittal form FWI. P. Zinsious to forward. [04] M. Wagstaff indicated that Lamac not confirmed yet for record drawings in AutoCAD. Review in progress. [05] R. Porter reports not having information yet from subcontractors on record drawings. In progress.

08 MATERIAL**01 GENERAL**

2012-09-11	OPEN - listing for materials that have potential to impact schedule. [01] J. Cravens distributed sketch "Hutsonville Ash Pond D Closure - Clay Issue Recovery Layout" [not dated].
2012-09-04	OPEN - listing for materials that have potential to impact schedule. [01] General discussion of Baro sensor to be in separate panel box. P. Zinsious recommended FWI research with vendor if placed is electrical panel would other signals/inductance create and issue. J. King has no feedback, but does not see this as an issue. CLOSE [02] AMS presented copies of letter dated 08-31 "Clay issue recovery - Schedule and work plan": [01] AMS committed to bring in additional clay to make grade elevations. [02] M. Wagstaff inquired about QA/QC of grade. AMS will grade to stake and have Lamac check grade before seed and straw and the Massmann survey. [03] Review of CQA requirement [page A-2] for tolerance is 0 FT to - 0.4 FT. The maximum coverage is 3 FT. [04] Clay recovery duration not shown as additional activities, the activity "fine grade" duration to be extended. [05] M. Wagstaff inquired about scheduling overtime for placement of clay. Review of schedule indicates float. Considering the rain day taken today [09-04], this leaves only one rain day for the next week [as only two were used the recovery duration calculation as noted in the letter]. General discussion that next PM review of progress to determine overtime.

09 ADJACENT PROPERTIES AND PCP LINE**01 GENERAL**

2012-09-11	OPEN - Discussion during Progress Meeting: [01] AMS to seal pipe with brick [8 IN ?] and mortar "long ways", and to cover face with non-shrink grout to seal pipe. This method is a no-cost change to Ameren.
2012-09-04	OPEN - Discussion during Progress Meeting: [01] R. Porter reported that Wampler has requested that [field drain] line be plugged. This line is off site, and not part of the scope of work, and is an issue with the agreement between AER and Wampler. General discussion and M. Wagstaff approved proceed to plug line as indicated on drawings.

10 QUALITY CONTROL

2012-09-11	No issues. [01] AMS received concrete break reports, and forwarded them on 09-11.
2012-09-04	[01] AMS received concrete field reports, and forwarded them .P. Zinsious to check on break reports. [02] DS-3 ring height issues due to re-grade of the paved concrete ditch. R. Porter indicated will be delivered with other precast.

11 SCHEDULE REVIEW

2012-09-11 OPEN - Review of last planner by M. Wagstaff. [AID = Activity Identification, S = successor, P = Predecessor, D = Duration and day]
[01] Rain dates as listed.
[02] Major changes commentary:
[01] Activities 220, 221 and 222 activities to be scheduled out by software.
[02] AAA to meet with AMS after PM to review in detail electrical work schedule.
[03] Change LP on 183 to Porter.
[03] All change were made to the LP sheet and full report submitted to AER. Below is highlight of changes/updates [alpha by LP]:

NO.	LAST PLANNER	AID	ACTIVITY NAME	RDU	START	FINISH	PERCENT	COMMENT
	AAA-King	318	PCP-PCR - electrical final checkout		9/21/2012	9/21/2012		
	AAA-King	375	Pull power...		9/14/2012			
	AAA-King	380	Install new Power cables...		9/24/2012			
	AAA-King	385	WPA at Existing Coal...		9/14/2012			
	AAA-King	390	WPA to Disconnect...		9/24/2012			AAA - WPA LOTO
	AAA-King	395	Tie-in Electrical...		9/14/2012	9/17/2012		
	AAA-King	400	Energize...		9/21/2012			
	AAA-King	401	Testing of...		9/18/2012			
	AAA-King	124c	Install - DS Baro...			9/14/2012		
	AAA-King	279a	DS3 - Electrical wiring...		9/13/2012	9/13/2012		
	AAA-King	312b	PCS - East - Wire & Terminate...			9/20/2012	50%	
	AAA-King	313c	PCS - West - Wire...			9/6/2012	100%	
	AAA-King	385a	WPA for APD electrical...		9/14/2012			
	AAA-King	385b	Release WPA to Energize Ash...		9/17/2012			
	AAA-King	390a	Release WPA to Energize New...		9/26/2012			AAA - WPA LOTO
	AAA-King	390b	Commission Ash Pond C system		9/26/2012	9/27/2012		
	AAA-King	420a	Pull cables...	3	9/13/2012	9/17/2012		
	AER-Wagstaff	17	Permits - NPDES...			10/5/2012		
	AMS-Porter	111	Procure...			9/11/2012	100%	
	AMS-Porter	198	Perimeter...				50%	
	AMS-Porter	191	Earthwork APD - slope diversion...			9/7/2012	100%	
	AMS-Porter	192	Earthwork APD - let down				50%	
	AMS-Porter	193	Earthwork APD - rock chutes			9/17/2012	90%	
	AMS-Porter	196	Earthwork APD - fine grade				10%	Includes additional clay
	AMS-Porter	50a	Additional clay to Pass...			9/19/2012		
	AMS-Zinsious	189	Clay placement - Work List...		9/25/2012			
	AMS-Zinsious	217	Substantial...			10/2/2012		
	AMS-Zinsious	218	Commission Pump System		9/28/2012			
	AMS-Zinsious	219	Punch List - Walk...		10/2/2012			
	BTD-Boyer	237a	DS1 - Precast - set lid					Received 09-10
	BTD-Boyer	252a	DS2 - Precast - set lid					Received 09-10
	BTD-Boyer	272a	DS3 - Precast - set lid					Received 09-10
	BTD-Boyer	272c	Set DS3 upper ring section		9/13/2012	9/13/2012		
	BTD-Boyer	294a	DS4 - Precast - set lid					Received 09-10
	GEO-Salndon	11	Survey - APD - vegetative...	2 [duration]	9/20/2012	9/21/2012		
	GEO-Salndon	50b	Clay Certification (Final		9/21/2012	9/24/2012		
	LEC-Ridgely	15	Survey - APD - final			9/19/2012		

2012-09-04 OPEN - Review of last planner by M. Wagstaff. [AID = Activity Identification, S = successor, P = Predecessor, D = Duration and day]

[01] Rain date 09-04.

[02] Major changes commentary:

[01] Activities 221 and 222 activities to be scheduled out by software.

[02] Delete activities 185a, 185b, 186a, 186b, 187a, 187b, 188a, and 188b as the clay placement will not follow the original quadrant layout. Work for the additional clay placement is included in the "fine grade" activity, and not shown as additional activities, only extending the activity "fine grade" duration [ref. 08.01.2012-09-04.04 above].

[03] All change were made to the LP sheet and full report submitted to AER. Below is highlight of changes/updates [alpha by LP]:

NO.	LAST PLANNER	AID	ACTIVITY NAME	RDU	START	FINISH	PERCENT	COMMENT
	AAA-King	385	WPA at Existing Coal...		9/7/2012			
	AAA-King	385a	WPA for APD...		9/7/2012			
	AAA-King	375	Pull power...		9/10/2012	9/11/2012		
	AAA-King	395	Tie-in Electrical...		9/10/2012	9/11/2012		
	AAA-King	390	WPA to Disconnect...		9/10/2012			
	AAA-King	380	Install new Power cables...		9/10/2012	9/11/2012		
	AAA-King	390a	Release WPA to Energize New...		9/11/2012			
	AAA-King	124c	Install DS Baro...				75%	Waiting on DS-3 ring
	AAA-King	279a	DS3 - Electrical wiring...					Waiting on DS-3 ring
	AAA-King	301a	DS4 - Electrical...				100%	
	AAA-King	420	Install conduits...				100%	
	AAA-King	114	Procurement - receive - electrical...				100%	AAA possession
	AAA-King	420a	Pull cables...		9/6/2012	9/7/2012		
	AAA-King	313b	PCS - West - Mount...				100%	
	AAA-King	313c	PCS - West - Wire...		8/31/2012		25%	
	AAA-King	312a	PCS - East - Mount...			8/29/2012	100%	
	AMS-Boone	183	Site prep - CBS...			9/21/2012		
	AMS-Porter	191	Earthwork APD - slope diversion...				90%	
	AMS-Porter	193	Earthwork APD - rock chutes				100%	
	AMS-Zinsious	218	Commission Pump System		9/18/2012			
	AMS-Zinsious	217	Substantial...			9/25/2012		
	AMS-Zinsious	219	Punch List - Walk...		9/25/2012	9/25/2012		
	AMS-Zinsious	220	Punch List - Work...		9/26/2012			
	BTD-Boyer	237a	DS1 - Precast - set lid			9/10/2012		
	BTD-Boyer	252a	DS2 - Precast - set lid			9/10/2012		
	BTD-Boyer	252a	DS4 - Precast - set lid			9/10/2012		
	CHI-Williams	139	Fence - APD - install gate			8/29/2012	100%	R. Porter
	DLF-Ziliak	127	Procurement...				100%	
	DLF-Ziliak	210	Ground cover - mob...		9/17/2012	9/17/2012		
	DLF-Ziliak	211	Ground cover - hydro...		9/18/2012			
	DLF-Ziliak	212	Ground cover - TRM...		9/18/2012			
	DLF-Ziliak	120	Procurement...			9/4/2012	100%	
	FWI-Burch	316a	Hydro...			9/18/2012		
	GEO-Saandon	11	Survey - APD - vegetative...	1 [duration]	9/18/2012	9/19/2012		
	GEO-Saandon	50a	Clay - certification (Final)		9/19/2012	9/21/2012		
	LEC-Ridgely	15	Survey - APD - final			9/17/2012		
	LEC-Ridgely	13	Survey - CBS...			9/18/2012		
	STC-Hunt	207	Concrete - paved ditch - form and...			9/14/2012	75%	
	STC-Hunt	208	Concrete - paved ditch -			9/14/2012		

12.0 COST AND BUDGET

02 AMS PAY APPLICATION - CHANGE REQUEST

2012-09-11 No issues. P. Zinsious inquired about retainage. Review of calculation on [draft as submitted to Ameren]. Balance over 90% billing to retainage. M. Wagstaff indicated will discuss with J. Skitt at Ameren.

2012-09-04 No issues. AMS to submit EOM draft. Copy for M. Wagstaff today.

12.1 EXTRA WORK ORDERS

AMS distributed HUT-APD-EWO-RPT-2012-09-06-R0 "EWO Basic Report". General discussions of EWO report, procedure, budget, and timing.

15	EWO-15	FENCE ALIGNMENT
	2012-09-11	OPEN - AMS to provide back-up information. [no report - work complete].
	2012-09-04	OPEN - AMS to provide back-up information. In progress.
17	EWO-17	PAVED DITCH ALIGNMENT
	2012-09-11	OPEN - Check grade to plan as possibly area included in grade.
	2012-09-04	OPEN - In progress.
18	EWO-18	VENT PROTECTION RING
	2012-09-11	OPEN - No report [in progress].
	2012-09-04	OPEN - M. Wagstaff has approved.
19	EWO-19	COMMISSIONING
	2012-09-11	M. Wagstaff indicated possible temporary discharge by IEPA, Ameren investigating. Transmitted packet of sketches and information for basic review of discharge piping option [ref. 16.2012-09-11.05 below for list].
	2012-09-04	OPEN - AMS to provide cost for installing a manifold at the collector box to tie together the DS discharge lines to a single discharge line. The single line will then be routed along the east berm of Ash Pond D to the existing Bottom Ash Pond, where water will be able to gravity flow into existing Ash Pond C. This temporary configuration will utilize the new DS pumps, eliminate confined space entry [for now] and will not require a generator/pump combination.
20	EWO-20	ADDITIONAL RIP-RAP
	2012-09-11	AMS provide cost.
	2012-09-04	OPEN - AMS to provide cost for installing additional rip-rap [RR-3] and geotextile material as necessary to accommodate for grade adjusted in the clay cap along the west slope adjacent to the paved gutter. M. Wagstaff indicated that a 1:1 slope is acceptable in this area. R. Porter and M. Wagstaff to review in the field today.
21	EWO-21	FIELD TILE LOCATION - LENGTH [was EWO-14]
	2012-09-11	NEW - AMS to investigate addenda drawings to see if already included in the bid.
22	EWO-22	MECHANICAL CHANGES
	2012-09-11	NEW - AMS to investigate addenda drawings to see if already included in the bid.
23	EWO-23	CONCRETE CHANGES
	2012-09-11	NEW - AMS to investigate addenda drawings to see if already included in the bid.
24	EWO-24	CONDUIT AND PIPE SAND ENCASEMENT
	2012-09-11	NEW - AMS to investigate addenda drawings to see if already included in the bid.
25	EWO-25	ELECTRICAL OVERHEAD UTILITY CHANGES
	2012-09-11	NEW - M. Wagstaff has approved.
26	EWO-26	DS LID MODIFICATIONS FOR PIPING
	2012-09-11	NEW - M. Wagstaff has approved.
27	EWO-27	ADDITIONAL BOLLARDS FOR CLEANOUTS
	2012-09-11	NEW - M. Wagstaff has approved.

13 ACTION ITEMS - AER [25]

01	AMEREN [AER]
	2012-09-11 No report.
	2012-09-04 No report.

14 ACTION ITEMS - AMS [21]

01	ASH MANAGEMENT [AMS]
	2012-09-11 No report.
	2012-09-04 No report.

15 PRODUCTION

03 CLAY

2012-09-11	OPEN - no issues [01] Placement as of 09-10 is 129,107 CY. [01] General discussion that CY count is "loose delivered" and that trucks CY count is 11 CY, but actually haul more. [02] Trucks were weighed in the beginning to make sure they are legal. [03] Overview of compaction requirements and lessons learned. [04] Estimated requirement to finish 17,000 CY in 8D projected [2,125 CY/D].
2012-09-04	OPEN - no issues [01] Placement as of 08-31 is 127,138 CY. [02] Additional clay to be placed to make grade elevations [ref. above 08.01.2012-08-28.03].

16 DOCUMENTS TRANSMITTED

2012-09-11	[01] AER - Last Planner schedule dated 09-04 [data date]. [02] GEO - Submittal Log dated 09-08. [03] AMS - HUT-APD-EWO-RPT-2012-09-06-R0 "EWO Basic Report" [04] GEO - "Hutsonville Ash Pond D Closure - Clay Issue Recovery Layout" [not dated]. [05] AMS - E-mail dated 2012-09-06-16:47 to M. Wagstaff "Hutsonville APD Closure - commissioning - DS discharge - temporary" wit the following attachments [full pump submittal not included only curve]: [01] SK-HUT-APD-025-R0 "Commissioning - DS discharge - Temporary discharge line route" [02] SK-HUT-APD-026-R0 "Commissioning - DS discharge - Collector box manifold" [03] SK-HUT-APD-027-R0 "Commissioning - DS discharge - Pump flow schematic" [04] 11x17 DS pump curve [05] MacAllister Cat Invoice R6873095800 [proposal] for 6 IN pump [06] FWI letter dated 2012-09-07 "Temporary discharge Drain Line"
2012-09-04	[01] AER - Last Planner schedule dated 08-28 [data date]. [02] AMS - letter dated 08-31 "Clay issue recovery - Schedule and work plan" [03] AMS - 1x 11x17 color copy of Lamac drawings from AMS letter dated 08-31 "Clay issue recovery - Schedule and work plan" to J. Cravens.

17 DOCUMENTS REVIEW ONLY

2012-09-11	B&T Drainage & Excavating letter dated 2012-09-04 to show cost of field collector tile [relative EWO-21].
2012-09-04	None.

18 NEXT PROGRESS MEETING

Next meeting will be held in one week - Tuesday, September 18, 2012 at Hutsonville

19 DISTRIBUTION - STANDARD

AER	SUBCONTRACTORS	
01 Mr. Mike Wagstaff	01 S. Tincher	AAA
02 Mr. Mike Stewart	02 M. Burch	FWI
03 Mr. Bob Muesenfechter	03 T. Boyer	BTD
04 Mr. Steve Bluemner	04 T. Hunt	STC
GEO		
01 Ms. Anna Saindon		
02 Mr. Eric Neuner		
03 Mr. Joe Cravens		
AMS		
01 Mr. Jimmy Boone		
02 Mr. John Denham		
03 Mr. Joko Tasich		
04 Mr. Randy Porter		

If there are any corrections, modifications, additions, or deletions please notify the sender by e-mail at pzinsious@ashmanagementservices.com

PHOTOGRAPH LOG



Photograph 1 ▲ - Installing overhead electric lines facing south



Photograph 2 ▲ - Example of storm damage facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between September 10 and September 14, 2012

JRC



Photograph 3 ▲ - Vegetative layer placement facing northwest



Photograph 4 ▲ - Completed cap vent facing south

All photographs taken by Joseph Cravens of Geotechnology, Inc. between September 10 and September 14, 2012



Photograph 5 ▲ - Manhole with lid facing south



Photograph 6 ▲ - Collector box hatch facing north

All photographs taken by Joseph Cravens of Geotechnology, Inc. between September 10 and September 14, 2012

JRC



Photograph 7 ▲ - Clean out pipe slabs facing northwest



Photograph 8 ▲ - Paved ditch facing northeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between September 10 and September 14, 2012

JRC



Photograph 9 ▲ - Overview of Ash Pond D facing southeast



Photograph 10 ▲ - Overview of Ash Pond D facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between September 10 and September 14, 2012



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Energy Resources

FROM: Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DATE: September 26, 2012

SUBJECT: Weekly Summary Report for September 17, 2012 to September 21, 2012

PROJECT: Hutsonville Ash Pond D Closure
Crawford County, Hutsonville, Illinois
Geotechnology Project No. J019896.01

The following is a weekly summary of the site activities at the referenced site.

Weather

The weather was generally mostly cloudy to sunny with periods of rain. Temperature (°F) lows ranged from 39 to 63°F, and temperature highs ranged from 69 to 78°F. Weather delays did not occur this week.

Construction Activities

The following activities occurred this week: repairing impacts from storm events, additional rip rap wall and rock chute construction, PVC trench excavation and backfill, cap vent ring and cleanout concrete slab construction, finish grading, surveying, electrical installations, clay placement, and letdown channel construction. Ash Management Services, LLC repaired storm impacts to the rock chutes, swales, and paved ditch. The PVC trench between Ash Pond C service pole and pump control panel was excavated, PVC placed in the trench, and backfilled. The rip rap wall construction continued and the rock chute for the paved gutter culvert was completed. Geotextile and CA-6 stone was placed inside the cap vent protective ring barriers. Rip rap was placed around the pipe bollard and cleanout concrete slabs and finish grading was performed south and east of Ash Pond D. Massmann Surveying and Lamac Engineering Co. surveyed the vegetative cover. AAA Electric, Inc. performed various electrical installations such as: junction boxes for the dewatering sumps, disconnect switches and electrical conduit for the service poles, high voltage buried electric feed, overhead electric, MCC-1 building, Ash Pond C service pole and pump control panel, dewatering sumps DS-1 and DS-2 junction boxes, and the west pump control panel. Fawn Lane Transit, Inc. and Belt Construction, Inc. continued additional clay

placement and completed construction of the letdown channels. Approximately 11 trucks were used to haul clay material to Ash Pond D. Refer to the daily reports for detailed information.

Equipment and Personnel On-Site

CAT D6N Bulldozer
CAT CS-323C Smooth Drum Roller
JLG 450AJ Articulating Boom Lift
John Deere 762B Paddlewheel Scraper
John Deere 450 LC Excavator
Case 580 Backhoe
Kubota L245DT Tractor
Water Truck (Dust Control)

Geotechnology, Inc. – Joe Cravens
Ash Management Services, LLC (AMS) – Randy Porter, Robert Dunkley, Brad Bolenbaugh, Greg Siverly, Jeremy Shorter, Blake Bunting, and Eric Sefton
Charah, Inc. – Joe Tasich
Belt Construction, Inc. (BCI) – Jared Belt
AAA Electric, Inc. (AAA) – Joseph King and Kyle Davidson
Fawn Lane Transit, Inc. (FLT) – Lee Edington, Scott Comer, James Elledge, Jim Urfer, Gary Lamb, Tom Sager, Alan Ruholl, Patrick Wente, Frank Walton, Brian Griffith, and Greg Cornwell
Massmann Surveying (MMS) – Rick Koeac and Gary Delf
Lamac Engineering Co. (LEC) – Jake Lewis and Steve Anderson
Visitors – Refer to the Visitor's Log for visitors, dates, and times.
Refer to the meeting minutes for additional personnel.

Meetings

The weekly progress meeting was held on Tuesday, September 18, 2012. Refer to the attached meeting minutes for additional information.

Photographs

A photograph log with select photographs obtained this week is attached.

Materials

The following materials were delivered this week: RR-03 rip rap and IDOT CA-6 gravel.

Testing/Sampling

AAA Electric, Inc. performed continuity testing on high voltage, single phase and three phase, 2/0 and 4/0 AWG electric cables. Refer to the electric testing records for additional information.

Calibration Records

Calibration information was not obtained this week.

Signature of CQA Officer

A handwritten signature in black ink, appearing to read "Anna Saindon", is written over a horizontal line.

Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DAILY REPORTS

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: — Client: Ameren ER Date: 9/20/12

TIME: Arrive: 6:00 AM Depart: 6:00 PM Travel: 1.0 hr Total: 12.75 hrs (0.25 hr for lunch)
 Weather: Partly Cloudy, 51° AM, Rain, 73° PM Contractor: AMS Subcontr./Supplier: AAA, FLT, BCI, LEC, MMS
 Equipment Working: D6N Dozer, 580 Backhoe

Site Activities / Observations / Contacts / Notes: _____

AMS:

Backfilled the remaining trench between the Ash Pond C pump control panel and service pole, and transported the excess spoils to the south side of Ash Pond D to be used as fill. Began preparing and filling the bedding for an additional rip rap wall along the paved gutter on the west side of Section A. Continued disposing of the old fence materials in the construction yard.

AAA:

Pulled the high voltage, three phase 2/OAWG with 600V ground electrical feed from the Ash Pond C pump control panel to the Ash Pond C service pole. Installed the PVC conduit into the disconnect switch and installed the copper clad ground rod, with exothermic (CAD) welding the 600V ground, at the Ash Pond C service pole. Wired the three phase electrical feed in the disconnect switches on the Ash Pond C pump control panel and service pole, and locked out/tagged out the boxes. All electrical work is now completed for Ash Pond C. Wired the high voltage, single phase 4/OAWG electric feeder in the MPZ on the west pump control panel. Installed the copper clad ground rod, with exothermic (CAD) welding the 600V ground, at the pump control service pole, and locked out/tagged out the disconnect. All electrical work is now completed for the pump control service pole. Anchored the junction boxes onto the new manhole section at DS-2, and began wiring the joints for the sump pumps, floats, and paddlewheel (flow) sensor for the west system. Demobilized - JLG 450AJ Art. Lift.

FLT/BCI:

Continued additional clay placement in Section 6. Loads = 200

LEC/MMS:

Lamac and Massmann surveyed the certification

Additional Comments: grid points for Ash Pond D.

Randy Dorte Contractor Representative
Anna Saindon Signature
 Geotechnology, Inc.
AMS Company
9-20-12 Date
9-24-12 Date
 Engineer's Signature

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 9/21/12

TIME: Arrive: 6:00 AM Depart: 5:45 PM Travel: 1.0 hr Total: 12.5 hrs (0.25 hr for lunch)
Weather: Cloudy, 50° AM, 78° PM Contractor: AMS Subcontr./Supplier: AAA, FLT, BCI
Equipment Working: D6N Dozer, 580 Backhoe
Site Activities / Observations / Contacts / Notes: _____

AMS:

Continued preparing and filling the bedding for an additional rip rap wall along the paved gutter on the west side of Section A. Continued disposing of the old fence materials in the construction yard. Site Remediation: Completed repairing the box culvert rock chute and swale. Graded the plant access roads and performed housekeeping across the site.

AAA:

Dewatered around DS-3 and re-core drilled the holes for the high and low voltage junction boxes. Installed the junction boxes at a higher elevation at DS-3 and extended the PVC conduit to the junction boxes. Completed wiring all the connections for the pumps, floats, and flow sensors for DS-1, DS-2, and the west pump control panel. All the electrical work is now completed for the west end of the groundwater collection system, excluding the installation of the Baro-Readout Meter and activation of the Mini Divers.

FLT/BCI:

Completed additional clay placement in Section 6. Loads = 195

Additional Comments: _____

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[Signature]
Contractor Representative[Signature]
Company[Signature]
Signature9-21-12
Date[Signature]
Geotechnology, Inc.[Signature]
Engineer's Signature9-24-12
Date

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 9/17/12

TIME: Arrive: 6:00 AM Depart: 6:00 PM Travel: 1.0 hr Total: 12.75 hrs (0.25 hr for lunch)

Weather: Cloudy, 63° AM, 73° PM Contractor: AMS Subcontr./Supplier: AAA, FLT, BCI

Equipment Working: D6N Dozer, 580 Backhoe, 450AJ Lift, Water Truck

Site Activities / Observations / Contacts / Notes: _____

AMS:

Completed the additional rock chute, with RR-03 rip rap and 8oz. non-woven geotextile, between the paved gutter culvert and the beginning of the paved ditch on the southwest side of Ash Pond D. Performed finish grading on the south and east sides of Ash Pond D. Backfilled the PVC conduit excavations on the southeast side of Ash Pond B from retrieving the broken lines from pulling electrical wires/cables. Site Remediation: Completed repairing and adding length to the additional rock chute on the northeast embankment of Ash Pond D, and removed washed out material from the paved ditch on the south side of Ash Pond D.

AAA:

Completed pulling the high voltage, electric feeder 4/0AWG, single phase cables with ground wire from the disconnect switch on the pump control service pole to the west pump control panel, through the 2½" PVC conduit. Repaired all PVC conduit from the excavations on the southeast side of Ash Pond B. Began wiring the connections for the ground on the Ash Pond C service pole. Installed an additional ceramic spool insulator on the power pole northwest of Ash Pond C to keep the overhead from coming into contact with the power pole. Installed the disconnect switch on the pump control service pole. Installed the ¾" x 10' copper clad ground rod at the pump control service pole. Cut #6 bare stranded aluminum cables for ground rods.

FLT/BCI:

Completed additional clay placement in Section 4 and began clay placement in Section 5. Completed the letdown channel in Section 4, completing all letdown channels. Loads = 176

Additional Comments: _____

Randy Porter
Contractor Representative

AMS
Company

Anna Saindon
Signature

9-17-12
Date

Randy Porter
Geotechnology, Inc.
Engineer's Signature

9-24-12
Date

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: JO19896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 9/18/12

TIME: Arrive: 6:00 AM Depart: 6:15 PM Travel: 1.0 hr Total: 13.0 hrs (0.25 hr for lunch)
Weather: Cloudy, 58° AM, 69° PM Contractor: AMS Subcontr./Supplier: AAA, FLT, BCI
Equipment Working: D6N Dozer, 580 Backhoe, 450AJ Lift, Water Truck

Site Activities / Observations / Contacts / Notes: —

AMS:
Continued finish grading south of Ash Pond D. Placed 8oz. non-woven geotextile and CA-6 stone in the cap vent protective ring barriers, completing EWO-18. Built a gravel pad for the west pump control panel with 8oz. non-woven geotextile and CA-6 stone. Placed RR-03 rip rap around the bollard/cleanout concrete slabs. Began disposing of the old fence materials stockpiled in the construction yard. Graded the plant access roads. Site Remediation: Continued removing washed out material from the paved ditch south of Ash Pond D. Delivery - CA-6, AAA:

Wired the three phase and single phase 4/0AWG cables into the disconnect switch on the pump control service pole, completing all overhead electric and disconnect landings. Completed grounding all overhead messenger cables at the MCC-1, Ash Pond C, and pump control service poles. The ground was butt spliced at the pump control service pole, Kearney connected at the Ash Pond C service pole, and the messenger cable was grounded within the MCC-1 building for the MCC-1 service pole. Installed the stainless steel weather head and additional 2½" stainless conduit on the pump control service pole. Tightened all guy wires and straightened all power poles, completing all overhead electrical work. Drilled holes in disconnects for conduit and buried electric entry. Cut cables and prepared lugs for overhead electric landing to existing power in the spare breaker in the MCC-1 building. Tested the overhead electrical feeder, three phase 4/0AWG cables for continuity and shorts.

FLT/BCI:
Continued additional clay placement in Section 5. Loads = 178

Additional Comments: —

Randy Portch AMS
Contractor Representative Company
Anna Sander Date 9-18-12
Geotechnology, Inc. Date 9-24-12
Michael
Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: JO19896.01 Task: 2370
 Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: - Client: Ameren ER Date: 9/19/12

TIME: Arrive: 6:00 AM Depart: 6:00 PM Travel: 1.0 hr Total: 12.75 hrs ^(0.25 hr for lunch)
 Weather: Sunny, 39°AM, 73°PM Contractor: AMS Subcontr./Supplier: AAA, FLT, BCI
 Equipment Working: D6N Dozer, 580 Backhoe

Site Activities / Observations / Contacts / Notes: _____

AMS:

Excavated and backfilled the existing electrical feed between the Pump House and the Ash Pond C pump control panel. Excavated the new trench for the electrical conduit between the Ash Pond C service pole and pump control panel. The electrical conduit was haunched with FA-01 sand, detectable tape was placed over the conduit, and the trench was backfilled between the Ash Pond C service pole and pump control panel. Continued disposing of the old fence materials in the construction yard and grading the plant access roads.

AAA:

Installed lugs and wired the high voltage, three phase 4/0AWG electrical feed in the spare breaker in the MCC-1 building. The WPA was released for the MCC-1 and Ameren reconnected the power supply to the building. The three phase 4/0AWG was tested for voltage and the spare breaker was turned off and locked out / tagged out to continue electrical work. All electrical work is now completed in the MCC-1 building. Removed the existing high voltage, three phase 2/0AWG w/600V ground buried electrical feed between the Pump House and the Ash Pond C pump control panel. The landing within the breaker box in the Pump House for the Ash Pond C pump control panel electrical feed was disconnected, and the breaker box remains in place to act as a spare breaker. All electrical work is now completed in the Pump House. Tied into the existing buried electrical conduit at the Ash Pond C pump control panel and installed new 2" PVC conduit from the Ash Pond C pump control panel to the Ash Pond C service pole. The existing buried electrical conduit was abandoned.

FLT/BCI: Completed clay placement in Section 5 and continued placement in Section 6.

Site Remediation - graded the south and east

Additional Comments: embankments of Ash Pond D.

BTP: demobilized the D5G Dozer and 410J Backhoe.

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Kathy Porter AMS
 Contractor Representative Company
Anna Sanda 9-19-12
 Signature Date
 Geotechnology, Inc. 9-24-12
 Date
Paul Smith
 Engineer's Signature

Loads = 120

MEETING MINUTES



**Hutsonville Power Station - Ash Pond D Closure
Progress Meeting No. 27 Minutes
Tuesday, September 18, 2012**

01 PUBLICATION

Publish date:	2012-09-20	Submitted by:	PHZ
Distribution:	E-mail only	Notes taken by:	PHZ
Location:	Hutsonville Power	AMS-Charah File No.	HUT-APD-MTG-MIN-2012-09-18-PM-27
AER PO:	567523 R4	AMS-Charah Contract:	00030-01 AMS-Charah 4116-06-6120

02 ATTENDEES [ALPHA BY COMPANY]

NO.	SAL	FIRST	LAST	COMPANY	PHONE	E-MAIL
01	Mr.	Joe	King	AAA Electric	812-208-0464	sandy.tincher@aaaelectricofth.com
02	Mr.	Mike	Wagstaff	Ameren	618-406-3478	mwagstaff@ameren.com
03	Mr.	Paul	Zinsious	AMS - PCM	502-640-2918	pzinsious@ashmanagementservices.com
04	Mr.	John	Denham	AMS - RM	502-609-0278	idenham@ashmanagementservices.com
05	Mr.	Randy	Porter	AMS - SM	502-554-5230	rporter@ashmanagementservices.com
06	Mr.	Joe	Cravens	Geotechnology	314-568-6628	j_cravens@geotechnology.com

03 ABBREVIATIONS

AER	Ameren Energy Resources	OSHA	Occupational Safety Health Administration
AMS	Ash Management Services	PCP	Perforated Collector Pipe
BNSF	Burlington	PO	Purchase Order
CBT	Computer Based Training	RHOM	Routine Handling, Operation, and Maintenance
EAP	Emergency Action Plan	SPOC	Single Point
EOD	End of [the] Day	T/M	Time and
EOM	End of [the] month	TBD	To Be
EOW	End of [the] week	TD	Transmission Dispatch
EDTS	Energy Delivery Transmission Services	WPA	Worker Protection Assurance
EDC	Estimated Date [of] Completion		
EWO	Extra Work Order		
HDPE	High Density Polyethylene		
HRS	Hours		
LOTO	Lock Out Tag Out		
NMA	National Maintenance Agreement		

04 DOCUMENTATION

Minutes are documented weekly, and the publication have a "rolling record" of the immediate past two weeks. Each week the oldest drops off and the current week is added to the minutes. Items are categorized as either "NEW", "OPEN", "CLOSE", or in case the an item has to be re-published after closed the previous week - "REOPEN". Minutes format changed for Progress Meeting No. 13 deleting and combining certain items for brevity and to abbreviate documentation. Currently the item numbers remained the same for tracking purposes.

05 SAFETY - HOUSEKEEPING

02 WORKER PROTECTION ASSURANCE

2012-09-18 OPEN:
 [01] WPA opened on 09-13, work completed, AER [S. Bruner] to close.
 [02] J. King reports Ash Pond C pump station is on.

2012-09-11 OPEN:
 [01] no date set for WPA, M. Wagstaff sent e-mail to S. Bruner.

03 EMPLOYEE DRUG TESTING

2012-09-18 OPEN - no issues. No testing scheduled for worker screening. Post-incident drug testing in progress [ref. 04.2012-09-18.03 below].

2012-09-11 OPEN:
 [01] None projected.
 [02] AMS had random [company generated] drug test at the borrow site. No positives [return to work].

04 AMS SAFETY

2012-09-18

- [01] J. Tasich on site schedule TBD. J. Tasich on site last week [Thu 09-13], and safety report [via e-mail] was published.
 [02] No safety issues on site reported.
 [03] J. Denham reports incident regarding Fawn Lane truck driver that ran truck off road into ditch on return to borrow site. Summary:
 [01] AMS to provide full report later today [09-18].
 [02] Truck was empty on way to borrow site. Driver had a bee get in the cab.
 [03] Driver had bee in cab. Truck ran off road in to ditch approximately 15:50 PM CT [yesterday 09-17].
 [04] Driver was not injured. Sent for post-incident drug testing.
 [05] Truck had to be removed from ditch by tow truck. First estimate of damage [by visual inspection], appears less than \$ 500.
 [06] Incident not a "lost time" or "recordable".
 [07] AMS will address with the other subcontractors.
 [08] M. Wagstaff suggested this incident be part of Lessons Learned.
 [04] Cooling stations not required, as weather turning.
 [05] AAA bringing 45 FT articulated lift remains on site.

2012-09-11

- [01] J. Tasich on site schedule TBD. P. Zinsious to check when Joko or Dave Valentine will be on site next.
 [02] No safety issues reported.
 [03] Damaged AMS cooling stations will have to be replaced, not repaired.
 [04] AAA has 45 FT articulated lift on site [for power pole work]. Workers observe using harness and correct PPE.
 [05] P. Zinsious indicated report that safety recall for harnesses [involuntary safety recall from 3M on a self-retracting lanyard. The SRL is manufactured by IKAR under the THOR label]. R. Porter indicated AMS does not have this style on site.
 [06] Brief discussion on the recent rains and muddy site.

05 HOUSEKEEPING

2012-09-18

- OPEN: No issues.
 [01] AMS begin cleaning up site to de-mob.
 [02] R. Porter disposing of concrete and fence posts into dumpster. Will have to go from 40 CY to 30 CY due to weight.

2012-09-11

- OPEN - No issues, other than mud from the rains.

06 PLANT ACCESS - CBT BADGE

2012-09-18

- OPEN: No issues.
 [01] General discussion on site security.
 [01] Guard now stationed on site on Fridays.
 [02] R. Porter reports no guard on Saturdays when there is work on the transmission project.
 [03] R. Porter also reports the guard does not have a gate key, therefore when AMS leaves, so does the guard.
 [04] M. Wagstaff to investigate the situation.
 [02] R. Porter locking new gate, [no open areas to plant], and will provide updated lock count to AER of approximately 7x locks, 2x keys. M. Wagstaff indicated will discuss with Greg Musch as Ameren has several locks available on site. M. Wagstaff has discussed with G. Musch, and R. Porter reports he was on site 09-13 and 09-14.

2012-09-11

- OPEN: No issues.
 [01] Inquired about when guard would go 24/7. To be determined. M. Wagstaff indicated cameras still active on site.
 [02] R. Porter locking new gate, [no open areas to plant], and will provide updated lock count to AER of approximately 7x locks, 2x keys. M. Wagstaff indicated will discuss with Greg Musch as Ameren has several locks available on site.
 [03] M. Wagstaff indicated locks also for disconnects can come from the plant.

08 OSHA LOG - WORK HOURS

2012-09-18

OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 08-20.
 No incidents or accidents.
 9,540.00 RT
 1,833.00 OT
11,373.00 TOTAL

2012-09-11

OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 08-13
 No incidents or accidents.
 9,085.00 RT
 1,738.00 OT
10,823.00 TOTAL

01 CREW SIZE [Alpha by Company]

2012-09-18 Geotechnology [work hours not included in OSHA Log above] Exact count in daily reports, make note if on site.

NO.	COMPANY	SURVEYOR	TECHNICIAN	FOREMEN	OPERATORS	TEAMSTERS	LABORERS	PIPE FITTERS	ELECTRICIANS	IRON WRK
01	AAA	0	0	0	0	0	0	0	2	0
02	AMS	0	0	1	1	1	2	0	0	0
03	BCI	0	0	0	1	0	0	0	0	0
04	BTD	0	0	0	2	0	0	0	0	0
05	CHI	0	0	0	0	0	0	0	0	0
06	FLT	0	0	0	0	11	0	0	0	0
07	FWI	0	0	0	0	0	0	0	0	0
08	GEO	0	1	0	0	0	0	0	0	0
09	LEC	0	0	0	0	0	0	0	0	0
10	PLB	0	0	0	0	0	0	0	0	0
11	STC	0	0	0	0	0	6	0	0	0
12	Z-3	0	0	0	0	0	0	0	0	0

Total on site: 28

2012-09-11 Geotechnology [work hours not included in OSHA Log above] Exact count in daily reports, make note if on site.

NO.	COMPANY	SURVEYOR	TECHNICIAN	FOREMEN	OPERATORS	TEAMSTERS	LABORERS	PIPE FITTERS	ELECTRICIANS	IRON WRK
01	AAA	0	0	0	0	0	0	0	2	0
02	AMS	0	0	1	1	1	2	0	0	0
03	BCI	0	0	0	1	0	0	0	0	0
04	BTD	0	0	0	0	0	0	0	0	0
05	CHI	0	0	0	0	0	0	0	0	1
06	FLT	0	0	0	0	10	0	0	0	0
07	FWI	0	0	0	0	0	0	0	0	0
08	GEO	0	1	0	0	0	0	0	0	0
09	LEC	0	0	0	0	0	0	0	0	0
10	PLB	0	0	0	0	0	0	0	0	0
11	STC	0	0	0	0	0	1	0	0	0
12	Z-3	0	0	0	0	0	0	0	0	0

Total on site: 21

02 WORK HOURS AND OVERTIME

2012-09-18 OPEN: No issues. No change.

[01] Standard hours - 7:00 AM CT to 5:30 PM CT. Going back to subcontractors starting 06:00 AM CT [at borrow site] to get started. Trucks to begin later. Safety awareness will be diligent regarding the time period.

2012-09-11 OPEN: No issues.

[01] Standard hours - 7:00 AM CT to 5:30 PM CT. Going back to subcontractors starting 06:00 AM CT [at borrow site] to get started. Trucks to begin later. Safety awareness will be diligent regarding the time period.

04 TRAILER - GENERAL CONDITIONS - COORDINATION - VEHICLES

2012-09-18 OPEN: No issues.

[01] M. Wagstaff to check if electric utility bill for trailers transferred to Miller Construction. In progress.

[02] GEO trailer to be removed around 10-19.

[03] AMS employee trailer to be removed 09-25.

2012-09-11 OPEN: No issues.

[01] M. Wagstaff to check if electric utility bill for trailers transferred to Miller Construction.

[02] Look ahead to removing GEO trailers on 09-28 to remain projected date. AMS to be determined.

01 SUBCONTRACTS

2012-09-18 OPEN - No issues.

2012-09-11 OPEN - no issues. P. Zinsious to tracked in legal. FWI pay application shows CO and approved. CLOSE

02 SUBMITTALS

2012-09-18 Submittal log dated 09-15 distributed and reviewed.

[01] Item No. 21 - M. Wagstaff indicated review or geo roll inventory. In progress.

[02] M. Wagstaff indicated bolt pattern and sealant for the DS hatch required. AMS submitted 09-11. CLOSE

[03] AMS has received digital reader submittal form FWI. AMS submitted 09-11. AMS to send submittal to AAA. CLOSE

[04] M. Wagstaff indicated that Lamac not confirmed yet for record drawings in AutoCAD. Review in progress.

[05] R. Porter gathering information from subcontractors on record drawings.

[06] AMS requiring all subcontractors' to have close-out information to AMS by 09-28 deadline.

[07] Item No. 26 - No longer required due to material change of the PCP.

[08] Item No. 81 - No longer required as information submitted under other submittals [and approved].

20120-09-11 Submittal log dated 09-08 distributed and reviewed.
 [01] M. Wagstaff indicated review of geo roll inventory [Item No. 21].
 [02] M. Wagstaff indicated bolt pattern and sealant for the DS hatch required. AMS submitted 09-11.
 [03] AMS has received digital reader submittal form FWI. AMS submitted 09-11.
 [04] M. Wagstaff indicated that Lamac not confirmed yet for record drawings in AutoCAD. Review in progress.
 [05] R. Porter reports not having information yet from subcontractors on record drawings. In progress.

08 MATERIAL

01 GENERAL

2012-09-18 OPEN - listing for materials that have potential to impact schedule.
 [01] FLT not providing as many trucks [to haul clay], only 9x today [09-18], need 12x. Completion of the clay cap recovery potential to be done by next Tue [09-25] or Wed [09-26]. J. Denham to look into this matter with FLT.
 2012-09-11 OPEN - listing for materials that have potential to impact schedule.
 [01] J. Cravens distributed sketch "Hutsonville Ash Pond D Closure - Clay Issue Recovery Layout" [not dated].

09 ADJACENT PROPERTIES AND PCP LINE

01 GENERAL

2012-09-18 OPEN - Discussion during Progress Meeting:
 [01] Pipe sealed with gap per GEO/AER e-mail earlier in the week. CLOSE
 2012-09-11 OPEN - Discussion during Progress Meeting:
 [01] AMS to seal pipe with brick [8 IN ?] and mortar "long ways", and to cover face with non-shrink grout to seal pipe. This method is a no-cost change to Ameren.

10 QUALITY CONTROL

2012-09-18 No issues.
 [01] AMS received some Patriot billing that did not seem correct. P. Zinsious to research.
 [02] M. Wagstaff indicated the bill goes direct to GEO technology. No EWO.
 2012-09-11 No issues.
 [01] AMS received concrete break reports, and forwarded them on 09-11.

11 SCHEDULE REVIEW

2012-09-18 OPEN - Review of last planner by M. Wagstaff. [AID = Activity Identification, S = successor, P = Predecessor, D = Duration and day]
 [01] Rain dates as listed. No change.
 [02] Major changes commentary:
 [01] M. Wagstaff additional activities noted for Close Out.
 [02] Add milestone for hand-off on 10-05.
 [03] General discussion on Lamac survey before Massmann. No work on ground cover until after Massmann info back. Lamac is tentatively to be schedule on 09-19. Planning to have DLF mobilize on 09-24 for ground cover.
 [03] All change were made to the LP sheet and full report submitted to AER. Below is highlight of changes/updates [alpha by LP]:

NO.	LAST PLANNER	AID	ACTIVITY NAME	RDU	START	FINISH	PERCENT	COMMENT
	AAA-King	375	Pull power...			9/14/2012	100%	
	AAA-King	380	Install new Power cables...		9/21/2012			
	AAA-King	395	Tie-in Electrical...		9/21/2012	9/21/2012		
	AAA-King	124c	Install - DS Baro...			9/19/2012		
	AAA-King	279a	DS3 - Electrical wiring...			9/19/2012		
	AAA-King	385	WPA at Existing Coal...		9/13/2012		100%	
	AAA-King	385a	WPA for APD electrical...		7/1/1902		100%	
	AAA-King	385b	Release WPA to Energize Ash...		9/17/2012			Open - R. Porter to call.
	AAA-King	390	WPA to Disconnect...		9/21/2012			AAA - WPA LOTO
	AAA-King	390a	Release WPA to Energize New...		9/21/2012			AAA - WPA LOTO
	AAA-King	390b	Commission Ash Pond C system		9/21/2012			Dependent on 385b close.
	AAA-King	420a	Pull cables...				100%	
	AMS-Porter	198	Roadways - APD perimeter...			9/28/2012		
	AMS-Porter	199	Roadways - PCS -			9/28/2012		
	AMS-Porter	198a	Roadways on plant			9/28/2012		
	AMS-Porter	192	Earthwork APD - let down				100%	
	AMS-Porter	193	Earthwork APD - rock chutes				100%	
	AMS-Porter	196	Earthwork APD - fine grade			9/25/2012	50%	Includes additional clay
	AMS-Porter	50a	Additional clay to Pass...			9/25/2012	50%	
	AMS-Zinsious	189	Clay placement - Work List...		10/1/2012	10/1/2012		
	AMS-Zinsious	218	Commission Pump System	5	10/1/2012	10/5/2012		
	AMS-Zinsious	219	Punch List - Walk...		10/1/2012			
	AMS-Zinsious	217	Substantial Completion			10/1/2012		
	BTD-Boyer	237a	DS1 - Precast - set lid				100%	
	BTD-Boyer	252a	DS2 - Precast - set lid				100%	

BTD-Boyer	272a	DS3 - Precast - set lid				100%	
BTD-Boyer	272c	Set DS3 upper ring section				100%	
BTD-Boyer	294a	DS4 - Precast - set lid				100%	
DLF-Ziliak	201	Ground cover - mob...			9/24/2012		
GEO-Saindon	11	Survey - APD - vegetative...		9/26/2012	9/27/2012		
GEO-Saindon	50b	Clay Certification (Final			9/28/2012		
STC-Hunt	207	Concrete - paved ditch...				100%	
STC-Hunt	208	Concrete - paved ditch...				100%	

2012-09-11 OPEN - Review of last planner by M. Wagstaff. [AID = Activity Identification, S = successor, P = Predecessor, D = Duration and day]

[01] Rain dates as listed.

[02] Major changes commentary:

[01] Activities 220, 221 and 222 activities to be scheduled out by software.

[02] AAA to meet with AMS after PM to review in detail electrical work schedule.

[03] Change LP on 183 to Porter.

[03] All change were made to the LP sheet and full report submitted to AER. Below is highlight of changes/updates [alpha by LP]:

NO.	LAST PLANNER	AID	ACTIVITY NAME	RDU	START	FINISH	PERCENT	COMMENT
	AAA-King	318	PCP-PCR - electrical final checkout		9/21/2012	9/21/2012		
	AAA-King	375	Pull power...		9/14/2012			
	AAA-King	380	Install new Power cables...		9/24/2012			
	AAA-King	385	WPA at Existing Coal...		9/14/2012			
	AAA-King	390	WPA to Disconnect...		9/24/2012			AAA - WPA LOTO
	AAA-King	395	Tie-in Electrical...		9/14/2012	9/17/2012		
	AAA-King	400	Energize...		9/21/2012			
	AAA-King	401	Testing of...		9/18/2012			
	AAA-King	124c	Install - DS Baro...			9/14/2012		
	AAA-King	279a	DS3 - Electrical wiring...		9/13/2012	9/13/2012		
	AAA-King	312b	PCS - East - Wire & Terminate...			9/20/2012	50%	
	AAA-King	313c	PCS - West - Wire...			9/6/2012	100%	
	AAA-King	385a	WPA for APD electrical...		9/14/2012			
	AAA-King	385b	Release WPA to Energize Ash...		9/17/2012			
	AAA-King	390a	Release WPA to Energize New...		9/26/2012			AAA - WPA LOTO
	AAA-King	390b	Commission Ash Pond C system		9/26/2012	9/27/2012		
	AAA-King	420a	Pull cables...	3	9/13/2012	9/17/2012		
	AER-Wagstaff	17	Permits - NPDES...			10/5/2012		
	AMS-Porter	111	Procure...			9/11/2012	100%	
	AMS-Porter	198	Perimeter...				50%	
	AMS-Porter	191	Earthwork APD - slope diversion...			9/7/2012	100%	
	AMS-Porter	192	Earthwork APD - let down				50%	
	AMS-Porter	193	Earthwork APD - rock chutes			9/17/2012	90%	
	AMS-Porter	196	Earthwork APD - fine grade				10%	includes additional clay
	AMS-Porter	50a	Additional clay to Pass...			9/19/2012		
	AMS-Zinsious	189	Clay placement - Work List...		9/25/2012			
	AMS-Zinsious	217	Substantial...			10/2/2012		
	AMS-Zinsious	218	Commission Pump System		9/28/2012			
	AMS-Zinsious	219	Punch List - Walk...		10/2/2012			
	BTD-Boyer	237a	DS1 - Precast - set lid					Received 09-10
	BTD-Boyer	252a	DS2 - Precast - set lid					Received 09-10
	BTD-Boyer	272a	DS3 - Precast - set lid					Received 09-10
	BTD-Boyer	272c	Set DS3 upper ring section		9/13/2012	9/13/2012		
	BTD-Boyer	294a	DS4 - Precast - set lid					Received 09-10
	GEO-Saindon	11	Survey - APD - vegetative...	2 [duration]	9/20/2012	9/21/2012		
	GEO-Saindon	50b	Clay Certification (Final		9/21/2012	9/24/2012		
	LEC-Ridgely	15	Survey - APD - final			9/19/2012		

12.0 COST AND BUDGET

02 AMS PAY APPLICATION - CHANGE REQUEST

2012-09-18 No issues. M. Wagstaff indicated add note [as shown on e-mail], proceed with submission to AER AP. CLOSE

2012-09-11 No issues. P. Zinsious inquired about retainage. Review of calculation on [draft as submitted to Ameren]. Balance over 90% billing to retainage. M. Wagstaff indicated will discuss with J. Skitt at Ameren.

12.1 EXTRA WORK ORDERS

15	EWO-15	FENCE ALIGNMENT
2012-09-18	OPEN	AMS to provide back-up information. In progress.
2012-09-11	OPEN	AMS to provide back-up information. [no report - work complete].
17	EWO-17	PAVED DITCH ALIGNMENT
2012-09-18	OPEN	AMS to provide back-up information. In progress.
2012-09-11	OPEN	Check grade to plan as possibly area included in grade.
18	EWO-18	VENT PROTECTION RING
2012-09-18	OPEN	All rings set in place, fabric and stone remains to be installed.
2012-09-11	OPEN	No report [in progress].
19	EWO-19	COMMISSIONING
2012-09-18	OPEN	M. Wagstaff gave oral approval to AMS. Work scheduled by FWI for Sat 09-28, this will allow for pumps to be operational on 10-01. AMS to provide written EWO request.
2012-09-11		M. Wagstaff indicated possible temporary discharge by IEPA, Ameren investigating. Transmitted packet of sketches and information for basic review of discharge piping option [ref. 16.2012-09-11.05 below for list].
20	EWO-20	ADDITIONAL RIP-RAP
2012-09-18	AMS	provide cost. In progress.
2012-09-11	AMS	provide cost.
21	EWO-21	FIELD TILE LOCATION - LENGTH [was EWO-14]
2012-09-18	OPEN	AMS to review EWO against AER Addenda and report.
2012-09-11	NEW	AMS to investigate addenda drawings to see if already included in the bid.
22	EWO-22	MECHANICAL CHANGES
2012-09-18	OPEN	AMS to review EWO against AER Addenda and report.
2012-09-11	NEW	AMS to investigate addenda drawings to see if already included in the bid.
23	EWO-23	CONCRETE CHANGES
2012-09-18	OPEN	AMS to review EWO against AER Addenda and report.
2012-09-11	NEW	AMS to investigate addenda drawings to see if already included in the bid.
24	EWO-24	CONDUIT AND PIPE SAND ENCASEMENT
2012-09-18	OPEN	AMS to review EWO against AER Addenda and report.
2012-09-11	NEW	AMS to investigate addenda drawings to see if already included in the bid.
25	EWO-25	ELECTRICAL OVERHEAD UTILITY CHANGES
2012-09-18	OPEN	AMS to provide written EWO request for processing.
2012-09-11	NEW	M. Wagstaff has approved.
26	EWO-26	DS LID MODIFICATIONS FOR PIPING
2012-09-18	OPEN	AMS to provide written EWO request for processing.
2012-09-11	NEW	M. Wagstaff has approved.
27	EWO-27	ADDITIONAL BOLLARDS FOR CLEANOUTS
2012-09-18	OPEN	AMS to provide written EWO request for processing.
2012-09-11	NEW	M. Wagstaff has approved.
28	EWO-28	TAX EXEMPTION
2012-09-18	NEW	General discussion for potential EWO due to City of Robinson not renewing tax exemption. AMS to verify no charges from subs.

13 ACTION ITEMS - AER [25]

01	AMEREN [AER]
2012-09-18	No report.
2012-09-11	No report.

14 ACTION ITEMS - AMS [21]

01	ASH MANAGEMENT [AMS]
2012-09-18	No report.
2012-09-11	No report.

15	PRODUCTION
03	CLAY
2012-09-18	OPEN - no issues [01] Placement as of 09-17 is 137,951 CY. [02] Additional clay to be placed to make grade elevations [ref. above 08.01.2012-08-28.03] in progress.
2012-09-11	OPEN - no issues [01] Placement as of 09-10 is 129,107 CY. [01] General discussion that CY count is "loose delivered" and that trucks CY count is 11 CY, but actually haul more. [02] Trucks were weighed in the beginning to make sure they are legal. [03] Overview of compaction requirements and lessons learned. [04] Estimated requirement to finish 17,000 CY in 8D projected [2,125 CY/D].

16	DOCUMENTS TRANSMITTED
2012-09-18	[01] AER - Last Planner schedule - Current date 09-14 - Data date 09-04 [02] GEO - "Hutsonville Ash Pond D Closure - Clay Issue Recovery Layout" [not dated]. [03] GEO - Submittal Log dated 09-15.
2012-09-11	[01] AER - Last Planner schedule dated 09-04 [data date]. [02] GEO - Submittal Log dated 09-08. [03] AMS - HUT-APD-EWO-RPT-2012-09-06-R0 "EWO Basic Report" [04] GEO - "Hutsonville Ash Pond D Closure - Clay Issue Recovery Layout" [not dated]. [05] AMS - E-mail dated 2012-09-06-16:47 to M. Wagstaff "Hutsonville APD Closure - commissioning - DS discharge - temporary" wit the following attachments [full pump submittal not included only curve]: [01] SK-HUT-APD-025-R0 "Commissioning - DS discharge - Temporary discharge line route" [02] SK-HUT-APD-026-R0 "Commissioning - DS discharge - Collector box manifold" [03] SK-HUT-APD-027-R0 "Commissioning - DS discharge - Pump flow schematic" [04] 11x17 DS pump curve [05] MacAllister Cat Invoice R6873095800 [proposal] for 6 IN pump [06] FWI letter dated 2012-09-07 "Temporary discharge Drain Line"

17	DOCUMENTS REVIEW ONLY
2012-09-18	None.
2012-09-11	B&T Drainage & Excavating letter dated 2012-09-04 to show cost of field collector tile [relative EWO-21].

18	MEETING SCHEDULE																
2012-09-18	Changed category form "Next Progress Meeting" to "Meeting Schedule". Schedule for upcoming meetings: <table><tr><td>[01] Progress Meeting</td><td>Tuesday</td><td>September 25, 2012</td><td>Standard.</td></tr><tr><td>[02] Progress Meeting</td><td>Monday</td><td>October 1, 2012</td><td>Day earlier than normal schedule.</td></tr><tr><td>[03] AMS-AER Operations Transfer</td><td>Friday</td><td>October 5, 2012</td><td>To be confirmed.</td></tr><tr><td>[03] Lesson Learned</td><td>TBD</td><td></td><td></td></tr></table>	[01] Progress Meeting	Tuesday	September 25, 2012	Standard.	[02] Progress Meeting	Monday	October 1, 2012	Day earlier than normal schedule.	[03] AMS-AER Operations Transfer	Friday	October 5, 2012	To be confirmed.	[03] Lesson Learned	TBD		
[01] Progress Meeting	Tuesday	September 25, 2012	Standard.														
[02] Progress Meeting	Monday	October 1, 2012	Day earlier than normal schedule.														
[03] AMS-AER Operations Transfer	Friday	October 5, 2012	To be confirmed.														
[03] Lesson Learned	TBD																

19	DISTRIBUTION - STANDARD		
	AER	SUBCONTRACTORS	
	01 Mr. Mike Wagstaff	01 S. Tincher	AAA
	02 Mr. Mike Stewart	02 M. Burch	FWI
	03 Mr. Bob Muesenfechter	03 T. Boyer	BTD
	04 Mr. Steve Bluemner	04 T. Hunt	STC
	GEO		
	01 Ms. Anna Saindon		
	02 Mr. Eric Neuner		
	03 Mr. Joe Cravens		
	AMS		
	01 Mr. Jimmy Boone		
	02 Mr. John Denham		
	03 Mr. Joko Tasich		
	04 Mr. Randy Porter		

If there are any corrections, modifications, additions, or deletions please notify the sender by e-mail at pzinsious@ashmanagementservices.com

PHOTOGRAPH LOG



Photograph 1 ▲ - Rock chute for paved gutter culvert facing south



Photograph 2 ▲ - Pulling electric to west pump control panel facing west

All photographs taken by Joseph Cravens of Geotechnology, Inc. between September 17 and September 21, 2012.

JRC



Photograph 3 ▲ - Vegetative layer placement facing east



Photograph 4 ▲ - Rock bedding in cap vent protective barriers facing north

All photographs taken by Joseph Cravens of Geotechnology, Inc. between September 17 and September 21, 2012.

JRC



Photograph 5 ▲ - Gravel pad for west pump control panel facing northeast



Photograph 6 ▲ - Rip rap around cleanout concrete slabs facing northwest

All photographs taken by Joseph Cravens of Geotechnology, Inc. between September 17 and September 21, 2012.



Photograph 7 ▲ - PVC conduit for Ash Pond C electrical feed facing south



Photograph 8 ▲ - Vegetative layer placement facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between September 17 and September 21, 2012.

JRC



Photograph 9 ▲ - Overview of Ash Pond D facing southeast



Photograph 10 ▲ - Overview of Ash Pond D facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between September 17 and September 21, 2012.

JRC



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Energy Resources

FROM: Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DATE: October 1, 2012

SUBJECT: Weekly Summary Report for September 24, 2012 to September 29, 2012

PROJECT: Hutsonville Ash Pond D Closure
Crawford County, Hutsonville, Illinois
Geotechnology Project No. J019896.01

The following is a weekly summary of the site activities at the referenced site.

Weather

The weather was generally mostly cloudy with rain, having periods of clear skies. Temperature (°F) lows ranged from 34 to 63°F, and temperature highs ranged from 70 to 75°F. Weather delays occurred on September 25, 26, 27, and 28.

Construction Activities

The following activities occurred this week: rip rap wall construction, finish grading, electrical installations, ground cover, temporary discharge line installation, and clay placement. Ash Management Services, LLC continued construction of the rip rap wall along the paved gutter on the west side of Quadrant A, and finish graded the vegetative cover. AAA Electric, Inc. completed the electrical installations for the groundwater collection system, excluding final installations for the Diver system and electrical testing, and installed the protective covers for the guy wires. Daylight Land Management began ground cover activities, such as seeding and fertilizing prior to installing the turf reinforcement mats. Freitag-Weinhardt, Inc. installed the headers, manifold, and flexible hose for the temporary discharge line from the collector box to the Bottom Ash Pond. Fawn Lane Transit, Inc. and Belt Construction, Inc. continued clay placement for the vegetative layer. Approximately 11 trucks were used to haul clay material to Ash Pond D. Refer to the daily reports for detailed information.

Equipment and Personnel On-Site

CAT D6N Bulldozer
CAT CS-323C Smooth Drum Roller
John Deere 762B Paddlewheel Scraper
John Deere 450 LC Excavator
John Deere 7330 Tractor
Case 580 Backhoe
Kubota L245DT Tractor
Water Truck (Dust Control)

Geotechnology, Inc. – Joe Cravens
Ash Management Services, LLC (AMS) – Randy Porter, Robert Dunkley, Brad Bolenbaugh, Greg Siverly, Jeremy Shorter, Blake Bunting, and Eric Sefton
Charah, Inc. – Joe Tasich
Belt Construction, Inc. (BCI) – Jared Belt
AAA Electric, Inc. (AAA) – Joseph King and Kyle Davidson
Fawn Lane Transit, Inc. (FLT) – Lee Edington, Scott Comer, James Elledge, Jim Urfer, Gary Lamb, Tom Sager, Alan Ruholl, Patrick Wente, Frank Walton, Brian Griffith, and Greg Cornwell
Daylight Land Management (DLM) – Jon Ziliak, Adam Ziliak, and Billy Georges
Freitag-Weinhardt, Inc. (FWI) – Scott Burch and Jarrod Barrett
Visitors – Refer to the Visitor's Log for visitors, dates, and times.
Refer to the meeting minutes for additional personnel.

Meetings

The weekly progress meeting was held on Tuesday, September 25, 2012. Refer to the attached meeting minutes for additional information.

Photographs

A photograph log with select photographs obtained this week is attached.

Materials

The following materials were delivered this week: RR-03 rip rap, Wyatt Seed Co. dry seed mix, Loveland Products 19-19-19 dry fertilizer, Western Excelsior Corp. Excel PP5-10 Turf Reinforcement Mat, and Western Excelsior Corp. Excel CC-4 Erosion Control Blanket.


Testing/Sampling

Testing and sampling did not occur this week.

Calibration Records

Calibration information was not obtained this week.

Signature of CQA Officer



Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DAILY REPORTS

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 9/24/12

TIME: Arrive: 6:00 AM Depart: 7:00 PM Travel: 1.0hr Total: 13.75 hrs (0.25 hr for lunch)
Weather: Sunny, 34° AM, 72° PM Contractor: AMS Subcontr./Supplier: AAA, DLM, FLT, BCI
Equipment Working: D6N Dozer, 580 Backhoe, 7330 Tractor

Site Activities / Observations / Contacts / Notes: —

AMS:
Demobilized employee trailer. Filled and graded low areas of the vegetative cover and slope diversion berms. Completed disposing old fence materials in the construction yard.

AAA:
Installed PVC conduit over all the exothermic welded ground cables, and markers/protectors over all the guy wires for the new power poles. Pulled the high and low voltage electric from the east pump control panel to DS-3. Completed wiring all the connections and joints for the pumps, floats, and flow sensors for DS-3, DS-4, and the east pump control panel. All the electrical work is now completed for the east end of the groundwater collection system, excluding the installation of the Baro-Readout Meter and activation of the Mini Divers.

DLM:
Personnel - Jon Ziliak, Adam Ziliak, and Billy Georges. Mobilized - John Deere 7330 Tractor with Reveal 4 in 1 and 741 self-leveling lift. Began final ground cover for the letdown channels and the northwest groin. The subgrade was prepared, and was fertilized with 19-19-19 dry bagged fertilizer and seeded with turf type dry bagged seed. Excel PP5-10 turf reinforcement mat (100% synthetic) was installed by placing and stapling on the prepared letdown channels and northwest groin. Delivery - Wyatt Seed Co. dry seed mix, Loveland Products dry 19-19-19 fertilizer, and Western Excelsior Corp. Excel PP5-10 turf reinforcement mat rolled erosion control product (RECP) with 100% synthetic components.

FLT/BCI:
Began additional clay placement in Section 7, and filled/graded low areas. Loads = 176

AMS: Began placing RR-03 rip rap and 8oz. non-woven

Additional Comments: geotextile for the additional rip rap wall along the paved gutter west of Section A.

Kandy Poeter
Contractor Representative

AMS
Company

Anna Savina
Signature

9-24-12
Date

Geotechnology, Inc.
Geotechnologist

11-1-12
Date

—
Engineer's Signature

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 9/25/12

TIME: Arrive: 6:00 AM Depart: 4:00 PM Travel: 1.0 hr Total: 10.5 hrs (0.5 hr for lunch)
Weather: Rain, 54° AM, 70° PM Contractor: AMS Subcontr./Supplier: AAA
Equipment Working: None
Site Activities / Observations / Contacts / Notes: —

AAA:
Patched unused core holes in DS-3 manhole. Performed housekeeping from electrical installations.
All major electrical work items have been completed. Work items remaining include installation
of the Baro-Reddout meters, engraved name plates for labels, activation of the Diver level sensors,
and commissioning of the system. Electrical testing remaining includes continuity and megger.

Other:
Weather Delay, no other work items occurred.

Meeting:
Pump commissioning remains scheduled for 10/1/12. Substantial completion has been moved
to 10/5/12, moving Project End to 10/17/12.

Note:
As-built drawings are currently being produced by Lamac/AMS and will require further
editing and approval from myself before they are submitted to Ameren.

Additional Comments: —

Randy Porter AMS
Contractor Representative Company 9-25-12
Signature Anna Saindon Date 10-1-12
Geotechnology, Inc. Date
Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 9/26/12

TIME: Arrive: 6:30 AM Depart: 3:30 PM Travel: 1.0 hr Total: 9.75 hrs (0.25 hr for lunch)
Weather: Rain, 56° AM, 73° PM Contractor: AMS Subcontr./Supplier: DLM
Equipment Working: 7330 Tractor
Site Activities / Observations / Contacts / Notes: —

AMS:

Continued constructing the additional rip rap wall along the paved gutter west of Section A.

DLM:

Delivery - Western Excelsior Excel CC-4 extended term Erosion Control Blanket rolled erosion control product (RECP).

Misc.:

BTD demobilized the John Deere 450LC Excavator and 762B Paddlewheel Scraper.

Other:

Weather delay, no other work items occurred.

Additional Comments: —

Kathy Porter
Contractor Representative

AMS
Company

Anna Sandon
Signature

Geotechnology, Inc.
Geotechnologist

—
Engineer's Signature

9-26-12
Date
10-1-12
Date

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

No. A 14911

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 9/27/12

TIME: Arrive: 6:30 AM Depart: 3:15 PM Travel: 1.0 hr Total: 9.5 hrs (0.25 hr for lunch)
Weather: Rain, 63° AM, Partly 75° cloudy, PM Contractor: AMS Subcontr./Supplier: None
Equipment Working: None

Site Activities / Observations / Contacts / Notes: —

AMS:

Delivery - RR-03 rip rap. Performed maint. on equipment.

Misc.:

James Griffith met with AMS to discuss the truck issue for completing clay placement in a timely manner. Clay placement will resume next Monday due to the wet conditions. Final surveying of the vegetative cover and other site features for the As-Built will begin on Wednesday.

Other:

Weather Delay, no productive work items occurred.

Additional Comments: —

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

Randy Pictor 9/28-12
Contractor Representative Company
Anna Saindon 9-27-12
Signature Date
Geotechnology, Inc. 10-1-12
Date
— Engineer's Signature

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: — Client: Ameren ER Date: 9/28/12

TIME: Arrive: 6:30 AM Depart: 3:30 PM Travel: 1.0 hr Total: 9.75 hrs (0.25 hr for lunch)
 Weather: Cloudy, 61° AM, Sunny, 75° PM Contractor: AMS Subcontr./Supplier: None
 Equipment Working: 580 Backhoe
 Site Activities / Observations / Contacts / Notes: —

AMS:

Continued constructing the additional rip rap wall along the paved gutter west of Section A.
Performed housekeeping and graded the plant access roads.

Misc.:

BTD demobilized the Kubota L245DT Tractor and box blade, backhoe buckets, and remaining pipe.

Other:

Weather Delay, no other work items occurred.

Additional Comments: —

Randy Porter
Contractor Representative

AMS
Company

Anna Saindon
Signature
Geotechnology, Inc.

9-28-12
Date
10-1-12
Date

—
Engineer's Signature

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: — Client: Ameren ER Date: 9/29/12

TIME: Arrive: 6:30 AM Depart: 3:30 PM Travel: 1.0 hr Total: 9.75 hrs (0.25 hr for lunch)
 Weather: Sunny, 52° AM, 74° PM Contractor: AMS Subcontr./Supplier: FWI
 Equipment Working: 580 Backhoe
 Site Activities / Observations / Contacts / Notes: —

Pump Commissioning Temporary Discharge:

FWI and AMS installed the temporary discharge line for sump pump commissioning for the groundwater collection system. The temporary discharge line runs from the collector box on the northeast corner of Ash Pond D, to the Bottom Ash Pond. Four 3" HDPE prefabricated headers were used to connect to the four 3" HDPE sump discharge pipes, inside the collector box, to bring the discharge to the top of the collector box. The headers were short and had to be extended by butt fusion welding additional 3" HDPE pipe. A McElroy Pitbull No. 14 was used for butt fusion. The headers were electrofusion welded to the sump discharge pipes with Central 3" couplings. A Central Easy Fuse Electrofusion Processor was used for electrofusion. The headers were connected to a steel 3" to 6" converter manifold on top of the collector box. The 6" flexible temporary discharge hose was also connected to the steel converter manifold. The headers and flexible hose was bolted to the manifold, and the manifold was anchored to the collector box. The 6" flexible temporary discharge hose was staged, connected by metal bands, and anchored approx. 1400' along the PGL on the northeast embankment of Ash Pond D from the collector box to the bottom ash pond.

AMS:

Continued constructing the rip rap wall along the paved gutter west of Section A.

Additional Comments: —

Randy Poole
Contractor Representative

AMS
Company 9-29-12

Anna Saindon
Signature

10-1-12
Date

Geotechnology, Inc.
Engineer's Signature

Date

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

MEETING MINUTES



Hutsonville Power Station - Ash Pond D Closure
Progress Meeting No. 28 Minutes
Tuesday, September 25, 2012

01	PUBLICATION			
	Publish date:	2012-10-01	Submitted by:	PHZ
	Distribution:	E-mail only	Notes taken by:	PHZ
	Location:	Hutsonville Power	AMS-Charah File No.	HUT-APD-MTG-MIN-2012-09-25-PM-28
	AER PO:	567523 R4	AMS-Charah Contract:	00030-01 AMS-Charah C 4116-06-6120

02 ATTENDEES [ALPHA BY COMPANY]							
NO.	SAL	FIRST	LAST	COMPANY	PHONE	E-MAIL	
01	Mr.	Joe	King	AAA Electric	812-208-0464	sandy.tincher@aaaelectricofth.com	
02	Mr.	Mike	Wagstaff	Ameren	618-406-3478	mwagstaff@ameren.com	
03	Mr.	Paul	Zinsious	AMS - PCM	502-640-2918	pzinsious@ashmanagementservices.com	
04	Mr.	Randy	Porter	AMS - SM	502-554-5230	rporter@ashmanagementservices.com	
05	Mr.	Joko	Tasich	Charah	502-649-7633	jtasich@charah.com	
06	Mr.	Joe	Cravens	Geotechnology	314-568-6628	jcravens@geotechnology.com	

03

ABBREVIATIONS			
AER	Ameren Energy Resources	OSHA	Occupational Safety Health Administration
AMS	Ash Management Services	PCP	Perforated Collector Pipe
BNSF	Burlington	PO	Purchase Order
CBT	Computer Based Training	RHOM	Routine Handling, Operation, and Maintenance
EAP	Emergency Action Plan	SPOC	Single Point
EOD	End of [the] Day	T/M	Time and
EOM	End of [the] month	TBD	To Be
EOW	End of [the] week	TD	Transmission Dispatch
EDTS	Energy Delivery Transmission Services	WPA	Worker Protection Assurance
EDC	Estimated Date [of] Completion		
EWO	Extra Work Order		
HDPE	High Density Polyethylene		
HRS	Hours		
LOTO	Lock Out Tag Out		
NMA	National Maintenance Agreement		

04 DOCUMENTATION	
Minutes are documented weekly, and the publication have a "rolling record" of the immediate past two weeks. Each week the oldest drops off and the current week is added to the minutes. Items are categorized as either "NEW", "OPEN", "CLOSE", or in case the an item has to be re-published after closed the previous week - "REOPEN". Minutes format changed for Progress Meeting No. 13 deleting and combining certain items for brevity and to abbreviate documentation. Currently the item numbers remained the same for tracking purposes.	

05 SAFETY - HOUSEKEEPING	
02 WORKER PROTECTION ASSURANCE	
2012-09-25	OPEN: [01] WPA opened on 09-13, work completed, AER closed 09-18. [02] J. King indicated no WPA required for continuity or megger testing on 10-01. [03] J. King reported that conduit for connection at Ash Pond C was deep [6FT to 7FT below grade].
2012-09-18	OPEN: [01] WPA opened on 09-13, work completed, AER [S. Bruner] to close. [02] J. King reports Ash Pond C pump station is on.
03 EMPLOYEE DRUG TESTING	
2012-09-25	OPEN: [01] None projected. DLM may have some workers to schedule [TBD]. [02] FLT driver involved in last week incident results for DT returned negative, and driver returned to work 09-19.
2012-09-18	OPEN - no issues. No testing scheduled for worker screening. Post-incident drug testing in progress [ref. 04.2012-09-18.03 below].
04 AMS SAFETY	
2012-09-25	[01] Correct last week report date [Thu 09-19]. [02] No safety issues reported. [03] J. Tasich reported site down due to rain and lightning. No work, but be aware of muddy site, slips and trips. [04] FWI work this Saturday [09-29] in the collector box will not require confined space entry [permit]. [05] FLT incident DT - negative results [ref. 05.03.2012-09-18.02 above]. [06] R. Porter addressed FLT incident with workers [last week]. [07] R. Porter has to silence the fire pump system alarm at the plant periodically until AER personnel reset the system due to WPA. [08] AAA lift off-site.

- 2012-09-18 [01] J. Tasich on site schedule TBD. J. Tasich on site last week ~~[Thu 09-13]~~, [09-19] and safety report [via e-mail] was published.
 [02] No safety issues on site reported.
 [03] J. Denham reports incident regarding Fawn Lane truck driver that ran truck off road into ditch on return to borrow site. Summary:
 [01] AMS to provide full report later today [09-18].
 [02] Truck was empty on way to borrow site. Driver had a bee get in the cab.
 [03] Driver had bee in cab. Truck ran off road into ditch approximately 15:50 PM CT [yesterday 09-17].
 [04] Driver was not injured. Sent for post-incident drug testing.
 [05] Truck had to be removed from ditch by tow truck. First estimate of damage [by visual inspection], appears less than \$ 500.
 [06] Incident not a "lost time" or "recordable".
 [07] AMS will address with the other subcontractors.
 [08] M. Wagstaff suggested this incident be part of Lessons Learned.
 [04] Cooling stations not required, as weather turning.
 [05] AAA bringing 45 FT articulated lift remains on site.

05 HOUSEKEEPING

- 2012-09-25 OPEN: No issues.
 [01] Excess fence material [used, in good condition] taken down during demolition to be moved on site by AMS to the storage yard.. R. Porter estimates about 750 FT of fence fabric, top rail, and one gate [double 8 FT].
 [02] R. Porter disposing of concrete and fence posts into dumpster. Will have to go from 40 CY to 30 CY due to weight.
 2012-09-18 OPEN: No issues.
 [01] AMS begin cleaning up site to de-mob.
 [02] R. Porter disposing of concrete and fence posts into dumpster. Will have to go from 40 CY to 30 CY due to weight.

06 PLANT ACCESS - CBT BADGE

- 2012-09-25 OPEN: No issues.
 [01] General discussion on site security.
 [01] Guard now stationed on site on 5D x 8HRS, which is less time than previous.
 [02] Issue with site open, and no guard remains.
 [03] M. Wagstaff to investigate the situation, and forward MM to B. Simmons [AER].
 [02] Lock final count and distribution to be determined after SC, when AMS leaves site.
 2012-09-18 OPEN: No issues.
 [01] General discussion on site security.
 [01] Guard now stationed on site on Fridays.
 [02] R. Porter reports no guard on Saturdays when there is work on the transmission project.
 [03] R. Porter also reports the guard does not have a gate key, therefore when AMS leaves, so does the guard.
 [04] M. Wagstaff to investigate the situation.
 [02] R. Porter locking new gate, [no open areas to plant], and will provide updated lock count to AER of approximately 7x locks, 2x keys. M. Wagstaff indicated will discuss with Greg Musch as Ameren has several locks available on site. M. Wagstaff has discussed with G. Musch, and R. Porter reports he was on site 09-13 and 09-14.

08 OSHA LOG - WORK HOURS

2012-09-25 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 08-13
 No incidents or accidents.
 9,812.00 RT
 1,911.00 OT
11,723.00 TOTAL
 2012-09-18 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 08-20.
 No incidents or accidents.
 9,540.00 RT
 1,833.00 OT
11,373.00 TOTAL

05 MANPOWER [HEAD COUNT]

01 CREW SIZE [Alpha by Company]

2012-09-25 Geotechnology [work hours not included in OSHA Log above] Exact count in daily reports, make note if on site.

NO.	COMPANY	SURVEYOR	TECHNICIAN	FOREMEN	OPERATORS	TEAMSTERS	LABORERS	PIPE FITTERS	ELECTRICIANS	IRON WRK
01	AAA	0	0	0	0	0	0	0	2	0
02	AMS	0	0	1	1	1	2	0	0	0
03	BCI	0	0	0	1	0	0	0	0	0
04	BTD	0	0	0	0	0	0	0	0	0
05	CHI	0	0	0	0	0	0	0	0	0
06	DLM	0	0	0	0	0	3	0	0	0
07	FLT	0	0	0	0	11	0	0	0	0
08	FWI	0	0	0	0	0	0	0	0	0
09	GEO	0	1	0	0	0	0	0	0	0
10	LEC	0	0	0	0	0	0	0	0	0
11	PLB	0	0	0	0	0	0	0	0	0
12	STC	0	0	0	0	0	0	0	0	0
TOTAL COUNT		0	1	1	2	12	5	0	2	0

Total on site: 23

2012-09-18 Geotechnology [work hours not included in OSHA Log above] Exact count in daily reports, make note if on site.

NO.	COMPANY	SURVEYOR	TECHNICIAN	FOREMEN	OPERATORS	TEAMSTERS	LABORERS	PIPE FITTERS	ELECTRICIANS	IRON WRK
01	AAA	0	0	0	0	0	0	0	2	0
02	AMS	0	0	1	1	1	2	0	0	0
03	BCI	0	0	0	1	0	0	0	0	0
04	BTD	0	0	0	2	0	0	0	0	0
05	CHI	0	0	0	0	0	0	0	0	0
06	FLT	0	0	0	0	11	0	0	0	0
07	FWI	0	0	0	0	0	0	0	0	0
08	GEO	0	1	0	0	0	0	0	0	0
09	LEC	0	0	0	0	0	0	0	0	0
10	PLB	0	0	0	0	0	0	0	0	0
11	STC	0	0	0	0	0	6	0	0	0
12	Z-3	0	0	0	0	0	0	0	0	0

Total on site: 28

02 WORK HOURS AND OVERTIME

2012-09-25 OPEN: No issues. No change.
 [01] Standard hours - 7:00 AM CT to 5:30 PM CT. Continue early start some subcontractors starting 06:00 AM CT [at borrow site] to get started. Trucks to begin later. Safety awareness will be diligent regarding the time period.
 [02] AMS and FWI scheduled to work this Saturday 09-29 to install DS temporary discharge line.

2012-09-18 OPEN: No issues. No change.
 [01] Standard hours - 7:00 AM CT to 5:30 PM CT. Going back to subcontractors starting 06:00 AM CT [at borrow site] to get started. Trucks to begin later. Safety awareness will be diligent regarding the time period.

04 TRAILER - GENERAL CONDITIONS - COORDINATION - VEHICLES

2012-09-25 OPEN: No issues.
 [01] M. Wagstaff to check if electric utility bill for trailers transferred to Miller Construction. In progress.
 [02] GEO trailer to be removed around 10-19.
 [03] AMS employee trailer off-site.
 [04] DLM to bring equipment on site - "4N1", hydro seeder, and tractor.

2012-09-18 OPEN: No issues.
 [01] M. Wagstaff to check if electric utility bill for trailers transferred to Miller Construction. In progress.
 [02] GEO trailer to be removed around 10-19.
 [03] AMS employee trailer to be removed 09-25.

07 PREVIOUS

01 SUBCONTRACTS

2012-09-25 OPEN - No issues.
 2012-09-18 OPEN - No issues.

02 SUBMITTALS

2012-09-25 No Submittal log update issued.
 [01] Item No. 21 - M. Wagstaff indicated review or geo roll inventory. In progress.
 [02] M. Wagstaff has meeting set up today [09-25] with A. Ridgely [Lamac] to discuss record drawings.
 [03] R. Porter gathering information from subcontractors on record drawings. AAA input on 09-25.
 [04] AMS requiring all subcontractors' to have close-out information to AMS by 09-28 deadline. In progress.
 [05] Item No. 26 - No longer required due to material change of the PCP.
 [06] Item No. 81 - No longer required as information submitted under other submittals [and approved].

2012-09-18 Submittal log dated 09-15 distributed and reviewed.
 [01] Item No. 21 - M. Wagstaff indicated review or geo roll inventory. In progress.
 [02] M. Wagstaff indicated bolt pattern and sealant for the DS hatch required. AMS submitted 09-11. CLOSE
 [03] AMS has received digital reader submittal form FWI. AMS submitted 09-11. AMS to send submittal to AAA. CLOSE
 [04] M. Wagstaff Indicated that Lamac not confirmed yet for record drawings in AutoCAD. Review in progress.
 [05] R. Porter gathering information from subcontractors on record drawings.
 [06] AMS requiring all subcontractors' to have close-out information to AMS by 09-28 deadline.
 [07] Item No. 26 - No longer required due to material change of the PCP.
 [08] Item No. 81 - No longer required as information submitted under other submittals [and approved].

08 MATERIAL

01 GENERAL

2012-09-25 OPEN - listing for materials that have potential to impact schedule.
 [01] FLT current truck count for clay hauling down. Clay would have been done 09-26, but new date for clay hauling completion is 09-28 based on the weather. J. Denham involved with FLT to resolve. R. Porter indicated trucks working other areas.

2012-09-18 OPEN - listing for materials that have potential to impact schedule.
 [01] FLT not providing as many trucks [to haul clay], only 9x today [09-18], need 12x. Completion of the clay cap recovery potential to be done by next Tue [09-25] or Wed [09-26]. J. Denham to look into this matter with FLT.

09 ADJACENT PROPERTIES AND PCP LINE

01 GENERAL

2012-09-25 OPEN - Discussion during Progress Meeting:
 [01] Additional field tile installed to be located on the record drawings.

2012-09-18 OPEN - Discussion during Progress Meeting:
 [01] Pipe sealed with gap per GEO/AER e-mail earlier in the week. CLOSE

10 QUALITY CONTROL

2012-09-25 No issues.
 [01] P. Zinsious to researched Patriot billing, received only billing for hours, not analysis. Requested STC combine to one large billing.
 [02] P. Zinsious reported STC offered to bill GEO direct. M. Wagstaff indicated billing to go direct to GEO from STC non-issue.
 [03] Distribution and general discussion of AMS "Hutsonville APD Closure - Revision Matrix" HUT-APD-DWG-LST-2012-09-21-R0 relative EWO requests, and drawings associated with AER addenda. M. Wagstaff to forward copies of files AMS indicated could not find internally.

2012-09-18 No issues.
 [01] AMS received some Patriot billing that did not seem correct. P. Zinsious to research.
 [02] M. Wagstaff indicated the bill goes direct to GEO technology. No EWO.

11 SCHEDULE REVIEW

2012-09-25 OPEN - Review of last planner by M. Wagstaff. [AID = Activity Identification, S = successor, P = Predecessor, D = Duration and day]
 [01] Rain date today [09-25].
 [02] Major changes commentary:
 [01] AAA checked out Ash Pond C pumps with phase meter.
 [02] R. Porter spreadsheet with clay elevations relative Massmann survey.
 [03] General discussion on Massmann survey and Lamac survey, as differences at some points both surveyed. Massmann used pointed rod, and GEO indicated that most representative of area within a foot of the stake was used as guideline.
 [04] Add activity 10-15 "Finish Punch".
 [03] All change were made to the LP sheet and full report submitted to AER. Below is highlight of changes/updates [alpha by LP]:

NO.	LAST PLANNER	AID	ACTIVITY NAME	RDU	START	FINISH	PERCENT	COMMENT
01	AAA-King	124c	Install - DS Baro...			9/24/2012	100%	
02	AAA-King	318	PCP - PCR...			9/24/2012	100%	
03	AAA-King	312	PCS - East...				100%	
04	AAA-King	401	Testing of PCS wire...				100%	
05	AAA-King	400	Energize...				100%	
06	AAA-King	380	Install new Power cables...			9/20/2012	100%	
07	AAA-King	390	WPA to Disconnect...				100%	
08	AAA-King	279a	DS3 - Electrical wiring...			9/21/2012	100%	
09	AAA-King	385b	Release WPA to Energize Ash...		9/19/2012		100%	
10	AAA-King	390a	Release WPA to Energize New...		9/19/2012		100%	
11	AAA-King	390b	Commission Ash Pond C system		9/20/2012		100%	
12	AER-Wagstaff	A4350	Punch List Items Resolved			10/15/2012		
13	AMS-Porter	50a	Additional clay...		9/28/2012		85%	
14	AMS-Porter	183	Site Prep - CBS - restore...		10/5/2012			
15	AMS-Porter	196	Earthwork APD - fine grade			9/28/2012	85%	
16	AMS-Porter	198	Roadways - APD perimeter...			10/5/2012		
17	AMS-Porter	198a	Roadways - Plant			10/5/2012		
18	AMS-Porter	199	Roadways - PCS -			10/5/2012		
19	AMS-Zinsious	189	Clay placement - Work List...			10/5/2012		
20	AMS-Zinsious	217	Substantial Completion			10/5/2012		
21	AMS-Zinsious	219	Punch List - Walk...			10/5/2012		
22	AMS-Zinsious	220	Punch List Work		10/8/2012	10/12/2012		
23	AMS-Zinsious	221	De-mobilize		10/16/2012	10/17/2012		
24	DLF-Ziliak	210	Ground cover - mob...			9/24/2012	100%	
25	DLF-Ziliak	211	Ground cover - hydro...			10/5/2012		
26	DLF-Ziliak	212	Ground cover - TRM or ECB			10/5/2012	20%	
27	GEO-Saandon	11	Survey - APD - vegetative...		10/1/2012			
28	GEO-Saandon	11a	Survey - APD - vegetative...				100%	
29	GEO-Saandon	50b	Clay - certification (final)		10/2/2012	10/3/2012		
30	LEC-Ridgely	13	Survey - CBS - final grade		10/5/2012			
31	LEC-Ridgely	15	Survey - APD - final (2nd half)			9/28/2012		
32	LEC-Ridgely	15a	Survey - APD - final (1st half)			9/20/2012	100%	

2012-09-18 OPEN - Review of last planner by M. Wagstaff. [AID = Activity Identification, S = successor, P = Predecessor, D = Duration and day]
 [01] Rain dates as listed. No change.
 [02] Major changes commentary:
 [01] M. Wagstaff additional activities noted for Close Out.
 [02] Add milestone for hand-off on 10-05.
 [03] General discussion on Lamac survey before Massmann. No work on ground cover until after Massmann info back. Lamac is tentatively to be schedule on 09-19. Planning to have DLF mobilize on 09-24 for ground cover.
 [03] All change were made to the LP sheet and full report submitted to AER. Below is highlight of changes/updates [alpha by LP]:

NO.	LAST PLANNER	AID	ACTIVITY NAME	RDU	START	FINISH	PERCENT	COMMENT
	AAA-King	375	Pull power...			9/14/2012	100%	
	AAA-King	380	Install new Power cables...		9/21/2012			
	AAA-King	395	Tie-in Electrical...		9/21/2012	9/21/2012		
	AAA-King	124c	Install - DS Baro...			9/19/2012		
	AAA-King	279a	DS3 - Electrical wiring...			9/19/2012		
	AAA-King	385	WPA at Existing Coal...		9/13/2012		100%	
	AAA-King	385a	WPA for APD electrical...		7/1/1902		100%	
	AAA-King	385b	Release WPA to Energize Ash...		9/17/2012			Open - R. Porter to call.
	AAA-King	390	WPA to Disconnect...		9/21/2012			AAA - WPA LOTO
	AAA-King	390a	Release WPA to Energize New...		9/21/2012			AAA - WPA LOTO
	AAA-King	390b	Commission Ash Pond C system		9/21/2012			Dependent on 385b close.
	AAA-King	420a	Pull cables...				100%	
	AMS-Porter	198	Roadways - APD perimeter...			9/28/2012		
	AMS-Porter	199	Roadways - PCS -			9/28/2012		
	AMS-Porter	198a	Roadways on plant			9/28/2012		
	AMS-Porter	192	Earthwork APD - let down				100%	
	AMS-Porter	193	Earthwork APD - rock chutes				100%	
	AMS-Porter	196	Earthwork APD - fine grade			9/25/2012	50%	Includes additional clay
	AMS-Porter	50a	Additional clay to Pass...			9/25/2012	50%	
	AMS-Zinsious	189	Clay placement - Work List...		10/1/2012	10/1/2012		
	AMS-Zinsious	218	Commission Pump System	5	10/1/2012	10/5/2012		
	AMS-Zinsious	219	Punch List - Walk...		10/1/2012			
	AMS-Zinsious	217	Substantial Completion			10/1/2012		
	BTD-Boyer	237a	DS1 - Precast - set lid				100%	
	BTD-Boyer	252a	DS2 - Precast - set lid				100%	
	BTD-Boyer	272a	DS3 - Precast - set lid				100%	
	BTD-Boyer	272c	Set DS3 upper ring section				100%	
	BTD-Boyer	294a	DS4 - Precast - set lid				100%	
	DLF-Ziliak	201	Ground cover - mob...			9/24/2012		
	GEO-Saindon	11	Survey - APD - vegetative...		9/26/2012	9/27/2012		
	GEO-Saindon	50b	Clay Certification (Final			9/28/2012		
	STC-Hunt	207	Concrete - paved ditch...				100%	
	STC-Hunt	208	Concrete - paved ditch...				100%	

12.0 COST AND BUDGET

02 AMS PAY APPLICATION - CHANGE REQUEST

2012-09-25 No issues.

2012-09-18 No issues. M. Wagstaff indicated add note [as shown on e-mail], proceed with submission to AER AP. CLOSE

12.1 EXTRA WORK ORDERS

GENERAL

2012-09-25 Distribution and general discussion of AMS "Hutsonville APD Closure - Basic EWO Report" HUT-APD-EWO-RPT-2012-09-12-R0.

15 EWO-15 FENCE ALIGNMENT

2012-09-25 OPEN - AMS to provide back-up information. In progress.

2012-09-18 OPEN - AMS to provide back-up information. In progress.

17 EWO-17 PAVED DITCH ALIGNMENT

2012-09-25 OPEN - AMS to provide back-up information. In progress.

2012-09-18 OPEN - AMS to provide back-up information. In progress.

18 EWO-18 VENT PROTECTION RING

2012-09-25 CLOSE

2012-09-18 OPEN - All rings set in place, fabric and stone remains to be installed.

19	EWO-19	COMMISSIONING
	2012-09-25	OPEN - M. Wagstaff approved 09-21.
	2012-09-18	OPEN - M. Wagstaff gave oral approval to AMS. Work scheduled by FWI for Sat 09-28, this will allow for pumps to be operational on 10-01. AMS to provide written EWO request.
20	EWO-20	ADDITIONAL RIP-RAP
	2012-09-25	OPEN - M. Wagstaff approved 09-21. Work in progress.
	2012-09-18	AMS provide cost. In progress.
21	EWO-21	FIELD TILE LOCATION - LENGTH [was EWO-14]
	2012-09-25	OPEN - Reviewed drawings and J. Craven sketch. AMS to further investigate information from BTd.
	2012-09-18	OPEN - AMS to review EWO against AER Addenda and report.
22	EWO-22	MECHANICAL CHANGES
	2012-09-25	OPEN - AMS to provide specific backup information. Change are FWI piping, associated cost in other EWO.
	2012-09-18	OPEN - AMS to review EWO against AER Addenda and report.
23	EWO-23	CONCRETE CHANGES
	2012-09-25	OPEN - AMS to provide specific backup information.
	2012-09-18	OPEN - AMS to review EWO against AER Addenda and report.
24	EWO-24	CONDUIT AND PIPE SAND ENCASEMENT
	2012-09-25	CLOSE - Scope was delineated in AER Addenda, AMS to rescind and delete EWO request.
	2012-09-18	OPEN - AMS to review EWO against AER Addenda and report.
25	EWO-25	ELECTRICAL OVERHEAD UTILITY CHANGES-LOCATION
	2012-09-25	CLOSE - M. Wagstaff approved 09-21.
	2012-09-18	OPEN - AMS to provide written EWO request for processing.
26	EWO-26	DS LID MODIFICATIONS FOR PIPING
	2012-09-25	OPEN - AMS to provide written EWO request for processing.
	2012-09-18	OPEN - AMS to provide written EWO request for processing.
27	EWO-27	ADDITIONAL BOLLARDS FOR CLEANOUTS
	2012-09-25	CLOSE - M. Wagstaff approved 09-21.
	2012-09-18	OPEN - AMS to provide written EWO request for processing.
28	EWO-28	TAX EXEMPTION
	2012-09-25	OPEN - Close-out after Friday 09-28.
	2012-09-18	NEW - General discussion for potential EWO due to City of Robinson not renewing tax exemption. AMS to verify no charges from subs.

13 ACTION ITEMS - AER [25]

01	AMEREN [AER]
	2012-09-25 [01] J. King request spreadsheet of electrical panel description tags.
	2012-09-18 No report.

14 ACTION ITEMS - AMS [21]

01	ASH MANAGEMENT [AMS]
	2012-09-25 No report.
	2012-09-18 No report.

15 PRODUCTION

03	CLAY
	2012-09-25 OPEN - no issues
	[01] Placement as of 09-24 is 147,510 CY.
	[02] Additional clay to be placed to make grade elevations [ref. above 08.01.2012-08-28.03] in progress.
	2012-09-18 OPEN - no issues
	[01] Placement as of 09-17 is 137,951 CY.
	[02] Additional clay to be placed to make grade elevations [ref. above 08.01.2012-08-28.03] in progress.

16 DOCUMENTS TRANSMITTED

2012-09-25	[01] AER - Last Planner schedule - Current date 09-20 - Data date 09-18. [02] AMS "Hutsonville APD Closure - Basic EWO Report" HUT-APD-EWO-RPT-2012-09-12-R0 [03] AMS "Hutsonville APD Closure - Revision Matrix " HUT-APD-DWG-LST-2012-09-21-R0
2012-09-18	[01] AER - Last Planner schedule - Current date 09-14 - Data date 09-04 [02] GEO - "Hutsonville Ash Pond D Closure - Clay Issue Recovery Layout" [not dated]. [03] GEO - Submittal Log dated 09-15.

17 DOCUMENTS REVIEW ONLY

2012-09-18	[01] GEO - "Field Tile Plan Layout-R1_JRC" second page [copy to P. Zinsious] [02] R. Porter spreadsheet with clay elevations relative Massmann survey.
2012-09-18	None.

18 MEETING SCHEDULE

2012-09-18	Schedule for upcoming meetings:
	[01] Progress Meeting Monday October 1, 2012 Day earlier than normal schedule.
	[02] AMS-AER Operations Transfer Friday October 5, 2012 Confirmed.
	[03] NO MEETING THIS WEEK Tuesday October 8, 2012
	[04] Progress Meeting Monday October 15, 2012 Day earlier than normal schedule.
	[05] Lesson Learned TBD
2012-09-18	Changed category form "Next Progress Meeting" to "Meeting Schedule". Schedule for upcoming meetings:
	[01] Progress Meeting Tuesday September 25, 2012 Standard.
	[02] Progress Meeting Monday October 1, 2012 Day earlier than normal schedule.
	[03] AMS-AER Operations Transfer Friday October 5, 2012 To be confirmed.
	[03] Lesson Learned TBD

19 DISTRIBUTION - STANDARD

AER	SUBCONTRACTORS	
01 Mr. Mike Wagstaff	01 S. Tincher	AAA
02 Mr. Mike Stewart	02 M. Burch	FWI
03 Mr. Bob Muesenfechter	03 T. Boyer	BTD
04 Mr. Steve Bluemner	04 T. Hunt	STC
GEO		
01 Ms. Anna Saindon		
02 Mr. Eric Neuner		
03 Mr. Joe Cravens		
AMS		
01 Mr. Jimmy Boone		
02 Mr. John Denham		
03 Mr. Joko Tasich		
04 Mr. Randy Porter		

If there are any corrections, modifications, additions, or deletions please notify the sender by e-mail at pzinsious@ashmanagementservices.com

PHOTOGRAPH LOG



Photograph 1 ▲ - Vegetative layer placement facing north



Photograph 2 ▲ - Preparing for final ground cover at letdowns facing northeast



Photograph 3 ▲ - Seed and fertilizer distribution facing southwest



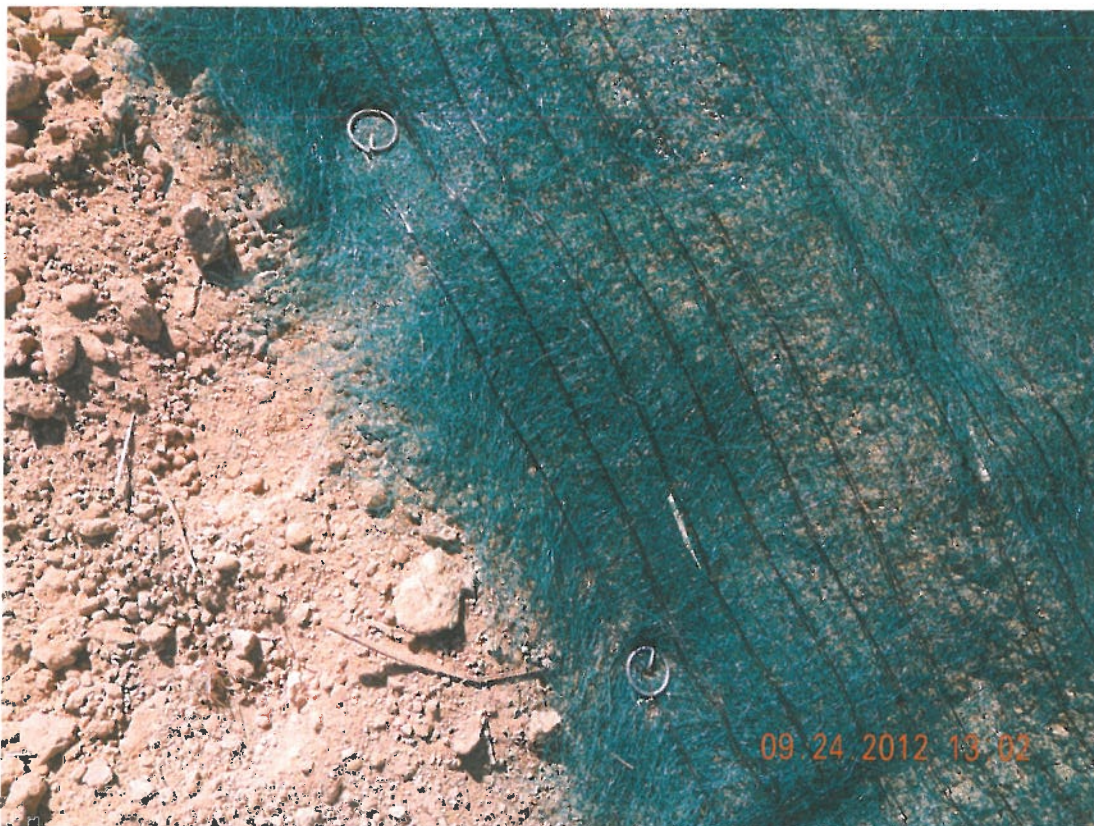
Photograph 4 ▲ - Fertilization and seeding letdowns facing northwest

All photographs taken by Joseph Cravens of Geotechnology, Inc. between September 24 and September 29, 2012.

JRC



Photograph 5 ▲ - Installing turf reinforcement mat facing north



Photograph 6 ▲ - Installing turf reinforcement mat facing south



Photograph 7 ▲ - Installing turf reinforcement mat facing north



Photograph 8 ▲ - HDPE butt fusion welding facing northwest

All photographs taken by Joseph Cravens of Geotechnology, Inc. between September 24 and September 28, 2012.



Photograph 9 ▲ - Flexible hose connected to manifold facing south



Photograph 10 ▲ - Anchoring flexible hose for temporary discharge into bottom ash pond facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between September 24 and September 28, 2012.

JRC



Photograph 11 ▲ - Overview of Ash Pond D facing southeast



Photograph 12 ▲ - Overview of Ash Pond D facing northeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between September 24 and September 28, 2012.

JRC



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Energy Resources

FROM: Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DATE: October 18, 2012

SUBJECT: Weekly Summary Report for October 1, 2012 to October 5, 2012

PROJECT: Hutsonville Ash Pond D Closure
Crawford County, Hutsonville, Illinois
Geotechnology Project No. J019896.01

The following is a weekly summary of the site activities at the referenced site.

Weather

The weather was generally mostly cloudy with rain, having periods of clear skies. Temperature (°F) lows ranged from 49 to 58°F, and temperature highs ranged from 50 to 81°F. Weather delays occurred on October 3, 2012.

Construction Activities

The following activities occurred this week: commissioning of the groundwater collection trench system, rip rap placement, roadway restoration and construction, finish grading, repairing impacts from storm events, surveying, electrical installations, final ground cover, and clay placement. The pumps were commissioned for the groundwater collection trench system on October 1, 2012, and personnel from Ameren Energy Resources, Ash Management Services, LLC, AAA Electric, Inc., Freitag-Weinhardt, Inc. and Pine Environmental Services, Inc were present. Continuity testing was performed for the electrical components of the system prior to commissioning. Ash Management Services, LLC completed construction of the rip rap wall along the paved gutter on the west side of Quadrant A, performed roadway restoration, and continued construction of the east pump control panel and south property access roads. Finish grading occurred south and east of Ash Pond D and storm impacts were repaired for the paved gutter, paved ditch, rip rap pads, rock chutes, and swales. Lamac Engineering, CO. surveyed quantities for the paved ditch backfill. Massmann Surveying surveyed the vegetative layer and site features for the as-built construction drawings. AAA Electric, Inc. installed the flowmeter readouts for the flow sensors. Daylight Land Management installed turf reinforcement mats, erosion control blankets

for Ash Pond D, and performed other ground cover activities such as seeding for the vegetative layer and disturbed areas on-site. Fawn Lane Transit, Inc. and Belt Construction, Inc. completed clay placement for the vegetative layer and finish grading. Approximately 11 trucks were used to haul clay material to Ash Pond D. Refer to the daily reports for detailed information.

Equipment and Personnel On-Site

CAT D6N Bulldozer
CAT CS-323C Smooth Drum Roller
John Deere 7330 Tractor
John Deere 6430 Tractor
Case 580 Backhoe
Water Truck (Dust Control)

Geotechnology, Inc. – Joe Cravens
Ameren Energy Resources – Mike Wagstaff, Lionel Chambers, and Terry Hanratty
Pine Environmental Services, Inc. – Mark Winter
Ash Management Services, LLC (AMS) – Randy Porter, Paul Zinsious, John Denham, Robert Dunkley, Brad Bolenbaugh, Greg Siverly, Jeremy Shorter, Blake Bunting, and Eric Sefton
Charah, Inc. – Joe Tasich
Belt Construction, Inc. (BCI) – Jared Belt
AAA Electric, Inc. (AAA) – Joseph King
Fawn Lane Transit, Inc. (FLT) – Lee Edington, Scott Comer, James Elledge, Jim Urfer, Gary Lamb, Tom Sager, Alan Ruholl, Patrick Wente, Frank Walton, Brian Griffith, and Greg Cornwell
Daylight Land Management (DLM) – Jon Ziliak, Adam Ziliak, Billy Georges, Eric Wells, Jacob Hoalt, Tracy Deisher, and Ivan York
Freitag-Weinhardt, Inc. (FWI) – Jarrod Barrett
Lamac Surveying – Austin Ridgely
Massmann Surveying – Rick Kopac
Visitors – Refer to the Visitor's Log for visitors, dates, and times.
Refer to the meeting minutes for additional personnel.

Meetings

The weekly progress meeting was held on Monday, October 1, 2012. Refer to the attached meeting minutes for additional information.

Photographs

A photograph log with select photographs obtained this week is attached.

Materials

The following materials were delivered this week: Wyatt Seed Co. dry seed mix, Ceres Solutions 19-19-19 dry fertilizer, Western Excelsior Corp. Excel CC-4 Erosion Control Blanket, IDOT CA-6 aggregate, and clay for the vegetative layer.

Testing/Sampling

AAA Electric, Inc. performed continuity testing on the electrical components of the groundwater collection system. The megger testing requirement for the electrical components of the system was omitted by Ameren Energy Resources. Refer to the electrical testing records for additional information. The final welds of the sump discharge pipes were visually observed for leaks to complete the hydrostatic testing.

Calibration Records

Calibration information was not obtained this week.

Signature of CQA Officer



Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DAILY REPORTS

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: — Client: Ameren ER Date: 10/1/12

TIME: Arrive: 6:00 AM Depart: 7:00 PM Travel: 1.0 hr Total: 14 hrs (no lunch)
 Weather: Cloudy, 52° AM, 61° PM Contractor: AMS Subcontr./Supplier: AAA, FWI, AER, DLM, FLT, BCI
 Equipment Working: D6N Dozer, 580 Backhoe, 7330 Tractor, 6430 Tractor

Site Activities / Observations / Contacts / Notes:

AMS/AER/AAA/FWI:

Personnel - Randy Porter, Paul Zinsious, Mike Wagstaff, Lionel Chambers, Joe King, and Jarrod Barrett. AAA installed the Omega Sensor Readouts for the paddlewheel flow sensors for DS-1, 2, 3, and 4, and performed continuity testing for the low and high voltage, 2/0 and 4/0 AWG electric lines for the groundwater collection system, as well as checked for voltage drops. The megger testing requirement, as stated in the project specifications, was omitted for the electric lines. AAA energized the sump pumps for pump commissioning of the groundwater collection system. AER, AMS, and FWI were present for commissioning. No leaks were observed in the exit butt fusion welds, completing the in-service visual inspection of the final welds. All pumps and floats were operational, and no leaks were observed in the temporary discharge line running from the collector box to the Bottom Ash Pond. The operation of the paddlewheel flow sensors will be checked at a later date. The Mini Divers for DS-1, 2, and 4, Baro Diver, and Diver Mate were activated and operational. The cable for DS-3's Mini Diver was cut and could not be activated. The cable will be replaced by operational training on Friday. The pumps will remain on 24/7 at this time, dependent on the NPDES Permit and operational training. The system will be inspected daily for the remainder of the project.

AMS:

Completed constructing the additional rip rap wall along the paved gutter on the west side of Section A. Performed finish grading south of Ash Pond D. Removed temporary fencing around the DS manholes and began final backfill against the manholes.

Additional Comments: NEXT PAGE

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

<u>Randy Porter</u> Contractor Representative <u>Anna Sardon</u> Signature Geotechnology, Inc. Engineer's Signature	<u>AMS</u> Company <u>10-1-12</u> Date <u>10-8-12</u> Date
--	---

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 10/1/12

TIME: Arrive: — Depart: — Travel: — Total: —
Weather: — Contractor: — Subcontr./Supplier: —
Equipment Working: —
Site Activities / Observations / Contacts / Notes: REFER TO PAGE 1

DLM:
Additional Personnel - Eric Wells, Jacob Hoalt, Tracy Deisher, and Ivan York. Mobilized - John Deere 6430 Tractor with 673 self-leveling lift and Haybuster 2564. Began final ground cover for the slope diversion berms. The subgrade was prepared, fertilized with 19-19-19 dry bagged fertilizer, and seeded with turf type dry bagged seed mix. Excel CC-4 erosion control blanket was installed by placing and stapling on the prepared slope diversion berms. Also, the western strip of vegetative cover between the access road and the most western slope diversion berm was fertilized, seeded, and covered with straw.

FLT/BCI:
Completed additional clay placement in Section 7, and began in Section 8. Reconstructed slope diversion berms, performed finish grading on the south embankment of Ash Pond D, and prepared the subgrade for the east pump control panel access road. Additional Personnel - Aaron Gullet, Jason Byers, Kim Edington, and Robby Sanders. Loads = 273

Additional Comments: —

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Randy Poole
Contractor Representative
Arina Sandon
Signature
Geotechnology, Inc.
Engineer's Signature
AMS
Company
10-1-12
Date
10-8-12
Date

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 10/2/12

TIME: Arrive: 6:30 AM Depart: 6:45 PM Travel: 1.0 hr Total: 13 hrs (0.25 hr for lunch)
Weather: Cloudy, 49° AM, 60° PM Contractor: AMS Subcontr./Supplier: DLM, LEC, FLT, BCI
Equipment Working: D6N Dozer, 580 Backhoe, 7330 Tractor, 6430 Tractor

Site Activities / Observations / Contacts / Notes:AMS/FLT/BCI:

Began the new access roadway for the east pump control panel southwest of Ash Pond D with gravel surfacing. Non-woven 8oz. geotextile and IDOT CA-6 gravel were used for the access road. Filled and performed finish grading south of Ash Pond D. Site Remediation-removed washed out material from the paved ditch and paved gutter. Attempted to continue additional clay placement in Section 8, but the excavator broke down at the clay borrow site. Clay placement will continue tomorrow.

DLM:

Completed installing the turf reinforcement mat on the northwest groin and the erosion control blankets on the slope diversion berms, excluding the most southwest slope diversion berm that is incomplete for the entrance to Ash Pond D. Began final ground cover for the vegetative layer and embankments of Ash Pond D, and the areas east and south of Ash Pond D, and south of Ash Pond A and Ash Pond B. Prepared, graded, aerated, fertilized, and seeded the vegetative layer and embankments of Ash Pond D, and the areas east and south of Ash Pond D, and south of Ash Pond A and Ash Pond B. Turf Type dry bagged seed mix was used from Wyatt Seed Co., and 19-19-19 fertilizer was used and delivered from Ceres Solutions in a WillMorr Super 600 buggy. Began straw mulching with a Haybuster on the vegetative layer and embankments of Ash Pond D.

LEC:

Austin surveyed the grid points for the vegetative layer and the fill area along the paved ditch south of Ash Pond D to estimate the quantity of clay used for fill.

Additional Comments: The site is highly saturated from the steady light rain the past two days.

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Kandy Poetore
Contractor RepresentativeAnna Samolon
Signature
Geotechnology, Inc.

Engineer's Signature

AMS
Company
10-2-12
Date
10-8-12
Date

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 10/3/12

TIME: Arrive: 6:30 AM Depart: 5:15 PM Travel: 1.0 hr Total: 11.5 hrs (0.25 hr for lunch)
Weather: Cloudy, 58° AM, Sunny, 76° PM Contractor: AMS Subcontr./Supplier: BCI, MMS
Equipment Working: D6N Dozer, 580 Backhoe, Water Truck

Site Activities / Observations / Contacts / Notes: —

AMS/BCI:

Cleaned and graded the plant entrance and access roads. Backfilled against DS manholes, filled low spots on the vegetative layer, and removed remaining temporary silt fence within the property limits. Completed constructing the anchor trench outlet toe drain rip rap splash pads on the south embankment of Ash Pond D. Reconstructed damaged rip rap pads, rock chutes, and swales. Performed finish grading south of Ash Pond D.

MMS:

Rick surveyed the certification grid points for the vegetative cover.

Other:

Weather Delay - The rain from Monday and Tuesday caused the site to become highly saturated and no other work items occurred. Ground cover and clay placement will continue tomorrow, and the final ground cover will be crimped with a cultipacker.

Additional Comments: —

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Landmaster
Contractor Representative
Signature Anna Samson
Geotechnology Inc.
Engineer's Signature
Company AMS
Date 10-3-12
Date 10-8-12

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: JO19896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: — Client: Ameren ER Date: 10/4/12

TIME: Arrive: 6:30 AM Depart: 7:30 PM Travel: 1.0 hr Total: 13.75 hrs (0.25 hr for lunch)
 Weather: Sunny, 57° AM, 81° PM Contractor: AMS Subcontr./Supplier: DLM, FLT, BCI, MMS, LEC
 Equipment Working: D6N Dozer, 580 Backhoe, 7330 Tractor, 6430 Tractor, Water Truck

Site Activities / Observations / Contacts / Notes:

AMS/FLT/BCI:

Completed backfilling around DS manholes and finish grading south of Ash Pond D. Added additional fill along the top of the rip rap wall and along the paved gutter adjacent to the plant access road. Continued removing washed out material from the paved gutter and paved ditch. Cleaned and graded plant entrance and access roads. Placed additional fill south of Ash Pond D. Completed additional clay placement in Section 8, completing the 3.0' vegetative layer, Loads = 145. The last slope diversion berm that was left open for an entrance to the pond was completed.

DLM:

Continued seeding and straw mulching on the vegetative layer of Ash Pond D, the embankments of Ash Pond D, east and south areas of Ash Pond D, and south areas of Ash Pond A and Ash Pond B. Completed installing the last set of erosion control blankets on the most southwestern slope diversion berm. Crimping of the straw mulch will begin tomorrow with a disc and cultipacker.

MMS:

The survey of the certification grid points for the vegetative layer was completed. The vegetative thickness was field verified to have thicknesses greater than or equal to 3.00' by comparing to the as-built ash elevations. Began surveying the modified and new site features for the as-built construction drawings.

LEC:

Completed surveying the additional quantity of fill for the paved ditch backfill.

Additional Comments: DLM completed straw mulching in the late PM.

Randy Pickett
 Contractor Representative

AMS
 Company 10-4-12

Anna Swindon
 Signature

Date 10-8-12
 Date

Geotechnology Inc.
 Engineer's Signature

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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: — Client: Ameren ER Date: 10/5/12

TIME: Arrive: 6:00 AM Depart: 4:00 PM Travel: 1.0 hr Total: 11 hrs (no lunch)
 Weather: Cloudy, 54° AM, 50° PM Contractor: AMS Subcontr./Supplier: DLM, BCI, AAA, AER, FWI, MMS
 Equipment Working: D6N Dozer, 580 Backhoe, 7330 Tractor, 6430 Tractor, Water Truck
 Site Activities / Observations / Contacts / Notes: —

AMS/BCI:

Began roadway improvement/gravel surfacing for the existing roadway south of Ash Pond D along the south property line. Non-woven 8oz. geotextile and IDOT CA-6 gravel was used for the roadway improvement. Placed additional rip rap along the new access road to the east pump control panel to mitigate erosion. Removed warning signs from Hwy. 1 pertaining to the dump trucks entering and leaving the highway. Cleaned plant access roads.

DLM:

Completed crimping the straw mulch on Ash Pond D, and all other areas on the site disturbed from construction, by utilizing a disc and cultipacker. Demobilized equipment and materials.

AAA:

Began installing the engraved nameplates for the electrical devices.

Pump Commissioning (Follow-up) Meeting:

Personnel - Mike Wagstaff and Terry Hanratty (AER), Paul Zinsious and John Denham (AMS), Mark Winter (Pine Environmental Services, Inc.), Jarrod Barrett (FWI), and Joe King (AAA).

The four sump pumps were evaluated after being in operation since 10/1/12. The data was downloaded, reviewed, and the methodology of the data reduction for the Diver system was discussed. The Diver data provided that DS-1, DS-3, and DS-4 are cycling. DS-2 has yet to reach a low enough water level to cause the pump to cycle. The groundwater collection system was found to be fully operational, and the system was turned over to Ameren's control. The Omega totalizers will be activated next Tuesday when the pumps are re-energized. Note: the pumps will remain off over the weekend.

MMS: Completed surveying the modified and

Additional Comments: new site features for the as-built construction drawings.

Randy Kestel
 Contractor Representative

Anna Scandon
 Signature

Geotechnology, Inc.
 Engineer's Signature

AMS
 Company

10-5-12
 Date
10-8-12
 Date

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only 3 new items remain.

MEETING MINUTES



Hutsonville Power Station - Ash Pond D Closure
Progress Meeting No. 29 Minutes
Monday, October 1, 2012

01 PUBLICATION

Publish date:	2012-10-02	Submitted by:	PHZ
Distribution:	E-mail only	Notes taken by:	PHZ
Location:	Hutsonville Power	AMS-Charah File No.	HUT-APD-MTG-MIN-2012-10-01-PM-29
AER PO:	567523 R4	AMS-Charah Contract:	00030-01 AMS-Charah C 4116-06-6120

02 ATTENDEES [ALPHA BY COMPANY]

NO.	SAL	FIRST	LAST	COMPANY	PHONE	E-MAIL
01	Mr.	Joe	King	AAA Electric	812-208-0464	sandy.tincher@aaaelectricofth.com
02	Mr.	Lionel	Chambers	Ameren	618-301-8969	rchambers@ameren.com
03	Mr.	Mike	Wagstaff	Ameren	618-406-3478	mwagstaff@ameren.com
04	Mr.	Paul	Zinsious	AMS - PCM	502-640-2918	pzinsious@ashmanagementservices.com
05	Mr.	Randy	Porter	AMS - SM	502-554-5230	rporter@ashmanagementservices.com
06	Mr.	Joko	Tasich	Charah	502-649-7633	jtasich@charah.com
07	Mr.	Joe	Cravens	Geotechnology	314-568-6628	jcravens@geotechnology.com

03 ABBREVIATIONS

AER	Ameren Energy Resources	OSHA	Occupational Safety Health Administration
AMS	Ash Management Services	PCP	Perforated Collector Pipe
BNSF	Burlington	PO	Purchase Order
CBT	Computer Based Training	RHOM	Routine Handling, Operation, and Maintenance
EAP	Emergency Action Plan	SPOC	Single Point
EOD	End of [the] Day	T/M	Time and
EOM	End of [the] month	TBD	To Be
EOW	End of [the] week	TD	Transmission Dispatch
EDTS	Energy Delivery Transmission Services	WPA	Worker Protection Assurance
EDC	Estimated Date [of] Completion		
EWO	Extra Work Order		
HDPE	High Density Polyethylene		
HRS	Hours		
LOTO	Lock Out Tag Out		
NMA	National Maintenance Agreement		

04 DOCUMENTATION

Minutes are documented weekly, and the publication have a "rolling record" of the immediate past two weeks. Each week the oldest drops off and the current week is added to the minutes. Items are categorized as either "NEW", "OPEN", "CLOSE", or in case the an item has to be re-published after closed the previous week - "REOPEN". Minutes format changed for Progress Meeting No. 13 deleting and combining certain items for brevity and to abbreviate documentation. Currently the item numbers remained the same for tracking purposes.

05 SAFETY - HOUSEKEEPING

02 WORKER PROTECTION ASSURANCE

2012-10-01	OPEN:
	[01] AMS removed LOTO at Collector Box for DS temporary discharge [ref. new Item No. 15.1 below].
	[02] AAA monitoring operation of pumps for start-up.
	[03] No future WPA's projected.
2012-09-25	OPEN:
	[01] WPA opened on 09-13, work completed, AER closed 09-18.
	[02] J. King indicated no WPA required for continuity or megger testing on 10-01.
	[03] J. King reported that conduit for connection at Ash Pond C was deep [6FT to 7FT below grade].

03 EMPLOYEE DRUG TESTING

2012-10-01	OPEN:
	[01] None projected.
	[02] DLM had 4x workers tested today [10-01], and results negative.
2012-09-25	OPEN:
	[01] None projected. DLM may have some workers to schedule [TBD].
	[02] FLT driver Involved in last week incident results for DT returned negative, and driver returned to work 09-19.

04 AMS SAFETY

2012-10-01	<p>[01] J. Tasich on site - observations and commentary:</p> <p>[01] No safety issues.</p> <p>[02] Clay hauling truck operations going well.</p> <p>[03] Observed good communications between laborers [spotters] and dozer operators.</p> <p>[04] Performed site specific training for 4x workers for DLM.</p> <p>[05] Tentative next site visit schedule -10-15 possibly for close out.</p> <p>[06] Site drying up. DLM operations brought 2x tractors on site.</p> <p>[02] Continuing effort to silence the fire pump system alarm at the plant periodically until AER personnel reset the system due to WPA.</p>
2012-09-25	<p>[01] Correct last week report date [Thu 09-19].</p> <p>[02] No safety issues reported.</p> <p>[03] J. Tasich reported site down due to rain and lightning. No work, but be aware of muddy site, slips and trips.</p> <p>[04] FWI work this Saturday [09-29] in the collector box will not require confined space entry [permit].</p> <p>[05] FLT incident DT - negative results [ref. 05.03.2012-09-18.02 above].</p> <p>[06] R. Porter addressed FLT incident with workers [last week].</p> <p>[07] R. Porter has to silence the fire pump system alarm at the plant periodically until AER personnel reset the system due to WPA.</p> <p>[08] AAA lift off-site.</p>

05 HOUSEKEEPING

2012-10-01	<p>OPEN: No issues.</p> <p>[01] R. Porter to schedule moving excess fence material.</p> <p>[02] During cleanup at de-mobilizing, AMS will wash streets one-time when leaving site.</p> <p>[03] R. Porter reports - appears transmission subcontractor concrete truck washed out at entrance to plant. AMS has washed out at close proximity to the Ash Pond D and placed the concrete in a dumpster to haul off site.</p>
2012-09-25	<p>OPEN: No issues.</p> <p>[01] Excess fence material [used, in good condition] taken down during demolition to be moved on site by AMS to the storage yard.. R. Porter estimates about 750 FT of fence fabric, top rail, and one gate [double 8 FT].</p> <p>[02] R. Porter disposing of concrete and fence posts into dumpster. Will have to go form 40 CY to 30 CY due to weight.</p>

06 PLANT ACCESS - CBT BADGE

2012-10-01	<p>OPEN: No issues.</p> <p>[01] General discussion on site security.</p> <p>[01] Guard stationed on site on 5D x 8HRS continues.</p> <p>[02] When on site Saturday R. Porter indicated no guard was present.</p> <p>[03] M. Wagstaff to investigate the situation, and forward MM to B. Simmons [AER] in progress.</p>
2012-09-25	<p>OPEN: No Issues.</p> <p>[01] General discussion on site security.</p> <p>[01] Guard now stationed on site on 5D x 8HRS, which is less time than previous.</p> <p>[02] Issue with site open, and no guard remains.</p> <p>[03] M. Wagstaff to investigate the situation, and forward MM to B. Simmons [AER].</p> <p>[02] Lock final count and distribution to be determined after SC, when AMS leaves site.</p>

08 OSHA LOG - WORK HOURS

2012-10-01	<p>OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to start of today 10-01 due to meeting change].</p> <p>No incidents or accidents.</p> <p>9,900.00 RT</p> <p>1,964.00 OT</p> <p>11,864.00 TOTAL</p>
2012-09-25	<p>OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to EOD Monday] 08-13 09-24 [corrected 10-01].</p> <p>No incidents or accidents.</p> <p>9,812.00 RT</p> <p>1,911.00 OT</p> <p>11,723.00 TOTAL</p>

06 MANPOWER [HEAD COUNT]**01 CREW SIZE [Alpha by Company]**

2012-10-01		Geotechnology [work hours not included in OSHA Log above] Exact count in daily reports, make note if on site. Last week 4x rain days.								
NO.	COMPANY	SURVEYOR	TECHNICIAN	FOREMEN	OPERATORS	TEAMSTERS	LABORERS	PIPE FITTERS	ELECTRICIANS	IRON WRK
01	AAA	0	0	0	0	0	0	0	2	0
02	AMS	0	0	1	1	1	2	0	0	0
03	BCI	0	0	0	1	0	0	0	0	0
04	BTD	0	0	0	0	0	0	0	0	0
05	CHI	0	0	0	0	0	0	0	0	0
06	DLM	0	0	0	0	0	3	0	0	0
07	FLT	0	0	0	0	11	0	0	0	0
08	FWI	0	0	0	0	0	0	2	0	0
09	GEO	0	1	0	0	0	0	0	0	0
10	LEC	0	0	0	0	0	0	0	0	0
11	PLB	0	0	0	0	0	0	0	0	0
12	STC	0	0	0	0	0	0	0	0	0
TOTAL COUNT		0	1	1	2	12	5	2	2	0

Total on site: 25

2012-09-25 Geotechnology [work hours not included in OSHA Log above] Exact count in daily reports, make note if on site.

NO.	COMPANY	SURVEYOR	TECHNICIAN	FOREMEN	OPERATORS	TEAMSTERS	LABORERS	PIPE FITTERS	ELECTRICIANS	IRON WRK
01	AAA	0	0	0	0	0	0	0	2	0
02	AMS	0	0	1	1	1	2	0	0	0
03	BCI	0	0	0	1	0	0	0	0	0
04	BTD	0	0	0	0	0	0	0	0	0
05	CHI	0	0	0	0	0	0	0	0	0
06	DLM	0	0	0	0	0	3	0	0	0
07	FLT	0	0	0	0	11	0	0	0	0
08	FWI	0	0	0	0	0	0	0	0	0
09	GEO	0	1	0	0	0	0	0	0	0
10	LEC	0	0	0	0	0	0	0	0	0
11	PLB	0	0	0	0	0	0	0	0	0
12	STC	0	0	0	0	0	0	0	0	0
TOTAL COUNT		0	1	1	2	12	5	0	2	0

Total on site: 23

02 WORK HOURS AND OVERTIME

2012-10-01 OPEN: No issues. No change.

[01] Standard hours - 7:00 AM CT to 5:30 PM CT. Continue early start some subcontractors starting 06:00 AM CT [at borrow site] to get started. Trucks to begin later. Safety awareness will be diligent regarding the time period.

[02] AMS and FWI work this Saturday 09-29 to install DS temporary discharge line. Work completed.

2012-09-25 OPEN: No issues. No change.

[01] Standard hours - 7:00 AM CT to 5:30 PM CT. Continue early start some subcontractors starting 06:00 AM CT [at borrow site] to get started. Trucks to begin later. Safety awareness will be diligent regarding the time period.

[02] AMS and FWI scheduled to work this Saturday 09-29 to install DS temporary discharge line.

04 TRAILER - GENERAL CONDITIONS - COORDINATION - VEHICLES

2012-10-01 OPEN: No issues.

[01] M. Wagstaff to check if electric utility bill for trailers transferred to Miller Construction. In progress.

[02] DLM equipment on site - "4N1", hydro seeder, tractor, and straw blower.

2012-09-25 OPEN: No issues.

[01] M. Wagstaff to check if electric utility bill for trailers transferred to Miller Construction. In progress.

[02] GEO trailer to be removed around 10-19.

[03] AMS employee trailer off-site.

[04] DLM to bring equipment on site - "4N1", hydro seeder, and tractor.

07 PREVIOUS

01 SUBCONTRACTS

2012-10-01 OPEN - No issues.

2012-09-25 OPEN - No issues.

02 SUBMITTALS

2012-10-01 No Submittal log update issued.

[01] Item No. 21 - M. Wagstaff indicated review or geo roll inventory. In progress.

[02] M. Wagstaff meeting 09-25 with A. Ridgely [Lamac] to discuss record drawings. CLOSE

[03] R. Porter gathering information from subcontractors on record drawings. FWI delivered "red lines" 09-28.

[04] AMS subcontractors' to have close-out information to AMS by 09-28 deadline. No tax information received, AMS to close.

2012-09-25 No Submittal log update issued.

[01] Item No. 21 - M. Wagstaff indicated review or geo roll inventory. In progress.

[02] M. Wagstaff has meeting set up today [09-25] with A. Ridgely [Lamac] to discuss record drawings. Procedure is half-size drawings to be marked up by AMS send to GEO for review and secondary mark up for AER.

[03] R. Porter gathering information from subcontractors on record drawings. AAA input on 09-25.

[04] AMS requiring all subcontractors' to have close-out information to AMS by 09-28 deadline. In progress.

[05] Item No. 26 - No longer required due to material change of the PCP.

[06] Item No. 81 - No longer required as information submitted under other submittals [and approved].

08 MATERIAL

01 GENERAL

2012-10-01 OPEN - listing for materials that have potential to impact schedule.

[01] R. Porter reports FLT has 14x trucks hauling today 10-01 making good progress. Clay hauling projected completion for 10-02.

2012-09-25 OPEN - listing for materials that have potential to impact schedule.

[01] FLT current truck count for clay hauling down. Clay would have been done 09-26, but new date for clay hauling completion is 09-28 based on the weather. J. Denham involved with FLT to resolve. R. Porter indicated trucks working other areas.

09 ADJACENT PROPERTIES AND PCP LINE

01 GENERAL

2012-10-01 OPEN - No report.
 2012-09-25 OPEN - Discussion during Progress Meeting:
 (01) Additional field tile installed to be located on the record drawings.

10 QUALITY CONTROL

2012-10-01 No issues.
 (01) Patriot billing that STC is to combine to one large billing in progress.
 (02) M. Wagstaff to forward copies of files AMS indicated could not find internally. In progress.

2012-09-25 No issues.
 (01) P. Zinsious to researched Patriot billing, received only billing for hours, not analysis. Requested STC combine to one large billing.
 (02) P. Zinsious reported STC offered to bill GEO direct. M. Wagstaff indicated billing to go direct to GEO from STC non-issue.
 (03) Distribution and general discussion of AMS "Hutsonville APD Closure - Revision Matrix " HUT-APD-DWG-LST-2012-09-21-R0 relative EWO requests, and drawings associated with AER addenda. M. Wagstaff to forward copies of files AMS indicated could not find internally.

11 SCHEDULE REVIEW

2012-10-01 OPEN - Review of last planner by M. Wagstaff. [AID = Activity Identification, S = successor, P = Predecessor, D = Duration and day]
 (01) Rain date 4x last week.
 (02) Major changes commentary:
 (01) DS temporary discharge line operational [ref. new Item No. 15.1 below].
 (02) Punch list walk through date to be determined, tentative 10-08 or 10-09.
 (03) AID A4300 change LP to M. Wagstaff and AMS delete.
 (04) Operations transfer remains scheduled for 10-05.
 (03) All change were made to the LP sheet and full report submitted to AER. Below is highlight of changes/updates [alpha by LP]:

NO.	LAST PLANNER	AID	ACTIVITY NAME	RDU	START	FINISH	PERCENT	COMMENT
01	AMS-Porter	50a	Additional clay...			10/2/2012	95%	
02	AMS-Porter	196	Earthwork APD - fine grade			10/2/2012		
03	AMS-Wagstaff	A4300	Final As-built...					[see note above]
04	AMS-Zinsious	A4600	AMS as-built drawing mark-ups...				10/5/2012	
05	AMS-Zinsious	A4620	AMS submit O&M ...				10/5/2012	
06	AMS-Zinsious	217	Substantial Completion			10/9/2012		
07	AMS-Zinsious	219	Punch List - Walk...			10/9/2012		
08	AMS-Zinsious	220	Punch List Work		10/9/2012			
09	DLF-Ziliak	211	Ground cover - hydro...			10/5/2012	50%	
10	DLF-Ziliak	212	Ground cover - TRM or ECB			10/5/2012	50%	
11	FWI-Burch	316a	Extend temporary...				100%	
12	GEO-Saindon	11	Survey - APD - vegetative...		10/3/2012	10/5/2012		
13	GEO-Saindon	50b	Clay - certification (final)			10/8/2012		
14	LEC-Ridgely	15	Survey - APD - final (2nd half)			10/2/2012		

2012-09-25 OPEN - Review of last planner by M. Wagstaff. [AID = Activity Identification, S = successor, P = Predecessor, D = Duration and day]
 (01) Rain days - 4x last week for total 20xD
 (02) Major changes commentary:
 (01) AAA checked out Ash Pond C pumps with phase meter.
 (02) R. Porter spreadsheet with clay elevations relative Massmann survey.
 (03) General discussion on Massmann survey and Lamac survey, as differences at some points both surveyed. Massmann used pointed rod, and GEO indicated that most representative of area within a foot of the stake was used as guideline.
 (04) Add activity 10-15 "Finish Punch".
 (03) All change were made to the LP sheet and full report submitted to AER. Below is highlight of changes/updates [alpha by LP]:

NO.	LAST PLANNER	AID	ACTIVITY NAME	RDU	START	FINISH	PERCENT	COMMENT
01	AAA-King	124c	Install - DS Baro...			9/24/2012	100%	
02	AAA-King	318	PCP -PCR...			9/24/2012	100%	
03	AAA-King	312	PCS - East...				100%	
04	AAA-King	401	Testing of PCS wire...				100%	
05	AAA-King	400	Energize...				100%	
06	AAA-King	380	Install new Power cables...			9/20/2012	100%	
07	AAA-King	390	WPA to Disconnect...				100%	
08	AAA-King	279a	DS3 - Electrical wiring...			9/21/2012	100%	
09	AAA-King	385b	Release WPA to Energize Ash...		9/19/2012		100%	
10	AAA-King	390a	Release WPA to Energize New...		9/19/2012		100%	
11	AAA-King	390b	Commission Ash Pond C system		9/20/2012		100%	
12	AER-Wagstaff	A4350	Punch List Items Resolved			10/15/2012		
13	AMS-Porter	50a	Additional clay...		9/28/2012		85%	
14	AMS-Porter	183	Site Prep - CBS - restore...		10/5/2012			
15	AMS-Porter	196	Earthwork APD - fine grade			9/28/2012	85%	
16	AMS-Porter	198	Roadways - APD perimeter...			10/5/2012		
17	AMS-Porter	198a	Roadways - Plant			10/5/2012		

18	AMS-Porter	199	Roadways - PCS -			10/5/2012		
19	AMS-Zinsious	189	Clay placement - Work List...			10/5/2012		
20	AMS-Zinsious	217	Substantial Completion			10/5/2012		
21	AMS-Zinsious	219	Punch List - Walk...			10/5/2012		
22	AMS-Zinsious	220	Punch List Work		10/8/2012	10/12/2012		
23	AMS-Zinsious	221	De-mobilize		10/16/2012	10/17/2012		
24	DLF-Ziliak	210	Ground cover - mob...			9/24/2012	100%	
25	DLF-Ziliak	211	Ground cover - hydro...			10/5/2012		
26	DLF-Ziliak	212	Ground cover - TRM or ECB			10/5/2012	20%	
27	GEO-Saindon	11	Survey - APD - vegetative...		10/1/2012			
28	GEO-Saindon	11a	Survey - APD - vegetative...				100%	
29	GEO-Saindon	50b	Clay - certification (final)		10/2/2012	10/3/2012		
30	LEC-Ridgely	13	Survey - CBS - final grade		10/5/2012			
31	LEC-Ridgely	15	Survey - APD - final (2nd half)			9/28/2012		
32	LEC-Ridgely	15a	Survey - APD - final (1st half)			9/20/2012	100%	

12.0 COST AND BUDGET

02 AMS PAY APPLICATION - CHANGE REQUEST

2012-10-01	No issues. AMS to develop draft next pay-app.
2012-09-25	No issues.

12.1 EXTRA WORK ORDERS

GENERAL

2012-10-01	No issues.
2012-09-25	Distribution and general discussion of AMS "Hutsonville APD Closure - Basic EWO Report" HUT-APD-EWO-RPT-2012-09-12-RD.

15 EWO-15 FENCE ALIGNMENT

2012-10-01	OPEN - AMS to provide back-up information. In progress.
2012-09-25	OPEN - AMS to provide back-up information. In progress.

17 EWO-17 PAVED DITCH ALIGNMENT

2012-10-01	OPEN - Lamac to survey area, and provide information for delta between plan and new elevations for fill.
2012-09-25	OPEN - AMS to provide back-up information. In progress.

19 EWO-19 COMMISSIONING

2012-10-01	CLOSE - Work completed. Reference new Item No. 15.1 below.
2012-09-25	OPEN - M. Wagstaff approved 09-21.

20 EWO-20 ADDITIONAL RIP-RAP

2012-10-01	CLOSE - Work completed.
2012-09-25	OPEN - M. Wagstaff approved 09-21. Work in progress.

21 EWO-21 FIELD TILE LOCATION - LENGTH [was EWO-14]

2012-10-01	OPEN - AMS to provide back-up information. In progress.
2012-09-25	OPEN - Reviewed drawings and J. Craven sketch. AMS to further investigate information from BTd.

22 EWO-22 MECHANICAL CHANGES

2012-10-01	OPEN - AMS to provide back-up information. In progress.
2012-09-25	OPEN - AMS to provide specific backup information. Change are FWI piping, associated cost in other EWO.

23 EWO-23 CONCRETE CHANGES

2012-10-01	OPEN - AMS to provide back-up information. In progress.
2012-09-25	OPEN - AMS to provide specific backup information.

26 EWO-26 DS LID MODIFICATIONS FOR PIPING

2012-10-01	OPEN - AMS to provide written EWO request for processing.
2012-09-25	OPEN - AMS to provide written EWO request for processing.

28 EWO-28 TAX EXEMPTION

2012-10-01	CLOSE - No response from subcontractors. AMS to provide notice and documentation.
2012-09-25	OPEN - Close-out after Friday 09-28.

13	ACTION ITEMS - AER [25]		
01	AMEREN [AER]		
2012-10-01	[01]	J. King indicated after meeting with L. Chambers on site, will forward spreadsheet of electrical panel description tags.	
2012-09-25	[01]	J. King request spreadsheet of electrical panel description tags.	

14	ACTION ITEMS - AMS [21]		
01	ASH MANAGEMENT [AMS]		
2012-10-01		No report.	
2012-09-25		No report.	

15	PRODUCTION		
03	CLAY		
2012-10-01		OPEN - no issues [01] Placement as of today [10-01] is no change from 147,510 CY last week due to weather delay - rain days. [02] FLT hauling today [10-01].	
2012-09-25		OPEN - no issues [01] Placement as of 09-24 is 147,510 CY. [02] Additional clay to be placed to make grade elevations [ref. above 08.01.2012-08-28.03] in progress.	

15.1	CLOSE OUT		
01	START UP AND COMMISSION		
2012-10-01		NEW [01] Cable to Baro Mini Diver 502 at DS-3 not operational. FWI to obtain replacement before Friday meeting. [02] DS temporary discharge line in place. Line secure. Pumps operational, no issues. [03] Operation of the pumps per plan 24/7 until Friday 10-05, which determination will be made by Ameren if necessary to continue.	

16	DOCUMENTS TRANSMITTED		
2012-10-01	[01]	AER - Last Planner schedule - Current date 09-26 - Data date 09-26	
2012-09-25	[01]	AER - Last Planner schedule - Current date 09-20 - Data date 09-18.	
	[02]	AMS "Hutsonville APD Closure - Basic EWO Report" HUT-APD-EWO-RPT-2012-09-12-R0	
	[03]	AMS "Hutsonville APD Closure - Revision Matrix " HUT-APD-DWG-LST-2012-09-21-R0	

17	DOCUMENTS REVIEW ONLY		
2012-10-01		None.	
2012-09-25	[01]	GEO - "Field Tile Plan Layout-R1_JRC" second page [copy to P. Zinsious]	
	[02]	R. Porter spreadsheet with clay elevations relative Massmann survey.	

18	MEETING SCHEDULE				
2012-10-01	Schedule for upcoming meetings:				
NOTE>>>>>>>	[01]	AMS-AER Operations Transfer	Friday	October 5, 2012	Confirmed.
	[02]	Punch List Walkthrough	TBD	TBD	Possible 10-08, or 10-09.
	[03]	Progress Meeting	Monday	October 15, 2012	Day earlier than normal schedule.
	[04]	Lesson Learned	TBD		
2012-09-25	Schedule for upcoming meetings:				
	[01]	Progress Meeting	Monday	October 1, 2012	Day earlier than normal schedule.
	[02]	AMS-AER Operations Transfer	Friday	October 5, 2012	Confirmed.
	[03]	NO MEETING THIS WEEK	Tuesday	October 8, 2012	
	[04]	Progress Meeting	Monday	October 15, 2012	Day earlier than normal schedule.
	[05]	Lesson Learned	TBD		

19	DISTRIBUTION - STANDARD		
	AER	SUBCONTRACTORS	
01	Mr. Mike Wagstaff	01	S. Tinchler AAA
02	Mr. Mike Stewart	02	M. Burch FWI
03	Mr. Bob Muesenfechter	03	T. Boyer BTD
04	Mr. Steve Bluemner	04	T. Hunt STC
	GEO		
01	Ms. Anna Saindon		
02	Mr. Eric Neuner		
03	Mr. Joe Cravens		
	AMS		
01	Mr. Jimmy Boone		
02	Mr. John Denham		
03	Mr. Joko Tasich		
04	Mr. Randy Porter		

If there are any corrections, modifications, additions, or deletions please notify the sender by e-mail at pzinsious@ashmanagementservices.com

PHOTOGRAPH LOG



Photograph 1 ▲ - Vegetative cover placement facing north



Photograph 2 ▲ - Aerating slope diversion berms facing southwest

All photographs taken by Joseph Cravens of Geotechnology, Inc. between October 1 and October 5, 2012.

JRC



Photograph 3 ▲ - Groundwater collection system pump commissioning facing southeast



Photograph 4 ▲ - Groundwater collection system pump commissioning facing southwest

All photographs taken by Joseph Cravens of Geotechnology, Inc. between October 1 and October 5, 2012.

JRC



Photograph 5 ▲ - Installing erosion control blankets on berms facing east



Photograph 6 ▲ - Installing erosion control blankets on berms facing northeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between October 1 and October 5, 2012.

JRC



Photograph 7 ▲ - Straw mulch placement facing south



Photograph 8 ▲ - Gravel surfacing for new access road facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between October 1 and October 5, 2012.



Photograph 9 ▲ - Straw mulch placement facing northeast



Photograph 10 ▲ - Overview of Ash Pond D facing south

All photographs taken by Joseph Cravens of Geotechnology, Inc. between October 1 and October 5, 2012.



Photograph 11 ▲ - Overview of Ash Pond D facing south



Photograph 12 ▲ - Overview of Ash Pond D facing south

All photographs taken by Joseph Cravens of Geotechnology, Inc. between October 1 and October 5, 2012.

JRC



Photograph 13 ▲ - Overview of Ash Pond D facing east



Photograph 14 ▲ - Overview of Ash Pond D facing southeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between October 1 and October 5, 2012.

JRC



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Energy Resources

FROM: Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DATE: October 18, 2012

SUBJECT: Weekly Summary Report for October 8, 2012 to October 13, 2012

PROJECT: Hutsonville Ash Pond D Closure
Crawford County, Hutsonville, Illinois
Geotechnology Project No. J019896.01

The following is a weekly summary of the site activities at the referenced site.

Weather

The weather was generally clear and sunny. Temperature (°F) lows ranged from 31 to 50°F, and temperature highs ranged from 55 to 74°F. Weather delays did not occur this week.

Construction Activities

The following activities occurred this week: roadway restoration and gravel surfacing, repairing impacts from storm events, performing tasks on the punch list, electrical installations, and surveying. Ash Management Services, LLC and Belt Construction, Inc. completed roadway restoration, construction of plant access roads, addressed impacts from storm events, and performed tasks from the punch list. AAA Electric, Inc. installed the engraved nameplates for the electrical components for the groundwater collection system and resistors for the Omega flowmeter readouts. Massmann Surveying completed surveying the new and modified site features for the as-built construction drawings. Refer to the daily reports for detailed information.

Equipment and Personnel On-Site

CAT D6N Bulldozer
CAT CS-323C Smooth Drum Roller
Case 580 Backhoe
Water Truck (Dust Control)

Geotechnology, Inc. – Joe Cravens
Ash Management Services, LLC (AMS) – Randy Porter, Robert Dunkley, Brad Bolenbaugh,
Greg Siverly, Jeremy Shorter, and Blake Bunting
Charah, Inc. – Joe Tasich
Belt Construction, Inc. (BCI) – Jared Belt
AAA Electric, Inc. (AAA) – Joseph King
Massmann Surveying – Rick Kopac
Visitors – Refer to the Visitor's Log for visitors, dates, and times.
Refer to the meeting minutes for additional personnel.

Meetings

The weekly progress meeting was held on Tuesday, October 9, 2012. Refer to the attached meeting minutes for additional information.

Photographs

A photograph log with select photographs obtained this week is attached.

Materials

The following materials were delivered this week: IDOT CA-6 aggregate.

Testing/Sampling

Testing and sampling did not occur this week.

Calibration Records

Calibration information was not obtained this week.

Signature of CQA Officer



Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DAILY REPORTS

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 10/8/12

TIME: Arrive: 6:00 AM Depart: 6:00 PM Travel: 1.0 hr Total: * 12.75 hrs (0.25 hr for lunch)
Weather: Sunny, 31° AM, 60° PM Contractor: AMS Subcontr./Supplier: BCI
Equipment Working: D6N Dozer, 580 Backhoe
Site Activities / Observations / Contacts / Notes: —

AMS/BCI:

Continued removing washed out material in paved ditch and performed final grading of the plant entrance and access roads. Continued roadway improvement / gravel surfacing for the existing roadway south of Ash Pond D along the south property line. Disposed excess materials in the construction yard. Tightened all the bolts/nuts on the aluminum hatches for the DG manholes. Completed installing the rodent guards in the anchor trench outlet toe drains for Ash Pond D. Delivery - CA-6.

Additional Comments: * +2 hrs for As-Built Drawings
Total = 14.75 hrs

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

Randy Peter
Contractor Representative
Signature Anna Scindora
Geotechnology, Inc.
Engineer's Signature
Company AMS
Date 10-8-12
Date 10-15-12

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: - Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: - Client: Ameren ER Date: 10/9/12

TIME: Arrive: 6:30 AM Depart: 5:45 PM Travel: 1.0 hr Total: 12.25 hrs ^(no lunch)
Weather: Sunny, 39° AM, 67° PM Contractor: AMS Subcontr./Supplier: BCI, AAA
Equipment Working: D6N Dozer, 580 Backhoe, Water Truck
Site Activities / Observations / Contacts / Notes: _____

AMS/BCI:

Continued disposing of excess materials in the construction yard and stockpiling materials to remain. Completed removing washed out material from the paved ditch. Placed rip rap on the south side of the east pump control panel to mitigate erosion of the panel's gravel pad. Cleaned all cap vents/protective rings across Ash Pond D. Began dressing the rip rap wall along the paved gutter and removing excess lathe stakes from Ash Pond D.

AAA:

Completed installing all the engraved nameplates for the new electrical devices, drilled holes in the bottom of the west and east pump control panel junction boxes for drainage, and completed wiring and mounting the Omega DPF75 totalizers. Note: a 1/4 Watt, 2000 ohm resistor will have to be added to the totalizers to read flow properly.

Pumps:

All four pumps were turned back on, and the Diver data was downloaded. The temporary discharge line will remain in place.

Additional Comments: * +1.25 hrs for Manual
Total = 13.5 hrs

Randy Poeter
Contractor Representative

Signature Hana Swindon
Geotechnology, Inc.
Engineer's Signature

AMS
Company 10-9-12
Date 10-15-12
Date

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: — Client: Ameren ER Date: 10/10/12

TIME: Arrive: 6:30 AM Depart: 7:15 PM Travel: 1.0 hr Total: *13.5 hrs (0.25 hr for lunch)
 Weather: Sunny, 48° AM, 55° PM Contractor: AMS Subcontr./Supplier: BCI, MMS
 Equipment Working: D6N Dozer, 580 Backhoe, Water Truck, CS-323C Roller
 Site Activities / Observations / Contacts / Notes: —

AMS/BCI:

Cleaned the paved gutter and paved ditch by utilizing the water truck. Watered the embankments of Ash Pond D to promote vegetative growth. Fixed ruts across the vegetative cover from seeding and mulching. Completed dressing rip rap wall along the paved gutter. Gravel surfacing on the east side of Ash Pond D, the north/south access road on the west side of Ash Pond D, and the access road from the pump house to Ash Pond D. Removed remaining lathe stakes from the vegetative cover. Flushed out clogged anchor trench outlet toe drains on the east side of Ash Pond D. Began compacting gravel surface with a smooth drum roller.

MMS:

Rick Kopac finished surveying the new and modified site features for the as-built construction drawings.

Additional Comments: * 11 hrs for Site Activities
1.75 hrs for Manual

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

<p><u>Randy Postel</u></p> <p>Contractor Representative</p> <p>Signature <u>Anna Saldon</u></p> <p>Geotechnology Inc.</p> <p>Engineer's Signature</p>	<p><u>AMS</u></p> <p>Company <u>10-10-12</u></p> <p>Date <u>10-15-12</u></p> <p>Date</p>
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FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
 Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
 Vehicle: 4103 Zone: — Client: Ameren ER Date: 10/11/12

TIME: Arrive: 6:15 AM Depart: 8:45 PM Travel: 1.0 hr Total: 15.25 hrs ^(0.25 hr for lunch)
 Weather: Sunny, 35° AM, 68° PM Contractor: AMS Subcontr./Supplier: BCI
 Equipment Working: D6N Dozer, CS-323C Roller, Water Truck
 Site Activities / Observations / Contacts / Notes: _____

AMS/BCI:

Watered the embankments of Ash Pond D to promote vegetative growth. Installed confined space entry signs on the tops of the DS manholes. Flagged the fence post marking the tee for the field tile across the south property line. Continued gravel surfacing on the south and east side of Ash Pond D, the north/south access road on the west side of Ash Pond D, and the access road from the pump house to Ash Pond D.

Additional Comments: * 12.25 hrs for Site Activities
2.25 hrs for Manual

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

Randy Postel
 Contractor Representative
Anna Saindon
 Signature
 Geotechnology, Inc.
Anna Saindon
 Engineer's Signature

AMS
 Company
10-11-12
 Date
10-15-12
 Date

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 10/12/12

TIME: Arrive: 6:15 AM Depart: 10:15 PM Travel: 1.0 hr Total: 16.75 hrs (* 0.25 hr for lunch)
Weather: Sunny, 41° AM, 65° PM Contractor: AMS Subcontr./Supplier: BCI
Equipment Working: D6N Dozer, CS-323C Roller, 35D Mini Excavator, Water Truck
Site Activities / Observations / Contacts / Notes: —

AMS/BCI:

Completed roadway improvement / gravel surfacing for the south and east access roads, east pump control panel access road, and the plant entrance and access roads. Cut and removed excess fabric from the geotextile, turf reinforcement mat, and erosion control blanket across Ash Pond D. Continued fixing ruts on the vegetative cover from the seeding and mulching. Mobilized John Deere 35 D Mini Excavator.

Additional Comments: * 12.75 hrs for Site Activities
3.25 hrs for Manual

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

Landy Pieler

Contractor Representative

Signature Anna Sainden

Geotechnology, Inc.

Engineer's Signature

Company

10-12-12

Date

10-15-12

Date

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: JO19896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 10/13/12

TIME: Arrive: 6:30 AM Depart: 5:30 PM Travel: 1.0 hr Total: 11.75 hrs ^{*} (0.25 hr for lunch)
Weather: Sunny, 50° AM, Cloudy, 74° PM Contractor: AMS Subcontr./Supplier: None
Equipment Working: 580 Backhoe, CS-323C Roller, 35D Mini Excavator, Water Truck
Site Activities / Observations / Contacts / Notes: —

AMS:
Completed fixing ruts on the vegetative cover. Grouted the floor of the collector box to promote drainage to the outlet pipe from the sump discharge pipes. Installed a confined space entry sign on the collector box. Dressed rip rap on the new site features. Removed all supplies from the storm shelter. Began demobilizing materials from the site.

Additional Comments: * 10.75 hrs for Site Activities
1.0 hr for Manual

Randy Foelke AMS
Contractor Representative Company 10-13-12
Signature Anna Saindon Date 10-15-12
Geotechnology, Inc. Date
Engineer's Signature Anna Saindon

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

MEETING MINUTES



Hutsonville Power Station - Ash Pond D Closure
Progress Meeting No. 30 Minutes
Tuesday, October 9, 2012

01 PUBLICATION				
Publish date:	2012-10-15	Submitted by:	PHZ	
Distribution:	E-mail only	Notes taken by:	PHZ	
Location:	Hutsonville Power	AMS-Charah File No.	HUT-APD-MTG-MIN-2012-10-09-PM-30	
AER PO:	567523 R4	AMS-Charah Contract:	00030-01	AMS-Charah (4116-06-6120)

02 ATTENDEES [ALPHA BY COMPANY]						
NO.	SAL	FIRST	LAST	COMPANY	PHONE	E-MAIL
01	Mr.	Mike	Wagstaff	Ameren	618-406-3478	mwagstaff@ameren.com
03	Mr.	Paul	Zinsious	AMS - PCM	502-640-2918	pzinsious@ashmanagementservices.com
04	Mr.	Randy	Porter	AMS - SM	502-554-5230	rporter@ashmanagementservices.com
05	Mr.	Joko	Tasich	Charah	502-649-7633	jtasich@charah.com
06	Ms.	Anna	Saindon	Geotechnology	314-997-7440	a_saindon@geotechnology.com
07	Mr.	Joe	Cravens	Geotechnology	314-568-6628	j_cravens@geotechnology.com

03 ABBREVIATIONS				
AER	Ameren Energy Resources		OSHA	Occupational Safety Health Administration
AMS	Ash Management Services		PCP	Perforated Collector Pipe
BNSF	Burlington		PO	Purchase Order
CBT	Computer Based Training		RHOM	Routine Handling, Operation, and Maintenance
EAP	Emergency Action Plan		SPOC	Single Point
EOD	End of [the] Day		T/M	Time and
EOM	End of [the] month		TBD	To Be
EOW	End of [the] week		TD	Transmission Dispatch
EDTS	Energy Delivery Transmission Services		WPA	Worker Protection Assurance
EDC	Estimated Date [of] Completion			
EWO	Extra Work Order			
HDPE	High Density Polyethylene			
HRS	Hours			
LOTO	Lock Out Tag Out			
NMA	National Maintenance Agreement			

04 DOCUMENTATION	
Minutes are documented weekly, and the publication have a "rolling record" of the immediate past two weeks. Each week the oldest drops off and the current week is added to the minutes. Items are categorized as either "NEW", "OPEN", "CLOSE", or in case the an Item has to be re-published after closed the previous week - "REOPEN". Minutes format changed for Progress Meeting No. 13 deleting and combining certain items for brevity and to abbreviate documentation. Currently the item numbers remained the same for tracking purposes.	

05 SAFETY - HOUSEKEEPING	
02 WORKER PROTECTION ASSURANCE	
2012-10-09	OPEN: [01] None [02] Pumps to be turned on today [01-09] no WPA required.
2012-10-01	OPEN: [01] AMS removed LOTO at Collector Box for DS temporary discharge [ref. new Item No. 15.1 below]. [02] AAA monitoring operation of pumps for start-up. [03] No future WPA's projected.
03 EMPLOYEE DRUG TESTING	
2012-10-09	OPEN: [01] None projected.
2012-10-01	OPEN: [01] None projected. [02] DLM had 4x workers tested today [10-01], and results negative.
04 AMS SAFETY	
2012-10-09	[01] J. Tasich on site - observations and commentary: [01] No safety issues. [02] General awareness. [03] Focus on not being complacent during close-out process. [04] General discussion for Charah cell phone and electronic use policy. [02] Continuing daily effort to silence fire pump system alarm at the plant until AER personnel reset the system due to WPA.

2012-10-01 [01] J. Tasich on site - observations and commentary:
 [01] No safety issues.
 [02] Clay hauling truck operations going well.
 [03] Observed good communications between laborers [spotters] and dozer operators.
 [04] Performed site specific training for 4x workers for DLM.
 [05] Tentative next site visit schedule -10-15 possibly for close out.
 [06] Site drying up. DLM operations brought 2x tractors on site.
 [02] Continuing effort to silence the fire pump system alarm at the plant periodically until AER personnel reset the system due to WPA.

05 HOUSEKEEPING

2012-10-09 OPEN: No issues.
 [01] Continuing picking up trash and clean-up for demobilization.
 [02] Clean-up of streets in progress.
 [03] R. Porter reports - appears transmission subcontractor using APD Closure temporary toilets.
 2012-10-01 OPEN: No issues.
 [01] R. Porter to schedule moving excess fence material.
 [02] During cleanup at de-mobilizing, AMS will wash streets one-time when leaving site.
 [03] R. Porter reports - appears transmission subcontractor concrete truck washed out at entrance to plant. AMS has washed out at close proximity to the Ash Pond D and placed the concrete in a dumpster to haul off site.

06 PLANT ACCESS - CBT BADGE

2012-10-09 OPEN: No issues.
 [01] General discussion on site security.
 [01] Guard stationed on site on 24/7 now.
 2012-10-01 OPEN: No issues.
 [01] General discussion on site security.
 [01] Guard stationed on site on 5D x 8HRS continues.
 [02] When on site Saturday R. Porter indicated no guard was present.
 [03] M. Wagstaff to investigate the situation, and forward MM to B. Simmons [AER] in progress.

08 OSHA LOG - WORK HOURS

2012-10-09 OPEN - total all hours [including subcontractors]
 No incidents or accidents.
 10,113.00 RT
 2,015.50 OT
12,128.50 TOTAL
 2012-10-01 OPEN - total all hours [including subcontractors] [Point of clarification: Hours are to start of today 10-01 due to meeting change].
 No incidents or accidents.
 9,900.00 RT
 1,964.00 OT
11,864.00 TOTAL

06 MANPOWER [HEAD COUNT]

01 CREW SIZE [Alpha by Company]

2012-10-09 AMS laid off 1x laborer project close-out.

2012-10-09 Geotechnology [work hours not included in OSHA Log above] Exact count in daily reports, make note if on site.

NO.	COMPANY	SURVEYOR	TECHNICIAN	FOREMEN	OPERATORS	TEAMSTERS	LABORERS	PIPE FITTERS	ELECTRICIANS	IRON WRK
01.	AAA	0	0	0	0	0	0	0	1	0
02	AMS	0	0	1	1	1	2	0	0	0
03	BCI	0	0	0	1	0	0	0	0	0
04	BTD	0	0	0	0	0	0	0	0	0
05	CHI	0	0	0	0	0	0	0	0	0
06	DLM	0	0	0	0	0	3	0	0	0
07	FLT	0	0	0	0	14	0	0	0	0
08	FWI	0	0	0	0	0	0	1	0	0
09	GEO	0	2	0	0	0	0	0	0	0
10	LEC	0	0	0	0	0	0	0	0	0
11	PLB	0	0	0	0	0	0	0	0	0
12	STC	0	0	0	0	0	0	0	0	0
TOTAL COUNT		0	2	1	2	15	5	1	1	0

Total on site: 27

2012-10-01 Geotechnology [work hours not included in OSHA Log above] Exact count in daily reports, make note if on site. Last week 4x rain days.

NO.	COMPANY	SURVEYOR	TECHNICIAN	FOREMEN	OPERATORS	TEAMSTERS	LABORERS	PIPE FITTERS	ELECTRICIANS	IRON WRK
01	AAA	0	0	0	0	0	0	0	2	0
02	AMS	0	0	1	1	1	2	0	0	0
03	BCI	0	0	0	1	0	0	0	0	0
04	BTD	0	0	0	0	0	0	0	0	0
05	CHI	0	0	0	0	0	0	0	0	0
06	DLM	0	0	0	0	0	3	0	0	0
07	FLT	0	0	0	0	11	0	0	0	0
08	FWI	0	0	0	0	0	0	2	0	0
09	GEO	0	1	0	0	0	0	0	0	0
10	LEC	0	0	0	0	0	0	0	0	0
11	PLB	0	0	0	0	0	0	0	0	0
12	STC	0	0	0	0	0	0	0	0	0
TOTAL COUNT		0	1	1	2	12	5	2	2	0

Total on site: 25

02 WORK HOURS AND OVERTIME

2012-10-09 OPEN: No issues.

[01] Standard hours - 7:00 AM CT to 3:30 PM CT. Overtime reduced unless required as of 10-08.

2012-10-01 OPEN: No issues. No change.

[01] Standard hours - 7:00 AM CT to 5:30 PM CT. Continue early start some subcontractors starting 06:00 AM CT [at borrow site] to get started. Trucks to begin later. Safety awareness will be diligent regarding the time period.

[02] AMS and FWI work this Saturday 09-29 to install DS temporary discharge line. Work completed.

04 TRAILER - GENERAL CONDITIONS - COORDINATION - VEHICLES

2012-10-09 OPEN: No issues.

[01] AMS to pull [small office] trailer next week.

[02] Power to trailers to be disconnected.

[03] M. Wagstaff to check if electric utility bill for trailers transferred to Miller Construction. In progress.

2012-10-01 OPEN: No issues.

[01] M. Wagstaff to check if electric utility bill for trailers transferred to Miller Construction. In progress.

[02] DLM equipment on site - "4N1", hydro seeder, tractor, and straw blower.

07 PREVIOUS

01 SUBCONTRACTS

2012-10-09 OPEN - No issues.

2012-10-01 OPEN - No issues.

02 SUBMITTALS

2012-10-09 Submittal log update issued.

[01] GEO - Marked up original of AMS record drawings dated 2012-10-08 [blue ink] to M. Wagstaff only. P. Zinsious request scan copy.

[02] Insert to Item No. 73 for AAA OM submittal. Should have 10-13.

[03] M. Wagstaff to send Baro software info back to P. Zinsious.

[04] Flow totalizer submittal AMS 036-02 logged in OM manual.

[05] M. Wagstaff to send tag information as sent to L. Chambers by AAA back to P. Zinsious.

2012-10-01 No Submittal log update issued.

[01] Item No. 21 - M. Wagstaff indicated review or geo roll inventory. In progress.

[02] M. Wagstaff meeting 09-25 with A. Ridgely [Lamac] to discuss record drawings. CLOSE

[03] R. Porter gathering information from subcontractors on record drawings. FWI delivered "red lines" 09-28.

[04] AMS subcontractors' to have close-out information to AMS by 09-28 deadline. No tax information received, AMS to close.

08 MATERIAL

01 GENERAL

2012-10-09 OPEN - listing for materials that have potential to impact schedule.

[01] GEO requested the sign-off for contractor acceptance of line for clay placement. R. Porter to sign for AMS and scan.

[02] AMS to receive 1x roll IDOT 8oz geotextile on site 10-10 to finish the roadway.

[03] A. Saindon indicated one more CQA certification due, for the final survey, should have 10-10.

[04] FLT work complete [as clay hauling done].

2012-10-01 OPEN - listing for materials that have potential to impact schedule.

[01] R. Porter reports FLT has 14x trucks hauling today 10-01 making good progress. Clay hauling projected completion for 10-02.

09 ADJACENT PROPERTIES AND PCP LINE

01 GENERAL

2012-10-09 OPEN - Discussion during Progress Meeting:
 [01] J. Cravens reports post for field tile location to be better delineated.
 [02] All work finished on Wampler property.

2012-10-01 OPEN - No report.

10 QUALITY CONTROL

2012-10-09 No issues.
 [01] M. Wagstaff to forward copies of files AMS indicated could not find internally. In progress.
 [02] P. Zinsious to investigate closing SWP3.
 [03] Patriot billing that STC is to combine to one large billing in progress to less than \$ 4K.
 [04] P. Zinsious to look into 28D break information.

2012-10-01 No issues.
 [01] Patriot billing that STC is to combine to one large billing in progress.
 [02] M. Wagstaff to forward copies of files AMS indicated could not find internally. In progress.

11 SCHEDULE REVIEW

2012-10-09 OPEN - Review of last planner by M. Wagstaff. [AID = Activity Identification, S = successor, P = Predecessor, D = Duration and day]
 [01] Rain days - 10-03
 [02] Major changes commentary:
 [01] AID A4300 LP change to LEC-Ridgely
 [02] Project date of Substantial Completion 10-09.

NO.	LAST PLANNER	AID	ACTIVITY NAME	RDU	START	FINISH	PERCENT	COMMENT
02	LEC-Ridgely	13	Survey - CBS - final grade			10/12/2012		
03	LEC-Ridgely	15	Survey - APD - final (2nd half)			10/5/2012		
04	AMS-Porter	183	Site Prep - CBS - restore...			10/12/2012		
06	AMS-Porter	196	Earthwork APD - fine grade			10/4/2012		
07	AMS-Porter	198	Roadways - APD perimeter...			10/12/2012		
08	AMS-Porter	199	Roadways - PCS -			10/12/2012		
10	DLF-Ziliak	211	Ground cover - hydro...				100%	
11	DLF-Ziliak	212	Ground cover - TRM or ECB				100%	
12	AMS-Zinsious	217	Substantial Completion				100%	
13	AMS-Zinsious	A4620				10/12/2012		
14	AMS-Zinsious	A4600					100%	
15	AER-Wagstaff	A1900			10/16/2012			
16	AER-Wagstaff	A1880	Lessons Learned..		10/16/2012			
01	AMS-Porter	50a	Additional clay...			10/4/2012		
13	GEO-Saindon	50b	Clay - certification (final)			10/10/2012		
23	AMS-Zinsious	218	Commission APD Pump Station				100%	
25	AMS-Porter	198a	Roadways - Plant			10/12/2012		
26	FWI-Burch	HPA1030	Remove temporary...			12/3/2012		

2012-10-01 OPEN - Review of last planner by M. Wagstaff. [AID = Activity Identification, S = successor, P = Predecessor, D = Duration and day]
 [01] Rain date 4x last week.
 [02] Major changes commentary:
 [01] DS temporary discharge line operational [ref. new Item No. 15.1 below].
 [02] Punch list walk through date to be determined, tentative 10-08 or 10-09.
 [03] AID A4300 change LP to M. Wagstaff and AMS delete.
 [04] Operations transfer remains scheduled for 10-05.
 [03] All change were made to the LP sheet and full report submitted to AER. Below is highlight of changes/updates [alpha by LP]:

NO.	LAST PLANNER	AID	ACTIVITY NAME	RDU	START	FINISH	PERCENT	COMMENT
01	AMS-Porter	50a	Additional clay...			10/2/2012	95%	
02	AMS-Porter	196	Earthwork APD - fine grade			10/2/2012		
03	AMS-Wagstaff	A4300	Final As-built...					[see note above]
04	AMS-Zinsious	A4600	AMS as-built drawing mark-ups...				10/5/2012	
05	AMS-Zinsious	A4620	AMS submit O&M ...				10/5/2012	
06	AMS-Zinsious	217	Substantial Completion			10/9/2012		
07	AMS-Zinsious	219	Punch List - Walk...			10/9/2012		
08	AMS-Zinsious	220	Punch List Work		10/9/2012			
09	DLF-Ziliak	211	Ground cover - hydro...			10/5/2012	50%	
10	DLF-Ziliak	212	Ground cover - TRM or ECB			10/5/2012	50%	
11	FWI-Burch	316a	Extend temporary...				100%	
12	GEO-Saindon	11	Survey - APD - vegetative...		10/3/2012	10/5/2012		
13	GEO-Saindon	50b	Clay - certification (final)			10/8/2012		
14	LEC-Ridgely	15	Survey - APD - final (2nd half)			10/2/2012		

12.0	COST AND BUDGET	
02	AMS PAY APPLICATION - CHANGE REQUEST	
2012-10-09	Draft Pay Application No. 7 [HUT-APD-Pay-App-7-R0] to M. Wagstaff and J. Cravens for review [after meeting].	
2012-10-01	No issues. AMS to develop draft next pay-app.	
12.1	EXTRA WORK ORDERS	
	GENERAL	
2012-10-09	No issues.	
2012-10-01	No issues.	
15	EWO-15 FENCE ALIGNMENT	
2012-10-09	OPEN - AMS to provide back-up information. In progress.	
2012-10-01	OPEN - AMS to provide back-up information. In progress.	
17	EWO-17 PAVED DITCH ALIGNMENT	
2012-10-09	OPEN - AMS submitted. AER review. Additional review for existing to plan to revised grade.	
2012-10-01	OPEN - Lamac to survey area, and provide information for delta between plan and new elevations for fill.	
21	EWO-21 FIELD TILE LOCATION - LENGTH [was EWO-14]	
2012-10-09	CLOSE - non-issue.	
2012-10-01	OPEN - AMS to provide back-up information. In progress.	
22	EWO-22 MECHANICAL CHANGES	
2012-10-09	OPEN - AMS to provide back-up information. In progress.	
2012-10-01	OPEN - AMS to provide back-up information. In progress.	
23	EWO-23 CONCRETE CHANGES	
2012-10-09	OPEN - AMS submitted. AER review.	
2012-10-01	OPEN - AMS to provide back-up information. In progress.	
26	EWO-26 DS LID MODIFICATIONS FOR PIPING	
2012-10-09	OPEN - AMS submitted. AER review.	
2012-10-01	OPEN - AMS to provide written EWO request for processing.	
13	ACTION ITEMS - AER [25]	
01	AMEREN [AER]	
2012-10-09	[01] CLOSE - L. Chambers approved spreadsheet of electrical panel description tags per M. Wagstaff.	
2012-10-01	[01] J. King indicated after meeting with L. Chambers on site, will forward spreadsheet of electrical panel description tags.	
14	ACTION ITEMS - AMS [21]	
01	ASH MANAGEMENT [AMS]	
2012-10-09	No report.	
2012-10-01	No report.	
15	PRODUCTION	
03	CLAY	
2012-10-09	CLOSE - work completed.	
2012-10-01	OPEN - no issues	
	[01] Placement as of today [10-01] is no change from 147,510 CY last week due to weather delay - rain days.	
	[02] FLT hauling today [10-01].	
15.1	CLOSE OUT	
01	START UP AND COMMISSION	
2012-10-09	General discussion:	
	[01] Cable to Baro Mini Diver 502 at DS-3 not operational. CLOSE - wire installed.	
	[02] Check drawings for electrical box lock requirements.	
	[03] DS temporary discharge line to remain in place, Ameren to remove at their discretion.	
	[04] Distributed AMS - "Hutsonville Power Station - Ash Pond D Closure - Status Report - Turnover" dated 2012-10-05	
	[05] Omega totalizer to be reviewed today [10-09] by AER for operation.	
	[06] Reviewed both AER and AMS punch list documents, Punch List to be completed 10-16:	
	[01] AER - "Hutsonville Ash Pond D Closure: Project Completion - Punch List Field Items - October 2012"	
	[02] AMS - "Hutsonville Ash Pond D Closure - Punch List - AMS Remaining Work" HUT-APD-PNCH-LST-2012-10-08-R0	
	[07] Record drawings for DS vents West control Panel had DS-1, and DS-2. East Control Panel has DS-3, DS-4 and CO-3. CO-4 independent.	
	[08] Operation of the pumps per AER.	
2012-10-01	NEW	
	[01] Cable to Baro Mini Diver 502 at DS-3 not operational. FWI to obtain replacement before Friday meeting.	
	[02] DS temporary discharge line in place. Line secure. Pumps operational, no issues.	
	[03] Operation of the pumps per plan 24/7 until Friday 10-05, which determination will be made by Ameren if necessary to continue.	

16 DOCUMENTS TRANSMITTED

2012-10-09 [01] AER - Last Planner schedule - Current date 10-03 - Data date 10-02.
 [02] AER - "Hutsonville Ash Pond D Closure: Project Completion - Punch List Field Items - October 2012"
 [03] AMS - "Hutsonville Ash Pond D Closure - Punch List - AMS Remaining Work" HUT-APD-PNCH-LST-2012-10-08-R0
 [04] GEO - "Submittal Log - Hutsonville Power Station Ash Pond Closure" dated WE 2012-10-13
 [05] GEO - Marked up original of AMS record drawings dated 2012-10-08 [blue ink] to M. Wagstaff only.
 [06] AMS - "Hutsonville Power Station - Ash Pond D Closure - Status Report - Turnover" dated 2012-10-05
 [07] AMS - Pay Application No. 7 [HUT-APD-Pay-App-7-R0] to M. Wagstaff and J. Cravens for review [after meeting].

2012-10-01 [01] AER - Last Planner schedule - Current date 09-26 - Data date 09-26

17 DOCUMENTS REVIEW ONLY

2012-10-09 None.
 2012-10-01 None.

18 MEETING SCHEDULE

2012-10-09 Schedule for upcoming meetings:

[01] Progress Meeting	Monday	October 16, 2012
[02] Lesson Learned	TBD	

2012-10-01 Schedule for upcoming meetings:

[01] AMS-AER Operations Transfer	Friday	October 5, 2012	Confirmed.
[02] Punch List Walkthrough	TBD	TBD	Possible 10-08, or 10-09.
[03] Progress Meeting	Monday	October 15, 2012	Day earlier than normal schedule.
[04] Lesson Learned	TBD		

NOTE>>>>>>>

19 DISTRIBUTION - STANDARD

AER	SUBCONTRACTORS	
01 Mr. Mike Wagstaff	01 S. Tincher	AAA
02 Mr. Mike Stewart	02 M. Burch	FWI
03 Mr. Bob Muesenfechter	03 T. Boyer	BTD
04 Mr. Steve Bluemner	04 T. Hunt	STC
GEO		
01 Ms. Anna Salndon		
02 Mr. Eric Neuner		
03 Mr. Joe Cravens		
AMS		
01 Mr. Jimmy Boone		
02 Mr. John Denham		
03 Mr. Joko Tasich		
04 Mr. Randy Porter		

If there are any corrections, modifications, additions, or deletions please notify the sender by e-mail at pzinsious@ashmanagementservices.com

PHOTOGRAPH LOG



Photograph 1 ▲ - Cleaning paved ditch facing northeast



Photograph 2 ▲ - Cleaned paved gutter facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between October 8 and October 13, 2012.

JRC



Photograph 3 ▲ - Restoration of plant access roads facing west



Photograph 4 ▲ - Confined entry sign on manhole facing west



Photograph 5 ▲ - Restored plant access roads facing northeast



Photograph 6 ▲ - Repairing ruts on vegetative cover facing northeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between October 8 and October 13, 2012.

JRC



Photograph 7 ▲ - Overview of Ash Pond D facing southeast



Photograph 8 ▲ - Overview of Ash Pond D facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between October 8 and October 13, 2012.

JRC



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Energy Resources

FROM: Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DATE: October 19, 2012

SUBJECT: Weekly Summary Report for October 15, 2012 to October 17, 2012

PROJECT: Hutsonville Ash Pond D Closure
Crawford County, Hutsonville, Illinois
Geotechnology Project No. J019896.01

The following is a weekly summary of the site activities at the referenced site.

Weather

The weather was generally clear and sunny, with periods of cloudy skies. Temperature (°F) lows ranged from 49 to 53°F, and temperature highs ranged from 65 to 76°F. Weather delays did not occur this week.

Construction Activities

The following activities occurred this week: tasks on the punch list, electrical work, and demobilization. AAA Electric, Inc. completed final wiring of the groundwater collection system and installed locks for the electrical components of the system. Ash Management Services, LLC completed the tasks on the punch list. Equipment, materials, and job trailers were demobilized. Refer to the daily reports for detailed information.

The leaning power poles for groundwater collection system have not been repaired. This will be repaired at a later date and Ash Management Services, LLC will be present for the repairs.

Equipment and Personnel On-Site

CAT CS-323C Smooth Drum Roller
Case 580 Backhoe
Water Truck (Dust Control)

Geotechnology, Inc. – Joe Cravens
Ash Management Services, LLC (AMS) – Randy Porter, Brad Bolenbaugh, and Blake Bunting
Belt Construction, Inc. (BCI) – Jared Belt
AAA Electric, Inc. (AAA) – Joseph King
Visitors – Refer to the Visitor's Log for visitors, dates, and times.
Refer to the meeting minutes for additional personnel.

Meetings

The weekly progress meeting was held on Tuesday, October 16, 2012. Refer to the attached meeting minutes for additional information.

Photographs

A photograph log with select photographs obtained this week is attached.

Materials

The following materials were delivered this week: Western Excelsior Double-Net Straw Blanket.

Testing/Sampling

Testing and sampling did not occur this week.

Calibration Records

Calibration information was not obtained this week.

Signature of CQA Officer



Anna Saindon, P.E., R.G., Ph.D.
Geotechnology, Inc.

DAILY REPORTS

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: JO19896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 10/15/12

TIME: Arrive: 6:00 AM Depart: 8:45 PM Travel: 1.0 hr Total: * 15.25 hrs (0.5 hr for lunch)
Weather: Sunny, 53° AM, 65° PM Contractor: AMS Subcontr./Supplier: BCI, AAA
Equipment Working: 580 Backhoe, CS323C Roller
Site Activities / Observations / Contacts / Notes: —

AMS:
Completed dressing rip rap on the new site features. Re-rolled all new gravel surfaced
plant access roads. Continued demobilizing materials in the construction yard.
Demobilized job trailer. Continued housekeeping across site. Delivery - Round Top
staples and Western Excelsior Double Net Straw Blanket.

BCI:
Demobilized D6N Dozer and materials.

AAA:
Evaluated the solution to the leaning power poles.

Additional Comments: * 12.25 hrs for Site Activities
3.00 hrs for Manual

Randy Pieter
Contractor Representative
Anna Saindon
Signature
Geotechnology, Inc.
Anna Saindon
Engineer's Signature
Company AMS
10-15-12
Date
10-18-12
Date

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

FIELD OBSERVATION REPORT

Representative: Joe Cravens Project No.: J019896.01 Task: 2370
Equipment & ID No.: — Project Name: Hutsonville Ash Pond D Closure
Vehicle: 4103 Zone: — Client: Ameren ER Date: 10/16/12

TIME: Arrive: 6:30 AM Depart: 5:30 PM Travel: 1.0 hr Total: 12 hrs (no lunch)
Weather: Sunny, 49° AM, 76° PM Contractor: AMS Subcontr./Supplier: AAA
Equipment Working: None
Site Activities / Observations / Contacts / Notes: —

AMS:

Seeded and installed straw blanket on remaining construction areas. Completed housekeeping and demobilizing all remaining equipment and materials. Final walk-thru and punchlist reviewed. All work completed except for fixing the leaning power poles. This will be completed at a later date.

AAA:

Installed resistors for the Omega DPF75 readouts and locks for the junction boxes.

* PROJECT END *AMEN

Additional Comments: —

Notice: The Geotechnology representative is on site solely to observe operations of the contractor identified, form opinions about the accuracy of those operations and report those opinions to the client. The presence and activities of the Geotechnology field representative do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequence of construction.

Lance P. Pickett
Contractor RepresentativeAAA
CompanyLance P. Pickett
Signature10-16-12
DateAnna Samdon
Geotechnology, Inc.Anna Samdon
Engineer's Signature10-18-12
Date

MEETING MINUTES



Hutsonville Power Station - Ash Pond D Closure
Progress Meeting No. 31 Minutes
Tuesday, October 16, 2012

01	PUBLICATION	
	Publish date: 2012-10-31	Submitted by: PHZ
	Distribution: E-mail only	Notes taken by: PHZ
	Location: Hutsonville Power	AMS-Charah File No. HUT-APD-MTG-MIN-2012-10-16-PM-31
	AER PO: 567523 R4	AMS-Charah Contract: 00030-01 AMS-Charah C4116-06-6120

02	ATTENDEES [ALPHA BY COMPANY]						
	NO.	SAL	FIRST	LAST	COMPANY	PHONE	E-MAIL
	01	Mr.	Mike	Wagstaff	Ameren	618-406-3478	mwagstaff@ameren.com
	02	Mr.	Paul	Zinsious	AMS - PCM	502-640-2918	pzinsious@ashmanagementservices.com
	03	Mr.	Randy	Porter	AMS - SM	502-554-5230	rporter@ashmanagementservices.com
	04	Mr.	Joe	Cravens	Geotechnology	314-568-6628	j_cravens@geotechnology.com

03	ABBREVIATIONS	
	AER Ameren Energy Resources	OSHA Occupational Safety Health Administration
	AMS Ash Management Services	PCP Perforated Collector Pipe
	BNSF Burlington	PO Purchase Order
	CBT Computer Based Training	RHOM Routine Handling, Operation, and Maintenance
	EAP Emergency Action Plan	SPOC Single Point
	EOD End of [the] Day	T/M Time and
	EOM End of [the] month	TBD To Be
	EOW End of [the] week	TD Transmission Dispatch
	EDTS Energy Delivery Transmission Services	WPA Worker Protection Assurance
	EDC Estimated Date [of] Completion	
	EWO Extra Work Order	
	HDPE High Density Polyethylene	
	HRS Hours	
	LOTO Lock Out Tag Out	
	NMA National Maintenance Agreement	

04	DOCUMENTATION	
	<p>Minutes are documented weekly, and the publication have a "rolling record" of the immediate past two weeks. Each week the oldest drops off and the current week is added to the minutes. Items are categorized as either "NEW", "OPEN", "CLOSE", or in case the an item has to be re-published after closed the previous week - "REOPEN". Minutes format changed for Progress Meeting No. 13 deleting and combining certain items for brevity and to abbreviate documentation. Currently the item numbers remained the same for tracking purposes.</p>	

05	SAFETY - HOUSEKEEPING	
02	WORKER PROTECTION ASSURANCE	
	2012-10-16 OPEN:	
	[01] None projected.	
	[02] Pumps to be shut off when GEO leaves [de-mobs] from site. Shut off at rack and MPZ and pump control panel.	
	2012-10-09 OPEN:	
	[01] None	
	[02] Pumps to be turned on today [01-09] 10-09 no WPA required. [corrected 10-16]	
03	EMPLOYEE DRUG TESTING	
	2012-10-16 OPEN:	
	[01] None projected.	
	2012-10-09 OPEN:	
	[01] None projected.	
04	AMS SAFETY	
	2012-10-16 OPEN:	
	[01] No safety issues.	
	2012-10-09 [01] J. Tasich on site - observations and commentary:	
	[01] No safety issues.	
	[02] General awareness.	
	[03] Focus on not being complacent during close-out process.	
	[04] General discussion for Charah cell phone and electronic use policy.	
	[02] Continuing daily effort to silence fire pump system alarm at the plant until AER personnel reset the system due to WPA.	

05 HOUSEKEEPING

2012-10-16 OPEN: No issues.
[01] R. Porter notified Miller Construction of AMS de-mob.

2012-10-09 OPEN: No issues.
[01] Continuing picking up trash and clean-up for demobilization.
[02] Clean-up of streets in progress.
[03] R. Porter reports - appears transmission subcontractor using APD Closure temporary toilets.

06 PLANT ACCESS - CBT BADGE

2012-10-16 OPEN: No issues.
[01] None projected.

2012-10-09 OPEN: No issues.
[01] General discussion on site security.
[01] Guard stationed on site on 24/7 now.

08 OSHA LOG - WORK HOURS

2012-10-16 OPEN - total all hours [including subcontractors]
No incidents or accidents.
10,257.00 RT
2,113.00 OT
12,370.00 TOTAL

2012-10-09 OPEN - total all hours [including subcontractors]
No incidents or accidents.
10,113.00 RT
2,015.50 OT
12,128.50 TOTAL

06 MANPOWER [HEAD COUNT]**01 CREW SIZE [Alpha by Company]**

2012-10-16 Project completion.

2012-10-09 AMS laid off 1x laborer project close-out.

2012-10-16 Geotechnology [work hours not included in OSHA Log above] Exact count in daily reports, make note if on site.

NO.	COMPANY	SURVEYOR	TECHNICIAN	FOREMEN	OPERATORS	TEAMSTERS	LABORERS	PIPE FITTERS	ELECTRICIANS	IRON WRK
01	AAA	0	0	0	0	0	0	0	0	0
02	AMS	0	0	1	2	1	1	0	0	0
03	BCI	0	0	0	1	0	0	0	0	0
04	BTD	0	0	0	0	0	0	0	0	0
05	CHI	0	0	0	0	0	0	0	0	0
06	DLM	0	0	0	0	0	0	0	0	0
07	FLT	0	0	0	0	0	0	0	0	0
08	FWI	0	0	0	0	0	0	0	0	0
09	GEO	0	1	0	0	0	0	0	0	0
10	LEC	0	0	0	0	0	0	0	0	0
11	PLB	0	0	0	0	0	0	0	0	0
12	STC	0	0	0	0	0	0	0	0	0
TOTAL COUNT		0	1	1	3	1	1	0	0	0

Total on site: 7

2012-10-09 Geotechnology [work hours not included in OSHA Log above] Exact count in daily reports, make note if on site.

NO.	COMPANY	SURVEYOR	TECHNICIAN	FOREMEN	OPERATORS	TEAMSTERS	LABORERS	PIPE FITTERS	ELECTRICIANS	IRON WRK
01	AAA	0	0	0	0	0	0	0	1	0
02	AMS	0	0	1	1	1	2	0	0	0
03	BCI	0	0	0	1	0	0	0	0	0
04	BTD	0	0	0	0	0	0	0	0	0
05	CHI	0	0	0	0	0	0	0	0	0
06	DLM	0	0	0	0	0	3	0	0	0
07	FLT	0	0	0	0	14	0	0	0	0
08	FWI	0	0	0	0	0	0	1	0	0
09	GEO	0	2	0	0	0	0	0	0	0
10	LEC	0	0	0	0	0	0	0	0	0
11	PLB	0	0	0	0	0	0	0	0	0
12	STC	0	0	0	0	0	0	0	0	0
TOTAL COUNT		0	2	1	2	15	5	1	1	0

Total on site: 27

02 WORK HOURS AND OVERTIME

2012-10-16 OPEN: No issues.
[01] Standard hours - 7:00 AM CT to 3:30 PM CT to 8HR days. Work completion.

2012-10-09 OPEN: No issues.
[01] Standard hours - 7:00 AM CT to 3:30 PM CT. Overtime reduced unless required as of 10-08.

04 TRAILER - GENERAL CONDITIONS - COORDINATION - VEHICLES

2012-10-16 OPEN: No issues.
[01] AMS trailer gone 10-16.
[02] Power to trailers to be disconnected by leaving conduit with wire inside. Coil up spare wire.
[03] M. Wagstaff to check if electric utility bill for trailers transferred to Miller Construction. In progress.

2012-10-09 OPEN: No issues.
[01] AMS to pull [small office] trailer next week.
[02] Power to trailers to be disconnected.
[03] M. Wagstaff to check if electric utility bill for trailers transferred to Miller Construction. In progress.

07 PREVIOUS**01 SUBCONTRACTS**

2012-10-16 OPEN - No issues.
2012-10-09 OPEN - No issues.

02 SUBMITTALS

2012-10-16 Submittal log update issued.
[01] GEO - Marked up original of AMS record drawings to be reviewed by AMS.
[02] Insert to Item No. 73 for AAA OM submittal. AMS received 10-15, will send hardcopy and PDF scan.
[03] M. Wagstaff to send Baro software info back to P. Zinsious. AMS to check receipt.
[04] Flow totalizer submittal AMS 036-02 logged in OM manual. In progress.
[05] M. Wagstaff to send tag information as sent to L. Chambers by AAA back to P. Zinsious. In progress.
[06] Conversation power pole burial depth 5 FT verse 5.5 FT.

2012-10-09 Submittal log update issued.
[01] GEO - Marked up original of AMS record drawings dated 2012-10-08 [blue ink] to M. Wagstaff only. P. Zinsious request scan copy.
[02] Insert to Item No. 73 for AAA OM submittal. Should have 10-13.
[03] M. Wagstaff to send Baro software info back to P. Zinsious.
[04] Flow totalizer submittal AMS 036-02 logged in OM manual.
[05] M. Wagstaff to send tag information as sent to L. Chambers by AAA back to P. Zinsious.

08 MATERIAL**01 GENERAL**

2012-10-16 OPEN - listing for materials that have potential to impact schedule.
[01] GEO requested the sign-off for contractor acceptance of line for clay placement. R. Porter to sign for AMS and scan. Done - CLOSE.
[02] AMS to receive 1x roll IDOT 8oz geotextile on site 10-10 to finish the roadway. Done - CLOSE.
[03] A. Saindon indicated one more CQA certification due, for the final survey, should have 10-10. In progress, J. Cravens sent preliminary to M. Wagstaff who subsequently reviewed with A. Saindon - no issues.
[04] R. Porter patching material for seed/straw is Western Excelsior double straw matt.

2012-10-09 OPEN - listing for materials that have potential to impact schedule.
[01] GEO requested the sign-off for contractor acceptance of line for clay placement. R. Porter to sign for AMS and scan.
[02] AMS to receive 1x roll IDOT 8oz geotextile on site 10-10 to finish the roadway.
[03] A. Saindon indicated one more CQA certification due, for the final survey, should have 10-10.
[04] FLT work complete [as clay hauling done].

09 ADJACENT PROPERTIES AND PCP LINE**01 GENERAL**

2012-10-16 Done - CLOSE.

2012-10-09 OPEN - Discussion during Progress Meeting:
[01] J. Cravens reports post for field tile location to be better delineated.
[02] All work finished on Wampler property.

10 QUALITY CONTROL

2012-10-16 No issues.
[01] M. Wagstaff to forward copies of files AMS indicated could not find internally. Done - CLOSE.
[02] P. Zinsious to investigate closing SWP3. Discussed possible issue with run-off into the paved ditch.
[03] Patriot billing that STC is to combine to one large billing in progress to less than \$ 4K. In progress.
[04] P. Zinsious to look into 28D break information. In progress.

2012-10-09 No issues.
[01] M. Wagstaff to forward copies of files AMS indicated could not find internally. In progress.
[02] P. Zinsious to investigate closing SWP3.
[03] Patriot billing that STC is to combine to one large billing in progress to less than \$ 4K.
[04] P. Zinsious to look into 28D break information.

11 SCHEDULE REVIEW

2012-10-16 OPEN - no report [work is substantially complete].

2012-10-09 OPEN - Review of last planner by M. Wagstaff. [AID = Activity Identification, S = successor, P = Predecessor, D = Duration and day]

[01] Rain days - 10-03

[02] Major changes commentary:

[01] AID A4300 LP change to LEC-Ridgely

[02] Project date of Substantial Completion 10-09.

NO.	LAST PLANNER	AID	ACTIVITY NAME	RDU	START	FINISH	PERCENT	COMMENT
02	LEC-Ridgely	13	Survey - CBS - final grade			10/12/2012		
03	LEC-Ridgely	15	Survey - APD - final (2nd half)			10/5/2012		
04	AMS-Porter	183	Site Prep - CBS - restore...			10/12/2012		
06	AMS-Porter	196	Earthwork APD - fine grade			10/4/2012		
07	AMS-Porter	198	Roadways - APD perimeter...			10/12/2012		
08	AMS-Porter	199	Roadways - PCS -			10/12/2012		
10	DLF-Ziliak	211	Ground cover - hydro...				100%	
11	DLF-Ziliak	212	Ground cover - TRM or ECB				100%	
12	AMS-Zinsious	217	Substantial Completion				100%	
13	AMS-Zinsious	A4620				10/12/2012		
14	AMS-Zinsious	A4600					100%	
15	AER-Wagstaff	A1900			10/16/2012			
16	AER-Wagstaff	A1880	Lessons Learned..		10/16/2012			
01	AMS-Porter	50a	Additional clay...			10/4/2012		
13	GEO-Saindon	50b	Clay - certification (final)			10/10/2012		
23	AMS-Zinsious	218	Commission APD Pump Station				100%	
25	AMS-Porter	198a	Roadways - Plant			10/12/2012		
26	FWI-Burch	HPA1030	Remove temporary...			12/3/2012		

12.0 COST AND BUDGET

02 AMS PAY APPLICATION - CHANGE REQUEST

2012-10-16 No issues. AER to review holding \$ 20K for vegetative growth, erosion control, and power pole issue.

2012-10-09 Draft Pay Application No. 7 [HUT-APD-Pay-App-7-R0] to M. Wagstaff and J. Cravens for review [after meeting].

12.1 EXTRA WORK ORDERS

GENERAL

2012-10-16 No issues.

2012-10-09 No issues.

15 EWO-15 FENCE ALIGNMENT

2012-10-16 OPEN - AMS provided revised backup information, AER to review.

2012-10-09 OPEN - AMS to provide back-up information. In progress.

17 EWO-17 PAVED DITCH ALIGNMENT

2012-10-16 OPEN - AMS provided revised backup information, AER to review.

2012-10-09 OPEN - AMS submitted. AER review. Additional review for existing to plan to revised grade.

22 EWO-22 MECHANICAL CHANGES

2012-10-16 OPEN - AMS provided revised backup information, AER to review.

2012-10-09 OPEN - AMS to provide back-up information. In progress.

23 EWO-23 CONCRETE CHANGES

2012-10-16 OPEN - AMS provided revised backup information, M. Wagstaff indicated acceptable.

2012-10-09 OPEN - AMS submitted. AER review.

26 EWO-26 DS LID MODIFICATIONS FOR PIPING

2012-10-16 OPEN - AMS provided revised backup information, M. Wagstaff indicated acceptable.

2012-10-09 OPEN - AMS submitted. AER review.

13 ACTION ITEMS - AER [25]

01 AMEREN [AER]

2012-10-16 No report.

2012-10-09 [01] CLOSE - L. Chambers approved spreadsheet of electrical panel description tags per M. Wagstaff.

14 ACTION ITEMS - AMS [21]

01 ASH MANAGEMENT [AMS]

2012-10-16 No report.

2012-10-09 No report.

15.1 CLOSE OUT

01 START UP AND COMMISSION

2012-10-16	General discussion: [01] Brief conversation on leaving the blue hose for the DS temporary discharge. The hose will have water in line due to changes in grade [elevation]. The hose can be cut and clamps can be purchased at Rural King. [02] Check drawings for electrical box lock requirements. AAA to bring out locks. [03] DS temporary discharge line to remain in place, Ameren to remove at their discretion. No change. [04] Reviewed GEO "Hutsonville Ash Pond D Closure - Project Completion - Punch List Field Items - October 2012" [05] Omega totalizer to be reviewed today [10-09] by AER for operation. In progress, AAA to install resistor. [07] Vents are remote [flood plain] for CO1, CO1A, CO1B, and CO2, with remaining 2x 3/8 IN holes in the cap. [08] Discussion AAA scheduled for today, no show for Items No. 02 and 05 above.
2012-10-09	General discussion: [01] Cable to Baro Mini Diver 502 at DS-3 not operational. CLOSE - wire installed. [02] Check drawings for electrical box lock requirements. [03] DS temporary discharge line to remain in place, Ameren to remove at their discretion. [04] Distributed AMS - "Hutsonville Power Station - Ash Pond D Closure - Status Report - Turnover" dated 2012-10-05 [05] Omega totalizer to be reviewed today [10-09] by AER for operation. [06] Reviewed both AER and AMS punch list documents, Punch List to be completed 10-16: [01] AER - "Hutsonville Ash Pond D Closure: Project Completion - Punch List Field Items - October 2012" [02] AMS - "Hutsonville Ash Pond D Closure - Punch List - AMS Remaining Work" HUT-APD-PNCH-LST-2012-10-08-R0 [07] Record drawings for DS vents West control Panel had DS-1, and DS-2. East Control Panel has DS-3, DS-4 and CO-3. CO-4 Independent. [08] Operation of the pumps per AER.

16 DOCUMENTS TRANSMITTED

2012-10-16	[01] GEO - "Hutsonville Ash Pond D Closure - Project Completion - Punch List Field Items - October 2012"
2012-10-09	[01] AER - Last Planner schedule - Current date 10-03 - Data date 10-02. [02] AER - "Hutsonville Ash Pond D Closure: Project Completion - Punch List Field Items - October 2012" [03] AMS - "Hutsonville Ash Pond D Closure - Punch List - AMS Remaining Work" HUT-APD-PNCH-LST-2012-10-08-R0 [04] GEO - "Submittal Log - Hutsonville Power Station Ash Pond Closure" dated WE 2012-10-13 [05] GEO - Marked up original of AMS record drawings dated 2012-10-08 [blue ink] to M. Wagstaff only. [06] AMS - "Hutsonville Power Station - Ash Pond D Closure - Status Report - Turnover" dated 2012-10-05 [07] AMS - Pay Application No. 7 [HUT-APD-Pay-App-7-R0] to M. Wagstaff and J. Cravens for review [after meeting].

17 DOCUMENTS REVIEW ONLY

2012-10-16	None.
2012-10-09	None.

18 MEETING SCHEDULE

2012-10-16	Schedule for upcoming meetings: None projected, this is last Progress Meeting.		
	[01] Lesson Learned	Cancelled	
2012-10-09	Schedule for upcoming meetings:		
	[01] Progress Meeting	Monday	October 16, 2012
	[02] Lesson Learned	TBD	

19 DISTRIBUTION - STANDARD

AER	SUBCONTRACTORS	
01 Mr. Mike Wagstaff	01 S. Tincer	AAA
02 Mr. Mike Stewart	02 M. Burch	FWI
03 Mr. Bob Muesenfechter	03 T. Boyer	BTD
04 Mr. Steve Bluemner	04 T. Hunt	STC
GEO		
01 Ms. Anna Saindon		
02 Mr. Eric Neuner		
03 Mr. Joe Cravens		
AMS		
01 Mr. Jimmy Boone		
02 Mr. John Denham		
03 Mr. Joko Tasich		
04 Mr. Randy Porter		

If there are any corrections, modifications, additions, or deletions please notify the sender by e-mail at pzinsious@ashmanagementservices.com

PHOTOGRAPH LOG



Photograph 1 ▲ - Installing straw blankets facing south



Photograph 2 ▲ - Ash Pond D Project – Post Construction facing southeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between October 15 and October 17, 2012.



Photograph 3 ▲ - Ash Pond D Project – Post Construction facing south



Photograph 4 ▲ - Ash Pond D Project – Post Construction facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between October 15 and October 17, 2012.



Photograph 5 ▲ - Ash Pond D Project – Post Construction facing southwest



Photograph 6 ▲ - Ash Pond D Project – Post Construction facing southeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between October 15 and October 17, 2012.

JRC



Photograph 7 ▲ - Ash Pond D Project – Post Construction facing southwest



Photograph 8 ▲ - Ash Pond D Project – Post Construction facing northwest

All photographs taken by Joseph Cravens of Geotechnology, Inc. between October 15 and October 17, 2012.

JRC



Photograph 9 ▲ - Ash Pond D Project – Post Construction facing west



Photograph 10 ▲ - Ash Pond D Project – Post Construction facing west

All photographs taken by Joseph Cravens of Geotechnology, Inc. between October 15 and October 17, 2012.

JRC



Photograph 11 ▲ - Ash Pond D Project – Post Construction facing southeast



Photograph 12 ▲ - Ash Pond D Project – Post Construction facing southeast

All photographs taken by Joseph Cravens of Geotechnology, Inc. between October 15 and October 17, 2012.



Photograph 13 ▲ - Ash Pond D Project – Post Construction facing east



Photograph 14 ▲ - Ash Pond D Project – Post Construction facing east

All photographs taken by Joseph Cravens of Geotechnology, Inc. between October 15 and October 17, 2012.

JRC



Photograph 15 ▲ - Ash Pond D Project – Post Construction facing northeast



CQA CERTIFICATION (Form CQAP-2.1)

The CQA certification as provided herein is based on a review of available inspection, testing and sampling results for the subject Work and is for the sole purpose of noting compliance of these results with established design parameters and taking no exceptions to initiation of new sequential Work . CQA certification by the Owner's Representative does not relieve the Contractor of its obligations to furnish all Work in accordance with the Contract.

1. LOCATION AND DESCRIPTION OF THE SUBJECT WORK:

Prequalification testing of 40 mil high density polyethylene (HDPE) geomembrane for Ash Pond D closure. Information reviewed for compliance with the CQA plan includes the manufacturer liner product data, manufacturer liner quality control data, and third party testing. GSE manufactured the geomembrane and TRI/Environmental Inc. performed third party testing on samples from twelve rolls in accordance with the CQA plan.

2. CONTRACTOR COMPLETING THE SUBJECT WORK:

GSE Lining Technology Inc. manufactured the geomembrane and TRI/Environmental Inc. performed third party testing on twelve samples.

3. NEW SEQUENTIAL WORK TO BEGIN:

Deliver 40 mil HDPE geomembrane to the job site for installation per the manufacturers handling instructions.

By CQA Officer-in-Absentia:
(if applicable)

(Signature)

Date: _____

By CQA Officer:



(Signature)

Date: 4-27-12

Distribution: Original To: Document Controller

Copies To: Mike Wagstaff (Ameren), Paul Zinsious (AMS)



CQA CERTIFICATION (Form CQAP-2.1)

The CQA certification as provided herein is based on a review of available inspection, testing and sampling results for the subject Work and is for the sole purpose of noting compliance of these results with established design parameters and taking no exceptions to initiation of new sequential Work . CQA certification by the Owner's Representative does not relieve the Contractor of its obligations to furnish all Work in accordance with the Contract.

1. LOCATION AND DESCRIPTION OF THE SUBJECT WORK:

Field moisture density testing using a nuclear gauge (compaction testing) was performed on the upper one foot of the subgrade for Ash Pond D. In addition, an as-built survey was performed on the subgrade for Ash Pond D closure. The compaction testing and survey were performed in compliance with the CQA plan and project specifications.

2. CONTRACTOR COMPLETING THE SUBJECT WORK:

The compaction testing was performed by Geotechnology, Inc. and the as-built survey of the subgrade was performed by Massmann Surveying.

3. NEW SEQUENTIAL WORK TO BEGIN:

Chesapeake Containment Systems, Inc. (CCS) will approve the subgrade and install 40 mil high density polyethylene (HDPE) geomembrane on- site (product previously approved). The CCS certificate of acceptance for the subgrade will be provided daily to the CQA officer on-site.

By CQA Officer-in-Absentia:
(if applicable)

(Signature)

Date: _____

By CQA Officer:



(Signature)

Date: May 30, 2012

Distribution: Original To: Document Controller

Copies To: Mike Wagstaff (Ameren), Paul Zinsious (AMS)



CQA CERTIFICATION (Form CQAP-2.1)

The CQA certification as provided herein is based on a review of available inspection, testing and sampling results for the subject Work and is for the sole purpose of noting compliance of these results with established design parameters and taking no exceptions to initiation of new sequential Work . CQA certification by the Owner's Representative does not relieve the Contractor of its obligations to furnish all Work in accordance with the Contract.

1. LOCATION AND DESCRIPTION OF THE SUBJECT WORK:

Chesapeake Containment Systems, Inc. (CCS) installed 40 mil high density polyethylene (HDPE) geomembrane on- site (product previously approved) on the north and north east portion of Ash Pond D. Field and laboratory testing for Panels P1 through P17 (not including the southernmost or easternmost seams for this area) were performed in compliance with the CQA plan and project specifications.

2. CONTRACTOR COMPLETING THE SUBJECT WORK:

Geotechnology, Inc. performed field quality control of the geomembrane and TRI Environmental provided third party testing of geomembrane destruct samples.

3. NEW SEQUENTIAL WORK TO BEGIN:

The three foot vegetative layer will be placed over the installed 40 mil HDPE geomembrane in the location of P1 through P17 on the north west portion of Ash Pond D by Ash Management Services (AMS).

By CQA Officer-in-Absentia:
(if applicable)

(Signature)

Date: _____

By CQA Officer:



(Signature)

Date: 6-9-12

Distribution: Original To: Document Controller

Copies To: _____



CQA CERTIFICATION (Form CQAP-2.1)

The CQA certification as provided herein is based on a review of available inspection, testing and sampling results for the subject Work and is for the sole purpose of noting compliance of these results with established design parameters and taking no exceptions to initiation of new sequential Work . CQA certification by the Owner's Representative does not relieve the Contractor of its obligations to furnish all Work in accordance with the Contract.

1. LOCATION AND DESCRIPTION OF THE SUBJECT WORK:

Ash Management Services, LLC (AMS) installed an anchor trench around the perimeter of Ash Pond D. The anchor trench in section view is approximately two feet deep and two feet wide. The anchor trench was observed to be free of unsuitable material. Chesapeake Containment Systems, Inc. (CCS) installed 40 mil high density polyethylene (HDPE) geomembrane on-site (product previously approved) on the approved Ash Pond D subgrade. The edges of the geomembrane were laid into the anchor trench. Geomembrane installation into the anchor trenches were performed in compliance with the CQA plan.

2. CONTRACTOR COMPLETING THE SUBJECT WORK:

Geotechnology, Inc. performed field quality control of the geomembrane and observed the geomembrane installation in the anchor trench.

3. NEW SEQUENTIAL WORK TO BEGIN:

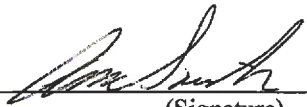
AMS will install four-inch HDPE perforated drainage pipe with filter sock (product previously approved) in the anchor trench, where applicable, and will backfill the anchor trench with drainage course.

By CQA Officer-in-Absentia:
(if applicable)

(Signature)

Date: _____

By CQA Officer:



(Signature)

Date: 6-13-12

Distribution: Original To: Document Controller

Copies To: _____



CQA CERTIFICATION (Form CQAP-2.1)

The CQA certification as provided herein is based on a review of available inspection, testing and sampling results for the subject Work and is for the sole purpose of noting compliance of these results with established design parameters and taking no exceptions to initiation of new sequential Work . CQA certification by the Owner's Representative does not relieve the Contractor of its obligations to furnish all Work in accordance with the Contract.

1. LOCATION AND DESCRIPTION OF THE SUBJECT WORK:

Prequalification testing of the groundwater collection trench course aggregate for Ash Pond D closure was provided by Ash Management Services (AMS). Particle size distribution analysis (AASHTO T27 and T11) for one sample of the course aggregate from the Van Tarble & Sons Quarries was provided. The provided aggregate sample meets the IDOT CA-7 classification as specified in the CQA plan.

2. CONTRACTOR COMPLETING THE SUBJECT WORK:

Van Tarble & Sons Quarries provided the aggregate sample and particle size distribution analysis.

3. NEW SEQUENTIAL WORK TO BEGIN:

The submitted course aggregate may be used for the groundwater collection trench.

By CQA Officer-in-Absentia:
(if applicable)

(Signature)

Date: _____

By CQA Officer:



(Signature)

Date: 6-14-12

Distribution: Original To: Document Controller

Copies To: _____



CQA CERTIFICATION (Form CQAP-2.1)

The CQA certification as provided herein is based on a review of available inspection, testing and sampling results for the subject Work and is for the sole purpose of noting compliance of these results with established design parameters and taking no exceptions to initiation of new sequential Work . CQA certification by the Owner's Representative does not relieve the Contractor of its obligations to furnish all Work in accordance with the Contract.

1. LOCATION AND DESCRIPTION OF THE SUBJECT WORK:

Chesapeake Containment Systems, Inc. (CCS) installed 40 mil high density polyethylene (HDPE) geomembrane on- site (product previously approved) on the north and north east portion of Ash Pond D. Field and laboratory testing for Panels P18 through P45 (not including the southernmost seams for this area) were performed in compliance with the CQA plan.

2. CONTRACTOR COMPLETING THE SUBJECT WORK:

Geotechnology, Inc. performed field quality control of the geomembrane and TRI Environmental provided third party testing of geomembrane destruct samples.

3. NEW SEQUENTIAL WORK TO BEGIN:

The three foot vegetative layer will be placed over the installed 40 mil HDPE geomembrane in the location of P18 through P45 on the north and north east portion of Ash Pond D by Ash Management Services (AMS).

By CQA Officer-in-Absentia:
(if applicable)

(Signature)

Date: _____

By CQA Officer:



(Signature)

Date: 6-15-12

Distribution: Original To: Document Controller

Copies To: _____



CQA CERTIFICATION (Form CQAP-2.1)

The CQA certification as provided herein is based on a review of available inspection, testing and sampling results for the subject Work and is for the sole purpose of noting compliance of these results with established design parameters and taking no exceptions to initiation of new sequential Work . CQA certification by the Owner's Representative does not relieve the Contractor of its obligations to furnish all Work in accordance with the Contract.

1. LOCATION AND DESCRIPTION OF THE SUBJECT WORK:

Chesapeake Containment Systems, Inc. (CCS) installed 40 mil high density polyethylene (HDPE) geomembrane on- site (product previously approved) on the south portion of Ash Pond D. Field and laboratory testing for Panels P46 through P105 were performed in compliance with the CQA plan.

2. CONTRACTOR COMPLETING THE SUBJECT WORK:

Geotechnology, Inc. performed field quality control of the geomembrane and TRI Environmental provided third party testing of geomembrane destruct samples.

3. NEW SEQUENTIAL WORK TO BEGIN:

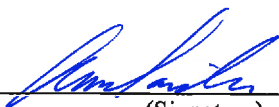
The three foot vegetative layer will be placed over the installed 40 mil HDPE geomembrane in the location of P46 through P105 on the south portion of Ash Pond D by Ash Management Services (AMS).

By CQA Officer-in-Absentia:
(if applicable)

(Signature)

Date: _____

By CQA Officer:



(Signature)

Date: 6/20/12

Distribution: Original To: Document Controller

Copies To: _____



CQA CERTIFICATION (Form CQAP-2.1)

The CQA certification as provided herein is based on a review of available inspection, testing and sampling results for the subject Work and is for the sole purpose of noting compliance of these results with established design parameters and taking no exceptions to initiation of new sequential Work . CQA certification by the Owner's Representative does not relieve the Contractor of its obligations to furnish all Work in accordance with the Contract.

1. LOCATION AND DESCRIPTION OF THE SUBJECT WORK:

Prequalification testing of the roadway gravel surfacing aggregate for Ash Pond D closure was provided by Ash Management Services (AMS). Particle size distribution analysis (AASHTO T27 and T11) for one sample of the course aggregate from the Van Tarble & Sons Quarries was provided. The provided aggregate sample meets the IDOT CA-6 classification as specified in the CQA plan.

2. CONTRACTOR COMPLETING THE SUBJECT WORK:

Van Tarble & Sons Quarries provided the aggregate sample and particle size distribution analysis.

3. NEW SEQUENTIAL WORK TO BEGIN:

The submitted course aggregate is IDOT CA-6 and may be used for the roadway gravel resurfacing.

By CQA Officer-in-Absentia:
(if applicable)

(Signature)

Date: _____

By CQA Officer:



(Signature)

Date: 7/26/12

Distribution: Original To: Document Controller

Copies To: Mike Wagstaff (Ameren), Paul Zinsious (AMS)



CQA CERTIFICATION (Form CQAP-2.1)

The CQA certification as provided herein is based on a review of available inspection, testing and sampling results for the subject Work and is for the sole purpose of noting compliance of these results with established design parameters and taking no exceptions to initiation of new sequential Work . CQA certification by the Owner's Representative does not relieve the Contractor of its obligations to furnish all Work in accordance with the Contract.

1. LOCATION AND DESCRIPTION OF THE SUBJECT WORK:

The material warranty, geomembrane installation warranty, and the installation record drawing was provided in the Closeout Submittals (revision August 9, 2012) by Chesapeake Containment Systems, Inc. for the installation of the 40 mil high density polyethylene (HDPE) geomembrane at the Ash Pond D closure. Information provided in the revised submittal was reviewed for compliance with the CQA plan. The documents in the revised submittal are in accordance with the CQA plan.

2. CONTRACTOR COMPLETING THE SUBJECT WORK:

Representatives of Chesapeake Containment Systems, Inc. performed the 40 mil HDPE geomembrane installation and provided the revised submittals for review.

3. NEW SEQUENTIAL WORK TO BEGIN:

Sequential work was not impacted by this approval.

By CQA Officer-in-Absentia:
(if applicable)

(Signature)

Date: _____

By CQA Officer:



(Signature)

Date: 8/14/2012

Distribution: Original To: Document Controller

Copies To: Mike Wagstaff (Ameren), Paul Zinsious (AMS)



CQA CERTIFICATION (Form CQAP-2.1)

The CQA certification as provided herein is based on a review of available inspection, testing and sampling results for the subject Work and is for the sole purpose of noting compliance of these results with established design parameters and taking no exceptions to initiation of new sequential Work . CQA certification by the Owner's Representative does not relieve the Contractor of its obligations to furnish all Work in accordance with the Contract.

1. LOCATION AND DESCRIPTION OF THE SUBJECT WORK:

Chemical analysis and soil index testing were performed on five representative samples of the installed vegetative layer at Ash Pond D. The chemical analysis and soil index testing results are in compliance with the revised CQA plan and project specifications.

2. CONTRACTOR COMPLETING THE SUBJECT WORK:

The soil index testing was performed by Geotechnology, Inc. and the chemical analysis of the vegetative layer was performed by Teklab, Inc.

3. NEW SEQUENTIAL WORK TO BEGIN:

The vegetative layer and surface water structures will be graded and the final survey will be performed.

By CQA Officer-in-Absentia:
(if applicable)

(Signature)

Date: _____

By CQA Officer:



(Signature)

Date: 8/22/2012

Distribution: Original To: Document Controller

Copies To: Mike Wagstaff (Ameren), Paul Zinsious (AMS)



CQA CERTIFICATION (Form CQAP-2.1)

The CQA certification as provided herein is based on a review of available inspection, testing and sampling results for the subject Work and is for the sole purpose of noting compliance of these results with established design parameters and taking no exceptions to initiation of new sequential Work . CQA certification by the Owner's Representative does not relieve the Contractor of its obligations to furnish all Work in accordance with the Contract.

1. LOCATION AND DESCRIPTION OF THE SUBJECT WORK:

The vegetative layer was surveyed on a 100 foot grid by Massmann Surveying and Engineering Company for Ash Pond D. The vegetative layer thickness was calculated from survey data to be a minimum of three feet thick in accordance with the CQA Plan.

2. CONTRACTOR COMPLETING THE SUBJECT WORK:

The survey was performed by Massmann Surveying and Engineering Company. Geotechnology, Inc. verified the vegetative layer thickness calculations.

3. NEW SEQUENTIAL WORK TO BEGIN:

The ground cover activities (including mulching, seeding, etc) will be performed.

By CQA Officer-in-Absentia:
(if applicable)

(Signature)

Date: _____

By CQA Officer:



(Signature)

Date: Oct 11, 2012

Distribution: Original To: Document Controller

Copies To: Mike Wagstaff (Ameren), Paul Zinsious (AMS)

Standard Proctor Summary for Ash Samples
Ameren Energy Resources
Hutsonville Ash Pond D Closure

Presented in Table 1 are the results of the standard Proctor tests and Atterberg limits performed on the collected ash samples. The ash varies in composition. Ash compaction will require a minimum of 90 percent of the maximum dry density as determined by the standard Proctor test in laboratory (ASTM D 698). For non-plastic ash material, use the average ash maximum dry density from samples Ash 1, 3 and 4, and the average optimum moisture content (presented in Table 2). For ash material that has some plasticity or has characteristics similar to that of “silt”, use the value presented in Table 3. The target value to be used in the field will depend on the type of ash that is encountered at the location of testing and will be based upon the judgment of the CQA Technician. In areas that embankment material was used, use the average embankment material value. The contractor will be notified immediately of compaction tests not in conformance.

Table 1
Summary of Laboratory Tests for Collected Ash Samples

Sample	Maximum Dry Density (pcf)	Optimum Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)
Ash 1	74.3	38.3	25	24	1
Ash 2	92.4	19.4	37	34	3
Ash 3	75.5	31.0	NP	NP	NP
Ash 4	76.3	33.5	NP	NP	NP
S Embankment	115.2	10.1	-	-	-
E Embankment	116.4	10.9	-	-	-

Table 2
Standard Proctor Summary for Non-Plastic Ash

Reference Proctor	Average Maximum Dry Density (pcf)	Average Optimum Moisture Content (%)
Average of Ash 1, 3 and 4 (NP)	75.4	34.4
90% Max Dry Density	67.9	NA

Table 3
Standard Proctor Summary for Plastic Ash

Reference Proctor	Average Maximum Dry Density (pcf)	Average Optimum Moisture Content (%)
Ash 2 (LP)	92.4	19.4
90% Max Dry Density	83.2	NA

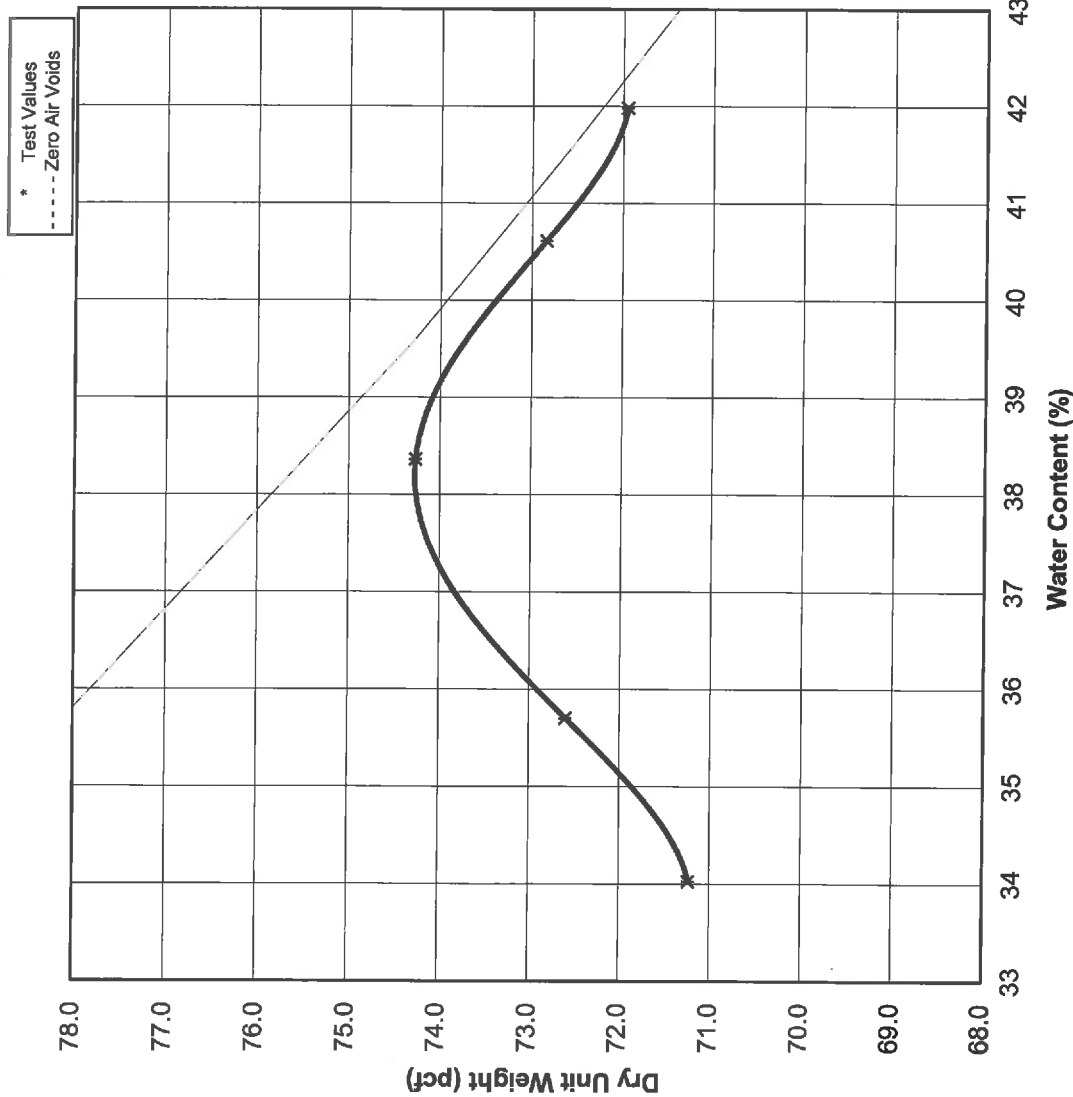
Table 4
Standard Proctor Summary for Embankment Material

Reference Proctor	Average Maximum Dry Density (pcf)	Average Optimum Moisture Content (%)
Average Embankment	115.8	10.5
90% Max Dry Density	104.2	NA

Project: Hutsonville Ash Pond Closure
Client: Ameren UE
Sample Source: North Side of Pond D

Supplier: N/A

LABORATORY COMPACTION TEST



Test Information	
Project No.:	J019896.01.7310
Test Date:	04/04/12
Proctor No.:	P-6613-1 (Ash 1)

Test Method:	ASTM D 698	Method A
Rammer Type:	Mechanical	
Prep. Method:	Dry	

Sample Description
Flyash w/ Bottom Ash

Sample Properties		
Moisture Content	--	
Liquid Limit	25	
Plastic Limit	24	
Plasticity Index	1	
Specific Gravity:	2.250	Estimated
Classification	ML	

Test Results:	
Maximum Dry Unit Weight (pcf):	74.3
Optimum Water Content (%) :	38.3
Oversize Correction Values:	
Maximum Dry Unit Weight (pcf):	--
Optimum Water Content (%) :	--

Tested By: PAR Input By: ZRB
 Date: 04/04/12 Date: 04/05/12
 Checked By: JPK
 Date: 04/05/12

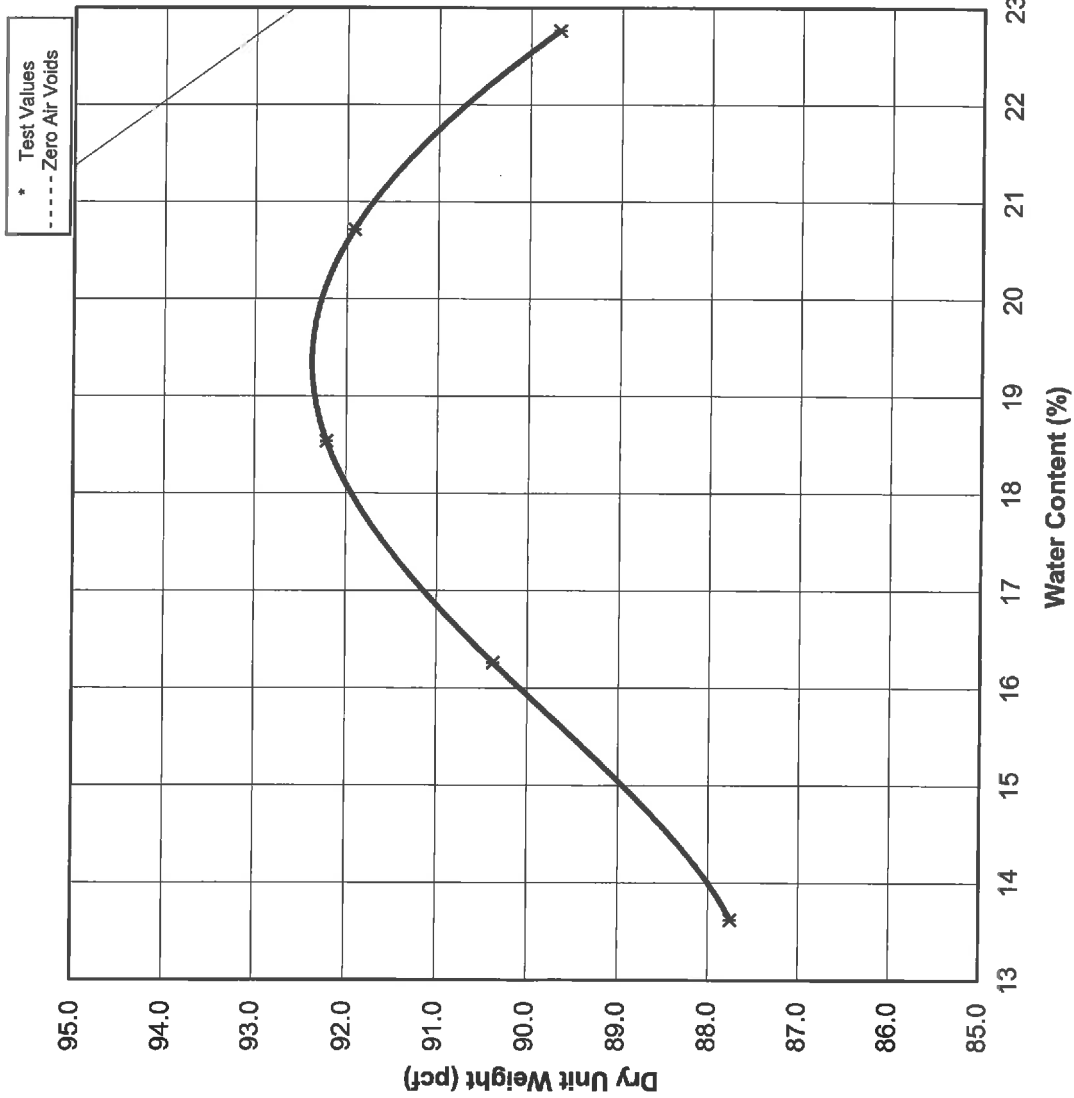
11816 Lackland Road, Suite 150
 St. Louis, MO 63146
 Ph: 314-997-7740
 Fax: 314-997-2067



Project: Hutsonville Ash Pond Closure
 Client: Ameren UE
 Sample Source: South Side of Pond D

Supplier: N/A

LABORATORY COMPACTION TEST



Test Information	
Project No.:	J019896.01.7310
Test Date:	04/04/12
Proctor No.:	P-6613-2 (Ash 2)
Test Method:	ASTM D 698 Method A
Rammer Type:	Mechanical
Prep. Method:	Dry

Sample Description
Flyash w/ Bottom Ash

Sample Properties	
Moisture Content	36.2
Liquid Limit	37
Plastic Limit	34
Plasticity Index	3
Specific Gravity:	2.250 Actual
Classification	ML

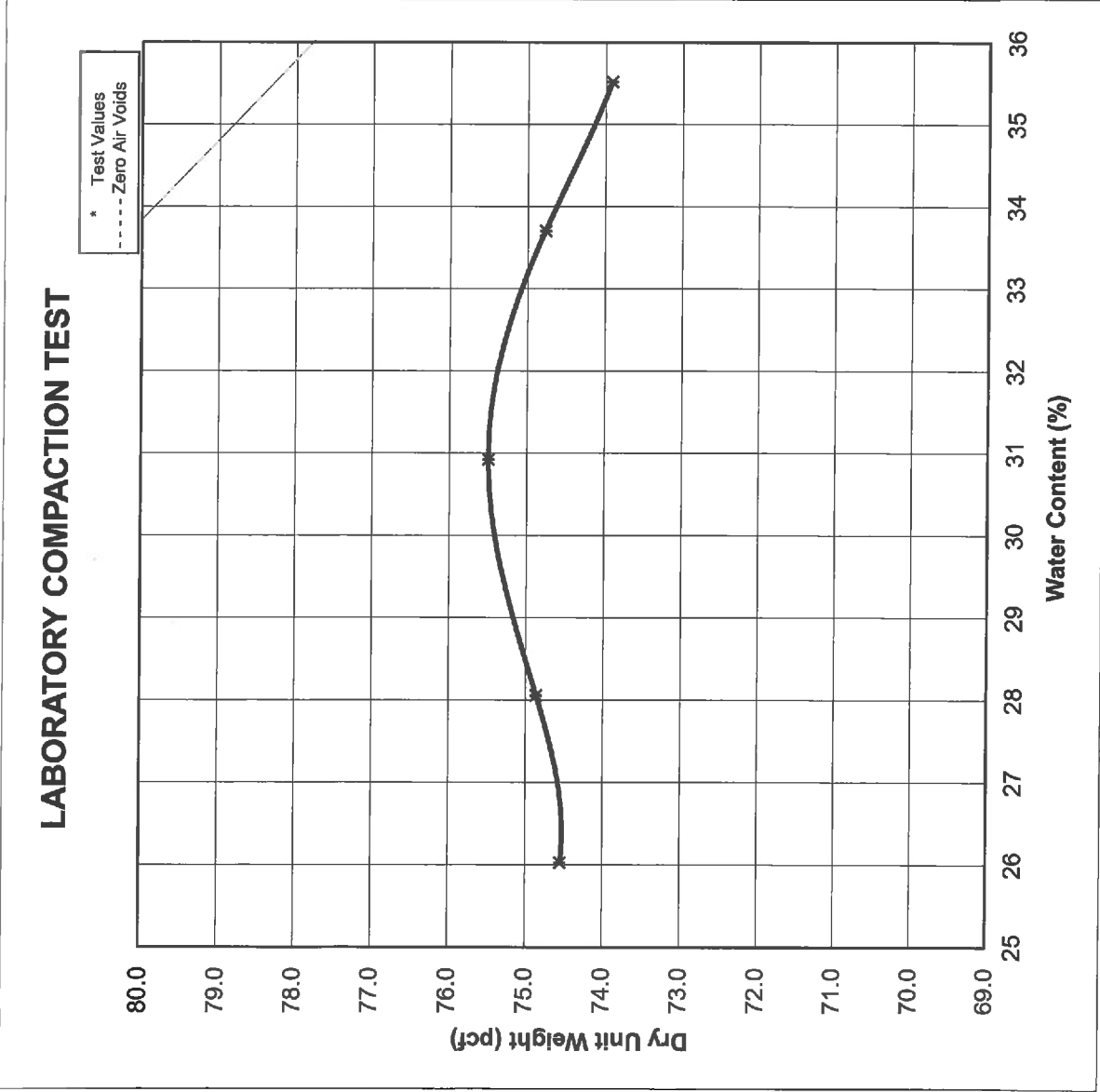
Test Results:	
Maximum Dry Unit Weight (pcf):	92.4
Optimum Water Content (%) :	19.4
Oversize Correction Values:	
Maximum Dry Unit Weight (pcf):	--
Optimum Water Content (%) :	--

Tested By: PAR Input By: ZRB
 Date: 04/04/12 Date: 04/05/12
 Checked By: JPK
 Date: 04/05/12

11816 Lackland Road, Suite 150
St. Louis, MO 63146
Ph: 314-997-7740
Fax: 314-997-2067



Project: Hutsonville Ash Pond Closure
Client: Ameren UE
Sample Source: West Side of Pond D



Supplier: N/A

Test Information	
Project No.:	J019896.01.7310
Test Date:	04/11/12
Proctor No.:	P-6625-1 (Ash 3)
Test Method:	ASTM D 698 Method A
Rammer Type:	Mechanical
Prep. Method:	Dry

Sample Description
Flyash w/ Bottom Ash

Sample Properties	
Moisture Content	
Liquid Limit	
Plastic Limit	
Plasticity Index	
Specific Gravity:	2.250 Actual
Classification	ML

Test Results:	
Maximum Dry Unit Weight (pcf):	75.5
Optimum Water Content (%):	31.0
Oversize Correction Values:	
Maximum Dry Unit Weight (pcf):	--
Optimum Water Content (%):	--

Tested By: PAR Input By: ZRB
Date: 04/11/12 Date: 04/12/12
Checked By: JPK
Date: 01/00/00

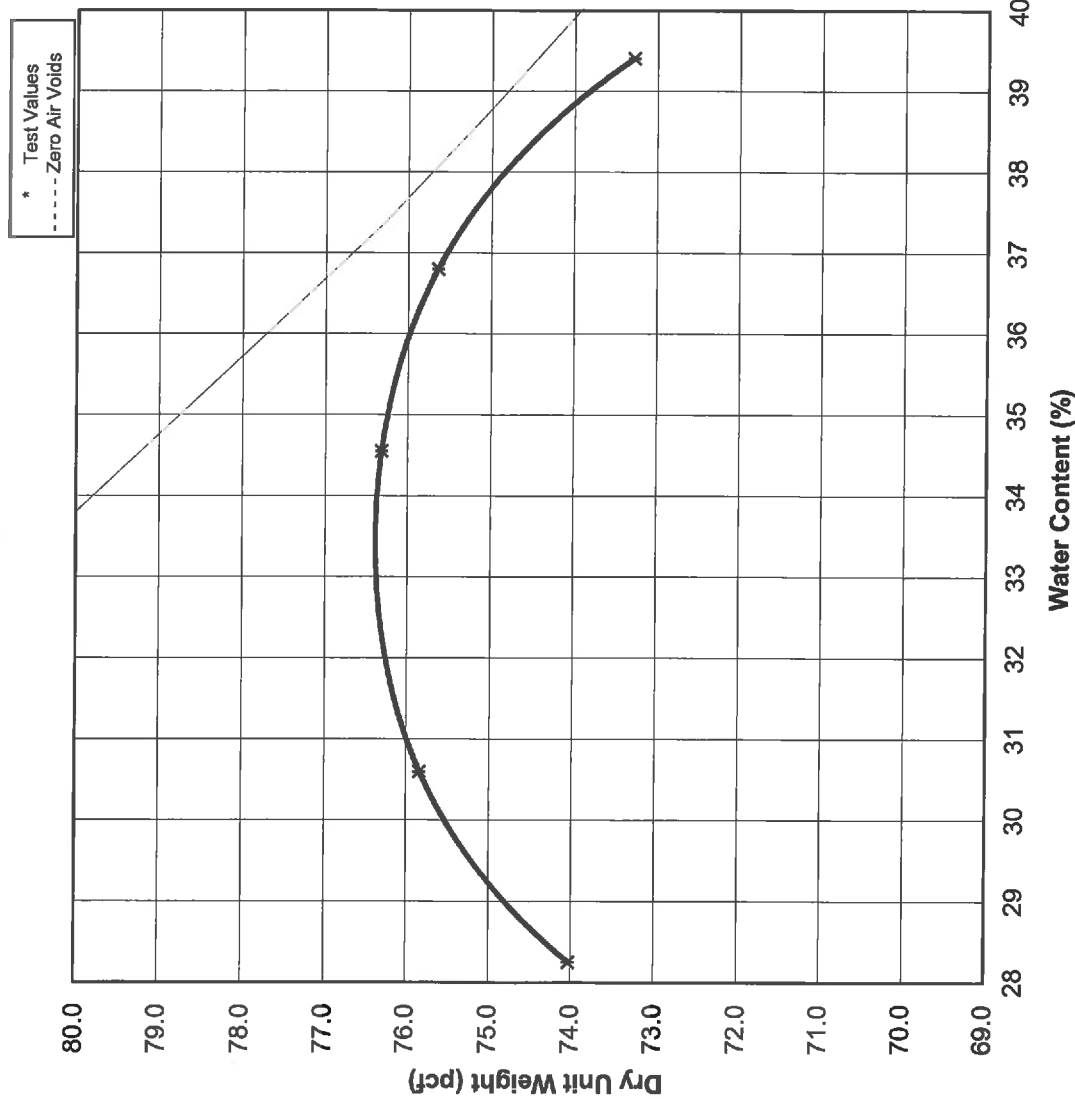
11816 Lackland Road, Suite 150
 St. Louis, MO 63146
 Ph: 314-997-7740
 Fax: 314-997-2067



Project: Hutsonville Ash Pond Closure
 Client: Ameren UE
 Sample Source: East Side of Pond D

Supplier: N/A

LABORATORY COMPACTION TEST



Test Information			
Project No.:	J019896.01.7310		
Test Date:	04/11/12		
Proctor No.:	P-6625-2 (Ash 4)		
Test Method:	ASTM D 698	Method A	
Rammer Type:	Mechanical		
Prep. Method:	Dry		

Sample Description
Flyash w/ Bottom Ash

Sample Properties	
Moisture Content	_____
Liquid Limit	_____
Plastic Limit	_____
Plasticity Index	_____
Specific Gravity:	2.250 Actual
Classification	ML

Test Results:	
Maximum Dry Unit Weight (pcf):	76.3
Optimum Water Content (%) :	33.5
Oversize Correction Values:	
Maximum Dry Unit Weight (pcf):	--
Optimum Water Content (%) :	--

Tested By: PAR Input By: ZRB
 Date: 04/11/12 Date: 04/12/12
 Checked By: JPK
 Date: 01/00/00



11816 Lackland Road, Suite 150
St. Louis, MO 63146
Ph: 314-997-7740
Fax: 314-997-2067

Project: Hutsonville Ash Pond D
Client: Ameren UE
Sample Source: East Embankment

Supplier: N/A

Test Information	
Project No.:	J019896.01.7310
Test Date:	05/03/12
Proctor No.:	P-6650-1
Test Method:	ASTM D 698 Method C
Rammer Type:	Mechanical
Prep. Method:	Dry

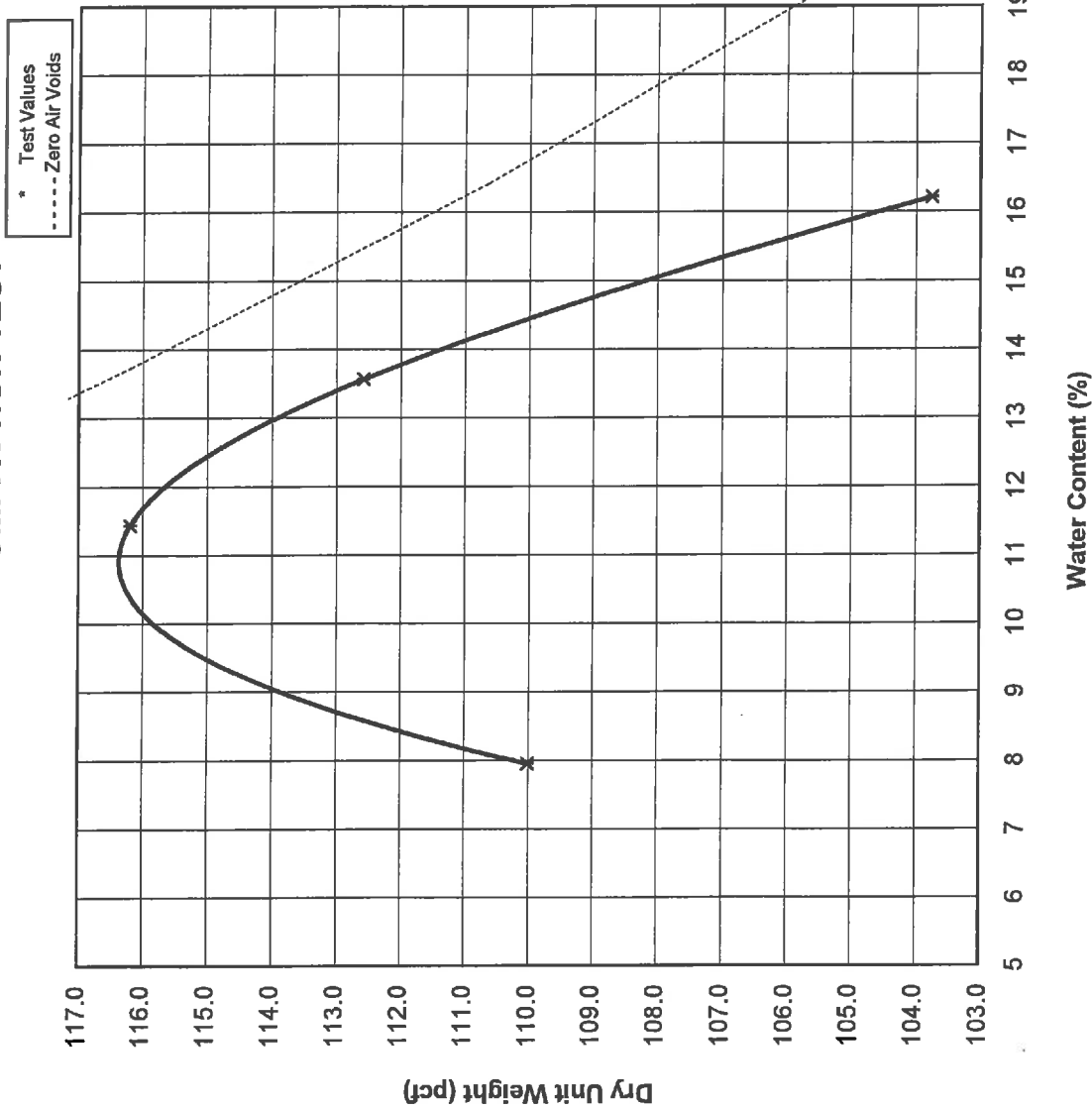
Sample Description
Sandy Lean Clay With Gravel

Sample Properties	
Moisture Content	--
Liquid Limit	--
Plastic Limit	--
Plasticity Index	--
Specific Gravity:	2.500 Estimated
Classification	N/A

Test Results:	
Maximum Dry Unit Weight (pcf):	116.4
Optimum Water Content (%):	10.9
Oversize Correction Values:	
Maximum Dry Unit Weight (pcf):	--
Optimum Water Content (%):	--

Tested By: ZRB Input By: ZRB
Date: 05/03/12 Date: 05/04/12
Checked By: JPK
Date: 05/04/12

LABORATORY COMPACTION TEST





11816 Lackland Road, Suite 150
St. Louis, MO 63146
Ph: 314-997-7740
Fax: 314-997-2067

Project: Hutsonville Ash Pond D
Client: Ameren UE
Sample Source: South Embankment

Supplier: N/A

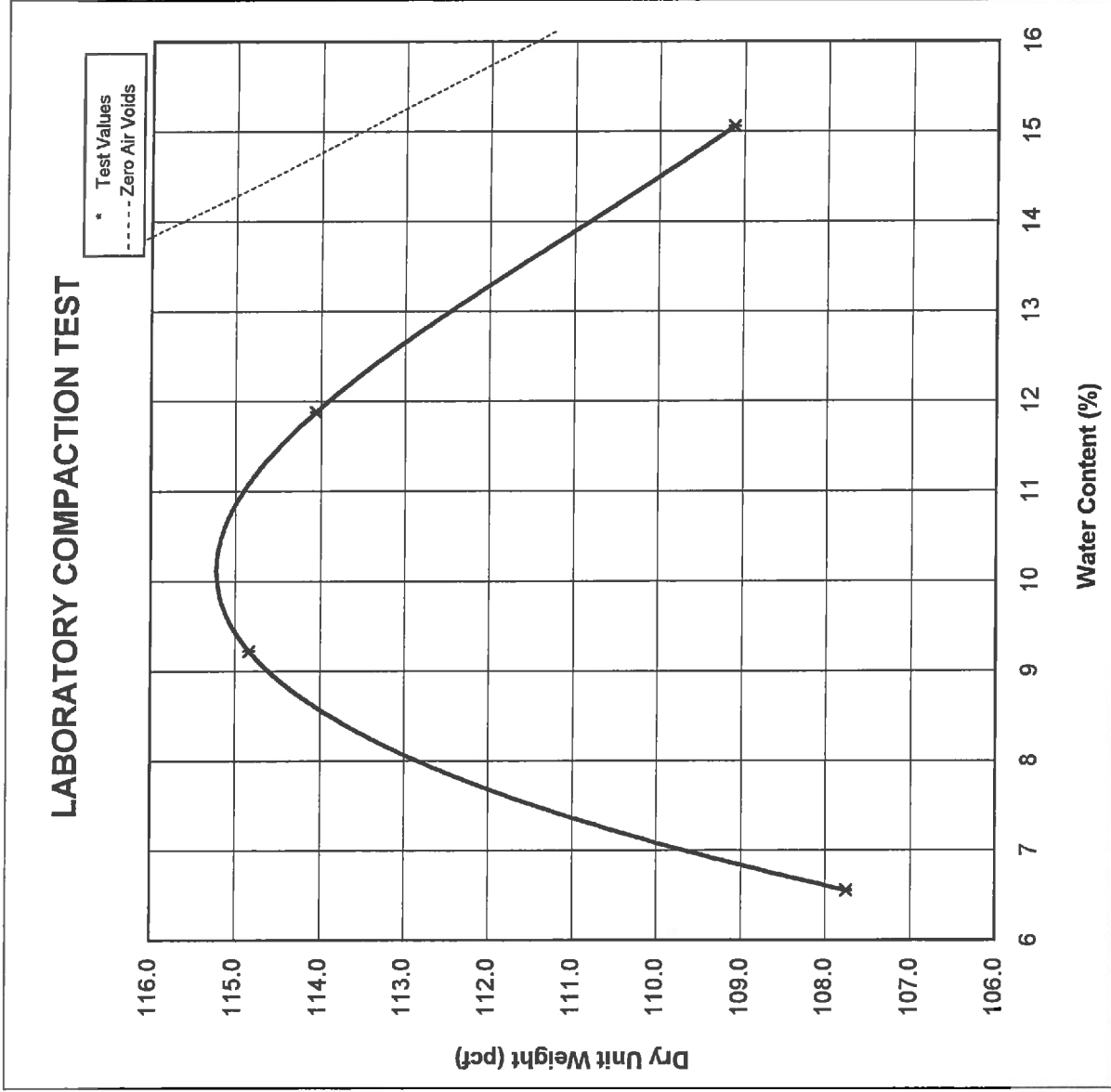
Test Information	
Project No.:	J019896.01.7310
Test Date:	05/03/12
Proctor No.:	P-6650-2
Test Method:	ASTM D 698 Method C
Rammer Type:	Mechanical
Prep. Method:	Dry

Sample Description
Sandy Lean Clay With Gravel

Sample Properties	
Moisture Content	—
Liquid Limit	—
Plastic Limit	—
Plasticity Index	—
Specific Gravity:	2.500 Estimated
Classification	N/A

Test Results:	
Maximum Dry Unit Weight (pcf):	115.2
Optimum Water Content (%):	10.1
Oversize Correction Values:	
Maximum Dry Unit Weight (pcf):	—
Optimum Water Content (%):	—

Tested By: ZRB Input By: ZRB
Date: 05/03/12 Date: 05/04/12
Checked By: JPK
Date: 05/04/12





Ash Management Services, LLC
12601 Plantside Drive
Louisville, Kentucky 40299
Phone: 502-245-1353

Hutsonville APD Closure

HUT-APD-SUB-007-01-Borrow material

02200-1.8.A Material Test Reports – Classification...Material

02200-2.1.A Soil Analysis of Clay

02200-3.4.A Product Data – Vegetative Cover

Submittal Information

Submittal No.	Date	Contact	Phone no.
SUB-007-01	2012-05-21	Paul Zinsious AMS	502-640-2918

SHOP DRAWING / SUBMITTAL REVIEW

Shop drawing/submittal review is for design conformity and general conformance with the design concept of the project as given in the contract documents. Subcontractor is responsible for full compliance with contract documents, confirming and correcting all quantities, correlating dimensions at project work site for tolerance, clearance, fabrication process, and techniques of construction. Subcontractor is responsible for coordination of his work with that of all other trades, and performance of the work in a safe and satisfactory manner.

<input checked="" type="checkbox"/>	Reviewed.	2012-05-21	Date
<input type="checkbox"/>	Reviewed with corrections.		
<input type="checkbox"/>	Revise and resubmit.		By
<input type="checkbox"/>	Rejected. See Remarks.		AMS, LLC

Holcomb Foundation Engineering Co., Inc.

SOILS • BITUMINOUS • CONCRETE • ENGINEERING AND TESTING

SHIPPING ADDRESS
393 Wood Road
Carbondale, IL 62901

MAILING ADDRESS
PO Box 88
Carbondale, IL 62903

PHONE 618-529-5262
TOLL FREE 800-333-1740
FAX 618-457-8991

May 18, 2012

Lamac Engineering Company
PO Box 160
Mt. Carmel, Illinois 62863

Attention: Mr. Pat Gould

Re: Laboratory Soil Tests – Borrow Sample
Hutsonville APD Closure
Hutsonville, Illinois
HFE File H-12097

Dear Sir:

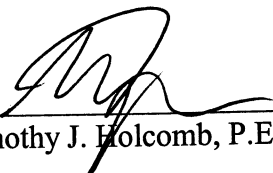
Results of laboratory tests performed on a soil sample delivered to our laboratory are as follows:

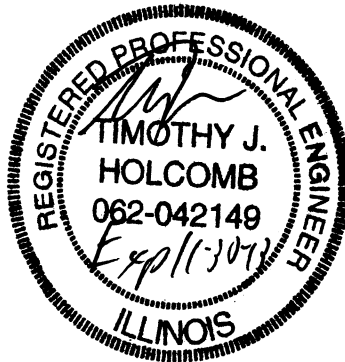
% Pass #4 Sieve	99.1
% Pass #200 Sieve	77.7
Atterberg Limits	
Liquid Limit:	30
Plastic Limit:	18
Plasticity Index:	12
Soil Classification:	Silty CLAY with sand (CL)

The grain size graph is attached. If you have any questions, please feel free to contact me at your convenience.

Sincerely,

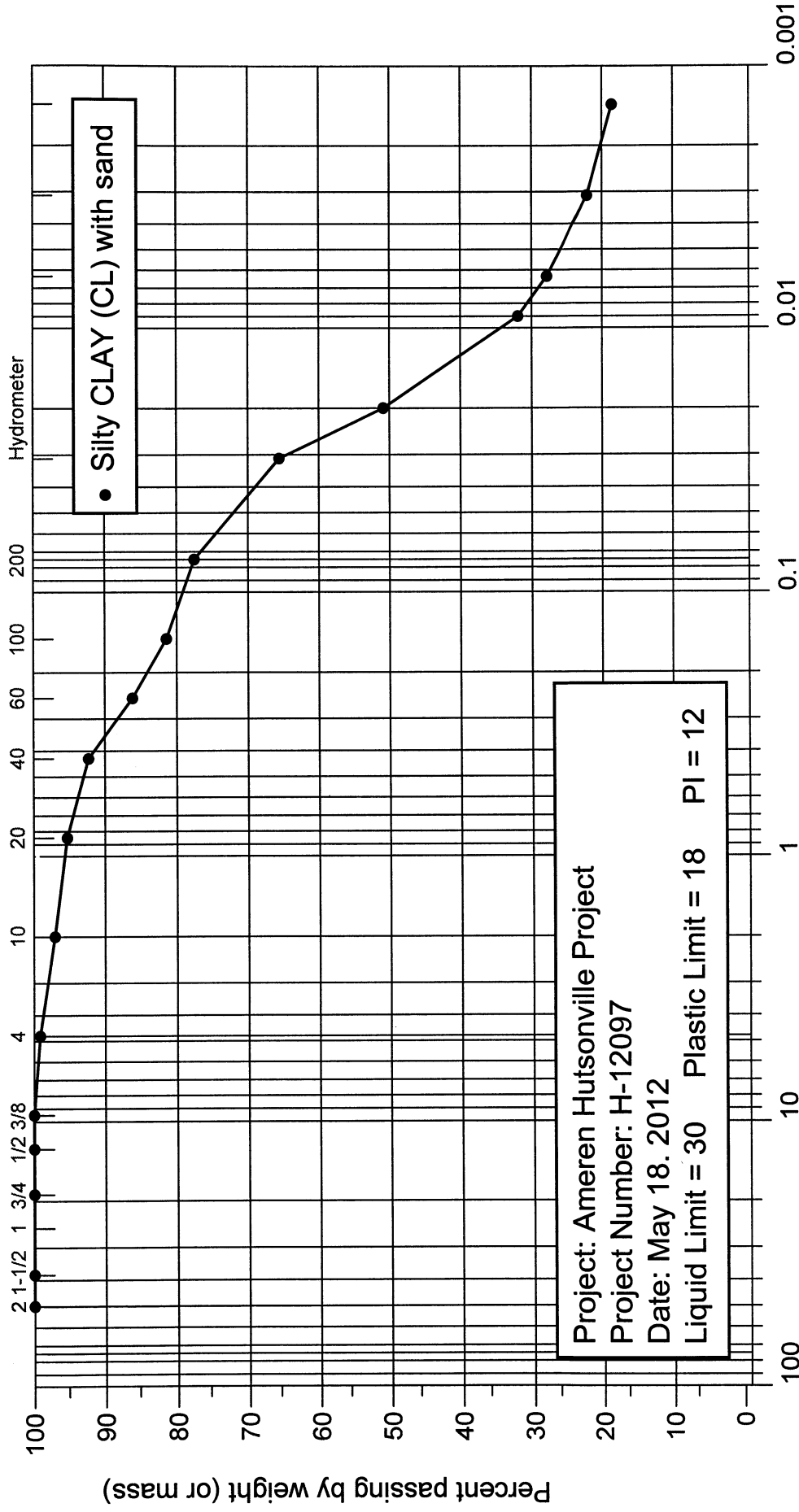
HOLCOMB FOUNDATION ENGINEERING CO.


Timothy J. Holcomb, P.E.



Holcomb Foundation Engineering

Grain Size Analysis



LABORATORY REPORT

ARDL, Inc. Applied Research and Development Laboratory

ARDL Number: 134021-01 ***** Report Date: 05/18/2012

Customer: LAMAC ENGINEERING
323 W 3RD STREET
MT CARMEL, IL 62863

Attention: PATRICK GOULD

Collected By: ARDL

Matrix: SOIL

Date Logged In: 05/15/2012

Hour Logged In: 09:06:59


Sampling Point: COMPOSITE/2 SITES

Collection Date: 05/14/2012

Hour: 1600

ANALYTE	RESULT
Benzene	<6.0 UG/KG
Toluene	<6.0 UG/KG
Ethyl Benzene	<6.0 UG/KG
m & p-Xylene	<12.0 UG/KG
o-Xylene	<6.0 UG/KG
Boron	<3.61 MG/KG
Mercury, TCLP	<0.000200 MG/L
Arsenic, TCLP	<0.0030 MG/L
Barium, TCLP	0.28 MG/L
Cadmium, TCLP	<0.0020 MG/L
Chromium, TCLP	<0.0050 MG/L
Lead, TCLP	0.0056 MG/L
Selenium, TCLP	0.0052 MG/L
Silver, TCLP	<0.0050 MG/L
Flash Point (Closed)	>200 DEG F
Chloride	<24.1 MG/KG
Sulfate	<60.2 MG/KG
pH	5.9 PH UNITS
Solids, Percent	83.0%

Respectfully submitted:

 (For)
Dean S. Dickerson
Technical Services Manager

P.O. Box 1566 Rte 15E Mt. Vernon Airport Mt. Vernon, Illinois 62864 (618) 244-3235

"Test everything. Keep the good." 1 Thes. 5:21

Compliant with NELAC

P.O. Box 1566, 400 Aviation Drive, Mt. Vernon, IL 62864
(618) 244-3235 Phone (618) 244-1149 Fax

P.O. Box 1566, 400 Aviation Drive, Mt. Vernon, IL 62864
(618) 244-3235 Phone (618) 244-1149 Fax

134031

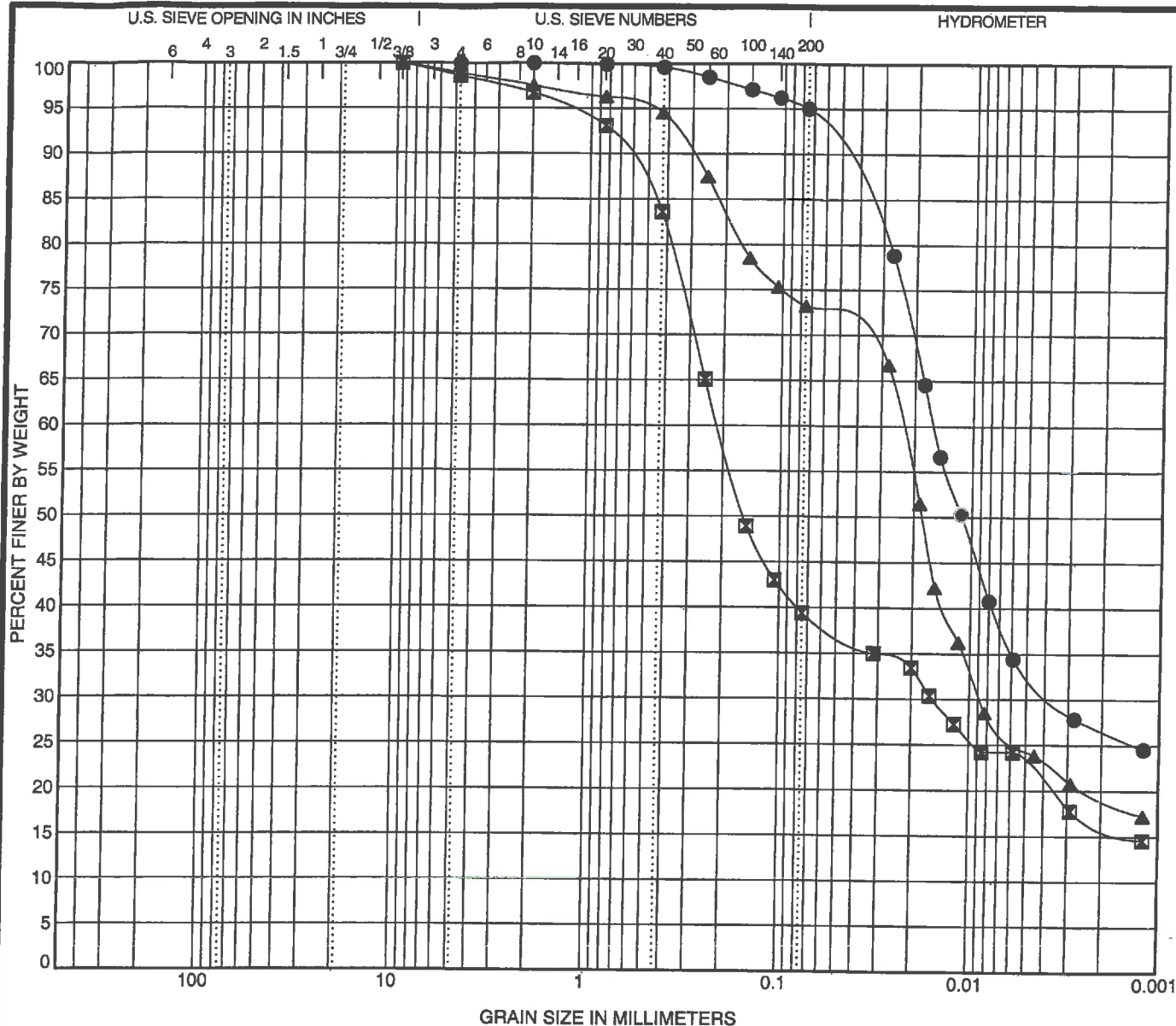
COPIES: White & Yellow copies accompany sample shipment to laboratory.
Pink copy retained by sampler.

PURCHASE ORDER NO:

[illegible][illegible]

J019896.01

US GRAIN SIZE J019896.01 • HUTSONVILLE.GPJ 00 CLONE ME.GPJ 7/17/12



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification	Classification	LL	PL	PI	Cc	Cu
● CS-3 1.0	LEAN CLAY(CL)	47	24	23		
☒ CS-4 1.0	CLAYEY SAND(SC)	28	15	13		
▲ CS-5 1.0	LEAN CLAY with SAND(CL)	42	18	24		

Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● CS-3 1.0	4.75	0	0		0.0	5.0	62.0	33.0
☒ CS-4 1.0	9.5	0.2	0		1.4	59.2	16.6	22.8
▲ CS-5 1.0	9.5	0	0		1.1	25.7	48.6	24.6



GRAIN SIZE DISTRIBUTION

Hutsonville

J019896.01

July 18, 2012

Anna Saindon
Geotechnology, Inc.
11816 Lackland Road
St. Louis, MO 63146
TEL: (314) 997-7440
FAX: (314) 997-2067



RE: J019896.01

WorkOrder: 12070427

Dear Anna Saindon:

TEKLAB, INC received 2 samples on 7/11/2012 4:33:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

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

Sincerely,



Shelly A. Hennessy
Project Manager
(618)344-1004 ex 36
SHennessy@teklabinc.com



Report Contents

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 12070427

Client Project: J019896.01

Report Date: 18-Jul-12

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Definitions

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 12070427

Client Project: J019896.01

Report Date: 18-Jul-12

Abbr Definition

- CCV Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
- DF Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
- DNI Did not ignite
- DUP Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
- ICV Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
- IDPH IL Dept. of Public Health
- LCS Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
- LCSD Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
- MB Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
- MDL Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.
- MS Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
- MSD Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
- MW Molecular weight
- ND Not Detected at the Reporting Limit
- NELAP NELAP Accredited
- PQL Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
- RL The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
- RPD Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
- SPK The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
- Surr Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
- TNTC Too numerous to count (> 200 CFU)

Qualifiers

- | | |
|--|---|
| # - Unknown hydrocarbon | B - Analyte detected in associated Method Blank |
| E - Value above quantitation range | H - Holding times exceeded |
| M - Manual Integration used to determine area response | ND - Not Detected at the Reporting Limit |
| R - RPD outside accepted recovery limits | S - Spike Recovery outside recovery limits |
| X - Value exceeds Maximum Contaminant Level | |



Case Narrative

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 12070427

Client Project: J019896.01

Report Date: 18-Jul-12

Cooler Receipt Temp: 4.6 °C

Locations and Accreditations

Collinsville		Springfield		Kansas City	
Address	5445 Horseshoe Lake Road Collinsville, IL 62234-7425	Address	3920 Pintail Dr Springfield, IL 62711-9415	Address	8421 Nieman Road Lenexa, KS 66214
Phone	(618) 344-1004	Phone	(217) 698-1004	Phone	(913) 541-1998
Fax	(618) 344-1005	Fax	(217) 698-1005	Fax	(913) 541-1998
Email	jhriley@teklabinc.com	Email	kmccclain@teklabinc.com	Email	dthompson@teklabinc.com

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2013	Collinsville
Kansas	KDHE	E-10374	NELAP	1/31/2013	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2013	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2013	Springfield
Arkansas	ADEQ	88-0966		3/14/2013	Collinsville
Illinois	IDPH	17584		4/30/2013	Collinsville
Kentucky	UST	0073		5/26/2013	Collinsville
Missouri	MDNR	00930		4/13/2013	Collinsville
Oklahoma	ODEQ	9978		8/31/2012	Collinsville



Laboratory Results

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 12070427

Client Project: J019896.01

Report Date: 18-Jul-12

Lab ID: 12070427-001

Client Sample ID: CS1

Matrix: SOLID

Collection Date: 07/10/2012 12:55

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		11.3	%	1	07/12/2012 10:47	R165754
STANDARD METHODS 4500-CL E (TOTAL)								
Chloride		11		< 11	mg/Kg-dry	1	07/16/2012 11:15	79748
SW-846 1010								
Ignitability, Closed Cup	NELAP	60		>200	°F	1	07/12/2012 9:45	R165724
SW-846 9036 (TOTAL)								
Sulfate		112	S	< 112	mg/Kg-dry	1	07/16/2012 11:15	79749
<i>Matrix interference present in sample.</i>								
SW-846 9045C								
pH (1:1)	NELAP	1.00		5.22		1	07/12/2012 12:45	R165730
SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP								
Arsenic	NELAP	0.250		< 0.250	mg/L	1	07/16/2012 18:55	79724
Barium	NELAP	0.0500		0.592	mg/L	1	07/16/2012 18:55	79724
Cadmium	NELAP	0.0200		< 0.0200	mg/L	1	07/16/2012 18:55	79724
Chromium	NELAP	0.100		< 0.100	mg/L	1	07/16/2012 18:55	79724
Lead	NELAP	0.400		< 0.400	mg/L	1	07/16/2012 18:55	79724
Selenium	NELAP	0.500		< 0.500	mg/L	1	07/16/2012 18:55	79724
Silver	NELAP	0.100		< 0.100	mg/L	1	07/16/2012 18:55	79724
SW-846 1311, 7470A IN TCLP EXTRACT								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	07/17/2012 9:58	79752
SW-846 3050B, 6010B, METALS BY ICP								
Boron	NELAP	2.00		3.33	mg/Kg-dry	1	07/16/2012 21:33	79708
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Benzene	NELAP	1.2		ND	µg/Kg-dry	1	07/12/2012 10:01	79735
Ethylbenzene	NELAP	5.8		ND	µg/Kg-dry	1	07/12/2012 10:01	79735
Toluene	NELAP	5.8		ND	µg/Kg-dry	1	07/12/2012 10:01	79735
Xylenes, Total	NELAP	5.8		ND	µg/Kg-dry	1	07/12/2012 10:01	79735
Surr: 1,2-Dichloroethane-d4		72.2-131		100.2	%REC	1	07/12/2012 10:01	79735
Surr: 4-Bromofluorobenzene		82.1-116		101.2	%REC	1	07/12/2012 10:01	79735
Surr: Dibromofluoromethane		77.7-120		100.1	%REC	1	07/12/2012 10:01	79735
Surr: Toluene-d8		86-116		98.1	%REC	1	07/12/2012 10:01	79735



Laboratory Results

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 12070427

Client Project: J019896.01

Report Date: 18-Jul-12

Lab ID: 12070427-002

Client Sample ID: CS2

Matrix: SOLID

Collection Date: 07/10/2012 12:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		12.8	%	1	07/12/2012 10:48	R165754
STANDARD METHODS 4500-CL E (TOTAL)								
Chloride		11		< 11	mg/Kg-dry	1	07/16/2012 13:17	79748
SW-846 1010								
Ignitability, Closed Cup	NELAP	60		>200	°F	1	07/12/2012 9:45	R165724
SW-846 9036 (TOTAL)								
Sulfate		114		< 114	mg/Kg-dry	1	07/16/2012 13:17	79749
SW-846 9045C								
pH (1:1)	NELAP	1.00		5.38		1	07/12/2012 12:46	R165730
SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP								
Arsenic	NELAP	0.250		< 0.250	mg/L	1	07/16/2012 19:07	79724
Barium	NELAP	0.0500		0.679	mg/L	1	07/16/2012 19:07	79724
Cadmium	NELAP	0.0200		< 0.0200	mg/L	1	07/16/2012 19:07	79724
Chromium	NELAP	0.100		< 0.100	mg/L	1	07/16/2012 19:07	79724
Lead	NELAP	0.400		< 0.400	mg/L	1	07/16/2012 19:07	79724
Selenium	NELAP	0.500		< 0.500	mg/L	1	07/16/2012 19:07	79724
Silver	NELAP	0.100		< 0.100	mg/L	1	07/16/2012 19:07	79724
SW-846 1311, 7470A IN TCLP EXTRACT								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	07/17/2012 10:08	79752
SW-846 3050B, 6010B, METALS BY ICP								
Boron	NELAP	1.82		1.86	mg/Kg-dry	1	07/16/2012 21:50	79708
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Benzene	NELAP	0.9		ND	µg/Kg-dry	1	07/12/2012 10:31	79735
Ethylbenzene	NELAP	4.7		ND	µg/Kg-dry	1	07/12/2012 10:31	79735
Toluene	NELAP	4.7		ND	µg/Kg-dry	1	07/12/2012 10:31	79735
Xylenes, Total	NELAP	4.7		ND	µg/Kg-dry	1	07/12/2012 10:31	79735
Surr: 1,2-Dichloroethane-d4		72.2-131		97.5	%REC	1	07/12/2012 10:31	79735
Surr: 4-Bromofluorobenzene		82.1-116		100.6	%REC	1	07/12/2012 10:31	79735
Surr: Dibromofluoromethane		77.7-120		99.8	%REC	1	07/12/2012 10:31	79735
Surr: Toluene-d8		86-116		97.2	%REC	1	07/12/2012 10:31	79735



Quality Control Results

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Client: Geotechnology, Inc.

Work Order: 12070427

Client Project: J019896.01

Report Date: 18-Jul-12

EPA SW846 3550C, 5035A, ASTM D2974

Batch R165754		SampType: LCS		Units %						
SampID: LCS										Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Percent Moisture	0.1		99.0	99.0	0	100	90	110	07/12/2012	

Batch R165754		SampType: LCSQC		Units %						
SampID: LCSQC										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Percent Moisture	0.1		99.0	99.0	0	100	90	110	07/12/2012	

Batch R165754		SampType: DUP		Units %				RPD Limit 15			
SampID: 12070429-002A DUP											
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Percent Moisture		0.1		17.6				17.09	2.66	07/12/2012	

Batch R165754		SampType: DUP		Units %				RPD Limit 15			
SampID: 12070443-004A DUP										Date	
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Analyzed	
Percent Moisture		0.1		13.0				13.35	2.27	07/12/2012	

Batch R165754		SampType: DUP		Units %				RPD Limit 15			
SampID: 12070494-001A DUP										Date Analyzed	
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD			
Percent Moisture	0.1		10.4				10.36	0.19	07/12/2012		

STANDARD METHODS 4500-CL E (TOTAL)

Batch 79748		SampType: MBLK		Units mg/Kg						
SampID: MB-79748										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chloride	10		< 10						07/16/2012	

Batch 79748		SampType: LCS		Units mg/Kg						
SampID: LCS-79748										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chloride	10		20	20	0	100.1	90	110	07/16/2012	
Chloride	100		192	200	0	96.0	90	110	07/16/2012	

Batch 79748		SampType: MS		Units mg/Kg-dry						
SampID: 12070427-001AMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chloride	11		219	224	0	97.4	85	115	07/16/2012	



Quality Control Results

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 12070427

Client Project: J019896.01

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STANDARD METHODS 4500-CL E (TOTAL)

Batch 79748		SampType: MSD		Units mg/Kg-dry				RPD Limit 15		
SampleID: 12070427-001AMSD										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride		11		214	224	0	95.4	218.7	2.02	07/16/2012

SW-846 1010

Batch R165724		SampType: LCS		Units °F						
SampleID: LCS-R165724										Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Ignitability, Closed Cup	60		81	81	0	100	97	103	07/12/2012	

Batch R165724		SampType: DUP		Units °F				RPD Limit 5		
SampleID: 12070427-002ADUP										Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Ignitability, Closed Cup		60		>200				0	0.00	07/12/2012

SW-846 9036 (TOTAL)

Batch 79749		SampType: MBLK		Units mg/Kg						
SampleID: MB-79749										Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Sulfate		10		< 10						
										07/16/2012

Batch 79749		SampType: LCS		Units mg/Kg						
SampID: LCS-79749										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate	10		19	20	0	93.5	90	110	07/16/2012	
Sulfate	100		183	200	0	91.7	90	110	07/16/2012	

Batch 79749		SampType: MS		Units mg/Kg-dry							
SampID: 12070427-001AMS											Date Analyzed
Analyses		RL	Oual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate		112	S	148	112	60.84	77.4	85	115	07/16/2012	

Batch 79749		SampType: MSD		Units mg/Kg-dry				RPD Limit 10		
SampID: 12070427-001AMSD										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Sulfate	112	S	148	112	60.84	77.8	147.7	0.30	07/16/2012	

SW-846 9045C

Batch R165730		SampType: LCS		Units							
SampleID: LCS-R165730											Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
pH (1:1)		1.00		6.98	7.00	0	99.7	99.1	100.8	07/12/2012	



Quality Control Results

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Client: Geotechnology, Inc.

Work Order: 12070427

Client Project: J019896.01

Report Date: 18-Jul-12

SW-846 9045C

Batch R165730		SampType: DUP		Units				RPD Limit 10			
SampID: 12070427-001ADUP											
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
pH (1:1)		1.00		5.06				5.220	3.11	07/12/2012	

Batch R165730		SampType: DUP		Units				RPD Limit 10			
SampID: 12070427-002ADUP										Date Analyzed	
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
pH (1:1)		1.00		5.16				5.380	4.17	07/12/2012	

Batch R165730		SampType: DUP		Units		RPD Limit 10				
SampID: 12070395-001ADUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)		1.00		4.32				4.300	0.46	07/12/2012

SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 79724		SampType: MBLK		Units mg/L						
SampID: MB-79724										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Arsenic	0.250		< 0.250	0.250	0	0	-100	100	07/16/2012	
Barium	0.0500		< 0.0500	0.0500	0	0	-100	100	07/16/2012	
Cadmium	0.0200		< 0.0200	0.0200	0	0	-100	100	07/16/2012	
Chromium	0.100		< 0.100	0.100	0	0	-100	100	07/16/2012	
Lead	0.400		< 0.400	0.400	0	0	-100	100	07/16/2012	
Selenium	0.500		< 0.500	0.500	0	0	-100	100	07/16/2012	
Silver	0.100		< 0.100	0.100	0	0	-100	100	07/16/2012	

Batch 79724		SampType: LCS		Units mg/L					
SampID: LCS-79724									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		19.0	20.0	0	95.0	85	115	07/16/2012
Barium	0.0500		17.8	20.0	0	89.0	85	115	07/16/2012
Cadmium	0.0200		0.487	0.500	0	97.4	85	115	07/16/2012
Chromium	0.100		1.87	2.00	0	93.7	85	115	07/16/2012
Lead	0.400		4.86	5.00	0	97.2	85	115	07/16/2012
Selenium	0.500		19.1	20.0	0	95.6	85	115	07/16/2012
Silver	0.100		0.453	0.500	0	90.6	85	115	07/16/2012



Quality Control Results

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 12070427

Client Project: J019896.01

Report Date: 18-Jul-12

SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 79724 SampType: MS Units mg/L

SampleID: 12070427-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		19.6	20.0	0	97.8	75	125	07/16/2012
Barium	0.0500		18.8	20.0	0.5920	90.8	75	125	07/16/2012
Cadmium	0.0200		0.501	0.500	0	100.2	75	125	07/16/2012
Chromium	0.100		1.93	2.00	0	96.3	75	125	07/16/2012
Lead	0.400		4.95	5.00	0	99.1	75	125	07/16/2012
Selenium	0.500		19.7	20.0	0	98.7	75	125	07/16/2012
Silver	0.100		0.479	0.500	0	95.8	75	125	07/16/2012

Batch 79724 SampType: MS Units mg/L

SampleID: 12070427-002AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		19.0	20.0	0	95.1	75	125	07/16/2012
Barium	0.0500		18.3	20.0	0.6790	88.0	75	125	07/16/2012
Cadmium	0.0200		0.487	0.500	0	97.4	75	125	07/16/2012
Chromium	0.100		1.86	2.00	0	93.1	75	125	07/16/2012
Lead	0.400		5.12	5.00	0.2660	97.2	75	125	07/16/2012
Selenium	0.500		19.3	20.0	0	96.4	75	125	07/16/2012
Silver	0.100		0.452	0.500	0	90.4	75	125	07/16/2012

Batch 79724 SampType: MS Units mg/L

SampleID: 12070488-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		19.7	20.0	0	98.4	75	125	07/16/2012
Barium	0.0500		19.3	20.0	0.8650	92.2	75	125	07/16/2012
Cadmium	0.0200		0.495	0.500	0	99.0	75	125	07/16/2012
Chromium	0.100		1.97	2.00	0	98.7	75	125	07/16/2012
Lead	0.400		4.92	5.00	0	98.3	75	125	07/16/2012
Selenium	0.500		19.8	20.0	0	99.1	75	125	07/16/2012
Silver	0.100		0.476	0.500	0	95.2	75	125	07/16/2012

Batch 79724 SampType: MS Units mg/L

SampleID: 12070488-002AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		19.7	20.0	0	98.6	75	125	07/16/2012
Barium	0.0500		18.9	20.0	0.5110	91.8	75	125	07/16/2012
Cadmium	0.0200		0.498	0.500	0	99.6	75	125	07/16/2012
Chromium	0.100		1.98	2.00	0	98.8	75	125	07/16/2012
Lead	0.400		4.94	5.00	0	98.7	75	125	07/16/2012
Selenium	0.500		20.0	20.0	0	100.2	75	125	07/16/2012
Silver	0.100		0.481	0.500	0	96.2	75	125	07/16/2012



Quality Control Results

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 12070427

Client Project: J019896.01

Report Date: 18-Jul-12

SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 79724		SampType: MSD		Units mg/L				RPD Limit 20		
SampleID: 12070488-002AMSD										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Analyzed	
Arsenic	0.250		19.8	20.0	0	98.8	19.73	0.20	07/16/2012	
Barium	0.0500		19.0	20.0	0.5110	92.4	18.87	0.69	07/16/2012	
Cadmium	0.0200		0.492	0.500	0	98.4	0.4980	1.21	07/16/2012	
Chromium	0.100		1.97	2.00	0	98.5	1.975	0.30	07/16/2012	
Lead	0.400		4.92	5.00	0	98.3	4.937	0.43	07/16/2012	
Selenium	0.500		20.0	20.0	0	99.8	20.03	0.30	07/16/2012	
Silver	0.100		0.479	0.500	0	95.8	0.4810	0.42	07/16/2012	

Batch 79724		SampType: MS		Units mg/L					
SampID: 12070488-003AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		19.4	20.0	0	97.1	75	125	07/16/2012
Barium	0.0500		19.1	20.0	0.8860	91.1	75	125	07/16/2012
Cadmium	0.0200		0.492	0.500	0	98.4	75	125	07/16/2012
Chromium	0.100		1.96	2.00	0	97.8	75	125	07/16/2012
Lead	0.400		4.90	5.00	0	98.0	75	125	07/16/2012
Selenium	0.500		19.7	20.0	0	98.4	75	125	07/16/2012
Silver	0.100		0.473	0.500	0	94.6	75	125	07/16/2012

Batch 79724		SampType: MS		Units mg/L					
SampleID: 12070495-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		19.3	20.0	0	96.6	75	125	07/16/2012
Barium	0.0500		17.6	20.0	0.2440	86.6	75	125	07/16/2012
Cadmium	0.0200		0.496	0.500	0	99.2	75	125	07/16/2012
Chromium	0.100		1.87	2.00	0	93.7	75	125	07/16/2012
Lead	0.400		4.90	5.00	0	98.0	75	125	07/16/2012
Selenium	0.500		19.5	20.0	0	97.4	75	125	07/16/2012
Silver	0.100		0.452	0.500	0	90.4	75	125	07/16/2012

Batch 79724		SampType: MS		Units mg/L					
SampID: 12070497-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		19.3	20.0	0	96.3	75	125	07/16/2012
Barium	0.0500		19.4	20.0	1.594	88.8	75	125	07/16/2012
Cadmium	0.0200		0.793	0.500	0.3130	96.0	75	125	07/16/2012
Chromium	0.100		1.90	2.00	0	95.1	75	125	07/16/2012
Lead	0.400		4.88	5.00	0	97.5	75	125	07/16/2012
Selenium	0.500		19.5	20.0	0	97.5	75	125	07/16/2012
Silver	0.100		0.460	0.500	0	92.0	75	125	07/16/2012



Quality Control Results

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 12070427

Client Project: J019896.01

Report Date: 18-Jul-12

SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 79724 SampType: MS		Units mg/L								Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Lead		0.400		4.90	5.00	0	97.9	75	125	07/16/2012

Batch 79724 SampType: MS		Units mg/L								Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Lead		0.400		4.98	5.00	0	99.6	75	125	07/16/2012

SW-846 1311, 7470A IN TCLP EXTRACT

Batch 79752 SampType: MBLK		Units mg/L								Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Mercury		0.00020		< 0.00020	0.00020	0	0	-100	100	07/17/2012

Batch 79752 SampType: LCS		Units mg/L								Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Mercury		0.00020		0.00467	0.00500	0	93.3	85	115	07/17/2012

Batch 79752 SampType: MS		Units mg/L								Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Mercury		0.00020		0.00441	0.00500	0	88.3	75	125	07/17/2012

Batch 79752 SampType: MSD		Units mg/L								Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Mercury		0.00020		0.00458	0.00500	0	91.7	0.004414	3.78	07/17/2012

Batch 79752 SampType: MS		Units mg/L								Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Mercury		0.00020		0.00475	0.00500	0	95.0	75	125	07/17/2012

Batch 79752 SampType: MS		Units mg/L								Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Mercury		0.00020		0.00467	0.00500	0	93.4	75	125	07/17/2012



Quality Control Results

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 12070427

Client Project: J019896.01

Report Date: 18-Jul-12

SW-846 1311, 7470A IN TCLP EXTRACT

Batch 79752 SampType: MS Units mg/L
SampID: 12070488-002AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00462	0.00500	0	92.4	75	125	07/17/2012

Batch 79752 SampType: MS Units mg/L
SampID: 12070488-003AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00460	0.00500	0	92.0	75	125	07/17/2012

Batch 79752 SampType: MS Units mg/L
SampID: 12070495-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00450	0.00500	0	90.1	75	125	07/17/2012

Batch 79752 SampType: MS Units mg/L
SampID: 12070497-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.0100		0.0703	0.00500	0.06625	81.4	75	125	07/17/2012

SW-846 3050E, 6010B, METALS BY ICP

Batch 79708 SampType: MBLK Units mg/Kg-dry
SampID: MB-79708

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Boron	2.00		< 2.00	2.00	0	0	-100	100	07/16/2012

Batch 79708 SampType: LCS Units mg/Kg-dry
SampID: LCS-79708

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Boron	2.00		47.4	50.0	0	94.8	85	115	07/16/2012

Batch 79708 SampType: MS Units mg/Kg-dry
SampID: 12070510-003AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Boron	1.92	S	27.8	48.1	1.240	55.2	75	125	07/16/2012

Batch 79708 SampType: MSD Units mg/Kg-dry
SampID: 12070510-003AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Boron	1.92	S	28.2	48.1	1.240	56.0	27.80	1.37	07/16/2012



Quality Control Results

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 12070427

Client Project: J019896.01

Report Date: 18-Jul-12

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 79735		SampType: MBLK		Units µg/Kg						
SampID: MBLK-A120712-1										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Benzene	1.0		ND						07/12/2012	
Ethylbenzene	5.0		ND						07/12/2012	
Toluene	5.0		ND						07/12/2012	
Xylenes, Total	5.0		ND						07/12/2012	
Surr: 1,2-Dichloroethane-d4			48.5	50.0		97.0	72.2	131	07/12/2012	
Surr: 4-Bromofluorobenzene			50.9	50.0		101.9	82.1	116	07/12/2012	
Surr: Dibromofluoromethane			49.2	50.0		98.5	77.7	120	07/12/2012	
Surr: Toluene-d8			48.3	50.0		96.6	86	116	07/12/2012	

Batch 79735		SampType: LCS		Units µg/Kg						
SampID: LCS-A120712-1										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Benzene	1.0		47.6	50.0	0	95.2	73.9	109	07/12/2012	
Ethylbenzene	5.0		48.6	50.0	0	97.3	84.1	115	07/12/2012	
Toluene	5.0		46.6	50.0	0	93.3	79.1	112	07/12/2012	
Xylenes, Total	5.0		146	150	0	97.6	79.1	117	07/12/2012	
Surr: 1,2-Dichloroethane-d4			46.0	50.0		92.0	72.2	131	07/12/2012	
Surr: 4-Bromofluorobenzene			52.9	50.0		105.7	82.1	116	07/12/2012	
Surr: Dibromofluoromethane			49.6	50.0		99.2	77.7	120	07/12/2012	
Surr: Toluene-d8			48.0	50.0		96.0	86	116	07/12/2012	

Batch 79735	SampType: LCSD	Units µg/Kg					RPD Limit 40			
SampID: LCSD-A120712-1										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Benzene	1.0		49.9	50.0	0	99.8	47.58	4.72	07/12/2012	
Ethylbenzene	5.0		50.5	50.0	0	101.0	48.65	3.71	07/12/2012	
Toluene	5.0		49.0	50.0	0	97.9	46.64	4.87	07/12/2012	
Xylenes, Total	5.0		152	150	0	101.2	146.4	3.64	07/12/2012	
Surr: 1,2-Dichloroethane-d4			45.6	50.0		91.1			07/12/2012	
Surr: 4-Bromofluorobenzene			51.9	50.0		103.8			07/12/2012	
Surr: Dibromofluoromethane			49.4	50.0		98.9			07/12/2012	
Surr: Toluene-d8			48.2	50.0		96.5			07/12/2012	



Receiving Check List

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 12070427

Client Project: J019896.01

Report Date: 18-Jul-12

Carrier: Josh Cerar

Received By: SRH

Completed by:

On:

11-Jul-12

Heather L. Riley

Reviewed by:

On:

11-Jul-12

Elizabeth A. Hurley

Pages to follow: Chain of custody

1

Extra pages included

1

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Temp °C 4.6

Type of thermal preservation?

None ☐

Ice ☒

Blue Ice ☐

Dry Ice ☐

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Reported field parameters measured:

Field ☐

Lab ☐

NA ☒

Container/Temp Blank temperature in compliance?

Yes ☒

No ☐

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water – at least one vial per sample has zero headspace?

Yes ☐

No ☐

No VOA vials ☒

Water - TOX containers have zero headspace?

Yes ☐

No ☐

No TOX containers ☒

Water - pH acceptable upon receipt?

Yes ☒

No ☐

NPDES/CWA TCN Interferences checked/treated in the field?

Yes ☐

No ☐

NA ☒

Any No responses must be detailed below or on the COC.

Analyze for all parameters on attached e-mail per Anna Saindon. SAH 7/12/12




pg. 1 of 1 Work Order # 12076427

pg. 1 of 1 Work Order # 12076427

Client: Geotechnology
Address: 11816 Lockland Rd St 15D
City / State / Zip: St. Louis MO 63146
Contact: Anna Saindon Phone: 314-997-7490
E-Mail: a-saindon@geotechnology.com Fax: _____

- Are these samples known to be involved in litigation? If yes, a surcharge will apply. ☐ Yes ☒ No
- Are these samples known to be hazardous? ☐ Yes ☒ No
- Are there any required reporting limits to be met on the requested analysis? If yes, please provide limits in comment section. ☐ Yes ☒ No

[illegible]

Relinquished By	Date / Time	Received By	Date / Time
	7/10/12 1400		7/11/12 1900
	7/11/12 1633	Stephen L. Hayes	7/11/12 1633

The individual signing this agreement on behalf of client acknowledges that he/she has read and understands the terms and conditions of this agreement, on the reverse side, and that he/she has the authority to sign on behalf of client.

WHITE - LAB YELLOW - SAMPLER'S COPY

Shelly A. Hennessy

From: Saindon, Anna [A_Saindon@geotechnology.com]

Sent: Thursday, June 21, 2012 11:08 AM

To: Shelly A. Hennessy

Subject: Bottle order

Good morning Shelly,

I would like the following bottle order delivered by next Monday afternoon if practicable. If you can give me an estimate on how much it costs for 6 of these I'll get a PO worked up for you too.

Thanks!

Hutsonville Ash Pond D Closure

J019896.01

6 sets in two coolers

RCRA Metals (as TCLP):

SW 846 1311 - Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver

SW 846 7478 - Mercury

CCW Ions (as Totals):

SW 846 6010B - Boron

SW 846 M4500-CLE - Chloride

SW 846 9036- Sulfate

BETX Constituents:

✓ SW 846 8260B - Benzene, Ethylbenzene, Toluene, Xylene

✓ pH - SW 846 9045C Every 25,000 cubic yards per borrow source

✓ Flash Point (Pensky-Martens Closed Cup) - SW 846 1010

Anna Saindon, PE, RG

Senior Engineer

GEOTECHNOLOGY, INC.

11816 Lackland Road, Suite 150

St. Louis, MO 63146

(314) 997-7440 phone

(314) 997-2067 fax

www.geotechnology.com

Please consider the environment before printing this email.

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7/11/2012

July 30, 2012

Anna Saindon
Geotechnology, Inc.
11816 Lackland Road
St. Louis, MO 63146
TEL: (314) 997-7440
FAX: (314) 997-2067



RE: J019896.01

WorkOrder: 12070752

Dear Anna Saindon:

TEKLAB, INC received 2 samples on 7/11/2012 4:33:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

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

Sincerely,



Shelly A. Hennessy
Project Manager
(618)344-1004 ex 36
SHennessy@teklabinc.com



Report Contents

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 12070752

Client Project: J019896.01

Report Date: 30-Jul-12

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	4
Laboratory Results	5
Quality Control Results	7
Chain of Custody	Appended

Client: Geotechnology, Inc.

Work Order: 12070752

Client Project: J019896.01

Report Date: 30-Jul-12

Abbr Definition

- CCV Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
- DF Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
- DNI Did not ignite
- DUP Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
- ICV Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
- IDPH IL Dept. of Public Health
- LCS Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
- LCS D Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
- MB Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
- MDL Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.
- MS Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
- MSD Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
- MW Molecular weight
- ND Not Detected at the Reporting Limit
- NELAP NELAP Accredited
- PQL Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
- RL The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
- RPD Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
- SPK The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
- Surr Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
- TNTC Too numerous to count (> 200 CFU)

Qualifiers

- | | |
|--|--|
| # - Unknown hydrocarbon | B - Analyte detected in associated Method Blank |
| E - Value above quantitation range | H - Holding times exceeded |
| J - Analyte detected below quantitation limits | M - Manual Integration used to determine area response |
| ND - Not Detected at the Reporting Limit | R - RPD outside accepted recovery limits |
| S - Spike Recovery outside recovery limits | X - Value exceeds Maximum Contaminant Level |



Case Narrative

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 12070752

Client Project: J019896.01

Report Date: 30-Jul-12

Cooler Receipt Temp: °C

This report contains additional analysis for work order #12070427.

Locations and Accreditations

Collinsville		Springfield		Kansas City	
Address	5445 Horseshoe Lake Road Collinsville, IL 62234-7425	Address	3920 Pintail Dr Springfield, IL 62711-9415	Address	8421 Nieman Road Lenexa, KS 66214
Phone	(618) 344-1004	Phone	(217) 698-1004	Phone	(913) 541-1998
Fax	(618) 344-1005	Fax	(217) 698-1005	Fax	(913) 541-1998
Email	jhriley@teklabinc.com	Email	kmccain@teklabinc.com	Email	dthompson@teklabinc.com

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2013	Collinsville
Kansas	KDHE	E-10374	NELAP	1/31/2013	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2013	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2013	Springfield
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2013	Collinsville
Arkansas	ADEQ	88-0966		3/14/2013	Collinsville
Illinois	IDPH	17584		4/30/2013	Collinsville
Kentucky	UST	0073		5/26/2013	Collinsville
Missouri	MDNR	00930		4/13/2013	Collinsville
Oklahoma	ODEQ	9978		8/31/2012	Collinsville



Laboratory Results

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 12070752

Client Project: J019896.01

Report Date: 30-Jul-12

Lab ID: 12070752-001

Client Sample ID: CS1

Matrix: SOLID

Collection Date: 07/10/2012 12:55

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
ASTM D3987, SW-846 9036, IN SHAKE EXTRACT (TOTAL)								
Sulfate, SHAKE		10	J	8	mg/L	1	07/20/2012 12:06	R166040
ASTM D3987, SW-846 9251, IN SHAKE EXTRACT								
Chloride, SHAKE		1		9	mg/L	1	07/20/2012 12:06	R166041
ASTM D3987, SW-846 3005A, 6010B, METALS IN SHAKE EXTRACT BY ICP								
Boron		0.100		0.474	mg/L	5	07/30/2012 14:38	79912



Laboratory Results

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 12070752

Client Project: J019896.01

Report Date: 30-Jul-12

Lab ID: 12070752-002

Client Sample ID: CS2

Matrix: SOLID

Collection Date: 07/10/2012 12:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
ASTM D3987, SW-846 9036, IN SHAKE EXTRACT (TOTAL)								
Sulfate, SHAKE		10	J	6	mg/L	1	07/20/2012 12:14	R166040
ASTM D3987, SW-846 9251, IN SHAKE EXTRACT								
Chloride, SHAKE		1		5	mg/L	1	07/20/2012 12:14	R166041
ASTM D3987, SW-846 3005A, 6010B, METALS IN SHAKE EXTRACT BY ICP								
Boron		0.100		0.431	mg/L	5	07/30/2012 14:44	79912



Quality Control Results

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 12070752

Client Project: J019896.01

Report Date: 30-Jul-12

ASTM D3987, SW-846 9036, IN SHAKE EXTRACT (TOTAL)

Batch R166040 SampType: MBLK Units mg/L

SampID: MB-R166040

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate, SHAKE	10		< 10						07/20/2012

Batch R166040 SampType: LCS Units mg/L

SampID: LCS-R166040

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate, SHAKE	10		19	20	0	97.3	90	110	07/20/2012

ASTM D3987, SW-846 9251, IN SHAKE EXTRACT

Batch R166041 SampType: MBLK Units mg/L

SampID: MB-R166041

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride, SHAKE	1		< 1						07/20/2012

Batch R166041 SampType: LCS Units mg/L

SampID: LCS-R166041

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride, SHAKE	1		21	20	0	104.4	90	110	07/20/2012

ASTM D3987, SW-846 3005A, 6010B, METALS IN SHAKE EXTRACT BY ICP

Batch 79912 SampType: MBLK Units mg/L

SampID: MB-79912

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Boron	0.0200	J	0.016	0.0200	0	79.5	-100	100	07/30/2012
Boron	0.0200		< 0.0200	0.0200	0	0	-100	100	07/24/2012

Batch 79912 SampType: LCS Units mg/L

SampID: LCS-79912

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Boron	0.0200		0.518	0.500	0	103.5	85	115	07/30/2012
Boron	0.0200		0.467	0.500	0	93.4	85	115	07/24/2012

Batch 79912 SampType: MS Units mg/L

SampID: 12070752-002AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Boron	0.100		0.948	0.500	0.4310	103.3	75	125	07/30/2012

Batch 79912 SampType: MSD Units mg/L

SampID: 12070752-002AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Boron	0.100		0.950	0.500	0.4310	103.8	0.9475	0.26	07/30/2012

TEKLAB, INC

5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
TEL: (618) 344-1004
FAX: (618) 344-1005

CHAIN-OF-CUSTODY RECORD

WorkOrder: 12070752

Client:

Geotechnology, Inc.
11816 Lackland Road
St. Louis, MO 63146

TEL: (314) 997-7440
FAX: (314) 997-2067
Project: J019896.01

12070752

19-Jul-12

Sample ID	ClientSampleID	Matrix	Date Collected	Bottle	Requested Tests			
					D3987/6010B	D3987/SW90	D3987/SW92	
12070752-001	CS1	Solid	7/10/2012 12:55:00 PM		A	A	A	
12070752-002	CS2	Solid	7/10/2012 12:40:00 PM		A	A	A	

Comments: Per Anna Saindon; additional analysis on WO #12070427

Relinquished by:	Date/Time
Relinquished by:	7-19-12
Relinquished by:	

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

August 15, 2012

Anna Saindon
Geotechnology, Inc.
11816 Lackland Road
St. Louis, MO 63146
TEL: (314) 997-7440
FAX: (314) 997-2067



RE: Hutsonville J019896.01

WorkOrder: 12080406

Dear Anna Saindon:

TEKLAB, INC received 3 samples on 8/8/2012 1:03:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

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

Sincerely,



Shelly A. Hennessy
Project Manager
(618)344-1004 ex 36
SHennessy@teklabinc.com



Report Contents

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 12080406

Client Project: Hutsonville J019896.01

Report Date: 15-Aug-12

This reporting package includes the following:

Cover Letter	1
Report Contents	2
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Chain of Custody	Appended

Client: Geotechnology, Inc.

Work Order: 12080406

Client Project: Hutsonville J019896.01

Report Date: 15-Aug-12

Abbr Definition

- CCV Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
- DF Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
- DNI Did not ignite
- DUP Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
- ICV Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
- IDPH IL Dept. of Public Health
- LCS Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
- LCSD Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
- MB Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
- MDL Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.
- MS Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
- MSD Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
- MW Molecular weight
- ND Not Detected at the Reporting Limit
- NELAP NELAP Accredited
- PQL Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
- RL The reporting limit is the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
- RPD Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
- SPK The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
- Surr Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
- TNTC Too numerous to count (> 200 CFU)

Qualifiers

- | | |
|--|---|
| # - Unknown hydrocarbon | B - Analyte detected in associated Method Blank |
| E - Value above quantitation range | H - Holding times exceeded |
| M - Manual Integration used to determine area response | ND - Not Detected at the Reporting Limit |
| R - RPD outside accepted recovery limits | S - Spike Recovery outside recovery limits |
| X - Value exceeds Maximum Contaminant Level | |



Case Narrative

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 12080406

Client Project: Hutsonville J019896.01

Report Date: 15-Aug-12

Cooler Receipt Temp: 4.2 °C

Locations and Accreditations

Collinsville		Springfield		Kansas City	
Address	5445 Horseshoe Lake Road Collinsville, IL 62234-7425	Address	3920 Pintail Dr Springfield, IL 62711-9415	Address	8421 Nieman Road Lenexa, KS 66214
Phone	(618) 344-1004	Phone	(217) 698-1004	Phone	(913) 541-1998
Fax	(618) 344-1005	Fax	(217) 698-1005	Fax	(913) 541-1998
Email	jhriley@teklabinc.com	Email	kmcclain@teklabinc.com	Email	dthompson@teklabinc.com

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2013	Collinsville
Kansas	KDHE	E-10374	NELAP	1/31/2013	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2013	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2013	Springfield
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2013	Collinsville
Arkansas	ADEQ	88-0966		3/14/2013	Collinsville
Illinois	IDPH	17584		4/30/2013	Collinsville
Kentucky	UST	0073		5/26/2013	Collinsville
Missouri	MDNR	00930		4/13/2013	Collinsville
Oklahoma	ODEQ	9978		8/31/2012	Collinsville



Laboratory Results

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.
 Client Project: Hutsonville J019896.01
 Lab ID: 12080406-001
 Matrix: SOLID

Work Order: 12080406
 Report Date: 15-Aug-12

Client Sample ID: CS-3

Collection Date: 08/07/2012 9:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
ASTM D3987, SW-846 9036, IN SHAKE EXTRACT (TOTAL)								
Sulfate, SHAKE		10		11	mg/L	1	08/14/2012 14:44	R166928
ASTM D3987, SW-846 9251, IN SHAKE EXTRACT								
Chloride, SHAKE		1		19	mg/L	1	08/13/2012 17:18	R166873
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		14.2	%	1	08/08/2012 17:39	R166726
SW-846 1010								
Ignitability, Closed Cup	NELAP	60		>200	°F	1	08/09/2012 11:00	R166734
SW-846 9045C								
pH (1:1)	NELAP	1.00		4.60		1	08/09/2012 10:04	R166723
ASTM D3987, SW-846 3005A, 6010B, METALS IN SHAKE EXTRACT BY ICP								
Boron		0.0200		< 0.0200	mg/L	1	08/13/2012 22:07	80495
SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP								
Arsenic	NELAP	0.250		< 0.250	mg/L	1	08/11/2012 4:42	80476
Barium	NELAP	0.0500		0.526	mg/L	1	08/11/2012 4:42	80476
Cadmium	NELAP	0.0200		< 0.0200	mg/L	1	08/11/2012 4:42	80476
Chromium	NELAP	0.100		< 0.100	mg/L	1	08/11/2012 4:42	80476
Lead	NELAP	0.400		< 0.400	mg/L	1	08/11/2012 4:42	80476
Selenium	NELAP	0.500		< 0.500	mg/L	1	08/11/2012 4:42	80476
Silver	NELAP	0.100		< 0.100	mg/L	1	08/11/2012 4:42	80476
SW-846 1311, 7470A IN TCLP EXTRACT								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	08/10/2012 14:17	80479
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Benzene	NELAP	1.0		ND	µg/Kg-dry	1	08/09/2012 23:55	80490
Ethylbenzene	NELAP	5.2		ND	µg/Kg-dry	1	08/09/2012 23:55	80490
Toluene	NELAP	5.2		ND	µg/Kg-dry	1	08/09/2012 23:55	80490
Xylenes, Total	NELAP	5.2		ND	µg/Kg-dry	1	08/09/2012 23:55	80490
Surr: 1,2-Dichloroethane-d4		72.2-131		107.3	%REC	1	08/09/2012 23:55	80490
Surr: 4-Bromofluorobenzene		82.1-116		97.4	%REC	1	08/09/2012 23:55	80490
Surr: Dibromofluoromethane		77.7-120		101.0	%REC	1	08/09/2012 23:55	80490
Surr: Toluene-d8		86-116		101.7	%REC	1	08/09/2012 23:55	80490



Laboratory Results

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 12080406

Client Project: Hutsonville J019896.01

Report Date: 15-Aug-12

Lab ID: 12080406-002

Client Sample ID: CS-4

Matrix: SOLID

Collection Date: 08/07/2012 9:45

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
ASTM D3987, SW-846 9036, IN SHAKE EXTRACT (TOTAL)								
Sulfate, SHAKE		10		< 10	mg/L	1	08/14/2012 14:46	R166928
ASTM D3987, SW-846 9251, IN SHAKE EXTRACT								
Chloride, SHAKE		1		2	mg/L	1	08/13/2012 17:22	R166873
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		10.6	%	1	08/08/2012 17:40	R166726
SW-846 1010								
Ignitability, Closed Cup	NELAP	60		>200	°F	1	08/09/2012 11:00	R166734
SW-846 9045C								
pH (1:1)	NELAP	1.00		6.55		1	08/09/2012 10:08	R166723
ASTM D3987, SW-846 3005A, 6010B, METALS IN SHAKE EXTRACT BY ICP								
Boron		0.0200		< 0.0200	mg/L	1	08/13/2012 22:24	80495
SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP								
Arsenic	NELAP	0.250		< 0.250	mg/L	1	08/11/2012 4:54	80476
Barium	NELAP	0.0500		0.295	mg/L	1	08/11/2012 4:54	80476
Cadmium	NELAP	0.0200		< 0.0200	mg/L	1	08/11/2012 4:54	80476
Chromium	NELAP	0.100		< 0.100	mg/L	1	08/11/2012 4:54	80476
Lead	NELAP	0.400		< 0.400	mg/L	1	08/11/2012 4:54	80476
Selenium	NELAP	0.500		< 0.500	mg/L	1	08/11/2012 4:54	80476
Silver	NELAP	0.100		< 0.100	mg/L	1	08/11/2012 4:54	80476
SW-846 1311, 7470A IN TCLP EXTRACT								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	08/10/2012 14:43	80479
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Benzene	NELAP	1.1		1.4	µg/Kg-dry	1	08/10/2012 0:21	80490
Ethylbenzene	NELAP	5.4		ND	µg/Kg-dry	1	08/10/2012 0:21	80490
Toluene	NELAP	5.4		ND	µg/Kg-dry	1	08/10/2012 0:21	80490
Xylenes, Total	NELAP	5.4		ND	µg/Kg-dry	1	08/10/2012 0:21	80490
Surr: 1,2-Dichloroethane-d4		72.2-131		107.4	%REC	1	08/10/2012 0:21	80490
Surr: 4-Bromofluorobenzene		82.1-116		101.6	%REC	1	08/10/2012 0:21	80490
Surr: Dibromofluoromethane		77.7-120		103.2	%REC	1	08/10/2012 0:21	80490
Surr: Toluene-d8		86-116		99.3	%REC	1	08/10/2012 0:21	80490



Laboratory Results

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.
Client Project: Hutsonville J019896.01
Lab ID: 12080406-003

Work Order: 12080406
Report Date: 15-Aug-12

Matrix: SOLID

Client Sample ID: CS-5

Collection Date: 08/07/2012 10:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
ASTM D3987, SW-846 9036, IN SHAKE EXTRACT (TOTAL)								
Sulfate, SHAKE		10		17	mg/L	1	08/14/2012 14:49	R166928
ASTM D3987, SW-846 9251, IN SHAKE EXTRACT								
Chloride, SHAKE		1		35	mg/L	1	08/13/2012 17:25	R166873
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		18.2	%	1	08/08/2012 17:40	R166726
SW-846 1010								
Ignitability, Closed Cup	NELAP	60		>200	°F	1	08/09/2012 11:00	R166734
SW-846 9045C								
pH (1:1)	NELAP	1.00		4.67		1	08/09/2012 10:11	R166723
ASTM D3987, SW-846 3005A, 6010B, METALS IN SHAKE EXTRACT BY ICP								
Boron		0.0200		< 0.0200	mg/L	1	08/13/2012 22:42	80495
SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP								
Arsenic	NELAP	0.250		< 0.250	mg/L	1	08/11/2012 5:05	80476
Barium	NELAP	0.0500		0.425	mg/L	1	08/11/2012 5:05	80476
Cadmium	NELAP	0.0200		< 0.0200	mg/L	1	08/11/2012 5:05	80476
Chromium	NELAP	0.100		< 0.100	mg/L	1	08/11/2012 5:05	80476
Lead	NELAP	0.400		< 0.400	mg/L	1	08/11/2012 5:05	80476
Selenium	NELAP	0.500		< 0.500	mg/L	1	08/11/2012 5:05	80476
Silver	NELAP	0.100		< 0.100	mg/L	1	08/11/2012 5:05	80476
SW-846 1311, 7470A IN TCLP EXTRACT								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	08/10/2012 14:20	80479
SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Benzene	NELAP	0.9		ND	µg/Kg-dry	1	08/13/2012 20:04	80586
Ethylbenzene	NELAP	4.7		ND	µg/Kg-dry	1	08/13/2012 20:04	80586
Toluene	NELAP	4.7		ND	µg/Kg-dry	1	08/13/2012 20:04	80586
Xylenes, Total	NELAP	4.7		ND	µg/Kg-dry	1	08/13/2012 20:04	80586
Surr: 1,2-Dichloroethane-d4		72.2-131		94.3	%REC	1	08/13/2012 20:04	80586
Surr: 4-Bromofluorobenzene		82.1-116		113.1	%REC	1	08/13/2012 20:04	80586
Surr: Dibromofluoromethane		77.7-120		101.8	%REC	1	08/13/2012 20:04	80586
Surr: Toluene-d8		86-116		98.4	%REC	1	08/13/2012 20:04	80586



Quality Control Results

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 12080406

Client Project: Hutsonville J019896.01

Report Date: 15-Aug-12

ASTM D3987, SW-846 9036, IN SHAKE EXTRACT (TOTAL)

Batch R166928 SampType: MBLK Units mg/L
SampID: MB-R166928

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate, SHAKE	10		< 10						08/14/2012

Batch R166928 SampType: LCS Units mg/L
SampID: LCS-R166928

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate, SHAKE	10		21	20	0	104.1	90	110	08/14/2012

Batch R166928 SampType: MS Units mg/L
SampID: 12080534-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate, SHAKE	10	S	14	10	5.420	84.5	85	115	08/14/2012

Batch R166928 SampType: MSD Units mg/L
SampID: 12080534-001AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate, SHAKE	10	S	14	10	5.420	82.4	13.87	1.53	08/14/2012

RPD Limit 15

ASTM D3987, SW-846 9251, IN SHAKE EXTRACT

Batch R166873 SampType: MBLK Units mg/L
SampID: MB-R166873

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride, SHAKE	1		< 1						08/13/2012

Batch R166873 SampType: LCS Units mg/L
SampID: LCS-R166873

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride, SHAKE	1		21	20	0	104.4	90	110	08/13/2012

EPA SW846 3550C, 5035A, ASTM D2974

Batch R166726 SampType: LCS Units %
SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		99.0	99.0	0	100	90	110	08/08/2012

Batch R166726 SampType: LCSQC Units %
SampID: LCSQC

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		99.0	99.0	0	100	90	110	08/08/2012



Quality Control Results

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 12080406

Client Project: Hutsonville J019896.01

Report Date: 15-Aug-12

EPA SW846 3550C, 5035A, ASTM D2974

Batch R166726 SampType: DUP		Units %		RPD Limit 15				Date Analyzed
SampID: 12080406-002B DUP								
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD
Percent Moisture	0.1		11.5				10.65	7.33

08/08/2012

Batch R166726 SampType: DUP		Units %		RPD Limit 15				Date Analyzed
SampID: 12080281-004A DUP								
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD
Percent Moisture	0.1		19.3				19.42	0.72

08/08/2012

Batch R166726 SampType: DUP		Units %		RPD Limit 15				Date Analyzed
SampID: 12080281-014A DUP								
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD
Percent Moisture	0.1		20.5				20.44	0.44

08/08/2012

Batch R166726 SampType: DUP		Units %		RPD Limit 15				Date Analyzed
SampID: 12080302-003A DUP								
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD
Percent Moisture	0.1		6.2				6.040	2.94

08/08/2012

Batch R166726 SampType: DUP		Units %		RPD Limit 15				Date Analyzed
SampID: 12080322-002A DUP								
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD
Percent Moisture	0.1		18.0				18.68	3.54

08/08/2012

Batch R166726 SampType: DUP		Units %		RPD Limit 15				Date Analyzed
SampID: 12080355-001A DUP								
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD
Percent Moisture	0.1		1.4				1.400	2.12

08/08/2012

Batch R166726 SampType: DUP		Units %		RPD Limit 15				Date Analyzed
SampID: 12080356-006A DUP								
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD
Percent Moisture	0.1		17.2				17.59	2.30

08/08/2012

Batch R166726 SampType: DUP		Units %		RPD Limit 15				Date Analyzed
SampID: 12080360-005A DUP								
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD
Percent Moisture	0.1		17.0				18.35	7.76

08/08/2012

Batch R166726 SampType: DUP		Units %		RPD Limit 15				Date Analyzed
SampID: 12080373-008A DUP								
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD
Percent Moisture	0.1		81.0				81.37	0.46

08/08/2012



Quality Control Results

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 12080406

Client Project: Hutsonville J019896.01

Report Date: 15-Aug-12

EPA SW846 3550C, 5035A, ASTM D2974

Batch R166726 SampType: DUP		Units %		RPD Limit 15						Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Percent Moisture		0.1		16.5				16.12	2.15	08/08/2012

SW-846 1010

Batch R166734 SampType: LCS		Units °F								Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Ignitability, Closed Cup		60		81	81	0	100	97	103	08/09/2012

Batch R166734 SampType: DUP		Units °F		RPD Limit 5						Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Ignitability, Closed Cup		60		>200				0	0.00	08/09/2012

SW-846 9045C

Batch R166723 SampType: LCS		Units								Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
pH (1:1)		1.00		6.99	7.00	0	99.9	99.1	100.8	08/09/2012

Batch R166723 SampType: DUP		Units		RPD Limit 10						Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
pH (1:1)		1.00		4.78				4.600	3.84	08/09/2012

Batch R166723 SampType: DUP		Units		RPD Limit 10						Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
pH (1:1)		1.00		6.68				6.550	1.97	08/09/2012

Batch R166723 SampType: DUP		Units		RPD Limit 10						Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
pH (1:1)		1.00		4.63				4.670	0.86	08/09/2012

Batch R166723 SampType: DUP		Units		RPD Limit 10						Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
pH (1:1)		1.00		6.88				7.060	2.58	08/09/2012



Quality Control Results

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 12080406

Client Project: Hutsonville J019896.01

Report Date: 15-Aug-12

SW-846 9045C

Batch R166723 SampType: DUP		Units		RPD Limit 10				Date Analyzed
SampID: 12080428-001CDUP								
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD
pH (1:1)	1.00		6.81				6.740	1.03

Batch R166723 SampType: DUP		Units		RPD Limit 10				Date Analyzed
SampID: 12080428-002CDUP								
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD
pH (1:1)	1.00		7.11				7.160	0.70

Batch R166723 SampType: DUP		Units		RPD Limit 10				Date Analyzed
SampID: 12080428-003CDUP								
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD
pH (1:1)	1.00		7.38				7.190	2.61

Batch R166723 SampType: DUP		Units		RPD Limit 10				Date Analyzed
SampID: 12080428-004CDUP								
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD
pH (1:1)	1.00		7.93				7.760	2.17

Batch R166723 SampType: DUP		Units		RPD Limit 10				Date Analyzed
SampID: 12080428-005CDUP								
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD
pH (1:1)	1.00		7.06				7.150	1.27

Batch R166723 SampType: DUP		Units		RPD Limit 10				Date Analyzed
SampID: 12080429-001CDUP								
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD
pH (1:1)	1.00		6.93				6.880	0.72

Batch R166723 SampType: DUP		Units		RPD Limit 10				Date Analyzed
SampID: 12080429-007CDUP								
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD
pH (1:1)	1.00		5.20				5.140	1.16

Batch R166723 SampType: DUP		Units		RPD Limit 10				Date Analyzed
SampID: 12080429-008CDUP								
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD
pH (1:1)	1.00		6.13				6.090	0.65

Batch R166723 SampType: DUP		Units		RPD Limit 10				Date Analyzed
SampID: 12080429-009ADUP								
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD
pH (1:1)	1.00		7.08				7.020	0.85



Quality Control Results

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Client: Geotechnology, Inc.

Work Order: 12080406

Client Project: Hutsonville J019896.01

Report Date: 15-Aug-12

SW-846 9045C

Batch R166723 SampType: DUP		Units		RPD Limit 10						Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
pH (1:1)		1.00		6.88				6.900	0.29	08/09/2012

Batch R166723 SampType: DUP		Units		RPD Limit 10						Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
pH (1:1)		1.00		7.16				7.090	0.98	08/09/2012

ASTM D3987, SW-846 3005A, 6010B, METALS IN SHAKE EXTRACT BY ICP

Batch 80495 SampType: MBLK		Units mg/L								Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Boron		0.0200		< 0.0200	0.0200	0	71.5	-100	100	08/13/2012

Batch 80495 SampType: LCS		Units mg/L								Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Boron		0.0200		0.493	0.500	0	98.7	85	115	08/13/2012

Batch 80495 SampType: MS		Units mg/L								Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Boron		0.0200		0.496	0.500	0.01170	97.0	75	125	08/13/2012

Batch 80495 SampType: MSD		Units mg/L		RPD Limit 20						Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Boron		0.0200		0.506	0.500	0.01170	98.9	0.4965	1.95	08/13/2012

Batch 80495 SampType: MS		Units mg/L								Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Boron		0.0200		0.487	0.500	0.007300	96.0	75	125	08/13/2012

Batch 80495 SampType: MSD		Units mg/L		RPD Limit 20						Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Boron		0.0200		0.492	0.500	0.007300	96.9	0.4872	0.92	08/13/2012



Quality Control Results

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 12080406

Client Project: Hutsonville J019896.01

Report Date: 15-Aug-12

SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 80476 SampType: MBLK Units mg/L
SampID: MB-80476

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		< 0.250	0.250	0	0	-100	100	08/10/2012
Barium	0.0500		< 0.0500	0.0500	0	0	-100	100	08/10/2012
Cadmium	0.0200		< 0.0200	0.0200	0	0	-100	100	08/10/2012
Chromium	0.100		< 0.100	0.100	0	0	-100	100	08/10/2012
Lead	0.400		< 0.400	0.400	0	0	-100	100	08/10/2012
Selenium	0.500		< 0.500	0.500	0	0	-100	100	08/10/2012
Silver	0.100		< 0.100	0.100	0	0	-100	100	08/10/2012

Batch 80476 SampType: LCS Units mg/L
SampID: LCS-80476

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		19.7	20.0	0	98.4	85	115	08/10/2012
Barium	0.0500		19.3	20.0	0	96.6	85	115	08/10/2012
Cadmium	0.0200		0.482	0.500	0	96.4	85	115	08/10/2012
Chromium	0.100		1.95	2.00	0	97.6	85	115	08/10/2012
Lead	0.400		4.89	5.00	0	97.9	85	115	08/10/2012
Selenium	0.500		20.1	20.0	0	100.2	85	115	08/10/2012
Silver	0.100		0.495	0.500	0	99.0	85	115	08/10/2012

Batch 80476 SampType: MS Units mg/L
SampID: 12080386-002AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Lead	0.400		5.56	5.00	0.5830	99.5	75	125	08/13/2012

Batch 80476 SampType: MS Units mg/L
SampID: 12080406-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		19.7	20.0	0	98.4	75	125	08/11/2012
Barium	0.0500		19.4	20.0	0.5260	94.3	75	125	08/11/2012
Cadmium	0.0200		0.482	0.500	0	96.4	75	125	08/11/2012
Chromium	0.100		1.90	2.00	0	95.2	75	125	08/11/2012
Lead	0.400		4.79	5.00	0	95.8	75	125	08/11/2012
Selenium	0.500		19.9	20.0	0	99.3	75	125	08/11/2012
Silver	0.100		0.489	0.500	0	97.8	75	125	08/11/2012



Quality Control Results

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Client: Geotechnology, Inc.

Work Order: 12080406

Client Project: Hutsonville J019896.01

Report Date: 15-Aug-12

SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 80476 SampType: MS Units mg/L
 SampleID: 12080406-002AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		18.4	20.0	0	92.0	75	125	08/11/2012
Barium	0.0500		18.3	20.0	0.2950	90.1	75	125	08/11/2012
Cadmium	0.0200		0.458	0.500	0	91.6	75	125	08/11/2012
Chromium	0.100		1.82	2.00	0	91.2	75	125	08/11/2012
Lead	0.400		4.63	5.00	0	92.6	75	125	08/11/2012
Selenium	0.500		18.4	20.0	0	92.2	75	125	08/11/2012
Silver	0.100		0.474	0.500	0	94.8	75	125	08/11/2012

Batch 80476 SampType: MS Units mg/L
 SampleID: 12080406-003AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		19.9	20.0	0	99.6	75	125	08/11/2012
Barium	0.0500		19.9	20.0	0.4250	97.4	75	125	08/11/2012
Cadmium	0.0200		0.479	0.500	0	95.8	75	125	08/11/2012
Chromium	0.100		1.92	2.00	0	96.2	75	125	08/11/2012
Lead	0.400		4.85	5.00	0	96.9	75	125	08/11/2012
Selenium	0.500		20.2	20.0	0	100.8	75	125	08/11/2012
Silver	0.100		0.493	0.500	0	98.6	75	125	08/11/2012

Batch 80476 SampType: MS Units mg/L
 SampleID: 12080407-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		19.4	20.0	0.1090	96.6	75	125	08/11/2012
Barium	0.0500		19.4	20.0	0.5750	94.3	75	125	08/11/2012
Cadmium	0.0200		8.01	0.500	7.510	100.6	75	125	08/11/2012
Chromium	0.100		1.87	2.00	0	93.4	75	125	08/11/2012
Lead	0.400		4.78	5.00	0	95.5	75	125	08/11/2012
Selenium	0.500		19.6	20.0	0	98.0	75	125	08/11/2012
Silver	0.100		0.480	0.500	0	96.0	75	125	08/11/2012

Batch 80476 SampType: MS Units mg/L
 SampleID: 12080468-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		19.5	20.0	0	97.6	75	125	08/11/2012
Barium	0.0500		18.7	20.0	0	93.4	75	125	08/11/2012
Cadmium	0.0200		0.479	0.500	0	95.8	75	125	08/11/2012
Chromium	0.100		1.90	2.00	0	95.2	75	125	08/11/2012
Lead	0.400		4.80	5.00	0	96.0	75	125	08/11/2012
Selenium	0.500		19.9	20.0	0	99.4	75	125	08/11/2012
Silver	0.100		0.492	0.500	0	98.4	75	125	08/11/2012

Client: Geotechnology, Inc.

Work Order: 12080406

Client Project: Hutsonville J019896.01

Report Date: 15-Aug-12

SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

 Batch 80476 SampType: MS Units mg/L
 SampID: 12080477-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		19.5	20.0	0	97.5	75	125	08/10/2012
Barium	0.0500		19.6	20.0	0.2350	96.8	75	125	08/10/2012
Cadmium	0.0200		0.483	0.500	0	96.6	75	125	08/10/2012
Chromium	0.100		2.58	2.00	0.6420	96.9	75	125	08/10/2012
Lead	0.400		4.96	5.00	0	99.2	75	125	08/10/2012
Selenium	0.500		19.6	20.0	0	98.2	75	125	08/10/2012
Silver	0.100		0.492	0.500	0	98.4	75	125	08/10/2012

 Batch 80476 SampType: MSD Units mg/L
 SampID: 12080477-001AMSD

RPD Limit 20

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Arsenic	0.250		19.3	20.0	0	96.5	19.50	1.08	08/10/2012
Barium	0.0500		19.6	20.0	0.2350	96.8	19.60	0.00	08/10/2012
Cadmium	0.0200		0.475	0.500	0	95.0	0.4830	1.67	08/10/2012
Chromium	0.100		2.56	2.00	0.6420	95.8	2.580	0.82	08/10/2012
Lead	0.400		4.89	5.00	0	97.8	4.960	1.38	08/10/2012
Selenium	0.500		19.5	20.0	0	97.4	19.64	0.77	08/10/2012
Silver	0.100		0.490	0.500	0	98.0	0.4920	0.41	08/10/2012

 Batch 80476 SampType: MS Units mg/L
 SampID: 12080477-002AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		19.4	20.0	0	97.2	75	125	08/10/2012
Barium	0.0500		19.3	20.0	0.2970	94.9	75	125	08/10/2012
Cadmium	0.0200		0.475	0.500	0	95.0	75	125	08/10/2012
Chromium	0.100		5.06	2.00	3.166	94.9	75	125	08/10/2012
Lead	0.400		4.87	5.00	0	97.4	75	125	08/10/2012
Selenium	0.500		19.6	20.0	0	98.2	75	125	08/10/2012
Silver	0.100		0.488	0.500	0	97.6	75	125	08/10/2012

 Batch 80476 SampType: MS Units mg/L
 SampID: 12080481-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		19.1	20.0	0	95.7	75	125	08/11/2012
Barium	0.0500		19.9	20.0	1.363	92.9	75	125	08/11/2012
Cadmium	0.0200		0.464	0.500	0	92.8	75	125	08/11/2012
Chromium	0.100		1.99	2.00	0.1400	92.4	75	125	08/11/2012
Lead	0.400		5.37	5.00	0.6200	95.0	75	125	08/11/2012
Selenium	0.500		19.3	20.0	0	96.6	75	125	08/11/2012
Silver	0.100		0.481	0.500	0	96.2	75	125	08/11/2012



Quality Control Results

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Client: Geotechnology, Inc.

Work Order: 12080406

Client Project: Hutsonville J019896.01

Report Date: 15-Aug-12

SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 80476		SampType: MS		Units mg/L						
SampID: 12080482-001AMS										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Arsenic	0.250		19.2	20.0	0	96.2	75	125	08/11/2012	
Barium	0.0500		19.6	20.0	0.7680	94.3	75	125	08/11/2012	
Cadmium	0.0200		0.469	0.500	0	93.8	75	125	08/11/2012	
Chromium	0.100		1.88	2.00	0	94.2	75	125	08/11/2012	
Lead	0.400		4.73	5.00	0	94.6	75	125	08/11/2012	
Selenium	0.500		19.3	20.0	0	96.6	75	125	08/11/2012	
Silver	0.100		0.484	0.500	0	96.8	75	125	08/11/2012	

Batch 80476		SampType: MSD		Units mg/L				RPD Limit 20		
SampID: 12080482-001AMSD										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Arsenic	0.250		19.6	20.0	0	97.8	19.23	1.75	08/11/2012	
Barium	0.0500		19.8	20.0	0.7680	95.0	19.63	0.66	08/11/2012	
Cadmium	0.0200		0.477	0.500	0	95.4	0.4690	1.69	08/11/2012	
Chromium	0.100		1.91	2.00	0	95.4	1.883	1.32	08/11/2012	
Lead	0.400		4.81	5.00	0	96.2	4.731	1.64	08/11/2012	
Selenium	0.500		19.7	20.0	0	98.7	19.31	2.20	08/11/2012	
Silver	0.100		0.490	0.500	0	98.0	0.4840	1.23	08/11/2012	

Batch 80476		SampType: MS		Units mg/L						
SampID: 12080490-001AMS										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Arsenic	0.250		19.1	20.0	0	95.6	75	125	08/11/2012	
Barium	0.0500		19.9	20.0	1.168	93.6	75	125	08/11/2012	
Cadmium	0.0200		0.469	0.500	0	93.8	75	125	08/11/2012	
Chromium	0.100		1.87	2.00	0	93.4	75	125	08/11/2012	
Lead	0.400		4.71	5.00	0	94.2	75	125	08/11/2012	
Selenium	0.500		19.4	20.0	0	97.0	75	125	08/11/2012	
Silver	0.100		0.482	0.500	0	96.4	75	125	08/11/2012	

SW-846 1311, 7470A IN TCLP EXTRACT

Batch 80479		SampType: MBLK		Units mg/L						
SampID: MB-80479										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Mercury	0.00020		< 0.00020	0.00020	0	0	-100	100	08/10/2012	

Batch 80479		SampType: LCS		Units mg/L						
SampID: LCS-80479										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Mercury	0.00020		0.00511	0.00500	0	102.3	85	115	08/10/2012	

Client: Geotechnology, Inc.
 Client Project: Hutsonville J019896.01

Work Order: 12080406
 Report Date: 15-Aug-12

SW-846 1311, 7470A IN TCLP EXTRACT

Batch 80479 SampType: MS Units mg/L
 SampID: 12080406-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00509	0.00500	0	101.8	75	125	08/10/2012

Batch 80479 SampType: MS Units mg/L
 SampID: 12080406-002AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00497	0.00500	0	99.4	75	125	08/10/2012

Batch 80479 SampType: MS Units mg/L
 SampID: 12080406-003AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00503	0.00500	0	100.6	75	125	08/10/2012

Batch 80479 SampType: MS Units mg/L
 SampID: 12080407-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00396	0.00500	0.0001355	76.6	75	125	08/10/2012

Batch 80479 SampType: MS Units mg/L
 SampID: 12080468-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00510	0.00500	0	101.9	75	125	08/10/2012

Batch 80479 SampType: MS Units mg/L
 SampID: 12080477-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00484	0.00500	0	96.9	75	125	08/10/2012

Batch 80479 SampType: MSD Units mg/L
 SampID: 12080477-001AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury	0.00020		0.00502	0.00500	0	100.4	0.004843	3.64	08/10/2012

Batch 80479 SampType: MS Units mg/L
 SampID: 12080477-002AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00484	0.00500	0	96.8	75	125	08/10/2012

Batch 80479 SampType: MS Units mg/L
 SampID: 12080481-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00491	0.00500	0	98.3	75	125	08/10/2012



Quality Control Results

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 12080406

Client Project: Hutsonville J019896.01

Report Date: 15-Aug-12

SW-846 1311, 7470A IN TCLP EXTRACT

Batch 80479		SampType: MS		Units mg/L						Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Mercury		0.00020		0.00487	0.00500	0	97.4	75	125	08/10/2012

Batch 80479		SampType: MS		Units mg/L						Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Mercury		0.00020		0.00492	0.00500	0	98.5	75	125	08/10/2012

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 80490		SampType: MBLK		Units µg/Kg						Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Benzene		1.0		ND						08/09/2012
Ethylbenzene		5.0		ND						08/09/2012
Toluene		5.0		ND						08/09/2012
Xylenes, Total		5.0		ND						08/09/2012
Surr: 1,2-Dichloroethane-d4				52.0	50.0		104.1	72.2	131	08/09/2012
Surr: 4-Bromofluorobenzene				48.0	50.0		96.0	82.1	116	08/09/2012
Surr: Dibromofluoromethane				48.3	50.0		96.6	77.7	120	08/09/2012
Surr: Toluene-d8				51.4	50.0		102.7	86	116	08/09/2012

Batch 80490		SampType: LCSD		Units µg/Kg						RPD Limit 40	Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Benzene		1.0		46.6	50.0	0	93.1	49.47	6.06		08/09/2012
Ethylbenzene		5.0		45.2	50.0	0	90.3	47.81	5.68		08/09/2012
Toluene		5.0		43.4	50.0	0	86.9	45.83	5.33		08/09/2012
Xylenes, Total		5.0		137	150	0	91.5	146.4	6.47		08/09/2012
Surr: 1,2-Dichloroethane-d4				49.4	50.0		98.8				08/09/2012
Surr: 4-Bromofluorobenzene				49.2	50.0		98.4				08/09/2012
Surr: Dibromofluoromethane				48.3	50.0		96.7				08/09/2012
Surr: Toluene-d8				50.2	50.0		100.4				08/09/2012

Batch 80490		SampType: LCS		Units µg/Kg						Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Benzene		1.0		49.5	50.0	0	98.9	73.9	109	08/09/2012
Ethylbenzene		5.0		47.8	50.0	0	95.6	84.1	115	08/09/2012
Toluene		5.0		45.8	50.0	0	91.7	79.1	112	08/09/2012
Xylenes, Total		5.0		146	150	0	97.6	79.1	117	08/09/2012
Surr: 1,2-Dichloroethane-d4				49.7	50.0		99.4	72.2	131	08/09/2012
Surr: 4-Bromofluorobenzene				50.1	50.0		100.2	82.1	116	08/09/2012
Surr: Dibromofluoromethane				48.6	50.0		97.1	77.7	120	08/09/2012
Surr: Toluene-d8				50.1	50.0		100.2	86	116	08/09/2012



Quality Control Results

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 12080406

Client Project: Hutsonville J019896.01

Report Date: 15-Aug-12

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 80586 SampType: MBLK Units µg/Kg

SampleID: MBLK-F120813-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Benzene	1.0		ND						08/13/2012
Benzene	1.0		ND						08/13/2012
Ethylbenzene	5.0		ND						08/13/2012
Ethylbenzene	5.0		ND						08/13/2012
Toluene	5.0		ND						08/13/2012
Toluene	5.0		ND						08/13/2012
Xylenes, Total	5.0		ND						08/13/2012
Xylenes, Total	5.0		ND						08/13/2012
Surr: 1,2-Dichloroethane-d4			43.6	50.0		87.3	72.2	131	08/13/2012
Surr: 1,2-Dichloroethane-d4			43.6	50.0		87.3	72.2	131	08/13/2012
Surr: 4-Bromofluorobenzene			56.5	50.0		113.0	82.1	116	08/13/2012
Surr: 4-Bromofluorobenzene			56.5	50.0		113.0	82.1	116	08/13/2012
Surr: Dibromofluoromethane			52.1	50.0		104.2	77.7	120	08/13/2012
Surr: Toluene-d8			47.4	50.0		94.9	86	116	08/13/2012
Surr: Toluene-d8			47.4	50.0		94.9	86	116	08/13/2012

Batch 80586 SampType: LCSD Units µg/Kg

RPD Limit 40

SampleID: LCSD-F120813-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Benzene	1.0		45.7	50.0	0	91.3	49.21	7.46	08/13/2012
Benzene	1.0		45.7	50.0	0	91.3	49.21	7.46	08/13/2012
Ethylbenzene	5.0		46.8	50.0	0	93.5	49.18	5.07	08/13/2012
Ethylbenzene	5.0		46.8	50.0	0	93.5	49.18	5.07	08/13/2012
Toluene	5.0		45.4	50.0	0	90.7	49.80	9.33	08/13/2012
Toluene	5.0		45.4	50.0	0	90.7	49.80	9.33	08/13/2012
Xylenes, Total	5.0		143	150	0	95.6	152.9	6.43	08/13/2012
Xylenes, Total	5.0		143	150	0	95.6	152.9	6.43	08/13/2012
Surr: 1,2-Dichloroethane-d4			43.0	50.0		86.0			08/13/2012
Surr: 1,2-Dichloroethane-d4			43.0	50.0		86.0			08/13/2012
Surr: 4-Bromofluorobenzene			57.3	50.0		114.6			08/13/2012
Surr: 4-Bromofluorobenzene			57.3	50.0		114.6			08/13/2012
Surr: Dibromofluoromethane			51.2	50.0		102.3			08/13/2012
Surr: Toluene-d8			47.1	50.0		94.2			08/13/2012
Surr: Toluene-d8			47.1	50.0		94.2			08/13/2012



Quality Control Results

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 12080406

Client Project: Hutsonville J019896.01

Report Date: 15-Aug-12

SW-846 5035, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 80586		SampType: LCS		Units µg/Kg						
SampID: LCS-F120813-1										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Benzene	1.0		49.2	50.0	0	98.4	73.9	109	08/13/2012	
Benzene	1.0		49.2	50.0	0	98.4	73.9	109	08/13/2012	
Ethylbenzene	5.0		49.2	50.0	0	98.4	84.1	115	08/13/2012	
Ethylbenzene	5.0		49.2	50.0	0	98.4	84.1	115	08/13/2012	
Toluene	5.0		49.8	50.0	0	99.6	79.1	112	08/13/2012	
Toluene	5.0		49.8	50.0	0	99.6	79.1	112	08/13/2012	
Xylenes, Total	5.0		153	150	0	101.9	79.1	117	08/13/2012	
Xylenes, Total	5.0		153	150	0	101.9	79.1	117	08/13/2012	
Surr: 1,2-Dichloroethane-d4			42.2	50.0		84.5	72.2	131	08/13/2012	
Surr: 1,2-Dichloroethane-d4			42.2	50.0		84.5	72.2	131	08/13/2012	
Surr: 4-Bromofluorobenzene			58.0	50.0		115.9	82.1	116	08/13/2012	
Surr: 4-Bromofluorobenzene			58.0	50.0		115.9	82.1	116	08/13/2012	
Surr: Dibromofluoromethane			50.5	50.0		101.0	77.7	120	08/13/2012	
Surr: Toluene-d8			48.7	50.0		97.5	86	116	08/13/2012	
Surr: Toluene-d8			48.7	50.0		97.5	86	116	08/13/2012	

Batch 80586		SampType: LCSGD		Units %REC				RPD Limit 0		
SampID: LCSGD-F120813-1										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Surr: 1,2-Dichloroethane-d4			42.4	50.0		84.8			08/13/2012	
Surr: 1,2-Dichloroethane-d4			42.4	50.0		84.8			08/13/2012	
Surr: 4-Bromofluorobenzene			57.2	50.0		114.5			08/13/2012	
Surr: 4-Bromofluorobenzene			57.2	50.0		114.5			08/13/2012	
Surr: Dibromofluoromethane			49.9	50.0		99.8			08/13/2012	
Surr: Toluene-d8			48.2	50.0		96.5			08/13/2012	
Surr: Toluene-d8			48.2	50.0		96.5			08/13/2012	

Batch 80586		SampType: LCSG		Units %REC						
SampID: LCSG-F120813-1										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Surr: 1,2-Dichloroethane-d4			42.3	50.0		84.5	61	128	08/13/2012	
Surr: 1,2-Dichloroethane-d4			42.3	50.0		84.5	61	128	08/13/2012	
Surr: 4-Bromofluorobenzene			57.0	50.0		114.1	78.2	117	08/13/2012	
Surr: 4-Bromofluorobenzene			57.0	50.0		114.1	78.2	117	08/13/2012	
Surr: Dibromofluoromethane			50.3	50.0		100.6	66.6	130	08/13/2012	
Surr: Toluene-d8			48.1	50.0		96.3	80.1	122	08/13/2012	
Surr: Toluene-d8			48.1	50.0		96.3	80.1	122	08/13/2012	



Receiving Check List

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 12080406

Client Project: Hutsonville J019896.01

Report Date: 15-Aug-12

Carrier: Josh Cerar

Received By: SRH

Completed by:

On:

08-Aug-12

Timothy W. Mathis

Reviewed by:

On:

08-Aug-12

Shelly A. Hennessy

Shelly A. Hennessy

Pages to follow: Chain of custody

1

Extra pages included

0

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Temp °C 4.2

Type of thermal preservation?

None ☐

Ice ☒

Blue Ice ☐

Dry Ice ☐

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Reported field parameters measured:

Field ☐

Lab ☐

NA ☒

Container/Temp Blank temperature in compliance?

Yes ☒

No ☐

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water - at least one vial per sample has zero headspace?

Yes ☐

No ☐

No VOA vials ☒

Water - TOX containers have zero headspace?

Yes ☐

No ☐

No TOX containers ☒

Water - pH acceptable upon receipt?

Yes ☒

No ☐

NPDES/CWA TCN interferences checked/treated in the field?

Yes ☐

No ☐

NA ☒

Any No responses must be detailed below or on the COC.

pg. 1 of 1 Work Order # 2050404

Work Order # 72080406

Samples on: ☒ Ice ☐ Blue Ice ☐ No Ice 4.2 °C
Preserved in: ☐ Lab ☐ Field FOR LAB USE ONLY
Lab Notes:
Comments: LEPA DLS

- Are these samples known to be involved in litigation? If yes, a surcharge will apply. ☐ Yes ☒ No
- Are these samples known to be hazardous? ☐ Yes ☒ No
- Are there any required reporting limits to be met on the requested analysis? If yes, please provide limits in comment section. ☒ Yes ☐ No

[illegible]

The individual signing this agreement on behalf of client acknowledges that he/she has read and understands the terms and conditions of this agreement, on the reverse side, and that he/she has the authority to sign on behalf of client.



Ash Management Services, LLC
12601 Plantside Drive
Louisville, Kentucky 40299
Phone: 502-245-1353

Hutsonville APD Closure

HUT-APD-SUB-015-01-PCP granular material

02204-1.4.A 25 LB Sample – foundation, bedding and haunch material [on site 2012-06-13]
02620-2.2.C Coarse aggregate – drainage course [CA-7]

Submittal No.	Date	Contact	Phone no.
SUB-015-01	2012-06-13	Paul Zinsious AMS	502-640-2918

SHOP DRAWING / SUBMITTAL REVIEW	
Shop drawing/submittal review is for design conformity and general conformance with the design concept of the project as given in the contract documents. Subcontractor is responsible for full compliance with contract documents, confirming and correcting all quantities, correlating dimensions at project work site for tolerance, clearance, fabrication process, and techniques of construction. Subcontractor is responsible for coordination of his work with that of all other trades, and performance of the work in a safe and satisfactory manner.	
<input checked="" type="checkbox"/> Reviewed.	2012-06-13 Date
<input type="checkbox"/> Reviewed with corrections.	By AMS, LLC
<input type="checkbox"/> Revise and resubmit.	
<input type="checkbox"/> Rejected. See Remarks.	

Van Tarble & Sons Quarries

Quality Test Report

Plant 01-Quality Lime
Product C-025-042CM11
Specification 042CM11

CA-7



11955402

Sample Information

Sample No 11955402
Date Sampled 03/28/2012 12:10
Date Completed 03/28/2012 12:10
Sampled By Jay Tarble
Tested By Jay Tarble
Type Production
Method Screen Chute Discharge
Location
Process 09 (Washing Roadpack)
Ledge (002) East Bottom
Other

Weather Sunny
Temp 70
Split Sample ☐
Resample ☐
Lot / Sublot
Quad / Quantity
Sequence 707
Code

Test Note

Gradation Results

Unit	Moist Mass	Dry Mass	Wash Mass	Moisture %	Wash Loss %	Procedure		
g	6002.10	5883.80	5875.90	2.0	0.1	AASHTO T27 & T11		
Sieve	Mass Retained	Cum Mass Retained	Ind % Retained	% Retained	% Passing	Target	Specification	Comment
1" (25mm)	0.0	0.0	0.0	0.0	100.0		100-100	
3/4" (19mm)	202.9	202.9	3.4	3.4	96.6		84-100	
5/8" (16mm)	1047.6	1250.5	17.8	21.2	78.8			
1/2" (12.5mm)	1942.8	3193.3	33.1	54.3	45.7		37-53	
3/8" (9.5mm)	1791.3	4984.6	30.4	84.7	15.3			
1/4" (6.3mm)	864.6	5849.2	14.7	99.4	0.6			
#4 (4.75mm)	17.5	5866.7	0.3	99.7	0.3		0-12	
#8 (2.36mm)	2.2	5868.9	0.0	99.7	0.3			
#16 (1.18mm)	2.0	5870.9	0.0	99.7	0.3		0-8	
#200 (75um)	3.7	5874.6	0.10	99.80	0.20			
Pan	1.2	5875.8	0.20	100.00	0.00			



June 26, 2012

J019896.01.7310L

Mr. Andrew Antonik
Ameren Energy Generating Company
PO Box 66892
St. Louis, Missouri 63166

Re: Hutsonville Ash Pond Closure

Dear Mr. Antonik:

Submitted within this report are the test results from a sample of aggregate from the above referenced project. The sample was received in our laboratory on June 21, 2012 and tested in general accordance with the test method below.

Test To Determine

Method of Test

Standard Test Method for Sieve Analysis
of Fine and Course Aggregates

ASTM C 136

We trust this is the information you require. Please contact the undersigned if you have any questions regarding this report.

Respectfully submitted,

GEOTECHNOLOGY, INC.
Construction Materials Testing Group

Zachary R. Bullock, CET
CMT Laboratory Manager

ZRB/JPk:zrb

Copies Submitted: (1)

Attachment: Test Results

Material: Crushed Limestone (IDOT CA 7)

SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES- ASTM C 136

<u>Sieve Size</u>	<u>Total Passing, %</u>	<u>Specification Requirements</u>
1 ½ in.	100.0	100
1 in.	100.0	95 \pm 5
¾ in.	94.9	
½ in.	44.3	45 \pm 15
⅜ in.	14.0	
No.4	2.4	5 \pm 5
No.8	1.9	
No.16	1.8	
No.30	1.7	
No. 50	1.6	
No.100	1.5	
No.200	1.5	

The above sieve analysis satisfies project specifications as Illinois Department of Transportation CA 7 Aggregate (Art. 1004.01).



Ash Management Services, LLC
12601 Plantside Drive
Louisville, Kentucky 40299
Phone: 502-245-1353

Hutsonville APD Closure

HUT-APD-SUB-038-01

Concrete Placement

03300-3.2.D

Maintain Records of Concrete Placement

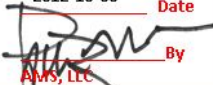
Submittal Information

Submittal No.	Date	Contact	Phone no.
SUB-038-01	2012-10-08	Paul Zinsious AMS	502-640-2918

SHOP DRAWING / SUBMITTAL REVIEW

Shop drawing/submittal review is for design conformity and general conformance with the design concept of the project as given in the contract documents. Subcontractor is responsible for full compliance with contract documents, confirming and correcting all quantities, correlating dimensions at project work site for tolerance, clearance, fabrication process, and techniques of construction. Subcontractor is responsible for coordination of his work with that of all other trades, and performance of the work in a safe and satisfactory manner.

<input checked="" type="checkbox"/>	Reviewed.	2012-10-08	Date
<input type="checkbox"/>	Reviewed with corrections.		
<input type="checkbox"/>	Revise and resubmit.		By
<input type="checkbox"/>	Rejected. See Remarks.		


AMS, LLC

Paul H. Zinsious, PMP

From: reinrod farms@hotmail.com on behalf of Nicole Hunt <nhuntstconstruction@live.com>
Sent: Monday, October 08, 2012 11:25 AM
To: Paul H. Zinsious, PMP; Travis Hunt
Attachments: Concrete Placement Log Hutsonville.xlsx

Paul,

Attached is the Concrete Ditch Placement Log. Each section started on the uphill side.

Nicole Findley Hunt
S T Construction, Inc.
1423 Buckeye Street
Terre Haute, IN 47804
Phone 812-234-2243
Fax 812-235-0080

www.stconstruction.biz



Please consider the environment before printing this email

A pessimist sees the difficulty in every opportunity; an optimist sees the opportunity in every difficulty.

[Winston Churchill](#)

S T Construction, Inc.

Concret Ditch Placement Log

Project: Hutsonville Power Plant

4' Ditch

Date	Yardage	Location
7/17/2012	22.0	0-230.34'
7/19/2012	22.5	230.34'-465.92'
7/20/2012	19.0	465.92'-664.85'
7/23/2012	24.0	664.84'-916.12'
7/24/2012	8.0	916.12'-1000'
Total	95.5	1000'

8' Ditch

Date	Yardage	Location
8/16/2012	15.0	0'-91.5'
8/20/2012	24.0	91.5'-146.4'
8/21/2012	25.0	146.4'-298.9'
8/22/2012	26.5	298.9'-460.55'
8/23/2012	24.0	460.55'-606.95'
8/24/2012	32.0	606.95'-802.15'
8/29/2012	16.0	802.15'-899.75'
8/30/2012	24.0	899.75'-1046.15'
8/31/2012	24.0	1046.15'-1192.55'
9/11/2012	16.0	1192.5'-1320.2'
9/12/2012	40.0	1320.2'-1594.2'
9/13/2012	17.0	1594.2'-1730.3'
Total	283.5	1730.3'



**PATRIOT ENGINEERING
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1359 N. Aberdeen Ave.
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(812) 466-5559 FAX: (812) 466-5509
PatriotEng.com

**REPORT OF COMPRESSIVE STRENGTH
ASTM C39**

☒ Original
☐ Amended

Addressed To:
ST Construction
1423 Buckeye Street
Terre Haute, IN 47804

Project Name: Hutsonville Cell Closure
Client: ST Construction
Project Number: 02-12-0910

Distributed To:
Travis Hunt (stdirt1@hotmail.com)

Project Information				Supplier Information					
Date of concrete placement:	<u>8/20/2012</u>			Concrete Supplier:	<u>R&L Ready Mix</u>				
Structure type:	<u>Slab</u>			Mix Number:	<u>Class SI</u>				
Total cubic yards:	<u>24</u> cy			Ticket Number:	<u>48626</u>				
Location of placement:	<u>Ditch liner- southside, pour #1</u>			Truck Number:	<u>n/a</u>				
Concrete contractor:	<u>ST Construction</u>			Batch Time:	<u>7:02 AM</u>				
				Mix Duration: (mins)	<u>85</u>				
Plastic Concrete Data				Hardened Concrete Data					
Air Temp:	<u>63</u>	°F		Test Cylinders Cast By:	<u>T. Simpson</u>				
Concrete Temp:	<u>75</u>	°F ASTM C1064		Specified Strength at 28 days:	<u>4000</u> (psi)				
Slump:	<u>3</u>	ASTM C143		Sample Size:	<u>4x8</u>				
Air Content:	<u>5.50%</u>	ASTM C173/C231		Tested By:	<u>TS/BM</u>				
Concrete Yield:	<u>n/a</u>	ASTM C138		Set Number:	<u>1</u>				
Ad Mixtures:	<u>WR</u>								
Compressive Strength Information									
Cylinder Number	Date Received	Date Tested	Age (Days)	Diameter (inches)	Length (inches)	Area (sq in)	Load (lbs)	Comp Str (psi)	Break Type
4998	8/21/2012	8/27/2012	7	4.000	8	12.56	58080	4620	4
4999	8/21/2012	9/17/2012	28	3.990	8	12.50	72410	5790	3
5000	8/21/2012	9/17/2012	28	3.990	8	12.50	72980	5840	2
5001	8/21/2012		Spare						
28 day average								5820	
Remarks: _____									

Reported By: <u>Timothy C. Gault</u>									



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Client: ST Construction
Project Number: 02-12-0910

Distributed To:
Travis Hunt (stdirt1@hotmail.com)

Project Information				Supplier Information					
Date of concrete placement:	<u>8/21/2012</u>			Concrete Supplier:	<u>R&L Ready Mix</u>				
Structure type:	<u>Slab</u>			Mix Number:	<u>Class SI</u>				
Total cubic yards:	<u>24</u> cy			Ticket Number:	<u>48662</u>				
Location of placement:	<u>Ditch liner- southside, pour #2</u>			Truck Number:	<u>n/a</u>				
Concrete contractor:	<u>ST Construction</u>			Batch Time:	<u>6:58 AM</u>				
				Mix Duration: (mins)	<u>122</u>				
Plastic Concrete Data				Hardened Concrete Data					
Air Temp:	<u>66</u>	°F		Test Cylinders Cast By:	<u>T. Simpson</u>				
Concrete Temp:	<u>78</u>	°F	ASTM C1064	Specified Strength at 28 days:	<u>4000</u> (psi)				
Slump:	<u>2</u>		ASTM C143	Sample Size:	<u>4x8</u>				
Air Content:	<u>4.20%</u>		ASTM C173/C231	Tested By:	<u>BM</u>				
Concrete Yield:	<u>n/a</u>		ASTM C138	Set Number:	<u>1</u>				
Ad Mixtures:	<u>WR</u>								
Compressive Strength Information									
Cylinder Number	Date Received	Date Tested	Age (Days)	Diameter (inches)	Length (inches)	Area (sq in)	Load (lbs)	Comp Str (psi)	Break Type
5019	8/22/2012	8/28/2012	7	4.000	8	12.56	55160	4390	4
5020	8/22/2012	9/18/2012	28	3.990	8	12.50	63550	5080	3
5021	8/22/2012	9/18/2012	28	3.990	8	12.50	62750	5020	3
5022	8/22/2012		Spare						
28 day average								5050	
Remarks: _____									

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Project Name: Hutsonville Cell Closure
Client: ST Construction
Project Number: 02-12-0910

Distributed To:
Travis Hunt (stdirt1@hotmail.com)

Project Information				Supplier Information					
Date of concrete placement:	<u>8/22/2012</u>			Concrete Supplier:	<u>R&L Ready Mix</u>				
Structure type:	<u>Slab</u>			Mix Number:	<u>Class SI</u>				
Total cubic yards:	<u>24</u> cy			Ticket Number:	<u>48676</u>				
Location of placement:	<u>Ditch liner- southside, pour 3</u>			Truck Number:	<u>n/a</u>				
Concrete contractor:	<u>ST Construction</u>			Batch Time:	<u>n/a</u>				
				Mix Duration: (mins)	<u>n/a</u>				
Plastic Concrete Data				Hardened Concrete Data					
Air Temp:	<u>68</u>	°F		Test Cylinders Cast By:	<u>T. Simpson</u>				
Concrete Temp:	<u>75</u>	°F ASTM C1064		Specified Strength at 28 days:	<u>4000</u> (psi)				
Slump:	<u>3</u>	ASTM C143		Sample Size:	<u>4x8</u>				
Air Content:	<u>4.50%</u>	ASTM C173/C231		Tested By:	<u>BM</u>				
Concrete Yield:	<u>n/a</u>	ASTM C138		Set Number:	<u>1</u>				
Ad Mixtures:	<u>WR</u>								
Compressive Strength Information									
Cylinder Number	Date Received	Date Tested	Age (Days)	Diameter (inches)	Length (inches)	Area (sq in)	Load (lbs)	Comp Str (psi)	Break Type
5076	8/23/2012	8/29/2012	7	4.000	8	12.56	57810	4600	2
5077	8/23/2012	9/19/2012	28	4.000	8	12.56	68450	5450	4
5078	8/23/2012	9/19/2012	28	4.000	8	12.56	68830	5480	4
5079	8/23/2012		Spare						
28 day average								5470	
Remarks: _____									

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Client: ST Construction
Project Number: 02-12-0910

Distributed To:
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Project Information				Supplier Information					
Date of concrete placement:	<u>8/23/2012</u>			Concrete Supplier:	<u>R&L Ready Mix</u>				
Structure type:	<u>Slab</u>			Mix Number:	<u>Class SI</u>				
Total cubic yards:	<u>24</u> cy			Ticket Number:	<u>48687</u>				
Location of placement:	<u>Ditch liner- southside, pour #4</u>			Truck Number:	<u>n/a</u>				
Concrete contractor:	<u>ST Construction</u>			Batch Time:	<u>6:46 AM</u>				
				Mix Duration: (mins)	<u>75</u>				
Plastic Concrete Data				Hardened Concrete Data					
Air Temp:	<u>71</u>	°F		Test Cylinders Cast By:	<u>T. Simpson</u>				
Concrete Temp:	<u>73</u>	°F	ASTM C1064	Specified Strength at 28 days:	<u>4000</u> (psi)				
Slump:	<u>3.75</u>		ASTM C143	Sample Size:	<u>4x8</u>				
Air Content:	<u>4.70%</u>		ASTM C173/C231	Tested By:	<u>JW</u>				
Concrete Yield:	<u>n/a</u>		ASTM C138	Set Number:	<u>1</u>				
Ad Mixtures:	<u>WR</u>								
Compressive Strength Information									
Cylinder Number	Date Received	Date Tested	Age (Days)	Diameter (inches)	Length (inches)	Area (sq in)	Load (lbs)	Comp Str (psi)	Break Type
5080	8/24/2012	8/30/2012	7	4.000	8	12.56	65340	5200	4
5081	8/24/2012	9/20/2012	28	4.000	8	12.56	74100	5900	3
5082	8/24/2012	9/20/2012	28	4.000	8	12.56	73040	5810	4
5083	8/24/2012		Spare						
28 day average								5860	
Remarks: _____									

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Client: ST Construction
Project Number: 02-12-0910

Distributed To:
Travis Hunt (stdirt1@hotmail.com)

Project Information				Supplier Information					
Date of concrete placement:	<u>8/24/2012</u>			Concrete Supplier:	<u>R&L Ready Mix</u>				
Structure type:	<u>Slab</u>			Mix Number:	<u>Class SI</u>				
Total cubic yards:	<u>32</u> cy			Ticket Number:	<u>48705</u>				
Location of placement:	<u>Ditch liner- southside, pour 5</u>			Truck Number:	<u>n/a</u>				
Concrete contractor:	<u>ST Construction</u>			Batch Time:	<u>6:38 AM</u>				
				Mix Duration: (mins)	<u>84</u>				
Plastic Concrete Data				Hardened Concrete Data					
Air Temp:	<u>69</u>	°F		Test Cylinders Cast By:	<u>T. Simpson</u>				
Concrete Temp:	<u>73</u>	°F ASTM C1064		Specified Strength at 28 days:	<u>4000</u> (psi)				
Slump:	<u>3</u>	ASTM C143		Sample Size:	<u>4x8</u>				
Air Content:	<u>3.80%</u>	ASTM C173/C231		Tested By:	<u>JW/BM</u>				
Concrete Yield:	<u>n/a</u>	ASTM C138		Set Number:	<u>1</u>				
Ad Mixtures:	<u>WR</u>								
Compressive Strength Information									
Cylinder Number	Date Received	Date Tested	Age (Days)	Diameter (inches)	Length (inches)	Area (sq in)	Load (lbs)	Comp Str (psi)	Break Type
5108	8/25/2012	8/31/2012	7	4.000	8	12.56	67850	5400	4
5109	8/25/2012	9/21/2012	28	4.000	8	12.56	74400	5920	2
5110	8/25/2012	9/21/2012	28	4.000	8	12.56	75430	6000	2
5111	8/25/2012		Spare						
28 day average								5960	
Remarks: _____									

Reported By: <u>Timothy C. Gault</u>									



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Project Name: Hutsonville Cell Closure
Client: ST Construction
Project Number: 02-12-0910

Distributed To:
Travis Hunt (stdirt1@hotmail.com)

Project Information				Supplier Information					
Date of concrete placement:	<u>8/29/2012</u>			Concrete Supplier:	<u>R&L Ready Mix</u>				
Structure type:	<u>Slab</u>			Mix Number:	<u>Class SI</u>				
Total cubic yards:	<u>24</u> cy			Ticket Number:	<u>48730</u>				
Location of placement:	<u>Ditch liner- southside pour #6</u>			Truck Number:	<u>n/a</u>				
Concrete contractor:	<u>ST Construction</u>			Batch Time:	<u>7:30</u>				
				Mix Duration: (mins)	<u>82</u>				
Plastic Concrete Data				Hardened Concrete Data					
Air Temp:	<u>69</u>	°F		Test Cylinders Cast By:	<u>T. Simpson</u>				
Concrete Temp:	<u>75</u>	°F ASTM C1064		Specified Strength at 28 days:	<u>4000</u> (psi)				
Slump:	<u>3.5</u>	ASTM C143		Sample Size:	<u>4x8</u>				
Air Content:	<u>4.50%</u>	ASTM C173/C231		Tested By:	<u>NF/BM</u>				
Concrete Yield:	<u>n/a</u>	ASTM C138		Set Number:	<u>1</u>				
Ad Mixtures:	<u>WR</u>								
Compressive Strength Information									
Cylinder Number	Date Received	Date Tested	Age (Days)	Diameter (inches)	Length (inches)	Area (sq in)	Load (lbs)	Comp Str (psi)	Break Type
5147	8/30/2012	9/5/2012	7	4.000	8	12.56	63240	5030	4
5148	8/30/2012	9/26/2012	28	3.990	8	12.50	71790	5740	4
5149	8/30/2012	9/26/2012	28	3.990	8	12.50	75890	6070	5
5150	8/30/2012		Spare						
28 day average								5910	
Remarks: _____									

Reported By: <u>Timothy C. Gault</u>									



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Client: ST Construction
Project Number: 02-12-0910

Distributed To:
Travis Hunt (stdirt1@hotmail.com)

Project Information				Supplier Information					
Date of concrete placement:	<u>8/30/2012</u>			Concrete Supplier:	<u>R&L Ready Mix</u>				
Structure type:	<u>Slab</u>			Mix Number:	<u>Class SI</u>				
Total cubic yards:	<u>8</u> cy			Ticket Number:	<u>48748</u>				
Location of placement:	<u>Ditch liner-southwest side</u>			Truck Number:	<u>n/a</u>				
Concrete contractor:	<u>ST Construction</u>			Batch Time:	<u>6:34 AM</u>				
				Mix Duration: (mins)	<u>85</u>				
Plastic Concrete Data				Hardened Concrete Data					
Air Temp:	<u>61</u>	°F		Test Cylinders Cast By:	<u>J. Wade</u>				
Concrete Temp:	<u>82</u>	°F ASTM C1064		Specified Strength at 28 days:	<u>4000</u> (psi)				
Slump:	<u>4.5</u>	ASTM C143		Sample Size:	<u>4x8</u>				
Air Content:	<u>5.25%</u>	ASTM C173/C231		Tested By:	<u>BM</u>				
Concrete Yield:	<u>n/a</u>	ASTM C138		Set Number:	<u>1</u>				
Ad Mixtures:	<u>WR</u>								
Compressive Strength Information									
Cylinder Number	Date Received	Date Tested	Age (Days)	Diameter (inches)	Length (inches)	Area (sq in)	Load (lbs)	Comp Str (psi)	Break Type
5217	8/31/2012	9/6/2012	7	4.000	8	12.56	67360	5360	4
5218	8/31/2012	9/27/2012	28	4.000	8	12.56	82740	6590	1
5219	8/31/2012	9/27/2012	28	4.000	8	12.56	76600	6100	2
5220	8/31/2012		Spare						
28 day average								6350	
Remarks: _____									

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Client: ST Construction
Project Number: 02-12-0910

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Project Information				Supplier Information					
Date of concrete placement:	<u>8/31/2012</u>			Concrete Supplier:	<u>R&L Ready Mix</u>				
Structure type:	<u>Ditch Liner</u>			Mix Number:	<u>n/a</u>				
Total cubic yards:	<u>24</u>	cy		Ticket Number:	<u>48759</u>				
Location of placement:	<u>8' ditch</u>			Truck Number:	<u>3</u>				
				Batch Time:	<u>6:19 AM</u>				
Concrete contractor:	<u>ST Construction</u>			Mix Duration: (mins)	<u>21</u>				
Plastic Concrete Data				Hardened Concrete Data					
Air Temp:	<u>71</u>	°F		Test Cylinders Cast By:	<u>M. Whooten</u>				
Concrete Temp:	<u>75</u>	°F	ASTM C1064	Specified Strength at 28 days:	<u>4000</u> (psi)				
Slump:	<u>2</u>		ASTM C143	Sample Size:	<u>4x8</u>				
Air Content:	<u>5.50%</u>		ASTM C173/C231	Tested By:	<u>JW</u>				
Concrete Yield:	<u>n/a</u>		ASTM C138	Set Number:	<u>1</u>				
Ad Mixtures:	<u>WR</u>								
Compressive Strength Information									
Cylinder Number	Date Received	Date Tested	Age (Days)	Diameter (inches)	Length (inches)	Area (sq in)	Load (lbs)	Comp Str (psi)	Break Type
5221	9/6/2012	9/7/2012	7	4.000	8	12.56	58460	4650	4
5222	9/6/2012	9/28/2012	28	3.990	8	12.50	68320	5470	4
5223	9/6/2012	9/28/2012	28	3.990	8	12.50	70130	5610	3
5224	9/6/2012		Spare						
28 day average								5540	
Remarks: _____									

Reported By: <u>Timothy C. Gault</u>									



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Project Number: 02-12-0910

Distributed To:
Travis Hunt (stdirt1@hotmail.com)

Project Information				Supplier Information					
Date of concrete placement:	<u>7/17/2012</u>			Concrete Supplier:	<u>R&L Ready Mix</u>				
Structure type:	<u>Ditch Liner</u>			Mix Number:	<u>Glass ST</u>				
Total cubic yards:	<u>6</u> cy			Ticket Number:	<u>48391</u>				
Location of placement:	<u>South drainage ditch</u>			Truck Number:	<u>3</u>				
Concrete contractor:	<u>ST Construction</u>			Batch Time:	<u>1:23 PM</u>				
				Mix Duration: (mins)	<u>60</u>				
Plastic Concrete Data				Hardened Concrete Data					
Air Temp:	<u>93</u>	°F		Test Cylinders Cast By:	<u>B. McDonald</u>				
Concrete Temp:	<u>85</u>	°F ASTM C1064		Specified Strength at 28 days:	<u>4000</u> (psi)				
Slump:	<u>4.5</u>	ASTM C143		Sample Size:	<u>4x8</u>				
Air Content:	<u>5.20%</u>	ASTM C173/C231		Tested By:	<u>NF/BMcD</u>				
Concrete Yield:	<u>n/a</u>	ASTM C138		Set Number:	<u>1</u>				
Ad Mixtures:									
Compressive Strength Information									
Cylinder Number	Date Received	Date Tested	Age (Days)	Diameter (inches)	Length (inches)	Area (sq in)	Load (lbs)	Comp Str (psi)	Break Type
4554	7/18/2012	7/24/2012	7	4.000	8	12.56	62790	5000	2
4555	7/18/2012	8/14/2012	28	4.000	8	12.56	69800	5560	3
4556	7/18/2012	8/14/2012	28	4.000	8	12.56	67540	5380	3
4557	7/18/2012		Spare						
								28 day average	5470
Remarks: _____									

Reported By: <u>Timothy C. Gault</u>									



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Project Number: 02-12-0910

Distributed To:
Travis Hunt (stdirt1@hotmail.com)

Project Information				Supplier Information					
Date of concrete placement:	<u>7/19/2012</u>			Concrete Supplier:	<u>R&L Ready Mix</u>				
Structure type:	<u>Slab</u>			Mix Number:	<u>Class SI</u>				
Total cubic yards:	<u>22.5</u> cy			Ticket Number:	<u>48406</u>				
Location of placement:	<u>Ditch liner pour 2</u>			Truck Number:	<u>n/a</u>				
Concrete contractor:	<u>ST Construction</u>			Batch Time:	<u>6:27 AM</u>				
				Mix Duration: (mins)	<u>85</u>				
Plastic Concrete Data				Hardened Concrete Data					
Air Temp:	<u>78</u>	°F		Test Cylinders Cast By:	<u>T. Simpson</u>				
Concrete Temp:	<u>78</u>	°F ASTM C1064		Specified Strength at 28 days:	<u>4000</u> (psi)				
Slump:	<u>5</u>	ASTM C143		Sample Size:	<u>4x8</u>				
Air Content:	<u>5.50%</u>	ASTM C173/C231		Tested By:	<u>BMcD</u>				
Concrete Yield:	<u>n/a</u>	ASTM C138		Set Number:	<u>1</u>				
Ad Mixtures:	<u>WR</u>								
Compressive Strength Information									
Cylinder Number	Date Received	Date Tested	Age (Days)	Diameter (inches)	Length (inches)	Area (sq in)	Load (lbs)	Comp Str (psi)	Break Type
4600	7/20/2012	7/26/2012	7	4.000	8	12.56	53390	4250	2
4601	7/20/2012	8/16/2012	28	4.000	8	12.56	67760	5390	4
4602	7/20/2012	8/16/2012	28	4.000	8	12.56	63250	5030	4
4603	7/20/2012		Spare						
28 day average								5210	
Remarks: _____									

Reported By: <u>Timothy C. Gault</u>									



**PATRIOT ENGINEERING
and ENVIRONMENTAL, INC.**

1359 N. Aberdeen Ave.
Terre Haute IN 47804
(812) 466-5559 FAX: (812) 466-5509
PatriotEng.com

**REPORT OF COMPRESSIVE STRENGTH
ASTM C39**

☒ Original
☐ Amended

Addressed To:
ST Construction
1423 Buckeye Street
Terre Haute, IN 47804

Project Name: Hutsonville Cell Closure
Client: ST Construction
Project Number: 02-12-0910

Distributed To:
Travis Hunt (stdirt1@hotmail.com)

Project Information				Supplier Information					
Date of concrete placement:	<u>7/20/2012</u>			Concrete Supplier:	<u>R&L Ready Mix</u>				
Structure type:	<u>Slab</u>			Mix Number:	<u>Class SI</u>				
Total cubic yards:	<u>19</u> cy			Ticket Number:	<u>48418</u>				
Location of placement:	<u>Ditch liner, pour 3</u>			Truck Number:	<u>n/a</u>				
Concrete contractor:	<u>ST Construction</u>			Batch Time:	<u>6:06 AM</u>				
				Mix Duration: (mins)	<u>85</u>				
Plastic Concrete Data				Hardened Concrete Data					
Air Temp:	<u>75</u>	°F		Test Cylinders Cast By:	<u>T. Simpson</u>				
Concrete Temp:	<u>77</u>	°F ASTM C1064		Specified Strength at 28 days:	<u>4000</u> (psi)				
Slump:	<u>4.5</u>	ASTM C143		Sample Size:	<u>4x8</u>				
Air Content:	<u>6.00%</u>	ASTM C173/C231		Tested By:	<u>BMcD</u>				
Concrete Yield:	<u>n/a</u>	ASTM C138		Set Number:	<u>1</u>				
Ad Mixtures:	<u>WR</u>								
Compressive Strength Information									
Cylinder Number	Date Received	Date Tested	Age (Days)	Diameter (inches)	Length (inches)	Area (sq in)	Load (lbs)	Comp Str (psi)	Break Type
4632	7/21/2012	7/27/2012	7	4.000	8	12.56	56060	4460	4
4633	7/21/2012	8/17/2012	28	3.990	8	12.50	66770	5340	4
4634	7/21/2012	8/17/2012	28	3.990	8	12.50	66640	5330	4
4635	7/21/2012		Spare						
28 day average								5340	
Remarks: _____									

Reported By: <u>Timothy C. Gault</u>									



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Addressed To:
ST Construction
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Terre Haute, IN 47804

Project Name: Hutsonville Cell Closure
Client: ST Construction
Project Number: 02-12-0910

Distributed To:
Travis Hunt (stdirt1@hotmail.com)

Project Information				Supplier Information					
Date of concrete placement:	<u>7/23/2012</u>			Concrete Supplier:	<u>R&L Ready Mix</u>				
Structure type:	<u>Ditch Liner</u>			Mix Number:	<u>Class SE</u>				
Total cubic yards:	<u>24</u> cy			Ticket Number:	<u>48431</u>				
Location of placement:	<u>West section A south of box culvert</u>			Truck Number:	<u>3</u>				
				Batch Time:	<u>6:15 AM</u>				
Concrete contractor:	<u>ST Construction</u>			Mix Duration: (mins)	<u>80</u>				
Plastic Concrete Data				Hardened Concrete Data					
Air Temp:	<u>75</u>	°F		Test Cylinders Cast By:	<u>B. McDonald</u>				
Concrete Temp:	<u>79</u>	°F ASTM C1064		Specified Strength at 28 days:	<u>4000</u> (psi)				
Slump:	<u>4.75</u>	ASTM C143		Sample Size:	<u>4x8</u>				
Air Content:	<u>5.00%</u>	ASTM C173/C231		Tested By:	<u>MH/BMcD</u>				
Concrete Yield:	<u>n/a</u>	ASTM C138		Set Number:	<u>1</u>				
Ad Mixtures:	<u>WR</u>								
Compressive Strength Information									
Cylinder Number	Date Received	Date Tested	Age (Days)	Diameter (inches)	Length (inches)	Area (sq in)	Load (lbs)	Comp Str (psi)	Break Type
4644	7/24/2012	7/30/2012	7	4.000	8	12.56	50690	4030	4
4645	7/24/2012	8/20/2012	28	3.990	8	12.50	57950	4640	4
4646	7/24/2012	8/20/2012	28	3.990	8	12.50	60520	4840	2
4647	7/24/2012		Spare						
28 day average								4740	
Remarks: _____									

Reported By: <u>Timothy C. Gault</u>									



REPORT OF COMPRESSIVE STRENGTH ASTM C39


☒ Original
☐ Amended

Addressed To:
ST Construction
1423 Buckeye Street
Terre Haute, IN 47804

Project Name: Hutsonville Cell Closure
Client: ST Construction
Project Number: 02-12-0910

Distributed To:
Travis Hunt (stdirt1@hotmail.com)

Project Information					Supplier Information				
Date of concrete placement: <u>7/24/2012</u>					Concrete Supplier: <u>R&L Ready Mix</u>				
Structure type: <u>Ditch liner</u>					Mix Number: <u>Class SI</u>				
Total cubic yards: <u>8</u> cy					Ticket Number: <u>48437</u>				
Location of placement: <u>West section A, south of box culvert (pour 2)</u>					Truck Number: <u>3</u>				
					Batch Time: <u>6:24 AM</u>				
Concrete contractor: <u>ST Construction</u>					Mix Duration: (mins) <u>80</u>				
Plastic Concrete Data					Hardened Concrete Data				
Air Temp: <u>82</u> °F					Test Cylinders Cast By: <u>B. McDonald</u>				
Concrete Temp: <u>83</u> °F ASTM C1064					Specified Strength at 28 days: <u>4000</u> (psi)				
Slump: <u>3.5</u> ASTM C143					Sample Size: <u>4x8</u>				
Air Content: <u>5.00%</u> ASTM C173/C231					Tested By: <u>BMCD/JW</u>				
Concrete Yield: <u>n/a</u> ASTM C138					Set Number: <u>1</u>				
Ad Mixtures: <u>WR</u>									
Compressive Strength Information									
Cylinder Number	Date Received	Date Tested	Age (Days)	Diameter (inches)	Length (inches)	Area (sq in)	Load (lbs)	Comp Str (psi)	Break Type
4692	7/25/2012	7/31/2012	7	4.000	8	12.56	58420	4650	4
4693	7/25/2012	8/21/2012	28	4.000	8	12.56	65560	5220	4
4694	7/25/2012	8/21/2012	28	4.000	8	12.56	69420	5530	4
4695	7/25/2012		Spare						
28 day average								5380	
Remarks: _____									

 Reported By: _____									



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REPORT OF COMPRESSIVE STRENGTH

ASTM C39

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Addressed To:
ST Construction
1423 Buckeye Street
Terre Haute, IN 47804

Project Name: Hutsonville Cell Closure
Client: ST Construction
Project Number: 02-12-0910

Distributed To:
Travis Hunt (stdirt1@hotmail.com)

Project Information				Supplier Information					
Date of concrete placement:	<u>9/11/2012</u>			Concrete Supplier:	<u>R&L Ready Mix</u>				
Structure type:	<u>Slab</u>			Mix Number:	<u>Class SI</u>				
Total cubic yards:	<u>24</u> cy			Ticket Number:	<u>48838</u>				
Location of placement:	<u>Ditch liner- eastside, pour 3</u>			Truck Number:	<u>n/a</u>				
Concrete contractor:	<u>ST Construction</u>			Batch Time:	<u>10:20 AM</u>				
				Mix Duration: (mins)	<u>82</u>				
Plastic Concrete Data				Hardened Concrete Data					
Air Temp:	<u>78</u>	°F		Test Cylinders Cast By:	<u>T. Simpson</u>				
Concrete Temp:	<u>78</u>	°F ASTM C1064		Specified Strength at 28 days:	<u>4000</u> (psi)				
Slump:	<u>3</u>	ASTM C143		Sample Size:	<u>4x8</u>				
Air Content:	<u>4.80%</u>	ASTM C173/C231		Tested By:	<u>BM/JB</u>				
Concrete Yield:	<u>n/a</u>	ASTM C138		Set Number:	<u>1</u>				
Ad Mixtures:	<u>WR</u>								
Compressive Strength Information									
Cylinder Number	Date Received	Date Tested	Age (Days)	Diameter (inches)	Length (inches)	Area (sq in)	Load (lbs)	Comp Str (psi)	Break Type
5301	9/12/2012	9/18/2012	7	3.990	8	12.50	50660	4050	2
5302	9/12/2012	10/9/2012	28	4.000	8	12.56	70150	5580	4
5303	9/12/2012	10/9/2012	28	4.000	8	12.56	64880	5160	2
5304	9/12/2012		Spare						
28 day average								5370	
Remarks: _____									

Reported By: <u>Timothy C. Gault</u>									



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Addressed To:
ST Construction
1423 Buckeye Street
Terre Haute, IN 47804

Project Name: Hutsonville Cell Closure
Client: ST Construction
Project Number: 02-12-0910

Distributed To:
Travis Hunt (stdirt1@hotmail.com)

Project Information				Supplier Information					
Date of concrete placement:	<u>9/12/2012</u>			Concrete Supplier:	<u>R&L Ready Mix</u>				
Structure type:	<u>Slab</u>			Mix Number:	<u>Class SI</u>				
Total cubic yards:	<u>32</u> cy			Ticket Number:	<u>48848</u>				
Location of placement:	<u>Ditch liner- eastside, pour 4</u>			Truck Number:	<u>n/a</u>				
Concrete contractor:	<u>ST Construction</u>			Batch Time:	<u>n/a</u>				
				Mix Duration: (mins)	<u>n/a</u>				
Plastic Concrete Data				Hardened Concrete Data					
Air Temp:	<u>55</u>	°F		Test Cylinders Cast By:	<u>T. Simpson</u>				
Concrete Temp:	<u>78</u>	°F ASTM C1064		Specified Strength at 28 days:	<u>4000</u> (psi)				
Slump:	<u>3.25</u>	ASTM C143		Sample Size:	<u>4x8</u>				
Air Content:	<u>5.20%</u>	ASTM C173/C231		Tested By:	<u>JW/JB</u>				
Concrete Yield:	<u>n/a</u>	ASTM C138		Set Number:	<u>1</u>				
Ad Mixtures:	<u>WR</u>								
Compressive Strength Information									
Cylinder Number	Date Received	Date Tested	Age (Days)	Diameter (inches)	Length (inches)	Area (sq in)	Load (lbs)	Comp Str (psi)	Break Type
5328	9/13/2012	9/19/2012	7	4.000	8	12.56	56440	4490	4
5329	9/13/2012	10/10/2012	28	4.000	8	12.56	67990	5410	5
5330	9/13/2012	10/10/2012	28	4.000	8	12.56	68260	5430	4
5331	9/13/2012		Spare						
28 day average								5420	
Remarks: _____									

Reported By: <u>Timothy C. Gault</u>									



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Terre Haute, IN 47804

Project Name: Hutsonville Cell Closure
Client: ST Construction
Project Number: 02-12-0910

Distributed To:
Travis Hunt (stdirt1@hotmail.com)

Project Information				Supplier Information					
Date of concrete placement:	<u>9/13/2012</u>			Concrete Supplier:	<u>R&L Ready Mix</u>				
Structure type:	<u>Slab</u>			Mix Number:	<u>Class SI</u>				
Total cubic yards:	<u>8+/-</u> cy			Ticket Number:	<u>48862</u>				
Location of placement:	<u>Ditch liner- eastside, pour 5 (final pour)</u>			Truck Number:	<u>n/a</u>				
Concrete contractor:	<u>ST Construction</u>			Batch Time:	<u>7:02 AM</u>				
				Mix Duration: (mins)	<u>86</u>				
Plastic Concrete Data				Hardened Concrete Data					
Air Temp:	<u>67</u>	°F		Test Cylinders Cast By:	<u>T. Simpson</u>				
Concrete Temp:	<u>81</u>	°F ASTM C1064		Specified Strength at 28 days:	<u>4000</u> (psi)				
Slump:	<u>3</u>	ASTM C143		Sample Size:	<u>4x8</u>				
Air Content:	<u>5.00%</u>	ASTM C173/C231		Tested By:	<u>T. Simpson</u>				
Concrete Yield:	<u>n/a</u>	ASTM C138		Set Number:	<u>1</u>				
Ad Mixtures:	<u>WR</u>								
Compressive Strength Information									
Cylinder Number	Date Received	Date Tested	Age (Days)	Diameter (inches)	Length (inches)	Area (sq in)	Load (lbs)	Comp Str (psi)	Break Type
5348	9/14/2012	9/20/2012	7	4.000	8	12.56	66650	5300	4
5349	9/14/2012	10/11/2012	28	4.000	8	12.56	77390	6160	4
5350	9/14/2012	10/11/2012	28	4.000	8	12.56	75140	5980	4
5351	9/14/2012		Spare						
28 day average								6070	
Remarks: _____									

Reported By: <u></u>									

Hutsonville Ash Pond D Closure - Paved Gutter Grades

Point Number	Elevation	Run	Difference (ft)	Distance (ft)	*Grade (+/-)	
138	451.500					Gutter @ Culvert
			1.290	26.8	4.81%	
139	452.790					Gutter
			1.149	24.0	4.79%	
140	453.939					Gutter
			0.522	26.0	2.01%	
141	454.461					Gutter
			0.145	68.2	0.21%	
142	454.606					Gutter
			0.394	185.3	0.21%	
143	455.000					End of Gutter
			0.000	50.0	0.00%	
144	455.000					Begin Gutter
			-0.221	32.0	-0.69%	
145	454.779					Gutter
			-0.481	69.0	-0.70%	
146	454.298					Gutter
			-0.094	37.5	-0.25%	
147	454.204					Gutter
			-0.091	35.0	-0.26%	
148	454.113					Gutter
			-0.312	125.0	-0.25%	
149	453.801					Gutter
			-0.068	27.0	-0.25%	
150	453.733					Gutter @ Stilling Basin
		Stilling Basin	Stilling Basin		Stilling Basin	
151	453.780					Gutter @ Stilling Basin
			0.653	39.0	1.67%	
152	454.433					Gutter
			0.567	226.5	0.25%	
153	455.000					End of Gutter

*Positive or Negative Grade (+/-) running South to North along Paved Gutter on APD



Ash Management Services, LLC
12601 Plantside Drive
Louisville, Kentucky 40299
Phone: 502-245-1353

Hutsonville APD Closure

HUT-APD-SUB-003-01-GSE-liner-product-data

Submittal Information

Submittal No.	Date	Contact	Phone no.
SUB-003-01	2012-04-16	Paul Zinsious AMS	502-640-2918

SHOP DRAWING / SUBMITTAL REVIEW

Shop drawing/submittal review is for design conformity and general conformance with the design concept of the project as given in the contract documents. Subcontractor is responsible for full compliance with contract documents, confirming and correcting all quantities, correlating dimensions at project work site for tolerance, clearance, fabrication process, and techniques of construction. Subcontractor is responsible for coordination of his work with that of all other trades, and performance of the work in a safe and satisfactory manner.

<input checked="" type="checkbox"/>	Reviewed.	2012-04-16	Date
<input type="checkbox"/>	Reviewed with corrections.		
<input type="checkbox"/>	Revise and resubmit.		
<input type="checkbox"/>	Rejected. See Remarks.		


AMS, LLC By



SUBMITTAL

COVER SHEET

Date: March 30, 2012

Project: Hutsonville Ash Pond

**General Contractor: Charah, Inc
12601 Plantside Drive
Louisville, KY 40299**

**Spec Section: 02800 HDPE Geomembrane Liner
Submittal Ref: 40 Mil LLDPE Geomembrane Liner- Product Data and
Manufacturer Qualifications.**

**NOTES: This submittal is for the initial review of the proposed GSE HDPE
Geomembrane Liner. Manufacture of materials will not commence until after a
Manufacturer and Product are approved.**

Inclusions:

- 1) Product Data Sheet**
- 2) Manufacturers Quality Assurance**
- 3) Installation Project List**
- 4) Manufacturing Capabilites**
- 5) Manufacturer's Material Warranty**

REVIEWER NOTES



The Pioneer Of Geosynthetics

S I N C E 1 9 7 2

GSE HD Textured Geomembrane

GSE HD Textured is a co-extruded textured high density polyethylene (HDPE) geomembrane available on one or both sides. It is manufactured from the highest quality resin specifically formulated for flexible geomembranes. This product is used in applications that require increased frictional resistance, excellent chemical resistance and endurance properties.

Product Specifications

These product specifications meet or exceed GRI GM13.

TESTED PROPERTY	TEST METHOD	FREQUENCY	MINIMUM AVERAGE VALUE				
			30 mil	40 mil	60 mil	80 mil	100 mil
Thickness, (minimum average) mil (mm)	ASTM D 5994	every roll	29 (0.73)	38 (0.96)	57 (1.45)	76 (1.93)	95 (2.41)
Lowest individual for 8 out of 10 values			27 (0.69)	36 (0.91)	54 (1.40)	72 (1.80)	90 (2.30)
Lowest individual for any of the 10 values			26 (0.66)	34 (0.86)	51 (1.30)	68 (1.73)	85 (2.16)
Density, g/cm ³	ASTM D 1505	200,000 lb	0.94	0.94	0.94	0.94	0.94
Tensile Properties (each direction)	ASTM D 6693, Type IV Dumbell, 2 ipm	20,000 lb					
Strength at Break, lb/in-width (N/mm)			45 (8)	60 (11)	90 (16)	120 (21)	150 (27)
Strength at Yield, lb/in-width (N/mm)			63 (11)	84 (15)	126 (22)	168 (29)	210 (37)
Elongation at Break, %			100	100	100	100	100
Elongation at Yield, %			12	12	12	12	12
Tear Resistance, lb (N)	ASTM D 1004	45,000 lb	21 (93)	28 (125)	42 (187)	56 (249)	70 (311)
Puncture Resistance, lb (N)	ASTM D 4833	45,000 lb	45 (200)	60 (267)	90 (400)	120 (534)	150 (667)
Carbon Black Content, % (Range)	ASTM D 1603*/4218	20,000 lb	2.0 - 3.0	2.0 - 3.0	2.0 - 3.0	2.0 - 3.0	2.0 - 3.0
Carbon Black Dispersion	ASTM D 5596	45,000 lb	Note ⁽¹⁾	Note ⁽¹⁾	Note ⁽¹⁾	Note ⁽¹⁾	Note ⁽¹⁾
Asperity Height, mil (mm) ⁽²⁾	ASTM D 7466	second roll	10	10	10	10	10
Notched Constant Tensile Load ⁽³⁾ , hr	ASTM D 5397, Appendix	200,000 lb	1,000	1,000	1,000	1,000	1,000
Oxidative Induction Time, min	ASTM D 3895, 200° C; O ₂ , 1 atm	200,000 lb	>140	>140	>140	>140	>140
TYPICAL ROLL DIMENSIONS							
Roll Length ⁽⁴⁾ , ft (m)	Double-Sided Textured		830 (253)	700 (213)	520 (158)	400 (122)	330 (101)
	Single-Sided Textured		840 (256)	650 (198)	420 (128)	320 (98)	250 (76)
Roll Width ⁽⁴⁾ , ft (m)			22.5 (6.9)	22.5 (6.9)	22.5 (6.9)	22.5 (6.9)	22.5 (6.9)
Roll Area, ft ² (m ²)	Double-Sided Textured		18,675 (1,735)	15,750 (1,463)	11,700 (1,087)	9,000 (836)	7,425 (690)
	Single-Sided Textured		18,900 (1,755)	14,625 (1,359)	9,450 (878)	7,200 (669)	5,625 (523)

NOTES:

- ⁽¹⁾Dispersion only applies to near spherical agglomerates. 9 of 10 views shall be Category 1 or 2. No more than 1 view from Category 3.
- ⁽²⁾8 of 10 readings \geq 7 mils. Lowest individual \geq 5 mils.
- ⁽³⁾NCTL for GSE HD Textured is conducted on representative smooth membrane samples.
- ⁽⁴⁾Roll lengths and widths have a tolerance of \pm 1%.
- GSE HD Textured Double-Sided is available in rolls weighing approximately 4,000 lb (1,800 kg) and Single-Sided weighing approximately 3,000 lb (1,360 kg).
- All GSE geomembranes have dimensional stability of \pm 2% when tested according to ASTM D 1204 and LTB of $<$ -77° C when tested according to ASTM D 746.
- *Modified.



G e o m e m b r a n e s

GSE HD • GSE HD Textured • GSE White • GSE White Textured • GSE Conductive • GSE Conductive Textured • GSE Conductive White
GSE Green Textured • GSE HD Weld Edge Textured • GSE UltraFlex • GSE UltraFlex Textured • GSE UltraFlex White • GSE Ultraflex White Textured

Manufacturing Quality Assurance Manual

www.gseworld.com



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I. QUALITY MANIFEST

GSE Lining Technology, Inc. is committed to providing the highest quality products and services to our customers. This requires a firm, total quality commitment from all individuals within our organization that we will only supply materials that meet or exceed the requirements and specifications of GSE and our customers.

GSE's commitment to quality starts with the highest quality raw materials. The quality of incoming raw materials is controlled at the supplier level with a complete vendor evaluation program in place. This means purchasing only from suppliers who are committed to statistical process control thereby providing a consistent, high level of quality assurance of their products.

II. MANUFACTURING QUALITY ASSURANCE

GSE Lining Technology, Inc. has an on-site Manufacturing Quality Assurance Laboratory at each manufacturing plant. Having a fully equipped, well staffed, dedicated laboratory at each of the manufacturing facilities allows GSE to maintain a high level of quality and up-to-the-minute results on finished products. Each facility follows the same guidelines for evaluating the quality of GSE products and is capable of adapting to market-driven requirements.

A. Objective

The objective of the GSE Quality Assurance program is to define implementation of basic manufacturing quality assurance (MQA) procedures necessary to ensure consistent production of quality products supplied to the geosynthetic market. Note that at this time, these procedures are limited to polyethylene geomembranes.

B. Scope

In order to achieve GSE's stated purpose, a rigorous set of minimum standards and an effective test program to assure compliance has been established. These procedures and requirements are frequently reviewed and adjusted to assure compliance with current market demands and/or predetermined project specifications. These procedures assure that raw materials and process parameters are controlled to provide products complying with GSE's pre-defined minimum characteristics.

III. MANUFACTURING QUALITY ASSURANCE ORGANIZATION

This organization consists of the Manufacturing Quality Assurance Laboratories as well as the manufacturing personnel. The combination of expertise and experience from these groups provides GSE with the proper tools to maintain the highest level of quality and customer service in the industry.

The Quality Assurance Department at GSE is charged by the President to assure that only products meeting both GSE's and the customer's requirements are released for shipment. The Quality Assurance personnel are directly responsible for monitoring testing and providing feedback to the manufacturing department to ensure the production of the specified product quality. Each member of the Quality Assurance team must participate in detailed training that includes factory exposure.

IV. STAFF AND SCHEDULING

The Quality Assurance Laboratories are staffed whenever manufacturing is occurring; this is usually 24 hours per day, 365 days per year. This minimizes the amount of potentially inferior product produced before a manufacturing problem is identified.



V. PRODUCT IDENTIFICATION AND DOCUMENTATION

A. Roll Numbering

Each roll of geomembrane is assigned a unique roll number. The Quality Assurance Laboratory maintains records documenting the raw materials and resulting product quality information.

B. Approval Procedure

Results for each tested roll of product are checked against both GSE and customer specifications for compliance. The Quality Assurance Laboratory approves those materials that meet both of these requirements for shipment.

C. Non-Conformance

Material that does not meet GSE minimum standards is given a roll number but is rejected and not placed into inventory. The material is identified as scrap and will not be utilized.

Material that meets GSE minimum standards but does not meet a stricter customer specification is not allocated to that customer but is placed into inventory as GSE standard material.

D. Documentation

Individual Quality Assurance Certificates are generated and supplied for each roll of geomembrane product to include all relevant quality assurance information about the material(s).

VI. RECORDS RETENTION

GSE maintains reports and/or samples for products produced and sold. Records and/or samples are maintained according to GSE's standard retention policy according to the item.

MATERIAL	ITEM	YEARS
Raw materials	Resin Supplier Test Reports and Certifications	≥2
	GSE Resin Test Reports	≥2
	Resin Sample Retain (Archive)	≥2
Geomembrane	Raw Test Data (in computer database)	≥5
	Quality Control Certificates (in computer database)	≥5
	Sample Retain (approximately one square foot)	≥3

VII. TESTING CAPABILITIES

GSE maintains high capacity, state-of-the-art laboratory equipment suitable for performing the procedures listed in Appendices A-D. GSE's Houston laboratories are accredited by the GAL-LAP program. GSE's Houston laboratories, as part of GSE's Product Division, also hold ISO certification. The appropriate certificates are maintained for review upon request by authorized parties.

A. Routine Testing

Through careful investigation, GSE has developed a strict and thorough Quality Assurance program that exceeds the vast majority of customer specifications including GRI GM13, "Test Properties, Testing



Frequency and Recommended Warranty for High Density Polyethylene (HDPE) Smooth and Textured Geomembranes" and GRI GM17 "Test Properties, Testing Frequency and Recommended Warranty for Linear Low Density Polyethylene (LLDPE) Smooth and Textured Geomembranes". The testing program covers raw materials (see Appendix A) and finished goods (see Appendix B) and is adhered to at all GSE laboratories. The laboratory equipment used by GSE represents the most modern equipment available and meets or exceeds the requirements of all the test standards used.

B. Other Testing Capabilities

In addition to routine testing, GSE laboratories are equipped to perform a wide variety of other tests as required for unusual requests or product development. Further, although the GSE Quality Assurance Laboratories are fully equipped and able to perform most routinely specified tests in the industry, there are some tests that are more economically performed by a dedicated testing facility. GSE believes requirements for such testing should be carefully considered and defined in terms of specific design requirements if they are found to be necessary.

VIII. MATERIAL QUALITY ASSURANCE

GSE Lining Technology, Inc. has established strict specifications for all raw materials and finished products. Test results must fall within the acceptable limits of GSE and customer specifications.

A. Raw Material

GSE primarily uses two types of raw materials, "natural resin" and "masterbatch" in the manufacture of geomembrane products. Natural resin is the base material that is used to make a geomembrane. It contains stabilizers to prevent degradation from occurring during and after extrusion. "Masterbatch" is the term referring to the concentrated carbon black material used with the natural resin to produce the finished product. The natural resin and masterbatch are blended at the appropriate ratio at the manufacturing stage. The masterbatch can contain other additives depending upon the geomembrane product to be produced. GSE verifies the properties of each lot of raw material prior to their utilization.

When natural resin is received, samples are taken and subjected to the tests outlined in Appendix A. All test data are entered into the computer database and checked for accuracy, consistency and compliance with GSE specifications. The material is not accepted unless all standard test requirements are met and the GSE test values meet the requirements set forth in the raw material specifications.

Copies of the supplier's certificate of analysis (COA) for each lot of resin utilized in the production of the materials supplied to a specific project are supplied as standard documentation. In addition, the GSE test results for each lot of resin are provided in a separate report upon request.

Virgin resin is normally received in rail car lots. If resin is received by other transport and/or in other quantities, an equivalent suitable sampling procedure is provided (i.e. not less than one sample per shipment or one sample for each 50,000 lb., 23,000 kg)

B. Geomembrane Products

GSE has implemented a strict and thorough Quality Assurance program for all geomembrane products. The geomembrane product line can be broken into two primary categories: smooth and textured products. Tables containing GSE minimum properties and test frequencies for all GSE geomembrane products includ-



ing specialty products such as GSE White (light-reflective geomembrane) and GSE Conductive (field spark-testable geomembrane) are in Appendix B.

1. On-Line Manufacturing Quality Assurance

The Quality Assurance program for finished product begins during the manufacturing process. Each manufacturing line is equipped with state-of-the-art monitoring devices that provide feedback on the physical quality of the materials being produced. Each geomembrane production line is equipped with both a thickness gage and spark-testing device.

a) Thickness Measurement

As geomembrane is being produced, thickness readings are taken continuously over the length and width of the roll. These data are used to establish the minimum, maximum and average thickness values for each roll and are verified by thickness testing upon sampling of the finished goods.

b) Spark Testing

An electrical spark detector is in place on each manufacturing sheet line. This apparatus provides immediate notification of holes in the finished product. If a hole is detected, an alarm is triggered and the hole is identified. Rolls containing holes are rejected from standard product inventory.

2. Smooth Geomembrane Materials

Smooth geomembrane products available include high density and linear low density polyethylene materials with 2-3% carbon black. Specialty materials include White, electrically conductive, green surfaced, and smooth edge textured geomembranes.

a) Sampling

Geomembrane rolls are sampled for QA testing according to the frequencies in Appendix B. An approximate one-foot by roll width sample is cut for Quality Assurance testing. Specimens for testing are taken from five predetermined positions across the width of the roll. Specimens are cut for testing the machine direction and transverse direction. A "retain" or archive sample approximately 12 x 12 inch (30 x 30 cm) is taken from the corresponding transverse direction position from the laboratory sample. The retain is labeled and kept for future reference (see Section VI).

b) Evaluation of Results

All data are entered into a computer database for calculation and comparison to GSE and customer-specific specifications. If materials do not meet GSE minimums and/or the customer specifications, the manufacturing personnel are immediately notified in order for the appropriate adjustments to be made. Only products meeting GSE minimums and customer specifications will be approved for shipment.



c) Reporting

Every roll of material has a quality assurance roll certificate or Roll Test Data Report (RTDR). This report identifies the standards on which the GSE approval is based along with the actual test results demonstrated by the material.

3. Coextruded Textured Geomembranes

Textured geomembrane is produced utilizing a round die with coextrusion technology. The texture is produced in a process in which one or two of the outer layers of a three-layer extrusion are blended with nitrogen gas. Nitrogen bubbles form in the molten resin and escape upon exiting the die, creating a rough, textured surface. Regular, White, green surfaced, and conductive geomembranes are available with coextruded texturing.

a) Sampling

Geomembrane rolls are sampled for QA testing according to the frequencies in Appendix B. An approximate one-foot by roll width sample is cut for Quality Assurance testing. Specimens for testing are taken from five predetermined positions across the width of the roll. Specimens for testing the machine and transverse direction tensile are cut from each of the five positions. A "retain" or archive sample approximately 12 x 12 inch (30 x 30 cm) is taken from the corresponding transverse direction position from the laboratory sample. The retain is labeled and kept for future reference (see Section VI).

Evaluation of results and reporting practices are the same as for smooth geomembranes.

C. Third Party Conformance Sampling

Some specifications require independent Quality Assurance and/or conformance testing. GSE can provide assistance with the sampling of products by arranging for the conformance samples to be taken during production. By taking samples during production rather than on site, the customer can be assured that the samples are clean and available for conformance testing in a timely manner.

GSE encourages customers to audit GSE manufacturing and manufacturing quality assurance operations and/or to collect samples and conduct independent conformance testing prior to shipment of materials.



Geomembranes Manufacturing Quality Assurance Manual

Appendix A - Minimum Testing Frequencies and Properties for GSE Raw Materials

MINIMUM TESTING FREQUENCIES FOR GSE RAW MATERIALS

Property	Test Method ⁽¹⁾	Natural Resin
Density	ASTM D 1505	once per rail car compartment
Melt Flow Index	ASTM D 1238 (190/2.16)	once per rail car compartment
OIT	ASTM D 3895 (1 ATM at 200° C)	once per resin lot
Carbon Black Content	ASTM D 1603*/4218	N/A
Carbon Black Dispersion	ASTM D 5596	NA

¹ GSE utilizes test equipment and procedures that enable effective and economical confirmation that the product will conform to specifications based on the noted procedures. Some test procedures have been modified for application to geosynthetics. All procedures and values are subject to change without prior notification.

*Modified.

MINIMUM PROPERTIES FOR GSE RAW MATERIALS

Property	Test Method ⁽¹⁾	HDPE	LLDPE
Density [g/cm ³]	ASTM D 1505	0.932	0.915
Melt Flow Index [g/10 min]	ASTM D 1238 (190/2.16)	≤ 1.0	≤ 1.0
OIT [minutes]	ASTM D 3895 (1 ATM at 200° C)	100	100

¹ GSE utilizes test equipment and procedures that enable effective and economical confirmation that the product will conform to specifications based on the noted procedures. Some test procedures have been modified for application to geosynthetics. All procedures and values are subject to change without prior notification.



Geomembranes Manufacturing Quality Assurance Manual

Appendix B - Minimum Testing Frequencies and Properties for GSE Geomembranes

MINIMUM PROPERTIES FOR GSE HD

TESTED PROPERTY	TEST METHOD	FREQUENCY	MINIMUM VALUE				
Product Code			HDE 030A000	HDE 040A000	HDE 060A000	HDE 080A000	HDE 100A000
Thickness, (minimum average) mil (mm)	ASTM D 5199	every roll	30 (0.75)	40 (1.00)	60 (1.50)	80 (2.00)	100 (2.50)
Lowest individual reading (-10%)			27 (0.69)	36 (0.91)	54 (1.40)	72 (1.80)	90 (2.30)
Density, g/cm ³	ASTM D 1505	200,000 lb	0.94	0.94	0.94	0.94	0.94
Tensile Properties (each direction)	ASTM D 6693, Type IV	20,000 lb					
Strength at Break, lb/in-width (N/mm)	Dumbell, 2 ipm		114 (20)	152 (27)	228 (40)	304 (53)	380 (67)
Strength at Yield, lb/in-width (N/mm)			63 (11)	84 (15)	126 (22)	168 (29)	210 (37)
Elongation at Break, %	G.L. 2.0 in (51 mm)		700	700	700	700	700
Elongation at Yield, %	G.L. 1.3 in (33 mm)		12	12	12	12	12
Tear Resistance, lb (N)	ASTM D 1004	45,000 lb	21 (93)	28 (125)	42 (187)	56 (249)	70 (311)
Puncture Resistance, lb (N)	ASTM D 4833	45,000 lb	54 (240)	72 (320)	108 (480)	144 (640)	180 (800)
Carbon Black Content, %	ASTM D 1603*/4218	20,000 lb	2.0	2.0	2.0	2.0	2.0
Carbon Black Dispersion	ASTM D 5596	45,000 lb	+Note 1	+Note 1	+Note 1	+Note 1	+Note 1
Notched Constant Tensile Load, hr	ASTM D 5397, Appendix	200,000 lb	300	300	300	300	300
REFERENCE PROPERTY	TEST METHOD	FREQUENCY	NOMINAL VALUE				
Oxidative Induction Time, min	ASTM D 3895, 200° C; O ₂ , 1 atm	200,000 lb	>100	>100	>100	>100	>100
Roll Length ⁽¹⁾ (approximate), ft (m)			1,120 (341)	870 (265)	560 (171)	430 (131)	340 (104)
Roll Width ⁽¹⁾ , ft (m)			22.5 (6.9)	22.5 (6.9)	22.5 (6.9)	22.5 (6.9)	22.5 (6.9)
Roll Area, ft ² (m ²)			25,200 (2,341)	19,575 (1,819)	12,600 (1,171)	9,675 (899)	7,650 (711)

NOTES:

- +Note 1: Dispersion only applies to near spherical agglomerates. 9 of 10 views shall be Category 1 or 2. No more than 1 view from Category 3.
- GSE HD is available in rolls weighing about 3,900 lb (1,769 kg)
- All GSE geomembranes have dimensional stability of ±2% when tested with ASTM D 1204 and LTB of <-77° C when tested with ASTM D 746.
- ⁽¹⁾Roll lengths and widths have a tolerance of ± 1%.
- *Modified.



Geomembranes Manufacturing Quality Assurance Manual

Appendix B - Minimum Testing Frequencies and Properties for GSE Geomembranes

MINIMUM PROPERTIES FOR GSE WHITE

TESTED PROPERTY	TEST METHOD	FREQUENCY	MINIMUM VALUE				
Product Code			HDE 030A010	HDE 040A010	HDE 060A010	HDE 080A010	HDE 100A010
Thickness, (minimum average) mil (mm)	ASTM D 5199	every roll	30 (0.75)	40 (1.00)	60 (1.50)	80 (2.00)	100 (2.50)
Lowest individual reading (-10%)			27 (0.69)	36 (0.91)	54 (1.40)	72 (1.80)	90 (2.30)
Density ⁽²⁾ , g/cm ³	ASTM D 1505	200,000 lb	0.94	0.94	0.94	0.94	0.94
Tensile Properties (each direction)	ASTM D 6693, Type IV	20,000 lb					
Strength at Break, lb/in-width (N/mm)	Dumbell, 2 ipm		114 (20)	152 (27)	228 (40)	304 (53)	380 (67)
Strength at Yield, lb/in-width (N/mm)			63 (11)	84 (15)	126 (22)	168 (29)	210 (37)
Elongation at Break, %	G.L. = 2.0 in (51 mm)		700	700	700	700	700
Elongation at Yield, %	G.L. = 1.3 in (33 mm)		12	12	12	12	12
Tear Resistance, lb (N)	ASTM D 1004	45,000 lb	21 (93)	28 (125)	42 (187)	56 (249)	70 (311)
Puncture Resistance, lb (N)	ASTM D 4833	45,000 lb	54 (240)	72 (320)	108 (480)	144 (640)	180 (800)
Carbon Black Content ^{(1) (2)} , %	ASTM D 1603*/4218	20,000 lb	2.0	2.0	2.0	2.0	2.0
Carbon Black Dispersion	ASTM D 5596	45,000 lb	+Note 1	+Note 1	+Note 1	+Note 1	+Note 1
Notched Constant Tensile Load, hr	ASTM D 5397, Appendix	200,000 lb	300	300	300	300	300
REFERENCE PROPERTY	TEST METHOD	FREQUENCY	NOMINAL VALUE				
Oxidative Induction Time ⁽²⁾ , min	ASTM D 3895, 200° C; O ₂ , 1 atm	200,000 lb	>100	>100	>100	>100	>100
Roll Length ⁽³⁾ (approximate), ft (m)			1,120 (341)	870 (265)	560 (171)	430 (131)	340 (104)
Roll Width ⁽³⁾ , ft (m)			22.5 (6.9)	22.5 (6.9)	22.5 (6.9)	22.5 (6.9)	22.5 (6.9)
Roll Area, ft ² (m ²)			25,200 (2,341)	19,575 (1,819)	12,600 (1,171)	9,675 (899)	7,650 (711)

NOTES:

- +Note 1: Dispersion only applies to near spherical agglomerates. 9 of 10 views shall be Category 1 or 2. No more than 1 view from Category 3.
- GSE White is available in rolls weighing about 3,900 lb (1,769 kg).
- ⁽¹⁾GSE White may have an overall ash content greater than 3.0% due to the white layer.
- All GSE geomembranes have dimensional stability of ±2% when tested with ASTM D 1204 and LTb of <77° C when tested with ASTM D 746.
- ⁽²⁾The values apply to the black layer only.
- ⁽³⁾Roll lengths and widths have a tolerance of ± 1%.
- *Modified.



Geomembranes Manufacturing Quality Assurance Manual

Appendix B - Minimum Testing Frequencies and Properties for GSE Geomembranes

MINIMUM PROPERTIES FOR GSE CONDUCTIVE

TESTED PROPERTY	TEST METHOD	FREQUENCY	MINIMUM VALUE			
Product Code			HDC 040A000	HDC 060A000	HDC 080A000	HDC 100A000
Thickness, (minimum average) mil (mm) Lowest individual reading (-10%)	ASTM D 5199	every roll	40 (1.00) 36 (0.91)	60 (1.50) 54 (1.40)	80 (2.00) 72 (1.80)	100 (2.50) 90 (2.30)
Density, g/cm ³	ASTM D 1505	200,000 lb	0.94	0.94	0.94	0.94
Tensile Properties (each direction) ⁽¹⁾	ASTM D 6693, Type IV Dumbbell, 2 ipm	20,000 lb				
Strength at Break, lb/in-width (N/mm)			152 (27)	228 (40)	304 (53)	380 (67)
Strength at Yield, lb/in-width (N/mm)			84 (15)	126 (22)	168 (29)	210 (37)
Elongation at Break, %	G.L. = 2.0 in (51 mm)		700	700	700	700
Elongation at Yield, %	G.L. = 1.3 in (33 mm)		12	12	12	12
Tear Resistance, lb (N)	ASTM D 1004	45,000 lb	28 (125)	42 (187)	56 (249)	70 (311)
Puncture Resistance, lb (N)	ASTM D 4833	45,000 lb	72 (320)	108 (480)	144 (640)	180 (800)
Carbon Black Content ⁽²⁾ , %	ASTM D 1603*/4218	20,000 lb	2.0	2.0	2.0	2.0
Carbon Black Dispersion	ASTM D 5596	45,000 lb	+Note 1	+Note 1	+Note 1	+Note 1
Notched Constant Tensile Load, hr	ASTM D 5397, Appendix	200,000 lb	300	300	300	300
REFERENCE PROPERTY	TEST METHOD	FREQUENCY	NOMINAL VALUE			
Oxidative Induction Time, min	ASTM D 3895, 200° C; O ₂ , 1 atm	200,000 lb	>100	>100	>100	>100
Roll Length ⁽³⁾ (approximate), ft (m)			870 (265)	560 (171)	430 (131)	340 (104)
Roll Width ⁽³⁾ , ft (m)			22.5 (6.9)	22.5 (6.9)	22.5 (6.9)	22.5 (6.9)
Roll Area, ft ² (m ²)			19,575 (1,819)	12,600 (1,171)	9,675 (899)	7,650 (711)

NOTES:

- +Note 1: Dispersion only applies to near spherical agglomerates. 9 of 10 views shall be Category 1 or 2. No more than 1 view from Category 3.
- GSE Conductive is available in rolls weighing about 3,900 lb (1,769 kg).
- ⁽¹⁾Due to surface effects caused by the conductive layer, these tensile properties are minimum average values.
- ⁽²⁾GSE Conductive may have an overall carbon black percentage above 3.0% due to the high carbon black loadings in the conductive layer.
- All GSE geomembranes have dimensional stability of ±2% when tested with ASTM D 1204 and LTB of <-77° C when tested with ASTM D 746.
- ⁽³⁾Roll lengths and widths have a tolerance of ± 1%.
- *Modified.



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Appendix B - Minimum Testing Frequencies and Properties for GSE Geomembranes

MINIMUM PROPERTIES FOR GSE CONDUCTIVE WHITE

TESTED PROPERTY	TEST METHOD	FREQUENCY	MINIMUM VALUE			
Product Code			HDC 040A010	HDC 060A010	HDC 080A010	HDC 100A010
Thickness, (minimum average) mil (mm) Lowest individual reading (-10%)	ASTM D 5199	every roll	40 (1.00) 36 (0.91)	60 (1.50) 54 (1.40)	80 (2.00) 72 (1.80)	100 (2.50) 90 (2.30)
Density ⁽³⁾ , g/cm ³	ASTM D 1505	200,000 lb	0.94	0.94	0.94	0.94
Tensile Properties (each direction) ⁽¹⁾	ASTM D 6693, Type IV Dumbbell, 2 ipm	20,000 lb				
Strength at Break, lb/in-width (N/mm)			152 (27)	228 (40)	304 (53)	380 (67)
Strength at Yield, lb/in-width (N/mm)			84 (15)	126 (22)	168 (29)	210 (37)
Elongation at Break, %	G.L. = 2.0 in (51 mm)		700	700	700	700
Elongation at Yield, %	G.L. = 1.3 in (33 mm)		12	12	12	12
Tear Resistance, lb (N)	ASTM D 1004	45,000 lb	28 (125)	42 (187)	56 (249)	70 (311)
Puncture Resistance, lb (N)	ASTM D 4833	45,000 lb	72 (320)	108 (480)	144 (640)	180 (800)
Carbon Black Content ^{(2) (3)} , %	ASTM D 1603*/4218	20,000 lb	2.0	2.0	2.0	2.0
Carbon Black Dispersion	ASTM D 5596	45,000 lb	+Note 1	+Note 1	+Note 1	+Note 1
Notched Constant Tensile Load, hr	ASTM D 5397, Appendix	200,000 lb	300	300	300	300
REFERENCE PROPERTY	TEST METHOD	FREQUENCY	NOMINAL VALUE			
Oxidative Induction Time ⁽³⁾ , min	ASTM D 3895, 200° C; O ₂ , 1 atm	200,000 lb	>100	>100	>100	>100
Roll Length ⁽⁴⁾ (approximate), ft (m)			870 (265)	560 (171)	430 (131)	340 (104)
Roll Width ⁽⁴⁾ , ft (m)			22.5 (6.9)	22.5 (6.9)	22.5 (6.9)	22.5 (6.9)
Roll Area, ft ² (m ²)			19,575 (1,819)	12,600 (1,171)	9,675 (899)	7,650 (711)

NOTES:

- +Note 1: Dispersion only applies to near spherical agglomerates. 9 of 10 views shall be Category 1 or 2. No more than 1 view from Category 3.
- GSE Conductive White is available in rolls weighing about 3,900 lb (1,769 kg).
- ⁽¹⁾Due to surface effects caused by the conductive layer, these tensile properties are minimum average values.
- ⁽²⁾GSE Conductive White may have an overall ash content greater than 3.0% due to the white and conductive outer layers.
- All GSE geomembranes have dimensional stability of ±2% when tested with ASTM D 1204 and LTB of <-77° C when tested with ASTM D 746.
- ⁽³⁾The values apply to the black layer only.
- ⁽⁴⁾Roll lengths and widths have a tolerance of ± 1%.
- *Modified.



Geomembranes Manufacturing Quality Assurance Manual

Appendix B - Minimum Testing Frequencies and Properties for GSE Geomembranes

MINIMUM PROPERTIES FOR GSE HD TEXTURED

TESTED PROPERTY	TEST METHOD	FREQUENCY	MINIMUM VALUE				
Product Code			HDT 030G000	HDT 040G000	HDT 060G000	HDT 080G000	HDT 100G000
Thickness, (minimum average) mil (mm)	ASTM D 5994	every roll	29 (0.73)	38 (0.96)	57 (1.45)	76 (1.93)	95 (2.41)
Lowest individual for 8 out of 10 values			27 (0.69)	36 (0.91)	54 (1.40)	72 (1.80)	90 (2.30)
Lowest individual for any of the 10 values			26 (0.66)	34 (0.86)	51 (1.30)	68 (1.73)	85 (2.16)
Density, g/cm ³	ASTM D 1505	200,000 lb	0.94	0.94	0.94	0.94	0.94
Tensile Properties (each direction) ⁽¹⁾	ASTM D 6693, Type IV Dumbell, 2 ipm	20,000 lb	45 (8)	60 (11)	90 (16)	120(21)	150 (27)
Strength at Break, lb/in-width (N/mm)			63 (11)	84 (15)	126 (22)	168 (29)	210 (37)
Strength at Yield, lb/in-width (N/mm)			100	100	100	100	100
Elongation at Break, %	G.L. = 2.0 in (51 mm)		12	12	12	12	12
Elongation at Yield, %	G.L. = 1.3 in (33 mm)						
Tear Resistance, lb (N)	ASTM D 1004	45,000 lb	21 (93)	28 (125)	42 (187)	56 (249)	70 (311)
Puncture Resistance, lb (N)	ASTM D 4833	45,000 lb	45 (200)	60 (267)	90 (400)	120 (534)	150 (667)
Carbon Black Content, %	ASTM D 1603*/4218	20,000 lb	2.0	2.0	2.0	2.0	2.0
Carbon Black Dispersion	ASTM D 5596	45,000 lb	+Note 1	+Note 1	+Note 1	+Note 1	+Note 1
Asperity Height	GRI GM 12	second roll	+Note 2	+Note 2	+Note 2	+Note 2	+Note 2
Notched Constant Tensile Load ⁽²⁾ , hr	ASTM D 5397, Appendix	200,000 lb	300	300	300	300	300
REFERENCE PROPERTY	TEST METHOD	FREQUENCY	NOMINAL VALUE				
Oxidative Induction Time, min	ASTM D 3895, 200° C; O ₂ , 1 atm	200,000 lb	>100	>100	>100	>100	>100
Roll Length ⁽³⁾ (approximate), ft (m)	Standard Textured		830 (253)	700 (213)	520 (158)	400 (122)	330 (101)
Roll Width ⁽³⁾ , ft (m)			22.5 (6.9)	22.5 (6.9)	22.5 (6.9)	22.5 (6.9)	22.5 (6.9)
Roll Area, ft ² (m ²)			18,674 (1,735)	15,750 (1,463)	11,700 (1,087)	9,000 (836)	7,425 (690)

NOTES:

- +Note 1: Dispersion only applies to near spherical agglomerates. 9 of 10 views shall be Category 1 or 2. No more than 1 view from Category 3.
- +Note 2: 10 mil average. 8 of 10 readings ≥ 7 mils. Lowest individual ≥ 5 mils.
- GSE HD Standard Textured is available in rolls weighing about 4,000 lb (1,800 kg).
- ⁽¹⁾The combination of stress concentrations due to coextrusion texture geometry and the small specimen size results in large variation of test results. Therefore, these tensile properties are minimum average values.
- ⁽²⁾NCTL for HD Textured is conducted on representative smooth membrane samples.
- All GSE geomembranes have dimensional stability of $\pm 2\%$ when tested with ASTM D 1204 and LTb of $< 77^\circ \text{C}$ when tested with ASTM D 746.
- ⁽³⁾Roll lengths and widths have a tolerance of $\pm 1\%$.
- *Modified.



Geomembranes Manufacturing Quality Assurance Manual

Appendix B - Minimum Testing Frequencies and Properties for GSE Geomembranes

MINIMUM PROPERTIES FOR GSE WHITE TEXTURED

Product Specifications

TESTED PROPERTY	TEST METHOD	FREQUENCY	MINIMUM VALUE			
Product Code			HDT 040G010	HDT 060G010	HDT 080G010	HDT 100G010
Thickness, (minimum average) mil (mm) Lowest individual for 8 out of 10 values Lowest individual for any of the 10 values	ASTM D 5994	every roll	38 (0.96) 36 (0.91) 34 (0.86)	57 (1.45) 54 (1.40) 51 (1.30)	76 (1.93) 72 (1.80) 68 (1.73)	95 (2.41) 90 (2.30) 85 (2.16)
Density ⁽⁴⁾ , g/cm ³	ASTM D 1505	200,000 lb	0.94	0.94	0.94	0.94
Tensile Properties (each direction) ⁽¹⁾ Strength at Break, lb/in-width (N/mm) Strength at Yield, lb/in-width (N/mm) Elongation at Break, % Elongation at Yield, %	ASTM D 6693, Type IV Dumbbell, 2 ipm G.L. = 2.0 in (51 mm) G.L. = 1.3 in (33 mm)	20,000 lb	60 (11) 84 (15) 100 12	90 (16) 126 (22) 100 12	120 (21) 168 (29) 100 12	150 (27) 210 (37) 100 12
Tear Resistance, lb (N)	ASTM D 1004	45,000 lb	28 (125)	42 (187)	56 (249)	70 (311)
Puncture Resistance, lb (N)	ASTM D 4833	45,000 lb	60 (267)	90 (400)	120 (534)	150 (667)
Carbon Black Content ^{(2) (4)} , %	ASTM D 1603*/4218	20,000 lb	2.0	2.0	2.0	2.0
Carbon Black Dispersion	ASTM D 5596	45,000 lb	+Note 1	+Note 1	+Note 1	+Note 1
Asperity Height	GRI GM 12	second roll	+Note 2	+Note 2	+Note 2	+Note 2
Notched Constant Tensile Load ⁽³⁾ , hr	ASTM D 5397, Appendix	200,000 lb	300	300	300	300
REFERENCE PROPERTY	TEST METHOD	FREQUENCY	NOMINAL VALUE			
Oxidative Induction Time ⁽⁴⁾ , min	ASTM D 3895, 200° C; O ₂ , 1 atm	200,000 lb	>100	>100	>100	>100
Roll Length ⁽⁵⁾ (approximate), ft (m)			700 (213)	520 (158)	400 (122)	330 (101)
Roll Width ⁽⁵⁾ , ft (m)			22.5 (6.9)	22.5 (6.9)	22.5 (6.9)	22.5 (6.9)
Roll Area, ft ² (m ²)			15,750 (1,463)	11,700 (1,087)	9,000 (836)	7,425 (690)

NOTES:

- +Note 1: Dispersion only applies to near spherical agglomerates. 9 or 10 views shall be Category 1 or 2. No more than 1 view from Category 3.
- +Note 2: 10 mil average. 8 of 10 readings ≥ 7 mils. Lowest individual ≥ 5 mils.
- GSE White Textured is available in rolls weighing about 4,000 lb (1,800 kg).
- ⁽¹⁾The combination of stress concentrations due to coextrusion texture geometry and the small specimen size results in large variation of test results. Therefore, these tensile properties are minimum average values.
- ⁽²⁾GSE White Textured may have an overall ash content greater than 3.0% due to the white layer.
- ⁽³⁾NCTL is conducted on representative smooth membrane samples.
- All GSE geomembranes have dimensional stability of ±2% when tested with ASTM D 1204 and LTB of <77° C when tested with ASTM D 746.
- ⁽⁴⁾The values apply to the black layer only.
- ⁽⁵⁾Roll lengths and widths have a tolerance of ± 1%.
- *Modified.



Geomembranes Manufacturing Quality Assurance Manual

Appendix B - Minimum Testing Frequencies and Properties for GSE Geomembranes

MINIMUM PROPERTIES FOR GSE ULTRAFLEX

TESTED PROPERTY	TEST METHOD	FREQUENCY	MINIMUM VALUE			
Product Code			LLD 030A000	LLD 040A000	LLD 060A000	LLD 080A000
Thickness, (minimum average) mil (mm) Lowest individual reading (-10%)	ASTM D 5199	every roll	30 (0.75) 27 (0.69)	40 (1.00) 36 (0.91)	60 (1.50) 54 (1.40)	80 (2.00) 72 (1.80)
Density, g/cm ³	ASTM D 1505	200,000 lb	0.92	0.92	0.92	0.92
Tensile Properties (each direction) Strength at Break, lb/in-width (N/mm) Elongation at Break, %	ASTM D 6693, Type IV Dumbbell, 2 ipm G.L. = 2.0 in (51 mm)	20,000 lb	114 (20) 800	152 (27) 800	228 (40) 800	304 (53) 800
Tear Resistance, lb (N)	ASTM D 1004	45,000 lb	16 (71)	22 (98)	33 (147)	44 (200)
Puncture Resistance, lb (N)	ASTM D 4833	45,000 lb	42 (190)	56 (250)	84 (370)	112 (500)
Carbon Black Content, %	ASTM D 1603*/4218	20,000 lb	2.0	2.0	2.0	2.0
Carbon Black Dispersion	ASTM D 5596	45,000 lb	+Note 1	+Note 1	+Note 1	+Note 1
REFERENCE PROPERTY	TEST METHOD	FREQUENCY	NOMINAL VALUE			
Oxidative Induction Time, min	ASTM D 3895, 200° C, 1 atm	200,000 lb	>100	>100	>100	>100
Roll Length (approximate), ft (m)			1,120 (341)	870 (265)	560 (171)	430 (131)
Roll Width ⁽¹⁾ , ft (m)			22.5 (6.9)	22.5 (6.9)	22.5 (6.9)	22.5 (6.9)
Roll Area ⁽¹⁾ , ft ² (m ²)			25,200 (2,341)	19,575 (1,819)	12,600 (1,171)	9,675 (899)

NOTES:

- +Note 1: Dispersion only applies to near spherical agglomerates. 9 of 10 views shall be Category 1 or 2. No more than 1 view from Category 3.
- GSE UltraFlex is available in rolls weighing about 3,800 lb (1,724 kg) respectively.
- All GSE geomembranes have dimensional stability of ±2% when tested with ASTM D 1204 and LTB of <77° C when tested with ASTM D 746.
- ⁽¹⁾Roll lengths and widths have a tolerance of ± 1%.
- *Modified.



Geomembranes Manufacturing Quality Assurance Manual

Appendix B - Minimum Testing Frequencies and Properties for GSE Geomembranes

MINIMUM PROPERTIES FOR GSE ULTRAFLEX WHITE

TESTED PROPERTY	TEST METHOD	FREQUENCY	MINIMUM VALUE	
Product Code			LLD040A010	LLD060A010
Thickness, (minimum average) mil (mm)	ASTM D 5199	every roll	40 (1.00)	60 (1.50)
Lowest individual reading (-10%)			36 (0.91)	54 (1.40)
Density ⁽²⁾ , g/cm ³	ASTM D 1505	200,000 lb	0.92	0.92
Tensile Properties (each direction)	ASTM D 6693, Type IV	20,000 lb		
Strength at Break, lb/in-width (N/mm)	Dumbell, 2 ipm		152 (27)	228 (40)
Elongation at Break, %	G.L. = 2.0 in (51 mm)		800	800
Tear Resistance, lb (N)	ASTM D 1004	45,000 lb	22 (98)	33 (147)
Puncture Resistance, lb (N)	ASTM D 4833	45,000 lb	56 (250)	84 (370)
Carbon Black Content ^{(1) (2)} , %	ASTM D 1603*/4218	20,000 lb	2.0	2.0
Carbon Black Dispersion	ASTM D 5596	45,000 lb	+Note 1	+Note 1
REFERENCE PROPERTY	TEST METHOD	FREQUENCY	NOMINAL VALUE	
Oxidative Induction Time ⁽²⁾ , min	ASTM D 3895, 200° C; O ₂ 1 atm	200,000 lb	>100	>100
Roll Length ⁽³⁾ (approximate), ft (m)			870 (265)	560 (171)
Roll Width ⁽³⁾ , ft (m)			22.5 (6.9)	22.5 (6.9)
Roll Area, ft ² (m ²)			19,575 (1,819)	12,600 (1,171)

NOTES:

- +Note 1: Dispersion only applies to near spherical agglomerates. 9 of 10 views shall be Category 1 or 2. No more than 1 view from Category 3.
- GSE UltraFlex White is available in rolls weighing about 3,800 lb (1,724 kg).
- ⁽¹⁾GSE UltraFlex White may have an overall ash content greater than 3.0% due to the white layer.
- All GSE geomembranes have dimensional stability of ±2% when tested with ASTM D 1204 and LTB of <-77° C when tested with ASTM D 746.
- ⁽²⁾The values apply to the black layer only.
- ⁽³⁾Roll lengths and widths have a tolerance of ± 1%.
- *Modified.



Geomembranes Manufacturing Quality Assurance Manual

Appendix B - Minimum Testing Frequencies and Properties for GSE Geomembranes

MINIMUM PROPERTIES FOR GSE ULTRAFLEX TEXTURED

TESTED PROPERTY	TEST METHOD	FREQUENCY	MINIMUM VALUE		
Product Code			LUT040G000	LUT060G000	LUT080G000
Thickness, (minimum average) mil (mm)	ASTM D 5994	every roll	38 (0.96)	57 (1.45)	76 (1.93)
Lowest individual for 8 out of 10 values			36 (0.91)	54 (1.40)	72 (1.80)
Lowest individual for any of the 10 values			34 (0.86)	51 (1.30)	68 (1.73)
Density, g/cm ³	ASTM D 1505	200,000 lb	0.92	0.92	0.92
Tensile Properties (each direction) ⁽¹⁾	ASTM D 6693, Type IV Dumbell, 2 ipm G.L. = 2.0 in (51 mm)	20,000 lb			
Strength at Break, lb/in-width (N/mm)			60 (11)	90 (16)	120 (21)
Elongation at Break, %			250	250	250
Tear Resistance, lb (N)	ASTM D 1004	45,000 lb	22 (98)	33 (147)	44 (200)
Puncture Resistance, lb (N)	ASTM D 4833	45,000 lb	44 (200)	66 (300)	88 (400)
Carbon Black Content, %	ASTM D 1603*/4218	20,000 lb	2.0	2.0	2.0
Carbon Black Dispersion	ASTM D 5596	45,000 lb	+Note 1	+Note 1	+Note 1
Asperity Height	GRI GM 12	second roll	+Note 2	+Note 2	+Note 2
REFERENCE PROPERTY	TEST METHOD	FREQUENCY	NOMINAL VALUE		
Oxidative Induction Time, min	ASTM D 3895, 200° C; O ₂ , 1 atm	200,000 lb	>100	>100	>100
Roll Length ⁽²⁾ (approximate), ft (m)			700 (213)	520 (158)	400 (122)
Roll Width ⁽²⁾ , ft (m)			22.5 (6.9)	22.5 (6.9)	22.5 (6.9)
Roll Area, ft ² (m ²)			15,750 (1,463)	11,700 (1,087)	9,000 (836)

NOTES:

- +Note 1: Dispersion only applies to near spherical agglomerates. 9 of 10 views shall be Category 1 or 2. No more than 1 view from Category 3.
- +Note 2: 10 mil average. 8 of 10 readings ≥ 7 mils. Lowest individual ≥ 5 mils.
- GSE UltraFlex Textured is available in rolls weighing about 3,900 lb (1,769 kg).
- ⁽¹⁾The combination of stress concentrations due to coextrusion texture geometry and the small specimen size results in large variation of test results. Therefore, these tensile properties are average roll values.
- All GSE geomembranes have dimensional stability of ±2% when tested with ASTM D 1204 and LTb of <77° C when tested with ASTM D 746.
- ⁽²⁾Roll lengths and widths have a tolerance of ± 1%.
- Modified.



Geomembranes Manufacturing Quality Assurance Manual

Appendix B - Minimum Testing Frequencies and Properties for GSE Geomembranes

MINIMUM PROPERTIES FOR GSE ULTRAFLEX WHITE TEXTURED

TESTED PROPERTY	TEST METHOD	FREQUENCY	MINIMUM VALUE		
Product Code			LUT040G010	LUT060G010	LUT080G010
Thickness, (minimum average) mil (mm)	ASTM D 5994	every roll	38 (0.96)	57 (1.45)	76 (1.93)
Lowest individual for 8 out of 10 values			36 (0.91)	54 (1.40)	72 (1.80)
Lowest individual for any of the 10 values			34 (0.86)	51 (1.30)	68 (1.73)
Density ⁽³⁾ , g/cm ³	ASTM D 1505	200,000 lb	0.92	0.92	0.92
Tensile Properties (each direction) ⁽¹⁾	ASTM D 6993, Type IV Dumbell, 2 ipm G.L. = 2.0 in (51 mm)	20,000 lb			
Strength at Break, lb/in-width (N/mm)			60 (11)	90 (16)	120 (21)
Elongation at Break, %			250	250	250
Tear Resistance, lb (N)	ASTM D 1004	45,000 lb	22 (98)	33 (147)	44 (200)
Puncture Resistance, lb (N)	ASTM D 4833	45,000 lb	44 (200)	66 (300)	88 (400)
Carbon Black Content ^{(2) (3)} , %	ASTM D 1603*/4218	20,000 lb	2.0	2.0	2.0
Carbon Black Dispersion	ASTM D 5596	45,000 lb	+Note 1	+Note 1	+Note 1
Asperity Height	GRI GM 12	second roll	+Note 2	+Note 2	+Note 2
REFERENCE PROPERTY	TEST METHOD	FREQUENCY	NOMINAL VALUE		
Oxidative Induction Time ⁽³⁾ , min	ASTM D 3895, 200° C; O ₂ , 1 atm	200,000 lb	>100	>100	>100
Roll Length ⁽⁴⁾ (approximate), ft (m)			700 (213)	520 (158)	400 (122)
Roll Width ⁽⁴⁾ , ft (m)			22.5 (6.9)	22.5 (6.9)	22.5 (6.9)
Roll Area, ft ² (m ²)			15,750 (1,463)	11,700 (1,087)	9,000 (836)

NOTES:

- +Note 1: Dispersion only applies to near spherical agglomerates. 9 of 10 views shall be Category 1 or 2. No more than 1 view from Category 3.
- +Note 2: 10 mil average. 8 of 10 readings ≥ 7 mils. Lowest individual ≥ 5 mils.
- GSE UltraFlex White Textured is available in rolls weighing about 3,900 lb (1,769 kg).
- ⁽¹⁾The combination of stress concentrations due to coextrusion texture geometry and the small specimen size results in large variation of test results. Therefore, these tensile properties are average roll values.
- ⁽²⁾GSE UltraFlex White Textured may have an overall ash content greater than 3.0% due to the white layer.
- All GSE geomembranes have dimensional stability of $\pm 2\%$ when tested with ASTM D 1204 and LTB of $< 77^\circ \text{C}$ when tested with ASTM D 746.
- ⁽³⁾The values apply to the black layer only.
- ⁽⁴⁾Roll lengths and widths have a tolerance of $\pm 1\%$.
- *Modified.



Geomembranes Manufacturing Quality Assurance Manual

Appendix C - Minimum Weld Properties for GSE Geomembrane Products

MINIMUM WELD PROPERTIES FOR STANDARD HDPE GEOMEMBRANES⁽¹⁾

Property	Test Method	30 (0.75)	40 (1.0)	60 (1.5)	80 (2.0)	100 (2.5)	120 (3.0)
Peel Strength (fusion), ppi (kN/m)	ASTM D 6392	49 (8.6)	65 (11.4)	98 (17.2)	130 (22.8)	162 (28.4)	196 (34.3)
Peel Strength (extrusion), ppi (kN/m)	ASTM D 6392	39 (6.8)	52 (9.1)	78 (13.7)	104 (18.2)	130 (22.8)	157 (27.5)
Shear Strength (fusion & ext), ppi (kN/m)	ASTM D 6392	61 (10.7)	81 (14.2)	121 (21.2)	162 (28.4)	203 (35.5)	242 (42.4)

¹ These values apply to both coextruded and flat cast produced geomembranes and white-surfaced and conductive products.

MINIMUM WELD PROPERTIES FOR STANDARD LLDPE GEOMEMBRANES⁽¹⁾

Property	Test Method	30 (0.75)	40 (1.0)	60 (1.5)	80 (2.0)	100 (2.5)
Peel Strength (extrusion) ppi (kN/m)	ASTM D 6392	36 (6.3)	48 (8.4)	72 (12.6)	96 (16.8)	120 (21.0)
Peel Strength (fusion), ppi (kN/m)	ASTM D 6392	38 (6.7)	50 (8.8)	75 (13.1)	100 (17.5)	125 (21.9)
Shear Strength (fusion & ext), ppi (kN/m)	ASTM D 6392	45 (7.9)	60 (10.5)	90 (15.8)	120 (21.0)	150 (26.3)

¹ These values apply to both coextruded and flat cast produced geomembranes to include white-surfaced products.



North America
South America
Asia Pacific
Europe & Africa
Middle East

GSE Lining Technology, Inc.
GSE Lining Technology Chile S.A.
GSE Lining Technology Company Limited
GSE Lining Technology GmbH
GSE Lining Technology-Egypt

Houston, Texas
Santiago, Chile
Bangkok, Thailand
Hamburg, Germany
The 6th of October City, Egypt

800 435 2008

281 443 8564
56 2 595 4200
66 2 937 0091
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Fax: 56 2 595 4290
Fax: 66 2 937 0097
Fax: 49 40 7674234
Fax: 202 2 828 8889

www.gseworld.com



GSE Installation Project List - Landfills & Caps

Project Name:	Waste Management/Cedar Ridge Landfill Cell 5	
Site Location:	Lewisburg, TN	GSE No.: 519388
Application:	Sanitary LF	
Owner:	Waste Management	
Owner Contact:	John Workman	770 805-3363
General Contractor:	WMI Cedar Ridge Landfill	
GC Contact:	Keith May	931 359-9032
Engineering Firm:	Triad Environmental Consultants, Ltd.	
Engineer Contact:	Nancy Sullivan	615 889-6888
Products:	GSE HD Textured 60 mil	526,500 sq. ft.
	GSE FabriNet DS HF 6 oz	524,900 sq. ft.
	Bentofix NWL	524,116 sq. ft.
Amount:	\$845,013	
Date completed:	7/9/2006	

Project Name:	Waste Management/Pheasant RUN RDF Phase 3A	
Site Location:	Briston, WI	GSE No.: 519471
Application:	Sanitary LF	
Owner:	Waste Management	
Owner Contact:	Luci Altieri	630 218-1821
General Contractor:	WMI Pheasant Run RDF	
GC Contact:	Casey Furlong	262 857-7956
Engineering Firm:	CQM, Inc.	
Engineer Contact:	Pete Rammer	920 465-3911
Products:	GSE HD Textured 60 mil	795,600 sq. ft.
	GSE FabriNet DS 6 oz	163,415 sq. ft.
	GSE Geotextile 12 oz	91,000 sq. ft.
Amount:	\$621,746	
Date completed:	10/15/2006	

Project Name:	Waste Management/Phoenix Resources Lnadfill 2006 Cap	
Site Location:	Wellsboro, PA	GSE No.: 518568
Application:	Sanitary LF Cap	
Owner:	Waste Management	
Owner Contact:	Tony Eith	215 269-2143
General Contractor:	WMI Phoenix Resources Landfill	
GC Contact:	RonWilson	570 353-2406
Engineering Firm:	Blazosky Associates, Inc.	
Engineer Contact:	Karen Finlan	814 238-2060
Products:	GSE HD Textured 40 mil	740,250 sq. ft.
	GSE FabriNet HS DS 6 oz	720,900 sq. ft.
	GSE Geotextile 6 oz	2,000 sq. ft.
Amount:	\$685,287	
Date completed:	8/11/2006	



Project Name:	Onyx/Orchard Hills Landfill Phase IV Cell Composite Cover	
Site Location:	Davis Junction, IL	GSE No.: 519872
Application:	Sanitary LF Cap	
Owner:	Onyx Waste Services, Inc.	
Owner Contact:	Randy Frank	262 971-1391
General Contractor:	Onyx Waste Services, Inc.	
GC Contact:	Randy Frank	262 971-1391
Engineering Firm:	CQM, Inc.	
Engineer Contact:	Pat Drossaart	920 465-3911
Products:	GSE UltraFlex Textured 40 mil	1,370,250 sq. ft.
	GSE FabriNet 6 oz	1,023,265 sq. ft.
Amount:	\$899,809	
Date completed:	9/10/2006	

Project Name:	Allied/Sauk Trail Hills Landfill Cell K	
Site Location:	Canton, MI	GSE No.: 519723
Application:	Sanitary LF	
Owner:	Allied Waste Industries	
Owner Contact:	Christina Pearce-Bossick	734 397-4323
General Contractor:	Allied Waste Industries	
GC Contact:	Christina Pearce-Bossick	734 397-4323
Engineering Firm:	Midwestern Consulting, LLC.	
Engineer Contact:	Chris Sullivan	734 995-0200
Products:	GSE HD Textured 60 mil	854,100 sq. ft.
	Bentofix NSL	809,284 sq. ft.
	GSE FabriNet DS 8 oz	513,300 sq. ft.
	GSE HyperNet 200 mil Geonet	261,000 sq. ft.
	GSE Geotextile 8 oz	30,000 sq. ft.
Amount:	\$860,580	
Date completed:	7/24/2006	

Project Name:	Allied/Roosevelt Regional Landfill Ash Stage 1	
Site Location:	Roosevelt, WA	GSE No.: 519255
Application:	Sanitary LF	
Owner:	Allied RABANCO Regional Disposal Company	
Owner Contact:	Bill Borlaug	800 375-5641
General Contractor:	Allied RABANCO Regional Disposal Company	
GC Contact:	Art Mains	800 375-5641
Engineering Firm:	Thiel Engineering	
Engineer Contact:	Richard Thiel	530 692-9114
Products:	GSE HD 80 mil	976,793 sq. ft.
	GSE Geotextile 4 oz	132,000 sq. ft.
	GSE Geotextile 14 oz	116,895 sq. ft.
	GSE HyperNet 200 mil Geonet	31,725 sq. ft.
Amount:	\$735,085	
Date completed:	5/6/2006	

Project Name:	Waste Management/Menominee Phase III Landfill Cell 9	
Site Location:	Menominee, MI	GSE No.: 518901
Application:	Sanitary LF	
Owner:	Waste Management	
Owner Contact:	Steve Lackner	630 572-8800
General Contractor:	WMI Menominee Landfill	
GC Contact:	Bob Pliska	906 228-4000
Engineering Firm:	CQM, Inc.	
Engineer Contact:		920 465-3911



Products:	GSE HD 60 mil	705,600	sq. ft.
	Bentofix NSL	708,143	sq. ft.
	GSE HyperNet	355,500	sq. ft.
	GSE Geotextile 8 oz	39,000	sq. ft.
	GSE Geotextile 12 oz	39,000	sq. ft.
Amount:	\$937,396		
Date completed:	6/26/2006		
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Project Name:	Waste Management/K&W Sanitary Landfill Phase II Cell 3		
Site Location:	Ontonagon, MI	GSE No.:	519375
Application:	Sanitary LF		
Owner:	Waste Management		
Owner Contact:	Steve Lackner	630 572-8800	
General Contractor:	WMI K&W Sanitary Landfill		
GC Contact:	Robert Pliska	906 228-4000	
Engineering Firm:	Wenck Associates, Inc.		
Engineer Contact:	Dave Parenteau	763 479-4243	
Products:	GSE HD 60 mil	635,670	sq. ft.
	GSE HyperNet 200 mil Geonet	608,385	sq. ft.
	Bentofix NSL	595,864	sq. ft.
	GSE Geotextile 8 oz	70,032	sq. ft.
Amount:	\$864,883		
Date completed:	8/18/2006		
<hr/>			
Project Name:	Waste Management/McGill Road Landfill Phase V Cell 1A		
Site Location:	Jackson, MI	GSE No.:	519555
Application:	Sanitary LF		
Owner:	Waste Management		
Owner Contact:	Steve Lackner	630 218-1821	
General Contractor:	WMI McGill Road LF		
GC Contact:	Paul Mazanec	734 326-8230	
Engineering Firm:	McNeely & Lincoln Associates, Inc.		
Engineer Contact:	Allen Visel	734 432-9777	
Products:	GSE HD 60 mil	340,200	sq. ft.
	GSE HD Textured 60 mil	289,100	sq. ft.
	Bentofix NWL	570,733	sq. ft.
	GSE HyperNet 200 mil Geonet	346,500	sq. ft.
	GSE FabriNet DS 8 oz	246,500	sq. ft.
	GSE Geotextile 8 oz	43,000	sq. ft.
	GSE Geotextile 10 oz	1,000	sq. ft.
Amount:	\$870,702		
Date completed:	7/3/2006		
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Project Name:	Waste Management/Waters Landfill Cell D South		
Site Location:	Frederic, MI	GSE No.:	519560
Application:	Sanitary LF		
Owner:	Waste Management		
Owner Contact:	Steve Lackner	630 218-1821	
General Contractor:	WMI Waters LF		
GC Contact:	Debora Johnston	989 539-6111	
Engineering Firm:	Midwestern Consulting, LLC.		
Engineer Contact:	J. Chris Sullivan	734 995-0200	
Products:	GSE HD Textured 60 mil	702,000	sq. ft.
	Bentofix NSL	629,482	sq. ft.
	GSE FabriNet DS 6 oz	498,699	sq. ft.
	GSE HyperNet 200 mil Geonet	166,500	sq. ft.
	GSE Geotextile 10 oz	19,500	sq. ft.
Amount:	\$995,929		



Date completed: 6/12/2006

Project Name: Waste Management/Lancaster Landfill and Recycling Center Phase 1B
Site Location: Lancaster, CA **GSE No.:** 519547
Application: Sanitary LF
Owner: Waste Management
Owner Contact: Rick Von Pein 510 613-0254
General Contractor: WMI Lancaster Landfill and Recycling Center
GC Contact: Bo McCoy 714 685-6485
Engineering Firm: Bryan Stirrat & Associates
Engineer Contact: Janet Paul 909 860-7777
Products: GSE HD Textured 60 mil 409,500 sq. ft.
GSE HD Textured Single-Sided 60 mil 113,400 sq. ft.
Bentofix NWL 492,995 sq. ft.
GSE Geotextile 8 oz 46,000 sq. ft.
GSE Geotextile 12 oz 45,500 sq. ft.
GSE Geotextile 16 oz 10,000 sq. ft.
Amount: \$769,071
Date completed: 9/5/2006

Project Name: Waste Management/Holyoke Landfill Stage 2
Site Location: Granby, MA **GSE No.:** 516696
Application: Sanitary LF
Owner: Waste Management
Owner Contact: Tony Eith 215 269-2143
General Contractor: WMI Holyoke Landfill
GC Contact: Bob Magnusson 413 539-9036
Engineering Firm: Golder Associates
Engineer Contact: Richard Wesenberg 603 668-0880
Products: GSE HD Textured 60 mil 924,300 sq. ft.
GSE FabriNet HF 8 oz 506,920 sq. ft.
Bentofix NWL 441,056 sq. ft.
Amount: \$750,861
Date completed: 2/3/2006

Project Name: Waste Management/Maplewood Landfill Cell 16B
Site Location: Jetersville, VA **GSE No.:** 519528
Application: Sanitary LF
Owner: Waste Management
Owner Contact: Tony Eith 215 269-2143
General Contractor: MWI Maplewood LF (Amelia)
GC Contact: Mike Thomas 804 240-1710
Engineering Firm: Terra Engineering
Engineer Contact: Andrew Miller 608 221-3501
Products: GE HD 60 mil 743,400 sq. ft.
Bentofix NSE 260,400 sq. ft.
GSE HyperNet 200 mil Geonet 256,500 sq. ft.
GSE FabriNet 10 oz 10,440 sq. ft.
GSE Geotextile 10 oz 3,537 sq. ft.
Amount: \$608,361
Date completed: 5/24/2006

Project Name: Allied/C & C Landfill Cell VA-2 and VB
Site Location: Marshall, MI **GSE No.:** 519714



Application:	Sanitary LF	
Owner:	Allied Waste Industries	
Owner Contact:	Debbie Nurmi	616 837-7316
General Contractor:	Allied Waste Industries	
GC Contact:	Debbie Nurmi	616 837-7316
Engineering Firm:	STS Consultants, Ltd.	
Engineer Contact:	Chris Jaquet	616 940-3077
Products:	GSE HD Textured 60 mil	1,052,550 sq. ft.
	GSE Bentofix NSL	1,035,670 sq. ft.
	GSE FabriNet HF DS 6 oz	516,200 sq. ft.
Amount:	\$948,420	
Date completed:	10/18/2006	

Project Name:	Allied/Forward and Austin Road Landfill Cell FU-06	
Site Location:	Manteca, CA	GSE No.: 519757
Application:	Sanitary LF	
Owner:	Allied Waste Industries	
Owner Contact:	Lochlin Caffey	925 458-9800
General Contractor:	Allied Waste Industries	
GC Contact:	Lochlin Caffey	925 458-9800
Engineering Firm:	Lewis Engineering	
Engineer Contact:	Sangeeta Lewis	510 601-7223
Products:	GSE HD Textured 60 mil	491,400 sq. ft.
	GSE HD 60 mil	425,250 sq. ft.
	Bentofix NWL	476,625 sq. ft.
	GSE FabriNet HF 8 oz	411,510 sq. ft.
	GSE Geotextile 8 oz	191,000 sq. ft.
	GSE Geotextile 12 oz	52,000 sq. ft.
Amount:	\$988,115	
Date completed:	10/18/2006	

Project Name:	Waste Mgt/Fitchburg Landfill Section 3 Phase 2 Expansion	
Site Location:	Westminster, MA	GSE No.: 519518
Application:	Sanitary LF	
Owner:	Waste Management	
Owner Contact:	Tony Eith	215 269-2143
General Contractor:	WMI RCI Fitchburg Landfill	
GC Contact:	Bob Magnusson	603 929-5435
Engineering Firm:	Brown & Caldwell	
Engineer Contact:	Bob Forgette	508 923-0879
Products:	GSE HD Textured 60 mil	573,300 sq. ft.
	Bentofix NWL	503,226 sq. ft.
	GSE FabriNet DS 8 oz	407,740 sq. ft.
	HSE HD 40 mil	19,575 sq. ft.
Amount:	\$848,142	
Date completed:	11/20/2006	

Project Name:	Waste Mgt/Bethel Landfill Phase 3 Cell 1C	
Site Location:	Hampton, VA	GSE No.: 519530
Application:	Sanitary LF	
Owner:	Waste Management	
Owner Contact:	Tony Eith	215 269-2143
General Contractor:	WMI Bethel LF	
GC Contact:	Jim Loveland	804 834-8300
Engineering Firm:	Earth Tech	
Engineer Contact:	Bryan Schwartzott	215 244-7100
Products:	GSE HD Textured 60 mil	760,500 sq. ft.



	GSE HD Textured 40 mil	693,000	sq. ft.
	GSE FabriNet DS 6 oz	760,380	sq. ft.
	GE Geotextile 10 oz	2,500	sq. ft.
Amount:	\$957,382		
Date completed:	11/13/2006		
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Project Name:	NEWS Mostoller Landfill Cell 4A	GSE No.:	514596
Site Location:	Somerset, PA		
Application:	Sanitary LF		
Owner:	North East Waste Services Company		
Owner Contact:	Rob Sochovka	717 423-5917	
General Contractor:	NEWS Mostoller Landfill, Inc.		
GC Contact:	Rob Sochovka	814 444-0112	
Engineering Firm:	CQA Services		
Engineer Contact:	John Hanak	717 245-9100	
Products:	GSE HD Textured 60 mil	888,300	sq. ft.
	BentoFix NSL	394,298	sq. ft.
	GSE FabriNet 10 oz	292,320	sq. ft.
	GSE FabriNet DS 10 oz	93,960	sq. ft.
	GSE HyperNet 200 mil GeoNet	288,000	sq. ft.
	GSE Geotextile 16 oz	55,500	sq. ft.
Amount:	\$829,073		
Date completed:	6/17/2006		
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Project Name:	Chestnut Valley Landfill (CBF) Area 4B	GSE No.:	520259
Site Location:	McClellandtown, PA		
Application:	Sanitary LF		
Owner:	Veolia Environmental Services		
Owner Contact:	Bill Binnie	814 265-1744	
General Contractor:	Veolia Environmental Services		
GC Contact:	Bill Binnie	814 265-1744	
Engineering Firm:	Blazosky Associates		
Engineer Contact:	Jim Echard	814 238-2060	
Products:	GSE HD Textured 100 mil	497,475	sq. ft.
	GSE FabriNet DS 10 oz	247,950	sq. ft.
	BentoFix NWL	247,888	sq. ft.
	GSE Geotextile 10 oz	28,500	sq. ft.
Amount:	\$625,108		
Date completed:	11/13/2006		
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Project Name:	NEWS/Moretown Landfill Cell 3A	GSE No.:	514599
Site Location:	Waterbury, VT		
Application:	Sanitary LF		
Owner:	North East Waste Services		
Owner Contact:	Rob Sochovka	717 729-5227	
General Contractor:	WSI/Moretown Landfill, Inc.		
GC Contact:	Rob Sochovka	717 729-5227	
Engineering Firm:	Tighe & Bond, Inc.		
Engineer Contact:	Doris Atkinson	413 572-3238	
Products:	GSE HD Textured 60 mil	877,500	sq. ft.
	GSE HD Textured 40 mil	63,000	sq. ft.
	GSE FabriNet 8 oz	174,000	sq. ft.
	GSE Geotextile 4 oz	3,000	sq. ft.
Amount:	\$987,221		
Date completed:	6/18/2005		



Project Name:	Waste Management/Liberty Landfill Cell	GSE No.:	514695
Site Location:	Monticello, IN		
Application:	Sanitary LF		
Owner:	Waste Management		
Owner Contact:	Luci Altieri	630 281-1821	
General Contractor:	WMI Liberty Landfill		
GC Contact:	Barry Ledbetter	574 278-7138	
Products:	GSE HD 60 mil	466,200	sq. ft.
	GSE HD Textured 60 mil	35,100	sq. ft.
	GSE FabriNet HF 10 oz	527,220	sq. ft.
	GSE Geotextile 6 oz	59,000	sq. ft.
	GSE Geotextile 16 oz	57,158	sq. ft.
Amount:	\$702,275		
Date completed:	8/5/2005		

Project Name:	Waste Management/DSI Landfill Cell 4 Stage 1	GSE No.:	514740
Site Location:	Hurricane, WV		
Application:	Sanitary LF		
Owner:	Waste Management		
Owner Contact:	John Workman	770 805-3363	
General Contractor:	WMI Disposal Services, Inc.		
GC Contact:	Jon Webster	304 562-3262	
Engineering Firm:	Alliance Consulting, Inc.		
Engineer Contact:	Engineer	304 255-0491	
Products:	GSE FabriNet 6 oz	1,055,528	sq. ft.
	GSE HD Textured 60 mil	439,425	sq. ft.
	Bentofix NS	395,250	sq. ft.
Amount:	\$963,025		
Date completed:	7/22/2005		

Project Name:	Waste Management/TLR-III (Turnkey) Landfill Phase 8B	GSE No.:	514752
Site Location:	Rochester, NH		
Application:	Sanitary LF		
Owner:	Waste Management		
Owner Contact:	Tony Eith	215 269-2219	
General Contractor:	WMI OF NH - TREE (Turnkey) LF		
GC Contact:	Anne Reichert	603 330-2140	
Engineering Firm:	Sanborn Head & Associates, Inc.		
Engineer Contact:	James Chabot	603 229-1900	
Products:	GSE HD Textured 60 mil	795,600	sq. ft.
	Bentofix NS	86,025	sq. ft.
	GSE FabriNet 6 oz	753,710	sq. ft.
	GSE Geotextile 10 oz	500	sq. ft.
Amount:	\$772,350		
Date completed:	7/22/2005		

Project Name:	Waste Management/ Maplewood Landfill Cell 6A	GSE No.:	516022
Site Location:	Jetersville, VA		
Application:	Sanitary LF		
Owner:	Waste Management		
Owner Contact:	Tony Eith	215 269-2143	
General Contractor:	WMI Maplewood Landfill		
GC Contact:	Mike Thomas	804 561-5787	
Engineering Firm:	Terra Engineering		
Engineer Contact:	Andrew Miller	608 221-3501	
Products:	GSE HD 60 mil	768,600	sq. ft.
Amount:	\$681,996		



Date completed: 5/27/2005

Project Name: Waste Management/ Columbia Ridge Landfill Module 11
Site Location: Arlington, OR **GSE No.:** 516629
Application: Sanitary LF
Owner: **Waste Management**
Owner Contact: Rick Von Pein 510 613-0254
General Contractor: WMI Columbia Ridge Landfill
GC Contact: Roger North 503 242-9493
Engineering Firm: Thiel Engineering
Engineer Contact: Richard Thiel 530 692-9114
Products: GSE HD Textured 60 mil 865,800 sq. ft.
GSE HD Textured 40 mil Single-Sided 13,095 sq. ft.
GSE HD 40 mil 39,150 sq. ft.
GSE Conductive 80 mil 76,725 sq. ft.
GSE FabriNet 4 oz 48,720 sq. ft.
GSE FabriNet HF 8 oz 2,755 sq. ft.
GSE Geotextiles 180,135 sq. ft.
Amount: \$873,150
Date completed: 7/29/2005

Project Name: Waste Mgt/Riverbend Landfill Module 8B and Phase 2 Overliner
Site Location: McMinnville, OR **GSE No.:** 516632
Application: Sanitary LF
Owner: **Waste Management**
Owner Contact: Rick Von Pein 510 613-0254
General Contractor: WMI Riverbend Landfill
GC Contact: Roger North 503 242-9493
Engineering Firm: Shaw Group Emcon/OWT
Engineer Contact: Weston Gavett 503 603-1000
Products: GSE HD Textured 60 mil 702,000 sq. ft.
GSE FabriNet HF 6 oz 162,400 sq. ft.
GSE HyperNet HF 67,320 sq. ft.
GSE Geotextile 8 oz 50,083 sq. ft.
GSE Geotextile 16 oz 60,458 sq. ft.
Amount: \$626,190
Date completed: 8/30/2005

Project Name: Waste Mgt/Fitchburg Landfill Section 3 Phase 1 Stage 2
Site Location: Westminster, MA **GSE No.:** 516695
Application: Sanitary LF
Owner: **Waste Management**
Owner Contact: Tony Eith 215 269-2143
General Contractor: WMI RCI Fitchburg Landfill
GC Contact: Bob Magnusson 603 929-5435
Engineering Firm: Brown & Caldwell, Inc.
Engineer Contact: Bob Forgette 508 923-0879
Products: GSE HD Textured 60 mil 690,300 sq. ft.
Bentofix NWL35 342,617 sq. ft.
GSE FabriNet HF 8 oz 162,545 sq. ft.
GSE HyperNet 13,200 sq. ft.
GSE Geotextile 8 oz 1,000 sq. ft.
GSE Geotextile 24 oz 43,560 sq. ft.
Amount: \$766,504
Date completed: 9/9/2005



Project Name:	Waste Management/Arden Landfill Cell 1C4	
Site Location:	Washington, PA	GSE No.: 516705
Application:	Sanitary LF	
Owner:	Waste Management	
Owner Contact:	Tony Eith	215 269-2143
General Contractor:	WMI Arden Landfill	
GC Contact:	Rick Smitsky	412 893-4962
Engineering Firm:	Civil Design Solutions	
Engineer Contact:	David Murray	412 299-2700
Products:	GSE HD Textured 60 mil	737,100 sq. ft.
	Bentofix NSL	365,025 sq. ft.
	GSE HyperNet	220,500 sq. ft.
	GSE FabriNet 8 oz	318,798 sq. ft.
	GSE FabriNet 10 oz Single-Sided	297,540 sq. ft.
	GSE Geotextile 10 oz	16,500 sq. ft.
Amount:	\$919,050	
Date completed:	8/2/2005	

Project Name:	Waste Management/Laurel Highlands Landfill Cell 5A	
Site Location:	Johnstown, PA	GSE No.: 516706
Application:	Sanitary LF	
Owner:	Waste Management	
Owner Contact:	Tony Eith	215 269-2143
General Contractor:	WMI Laurel Highlands Landfill	
GC Contact:	Brian Stewart	814 749-9065
Engineering Firm:	Civil & Environmental Consultants	
Engineer Contact:	Engineer	724 327-5200
Products:	GSE HD Textured 60 mil	631,800 sq. ft.
	Bentofix NSL	288,300 sq. ft.
	GSE HyperNet	576,000 sq. ft.
	GSE Geotextile 10 oz	66,413 sq. ft.
Amount:	\$698,636	
Date completed:	10/31/2005	

Project Name:	Waste Management/Shade Landfill Cell 2A Northern Expansion	
Site Location:	Cairnbrook, PA	GSE No.: 516708
Application:	Sanitary LF	
Owner:	Waste Management	
Owner Contact:	Tony Eith	215 269-2143
General Contractor:	WMI RCC (Shade) Landfill	
GC Contact:	Brian Stewart	814 754-4587
Engineering Firm:	Blazosky Associates, Inc.	
Engineer Contact:	Engineer	724 733-2060
Products:	GSE HD 60 mil	1,146,600 sq. ft.
	GSE HyperNet	710,850 sq. ft.
	GSE HD Textured 60 mil	81,900 sq. ft.
	GSE FabriNet 6oz	80,040 sq. ft.
	GSE Geotextile 10 oz	79,000 sq. ft.
Amount:	\$954,550	
Date completed:	10/24/2005	

Project Name:	Waste Management/ Southern Alleghenies Landfill Phase III	
Site Location:	Cell 2B/2C	
Site Location:	Davidsville, PA	GSE No.: 516709
Application:	Sanitary LF	
Owner:	Waste Management	



Owner Contact:	Tony Eith	215 269-2143
General Contractor:	WMI Southern Alleghenies Landfill	
GC Contact:	Brian Stewart	814 479-2537
Engineering Firm:	Civil Design Solutions	
Engineer Contact:	Engineer	412 299-2700
Products:	GSE HD Textured 60 mil	374,400 sq. ft.
	GSE HD 60 mil	322,268 sq. ft.
	Bentofix NSL	175,392 sq. ft.
	GSE FabriNet 6 oz	230,115 sq. ft.
	GSE FabriNet 6 oz Single-Sided	201,115 sq. ft.
	GSE Geotextile 10 oz	36,592 sq. ft.
Amount:	\$818,775	
Date completed:	8/29/2005	

Project Name:	Allied Waste/Roosevelt Regional Landfill MSW 13	
Site Location:	Roosevelt, WA	GSE No.: 516808
Application:	Sanitary LF	
Owner:	Allied RABANCO Regional Disposal Co.	
Owner Contact:	Art Mains	800 375-5641
General Contractor:	Allied RABANCO Regional Disposal Co.	
GC Contact:	Art Mains	800 375-5641
Engineering Firm:	Thiel Engineering	
Engineer Contact:	Richard Thiel	530 692-9114
Products:	GSE White 80 mil	803,025 sq. ft.
	GSE White Textured 80 mil	323,325 sq. ft.
	GSE HyperNet	36,000 sq. ft.
Amount:	\$652,300	
Date completed:	5/3/2005	

Project Name:	Waste Mgt/Waimanalo Gulch Landfill Cell 2-1	
Site Location:	Kapolei, HI	GSE No.: 516815
Application:	Sanitary LF	
Owner:	Waste Management	
Owner Contact:	Rick Von Pein	510 613-0254
General Contractor:	WMI Waimanalo Gulch Landfill	
GC Contact:	Joe Hernandez	808 668-2985
Engineering Firm:	A-Mehr, Inc.	
Engineer Contact:	Ali Mehr	714 633-5757
Products:	GSE White Textured 60 mil	234,000 sq. ft.
	Bentofix NWL	197,625 sq. ft.
	GSE Geotextile 16 oz	27,000 sq. ft.
Amount:	\$614,200	
Date completed:	9/27/2005	

Project Name:	Dow Salzburg Landfill Cell 17-19 Cap	
Site Location:	Midland, MI	GSE No.: 516854
Application:	Sanitary LF Cap	
Owner:	Dow Chemical Company	
Owner Contact:	Todd Konechne	517 638-1639
General Contractor:	Dow Chemical Company	
GC Contact:	John Allen	517 636-6085
Engineering Firm:	In House	
Products:	GSE White Textured 40 mil	482,625 sq. ft.
	Bentofix NWL	336,634 sq. ft.
	GSE FabriNet UF 6 oz Single-Sided	243,000 sq. ft.
	GSE FabriNet UF 6 oz	122,400 sq. ft.
	GSE Geotextile 6 oz	9,000 sq. ft.
Amount:	\$601,760	



Date completed: 6/8/2005

Project Name: Allied Waste/Forward Landfill WMU FU-05
Site Location: Manteca, CA **GSE No.:** 517128
Application: Sanitary LF
Owner: **Allied Waste Industries**
Owner Contact: Lochlin Caffey 925 458-9800
General Contractor: Allied Waste Industries
GC Contact: Lochlin Caffey 925 458-9800
Engineering Firm: Bryan A. Stirrat & Associates
Engineer Contact: Richard Genzel 909 860-7777
Products:
GSE HD Textured 60 mil 456,300 sq. ft.
GSE HD Textured 60 mil Single-Sided 255,150 sq. ft.
Bentofix NW35 166,625 sq. ft.
GSE FabriNet HF 8 oz Single-Sided 153,120 sq. ft.
GSE Geotextile 8 oz 182,934 sq. ft.
GSE Geotextile 12 oz 57,267 sq. ft.
Amount: \$697,213
Date completed: 7/25/2005

Project Name: Allied Waste/Wasatch Regional Landfill Phase 1A
Site Location: Tooele, UT **GSE No.:** 517149
Application: Sanitary LF
Owner: **Allied Waste Industries**
Owner Contact: Darin Olson 435 888-4418
General Contractor: Allied Waste Industries
GC Contact: Darin Olson 435 888-4418
Engineering Firm: Hansen Allen & Luce
Engineer Contact: Kent Staheli 801 566-5599
Products:
GSE HD 60 mil 995,400 sq. ft.
GSE HD Textured 60 mil 187,200 sq. ft.
GSE HyperNet 989,595 sq. ft.
GSE Geotextile 8 oz 123,000 sq. ft.
GSE Geotextile 16 oz 1,000 sq. ft.
Amount: \$934,644
Date completed: 8/6/2005

Project Name: Onyx/Greentree Landfill 2005 Cap
Site Location: Kersey, PA **GSE No.:** 517201
Application: Sanitary LF Cap
Owner: **Onyx Waste Services**
Owner Contact: Bill Binnie 814 265-1744
General Contractor: Onyx Greentree Landfill
GC Contact: Bill Binnie 814 265-1744
Engineering Firm: Blazosky Associates, Inc.
Engineer Contact: Steven Harshbarger 724 733-2060
Products:
GSE UltraFlex Textured 40 mil 866,250 sq. ft.
GSE FabriNet 6 oz 723,840 sq. ft.
GSE FabriNet HF 6 oz 136,300 sq. ft.
Amount: \$618,716
Date completed: 10/9/2005

Project Name: Waste Management/ Fitchburg Landfill Section 3 Expansion
Site Location: Westminster, MA **GSE No.:** 512845
Application: Sanitary LF



Owner: **Waste Management**
Owner Contact: Tony Eith 215 269-2143
General Contractor: Waste Management
GC Contact: Bob Magnusson 603 929-5435
Engineering Firm: Brown & Caldwell
Engineer Contact: William Goodman 508 923-0879
Products: GSE HD Textured 60 mil 1,185,620 sq. ft.
GSE HD 40 mil 39,150 sq. ft.
Bentofix NWL 995,100 sq. ft.
GSE FabriNet 8 oz 499,192 sq. ft.
GSE Geotextile 24 oz 71,690 sq. ft.
Amount: \$920,358
Date completed: 11/3/2004

Project Name: Waste Management/ GROWS Landfill Slope Cap
Site Location: Morrisville, PA **GSE No.:** 514392
Application: Sanitary LF Cap
Owner: **Waste Management**
Owner Contact: Tony Eith 215 269-2143
General Contractor: WMI GROWS Landfill
GC Contact: Ed Kucowski 215 428-3244
Engineering Firm: Earth Tech, Inc.
Engineer Contact: Keith McKeon 215 244-7109
Products: GSE HD Textured 60 mil 771,750 sq. ft.
GSE FabriNet HF 8 oz 374,767 sq. ft.
GSE Geotextile 16 oz 43,072 sq. ft.
Amount: \$875,450
Date completed: 8/9/2004

Project Name: Waste Management/ Northwest Regional Landfill Phase 1
Module 9
Site Location: Surprise, AZ **GSE No.:** 514585
Application: Sanitary LF
Owner: **Waste Management**
Owner Contact: Rick Von Pein 510 613-0254
General Contractor: WMI Northwest Regional Landfill
GC Contact: Glen Roycroft 623 584-6065
Engineering Firm: GeoSyntec Consultants
Engineer Contact: Christopher Hunt 925 943-3034
Products: GSE HD Textured 60 mil Single-Sided 783,900 sq. ft.
GSE HyperNet 4,500 sq. ft.
Amount: \$693,776
Date completed: 6/21/2004

Project Name: Waste Management/ Timberline Trail RDF Cap
Site Location: Weyerhaeuser, WI **GSE No.:** 514647
Application: Sanitary LF Cap
Owner: **Waste Management**
Owner Contact: Dan Leclaire 608 887-9031
General Contractor: WMI Timberline Trail RDF
GC Contact: Dan Leclaire 608 837-9031
Engineering Firm: CQM, Inc.
Engineer Contact: Pete Rammer 920 465-3911
Products: GSE UltraFlex Textured 40 mil 739,440 sq. ft.
Bentofix NSL 734,056 sq. ft.
GSE FabriNet 6 oz 736,021 sq. ft.
GSE Geotextile 6 oz 10,044 sq. ft.



Amount: \$860,837
Date completed: 8/19/2004

Project Name: Waste Management/Kirby Canyon Landfill Cell 7 Phase 1
Site Location: San Jose, CA **GSE No.:** 514668
Application: Sanitary LF
Owner: **Waste Management**
Owner Contact: Guy Petraborg 510.051
General Contractor: WMI Kirby Canyon Landfill
GC Contact: Guy Petraborg 408 779-2206
Engineering Firm: GeoSyntec Consultants
Engineer Contact: Hari Sharma 510 836-3034
Products: GSE HD Textured 40 mil 472,500 sq. ft.
GSE HD Textured 80 mil Single-Sided 590,400 sq. ft.
GSE FabriNet HF 8 oz 369,170 sq. ft.
GSE Geotextile 8 oz 34,000 sq. ft.
GSE Geotextile 16 oz 3,500 sq. ft.
Amount: \$607,150
Date completed: 12/3/2004

Project Name: Waste Management/West Hawaii Landfill Cell 7
Site Location: Waikoloa, HI **GSE No.:** 514670
Application: Sanitary LF
Owner: **Waste Management**
Owner Contact: Mike Kahn 808 886-0940
General Contractor: WMI West Hawaii Sanitary Landfill
GC Contact: Mike Kahn 808 886-0940
Engineering Firm: A-Mehr, Inc.
Engineer Contact: Ali Mehr 714 633-5757
Products: GSE White 60 mil 453,600 sq. ft.
Bentofix NSL 409,200 sq. ft.
GSE Geotextile 16 oz 72,000 sq. ft.
Amount: \$643,068
Date completed: 7/20/2004

Project Name: Lancaster Landfill and Recycling Center Phase 1A
Site Location: Lancaster, CA **GSE No.:** 514672
Application: Sanitary LF
Owner: **Waste Management**
Owner Contact: Rick Von Pein 510 613-0254
General Contractor: WMI Lancaster Recycling & Disposal
GC Contact: John Workman 661 945-5944
Engineering Firm: Bryan A. Stirrat & Associates
Engineer Contact: Janet Paul 909 860-7777
Products: GSE HD Textured 60 mil 351,000 sq. ft.
GSE HD Textured 60 mil Single-Sided 189,000 sq. ft.
Bentofix NWL 530,077 sq. ft.
GSE Geotextile 8 oz 359,940 sq. ft.
GSE Geotextile 12 oz 39,500 sq. ft.
GSE Geotextile 16 oz 19,000 sq. ft.
Amount: \$733,345
Date completed: 10/6/2004

Project Name: Waste Management/ Security RDF Cell 5 Phase V



Site Location:	Cleveland, TX	GSE No.:	514682
Application:	Sanitary LF		
Owner:	Waste Management		
Owner Contact:	Jeff Palutis		770 805-3363
General Contractor:	WMI Security RDF		
GC Contact:	Mike Derdeyn		281 592-3543
Engineering Firm:	Metroplex Core		
Engineer Contact:	Reid Matthews		281 440-5503
Products:	GSE HD 60 mil	470,745	sq. ft.
	GSE HD Textured 60 mil	468,750	sq. ft.
	GSE HyperNet	468,750	sq. ft.
	GSE FabriNet 6 oz	490,333	sq. ft.
	GSE FabriNet HF 6 oz	222,633	sq. ft.
	GSE Geotextile 6 oz	128,750	sq. ft.
Amount:	\$642,884		
Date completed:	7/30/2004		

Project Name:	Waste Management/Eagle Valley Landfill Cell 11B		
Site Location:	Orion, MI	GSE No.:	514702
Application:	Sanitary LF		
Owner:	Waste Management		
Owner Contact:	Steve Lackner		630 218-1702
General Contractor:	WMI Eagle Valley Landfill		
GC Contact:	Rich Paajanen		248 391-0990
Engineering Firm:	Earth Tech		
Engineer Contact:	Matthew Williams		734 779-2800
Products:	GSE HD 60 mil	226,800	sq. ft.
	GSE HD Textured 60 mil	175,500	sq. ft.
	GSE UltraFlex Textured 60 mil	315,900	sq. ft.
	GSE HyperNet	193,905	sq. ft.
	Bentofix NSL	491,866	sq. ft.
	GSE FabriNets	88,582	sq. ft.
	GSE Geotextiles	390,301	sq. ft.
Amount:	\$688,110		
Date completed:	10/1/2004		

Project Name:	Waste Management/Waters Landfill Cell D North		
Site Location:	Frederic, MI	GSE No.:	514705
Application:	Sanitary LF		
Owner:	Waste Management		
Owner Contact:	Steve Lackner		630 218-1702
General Contractor:	WMI Waters Landfill		
GC Contact:	Debora Johnston		517 732-3553
Engineering Firm:	Midwestern Consulting LLC		
Engineer Contact:	J. Chris Sullivan		734 995-0200
Products:	GSE HD Textured 60 mil	630,113	sq. ft.
	Bentofix NSL	299,925	sq. ft.
	GSE FabriNet 6 oz	464,000	sq. ft.
	GSE Geotextile 10 oz	19,000	sq. ft.
Amount:	\$813,252		
Date completed:	7/26/2004		

Project Name:	Waste Management/Chain of Rocks RDF Final Cover Top Slopes		
Site Location:	Granite City, IL	GSE No.:	514712
Application:	Sanitary LF Cap		
Owner:	Waste Management		



Owner Contact:	Denny Dennison	618 271-6788
General Contractor:	WMI Chain of Rocks RDF	
GC Contact:	Denny Dennison	618 271-6788
Engineering Firm:	Sherrill Associates	
Engineer Contact:	Melissa Shulte	618 656-9251
Products:	GSE HD Textured 40 mil	2,133,225 sq. ft.
Amount:	\$746,595	
Date completed:	9/24/2004	

Project Name:	Waste Management/ Pheasant Run Landfill Phase 2 Composite Liner	
Site Location:	Bristol, WI	GSE No.: 514716
Application:	Sanitary LF	
Owner:	Waste Management	
Owner Contact:	Casey Furlong	262 857-7956
General Contractor:	WMI Pheasant Run RDF	
GC Contact:	Casey Furlong	262 857-7956
Engineering Firm:	CQM, Inc.	
Engineer Contact:	Pete Rammer	920 465-3911
Products:	GSE HD Textured 60 mil	842,400 sq. ft.
	GSE FabriNet 6 oz	273,470 sq. ft.
	GSE Geotextile 12 oz	99,067 sq. ft.
Amount:	\$605,389	
Date completed:	8/20/2004	

Project Name:	Waste Management/ Mountain View Reclamation Cap	
Site Location:	Greencastle, PA	GSE No.: 514728
Application:	Sanitary LF Cap	
Owner:	Waste Management	
Owner Contact:	Tony Eith	215 269-2143
General Contractor:	WMI Mountain View Reclamation	
GC Contact:	Bob Detz	717 593-4501
Engineering Firm:	Earth Tech	
Engineer Contact:	John Conturo	215 244-7108
Products:	GSE HD Textured 40 mil	614,250 sq. ft.
	GSE FabriNet 8 oz	712,733 sq. ft.
	GSE Geotextile 10 oz	71,000 sq. ft.
Amount:	\$625,535	
Date completed:	7/26/2004	

Project Name:	Waste Management/ Mountain View Reclamation Cell 16B	
Site Location:	Greencastle, PA	GSE No.: 514730
Application:	Sanitary LF	
Owner:	Waste Management	
Owner Contact:	Tony Eith	215 269-2143
General Contractor:	WMI Mountain View Reclamation	
GC Contact:	Bob Detz	717 593-4501
Engineering Firm:	Earth Tech	
Engineer Contact:	John Conturo	215 244-7108
Products:	GSE HD Textured 60 mil	620,100 sq. ft.
	GSE FabriNet UF 8 oz	311,750 sq. ft.
	Bentofix NS	313,875 sq. ft.
	GSE Geotextile 6 oz	6,000 sq. ft.
	GSE Geotextile 16 oz	70,003 sq. ft.
Amount:	\$709,184	
Date completed:	6/3/2004	



Project Name:	Waste Management/Laurel Highlands Landfill Cell 4A	
Site Location:	Johnstown, PA	GSE No.: 514735
Application:	Sanitary LF	
Owner:	Waste Management	
Owner Contact:	Tony Eith	215 269-2143
General Contractor:	WMI Laurel Highlands Landfill	
GC Contact:	Brad Minemyer	814 749-9065
Engineering Firm:	Civil & Environmental Consultants, Inc.	
Engineer Contact:	Eric Chiado	724 327-5200
Products:	GSE HD Textured 60 mil	643,050 sq. ft.
	GSE HyperNet	647,700 sq. ft.
	Bentofix NSL	321,884 sq. ft.
	GSE Geotextile 10 oz	76,111 sq. ft.
Amount:	\$656,249	
Date completed:	11/22/2004	

Project Name:	Waste Management/ Southern Alleghenies Landfill Phase III Cell 2A	
Site Location:	Davidsville, PA	GSE No.: 514737
Application:	Sanitary LF	
Owner:	Waste Management	
Owner Contact:	Tony Eith	215 269-2143
General Contractor:	WMI Southern Alleghenies Landfill	
GC Contact:	Darrell Klink	814 479-2537
Engineering Firm:	Civil Design Solutions, Inc.	
Engineer Contact:	David Murray	412 299-2700
Products:	GSE HD 60 mil	478,800 sq. ft.
	GSE HD Textured 60 mil	234,000 sq. ft.
	Bentofix NSL	330,686 sq. ft.
	GSE HyperNet HF	221,155 sq. ft.
	GSE HyperNet HS	220,320 sq. ft.
	GSE FabriNets	253,596 sq. ft.
	GSE Geotextile 10 oz	51,000 sq. ft.
Amount:	\$660,686	
Date completed:	9/29/2004	

Project Name:	Waste Management/ Crossroads Landfill Phase 8B	
Site Location:	Norridgewock, ME	GSE No.: 514750
Application:	Sanitary LF	
Owner:	Waste Management	
Owner Contact:	Tony Eith	215 269-2143
General Contractor:	WMI Disposal Services of Maine	
GC Contact:	Dave Jarvis	207 634-2714
Engineering Firm:	GeoSyntec Consultants	
Engineer Contact:	Dave Bonnett	978 263-9588
Products:	GSE HD Textured 60 mil	526,500 sq. ft.
	GSE HD 60 mil	141,375 sq. ft.
	Bentofix NSL	484,027 sq. ft.
	GSE FabriNet HS 8 oz	257,854 sq. ft.
	GSE FabriNet UF 8 oz	146,595 sq. ft.
Amount:	\$774,575	
Date completed:	8/12/2004	

Project Name:	Waste Management/Mill Seat Landfill Stage IIIB	
Site Location:	Bergen, NY	GSE No.: 514760
Application:	Sanitary LF	



Owner:	Waste Management	
Owner Contact:	Tony Eith	215 269-2143
General Contractor:	WMI Mill Seat Landfill	
GC Contact:	Jeff Richardson	585 494-3000
Engineering Firm:	Earth Tech	
Engineer Contact:	Jim Dougherty	215 244-7100
Products:	GSE HD Textured 60 mil	632,610 sq. ft.
	Bentofix NWL	241,357 sq. ft.
	GSE FabriNet 6 oz	690,345 sq. ft.
	GSE Geotextile 16 oz	37,963 sq. ft.
	GSE Geotextile 6 oz	2,000 sq. ft.
Amount:	\$780,095	
Date completed:	10/13/2004	

Project Name:	Onyx/Orchard Hills Landfill Phase IV, V and Berm	
Site Location:	Davis Junction, IL	GSE No.: 514762
Application:	Sanitary LF	
Owner:	Onyx Waste Services	
Owner Contact:	Randy Frank	262 971-1391
General Contractor:	Onyx Waste Services	
GC Contact:	Randy Frank	262 971-1391
Engineering Firm:	RMT	
Engineer Contact:	Mark Torresani	608 831-4444
Products:	GSE HD 60 mil	879,120 sq. ft.
	GSE HD Textured 60 mil	245,700 sq. ft.
	Bentofix NSL	5,784 sq. ft.
	GSE Geotextile 12 oz	182,738 sq. ft.
	GSE Geotextile 6 oz	119,000 sq. ft.
Amount:	\$690,944	
Date completed:	11/24/2004	

Project Name:	Onyx/Greentree Cap	
Site Location:	Kersey, PA	GSE No.: 514767
Application:	Sanitary LF Cap	
Owner:	Onyx Waste Services	
Owner Contact:	Bill Binnie	814 265-1744
General Contractor:	Onyx Waste Services	
GC Contact:	Bill Binnie	814 265-1744
Engineering Firm:	Blazosky Associates, Inc.	
Engineer Contact:	Jim Echard	814 238-2060
Products:	GSE UltraFlex Textured 40 mil	1,512,000 sq. ft.
	GSE FabriNet 6 oz	1,490,745 sq. ft.
	GSE Geotextile 6 oz	9,000 sq. ft.
Amount:	\$899,319	
Date completed:	11/20/2004	

Project Name:	Waste Management/Hardy Road Landfill Final Cover	
Site Location:	Akron, OH	GSE No.: 514853
Application:	Sanitary LF Cap	
Owner:	Waste Management	
Owner Contact:	Tony Eith	215 269-2143
General Contractor:	WMI Hardy Road Landfill	
GC Contact:	Scott Herman	330 928-8293
Engineering Firm:	Civil & Environmental Consultants, Inc.	
Engineer Contact:	Carla Suszkowski	412 429-2324
Products:	GSE UltraFlex Textured 40 mil	1,134,000 sq. ft.
	GSE FabriCap 6 oz	1,163,612 sq. ft.



Amount: \$773,930
Date completed: 8/12/2004

Project Name:	Waste Management/Pine Tree Acres Landfill Cell 15	
Site Location:	Lenox, MI	GSE No.: 514859
Application:	Sanitary LF	
Owner:	Waste Management	
Owner Contact:	Steve Lackner	630 218-1702
General Contractor:	WMI Pine Tree Acres Landfill	
GC Contact:	Rich Paajanen	810 749-9698
Engineering Firm:	McNeely & Lincoln Associates, Inc.	
Engineer Contact:	Allen Visel	734 432-9777
Products:	GSE HD 60 mil	592,200 sq. ft.
	GSE HD Textured 60 mil	163,800 sq. ft.
	GSE UltraFlex Textured 40 mil	346,500 sq. ft.
	Bentofix NSL	749,575 sq. ft.
	GSE FabriNet 8 oz	98,600 sq. ft.
	GSE FabriNet 6 oz	38,280 sq. ft.
	GSE Geotextiles	113,000 sq. ft.
Amount:	\$714,845	
Date completed:	8/31/2004	

Project Name:	Allied Waste/Rockwood Landfill Cell 14	
Site Location:	Newport, MI	GSE No.: 514912
Application:	Sanitary LF	
Owner:	Allied Waste Industries	
Owner Contact:	Christina Pearse-Bosnick	734 397-2790
General Contractor:	Allied Waste Industries	
GC Contact:	Christina Pearse-Bosnick	734 397-2790
Engineering Firm:	Midwestern Consulting LLC	
Engineer Contact:	Chris Sullivan	734 995-0200
Products:	GSE HD Textured 60 mil	889,200 sq. ft.
	GSE FabriNet UF 6 oz	782,090 sq. ft.
	Bentofix NS	444,075 sq. ft.
	TP275-88 Geocomposite	108,646 sq. ft.
Amount:	\$749,196	
Date completed:	10/15/2004	

Project Name:	Allied Waste/Coffin Butte Landfill Cell 3B(b)	
Site Location:	Corvallis, OR	GSE No.: 514944
Application:	Sanitary LF	
Owner:	Allied Waste Industries	
Owner Contact:	Art Mains	800 275-5641
General Contractor:	Allied Waste Industries	
GC Contact:	Art Mains	800 275-5641
Engineering Firm:	Thiel Engineering	
Engineer Contact:	Rick Thiel	530 692-9114
Products:	GSE HD Textured 60 mil	1,087,425 sq. ft.
	GSE HD Textured 40 mil	456,750 sq. ft.
	GSE Conductive Textured 80 mil	79,200 sq. ft.
	Single-Sided	
Amount:	\$650,716	
Date completed:	11/13/2004	

Project Name:	Allied Waste/ECDC Environmental Landfill	
Site Location:	East Carbon, UT	GSE No.: 514947



Application: Sanitary LF
Owner: **Allied Waste Industries**
Owner Contact: Darin Olson 435 888-4418
General Contractor: Allied Waste Industries
GC Contact: Darin Olson 435 888-4418
Engineering Firm: Hansen, Allen & Luce, Inc.
Engineer Contact: Kent Staheli 801 566-5599
Products: GSE HD 60 mil 907,200 sq. ft.
GSE HD Textured 60 mil 152,100 sq. ft.
GSE HyperNet 468,165 sq. ft.
GSE HyperNet HF 480,955 sq. ft.
GSE Geotextile 8 oz 111,495 sq. ft.
GSE Geotextile 16 oz 12,500 sq. ft.
Amount: \$764,161
Date completed: 7/30/2004

Project Name: Allied Waste/Sunshine Canyon Landfill Phase IV-B Part 1
Site Location: Sylmar, CA **GSE No.:** **514957**
Application: Sanitary LF
Owner: **Allied Waste Industries**
Owner Contact: Frank Kiesler 818 833-6508
General Contractor: Allied Waste Industries
GC Contact: Frank Kiesler 818 833-6508
Engineering Firm: A-Mehr, Inc.
Engineer Contact: Ali Mehr 949 206-0157
Products: GSE HD Textured 80 mil 748,756 sq. ft.
Bentofix NSL 571,377 sq. ft.
GSE Geotextile 16 oz 105,990 sq. ft.
Amount: \$829,987
Date completed: 10/8/2004

Project Name: Cactus Landfill Cell 1A
Site Location: Pinal County, AZ **GSE No.:** **515086**
Application: Sanitary LF
Owner: **Capitol Environmental Resource, Inc.**
Owner Contact: Shawn McCash 480 734-2620
General Contractor: CS&W Contracting, Inc.
GC Contact: Robert Myers 602 266-7000
Engineering Firm: EMCON/OWT, Inc.
Engineer Contact: Donald Hullings 520 792-2800
Products: GSE White Textured 60 mil 444,600 sq. ft.
GSE White Textured 60 mil Single-Sided 170,100 sq. ft.
GSE FabriNet 10 oz 449,051 sq. ft.
GSE Geotextile 10 oz 30,264 sq. ft.
Amount: \$617,166
Date completed: 7/6/2004

Project Name: Seneca Landfill Cell 7
Site Location: Evans City, PA **GSE No.:** **515641**
Application: Sanitary LF
Owner: **Seneca Landfill, Inc.**
Owner Contact: Ed Vogel 724 625-1511
General Contractor: Seneca Landfill, Inc.
GC Contact: Ed Vogel 724 625-1511
Engineering Firm: Youchak & Youchak, Inc.
Engineer Contact: Dan Tolmer 412 323-8840



Products:	GSE HD Textured 60 mil	631,800	sq. ft.
	GSE HD 60 mil	37,800	sq. ft.
	GSE FabriNet 6/16oz	317,550	sq. ft.
	GSE FabriNet 6/10 oz	319,000	sq. ft.
	Bentofix NWL	634,725	sq. ft.
	GSE HyperNet	13,500	sq. ft.
	GSE Geotextile 16 oz	319,500	sq. ft.
Amount:	\$779,023		
Date completed:	11/24/2004		

Project Name:	Staten Island Transfer Station at Freshkill Landfill		
Site Location:	Staten Island, NY	GSE No.:	508444
Application:	Sanitary LF		
Owner:	New York City Dept of Sanitation		
Owner Contact:	Bernard Weinberger	212 837-8057	
General Contractor:	Tully Construction Co.		
GC Contact:	Tom Olesczuk	718 446-7000	
Engineering Firm:	HDR Engineering, Inc.		
Engineer Contact:	D. Harkins		
Products:	GSE HD 60 mil	69,615	sq. ft.
Amount:	\$658,750		
Date completed:	10/3/2003		

Project Name:	Allied Waste/ BFI Sunshine Canyon Landfill Phase IV-A		
Site Location:	Sylmar, CA	GSE No.:	509763
Application:	Sanitary LF		
Owner:	Allied Waste Industries		
Owner Contact:	Curt Fuji	925 458-9800	
General Contractor:	Allied BFI Sunshine Canyon Landfill		
GC Contact:	Sam Rojas	818 833-6500	
Engineering Firm:	A-Mehr, Inc.		
Engineer Contact:	Ali Mehrazarin	714 633-5757	
Products:	GSE HD Textured 80 mil	817,650	sq. ft.
	GSE HD 40 mil	39,150	sq. ft.
	Bentofix NSL	475,760	sq. ft.
	GSE Geotextile 16 oz	125,465	sq. ft.
Amount:	\$645,940		
Date completed:	5/5/2003		

Project Name:	Waste Mgt/GROWS Landfill Final Cover		
Site Location:	Morrisville, PA	GSE No.:	509992
Application:	Sanitary LF Cap		
Owner:	Waste Management, Inc.		
Owner Contact:	Tony Eith	215 269-2143	
General Contractor:	WMI GROWS Landfill		
GC Contact:	Ed Kurowski	215 428-3244	
Engineering Firm:	Earth Tech, Inc.		
Engineer Contact:	Keith McKeon	215 244-7109	
Products:	GSE HD Textured 40 mil	853,300	sq. ft.
	GSE FabriNet	713,700	sq. ft.
	GSE Geotextile 10 oz	20,610	sq. ft.
	Geotextile	651,360	sq. ft.
Amount:	\$986,650		
Date completed:	11/25/2003		

Project Name: Waste Mgt/ Pheasant Run 2003 Composite Cover



Site Location:	Whitelaw, WI	GSE No.:	510047
Application:	Sanitary LF Cap		
Owner:	Waste Management, Inc.		
Owner Contact:	Luci Altieri		630 218-1821
General Contractor:	WMI Pheasant Run Landfill		
GC Contact:	Casey Furlong		414 529-6180
Engineering Firm:	CQM		
Engineer Contact:	Terry McDonald		920 465-3911
Products:	GSE HD Textured 60 mil	732,320	sq. ft.
	GSE HyperNet	675,000	sq. ft.
	GSE FabriNet	100,050	sq. ft.
	Bentofix NSL	364,890	sq. ft.
	GSE Geotextile 16 oz	84,000	sq. ft.
	GSE Geotextile 6 oz	35,000	sq. ft.
Amount:	\$623,600		
Date completed:	9/25/2003		

Project Name:	Onyx/Arbor Hills Landfill Cell 5B	GSE No.:	510286
Site Location:	Northville, MI		
Application:	Sanitary LF		
Owner:	Onyx Waste Services		
Owner Contact:	Jay Warzinski		262 971-1390
General Contractor:	Onyx Waste Services		
GC Contact:	Jay Warzinski		262 971-1390
Engineering Firm:	Midwestern Consulting		
Engineer Contact:	Barbara Coughlin		248 620-2203
Products:	GSE UltraFlex Textured 60 mil	829,800	sq. ft.
	GSE UltraFlex Textured 40 mil	422,600	sq. ft.
	Bentofix NS	850,950	sq. ft.
	GSE FabriNet	409,480	sq. ft.
Amount:	\$989,055		
Date completed:	6/28/2003		

Project Name:	Waste Management/Shade Landfill Cell 1	GSE No.:	510937
Site Location:	Cairnbrook, PA		
Application:	Sanitary LF		
Owner:	Waste Management, Inc.		
Owner Contact:	Rick Smitsky		412 893-4962
General Contractor:	WMI Shade Landfill		
GC Contact:	Brian Stewart		814 754-4587
Engineering Firm:	Cumberland Geotechnical		
Engineer Contact:	Jaff Barnes		724 327-5200
Products:	GSE HD 60 mil	1,083,600	sq. ft.
	GSE HD Textured 60 mil	58,500	sq. ft.
	GSE HyperNet	1,017,000	sq. ft.
Amount:	\$707,720		
Date completed:	7/21/2003		

Project Name:	Waste Mgt/Columbia Ridge Landfill Module 9A	GSE No.:	511473
Site Location:	Arlington, OR		
Application:	Sanitary LF		
Owner:	Waste Management, Inc.		
Owner Contact:	Rick Von Pein		510 613-0254
General Contractor:	WMI Columbia Ridge Landfill & Recycling Center		
GC Contact:	Chris Haynes		541 454-3201
Engineering Firm:	Earth Tech, Inc.		
Engineer Contact:	Andy Querio		630 574-2006
Products:	GSE HD Textured 60 mil	948,290	sq. ft.



	GSE HD 40 mil	39,150	sq. ft.
	GSE Geotextile 4 oz	98,500	sq. ft.
	GSE Geotextile 16 oz	119,000	sq. ft.
Amount:	\$712,260		
Date completed:	5/29/2003		

Project Name:	Mostoller Landfill Phase 3b/3c	GSE No.:	511536
Site Location:	Somerset, PA		
Application:	Sanitary LF		
Owner:	North East Waste Services Company		
Owner Contact:	Barry Clark	814 444-0112	
General Contractor:	North East Waste Services Company		
GC Contact:	Barry Clark	814 444-0112	
Engineering Firm:	CME Engineering		
Engineer Contact:	Jeff Barnes	814 443-3344	
Products:	GSE HD Textured 60 mil	483,690	sq. ft.
	GSE FabriNet HS	113,675	sq. ft.
	GSE FabriNet Single-Sided	62,640	sq. ft.
	Bentofix NSL	166,700	sq. ft.
	GSE HyperNet	94,500	sq. ft.
	GSE Geotextile 16 oz	23,500	sq. ft.
Amount:	\$751,550		
Date completed:	10/8/2003		

Project Name:	Hopewell Closure Cap	GSE No.:	512366
Site Location:	Newburg, PA		
Application:	Sanitary LF Cap		
Owner:	North East Waste Services Company		
Owner Contact:	Bill Neidigh	717 423-5917	
General Contractor:	North East Waste Services Company		
GC Contact:	Bill Neidigh	717 423-5917	
Engineering Firm:	Martin & Martin, Inc.		
Engineer Contact:	Richard Bodner	717 264-6759	
Products:	GSE UltraFlex Textured 40 mil	772,430	sq. ft.
	GSE FabriNet	672,800	sq. ft.
	GSE Geotextile 16 oz	73,500	sq. ft.
Amount:	\$609,675		
Date completed:	7/29/2003		

Project Name:	Hopewell Landfill Cell 4	GSE No.:	512367
Site Location:	Newburg, PA		
Application:	Sanitary LF		
Owner:	North East Waste Services Company		
Owner Contact:	Bill Neidigh	717 423-5917	
General Contractor:	North East Waste Services Company		
GC Contact:	Bill Neidigh	717 423-5917	
Engineering Firm:	Martin & Martin, Inc.		
Engineer Contact:	Richard Bodner	717 264-6759	
Products:	GSE HD Textured 60 mil	732,320	sq. ft.
	GSE HyperNet	675,000	sq. ft.
	GSE FabriNet	100,050	sq. ft.
	Bentofix NSL	364,890	sq. ft.
	GSE Geotextile 6 oz	35,000	sq. ft.
	GSE Geotextile 16 oz	84,000	sq. ft.
Amount:	\$751,500		
Date completed:	9/30/2003		



Project Name:	Waste Mgt/CWM of the Northwest Landfill L14 Cell 1	
Site Location:	Arlington, OR	GSE No.: 512442
Application:	Sanitary LF	
Owner:	Waste Management, Inc.	
Owner Contact:	Rick Von Pein	510 613-0254
General Contractor:	WMI CWM of the Northwest Landfill	
GC Contact:	Chris Haynes	541 454-3201
Engineering Firm:	Earth Tech, Inc.	
Engineer Contact:	Amy Querio	630 574-2006
Products:	GSE White Textured 60 mil	862,200 sq. ft.
	GSE FabriNet HF	793,300 sq. ft.
	GSE Geotextile 16 oz	1,500 sq. ft.
Amount:	\$654,615	
Date completed:	8/19/2003	

Project Name:	Waste Mgt/Charles City County Landfill Phase 4 Cell 1	
Site Location:	Charles City, VA	GSE No.: 512568
Application:	Sanitary LF	
Owner:	Waste Management, Inc.	
Owner Contact:	Rick Smitsky	412 893-4962
General Contractor:	WMI Charles City Landfill	
GC Contact:	Jim Stemborg	804 966-7146
Engineering Firm:	GeoSyntec Consultants	
Engineer Contact:	John Beech	404 705-9500
Products:	GSE HD 60 mil	970,200 sq. ft.
	GSE HyperNet	530,880 sq. ft.
	Bentofix NSE	469,650 sq. ft.
	GSE FabriNet Single-Sided	62,640 sq. ft.
Amount:	\$607,160	
Date completed:	6/3/2003	

Project Name:	Allied Waste/Timberlands Landfill Cell 6	
Site Location:	Brewton, AL	GSE No.: 512632
Application:	Sanitary LF	
Owner:	Allied Waste Industries	
Owner Contact:	Brian Martz	205 929-3118
General Contractor:	Allied Waste Industries	
GC Contact:	Brian Martz	205 929-3118
Engineering Firm:	Golder Associates	
Engineer Contact:	Claudia Moeller	770 492-8191
Products:	GSE HD Textured 60 mil	666,900 sq. ft.
	Bentofix NWLE	662,625 sq. ft.
	GSE FabriNet HF	659,315 sq. ft.
	GSE Geotextile 8 oz	4,500 sq. ft.
Amount:	\$752,250	
Date completed:	5/8/2003	

Project Name:	Allied Waste/Brickyard Landfill Cell	
Site Location:	Danville, IL	GSE No.: 512683
Application:	Sanitary LF	
Owner:	Allied Waste Industries	
Owner Contact:	Terry Bent	217 787-6079
General Contractor:	Allied Brickyard Landfill	
GC Contact:		217 443-3128
Engineering Firm:	Feezor Engineering, Inc.	
Engineer Contact:	Dan Feezor	217 753-3988



Products:	GSE HD 60 mil	151,200	sq. ft.
	GSE HD Textured 60 mil	35,100	sq. ft.
	GSE Geotextile 4 oz	20,000	sq. ft.
	GSE Geotextile 8 oz	2,000	sq. ft.
Amount:	\$671,990		
Date completed:	8/6/2003		
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Project Name:	Allied Waste/Big River Landfill Area 5C Part 3		
Site Location:	Leland, MS	GSE No.:	512705
Application:	Sanitary LF		
Owner:	Allied Waste Industries		
Owner Contact:	Kirby Thompson	225 686-0122	
General Contractor:	Allied Waste Industries		
GC Contact:	Kirby Thompson	225 686-0122	
Engineering Firm:	Eco-Systems, Inc.		
Engineer Contact:	Jeff Allen	601 936-4440	
Products:	GSE HD 60 mil	239,400	sq. ft.
	GSE HD Textured 60 mil	23,400	sq. ft.
	GSE Geotextile 8 oz	4,000	sq. ft.
Amount:	\$89,500		
Date completed:	8/30/2003		
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Project Name:	Allied Waste/ECDC Environmental Super Cell 1A North		
Site Location:	East Carbon, UT	GSE No.:	512709
Application:	Sanitary LF		
Owner:	Allied Waste Industries		
Owner Contact:	Greg Czerniski	480 596-9596	
General Contractor:	Allied Waste Industries		
GC Contact:	Darin Olsen	435 888-4418	
Engineering Firm:	Hansen Allen & Luce		
Engineer Contact:	Kent Staheli	801 566-5599	
Products:	GSE HD 60 mil	844,200	sq. ft.
	GSE HD Textured 60 mil	409,500	sq. ft.
	GSE HyperNet	427,200	sq. ft.
	GSE HyperNet HF	423,625	sq. ft.
	GSE Geotextile 8 oz	102,000	sq. ft.
	GSE Geotextile 16 oz	40,000	sq. ft.
Amount:	\$726,570		
Date completed:	6/16/2003		
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Project Name:	Waste Management/ Westside Landfill Cell		
Site Location:	Three Rivers, MI	GSE No.:	512735
Application:	Sanitary LF		
Owner:	Waste Management, Inc.		
Owner Contact:	Luci Altieri	630 218-1821	
General Contractor:	WMI Westside Landfill		
GC Contact:	Fred Sawyers	616 273-1770	
Engineering Firm:	Lambert Engineering		
Engineer Contact:	Greg Lambert	616 443-1876	
Products:	GSE HD Textured 60 mil	524,780	sq. ft.
	GSE HD 60 mil	680,400	sq. ft.
	GSE FabriNet Single-Sided	688,750	sq. ft.
	GSE FabriNet	480,240	sq. ft.
	Bentofix NSL	1,162,590	sq. ft.
	GSE Geotextile 6 oz	5,625	sq. ft.
	GSE Geotextile 8 oz	26,740	sq. ft.
Amount:	\$948,850		



Date completed: 9/30/2003

Project Name: Waste Management/Glen's Landfill Cell 4 Phase 1
Site Location: Maple City, MI **GSE No.:** 512745
Application: Sanitary LF
Owner: **Waste Management, Inc.**
Owner Contact: Luci Altieri 630 218-1821
General Contractor: WMI Glen's Landfill
GC Contact: Debora Johnston 231 228-5196
Engineering Firm: Earth Tech, Inc.
Engineer Contact: Matt Williams 734 779-2800
Products:
GSE HD Textured 60 mil 405,720 sq. ft.
GSE HD 60 mil 352,800 sq. ft.
Bentofix NSL 720,750 sq. ft.
GSE FabriNet 403,535 sq. ft.
GSE HyperNet HF 360,000 sq. ft.
GSE Geotextile 8 oz 49,000 sq. ft.
Amount: \$796,625
Date completed: 7/19/2003

Project Name: Waste Management/Turnkey Landfill Phase 8A
Site Location: Rochester, NH **GSE No.:** 512752
Application: Sanitary LF
Owner: **Waste Management, Inc.**
Owner Contact: Tony Eith 215 269-2143
General Contractor: WMI of New Hampshire
GC Contact: Anne Reichert 603 330-2140
Engineering Firm: Sanborn Head & Associates, Inc.
Engineer Contact: James Chabot 603 229-1900
Products:
GSE HD Textured 60 mil 1,205,890 sq. ft.
GSE FabriNet 1,100,550 sq. ft.
Bentofix NS 230,175 sq. ft.
Amount: \$903,250
Date completed: 12/16/2003

Project Name: Waste Management/Grand Central Landfill 2003 Cap
Site Location: Pen Argyl, PA **GSE No.:** 512827
Application: Sanitary LF Cap
Owner: **Waste Management, Inc.**
Owner Contact: Tony Eith 215 269-2143
General Contractor: WMI Grand Central Sanitary Landfill
GC Contact: Bruce Fahs 610 863-1315
Engineering Firm: EarthRes Group
Engineer Contact: David Horvath 215 766-1211
Products:
GSE UltraFlex Textured 40 mil 724,500 sq. ft.
GSE FabriNet 493,000 sq. ft.
GSE Geotextile 8 oz 40,000 sq. ft.
GSE Geotextile 12 oz 52,370 sq. ft.
Amount: \$615,430
Date completed: 12/12/2003

Project Name: Waste Mgt/Mountain View Reclamation Closure Cells 11-14
Site Location: Greencastle, PA **GSE No.:** 512831
Application: Sanitary LF Cap
Owner: **Waste Management, Inc.**
Owner Contact: Tony Eith 215 269-2143



General Contractor:	WMI Mountain View Reclamation	
GC Contact:	Gary Von Stetina	717 597-5666
Engineering Firm:	In House	
Engineer Contact:	Gary Von Stetina	717 597-5666
Products:	GSE HD Textured 40 mil	945,900 sq. ft.
	GSE FabriNet HS	863,910 sq. ft.
	GSE Geotextile 10 oz	96,000 sq. ft.
Amount:	\$735,750	
Date completed:	12/9/2003	

Project Name:	Waste Management/ Monroeville Landfill Cell 6	
Site Location:	Monroeville, PA	GSE No.: 512835
Application:	Sanitary LF	
Owner:	Waste Management, Inc.	
Owner Contact:	Tony Eith	215 269-2143
General Contractor:	WMI Monroeville Landfill	
GC Contact:	Rick Smitsky	412 824-0678
Engineering Firm:	Civil Design Solutions, Inc.	
Engineer Contact:	Dave Murray	412 299-2700
Products:	GSE HD 60 mil	642,600 sq. ft.
	GSE HD Textured 60 mil	281,570 sq. ft.
	GSE HyperNet	61,500 sq. ft.
	GSE FabriNet	277,820 sq. ft.
	GSE Geotextile 10 oz	73,500 sq. ft.
Amount:	\$872,870	
Date completed:	9/24/2003	

Project Name:	Waste Mgt/Southern Alleghenies Landfill Phase III Area Cell 1A	
Site Location:	Davidsville, PA	GSE No.: 512837
Application:	Sanitary LF	
Owner:	Waste Management, Inc.	
Owner Contact:	Tony Eith	215 269-2143
General Contractor:	WMI Southern Alleghenies Landfill	
GC Contact:	Brian Stewart	814 479-2537
Engineering Firm:	Civil Design Solutions, Inc.	
Engineer Contact:	David Murray	412 299-2700
Products:	GSE HD 60 mil	264,600 sq. ft.
	GSE FabriNet UF	375,280 sq. ft.
	GSE FabriNet HS	302,470 sq. ft.
	GSE HyperNet HS	253,530 sq. ft.
	Bentofix NSL	427,800 sq. ft.
	GSE Geotextile 10 oz	29,000 sq. ft.
Amount:	\$894,015	
Date completed:	11/10/2003	

Project Name:	Waste Mgt/Chicopee Stage 2 Base Liner	
Site Location:	Chicopee, MA	GSE No.: 512843
Application:	Sanitary LF	
Owner:	Waste Management, Inc.	
Owner Contact:	Tony Eith	215 269-2143
General Contractor:	Waste Management, Inc.	
GC Contact:	Bob Magnusson	603 929-3494
Engineering Firm:	Golder Associates	
Engineer Contact:	Richard Wesenberg	603 668-0880
Products:	GSE HD Textured 60 mil	516,810 sq. ft.
	GSE HD 40 mil	19,575 sq. ft.
	GSE FabriNet HF	500,830 sq. ft.



Amount: Bentofix NWL 504,525 sq. ft.
Date completed: \$687,200
11/17/2003

Project Name: Waste Mgt/Lake View Valley Landfill Phase 3A
Site Location: Erie, PA **GSE No.:** 513014
Application: Sanitary LF
Owner: Waste Management, Inc.
Owner Contact: Tony Eith 215 269-2143
General Contractor: WMI Lake View Landfill
GC Contact: Keith Doverspike 814 824-7808
Engineering Firm: Earth Tech, Inc.
Engineer Contact: John Conturo 215 244-7100
Products: GSE HD Textured 60 mil 821,450 sq. ft.
GSE FabriNet 379,900 sq. ft.
GSE Geotextile 16 oz 92,000 sq. ft.
Amount: \$684,050
Date completed: 7/7/2003

Project Name: Waste Management/ Akron Regional Landfill Cap
Site Location: Akron, OH **GSE No.:** 509089
Application: Sanitary LF Cap
Owner: Waste Management, Inc.
Owner Contact: Kurt Shaner 412 893-4948
General Contractor: WMI Akron Regional Landfill
GC Contact: Rolando Benlo 330 351-1018
Engineering Firm: Civil & Environmental Consultants, Inc.
Engineer Contact: Rick Buaffalini 412 429-2324
Products: VFP Textured 40 mil 694,480 sq. ft.
Geocomposite 894,480 sq. ft.
Bentofix NS 894,480 sq. ft.
Amount: \$690,915
Date completed: 1/15/2002

Project Name: Cove Sanitation Landfill Cell 1
Site Location: Bad Axe, MI **GSE No.:** 509063
Application: Sanitary LF
Owner: Cove Sanitation
Owner Contact: Fred Hambleton 517 658-2464
General Contractor: Genoak Construction
GC Contact: Robert Bammert 248 634-0428
Engineering Firm: Rowe Engineering, Inc.
Engineer Contact: Dan Booth 810 341-7500
Products: HDPE 60 mil 218,214 sq. ft.
HDPE Textured 60 mil 164,011 sq. ft.
Geonet 218,214 sq. ft.
Geocomposite 164,011 sq. ft.
GCL 362,225 sq. ft.
Geotextile 218,214 sq. ft.
Amount: \$646,875
Date completed: 1/15/2002

Project Name: Allied Waste/ Conestoga Landfill Cell 12
Site Location: Morgantown, PA **GSE No.:** 507679
Application: Sanitary LF Cap
Owner: Allied Waste Industries



Owner Contact:	Al Roman	610 286-7876
General Contractor:	Allied Waste Industries	
GC Contact:	Al Roman	610 286-7876
Engineering Firm:	Blazosky Associates, Inc.	
Engineer Contact:	Mike Rudy	601 935-7701
Products:	GSE HD Textured 60 mil	1,111,500 sq. ft.
	Geotextile	236,500 sq. ft.
Amount:	\$984,075	
Date completed:	1/19/2002	

Project Name:	Seneca Landfill Cell 5/6		
Site Location:	Evans City, PA	GSE No.:	509177
Application:	Sanitary LF		
Owner:	Seneca Landfill		
Owner Contact:	Ed Vogel	724 625-1511	
General Contractor:	Seneca Landfill		
GC Contact:	Ed Vogel	724 625-1511	
Engineering Firm:	Youchak & Youchak		
Engineer Contact:	Derek Medved	412 323-8840	
Products:	GSE HD Textured 60 mil	712,000 sq. ft.	
	GSE HD 60 mil	23,175 sq. ft.	
	GSE FabriNet	712,000 sq. ft.	
Amount:	\$625,450		
Date completed:	11/30/2002		

Project Name:	J.H. Campbell Ash Disposal Landfill Cell 3		
Site Location:	West Olive, MI	GSE No.:	509378
Application:	Sanitary LF		
Owner:	Consumers Energy Co.		
Owner Contact:	D.M. Corson	517 788-0550	
General Contractor:	Consumers Energy Co.		
GC Contact:	Ken Chou	616 994-6946	
Engineering Firm:	STS Consultants, Ltd		
Engineer Contact:		616 940-3077	
Products:	GSE HD 60 mil	1,436,400 sq. ft.	
	GSE HD Textured 60 mil	281,750 sq. ft.	
	GSE FabriNet	256,800 sq. ft.	
	GSE HyperNet	1,651,500 sq. ft.	
	Bentofix NSL	107,333 sq. ft.	
	Geotextile	94,000 sq. ft.	
Amount:	\$980,000		
Date completed:	6/29/2002		

Project Name:	Allied Waste/ Charlotte Motor Speedway Landfill V Cell 2L		
Site Location:	Harrisburg, NC	GSE No.:	509440
Application:	Sanitary LF		
Owner:	Allied Waste Industries		
Owner Contact:	Brian Card	803 547-3184	
General Contractor:	Allied Waste Industries		
GC Contact:	Rich Nolan	803 547-3184	
Engineering Firm:	ESP Associates		
Engineer Contact:		704 504-1015	
Products:	GSE HD Textured 60 mil	619,560 sq. ft.	
	GSE FabriNet	593,050 sq. ft.	
	Bentofix EC	332,475 sq. ft.	
	Bentofix NWL	160,425 sq. ft.	
Amount:	\$642,135		
Date completed:	5/11/2002		



Project Name:	Waste Management/ Butterfield Station Landfill	
Site Location:	Mobile, AZ	GSE No.: 509565
Application:	Sanitary LF	
Owner:	Waste Management, Inc.	
Owner Contact:	Jack Kolopanis	602 256-0630
General Contractor:	Waste Management, Inc.	
GC Contact:	Jack Kolopanis	602 256-0630
Products:	GSE HD 60 mil	668,314 sq. ft.
	GSE HD 30 mil	668,314 sq. ft.
	Bentofix NW	668,314 sq. ft.
Amount:	\$825,775	
Date completed:	2/21/2002	

Project Name:	Waste Management/ Columbia Ridge Landfill Module 9	
Site Location:	Arlington, OR	GSE No.: 509662
Application:	Sanitary LF	
Owner:	Waste Management, Inc.	
Owner Contact:	Roger North	503 242-9493
General Contractor:	WMI Columbia Ridge Landfill	
GC Contact:	Sam Jiries	541 454-2630
Engineering Firm:	Earth Tech	
Engineer Contact:	Anthony Quero	630 574-2006
Products:	GSE HD Textured 60 mil	1,088,100 sq. ft.
	Geotextile	231,150 sq. ft.
Amount:	\$740,290	
Date completed:	7/19/2002	

Project Name:	Allied Waste/ Sunshine Canyon Landfill Phase IIC	
Site Location:	Sylmar, CA	GSE No.: 509757
Application:	Sanitary LF	
Owner:	Allied Waste Industries	
Owner Contact:	Curt Fuji	925 458-9800
General Contractor:	Allied Sunshine Canyon Landfill	
GC Contact:	Sam Rojas	818 833-6508
Engineering Firm:	GeoSyntec Consultants	
Engineer Contact:	Jeff Dombrowski	714 969-0800
Products:	GSE HD 30 mil	453,600 sq. ft.
	GSE HD Textured 60 mil Single-Sided	548,100 sq. ft.
	Bentofix NSL	561,426 sq. ft.
	Geotextile	77,000 sq. ft.
Amount:	\$805,790	
Date completed:	7/16/2002	

Project Name:	Waste Management/ Chicopee Landfill Phase 6 Stage 2A	
Site Location:	Chicopee, MA	GSE No.: 509854
Application:	Sanitary LF	
Owner:	Waste Management, Inc.	
Owner Contact:	Bob Magnusson	603 929-3494
General Contractor:	Waste Management, Inc.	
GC Contact:	Bob Magnusson	603 929-3494
Engineering Firm:	Golder & Associates	
Engineer Contact:	Rich Wesenberg	603 668-0880
Products:	GSE HD Textured 60 mil	830,700 sq. ft.
	GSE FabriNet HF	711,037 sq. ft.



	Bentofix DN	304,500	sq. ft.
	Bentofix ST	533,250	sq. ft.
Amount:	\$883,225		
Date completed:	7/9/2002		

Project Name:	Waste Management/ Mill Seat Landfill Stage IIIA		
Site Location:	Bergen, NY	GSE No.:	509876
Application:	Sanitary LF		
Owner:	Waste Management, Inc.		
Owner Contact:	Jeff Richardson	585 494-3000	
General Contractor:	WMI Mill Seat Landfill		
GC Contact:	Jeff Richardson	585 494-3000	
Engineering Firm:	Earth Tech		
Engineer Contact:	Paul Whitty	215 244-7100	
Products:	GSE HD Textured 60 mil	1,183,349	sq. ft.
	GSE FabriNet	1,166,913	sq. ft.
	Bentofix NWL	562,649	sq. ft.
	Geotextile	8,500	sq. ft.
Amount:	\$779,700		
Date completed:	10/11/2002		

Project Name:	Waste Management/ Taunton Sanitary Landfill Cells 3 & 4 Expansion		
Site Location:	Taunton, MA	GSE No.:	509982
Application:	Sanitary LF		
Owner:	Waste Management, Inc.		
Owner Contact:	Peter Richer	606 929-3434	
General Contractor:	WMI Taunton Landfill		
GC Contact:	Peter Richer	606 929-3434	
Engineering Firm:	Brown & Caldwell		
Engineer Contact:	Phil Jagoda	508 923-0879	
Products:	GSE HD Textured 60 mil	620,100	sq. ft.
	GSE FabriNet	656,169	sq. ft.
	Bentofix NWL	629,982	sq. ft.
Amount:	\$781,425		
Date completed:	11/25/2002		

Project Name:	Waste Management/ High Acres Landfill Cell 6/7 Overliner		
Site Location:	Fairport, NY	GSE No.:	509988
Application:	Sanitary LF		
Owner:	Waste Management, Inc.		
Owner Contact:			
General Contractor:	WMI High Acres Landfill		
GC Contact:	Jeff Kocian	716 223-6132	
Engineering Firm:	Blasland, Bouck & Lee, Inc.		
Engineer Contact:	Todd Farmeni	585 223-2074	
Products:	GSE HD Textured 60 mil	915,400	sq. ft.
	GSE HD 60 mil	478,800	sq. ft.
	GSE HyperNet	238,500	sq. ft.
	GSE FabriNet	442,888	sq. ft.
	Bentofix NWL	230,000	sq. ft.
	Geotextile	45,135	sq. ft.
Amount:	\$813,375		
Date completed:	10/8/2002		

Project Name:	Waste Management/ Hardy Road Landfill Cap
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Site Location:	Akron, OH	GSE No.:	509999
Application:	Sanitary LF Cap		
Owner:	Waste Management, Inc.		
Owner Contact:	Greg Meyer		937 318-6325
General Contractor:	WMI Akron Regional Landfill		
GC Contact:	Scott Herman		330 928-8293
Engineering Firm:	Civil & Environmental Consultants		
Engineer Contact:	Carla Suszkowski		412 429-2324
Products:	GSE UltraFlex Textured 40 mil	1,071,000	sq. ft.
	GSE FabriNet	1,076,466	sq. ft.
Amount:	\$664,200		
Date completed:	11/7/2002		

Project Name:	Waste Management/ Shade Landfill Cell 1A		
Site Location:	Cairnbrook, PA	GSE No.:	510008
Application:	Sanitary LF		
Owner:	Waste Management, Inc.		
Owner Contact:	Rick Smitsky		412 893-4962
General Contractor:	WMI Shade Landfill		
GC Contact:	Brian Stewart		814 754-4587
Engineering Firm:	Cumberland Geotechnical		
Engineer Contact:	Jeff Barnes		724 327-5200
Products:	GSE HD 60 mil	1,083,600	sq. ft.
	GSE HD Textured 60 mil	58,500	sq. ft.
	GSE HyperNet	1,017,000	sq. ft.
Amount:	\$680,900		
Date completed:	9/27/2002		

Project Name:	Waste Management/ King George Landfill Cells 8B & 15		
Site Location:	King George, VA	GSE No.:	510021
Application:	Sanitary LF		
Owner:	Waste Management, Inc.		
Owner Contact:	Rick Smitsky		412 893-4962
General Contractor:	WMI King George Landfill		
GC Contact:	Jim Stenborg		703 709-7651
Engineering Firm:	Golder & Associates		
Engineer Contact:			281 931-8674
Products:	GSE HD Textured 60 mil	865,800	sq. ft.
	GSE HD Textured 40 mil	440,325	sq. ft.
	GSE HD 20 mil	75,150	sq. ft.
	GSE FabriNet	440,177	sq. ft.
	Bentofix NSE	660,300	sq. ft.
Amount:	\$955,250		
Date completed:	10/1/2002		

Project Name:	Waste Management/ Venice Park Landfill Cell 2		
Site Location:	Lennon, MI	GSE No.:	510067
Application:	Sanitary LF		
Owner:	Waste Management, Inc.		
Owner Contact:	Luci Altieri		630 218-1821
General Contractor:	WMI Venice Park Landfill		
GC Contact:	Lori Winters		810 621-9080
Engineering Firm:	Golder & Associates		
Engineer Contact:	Shannon Mann		517 482-2262
Products:	GSE HD 60 mil	291,690	sq. ft.
	GSE UltraFlex Textured 40 mil	47,250	sq. ft.
	GSE FabriNet	324,887	sq. ft.



	GSE FabriNet Single-Sided	275,500	sq. ft.
	Bentofix NS	623,100	sq. ft.
Amount:	\$645,350		
Date completed:	10/2/2002		
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Project Name:	Mostoller Landfill Pad 3A	GSE No.:	510488
Site Location:	Somerset, PA		
Application:	Sanitary LF		
Owner:	Mostoller Landfill		
Owner Contact:	Barry Clark	814 444-0120	
General Contractor:	Mostoller Landfill		
GC Contact:	Barry Clark	814 444-0120	
Engineering Firm:	Blazosky Associates, Inc.		
Engineer Contact:	Jim Echard	814 238-2060	
Products:	GSE HD Textured 60 mil	647,028	sq. ft.
	GSE HyperFrictionFlex 60 mil	448,983	sq. ft.
	GSE FabriNet	255,824	sq. ft.
	GSE FabriNet Single-Sided	320,160	sq. ft.
	GSE HyperNet	306,000	sq. ft.
	Geotextile	80,000	sq. ft.
	Bentofix NSL	527,618	sq. ft.
Amount:	\$975,675		
Date completed:	11/13/2002		
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Project Name:	Allied Waste/ Woolworth Road Landfill Cell 10	GSE No.:	504699
Site Location:	Keithville, LA		
Application:	Sanitary LF		
Owner:	Allied Waste Industries		
Owner Contact:	Paul Marks	318 925-2262	
General Contractor:	Browning Ferris Industries Waste of North America, Inc.		
GC Contact:	Paul Marks	318 925-2262	
Engineering Firm:	URS		
Products:	GSE HD 60 mil	623,700	sq. ft.
	GSE GundSeal 40 mil	569,000	sq. ft.
	GSE FabriNet Single-Sided 6 oz	620,300	sq. ft.
Amount:	\$682,590		
Date completed:	9/1/2000		
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Project Name:	Allied Waste/ Sunshine Canyon Landfill Phase III Extension	GSE No.:	504816
Site Location:	Sylmar, CA		
Application:	Sanitary LF		
Owner:	Allied Waste Industries		
Owner Contact:	John Mays	818 833-6508	
General Contractor:	Allied Waste Sunshine Canyon Landfill		
GC Contact:	John Mays	818 833-6508	
Engineering Firm:	Geosyntec Consultants		
Engineer Contact:	Jeff Dubrowski	714 969-0800	
Products:	GSE HD Textured Single-Sided 60 mil	396,900	sq. ft.
	GSE HD Textured 60 mil	165,263	sq. ft.
	GSE HD 30 mil	406,350	sq. ft.
	GSE HD 40 mil	19,320	sq. ft.
	GSE HyperNet	432,600	sq. ft.
	Bentomat ST	472,500	sq. ft.
	Geotextile	86,500	sq. ft.
Amount:	\$644,391		
Date completed:	10/1/2000		



Project Name:	Waste Management/ Cedar Ridge Cap	GSE No.:	510636
Site Location:	East Jordan, MI		
Application:	Sanitary LF Cap		
Owner:	Waste Management, Inc.		
Owner Contact:	Luci Altieri	630 218-1821	
General Contractor:	WMI Cedar Ridge RDF		
GC Contact:	Debbie Johnston	248 596-3500	
Engineering Firm:	Earth Tech		
Engineer Contact:	May	734 779-2813	
Products:	GSE UltraFlex Textured 40 mil	1,131,300	sq. ft.
	GSE FabriNet	1,067,824	sq. ft.
	Bentofix NSL	564,975	sq. ft.
	Geotextile	1,616,223	sq. ft.
Amount:	\$856,265		
Date completed:	10/22/2002		

Project Name:	Waste Management/ East Liverpool Final Cap	GSE No.:	511068
Site Location:	Cincinnati, OH		
Application:	Sanitary LF Cap		
Owner:	Waste Management, Inc.		
Owner Contact:	Greg Meyer	937 318-6325	
General Contractor:	WMI East Liverpool Landfill		
GC Contact:	Mohammed Ali	330 866-3265	
Engineering Firm:	Earth Tech		
Engineer Contact:	Morgan Subbarayan	734 779-2816	
Products:	GSE UltraFlex Textured 40 mil	630,000	sq. ft.
	GSE FabriCap	631,272	sq. ft.
	Bentofix NS	602,175	sq. ft.
Amount:	\$626,225		
Date completed:	9/7/2002		

Project Name:	Mead Westvaco Phase 1 Landfill	GSE No.:	511153
Site Location:	Escanaba, MI		
Application:	Sanitary LF		
Owner:	Mead Westvaco Corporation		
Owner Contact:	David DeVet	906 233-3370	
General Contractor:	Bacco Construction		
GC Contact:	Bruce Nygard	960 774-2616	
Engineering Firm:	STS Consultants, Ltd		
Engineer Contact:	Steven Shimek	920 468-1978	
Products:	GSE HD 60 mil	390,600	sq. ft.
	GSE HD Textured 60 mil	193,234	sq. ft.
	GSE FabriNet	791,670	sq. ft.
	GSE HyperNet	45,000	sq. ft.
	Bentofix NSL	399,900	sq. ft.
Amount:	\$647,575		
Date completed:	11/30/2002		

Project Name:	Onyx/Arbor Hills Landfill Cell 5B	GSE No.:	510285
Site Location:	Northville, MI		
Application:	Sanitary LF		
Owner:	Superior Services		
Owner Contact:	Jay Warzinski	262 971-1390	
General Contractor:	Superior Services		
GC Contact:	Jay Warzinski	262 971-1390	



Engineering Firm:	Midwestern Consulting		
Engineer Contact:	Barbara Coughlin	248 620-2203	
Products:	GSE UltraFlex Textured 40 mil	1,260,000	sq. ft.
	GSE UltraFlex Textured 60 mil	414,000	sq. ft.
	GSE HD Textured 60 mil	292,500	sq. ft.
	GSE FabriNet	400,200	sq. ft.
	Bentofix NS	558,000	sq. ft.
	Geotextile	27,500	sq. ft.
Amount:	\$923,525		
Date completed:	9/22/2002		

Project Name:	Lanchester Landfill Cells 3C & 4		
Site Location:	Honey Brook, PA	GSE No.:	502410
Application:	Sanitary LF		
Owner:	Chester County Solid Waste Authority		
Owner Contact:			
General Contractor:	Pavex, Inc.		
GC Contact:	Brent Gallager	717 761-1502	
Engineering Firm:	Geosyntec Consultants		
Engineer Contact:	Jim Lyon		
Products:	GSE HD Textured 40 mil	110,250	sq. ft.
	GSE HD Textured 60 mil	1,614,600	sq. ft.
	GSE FabriNet	863,650	sq. ft.
	GSE FabriCap	863,650	sq. ft.
	GSE HyperNet	29,400	sq. ft.
Amount:	\$630,130		
Date completed:	5/4/2001		

Project Name:	Waste Management/Chicopee Landfill Phase 6		
Site Location:	Chicopee, MA	GSE No.:	504886
Application:	Sanitary LF		
Owner:	Waste Management, Inc.		
Owner Contact:	Bob Mangusson	603 929-1935	
General Contractor:	Waste Management, Inc.		
GC Contact:	Bob Magnusson	603 929-1935	
Engineering Firm:	Maquire Group		
Products:	GSE HD Textured 60 mil	852,050	sq. ft.
	GSE FabriNet Single-Sided	401,280	sq. ft.
	GSE FabriNet	292,880	sq. ft.
Amount:	\$616,650		
Date completed:	7/7/2001		

Project Name:	Southport Road Landfill Closure		
Site Location:	Kissimmee, FL	GSE No.:	507003
Application:	Sanitary LF Cap		
Owner:	Osceola County Board of County Commissioners		
Owner Contact:	Rey Palma	407 343-3125	
General Contractor:	C.J. Langenfelder & Son, Inc.		
GC Contact:	Mike Tiller	321 631-2687	
Engineering Firm:	HDR Engineering		
Engineer Contact:	Terry Tiedeman		
Products:	GSE UltraFlex Textured 40 mil	866,250	sq. ft.
	GSE CF315-66 Triplaner	875,425	sq. ft.
Amount:	\$714,300		
Date completed:	9/20/2001		



Project Name:	Allied Waste/Conestoga Landfill Cell 11	GSE No.:	507328
Site Location:	Morgantown, PA		
Application:	Sanitary LF		
Owner:	Allied Waste Industries		
Owner Contact:	Al Roman		610 286-7876
General Contractor:	Allied Waste Industries		
GC Contact:	Al Roman		610 286-7876
Engineering Firm:	Blazosky Associates, Inc.		
Engineer Contact:	Mike Rudy		
Products:	GSE HD Textured 60 mil	1,240,200	sq. ft.
	GSE HyperFlex 60 mil	67,680	sq. ft.
	GSE FabriNet	241,500	sq. ft.
	Geotextile	269,000	sq. ft.
Amount:	\$894,850		
Date completed:	6/26/2001		

Project Name:	Allied Waste/Sunshine Canyon Phase IIIB	GSE No.:	507364
Site Location:	Sylmar, CA		
Application:	Sanitary LF		
Owner:	Allied Waste Industries		
Owner Contact:	Curt Fujii		925 458-9800
General Contractor:	Allied Waste Sunshine Canyon		
GC Contact:	Sam Rojas		818 833-6508
Engineering Firm:	Geosyntec Consultants		
Engineer Contact:	Jeff Dombrowski		
Products:	GSE HD 30 mil	407,000	sq. ft.
	GSE HD Textured 60 mil	152,100	sq. ft.
	GSE HD Textured 60 mil Single-Sided	585,900	sq. ft.
	Geotextile	99,500	sq. ft.
	GSE FabriNet	8,400	sq. ft.
Amount:	\$823,900		
Date completed:	11/26/2001		

Project Name:	Waste Management/Alliance 2001 Cap	GSE No.:	507701
Site Location:	Taylor, PA		
Application:	Sanitary LF Cap		
Owner:	Waste Management, Inc.		
Owner Contact:	Glenn Kempa		570 562-1600
General Contractor:	Waste Management, Inc.		
GC Contact:	Glenn Kempa		570 562-1600
Engineering Firm:	Martin & Martin		
Engineer Contact:	Rick Bodner		
Products:	GSE UltraFlex Textured 40 mil	866,250	sq. ft.
	GSE FabriNet	907,350	sq. ft.
	Geotextile	97,000	sq. ft.
Amount:	\$681,420		
Date completed:	8/3/2001		

Project Name:	Mostoller Landfill	GSE No.:	507756
Site Location:	Somerset, PA		
Application:	Sanitary LF		
Owner:	Mostoller Landfill, Inc.		
Owner Contact:	Barry Clark		814 444-0120
General Contractor:	Mostoller Landfill, Inc.		
GC Contact:	Barry Clark		814 444-0120
Engineering Firm:	Crouse Consultants		



Engineer Contact: Jeff Evers
Products: GSE HD Textured 60 mil 1,056,500 sq. ft.
GSE HyperNet 155,400 sq. ft.
GSE FabriNet 383,925 sq. ft.
GSE FabriNet Single-Sided 164,225 sq. ft.
Claymax 200R 229,500 sq. ft.
Geotextile 64,900 sq. ft.
Amount: \$716,875
Date completed: 10/12/2001

Project Name: Norcal B & J Landfill Cell 5.1
Site Location: Vacaville, CA **GSE No.:** 507815
Application: Sanitary LF
Owner: Norcal Waste
Owner Contact: Tim Daleiden 707 678-5692
General Contractor: R.J. Gordon Construction, Inc.
GC Contact: John Johnson 925 680-8660
Engineering Firm: Golder Associates
Engineer Contact: Ken Haskell
Products: GSE HD Textured 60 mil Single-Sided 612,150 sq. ft.
GSE FabriNet HF 137,200 sq. ft.
Geotextile 64,500 sq. ft.
Amount: \$623,000
Date completed: 7/2/2001

Project Name: Commonwealth Landfill Phase IV and Phase 1 Cap
Site Location: Hegins, PA **GSE No.:** 507977
Application: Sanitary LF
Owner: Commonwealth Environmental Systems
Owner Contact: David Leung 570 695-3590
General Contractor: Commonwealth Environmental Systems
GC Contact: David Leung 570 695-3590
Engineering Firm: CECO Associates
Engineer Contact: Al Maganotta
Products: GSE HD Textured 40 mil 739,550 sq. ft.
GSE HyperFlex 60 mil 856,850 sq. ft.
GSE HD Textured 60 mil 573,300 sq. ft.
GSE FabriNet 691,900 sq. ft.
GSE FabriCap 851,225 sq. ft.
Amount: \$913,000
Date completed: 11/15/2001

Project Name: Lanchester Landfill Area B Cap
Site Location: Narvon, PA **GSE No.:** 502006
Application: Sanitary LF Cap
Owner: Lanchester Landfill
General Contractor: Pavex Inc.
GC Contact: Brent Gallagher 717 761-1502
Engineering Firm: Geosyntec Consultants
Engineer Contact: Eric Steinhauer 410 381-4333
Products: GSE HD Textured 40 mil 1,855,300 sq. ft.
GSE FabriCap 1,814,150 sq. ft.
Amount: \$630,130
Date completed: 7/1/2000



Project Name:	Glades Cut-Off Road Landfill Cell 3A	GSE No.:	504212
Site Location:	Fort Pierce, FL		
Application:	Sanitary LF		
Owner:	St. Lucie County Solid Waste		
Owner Contact:	Leo Gordeiro		561 462-6987
General Contractor:	Sheltra & Son Construction Co., Inc.		
GC Contact:	Vince Gorham		561 597-3180
Engineering Firm:	Camp Dresser & McKee Eng.		
Engineer Contact:	Eric Grotke		407 689-3336
Products:	GSE HyperFlex 60 mil	1,263,360	sq. ft.
	GSE HyperNet	1,889,000	sq. ft.
	Claymax 200R	491,775	sq. ft.
	Bentomat ST	154,725	sq. ft.
	Geotextile 8 oz	70,500	sq. ft.
Amount:	\$889,000		
Date completed:	8/1/2000		

Project Name:	Waste Management/ Alliance Landfill 2000 Closure	GSE No.:	504949
Site Location:	Taylor, PA		
Application:	Sanitary LF Cap		
Owner:	Waste Management, Inc.		
Owner Contact:	Glenn Kempa		570 562-1600
General Contractor:	Waste Management, Inc.		
GC Contact:	Glenn Kempa		570 562-1600
Engineering Firm:	Martin & Martin		
Engineer Contact:	Rick Bodner		717 264-6759
Products:	GSE UltraFlex Textured 40 mil	902,950	sq. ft.
	GSE HD 40 mil	14,625	sq. ft.
	GSE FabriCap 7.3 oz	896,500	sq. ft.
Amount:	\$658,796		
Date completed:	9/1/2000		

Project Name:	Waste Management/ Saginaw Valley Closure	GSE No.:	504982
Site Location:	Saginaw, MI		
Application:	Sanitary LF Cap		
Owner:	Waste Management, Inc.		
Owner Contact:	John Prusko		810 621-9080
General Contractor:	Waste Management, Inc.		
GC Contact:	John Prusko		810 621-9080
Engineering Firm:	Golder Associates Ltd.		
Engineer Contact:	Domenic F. Mattiazzi		705 524-6861
Products:	GSE HD Textured 40 mil	2,558,200	sq. ft.
	Bentomat ST	2,265,750	sq. ft.
Amount:	\$958,189		
Date completed:	10/31/2000		

Project Name:	Waste Management/ Westside Landfill Cell 6	GSE No.:	504984
Site Location:	Three Rivers, MI		
Application:	Sanitary LF		
Owner:	Waste Management, Inc.		
Owner Contact:	Fred Sawyers		616 688-5777
General Contractor:	Waste Management Inc		
GC Contact:	Fred Sawyer		616 688-5777
Engineering Firm:	Earth Tech		
Engineer Contact:	Te-Yang Soong		734 779-2813
Products:	GSE HyperFlex 60 mil	1,015,200	sq. ft.
	GSE HD Textured 60 mil	187,200	sq. ft.
	GSE HyperNet	364,000	sq. ft.



Amount:	Geotextile	66,500	sq. ft.
Date completed:	\$709,567		
	6/1/2000		
<hr/>			
Project Name:	Dow/Salzburg Landfill Cells 20-22	GSE No.:	505056
Site Location:	Midland, MI		
Application:	Sanitary LF		
Owner:	Dow Chemical USA		
Owner Contact:	Bob Reiss		517 859-4353
General Contractor:	Dow Chemical Company		
GC Contact:	Kurt Dietrich		517 636-0676
Products:	GSE White Textured 60 mil	386,100	sq. ft.
	GSE White Textured 80 mil	354,420	sq. ft.
	GSE TP275-08	321,901	sq. ft.
	GSE TP275-88	274,968	sq. ft.
	Geotextile 8 oz	14,500	sq. ft.
Amount:	\$788,842		
Date completed:	9/1/2000		
<hr/>			
Project Name:	Roseburg Landfill Phase II	GSE No.:	500182
Site Location:	Roseburg, OR		
Application:	Sanitary LF		
Owner:	Douglas County		
Owner Contact:	Chuck Cates		541 440-4255
General Contractor:	Wilder Construction Co.		
GC Contact:	Abe Moffat		503 255-1444
Engineering Firm:	Shannon & Wilson		
Engineer Contact:	Cathy Robertson		206 632-8020
Products:	GSE White Textured 60 mil	1,883,250	sq. ft.
	GSE FabriNet 6 oz	139,500	sq. ft.
	GSE FabriNet Single-Sided 6 oz	435,100	sq. ft.
Amount:	\$816,258		
Date completed:	6/1/1999		
<hr/>			
Project Name:	Allied/ Taylor County Landfill	GSE No.:	500453
Site Location:	Mauk, GA		
Application:	Sanitary LF		
Owner:	Allied Waste Industries		
Owner Contact:	Brian Card		912 862-2504
General Contractor:	Allied Waste/ Taylor County Landfill		
GC Contact:	Wes Mahaney		912 862-2504
Engineering Firm:	Hodges, Harbin, Newberry, Inc.		
Products:	GSE HyperFrictionFlex 60 mil	921,112	sq. ft.
	Bentoliner	949,500	sq. ft.
Amount:	\$641,908		
Date completed:	5/1/1999		
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Project Name:	Waste Management/ Pine Bluff Landfill Phase II	GSE No.:	500476
Site Location:	Ball Ground, GA		
Application:	Sanitary LF		
Owner:	Waste Management, Inc.		
Owner Contact:	Dave Stewart		770 479-2936
General Contractor:	Waste Management, Inc.		
GC Contact:	Ray Chewning		404 898-9243
Engineering Firm:	J. Jones & Goulding		
Engineer Contact:	Ernie Heins		770 455-8555



Products:	GSE White Textured 60 mil	809,550	sq. ft.
	GSE White 60 mil	85,050	sq. ft.
	GSE FabriNet 10 oz	735,560	sq. ft.
Amount:	\$650,072		
Date completed:	6/1/1999		

Project Name:	Rhode Island Resource Recovery Phase IV Area 1 & 2 Closures		
Site Location:	Johnston, RI	GSE No.:	500869
Application:	Sanitary LF Cap		
Owner:	Rhode Island Resource Recovery Corporation		
Owner Contact:	Robert Murray	401 942-1430	
General Contractor:	DiGregorio Corporation		
GC Contact:	Frank Maroni	401 232-5550	
Engineering Firm:	GZA GeoEnvironmental		
Engineer Contact:	Russ Morgan	401 421-4140	
Products:	GSE HyperFlex 60 mil	1,125,885	sq. ft.
	GSE HyperFlex 80 mil	1,333,640	sq. ft.
	Claymax200R	1,050,378	sq. ft.
	Geotextile	19,500	sq. ft.
Amount:	\$875,000		
Date completed:	7/1/1999		

Project Name:	Wicomico County/ Newland Park Landfill Closure		
Site Location:	Salisbury, MD	GSE No.:	500917
Application:	Sanitary LF Cap		
Owner:	Wicomico County		
Owner Contact:	Everett Baker	410 548-4935	
General Contractor:	George & Lynch		
GC Contact:	Joe Moretto	302 734-5865	
Engineering Firm:	GeoSyntec Consultants		
Products:	GSE HyperFrictionFlex 60 mil	142,364	sq. ft.
	GSE HD Textured 40 mil	1,432,936	sq. ft.
	GSE FabriNet	1,399,874	sq. ft.
	Bentomat ST	101,250	sq. ft.
Amount:	\$849,715		
Date completed:	11/1/1999		

Project Name:	Washington County Resh Road Landfill Cell 2		
Site Location:	Hagerstown, MD	GSE No.:	500920
Application:	Sanitary LF		
Owner:	Washington County		
Owner Contact:	Robert G. Davenport	301 791-3101	
General Contractor:	Charles Brake		
GC Contact:	Larry Miller	717 369-3411	
Engineering Firm:	KCI		
Engineer Contact:	Jim Krawczyk	410 316-7874	
Products:	GSE HD Textured 60 mil	175,000	sq. ft.
	GSE HD 60 mil	173,880	sq. ft.
	GSE UltraFlex 40 mil	160,875	sq. ft.
	GSE UltraFlex Textured 40 mil	173,250	sq. ft.
	Bentomat ST	119,250	sq. ft.
	Claymax200R	152,875	sq. ft.
	GSE TP 275-88	501,160	sq. ft.
Amount:	\$745,880		
Date completed:	11/1/1999		



Project Name:	Palm City Landfill	GSE No.:	501676
Site Location:	Palm City, FL		
Application:	Sanitary LF		
Owner:	Martin County		
Owner Contact:		561 288-5509	
General Contractor:	Southeast Environmental		
GC Contact:	Earl Holmes	912 247-7330	
Engineering Firm:	CDM		
Engineer Contact:	Alex Mackled	561 689-3336	
Products:	GSE HyperFlex 60 mil	1,285,900	sq. ft.
	GSE HyperNet	1,696,400	sq. ft.
Amount:	\$851,470		
Date completed:	7/1/1999		

Project Name:	Brookhaven Landfill Cell 5 Phases 6, 7, 8	GSE No.:	502404
Site Location:	Brookhaven, NY		
Application:	Sanitary LF		
Owner:	Town of Brookhaven		
Owner Contact:	Jack Oberholzer		
General Contractor:	Asplundh Construction Corp.		
GC Contact:	George J. Stolz	516 205-9340	
Engineering Firm:	Emcon		
Products:	GSE White Textured 60 mil	1,218,600	sq. ft.
	GSE FabriNet 8 oz	589,000	sq. ft.
	Bentoliner	470,250	sq. ft.
	Claymax	6,225	sq. ft.
Amount:	\$909,429		
Date completed:	9/1/1999		

Project Name:	River Birch Landfill Phase 4 Cells 7-12	GSE No.:	502465
Site Location:	Avondale, LA		
Application:	Sanitary LF		
Owner:	River Birch Incorporated		
Owner Contact:	Jeff Claunch	504 364-1140	
General Contractor:	Envirocon - Baton Rouge, LA		
GC Contact:		225 291-1222	
Engineering Firm:	Mader-Miers Engineering, Inc.		
Products:	GSE HD 60 mil	594,100	sq. ft.
	GSE HD 40 mil	493,350	sq. ft.
	GSE FabriNet 6 oz	965,700	sq. ft.
	Triplaner	44,700	sq. ft.
	Claymax200R	871,500	sq. ft.
Amount:	\$606,866		
Date completed:	11/1/1999		

Project Name:	Allied Waste/ Roxana Landfill Modules 2A, 2B, 3A, 3B	GSE No.:	502909
Site Location:	Roxana, IL		
Application:	Sanitary LF		
Owner:	Allied Waste Industries		
Owner Contact:		618 656-6912	
General Contractor:	Allied Waste		
GC Contact:		618 656-6912	
Engineering Firm:	Hurst - Rosche Engineers, Inc.		
Engineer Contact:		217 532-3953	
Products:	GSE White 60 mil	245,400	sq. ft.
	GSE White Textured 60 mil	444,600	sq. ft.



	GSE GundSeal Textured 40 mil	407,000	sq. ft.
	GSE HD Textured 40 mil	63,000	sq. ft.
Amount:	\$645,255		
Date completed:	8/1/1999		

Project Name:	Browning Ferris Industries/ Davis Junction Cap		
Site Location:	Davis Junction, IL	GSE No.:	503577
Application:	Sanitary LF Cap		
Owner:	Browning Ferris Industries		
Owner Contact:	Kevin Shaw	815 874-9000	
General Contractor:	Browning Ferris Industries		
GC Contact:	Kevin Shaw	815 874-9000	
Engineering Firm:	STS Consultants, Ltd		
Engineer Contact:	Tony Maxson	847 279-2500	
Products:	GSE UltraFlex 40 mil	1,638,000	sq. ft.
	GSE HyperNet CP	1,668,000	sq. ft.
Amount:	\$689,050		
Date completed:	11/1/1999		

x:/estimating/estimate/master reference list/landfills and caps.doc. 3/2007



NORTH AMERICAN MANUFACTURING CAPABILITIES

GSE Lining Technology, Inc. with its corporate headquarters located in Houston, Texas, has manufacturing facilities located throughout North America. The manufacturing facilities are located in Houston, Texas; Kingstree, South Carolina; Spearfish, South Dakota; and Barrie, Ontario, Canada. They are each equipped to provide the highest quality product with industry leading technology and maximum output to service customers' needs:

Houston, Texas: Multiple HDPE/LLDPE geomembrane sheet production lines that offer a wide range of products of smooth, textures, colors, thicknesses, and widths. In addition, HDPE geonet/geocomposite production lines are available for many net or composite variations needed for drainage.

Kingstree, South Carolina: HDPE geonet/geocomposite production line that offers the full range of drainage products. In addition, a nonwoven fabric production line that can produce 3 oz. to 32 oz. geotextile material for both environmental and civil markets.

Spearfish, South Dakota: Geosynthetic clay lining (GCL) production lines capable of a full range of geomembrane supported GCLs and/or fabric encased GCLs.

Barrie, Ontario, Canada: GCL production line capable of a full range of fabric encased GCLs.

At these facilities, GSE offers manufacturing capacity of over 1 billion square feet of saleable product per year.

- ~500,000,000 sf of Geomembrane sheet of all types
- ~180,000,000 sf of Geonet/ Geocomposite of all types
- ~450,000,000 sf of Nonwoven fabrics
- ~200,000,000 sf of GCLs of all types

All facilities operate the workforce on shifts. Each shift is fully staffed with Supervisor, Unit Operators, Quality Control and Maintenance personnel under the supervision of the Production Manager.

SAMPLE COPY



**PRO RATA LIMITED MATERIAL WARRANTY
FOR GSE LINING TECHNOLOGY, INC.
Geomembrane Products
(U.S.A.)**

Date:	_____	Warranty No.:	_____
Purchaser Name:	_____	Project No.:	_____
Address:	_____	Effective Date:	_____
City, State:	_____	Project Name:	_____
Product Type/Description:	GSE Geomembrane	Project Address:	_____

GSE Lining Technology, Inc. ("GSE") warrants each GSE product described above to be free from material manufacturing defects (as described by the contract's material specifications) and to be able to withstand normal weathering for a period of **five (5) years** from the date of sale. This limited warranty does not include damages or defects in the GSE product resulting from acts of God, casualty or catastrophe, including but not limited to: earthquakes, floods, piercing hail, tornadoes or force majeure. The term "normal use" does not include, among other things, the exposure of GSE's product to harmful chemicals, abuse by machinery, equipment or people; improper site preparation or placement of cover materials; excessive pressures or stresses from any source. This warranty is intended for commercial use only and is not in effect for the consumer as defined in the Magnuson-Moss Warranty Act.

Should defects or premature loss of use within the scope of this warranty occur, GSE will, at its option, repair or replace the GSE product on a pro rata basis at the current price in such manner as to charge the Purchaser only for that portion of the warranted life which has elapsed since the purchase of the product. GSE shall have the right to inspect and determine the cause of the alleged defect in the product and to take appropriate steps to repair or replace the product if a defect exists that is covered under this warranty.

Any claim for any alleged breach of this warranty must be made in writing, by certified mail or courier, to GSE Lining Technology Co., 19103 Gundle Road, Houston, TX 77073, with the words "Warranty Claim" clearly marked on the face of the envelope, within ten (10) days of Purchaser becoming aware of the alleged defect. Should the required notice not be given, the defect and all warranties are waived by the Purchaser, and Purchaser shall not have rights under this warranty. GSE shall not be obligated to perform any inspection or obligated to perform any repair or replacement under this warranty until the area is made available free from all obstructions, water, dirt, sludge, residuals and liquids of any kind. If after inspection it is determined that there is no claim under this warranty, Purchaser shall reimburse GSE for its costs associated with the site inspection.

In the event the exclusive remedy provided herein fails in its essential purpose, and in that event only, the Purchaser shall be entitled to a return of the purchase price for so much of the product as GSE determines to have violated the warranty provided herein. GSE shall not be liable for direct, indirect, special, consequential or incidental damages resulting from a breach of this warranty including, but not limited to: damages for loss of production, lost profits, personal injury or property damage. GSE shall not be obligated to reimburse Purchaser for any repairs, replacement, modifications or alterations made by Purchaser to GSE's product, unless GSE specifically authorized, in writing, said repairs, replacements, modifications or alterations in advance. GSE liability under this warranty shall in no event exceed the replacement cost of the product sold to the Purchaser for the particular installation in which it failed.

GSE neither assumes nor authorizes any person other than an officer of GSE to assume for it any other or additional liability in connection with the GSE product made on the basis of the Limited Warranty. **GSE MAKES NO WARRANTY OF ANY KIND OTHER THAN THAT GIVEN HEREIN AND HEREBY DISCLAIMS ALL WARRANTIES, INCLUDING BOTH EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, AND BY ACCEPTING DELIVERY OF THE PRODUCT, PURCHASER WAIVES ALL OTHER POSSIBLE WARRANTIES. GSE's WARRANTY BECOMES AN OBLIGATION OF GSE TO PERFORM UNDER THE WARRANTY ONLY UPON RECEIPT OF FINAL PAYMENT.**

This warranty is extended to the Purchaser and is non-transferable and non-assignable, i.e. there are no third-party beneficiaries to this warranty.



Ash Management Services, LLC
12601 Plantside Drive
Louisville, Kentucky 40299
Phone: 502-245-1353

Hutsonville APD Closure

HUT-APD-SUB-003-02-GSE-liner-QC-data

Submittal Information

Submittal No.	Date	Contact	Phone no.
SUB-003-02	2012-04-16	Paul Zinsious AMS	502-640-2918

SHOP DRAWING / SUBMITTAL REVIEW

Shop drawing/submittal review is for design conformity and general conformance with the design concept of the project as given in the contract documents. Subcontractor is responsible for full compliance with contract documents, confirming and correcting all quantities, correlating dimensions at project work site for tolerance, clearance, fabrication process, and techniques of construction. Subcontractor is responsible for coordination of his work with that of all other trades, and performance of the work in a safe and satisfactory manner.

<input checked="" type="checkbox"/>	Reviewed.	2012-04-16	Date
<input type="checkbox"/>	Reviewed with corrections.		
<input type="checkbox"/>	Revise and resubmit.		
<input type="checkbox"/>	Rejected. See Remarks.		

By 
AMS, LLC



SUBMITTAL

COVER SHEET

Date: April 4, 2012

Project: Hutsonville Ash Pond

**General Contractor: Charah, Inc
12601 Plantside Drive
Louisville, KY 40299**

**Spec Section: 02800 HDPE Geomembrane Liner
Submittal Ref: 40 Mil HDPE Geomembrane Liner- Manufacturers Quality Control
Certification**

Inclusions:

- 1) Roll Allocation List**
- 2) Roll Test Data (3 pages)**
- 3) Formosa Plastics Certificate of Analysis (12C1076)**
- 4) Formosa Plastics Certificate of Analysis (12C1080)**
- 5) Formosa Plastics Certificate of Analysis (12C1081)**

REVIEWER NOTES

GSE Roll Allocation

Order SO-066934
Customer Chesapeake Containment Systems, Inc.
Project Name Ameren Hutsonville Ash Pond D

Roll#	Resin Lot	Product Code	Mfg Date	Length
108162776	12C1081	HDT-040GE-BBB-B-W0	3/29/2012	700
108162777	12C1081	HDT-040GE-BBB-B-W0	3/29/2012	700
108162778	12C1081	HDT-040GE-BBB-B-W0	3/29/2012	700
108162779	12C1081	HDT-040GE-BBB-B-W0	3/29/2012	700
108162780	12C1081	HDT-040GE-BBB-B-W0	3/29/2012	700
108162781	12C1081	HDT-040GE-BBB-B-W0	3/29/2012	700
108162782	12C1081	HDT-040GE-BBB-B-W0	3/29/2012	700
108162783	12C1081	HDT-040GE-BBB-B-W0	3/30/2012	700
108162784	12C1081	HDT-040GE-BBB-B-W0	3/30/2012	700
108162785	12C1081	HDT-040GE-BBB-B-W0	3/30/2012	700
108162786	12C1081	HDT-040GE-BBB-B-W0	3/30/2012	700
108162787	12C1081	HDT-040GE-BBB-B-W0	3/30/2012	700
108162788	12C1081	HDT-040GE-BBB-B-W0	3/30/2012	700
108162789	12C1081	HDT-040GE-BBB-B-W0	3/30/2012	700
108162790	12C1081	HDT-040GE-BBB-B-W0	3/30/2012	700
108162791	12C1081	HDT-040GE-BBB-B-W0	3/30/2012	700
108162792	12C1081	HDT-040GE-BBB-B-W0	3/30/2012	700
108162793	12C1081	HDT-040GE-BBB-B-W0	3/30/2012	700
108162794	12C1081	HDT-040GE-BBB-B-W0	3/30/2012	700
108162801	12C1081	HDT-040GE-BBB-B-W0	3/30/2012	700
108162802	12C1081	HDT-040GE-BBB-B-W0	3/30/2012	700
108162803	12C1081	HDT-040GE-BBB-B-W0	3/30/2012	700
108162804	12C1081	HDT-040GE-BBB-B-W0	3/31/2012	700
108162805	12C1081	HDT-040GE-BBB-B-W0	3/31/2012	700
108162806	12C1081	HDT-040GE-BBB-B-W0	3/31/2012	700
108162807	12C1081	HDT-040GE-BBB-B-W0	3/31/2012	700
108162808	12C1081	HDT-040GE-BBB-B-W0	3/31/2012	700
108162809	12C1080	HDT-040GE-BBB-B-W0	3/31/2012	700
108162812	12C1080	HDT-040GE-BBB-B-W0	3/31/2012	700
108162813	12C1080	HDT-040GE-BBB-B-W0	3/31/2012	700
108162814	12C1080	HDT-040GE-BBB-B-W0	3/31/2012	700
108162815	12C1080	HDT-040GE-BBB-B-W0	3/31/2012	700
108162816	12C1080	HDT-040GE-BBB-B-W0	3/31/2012	700
108162817	12C1080	HDT-040GE-BBB-B-W0	3/31/2012	700
108162818	12C1080	HDT-040GE-BBB-B-W0	3/31/2012	700
108162819	12C1080	HDT-040GE-BBB-B-W0	3/31/2012	700
108162820	12C1080	HDT-040GE-BBB-B-W0	3/31/2012	700
108162821	12C1080	HDT-040GE-BBB-B-W0	3/31/2012	700
108162822	12C1080	HDT-040GE-BBB-B-W0	3/31/2012	700
108162823	12C1080	HDT-040GE-BBB-B-W0	3/31/2012	700
108162824	12C1080	HDT-040GE-BBB-B-W0	4/1/2012	700
108162825	12C1080	HDT-040GE-BBB-B-W0	4/1/2012	700

108162827	12C1080	HDT-040GE-BBB-B-W0	4/1/2012	700
108162828	12C1080	HDT-040GE-BBB-B-W0	4/1/2012	700
108162829	12C1080	HDT-040GE-BBB-B-W0	4/1/2012	700
108162830	12C1080	HDT-040GE-BBB-B-W0	4/1/2012	700
108162831	12C1080	HDT-040GE-BBB-B-W0	4/1/2012	700
108162832	12C1080	HDT-040GE-BBB-B-W0	4/1/2012	700
108162833	12C1080	HDT-040GE-BBB-B-W0	4/1/2012	700
108162834	12C1080	HDT-040GE-BBB-B-W0	4/1/2012	700
108162835	12C1080	HDT-040GE-BBB-B-W0	4/1/2012	700
108162836	12C1080	HDT-040GE-BBB-B-W0	4/1/2012	700
108162837	12C1080	HDT-040GE-BBB-B-W0	4/1/2012	700
108162838	12C1080	HDT-040GE-BBB-B-W0	4/1/2012	700
108162839	12C1080	HDT-040GE-BBB-B-W0	4/1/2012	700
108162840	12C1080	HDT-040GE-BBB-B-W0	4/1/2012	700
108162841	12C1080	HDT-040GE-BBB-B-W0	4/1/2012	700
108162842	12C1080	HDT-040GE-BBB-B-W0	4/1/2012	700
108162855	12C1076	HDT-040GE-BBB-B-W0	4/2/2012	700
108162856	12C1076	HDT-040GE-BBB-B-W0	4/2/2012	700
108162857	12C1076	HDT-040GE-BBB-B-W0	4/2/2012	700
108162858	12C1076	HDT-040GE-BBB-B-W0	4/2/2012	700
108162859	12C1076	HDT-040GE-BBB-B-W0	4/2/2012	700
108162860	12C1076	HDT-040GE-BBB-B-W0	4/2/2012	700
108162861	12C1076	HDT-040GE-BBB-B-W0	4/2/2012	700
108162862	12C1076	HDT-040GE-BBB-B-W0	4/2/2012	700
108162863	12C1076	HDT-040GE-BBB-B-W0	4/2/2012	700
108162864	12C1076	HDT-040GE-BBB-B-W0	4/3/2012	700
108162865	12C1076	HDT-040GE-BBB-B-W0	4/3/2012	700
108162866	12C1076	HDT-040GE-BBB-B-W0	4/3/2012	700
108162867	12C1076	HDT-040GE-BBB-B-W0	4/3/2012	700
108162868	12C1076	HDT-040GE-BBB-B-W0	4/3/2012	700



ROLL TEST DATA REPORT



Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO-066934	Chesapeake Containment Systems, Inc.	Hutsonville IL US	HDT-040GE-BBB-B-W0	

Roll Number	Average Thickness ASTM D5994 (mils)	Minimum Thickness ASTM D5994 (mils)	Yield Strength ASTM D6693 (ppi) MD	Yield Strength ASTM D6693 (ppi) TD	Yield Elongation ASTM D6693 (%) MD	Yield Elongation ASTM D6693 (%) TD	Break Strength ASTM D6693 (ppi) MD	Break Strength ASTM D6693 (ppi) TD	Break Elongation ASTM D6693 (%) MD	Break Elongation ASTM D6693 (%) TD	Tear Resistance ASTM D1004 (lbs) MD	Tear Resistance ASTM D1004 (lbs) TD	Puncture Resistance ASTM D4833 (lbs)	Density ASTM D1505 (g/cc)	Carbon Black Content ASTM D4218 (%)	Carbon Black Dispersion ASTM D5996 (Views in Cat1-Cat2)	Asperity Height GRI GM12 (mils) Side A	Asperity Height GRI GM12 (mils) Side B
108162776	39	36	104	104	17	16	127	95	483	311	38	35	103	0.944	2.37	10	21	21
108162777	39	36	104	104	17	16	127	95	483	311	38	35	103	0.944	2.33	10	21	21
108162778	39	36	103	106	17	16	143	110	573	473	38	37	110	0.944	2.33	10	21	21
108162779	39	34	103	106	17	16	143	110	573	473	38	37	110	0.944	2.33	10	22	19
108162780	38	35	104	112	17	16	142	107	560	356	39	37	110	0.944	2.34	10	22	19
108162781	38	35	104	112	17	16	142	107	560	356	39	37	110	0.944	2.34	10	21	19
108162782	39	35	104	112	17	16	142	107	560	356	39	37	110	0.944	2.34	10	21	19
108162783	38	35	104	113	17	16	138	120	513	477	40	36	106	0.944	2.36	10	22	20
108162784	39	34	104	113	17	16	138	120	513	477	40	36	106	0.944	2.36	10	22	20
108162785	39	35	104	113	17	16	138	120	513	477	40	36	106	0.944	2.36	10	21	20
108162786	39	35	104	113	17	16	138	120	513	477	40	36	106	0.944	2.36	10	21	20
108162787	39	35	101	104	17	16	130	104	516	437	36	36	106	0.944	2.51	10	21	20
108162788	38	35	101	104	17	16	130	104	516	437	36	36	106	0.944	2.51	10	21	20
108162789	39	34	101	104	17	16	130	104	516	437	36	36	106	0.944	2.51	10	21	20
108162790	39	37	113	118	17	16	141	118	521	404	39	39	107	0.944	2.40	10	21	20
108162791	39	36	113	118	17	16	141	118	521	404	39	39	107	0.944	2.40	10	21	21
108162792	38	37	113	118	17	16	141	118	521	404	39	39	107	0.944	2.40	10	21	21
108162793	39	37	111	117	17	17	144	131	534	544	40	37	110	0.944	2.53	9	21	21
108162794	39	36	111	117	17	17	144	131	534	544	40	37	110	0.944	2.53	9	21	21
108162801	39	34	106	113	17	16	132	107	455	324	38	36	111	0.944	2.36	10	21	20
108162802	38	35	105	111	17	17	138	113	524	422	39	36	106	0.944	2.39	10	21	20
108162803	39	35	105	111	17	17	138	113	524	422	39	36	106	0.944	2.39	10	21	20
108162804	39	35	105	111	17	17	138	113	524	422	39	36	106	0.944	2.39	10	21	20
108162805	39	35	106	109	17	16	142	103	533	388	38	35	114	0.944	2.45	10	21	20
108162806	39	34	106	109	17	16	142	103	533	388	38	35	114	0.944	2.45	10	21	19
108162807	38	35	106	109	17	16	142	103	533	388	38	35	114	0.944	2.45	10	21	19
108162808	39	35	111	122	17	17	148	113	543	392	39	39	110	0.946	2.24	10	23	22
108162809	38	35	111	122	17	17	148	113	543	392	39	39	110	0.946	2.24	10	20	19
108162812	40	35	116	120	16	16	151	111	547	315	40	39	111	0.946	2.49	10	22	20
108162813	39	34	116	120	16	16	151	111	547	315	40	39	111	0.946	2.49	10	22	20
108162814	39	34	117	124	17	16	140	105	511	300	43	39	108	0.946	2.34	10	21	21
108162815	39	35	117	124	17	16	140	105	511	300	43	39	108	0.946	2.34	10	21	21
108162816	39	35	117	124	17	16	140	105	511	300	43	39	108	0.946	2.34	10	21	22
108162817	39	34	121	123	16	16	135	105	472	267	41	40	110	0.946	2.46	10	21	22



ROLL TEST DATA REPORT



Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO-066934	Chesapeake Containment Systems, Inc.	Hutsonville IL US	HDT-040GE-BBB-B-W0	

Roll Number	Average Thickness ASTM D5994 (mils)	Minimum Thickness ASTM D5994 (mils)	Yield Strength ASTM D6693 (ppi) MD	Yield Strength ASTM D6693 (ppi) TD	Yield Elongation ASTM D6693 (%) MD	Yield Elongation ASTM D6693 (%) TD	Break Strength ASTM D6693 (ppi) MD	Break Strength ASTM D6693 (ppi) TD	Break Elongation ASTM D6693 (%) MD	Break Elongation ASTM D6693 (%) TD	Tear Resistance ASTM D1004 (lbs) MD	Tear Resistance ASTM D1004 (lbs) TD	Puncture Resistance ASTM D4833 (lbs)	Density ASTM D1505 (g/cc)	Carbon Black Content ASTM D4218 (%)	Carbon Black Dispersion ASTM D5596 (Views in Cat1-Cat2)	Asperity Height GRI GM12 (mils) Side A	Asperity Height GRI GM12 (mils) Side B
108162818	39	36	121	123	16	16	135	105	472	267	41	40	110	0.946	2.46	10	21	21
108162819	39	34	121	123	16	16	135	105	472	267	41	40	110	0.946	2.46	10	21	21
108162820	40	36	112	118	16	16	139	101	492	279	40	43	112	0.946	2.45	10	23	22
108162821	39	35	112	118	16	16	139	101	492	279	40	43	112	0.946	2.45	10	23	22
108162822	40	36	112	118	16	16	139	101	492	279	40	43	112	0.946	2.45	10	23	21
108162823	40	36	107	112	16	16	124	105	393	400	41	39	107	0.946	2.35	10	23	21
108162824	40	36	107	112	16	16	124	105	393	400	41	39	107	0.946	2.35	10	22	21
108162825	39	35	107	112	16	16	124	105	393	400	41	39	107	0.946	2.35	10	22	21
108162827	39	34	105	111	17	16	115	100	363	246	38	36	106	0.945	2.41	10	24	24
108162828	39	34	105	111	17	16	115	100	363	246	38	36	106	0.945	2.41	10	24	23
108162829	39	35	105	111	17	16	115	100	363	246	38	36	106	0.945	2.41	10	24	23
108162830	39	35	116	120	17	16	128	88	449	175	40	38	108	0.945	2.38	10	22	21
108162831	39	35	116	120	17	16	128	88	449	175	40	38	108	0.945	2.38	10	22	21
108162832	39	35	116	120	17	16	128	88	449	175	40	38	108	0.945	2.38	10	23	22
108162833	39	35	124	127	16	16	132	102	394	255	42	41	110	0.946	2.37	10	23	22
108162834	38	35	124	127	16	16	132	102	394	255	42	41	110	0.946	2.37	10	23	22
108162835	38	35	124	127	16	16	132	102	394	255	42	41	110	0.946	2.37	10	23	22
108162836	39	36	117	123	16	16	130	99	416	275	41	38	107	0.945	2.44	10	22	22
108162837	38	35	117	123	16	16	130	99	416	275	41	38	107	0.945	2.44	10	22	22
108162838	38	35	117	123	16	16	130	99	416	275	41	38	107	0.945	2.44	10	22	21
108162839	38	35	111	119	16	16	126	96	444	201	42	39	107	0.945	2.38	10	22	21
108162840	38	34	111	119	16	16	126	96	444	201	42	39	107	0.945	2.38	10	22	21
108162841	39	35	111	119	16	16	126	96	444	201	42	39	107	0.945	2.38	10	22	21
108162842	39	34	113	120	16	16	120	109	312	313	37	41	109	0.945	2.22	10	23	24
108162855	38	35	110	110	17	15	107	94	211	202	41	38	112	0.945	2.34	10	25	27
108162856	38	34	116	122	17	16	147	115	493	339	43	41	111	0.945	2.48	10	26	27
108162857	39	35	116	122	17	16	147	115	493	339	43	41	111	0.945	2.48	10	23	27
108162858	40	37	116	122	17	16	147	115	493	339	43	41	111	0.945	2.48	10	21	22
108162859	39	36	110	115	17	16	129	93	414	256	40	38	107	0.945	2.39	10	21	21
108162860	40	37	110	115	17	16	129	93	414	256	40	38	107	0.945	2.39	10	21	21
108162861	38	34	110	115	17	16	129	93	414	256	40	38	107	0.945	2.39	10	22	21
108162862	39	36	117	118	16	16	138	98	470	292	40	37	106	0.945	2.28	10	22	21
108162863	38	35	117	118	16	16	138	98	470	292	40	37	106	0.945	2.28	10	23	21
108162864	38	34	117	118	16	16	138	98	470	292	40	37	106	0.945	2.28	10	23	21

ROLL TEST DATA REPORT



Report Date: Apr/3/2012

Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO-066934	Chesapeake Containment Systems, Inc.	Hutsonville IL US	HDT-040GE-BBB-B-W0	

Roll Number	Average Thickness ASTM D5994 (mils)	Minimum Thickness ASTM D5994 (mils)	Yield Strength ASTM D6693 (ppi) MD	Yield Strength ASTM D6693 (ppi) TD	Yield Elongation ASTM D6693 (%) MD	Yield Elongation ASTM D6693 (%) TD	Break Strength ASTM D6693 (ppi) MD	Break Strength ASTM D6693 (ppi) TD	Break Elongation ASTM D6693 (%) MD	Break Elongation ASTM D6693 (%) TD	Tear Resistance ASTM D1004 (lbs) MD	Tear Resistance ASTM D1004 (lbs) TD	Puncture Resistance ASTM D4833 (lbs)	Density ASTM D1505 (g/cc)	Carbon Black Content ASTM D4218 (%)	Carbon Black Dispersion ASTM D5596 (Views in Cat1-Cat2)	Asperity Height GRI GM12 (mils) Side A	Asperity Height GRI GM12 (mils) Side B
108162865	39	34	113	120	16	16	120	109	312	313	37	41	109	0.945	2.22	10	21	21
108162866	38	34	113	120	16	16	120	109	312	313	37	41	109	0.945	2.22	10	21	21
108162867	39	35	113	120	16	16	120	109	312	313	37	41	109	0.945	2.22	10	22	21
108162868	39	35	121	130	17	16	135	101	461	210	43	40	112	0.945	2.30	10	22	21

Laboratory Manager





Formosa Plastics

FORMOSA PLASTICS CORPORATION, TEXAS

201 FORMOSA DRIVE
PO BOX 700
POINT COMFORT

TX 77978

PHONE:(888)FPCUSA3

Certificate of Analysis

CUSTOMER:GSE LINING TECHNOLOGY, IN
UP TRACK 14732 WESTFIELD

HOUSTON

TX 77070

PRODUCT :HL3812

RAILCAR

FPAX940150

S/O NO : SEM1A83

CUSTOMER PO : 03-067904

DATE SHIPPED: 3/12/12

LOT NO : 12C1076

WEIGHT (LB) : 192,250.00

CUSTID:FT03112 SPIDM4

TEST ITEM

REFERENCE METHOD

TEST VALUE

HLMI, g/10 min.

ASTM D1238

12.1

Density, g/cm3

ASTM D1505

.9389

Linda Kao

QC SUPERVISOR: LINDA KAO



Formosa Plastics

FORMOSA PLASTICS CORPORATION, TEXAS

201 FORMOSA DRIVE
PO BOX 700
POINT COMFORT

TX 77978

PHONE:(888)FPCUSA3

Certificate of Analysis

CUSTOMER:GSE LINING TECHNOLOGY, IN
UP TRACK 14732 WESTFIELD

HOUSTON

TX 77070

PRODUCT :HL3812

RAILCAR

FPAX200181

S/O NO : SEM1A79

CUSTOMER PO : 03-067904

DATE SHIPPED: 3/12/12

LOT NO : 12C1080

WEIGHT (LB) : 196,450.00

CUSTID:FT03112 SPIDM4

TEST ITEM

HLMI, g/10 min.

Density, g/cm3

REFERENCE METHOD

ASTM D1238

ASTM D1505

TEST VALUE

13.4

.9388

Linda Kao

QC SUPERVISOR: LINDA KAO



Formosa Plastics

FORMOSA PLASTICS CORPORATION, TEXAS

201 FORMOSA DRIVE
PO BOX 700
POINT COMFORT

TX 77978

PHONE:(888)FPCUSA3

Certificate of Analysis

CUSTOMER:GSE LINING TECHNOLOGY, IN
UP TRACK 14732 WESTFIELD

HOUSTON

TX 77070

PRODUCT :HL3812

RAILCAR

FPAX980327

S/O NO : SEM1A82

CUSTOMER PO : 03-067904

DATE SHIPPED: 3/12/12

LOT NO : 12C1081

WEIGHT (LB) : 192,500.00

CUSTID:FT03112 SPIDM4

TEST ITEM

REFERENCE METHOD

TEST VALUE

HLMI, g/10 min.

ASTM D1238

12.3

Density, g/cm3

ASTM D1505

.9384

Linda Kao

QC SUPERVISOR: LINDA KAO



April 16, 2012

Mail To:

Rick Pershall
Geotechnology, Inc.
11816 Lackland Road, Suite 150
St. Louis, MO 63146

email: r_pershall@geotechnology.com

Bill To:

<= Same

Dear Mr. Pershall:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs. TRI is pleased to submit this final report for laboratory testing.

Project: Ameren Hutsonsville Power Station Ash Pond D Closure

TRI Job Reference Number: E2366-36-03

Material(s) Tested: 12, GSE 40 mil Textured HDPE Geomembrane(s)

Test(s) Requested:
Thickness (ASTM D 5994)
Tensile (ASTM D 6693)
Puncture Strength (ASTM D 4833)
Tear Resistance (ASTM D 1004)

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

Mansukh Patel
Sr. Laboratory Coordinator
Geosynthetic Services Division
www.GeosyntheticTesting.com

cc: Sam R. Allen, Vice President and Division Manager



GEOMEMBRANE TEST RESULTS

TRI Client: Geotechnology, Inc.
Project: Ameren Hutsonsville Power Station Ash Pond D Closure

Material: GSE 40 mil Textured HDPE Geomembrane
Sample Identification: 108162776
TRI Log #: E2366-36-03

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.
	1	2	3	4	5	6	7	8	9	10		
Thickness (ASTM D 5994)												
Thickness (mils)	46	43	41	42	41	39	41	39	46	44	<div>42</div> <div>39</div>	3 << min
Tensile Properties (ASTM D 6693, 2 ipm strain rate)												
MD Yield Strength (ppi)	106	121	113	111	102						<div>111</div>	7
TD Yield Strength (ppi)	116	115	118	107	112						<div>114</div>	4
MD Break Strength (ppi)	118	148	133	144	137						<div>136</div>	12
TD Break Strength (ppi)	101	91	94	99	101						<div>97</div>	4
MD Yield Elongation (%)	16	16	16	16	16						<div>16</div>	0
TD Yield Elongation (%)	17	17	17	16	16						<div>17</div>	1
MD Break Elongation (%)	413	496	479	519	545						<div>490</div>	50
TD Break Elongation (%)	165	81	246	370	366						<div>246</div>	126
Puncture Resistance (ASTM D 4833)												
Puncture Strength (lbs)	96	97	101	101	104						<div>100</div>	4
Tear Resistance (ASTM D 1004)												
MD Tear Strength (lbs)	37	37	38	39	40	35	39	39	37	37	<div>38</div>	2
TD Tear Strength (lbs)	34	38	36	35	39	33	38	38	35	37	<div>36</div>	2
MD Machine Direction	TD Transverse Direction											

The testing is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.



GEOMEMBRANE TEST RESULTS

TRI Client: Geotechnology, Inc.
Project: Ameren Hutsonsville Power Station Ash Pond D Closure

Material: GSE 40 mil Textured HDPE Geomembrane
Sample Identification: 108162782
TRI Log #: E2366-36-03

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.
	1	2	3	4	5	6	7	8	9	10		
Thickness (ASTM D 5994)												
Thickness (mils)	39	40	41	45	44	39	42	48	44	41	<div>42</div> <div>39</div>	3 << min
Tensile Properties (ASTM D 6693, 2 ipm strain rate)												
MD Yield Strength (ppi)	108	125	119	129	123						<div>121</div>	8
TD Yield Strength (ppi)	123	123	129	123	120						<div>124</div>	3
MD Break Strength (ppi)	144	156	145	173	137						<div>151</div>	14
TD Break Strength (ppi)	91	108	100	101	99						<div>100</div>	6
MD Yield Elongation (%)	14	16	16	15	13						<div>15</div>	1
TD Yield Elongation (%)	12	16	16	14	14						<div>14</div>	2
MD Break Elongation (%)	535	531	513	591	451						<div>524</div>	50
TD Break Elongation (%)	68	310	296	65	86						<div>165</div>	126
Puncture Resistance (ASTM D 4833)												
Puncture Strength (lbs)	115	113	112	106	107						<div>111</div>	4
Tear Resistance (ASTM D 1004)												
MD Tear Strength (lbs)	41	39	41	42	41	45	39	41	37	39	<div>41</div>	2
TD Tear Strength (lbs)	39	40	36	40	38	35	40	37	41	39	<div>39</div>	2
MD Machine Direction	TD Transverse Direction											

The testing is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.



GEOMEMBRANE TEST RESULTS

TRI Client: Geotechnology, Inc.
Project: Ameren Hutsonsville Power Station Ash Pond D Closure

Material: GSE 40 mil Textured HDPE Geomembrane
Sample Identification: 108162788
TRI Log #: E2366-36-03

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.
	1	2	3	4	5	6	7	8	9	10		
Thickness (ASTM D 5994)												
Thickness (mils)	41	44	42	41	42	41	40	39	39	40	<div>41</div> <div>39</div>	2 << min
Tensile Properties (ASTM D 6693, 2 ipm strain rate)												
MD Yield Strength (ppi)	102	118	113	118	107						<div>112</div>	7
TD Yield Strength (ppi)	116	119	118	113	110						<div>115</div>	4
MD Break Strength (ppi)	126	146	138	148	133						<div>138</div>	9
TD Break Strength (ppi)	130	101	110	91	87						<div>104</div>	17
MD Yield Elongation (%)	17	17	14	14	14						<div>15</div>	2
TD Yield Elongation (%)	22	15	19	17	21						<div>19</div>	3
MD Break Elongation (%)	496	500	453	485	454						<div>478</div>	23
TD Break Elongation (%)	531	336	314	218	158						<div>311</div>	143
Puncture Resistance (ASTM D 4833)												
Puncture Strength (lbs)	101	106	100	106	105						<div>104</div>	3
Tear Resistance (ASTM D 1004)												
MD Tear Strength (lbs)	42	37	37	44	44	39	41	38	39	38	<div>40</div>	3
TD Tear Strength (lbs)	40	37	37	38	38	37	37	39	35	36	<div>37</div>	1
MD Machine Direction	TD Transverse Direction											

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GEOMEMBRANE TEST RESULTS

TRI Client: Geotechnology, Inc.
Project: Ameren Hutsonsville Power Station Ash Pond D Closure

Material: GSE 40 mil Textured HDPE Geomembrane
Sample Identification: 108162794
TRI Log #: E2366-36-03

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.
	1	2	3	4	5	6	7	8	9	10		
Thickness (ASTM D 5994)												
Thickness (mils)	45	48	44	46	42	44	43	45	42	45	<div>44</div> <div>42</div>	2 << min
Tensile Properties (ASTM D 6693, 2 ipm strain rate)												
MD Yield Strength (ppi)	112	109	117	118	114						<div>114</div>	4
TD Yield Strength (ppi)	121	118	121	125	122						<div>121</div>	3
MD Break Strength (ppi)	132	130	156	130	138						<div>137</div>	11
TD Break Strength (ppi)	98	90	102	124	99						<div>103</div>	13
MD Yield Elongation (%)	19	16	15	15	19						<div>17</div>	2
TD Yield Elongation (%)	17	15	14	16	15						<div>15</div>	1
MD Break Elongation (%)	438	438	538	420	500						<div>467</div>	50
TD Break Elongation (%)	386	364	329	440	108						<div>325</div>	128
Puncture Resistance (ASTM D 4833)												
Puncture Strength (lbs)	108	106	110	108	111						<div>109</div>	2
Tear Resistance (ASTM D 1004)												
MD Tear Strength (lbs)	40	39	42	38	42	40	39	38	40	38	<div>40</div>	2
TD Tear Strength (lbs)	35	39	38	39	38	36	38	38	40	39	<div>38</div>	2
MD Machine Direction	TD Transverse Direction											

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GEOMEMBRANE TEST RESULTS

TRI Client: Geotechnology, Inc.
Project: Ameren Hutsonsville Power Station Ash Pond D Closure

Material: GSE 40 mil Textured HDPE Geomembrane
Sample Identification: 108162806
TRI Log #: E2366-36-03

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.
	1	2	3	4	5	6	7	8	9	10		
Thickness (ASTM D 5994)												
Thickness (mils)	44	45	47	50	42	43	45	43	40	40	<div>44</div> <div>40</div>	3 << min
Tensile Properties (ASTM D 6693, 2 ipm strain rate)												
MD Yield Strength (ppi)	131	127	117	122	117						<div>123</div>	6
TD Yield Strength (ppi)	111	124	116	129	128						<div>122</div>	8
MD Break Strength (ppi)	126	97	101	107	154						<div>117</div>	23
TD Break Strength (ppi)	118	121	96	100	92						<div>105</div>	13
MD Yield Elongation (%)	18	17	17	17	17						<div>17</div>	0
TD Yield Elongation (%)	14	12	12	14	14						<div>13</div>	1
MD Break Elongation (%)	456	78	163	248	553						<div>299</div>	200
TD Break Elongation (%)	518	456	414	58	61						<div>301</div>	224
Puncture Resistance (ASTM D 4833)												
Puncture Strength (lbs)	101	99	105	107	108						<div>104</div>	4
Tear Resistance (ASTM D 1004)												
MD Tear Strength (lbs)	37	37	41	39	40	36	42	37	39	35	<div>38</div>	2
TD Tear Strength (lbs)	41	40	37	39	41	39	39	41	40	40	<div>40</div>	1
MD Machine Direction	TD Transverse Direction											

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GEOMEMBRANE TEST RESULTS

TRI Client: Geotechnology, Inc.
Project: Ameren Hutsonsville Power Station Ash Pond D Closure

Material: GSE 40 mil Textured HDPE Geomembrane
Sample Identification: 108162814
TRI Log #: E2366-36-03

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.
	1	2	3	4	5	6	7	8	9	10		
Thickness (ASTM D 5994)												
Thickness (mils)	47	43	47	44	44	37	46	40	41	43	<div>43</div> <div>37</div>	3 << min
Tensile Properties (ASTM D 6693, 2 ipm strain rate)												
MD Yield Strength (ppi)	115	119	119	115	126						<div>119</div>	4
TD Yield Strength (ppi)	120	117	123	128	131						<div>124</div>	6
MD Break Strength (ppi)	143	136	137	139	112						<div>133</div>	12
TD Break Strength (ppi)	110	91	97	108	107						<div>103</div>	8
MD Yield Elongation (%)	19	16	16	15	17						<div>17</div>	2
TD Yield Elongation (%)	15	13	14	13	14						<div>14</div>	1
MD Break Elongation (%)	519	454	469	504	190						<div>427</div>	135
TD Break Elongation (%)	425	99	261	304	158						<div>249</div>	128
Puncture Resistance (ASTM D 4833)												
Puncture Strength (lbs)	101	105	110	102	106						<div>105</div>	3
Tear Resistance (ASTM D 1004)												
MD Tear Strength (lbs)	40	39	39	41	38	38	42	39	40	38	<div>39</div>	1
TD Tear Strength (lbs)	39	39	37	37	41	36	40	37	36	39	<div>38</div>	2
MD Machine Direction	TD Transverse Direction											

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GEOMEMBRANE TEST RESULTS

TRI Client: Geotechnology, Inc.
Project: Ameren Hutsonsville Power Station Ash Pond D Closure

Material: GSE 40 mil Textured HDPE Geomembrane
Sample Identification: 108162820
TRI Log #: E2366-36-03

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.
	1	2	3	4	5	6	7	8	9	10		
Thickness (ASTM D 5994)												
Thickness (mils)	38	42	46	45	45	43	37	41	42	43	<div>42</div> <div>37</div>	3 << min
Tensile Properties (ASTM D 6693, 2 ipm strain rate)												
MD Yield Strength (ppi)	105	126	122	126	122						<div>120</div>	9
TD Yield Strength (ppi)	114	128	123	133	130						<div>126</div>	7
MD Break Strength (ppi)	114	117	147	62	124						<div>113</div>	31
TD Break Strength (ppi)	93	101	95	110	100						<div>100</div>	7
MD Yield Elongation (%)	15	14	16	14	17						<div>15</div>	1
TD Yield Elongation (%)	12	12	17	14	11						<div>13</div>	2
MD Break Elongation (%)	396	233	506	95	420						<div>330</div>	165
TD Break Elongation (%)	144	58	80	250	296						<div>166</div>	105
Puncture Resistance (ASTM D 4833)												
Puncture Strength (lbs)	106	99	103	105	107						<div>104</div>	3
Tear Resistance (ASTM D 1004)												
MD Tear Strength (lbs)	43	43	42	42	42	39	37	44	42	40	<div>41</div>	2
TD Tear Strength (lbs)	36	35	38	40	39	40	39	39	41	39	<div>39</div>	2
MD Machine Direction	TD Transverse Direction											

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GEOMEMBRANE TEST RESULTS

TRI Client: Geotechnology, Inc.
Project: Ameren Hutsonsville Power Station Ash Pond D Closure

Material: GSE 40 mil Textured HDPE Geomembrane
Sample Identification: 108162827
TRI Log #: E2366-36-03

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.
	1	2	3	4	5	6	7	8	9	10		
Thickness (ASTM D 5994)												
Thickness (mils)	42	39	41	42	39	46	45	42	37	40	41 37	3 << min
Tensile Properties (ASTM D 6693, 2 ipm strain rate)												
MD Yield Strength (ppi)	121	120	126	136	117						124	7
TD Yield Strength (ppi)	128	125	126	135	130						129	4
MD Break Strength (ppi)	126	130	139	122	106						125	12
TD Break Strength (ppi)	103	101	9*6	109	112						106	5
MD Yield Elongation (%)	15	15	15	15	15						15	0
TD Yield Elongation (%)	16	13	15	17	13						15	2
MD Break Elongation (%)	399	451	434	200	341						365	101
TD Break Elongation (%)	188	98	106	190	190						154	48
Puncture Resistance (ASTM D 4833)												
Puncture Strength (lbs)	104	105	101	97	107						103	4
Tear Resistance (ASTM D 1004)												
MD Tear Strength (lbs)	42	41	36	40	43	41	38	41	40	38	40	2
TD Tear Strength (lbs)	37	36	38	38	43	35	37	35	35	34	37	2
MD Machine Direction	TD Transverse Direction											

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GEOMEMBRANE TEST RESULTS

TRI Client: Geotechnology, Inc.
Project: Ameren Hutsonsville Power Station Ash Pond D Closure

Material: GSE 40 mil Textured HDPE Geomembrane
Sample Identification: 108162833
TRI Log #: E2366-36-03

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.
	1	2	3	4	5	6	7	8	9	10		
Thickness (ASTM D 5994)												
Thickness (mils)	42	44	43	41	45	40	42	48	40	41	<div>43</div> <div>40</div>	3 << min
Tensile Properties (ASTM D 6693, 2 ipm strain rate)												
MD Yield Strength (ppi)	121	130	134	122	117						<div>125</div>	7
TD Yield Strength (ppi)	124	123	126	129	128						<div>126</div>	3
MD Break Strength (ppi)	128	115	160	141	121						<div>133</div>	18
TD Break Strength (ppi)	99	81	116	89	101						<div>97</div>	13
MD Yield Elongation (%)	13	16	16	14	15						<div>15</div>	1
TD Yield Elongation (%)	23	13	16	15	15						<div>16</div>	4
MD Break Elongation (%)	349	240	504	459	421						<div>395</div>	103
TD Break Elongation (%)	140	110	454	83	126						<div>183</div>	153
Puncture Resistance (ASTM D 4833)												
Puncture Strength (lbs)	116	103	94	115	103						<div>106</div>	9
Tear Resistance (ASTM D 1004)												
MD Tear Strength (lbs)	40	44	39	40	45	42	39	37	37	39	<div>40</div>	3
TD Tear Strength (lbs)	42	39	39	42	44	39	43	41	43	41	<div>41</div>	2
MD Machine Direction	TD Transverse Direction											

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GEOMEMBRANE TEST RESULTS

TRI Client: Geotechnology, Inc.
Project: Ameren Hutsonsville Power Station Ash Pond D Closure

Material: GSE 40 mil Textured HDPE Geomembrane
Sample Identification: 108162839
TRI Log #: E2366-36-03

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.
	1	2	3	4	5	6	7	8	9	10		
Thickness (ASTM D 5994)												
Thickness (mils)	42	45	41	42	40	39	36	44	39	41	<div>41</div> <div>36</div>	3 << min
Tensile Properties (ASTM D 6693, 2 ipm strain rate)												
MD Yield Strength (ppi)	115	126	129	122	129						<div>124</div>	6
TD Yield Strength (ppi)	128	129	122	121	120						<div>124</div>	4
MD Break Strength (ppi)	103	121	141	123	113						<div>120</div>	14
TD Break Strength (ppi)	95	97	100	105	85						<div>96</div>	7
MD Yield Elongation (%)	16	16	16	12	16						<div>15</div>	2
TD Yield Elongation (%)	18	14	16	20	22						<div>18</div>	3
MD Break Elongation (%)	335	399	463	343	230						<div>354</div>	86
TD Break Elongation (%)	89	341	135	311	91						<div>194</div>	123
Puncture Resistance (ASTM D 4833)												
Puncture Strength (lbs)	104	98	101	97	107						<div>101</div>	4
Tear Resistance (ASTM D 1004)												
MD Tear Strength (lbs)	44	41	37	42	39	39	42	43	38	43	<div>41</div>	2
TD Tear Strength (lbs)	38	42	40	43	41	40	39	43	38	36	<div>40</div>	2
MD Machine Direction	TD Transverse Direction											

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GEOMEMBRANE TEST RESULTS

TRI Client: Geotechnology, Inc.
Project: Ameren Hutsonsville Power Station Ash Pond D Closure

Material: GSE 40 mil Textured HDPE Geomembrane
Sample Identification: 108162857
TRI Log #: E2366-36-03

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.
	1	2	3	4	5	6	7	8	9	10		
Thickness (ASTM D 5994)												
Thickness (mils)	43	46	41	44	42	48	44	41	36	40	<div>43</div> <div>36</div>	3 << min
Tensile Properties (ASTM D 6693, 2 ipm strain rate)												
MD Yield Strength (ppi)	118	129	132	127	122						<div>126</div>	6
TD Yield Strength (ppi)	126	125	128	121	122						<div>124</div>	3
MD Break Strength (ppi)	143	151	153	145	114						<div>141</div>	16
TD Break Strength (ppi)	103	99	98	101	99						<div>100</div>	2
MD Yield Elongation (%)	16	16	16	16	16						<div>16</div>	0
TD Yield Elongation (%)	22	17	15	19	19						<div>18</div>	3
MD Break Elongation (%)	529	511	510	473	243						<div>453</div>	119
TD Break Elongation (%)	354	156	109	446	178						<div>249</div>	144
Puncture Resistance (ASTM D 4833)												
Puncture Strength (lbs)	123	114	119	113	107						<div>115</div>	6
Tear Resistance (ASTM D 1004)												
MD Tear Strength (lbs)	45	40	43	41	44	42	40	45	38	38	<div>42</div>	3
TD Tear Strength (lbs)	36	37	37	37	38	38	41	39	39	37	<div>38</div>	1
MD Machine Direction	TD Transverse Direction											

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GEOMEMBRANE TEST RESULTS

TRI Client: Geotechnology, Inc.
Project: Ameren Hutsonsville Power Station Ash Pond D Closure

Material: GSE 40 mil Textured HDPE Geomembrane
Sample Identification: 108162863
TRI Log #: E2366-36-03

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.
	1	2	3	4	5	6	7	8	9	10		
Thickness (ASTM D 5994)												
Thickness (mils)	44	44	39	43	43	41	42	44	41	43	<div>42</div> <div>39</div>	2 << min
Tensile Properties (ASTM D 6693, 2 ipm strain rate)												
MD Yield Strength (ppi)	103	116	120	120	113						<div>114</div>	7
TD Yield Strength (ppi)	126	117	122	113	124						<div>120</div>	5
MD Break Strength (ppi)	128	114	110	154	106						<div>122</div>	20
TD Break Strength (ppi)	91	121	90	123	91						<div>103</div>	17
MD Yield Elongation (%)	15	15	15	15	13						<div>15</div>	1
TD Yield Elongation (%)	20	16	16	16	19						<div>17</div>	2
MD Break Elongation (%)	453	404	326	516	109						<div>362</div>	157
TD Break Elongation (%)	208	500	114	454	196						<div>294</div>	171
Puncture Resistance (ASTM D 4833)												
Puncture Strength (lbs)	106	102	109	96	104						<div>103</div>	5
Tear Resistance (ASTM D 1004)												
MD Tear Strength (lbs)	41	41	42	42	43	46	43	42	41	42	<div>42</div>	1
TD Tear Strength (lbs)	39	37	40	38	39	38	36	39	38	37	<div>38</div>	1
MD Machine Direction	TD Transverse Direction											

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Shipping Order – Packing List – Original – Not Negotiable

Page 1 of 1

GSE Lining Technology, LLC. Houston, TX

Number BL-0061991

Received at Houston, TX from GSE Lining Technology, LLC the property described below, in apparent good order, except as noted (contents and condition of packages unknown), marked, consigned, and destined as indicated below, which said Carrier agrees to carry to the place of delivery at said destination. It is mutually agreed as to each Carrier of all or any said property, over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service performed hereunder shall be subject to the rates and contract agreed to in writing by GSE Lining Technology, LLC and Carrier. GSE Lining Technology, LLC's obligation to pay freight charges for the shipment is conditioned on (1) the existence of a separate written contract with the carrier transporting the freight and (2) the carrier's name appearing on this Bill of Lading, and other carriers must look solely to a party other than GSE Lining Technology, LLC for payment.

Ship to: CCS/Ameren Hutsonville Ash Pond D 15142 East 1900th Avenue Randy Porter 502-554-5230 Hutsonville, IL 62433	Roll Certifications Included	Ship date: Apr/28/2012 Branch plant: 1500 Sales order: SO-066934
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Shipping instructions: 24 hr and 1 hr PRECALL REQUIRED. all trucks subject to inspection. No weapons, drugs, alcohol, pets, riders, etc. PPE equipment – Hardhat, safety glasses, High Vis Vest, sleeved shirt, long pants, steel toe boots.

Line no.	Shipped quantity	Product code	UM	Kind of Package, Description of Articles, Special Marks and Exceptions	Weight	Project
1	189,000	HDT-040GE-BBB-B-W0	SF	GSE HD 2S Textured 040 mil GM13 22.5' W		Freight charges are prepaid unless marked collect.
2				108162783 GSE HD 2S Textured 040 mil GM13 22.5' W	3,690.00	Check box if collect <input type="checkbox"/>
3				108162784 GSE HD 2S Textured 040 mil GM13 22.5' W	3,710.00	
4				108162792 GSE HD 2S Textured 040 mil GM13 22.5' W	3,690.00	
5				108162794 GSE HD 2S Textured 040 mil GM13 22.5' W	3,720.00	
6				108162801 GSE HD 2S Textured 040 mil GM13 22.5' W	3,710.00	Customer PO number
7				108162802 GSE HD 2S Textured 040 mil GM13 22.5' W	3,690.00	12-039
8				108162803 GSE HD 2S Textured 040 mil GM13 22.5' W	3,670.00	If this shipment is to be delivered to consignee, consignor shall sign the following statement. Carrier may decline to deliver this shipment without payment of freight and all other lawful charges.
9				108162805 GSE HD 2S Textured 040 mil GM13 22.5' W	3,655.00	
10				108162806 GSE HD 2S Textured 040 mil GM13 22.5' W	3,645.00	
11				108162809 GSE HD 2S Textured 040 mil GM13 22.5' W	3,640.00	
12				108162835 GSE HD 2S Textured 040 mil GM13 22.5' W	3,605.00	Signature of Consignor
13	1	FREIGHTSHT001	EA	108162842 GSE HD 2S Textured 040 mil GM13 22.5' W DOM. SHIPPING CHARGE	3,595.00	
				DOM. SHIPPING CHARGE	0.00	Local Verification Signed
						X _____
						PRO Number
						RR041380
						Seal numbers
						Truckers P.O. #
						PO2000
Total quantity:		189,001		Total weight:	44,020.00	

Driver requirements: 1) Driver must pre call 24 hrs prior to delivery and on Friday for Monday delivery. 2) Driver must call (281) 230-6781 when unloaded. 3) Driver must call and advise any delay in transit. 4) A copy of this bill of lading must accompany Freight Invoice.	Carrier name: Landstar Carrier signature: _____ Date: _____
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GSE Lining Technology, LLC

ENVIRONMENTAL™

ROLL TEST DATA REPORT



Report Date: Apr/28/2012

Sales Order No. SO-066934	Customer Name Chesapeake Containment Systems, Inc.	Project Location Hutsonville IL US	Product Name HDT-040GE-BBB-B-WO	BOL Number BL-0061991
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Roll Number	Average Thickness ASTM D5694 (mil)	Minimum Thickness ASTM D5694 (mil)	Yield Strength ASTM D6683 (psi)	Yield Elongation ASTM D6683 (%)	Yield Elongation ASTM D6683 (%)	Brack Strength ASTM D6683 (psi)	Brack Elongation ASTM D6683 (%)	Brack Elongation ASTM D6683 (%)	Tear Resistance ASTM D1004 (psi)	Tear Resistance ASTM D1004 (psi)	Puncture Resistance ASTM D4833 (psi)	Density ASTM D1505 (g/cc)	Carbon Black Content ASTM D4218 (%)	Carbon Black Dispersion ASTM D5266 (Views in Cat1-Cat2)	Asperity Height ASTM D512 (mil) Side A	Asperity Height ASTM D512 (mil) Side B
108162783	38	35	104	17	16	138	120	513	477	40	36	106	0.944	10	22	20
108162784	39	34	104	17	16	138	120	513	477	40	36	106	0.944	10	22	20
108162792	38	37	113	17	16	141	118	521	404	39	39	107	0.944	10	21	21
108162794	39	36	111	17	17	144	131	534	544	40	37	110	0.944	9	21	21
108162801	39	34	106	17	16	132	107	455	324	38	36	111	0.944	10	21	20
108162802	38	35	105	17	17	138	113	524	422	39	36	106	0.944	10	21	20
108162803	39	35	105	17	17	138	113	524	422	39	36	106	0.944	10	21	20
108162805	39	35	106	17	16	142	103	533	388	38	35	114	0.944	10	21	20
108162806	39	34	106	17	16	142	103	533	388	38	35	114	0.944	10	21	19
108162809	38	35	111	17	17	148	113	543	392	39	39	110	0.946	10	20	19
108162835	38	35	124	16	16	132	102	394	255	42	41	110	0.946	10	23	22
108162842	39	34	113	16	16	120	109	312	313	37	41	109	0.945	10	23	24

Laboratory Manager

Jane Allen

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19103 Gundale Road Houston, TX 77073



Shipping Order – Packing List – Original – Not Negotiable

Page1 of1

GSE Lining Technology, LLC. Houston, TX

Number BL-0061981

Received at Houston, TX from GSE Lining Technology, LLC the property described below, in apparent good order, except as noted (contents and condition of packages unknown), marked, consigned, and destined as indicated below, which said Carrier agrees to carry to the place of delivery at said destination. It is mutually agreed as to each Carrier of all or any said property, over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service performed hereunder shall be subject to the rates and contract agreed to in writing by GSE Lining Technology, LLC and Carrier. GSE Lining Technology, LLC's obligation to pay freight charges for the shipment is conditioned on (1) the existence of a separate written contract with the carrier transporting the freight and (2) the carrier's name appearing on this Bill of Lading, and other carriers must look solely to a party other than GSE Lining Technology, LLC for payment.

Ship to: CCS/Ameren Hutsonville Ash Pond D 15142 East 1900th Avenue Randy Porter 502-554-5230 Hutsonville, IL 62433	Ship date: Apr/27/2012 Branch plant: 1500 Sales order: SO-066934
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Shipping instructions: 24 hr and 1 hr PRECALL REQUIRED. all trucks subject to inspection. No weapons, drugs, alcohol, pets, riders, etc. PPE equipment – Hardhat, safety glasses, High Vis Vest, sleeved shirt, long pants, steel toe boots.

Line no.	Shipped quantity	Product code	UM	Kind of Package, Description of Articles, Special Marks and Exceptions	Weight	Project
	189,000	HDT-040GE-BBB-B-W0	SF	GSE HD 2S Textured 040 mil GM13 22.5' W		Freight charges are prepaid unless marked collect.
1				108162804 GSE HD 2S Textured 040 mil GM13 22.5' W	3,650.00	Check box if collect <input type="checkbox"/>
2				108162807 GSE HD 2S Textured 040 mil GM13 22.5' W	3,650.00	
3				108162813 GSE HD 2S Textured 040 mil GM13 22.5' W	3,635.00	
4				108162815 GSE HD 2S Textured 040 mil GM13 22.5' W	3,665.00	Customer PO number 12-039
5				108162818 GSE HD 2S Textured 040 mil GM13 22.5' W	3,625.00	
6				108162819 GSE HD 2S Textured 040 mil GM13 22.5' W	3,625.00	If this shipment is to be delivered to consignee, consignor shall sign the following statement. Carrier may decline to deliver this shipment without payment of freight and all other lawful charges.
7				108162829 GSE HD 2S Textured 040 mil GM13 22.5' W	3,585.00	
8				108162830 GSE HD 2S Textured 040 mil GM13 22.5' W	3,585.00	
9				108162831 GSE HD 2S Textured 040 mil GM13 22.5' W	3,590.00	
10				108162832 GSE HD 2S Textured 040 mil GM13 22.5' W	3,590.00	Signature of Consignor
11				108162833 GSE HD 2S Textured 040 mil GM13 22.5' W	3,615.00	
12				108162839 GSE HD 2S Textured 040 mil GM13 22.5' W	3,600.00	
	1	FREIGHTSHT001	EA	DOM. SHIPPING CHARGE		Local Verification Signed X
13				DOM. SHIPPING CHARGE	0.00	PRO Number RR041382
						Seal numbers
						Truckers P.O. # PO2100
Total quantity:		189,001		Total weight:	43,415.00	

Driver requirements: 1) Driver must pre call 24 hrs prior to delivery and on Friday for Monday delivery. 2) Driver must call (281) 230-6781 when unloaded. 3) Driver must call and advise any delay in transit. 4) A copy of this bill of lading must accompany Freight Invoice.	Carrier name: JH Rose Logistics, LLC Carrier signature: _____ Date: _____
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ROLL TEST DATA REPORT



Report Date: Apr/27/2012

Sales Order No. SO-066934	Customer Name Chesapeake Containment Systems, Inc.	Project Location Hutsonville IL US	Product Name HDT-040GE-BBB-B-W0	BOL Number BL-0061981
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Roll Number	Average Thickness (mils) D5594	Minimum Thickness (mils) D5594	Yield Strength ASTM D6654 (psi) MD	Yield Elongation ASTM D6654 (%) MD	Yield Elongation ASTM D6654 (%) TD	Break Strength ASTM D6654 (psi) MD	Break Elongation ASTM D6654 (%) MD	Break Elongation ASTM D6654 (%) TD	Tear Resistance D1004 (lbs) MD	Tear Resistance C1004 (lbs) TD	Puncture Resistance ASTM D4633 (lbs)	Density ASTM D1505 (g/cc)	Carbon Black Content ASTM D4218 (%)	Carbon Black Dispersion D5593 (Views in Cat1-Cat2)	Aspall Height GRI GM12 (mils) Side A	Aspall Height GRI GM12 (mils) Side B
108162804	39	35	105	17	17	138	113	524	39	36	106	0.944	2.39	10	21	20
108162807	38	35	106	17	16	142	103	533	38	35	114	0.944	2.45	10	21	19
108162813	39	34	116	16	16	151	111	547	40	39	111	0.946	2.49	10	22	20
108162815	39	35	117	17	16	140	105	511	43	39	108	0.946	2.34	10	21	21
108162818	39	36	121	16	16	135	105	472	41	40	110	0.946	2.46	10	21	21
108162819	39	34	121	16	16	135	105	472	41	40	110	0.946	2.46	10	21	21
108162829	39	35	105	17	16	115	100	363	38	36	106	0.945	2.41	10	24	23
108162830	39	35	116	17	16	128	88	449	40	38	108	0.945	2.38	10	22	21
108162831	39	35	116	17	16	128	88	449	40	38	108	0.945	2.38	10	22	21
108162832	39	35	116	17	16	128	88	449	40	38	108	0.945	2.38	10	23	22
108162833	39	35	124	16	16	132	102	394	42	41	110	0.946	2.37	10	23	22
108162839	38	35	111	16	16	126	96	444	42	39	107	0.945	2.38	10	22	21

Laboratory Manager



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19103 Gundle Road Houston, TX 77073



Shipping Order – Packing List – Original – Not Negotiable

Page1 of1

GSE Lining Technology, LLC. Houston, TX

Number BL-0061960

Received at Houston, TX from GSE Lining Technology, LLC the property described below, in apparent good order, except as noted (contents and condition of packages unknown), marked, consigned, and destined as indicated below, which said Carrier agrees to carry to the place of delivery at said destination. It is mutually agreed as to each Carrier of all or any said property, over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service performed hereunder shall be subject to the rates and contract agreed to in writing by GSE Lining Technology, LLC and Carrier. GSE Lining Technology, LLC's obligation to pay freight charges for the shipment is conditioned on (1) the existence of a separate written contract with the carrier transporting the freight and (2) the carrier's name appearing on this Bill of Lading, and other carriers must look solely to a party other than GSE Lining Technology, LLC for payment.

Ship to: CCS/Ameren Hutsonville Ash Pond D 15142 East 1900th Avenue Randy Porter 502-554-5230 Hutsonville, IL 62433	Roll Certifications Included	Ship date: Apr/27/2012 Branch plant: 1500 Sales order: SO-066934
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Shipping instructions: 24 hr and 1 hr PRECALL REQUIRED. all trucks subject to inspection. No weapons, drugs, alcohol, pets, riders, etc. PPE equipment – Hardhat, safety glasses, High Vis Vest, sleeved shirt, long pants, steel toe boots.

Line no.	Shipped quantity	Product code	UM	Kind of Package, Description of Articles, Special Marks and Exceptions	Weight	Project
1	189,000	HDT-040GE-BBB-B-W0	SF	GSE HD 2S Textured 040 mil GM13 22.5' W	3,575.00	Freight charges are prepaid unless marked collect. Check box if collect <input type="checkbox"/> Customer PO number 12-039 If this shipment is to be delivered to consignee, consignor shall sign the following statement. Carrier may decline to deliver this shipment without payment of freight and all other lawful charges. _____ Signature of Consignor Local Verification Signed X _____ PRO Number RR041384 Seal numbers Truckers P.O. # PO2000
2				108162776 GSE HD 2S Textured 040 mil GM13 22.5' W	3,600.00	
3				108162778 GSE HD 2S Textured 040 mil GM13 22.5' W	3,650.00	
4				108162779 GSE HD 2S Textured 040 mil GM13 22.5' W	3,660.00	
5				108162785 GSE HD 2S Textured 040 mil GM13 22.5' W	3,720.00	
6				108162787 GSE HD 2S Textured 040 mil GM13 22.5' W	3,725.00	
7				108162789 GSE HD 2S Textured 040 mil GM13 22.5' W	3,715.00	
8				108162791 GSE HD 2S Textured 040 mil GM13 22.5' W	3,700.00	
9				108162793 GSE HD 2S Textured 040 mil GM13 22.5' W	3,690.00	
10				108162808 GSE HD 2S Textured 040 mil GM13 22.5' W	3,640.00	
11				108162812 GSE HD 2S Textured 040 mil GM13 22.5' W	3,660.00	
12				108162814 GSE HD 2S Textured 040 mil GM13 22.5' W	3,650.00	
	1	FREIGHTSHT001	EA	DOM. SHIPPING CHARGE		
13				DOM. SHIPPING CHARGE	0.00	
Total quantity:		189,001		Total weight:	43,985.00	

Driver requirements: 1) Driver must pre call 24 hrs prior to delivery and on Friday for Monday delivery. 2) Driver must call (281) 230-6781 when unloaded. 3) Driver must call and advise any delay in transit. 4) A copy of this bill of lading must accompany Freight Invoice.	Carrier name: Access America Transport Carrier signature: _____ Date: _____
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GSE Lining Technology, LLC.

ROLL TEST DATA REPORT



ENVIRONMENTAL™

Report Date: Apr/27/2012

Sales Order No. SO-066934	Customer Name Chesapeake Containment Systems, Inc.	Project Location Hutsonville IL US	Product Name HDT-040GE-BBB-B-W0	BOL Number BL-0061960
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Roll Number	Average Thickness D5594 (mils)	Minimum Thickness D5594 (mils)	Yield Strength ASTM D6693 (psi) TD	Yield Elongation ASTM D6693 (%) MD	Yield Elongation ASTM D6693 (%) TD	Break Strength ASTM D6693 (psi) MD	Break Strength ASTM D6693 (psi) TD	Break Elongation ASTM D6693 (%) MD	Break Elongation ASTM D6693 (%) TD	Tear Resistance ASTM D1004 (lbs) MD	Tear Resistance ASTM D1004 (lbs) TD	Puncture Resistance ASTM D4833 (lbs)	Density ASTM D1505 (g/cc)	Carbon Black ASTM D4218 (%)	Carbon Black Dispersion ASTM D4218 (%) (Views in Cat1-Cat2)	Asperity Height ASTM GM12 (mils) Side A	Asperity Height ASTM GM12 (mils) Side B
108162776	39	36	104	17	16	127	95	483	311	38	35	103	0.944	2.37	10	21	21
108162777	39	36	104	17	16	127	95	483	311	38	35	103	0.944	2.33	10	21	21
108162778	39	36	103	17	16	143	110	573	473	38	37	110	0.944	2.33	10	21	21
108162779	39	34	103	17	16	143	110	573	473	38	37	110	0.944	2.33	10	22	19
108162785	39	35	104	17	16	138	120	513	477	40	36	106	0.944	2.36	10	21	20
108162787	39	35	101	17	16	130	104	516	437	36	36	106	0.944	2.51	10	21	20
108162789	39	34	101	17	16	130	104	516	437	36	36	106	0.944	2.51	10	21	20
108162791	39	36	113	17	16	141	118	521	404	39	39	107	0.944	2.40	10	21	21
108162793	39	37	111	17	17	144	131	534	544	40	37	110	0.944	2.53	9	21	21
108162808	39	35	111	17	17	148	113	543	392	39	39	110	0.946	2.24	10	23	22
108162812	40	35	116	16	16	151	111	547	315	40	39	111	0.946	2.49	10	22	20
108162814	39	34	117	17	16	140	105	511	300	43	39	108	0.946	2.34	10	21	21

Laboratory Manager

Jane Allen

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GSE Lining Technology, LLC.

ENVIRONMENTAL™

ROLL TEST DATA REPORT



Report Date: Apr/28/2012

Sales Order No. SO-066934	Customer Name Chesapeake Containment Systems, Inc.	Project Location Hutsonville IL US	Product Name HDT-040GE-BBB-B-W0	BOL Number BL-0061993
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Roll Number	Average Thickness ASTM D5894 (mils)	Minimum Thickness ASTM D5894 (mils)	Yield Strength ASTM D6953 (psi)	Yield Elongation ASTM D6953 (%)	Yield Elongation ASTM D6953 (%)	Break Strength ASTM D6953 (psi)	Break Elongation ASTM D6953 (%)	Break Elongation ASTM D6953 (%)	Tear Resistance ASTM D1004 (lbs)	Tear Resistance ASTM D1004 (lbs)	Puncture Resistance ASTM D4633 (lbs)	Density ASTM D1505 (g/cc)	Carbon Black Content ASTM D4218 (%)	Carbon Black		Aspirity Height GRI GM12 (mils) Side A	Aspirity Height GRI GM12 (mils) Side B
														Dispersion ASTM D5596 (Views in Cell-Cat2)	Carbon Black ASTM D4218 (%)		
108162780	38	35	104	112	17	142	107	560	356	39	37	110	0.944	2.34	10	22	19
108162786	39	35	104	113	17	138	120	513	477	40	36	106	0.944	2.36	10	21	20
108162827	39	34	105	111	17	115	100	363	246	38	36	106	0.945	2.41	10	24	24
108162841	39	35	111	119	16	126	96	444	201	42	39	107	0.945	2.38	10	22	21
108162855	38	35	110	110	17	107	94	211	202	41	38	112	0.945	2.34	10	25	27
108162856	38	34	116	122	17	147	115	493	339	43	41	111	0.945	2.48	10	26	27
108162857	39	35	116	122	17	147	115	493	339	43	41	111	0.945	2.48	10	23	27
108162858	40	37	116	122	17	147	115	493	339	43	41	111	0.945	2.48	10	21	22
108162864	38	34	117	118	16	138	98	470	292	40	37	106	0.945	2.28	10	23	21
108162866	38	34	113	120	16	120	109	312	313	37	41	109	0.945	2.22	10	21	21
108162867	39	35	113	120	16	120	109	312	313	37	41	109	0.945	2.22	10	22	21
108162868	39	35	121	130	17	135	101	461	210	43	40	112	0.945	2.30	10	22	21

Laboratory Manager

Jane Allen



Shipping Order – Packing List – Original – Not Negotiable

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GSE Lining Technology, LLC. Houston, TX

Number BL-0061992

Received at Houston, TX from GSE Lining Technology, LLC the property described below, in apparent good order, except as noted (contents and condition of packages unknown), marked, consigned, and destined as indicated below, which said Carrier agrees to carry to the place of delivery at said destination. It is mutually agreed as to each Carrier of all or any said property, over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service performed hereunder shall be subject to the rates and contract agreed to in writing by GSE Lining Technology, LLC and Carrier. GSE Lining Technology, LLC's obligation to pay freight charges for the shipment is conditioned on (1) the existence of a separate written contract with the carrier transporting the freight and (2) the carrier's name appearing on this Bill of Lading, and other carriers must look solely to a party other than GSE Lining Technology, LLC for payment.

Ship to: CCS/Ameren Hutsonville Ash Pond D 15142 East 1900th Avenue Randy Porter 502-554-5230 Hutsonville, IL 62433	Roll Certifications Included	Ship date: Apr/28/2012 Branch plant: 1500 Sales order: SO-066934
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Shipping instructions: 24 hr and 1 hr PRECALL REQUIRED. all trucks subject to inspection. No weapons, drugs, alcohol, pets, riders, etc. PPE equipment – Hardhat, safety glasses, High Vis Vest, sleeved shirt, long pants, steel toe boots.

Line no.	Shipped quantity	Product code	UM	Kind of Package, Description of Articles, Special Marks and Exceptions	Weight	Project
	189,000	HDT-040GE-BBB-B-W0	SF	GSE HD 2S Textured 040 mil GM13 22.5' W		Freight charges are prepaid unless marked collect.
1				108162781 GSE HD 2S Textured 040 mil GM13 22.5' W	3,685.00	Check box if collect <input type="checkbox"/>
2				108162782 GSE HD 2S Textured 040 mil GM13 22.5' W	3,700.00	
3				108162788 GSE HD 2S Textured 040 mil GM13 22.5' W	3,720.00	
4				108162790 GSE HD 2S Textured 040 mil GM13 22.5' W	3,675.00	Customer PO number 12-039
5				108162821 GSE HD 2S Textured 040 mil GM13 22.5' W	3,610.00	
6				108162836 GSE HD 2S Textured 040 mil GM13 22.5' W	3,640.00	
7				108162859 GSE HD 2S Textured 040 mil GM13 22.5' W	3,710.00	If this shipment is to be delivered to consignee, consignor shall sign the following statement.
8				108162860 GSE HD 2S Textured 040 mil GM13 22.5' W	3,720.00	
9				108162861 GSE HD 2S Textured 040 mil GM13 22.5' W	3,700.00	
10				108162862 GSE HD 2S Textured 040 mil GM13 22.5' W	3,670.00	Carrier may decline to deliver this shipment without payment of freight and all other lawful charges.
11				108162863 GSE HD 2S Textured 040 mil GM13 22.5' W	3,660.00	
12				108162865 GSE HD 2S Textured 040 mil GM13 22.5' W	3,670.00	
	1	FREIGHTSHT001	EA	DOM. SHIPPING CHARGE		Signature of Consignor
13				DOM. SHIPPING CHARGE	0.00	Local Verification Signed X
Total quantity: 189,001					Total weight: 44,160.00	Truckers P.O. # PO2000

Driver requirements:**Carrier name:** JH Rose Logistics, LLC

- 1) Driver must pre call 24 hrs prior to delivery and on Friday for Monday delivery.
- 2) Driver must call (281) 230-6781 when unloaded.
- 3) Driver must call and advise any delay in transit.
- 4) A copy of this bill of lading must accompany Freight Invoice.

Carrier signature: _____**Date:** _____



GSE Lining Technology, LLC.

ROLL TEST DATA REPORT

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ENVIRONMENTAL™

Report Date: Apr/28/2012

Sales Order No. SO-066934	Customer Name Chesapeake Containment Systems, Inc.	Project Location Hutsonville IL US	Product Name HDT-040GE-BBB-B-W0	BOL Number BL-0061992
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Roll Number	Average Thickness ASTM D5954 (mil)	Minimum Thickness ASTM D5954 (mil)	Yield Strength ASTM D883 (psi)	Yield Elongation ASTM D883 (%)	Yield Elongation ASTM D883 (%)	Break Strength ASTM D883 (psi)	Break Elongation ASTM D883 (%)	Break Elongation ASTM D883 (%)	Tear Resistance ASTM D1004 (psi)	Tear Resistance ASTM D1004 (psi)	Puncture Resistance ASTM D433 (psi)	Density ASTM D1505 (g/cc)	Carbon Content ASTM D4218 (%)	Carbon Black Dispersion ASTM D598 (Views in Cat1-Cat2)	Asp. Height GM12 (in)	Asp. Height GM12 (in)
108162781	38	35	104	112	17	107	560	356	39	37	110	0.944	2.34	10	21	19
108162782	39	35	104	112	17	107	560	356	39	37	110	0.944	2.34	10	21	19
108162788	38	35	101	104	17	104	516	437	36	36	106	0.944	2.51	10	21	20
108162790	39	37	113	118	17	118	521	404	39	39	107	0.944	2.40	10	21	20
108162821	39	35	112	118	16	101	492	279	40	43	112	0.946	2.45	10	23	22
108162836	39	36	117	123	16	99	416	275	41	38	107	0.945	2.44	10	22	22
108162859	39	36	110	115	17	93	414	256	40	38	107	0.945	2.39	10	21	21
108162860	40	37	110	115	17	93	414	256	40	38	107	0.945	2.39	10	21	21
108162861	38	34	110	115	17	93	414	256	40	38	107	0.945	2.39	10	22	21
108162862	39	36	117	118	16	98	470	292	40	37	106	0.945	2.28	10	22	21
108162863	38	35	117	118	16	98	470	292	40	37	106	0.945	2.28	10	23	21
108162865	39	34	113	120	16	109	312	313	37	41	109	0.945	2.22	10	21	21

Laboratory Manager

Jane Allen

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19103 Gundlie Road Houston, TX 77073

GSE-8.2.4-029 Rev01 -- 02/10



Shipping Order – Packing List – Original – Not Negotiable

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GSE Lining Technology, LLC. Houston, TX

Number BL-0061976

Received at Houston, TX from GSE Lining Technology, LLC the property described below, in apparent good order, except as noted (contents and condition of packages unknown), marked, consigned, and destined as indicated below, which said Carrier agrees to carry to the place of delivery at said destination. It is mutually agreed as to each Carrier of all or any said property, over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service performed hereunder shall be subject to the rates and contract agreed to in writing by GSE Lining Technology, LLC and Carrier. GSE Lining Technology, LLC's obligation to pay freight charges for the shipment is conditioned on (1) the existence of a separate written contract with the carrier transporting the freight and (2) the carrier's name appearing on this Bill of Lading, and other carriers must look solely to a party other than GSE Lining Technology, LLC for payment.

Ship to: CCS/Ameren Hutsonville Ash Pond D
15142 East 1900th Avenue
Randy Porter 502-554-5230
Hutsonville, IL 62433

**Roll Certifications
Included**

Ship date: Apr/27/2012
Branch plant: 1500
Sales order: SO-066934

Shipping instructions: 24 hr and 1 hr PRECALL REQUIRED. all trucks subject to inspection. No weapons, drugs, alcohol, pets, riders, etc. PPE equipment – Hardhat, safety glasses, High Vis Vest, sleeved shirt, long pants, steel toe boots.

Line no.	Shipped quantity	Product code	UM	Kind of Package, Description of Articles, Special Marks and Exceptions	Weight	Project
	189,000	HDT-040GE-BBB-B-W0	SF	GSE HD 2S Textured 040 mil GM13 22.5' W		Freight charges are prepaid unless marked collect.
1				108162816 GSE HD 2S Textured 040 mil GM13 22.5' W	3,670.00	Check box if collect <input type="checkbox"/>
2				108162817 GSE HD 2S Textured 040 mil GM13 22.5' W	3,630.00	
3				108162820 GSE HD 2S Textured 040 mil GM13 22.5' W	3,615.00	
4				108162822 GSE HD 2S Textured 040 mil GM13 22.5' W	3,640.00	Customer PO number 12-039
5				108162823 GSE HD 2S Textured 040 mil GM13 22.5' W	3,690.00	
6				108162824 GSE HD 2S Textured 040 mil GM13 22.5' W	3,575.00	If this shipment is to be delivered to consignee, consignor shall sign the following statement. Carrier may decline to deliver this shipment without payment of freight and all other lawful charges.
7				108162825 GSE HD 2S Textured 040 mil GM13 22.5' W	3,590.00	
8				108162828 GSE HD 2S Textured 040 mil GM13 22.5' W	3,580.00	
9				108162834 GSE HD 2S Textured 040 mil GM13 22.5' W	3,615.00	
10				108162837 GSE HD 2S Textured 040 mil GM13 22.5' W	3,625.00	Signature of Consignor Local Verification Signed X
11				108162838 GSE HD 2S Textured 040 mil GM13 22.5' W	3,620.00	
12				108162840 GSE HD 2S Textured 040 mil GM13 22.5' W	3,605.00	
	1	FREIGHTSHT001	EA	DOM. SHIPPING CHARGE		PRO Number RR041379
13				DOM. SHIPPING CHARGE	0.00	Seal numbers
Total quantity: 189,001					Total weight: 43,455.00	Truckers P.O. # PO2200

Driver requirements:

- 1) Driver must pre call 24 hrs prior to delivery and on Friday for Monday delivery.
- 2) Driver must call (281) 230-6781 when unloaded.
- 3) Driver must call and advise any delay in transit.
- 4) A copy of this bill of lading must accompany Freight Invoice.

Carrier name: C. H. Robinson International,

Carrier signature: _____

Date: _____



GSE Lining Technology, LLC.

ROLL TEST DATA REPORT



Report Date: Apr/27/2012

Sales Order No. SO-066934	Customer Name Chesapeake Containment Systems, Inc.	Project Location Hutsonville IL US	Product Name HDT-040GE-BBB-B-WO	BOL Number BL-0061976
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Roll Number	Average Thickness ASTM D5694 (mils)	Minimum Thickness ASTM D5694 (mils)	Yield Strength ASTM D6693 (psi)	Yield Strength ASTM D6693 (psi)	Yield Elongation ASTM D6693 (%)	Yield Elongation ASTM D6693 (%)	Break Strength ASTM D6693 (psi)	Break Elongation ASTM D6693 (%)	Break Elongation ASTM D6693 (%)	Tear Resistance ASTM D1004 (lb/ft)	Tear Resistance ASTM D1004 (lb/ft)	Puncture Resistance ASTM D4833 (lbs)	Density ASTM D1505 (g/cc)	Carbon Content ASTM D4218 (%)	Carbon Black Dispersion ASTM D5006 (Views in Cat1-Cat2)	Agency Test ASTM G12 (mils) Side A	Agency Test ASTM G12 (mils) Side B
108162816	39	35	117	124	17	16	105	511	300	43	39	108	0.946	2.34	10	21	22
108162817	39	34	121	123	16	16	105	472	267	41	40	110	0.946	2.46	10	21	22
108162820	40	36	112	118	16	16	101	492	279	40	43	112	0.946	2.45	10	23	22
108162822	40	36	112	118	16	16	101	492	279	40	43	112	0.946	2.45	10	23	21
108162823	40	36	107	112	16	16	105	393	400	41	39	107	0.946	2.35	10	23	21
108162824	40	36	107	112	16	16	105	393	400	41	39	107	0.946	2.35	10	22	21
108162825	39	35	107	112	16	16	105	393	400	41	39	107	0.946	2.35	10	22	21
108162828	39	34	105	111	17	16	100	363	246	38	36	106	0.945	2.41	10	24	23
108162834	38	35	124	127	16	16	102	394	255	42	41	110	0.946	2.37	10	23	22
108162837	38	35	117	123	16	16	99	416	275	41	38	107	0.945	2.44	10	22	22
108162838	38	35	117	123	16	16	99	416	275	41	38	107	0.945	2.44	10	22	21
108162840	38	34	111	119	16	16	96	444	201	42	39	107	0.945	2.38	10	22	21

Laboratory Manager

Jane Allen

This test report shall not be reproduced, except in full, without written approval of the laboratory.

19103 Gundlie Road Houston, TX 77073



Ash Management Services, LLC
12601 Plantside Drive
Louisville, Kentucky 40299
Phone: 502-245-1353

Hutsonville APD Closure

HUT-APD-SUB-030-02

Geomembrane-liner-close-out [REVISED]

- 02800-1.4.A.6 Material Warranty and Liner Installation Warranty**
- 02800-1.4.C.1 Manufacturer Warranty**
- 02800-1.4.C.2 Geomembrane Installation Warranty**
- 02800-1.4.C.9 Installation Record Drawing**

Submittal Information

<u>Submittal No.</u>	<u>Date</u>	<u>Contact</u>	<u>Phone no.</u>
SUB-030-02	2012-08-10	Paul Zinsious AMS	502-640-2918

SHOP DRAWING / SUBMITTAL REVIEW

Shop drawing/submittal review is for design conformity and general conformance with the design concept of the project as given in the contract documents. Subcontractor is responsible for full compliance with contract documents, confirming and correcting all quantities, correlating dimensions at project work site for tolerance, clearance, fabrication process, and techniques of construction. Subcontractor is responsible for coordination of his work with that of all other trades, and performance of the work in a safe and satisfactory manner.

<input checked="" type="checkbox"/>	Reviewed.	2012-08-10	Date
<input type="checkbox"/>	Reviewed with corrections.		
<input type="checkbox"/>	Revise and resubmit.		By
<input type="checkbox"/>	Rejected. See Remarks.		

Paul H. Zinsious, PMP

From: Ryan Clark <rclark@ccsliners.com>
Sent: Thursday, August 09, 2012 3:12 PM
To: Saindon, Anna
Cc: Paul H. Zinsious, PMP
Subject: RE: Questions regarding the Hutsonville geomembrane CQA report
Attachments: hutsonville closeout package rev 080912.pdf

Categories: Purple Category

Please see attached and comments below in red.

Thanks

Ryan P. Clark
Chesapeake containment Systems, Inc
352 Earls Road
Middle River, MD 21220
Ph: 410-335-5886
Fax: 443-303-1682
Cell: 410-913-3390
Web: www.ccsliners.com

From: Saindon, Anna [mailto:A_Saindon@geotechnology.com]
Sent: Thursday, August 09, 2012 8:45 AM
To: Ryan Clark
Cc: pzinsious@ashmanagementservices.com
Subject: Questions regarding the Hutsonville geomembrane CQA report

Good morning,

We noticed a few inconsistencies about the Ameren Hutsonville CQA report. Please review the following:

Record Layout Drawing:

- DS-7 should be labeled DS-7A and 7B- **Drawing revised to show A and B**
- DS-19 should be labeled DS-19A and 19B- **Drawing revised to show A and B**
- DS-31 is not labeled- **Revised to show DS location**
- DS-45 is shown on P64/P65 but forms show it at P70/P71- **Drawing and repair log showed correct location for DS-45, revised destruct log to actual location**
- DS-71 is labeled P90/P95 in the table and P95/P96 on layout- **Drawing and repair log showed correct location for DS-71, revised destruct log to show actual location**
- DS-84 should be labeled DS-84A1- **Revised on drawing**

Seaming and Non Destructive Test Log have some entries that do not have all the air pressure test data but says pass. For example, on 6/4/12 Seam 30/64. If these are fails that were repaired with a cap repair, please note as a fail/repair. **Changed dashes on seaming log to actual repair number that capped seams.**

Thank you for your assistance,

Anna Saindon, PE, RG
Senior Engineer

GEOTECHNOLOGY, INC.
11816 Lackland Road, Suite 150
St. Louis, MO 63146
(314) 997-7440 phone
(314) 997-2067 fax
www.geotechnology.com

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Hutsonville Ash Pond Closure

Closeout Submittals

(Rev: 8-9-2012)

1. Compliance Letter

2. Material Warranty

**3. Installation Warranty
(1 year)**

**4. SUBGRADE
ACCEPTANCE**

5. QC Documentation

6. Tensiometer Cert

**7. Installation Record
Drawing**

8. Job Photos



July 25, 2012

Ash Management Services
12601 Plantside Drive
Louisville Kentucky

Project: Hutsonville Ash Pond Closure- Ameren

Attn: Paul Zinsious

Chesapeake Containment Systems is pleased to present the attached record documentation for the Ameren Hutsonville Ash Pond Closure project.

We certify that the enclosed information is a compilation of our documentation for the project and that the installation was performed in accordance with the project specifications.

We further certify that all subgrade surface (surface quality only) was accepted by Chesapeake Containment Systems, Inc. prior to installation of Geosynthetics.

Included in this package are record copies of our field Quality Control, Installation records, and tensiometer certifications

If you should require any additional information please do not hesitate to contact our office.

Thank you

Chesapeake Containment Systems, Inc

A handwritten signature in black ink, appearing to read "Ryan P. Clark", is positioned below the company name.

Ryan P. Clark



**PRO RATA LIMITED MATERIAL WARRANTY
FOR GSE LINING TECHNOLOGY, LLC
(U.S.A.)**

Date:	<u>7/30/12</u>	Warranty No.:	<u>66934</u>
Purchaser Name:	<u>Ameren Energy Resources</u>	Project No.:	<u>66934</u>
Address:	<u>1500 Eastport Plaza Drive</u>	Effective Date:	<u>7/1/12</u>
City, State:	<u>Collinsville, IL 62234</u>	Project Name:	<u>Ameren Hutsonville Ash Pond</u>
Product Type/Description:	<u>GSE Geomembrane Products</u>	Project Address:	<u>Hutsonville, IL</u>

GSE Lining Technology, LLC ("GSE") warrants each GSE product described above to be free from material manufacturing defects (as described by the contract's material specifications) and to be able to withstand normal weathering for a period of **five (5) years** from the date of sale. This limited warranty does not include damages or defects in the GSE product resulting from acts of God, casualty or catastrophe, including but not limited to: earthquakes, floods, piercing hail, tornadoes or force majeure. The term "normal use" does not include, among other things, the exposure of GSE's product to harmful chemicals, abuse by machinery, equipment or people; improper site preparation or placement of cover materials; excessive pressures or stresses from any source. This warranty is intended for commercial use only and is not in effect for the consumer as defined in the Magnuson-Moss Warranty Act.

Should defects or premature loss of use within the scope of this warranty occur, GSE will, at its option, repair or replace the GSE product on a pro rata basis at the current price in such manner as to charge the Purchaser only for that portion of the warranted life which has elapsed since the purchase of the product. GSE shall have the right to inspect and determine the cause of the alleged defect in the product and to take appropriate steps to repair or replace the product if a defect exists that is covered under this warranty.

Any claim for any alleged breach of this warranty must be made in writing, by certified mail or courier, to GSE Lining Technology, LLC, 19103 Gundle Road, Houston, TX 77073, with the words "Warranty Claim" clearly marked on the face of the envelope, within ten (10) days of Purchaser becoming aware of the alleged defect. Should the required notice not be given, the defect and all warranties are waived by the Purchaser, and Purchaser shall not have rights under this warranty. GSE shall not be obligated to perform any inspection or obligated to perform any repair or replacement under this warranty until the area is made available free from all obstructions, water, dirt, sludge, residuals and liquids of any kind. If after inspection it is determined that there is no claim under this warranty, Purchaser shall reimburse GSE for its costs associated with the site inspection.

In the event the exclusive remedy provided herein fails in its essential purpose, and in that event only, the Purchaser shall be entitled to a return of the purchase price for so much of the product as GSE determines to have violated the warranty provided herein. GSE shall not be liable for direct, indirect, special, consequential or incidental damages resulting from a breach of this warranty including, but not limited to: damages for loss of production, lost profits, personal injury or property damage. GSE shall not be obligated to reimburse Purchaser for any repairs, replacement, modifications or alterations made by Purchaser to GSE's product, unless GSE specifically authorized, in writing, said repairs, replacements, modifications or alterations in advance. GSE liability under this warranty shall in no event exceed the replacement cost of the product sold to the Purchaser for the particular installation in which it failed.

GSE neither assumes nor authorizes any person other than an officer of GSE to assume for it any other or additional liability in connection with the GSE product made on the basis of the Limited Warranty. **GSE MAKES NO WARRANTY OF ANY KIND OTHER THAN THAT GIVEN HEREIN AND HEREBY DISCLAIMS ALL WARRANTIES, INCLUDING BOTH EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, AND BY ACCEPTING DELIVERY OF THE PRODUCT, PURCHASER WAIVES ALL OTHER POSSIBLE WARRANTIES. GSE's WARRANTY BECOMES AN OBLIGATION OF GSE TO PERFORM UNDER THE WARRANTY ONLY UPON RECEIPT OF FINAL PAYMENT.**

This warranty is extended to the Purchaser and is non-transferable and non-assignable, i.e. there are no third-party beneficiaries to this warranty.

PWGeomembrane5 R01/15/10

CHESAPEAKE CONTAINMENT SYSTEMS, INC.
LIMITED WORKMANSHIP WARRANTY

Warranty No. 112-011-01
Project No: 112-011
Effective Date: 7-1-12

PURCHASER: Ameren Corporation Hutsonville Plant

ADDRESS: 15142 East 1900th Ave

CITY, STATE, ZIP: Crawford County, IL 62433

PROJECT NAME: Hutsonville Ash Pond Closure

DESCRIPTION: 40 mil textured HDPE

ADDRESS: 15142 East 1900th Ave

CITY, STATE, ZIP: Crawford County, IL 62433

CHESAPEAKE CONTAINMENT SYSTEMS, INC. (CCSI) warrants each CCSI LINER SYSTEM installed by CCSI to be free from defects in workmanship. This "Workmanship Warranty" shall be in effect from the date the installation of the Liner System is completed and accepted by the Owner for a period of ONE YEAR of normal use in approved applications.

This Limited Warranty does not include damages or defects in the CCSI Liner System resulting from acts of God, casualty or catastrophe including but not limited to: earthquakes, floods, piercing hail, tornadoes or force majeure. The term "normal use" as used herein does not include, among other things, the exposure of CCSI Liner System to harmful chemicals, abuse of CCSI Liner System by machinery, equipment or people, excessive pressures or stress from any source, subsurface or overburdened soil conditions, and total or differential soil settlements and the effect these may have on the liner system.

Should defects or premature loss of use within the scope of the above Limited Workmanship Warranty occur, CCSI will, at its option, repair or replace the CCSI Liner System on a pro-rata basis at the then current price in such manner as to charge the Purchaser/User only for that portion of the warranted life which has elapsed since purchase of the material. CCSI will have the right to inspect and determine the cause of any alleged defect in the CCSI Liner System and to take appropriate steps to repair or replace the CCSI Liner System if a defect exists and is within the term of this Limited Warranty.

Any claim for any alleged breach of this warranty must be made in writing, by certified mail, to the President of CCSI within thirty (30) days after the alleged defect is noticed. Should the required notice not be given, the defect and all warranties shall be deemed to have been waived by the Purchaser, and Purchaser shall have no right of recovery against CCSI. In the event repairs and/or replacements are to be effected, said repairs and/or replacements shall not become due until the area subject to repair and/or replacement of CCSI Liner System is available to CCSI in a clean, dry, unencumbered condition. This includes, but is not limited to, the area made available for repair

and/or replacement of CCSI Liner System to be free from all water, dirt, sludge, residuals, and liquids of any kind.

CCSI's liability under this warranty shall in no event exceed the replacement cost of the material and installation sold to the Purchaser for the particular installation in which it failed. Further, under no circumstances shall CCSI be liable for any special, direct, indirect, or consequential damages arising from loss of production or any other losses including losses due to personal injuries and product liability owing to the failure of the material or installation and no allowance will be made for repairs, replacements, or alterations made by the Purchaser without the express written consent of CCSI.

CCSI neither assumes nor authorizes any person other than an officer of CCSI to assume for it any other or additional liability in connection with the CCSI Liner System made the basis of the Limited Warranty. The Limited Workmanship Warranty on the CCSI Liner System herein is given in lieu of all other possible material warranties, either express or implied, and by accepting delivery of the material Purchaser waives all other possible workmanship warranties, except those specifically given.

The parties expressly agree that the sale hereunder is for commercial or industrial use only.

CCSI's Limited Warranty is extended to the purchaser/owner and is non transferable and non-assignable.

Purchaser acknowledges by acceptance that the Limited Workmanship Warranty given herein is accepted in preference to any and all other possible workmanship warranties.

CCSI MAKES NO WARRANTY OF ANY KIND OTHER THAN THAT GIVEN ABOVE AND HEREBY DISCLAIMS ALL WARRANTIES, BOTH EXPRESS OR IMPLIED, OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

WARRANTY BECOMES EFFECTIVE UPON RECEIPT OF FINAL PAYMENT

I hereby state I have read and understood the above and foregoing Limited Warranty and agree to such by signing hereunder.

PURCHASER NAME: _____

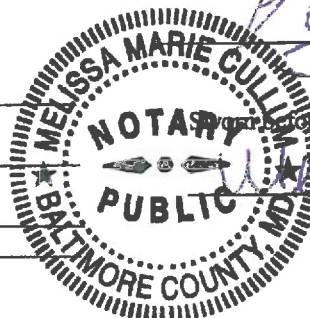
SIGNATURE: _____

TITLE: _____

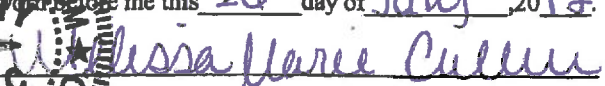
DATE: _____

Chesapeake Containment Systems, Inc.


Ryan Clark-Vice President



I warrant to me this 26 day of July, 2012.


Melissa Marie Cullen
expires 12/1/15



SUBGRADE SURFACE ACCEPTANCE

Project Name: Hutsonville Ash Pond Closure

Customer: Charah, Inc.

Project Number: 112-011

Date: 7/26/2012

Location: Crawford County, IL

Partial: _____ Final: X

This document only applies to the acceptability of surface conditions for installation of geosynthetic products. Chesapeake Containment Systems, Inc. does not accept responsibility for weather damage, compaction, elevation or moisture content, subsurface conditions, nor for the surface condition maintenance during deployment. Structural integrity of the subgrade and maintenance of these conditions are the responsibility of the Owner or Earthwork Contractor.

For Chesapeake Containment Systems, Inc.

For Contractor/Owner/Inspector:

[Signature]
Ryan Clark

Acceptance Number: Final Area Accepted: All Subgrade



Geomembrane Field Trial Seam Log

Project No.: 112011

Project Name: Hutsonville Power Plan

Start Date: 5/30/2012

Project Location: Hutsonville, IL

Material: HD TEXTURED

Project Seam Requirements

Fusion: Extrusion:

Peel: 60 Peel: 58

Shear: 80 Shear: 80

40 mil Thickness

Sample #	Date	Time	Ambient Temp.	Welder ID		Wedge	Extruder	Seam Strength															Pass	Tech ID	Remarks
								Machine	Operator	Peel (ppi) IN / OUT					Shear (ppi)										
				1	2					3	4	5	1	2	3	4	5								
1	5/30/2012	10:10	55F	M40	AO	860	600	95	68						133	130					Pass	BF	SS		
2	5/30/2012	10:40	55F	M14	PV	850	500	94	97						130	131					Pass	BF	SS		
3	5/30/2012	10:59	55F	M16	LS	860	600	103	80						132	129					Pass	BF	SS		
4	5/30/2012	10:57	55F	M16	LS	860	600	81	82						138	130					Pass	BF	TT		
5	5/30/2012	1:02	70F	M40	AO	860	600	87	92						119	127					Pass	BF	SS		
6	5/30/2012	1:20	70F	M14	PV	850	550	89	83						127	129					Pass	BF	SS		
7	5/30/2012	3:30	70F	M16	LS	860	600	99	83						128	128					Pass	BF	SS		
8	5/31/2012	7:00	65F	M16	LS	860	600	85	101						142	150					Pass	BF	SS		
9	5/31/2012	7:10	65F	M16	LS	860	600	106	87						142	150					Pass	BF	SS		
10	5/31/2012	7:07	65F	M40	AO	860	600	93	92						137	138					Pass	BF	TT		
11	5/31/2012	7:00	65F	M14	PV	850	500	86	86						144	142					Pass	BF	SS		
12	5/31/2012	7:10	65F	M40	AO	860	600	99	90						143	143					Pass	BF	SS		
								112	88						130	132					Pass	BF	TT		
								89	93												Pass	BF	TT		
								89	99												Pass	BF	TT		



Geomembrane Field Trial Seam Log

Project No.: 112011

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40 mil Thickness

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Fusion: Extrusion:

Peel:	60	Peel:	58
Shear:	80	Shear:	80

Sample #	Date	Time	Ambient Temp.	Welder ID		Wedge Temp/ Speed °F/fpm (or %max)	Extruder Barrel/ Preheat °F/°F	Seam Strength										Pass Fail	Tech ID	Remarks		
				Machine	Operator			Peel (ppi) IN / OUT					Shear (ppi)									
								1	2	3	4	5	1	2	3	4	5					
13	6/1/2012	10:20	50F	MX2	PV	500	500	66	108						110	122				Pass	BF	TT
14	6/1/2012	1:37	55F	MX2	PV	500	500	90	85						122	125				Pass	BF	TT
15	6/2/2012	7:43	50F	M14	PV	830	530	100	96						146	147				Pass	BF	SS
16	6/2/2012	8:12	60F	M16	LS	860	600	81	89						142	140				Pass	BF	SS
17	6/2/2012	8:15	60F	M41	JF	860	600	109	100						143	146				Pass	BF	SS
18	6/2/2012	11:40	60F	M14	PV	850	500	91	93						143	146				Pass	BF	SS
19	6/2/2012	12:26	60F	M14	PV	850	500	111	78											Fail	BF	TT
20	6/4/2012	7:00	59F	M14	PV	830	500	98	111						131	103				Pass	BF	TT
21	6/4/2012	7:09	59F	M14	PV	830	500	112	103						143	143				Pass	BF	SS
22	6/4/2012	7:15	59F	M41	JF	860	560	87	86						139	142				Pass	BF	SS
23	6/4/2012	10:10	62F	M16	DG	860	600	93	100						150	143				Pass	BF	SS
24	6/4/2012	11:50	65F	M41	JF	860	560	89	79						139	133				Pass	BF	SS
								83	67						131	136				Pass	BF	SS



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Project No.: 112011

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Shear: 80 Shear: 80

40 mil Thickness

Sample #	Date	Time	Ambient Temp.	Welder ID		Wedge Temp/ Speed °F/fpm (or %max)	Extruder Barrel/ Preheat °F/°F	Seam Strength															Pass Fail	Tech ID	Remarks
				Machine	Operator			Peel (ppi) IN / OUT					Shear (ppi)												
								1	2	3	4	5	1	2	3	4	5	1	2	3	4	5			
25	6/4/2012	12:08	65F	M16	DG	860	580	73	73						142	145						Pass	BF	SS	
26	6/4/2012	12:50	65F	M14	PV	830	550	101	102						134	137						Pass	BF	SS	
27	6/4/2012	1:37	65F	M14	DG	800	600	81	86						128	136						Pass	BF	SS	
28	6/4/2012	4:46	65F	M41	JF	860	450	101	100						132	131						Pass	BF	TT	
29	6/5/2012	7:14	58F	M14	PV	850	580	106	86						142	143						Pass	BF	SS	
30	6/5/2012	7:10	58F	M16	DG	860	550	79	78						145	145						Pass	BF	SS	
31	6/5/2012	7:02	58F	M41	JF	860	560	87	74						141	139						Pass	BF	SS	
32	6/5/2012	11:20	73F	M41	JF	800	580	88	88						116	115						Pass	BF	SS	
33	6/5/2012	11:26	73F	M16	DG	800	600	93	109						114	119						Pass	BF	SS	
34	6/5/2012	11:30	73F	M14	PV	800	600	76	75						119	121						Pass	BF	SS	
35	6/6/2012	6:47	55F	M14	PV	830	550	96	77						144	148						Pass	BF	SS	
36	6/6/2012	7:00	55F	M16	DG	860	550	86	67						148	138						Pass	BF	SS	



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Peel:	60	Peel:	58
Shear:	80	Shear:	80

40 mil Thickness

Sample #	Date	Time	Ambient Temp.		Welder ID		Wedge	Extruder	Seam Strength															Pass	Tech ID	Remarks
									Temp/ Speed °F/fpm (or %max)	Barrel/ Preheat °F/°F	Peel (ppi) IN / OUT					Shear (ppi)										
											1	2	3	4	5	1	2	3	4	5						
37	6/6/2012	6:55	55F	M41	JF	860	560	106	76						145	136						Pass	BF	SS		
38	6/6/2012	9:34	60F	M40	PV	830	530	100	86													Pass	BF	SS		
39	6/6/2012	9:18	60F	M41	JF	860	430	77	73						122	113						Pass	BF	TT		
40	6/6/2012	11:59	73F	M41	JF	860	560	84	75													Pass	BF	SS		
41	6/6/2012	1:28	73F	M40	PV	830	500	85	73						101	106						Pass	BF	TT		
42	6/6/2012	2:17	73F	MX2	AO	490	480	94	90													Pass	BF	TT		
43	6/7/2012	6:58	53F	M40	PV	850	500	98	62						99	100						Pass	BF	SS		
44	6/7/2012	7:00	53F	M16	DG	860	550	64	88													Pass	BF	TT		
45	6/7/2012	6:58	53F	M40	PV	850	500	100	83						99	88						Pass	BF	TT		
46	6/7/2012	7:22	53F	M41	JF	860	550	92	79						119	103						Pass	BF	TT		
47	6/7/2012	8:24	53F	M40	PV	830	500	118	84						158	151								SS		
48	6/7/2012	12:58	85F	M40	PV	830	600	93	92															SS		
								90	60						152	138								SS		
								93	63															SS		
								96	90						146	124								TT		
								94	85															TT		
								104	118						154	151								SS		
								105	93															SS		
								89	93						142	144								ST		
								91	101															SS		
								81	96						136	127								SS		
								95	81															SS		



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Project Seam Requirements

Fusion: Extrusion:

Peel: 60	Peel: 58
Shear: 80	Shear: 80

40 mil Thickness

Sample #	Date	Time	Ambient Temp.	Welder ID		Wedge Temp/Speed °F/fpm (or %max)	Extruder Barrel/Preheat °F/°F	Seam Strength										Pass Fail	Tech ID	Remarks																	
				Machine	Operator			Peel (ppi) IN / OUT					Shear (ppi)																								
								1	2	3	4	5	1	2	3	4	5																				
49	6/7/2012	1:00	85F	M40	PV	830	600	90	98						97	117											TT										
50	6/7/2012	1:38	85F	M41	JF	800	600	93	85																			SS									
								87	71													137	133														
								109	107																												
51	6/7/2012	1:25	85F	M16	DG	800	600	88	102																			SS									
								120	85													145	104														
								74	74													146	116														
52	6/7/2012	1:47	85F	M16	DG	800	550	104	124																		ST										
53	6/7/2012	3:50	85F	MX2	AO	490	480	118	112																			TT									
								109	69													133	136														
54	6/8/2012	7:00	50F	MX2	AO	490	480																				TT										
55	6/8/2012	7:12	50F	MX18	PV	500	550	93	107																			SS									
56	6/8/2012	1:00	75F	MX2	AO	480	460	101	126																		TT										
57	6/8/2012	1:00	75F	MX18	PV	500	450	117	104																			TT									
58	6/9/2012	7:00		MX2	AO	480	460	104	129																		TT										
59	6/9/2012	7:10		MX18	PV	830	500	126	116																			TT									
60	6/9/2012	1:00		MX2	AO	420	460	101	91																		TT										



Geomembrane Field Trial Seam Log

Project No.: 112011

Project Name: Hutsonville Power Plan

Start Date: 5/30/2012

Project Location: Hutsonville, IL

Material: HD TEXTURED

Project Seam Requirements

Fusion: Extrusion:

Peel:	60	Peel:	58
Shear:	80	Shear:	80

40 mil Thickness

Sample #	Date	Time	Ambient Temp.	Welder ID		Wedge Temp/ Speed °F/fpm (or %max)	Extruder Barrel/ Preheat °F/°F	Seam Strength										Pass	Tech ID	Remarks								
				Machine	Operator			Peel (ppi)					Shear (ppi)															
								IN / OUT																				
								1	2	3	4	5	1	2	3	4	5											
61	6/9/2012	1:10		MX18	PV	830	430	124	116						130	116												TT



Panel Placement Log

Project No.: I12-011
 Project Name: Hutsonville Power Plant
 Project Start Date: 5/30/2012
 Project Location: hutsonville,IL

Material: HD TEXTURED
 Thickness: 40

Date Deployed	Panel No.	Time Deployed	Panel Location	Roll No.	Width (FT)	Length (FT)	Area (SQ FT)
5/30/12	1	9:40	FLOOR	2839	15	50	750
5/30/12	2	9:50	FLOOR	2829	22	148	3256
5/30/12	3	10:10	FLOOR	2829	22	491	10802
5/30/12	4	10:15	FLOOR	2829	22	528	11616
5/30/12	5	11:00	FLOOR	2808	22	565	12430
5/30/12	6	11:15	FLOOR	2808	22	103	2266
5/30/12	7	11:34	FLOOR	2814	22	483	10626
5/30/12	8	1:03	FLOOR	2814	22	202	4444
5/30/12	9	1:20	FLOOR	2789	22	384	8448
5/30/12	10	1:50	FLOOR	2789	22	292	6424
5/30/12	11	1:55	FLOOR	2787	22	272	5984
5/30/12	12	2:18	FLOOR	2787	22	404	8888
5/30/12	13	2:34	FLOOR	2832	22	132	2904
5/30/12	14	2:45	FLOOR	2832	22	508	11176
5/30/12	15	3:20	FLOOR	2791	22	480	10560
5/30/12	16	3:40	FLOOR	2791	22	179	3938
5/30/12	17	3:30	FLOOR	2777	22	268	5896
5/30/12	18	3:45	FLOOR	2777	22	409	8998
5/30/12	19	4:35	FLOOR	2785	22	16	352
5/30/12	20	4:43	FLOOR	2785	22	397	8734
5/30/12	21	5:00	FLOOR	2758	22	340	7480
5/31/12	22	7:10	FLOOR	2793	22	128	2816
5/31/12	23	7:20	FLOOR	2793	22	367	8074
5/31/12	24	7:40	FLOOR	2793	22	189	4158
5/31/12	25	7:50	FLOOR	2830	22	120	2640
5/31/12	26	8:00	FLOOR	2830	22	281	6182
5/31/12	27	8:08	FLOOR	2830	22	255	5610
5/31/12	28	8:18	FLOOR	2779	22	232	5104
5/31/12	29	8:30	FLOOR	2779	22	209	4598
5/31/12	30	8:41	FLOOR	2779	22	188	4136



Panel Placement Log

Project No.: I12-011
 Project Name: Hutsonville Power Plant
 Project Start Date: 5/30/2012
 Project Location: hutsonville,IL

Material HD TEXTURED

Thickness: 40

Date Deployed	Panel No.	Time Deployed	Panel Location	Roll No.	Width (FT)	Length (FT)	Area (SQ FT)
5/31/12	31	8:50	FLOOR	2778	22	172	3784
5/31/12	32	9:10	FLOOR	2778	22	157	3454
5/31/12	33	9:16	FLOOR	2778	22	144	3168
5/31/12	34	9:24	FLOOR	2778	22	131	2882
5/31/12	35	9:35	FLOOR	2778	22	49	1078
5/31/12	36	9:50	FLOOR	2812	22	69	1518
5/31/12	37	10:00	FLOOR	2812	22	106	2332
5/31/12	38	10:08	FLOOR	2812	22	94	2068
5/31/12	39	10:18	FLOOR	2812	22	82	1804
5/31/12	40	10:21	FLOOR	2812	22	62	1364
5/31/12	41	10:30	FLOOR	2812	22	57	1254
5/31/12	42	10:32	FLOOR	2812	22	45	990
5/31/12	43	10:35	FLOOR	2812	22	33	726
5/31/12	44	10:40	FLOOR	2812	22	20	440
5/31/12	45	10:52	FLOOR	2812	22	14	308
6/2/12	46	7:00	FLOOR	2807	22	694	15268
6/2/12	47	7:20	FLOOR	2833	22	695	15290
6/2/12	48	7:40	FLOOR	2813	22	695	15290
6/2/12	49	8:00	FLOOR	2813	22	697	15334
6/2/12	50	8:20	FLOOR	2819	22	698	15356
6/2/12	51	9:30	FLOOR	2816	22	696	15312
6/2/12	52	9:15	FLOOR	2776	22	696	15312
6/4/12	53	7:00	FLOOR	2804	22	692	15224
6/4/12	54	7:15	FLOOR	2835	22	694	15268
6/4/12	55	7:30	FLOOR	2803	22	694	15268
6/4/12	56	7:45	FLOOR	2806	22	695	15290
6/4/12	57	8:00	FLOOR	2794	22	695	15290
6/4/12	58	10:00	FLOOR	2792	22	695	15290
6/4/12	59	11:25	FLOOR	2842	22	694	15268
6/4/12	60	12:50	FLOOR	2784	22	693	15246



Panel Placement Log

Project No.: I12-011
 Project Name: Hutsonville Power Plant
 Project Start Date: 5/30/2012
 Project Location: hutsonville,IL

Material: HD TEXTURED
 Thickness: 40

Date Deployed	Panel No.	Time Deployed	Panel Location	Roll No.	Width (FT)	Length (FT)	Area (SQ FT)
6/4/12	61	1:00	FLOOR	2802	22	693	15246
6/4/12	62	1:54	FLOOR	2805	22	694	15268
6/4/12	63	2:26	FLOOR	2801	22	695	15290
6/4/12	64	3:02	FLOOR	2783	22	695	15290
6/4/12	65	3:22	FLOOR	2809	22	695	15290
6/4/12	66	3:45	FLOOR	2815	22	695	15290
6/5/12	67	7:40	FLOOR	2823	22	695	15290
6/5/12	68	8:00	FLOOR	2822	22	695	15290
6/5/12	69	8:25	FLOOR	2838	22	693	15246
6/5/12	70	8:39	FLOOR	2837	22	694	15268
6/5/12	71	9:35	FLOOR	2825	22	695	15290
6/5/12	72	9:50	FLOOR	2820	22	695	15290
6/5/12	73	10:15	FLOOR	2824	22	696	15312
6/5/12	74	10:30	FLOOR	2834	22	697	15334
6/5/12	75	10:54	FLOOR	2817	22	699	15378
6/5/12	76	1:31	FLOOR	2828	22	699	15378
6/5/12	77	1:51	FLOOR	2840	22	695	15290
6/5/12	78	2:00	FLOOR	2782	22	691	15202
6/6/12	79	7:00	FLOOR	2865	22	688	15136
6/6/12	80	7:30	FLOOR	2836	22	683	15026
6/6/12	81	8:00	FLOOR	2781	22	684	15048
6/6/12	82	8:10	FLOOR	2788	22	684	15048
6/6/12	83	8:24	FLOOR	2860	22	683	15026
6/6/12	84	8:40	FLOOR	2861	22	676	14872
6/6/12	85	8:50	FLOOR	2859	22	653	14366
6/6/12	86	9:00	FLOOR	2790	22	535	11770
6/6/12	87	11:04	FLOOR	2862	22	275	6050
6/6/12	88	11:40	FLOOR	2862	12	54	648
6/6/12	89	9:20	FLOOR	2832	22	10	220
6/6/12	90	9:30	FLOOR	2859	22	22	484



Panel Placement Log

Project No.: I12-011
 Project Name: Hutsonville Power Plant
 Project Start Date: 5/30/2012
 Project Location: hutsonville,IL

Material HD TEXTURED

Thickness: 40

Date Deployed	Panel No.	Time Deployed	Panel Location	Roll No.	Width (FT)	Length (FT)	Area (SQ FT)
6/6/12	91	10:00	FLOOR	2790	22	33	726
6/7/12	92	6:47	FLOOR	2821	22	697	15334
6/7/12	93	7:00	FLOOR	2863	22	697	15334
6/7/12	94	7:20	FLOOR	2866	22	697	15334
6/7/12	95	10:50	FLOOR	2786	22	644	14168
6/7/12	96	10:32	FLOOR	2818	22	565	12430
6/7/12	97	11:40	FLOOR	2831	22	407	8954
6/7/12	98	1:33	FLOOR	2831	22	176	3872
6/7/12	99	11:50	FLOOR	2780	22	100	2200
6/7/12	100	11:55	FLOOR	2780	22	100	2200
6/7/12	101	1:40	FLOOR	2862	22	92	2024
6/7/12	102	1:42	FLOOR	2862	22	8	176
6/7/12	103	1:50	FLOOR	2831	10	40	400
6/7/12	104	1:59	FLOOR	2831	10	23	230
6/7/12	105	2:10	FLOOR	2831	10	15	150
							938234



Seaming and Non Destructive Test Log

Project No.: I12-011

Project Name: Hutsonville Power Plant

Date Started: 5/30/2012

Project Location: Hutsonville, IL

Material: HD Textured

Thickness : 40 mil

WELD DATE	SEAM # (P#/P#)	WELD TIME	TECH ID	Machine ID	Machine Temp	Machine Speed or Preheat	Start Point	End Point	Seam Length (Feet)	Air Pressure Test						Pass / Fail
										PSI		Time		Tech	Date	
										Start	Finish	Start	Finish			
5/30/12	1/2	10:40	AO	M40	860	600	SEOS	NEOS	100	30	29	12:54	12:59	LS	5/31/12	PASS
5/30/12	2/3	11:11	AO	M40	860	600	E EOS	NEOS	195	30	28	1:03	1:08	LS	5/31/12	PASS
5/30/12	3/4	11:00	PV	M14	850	500	SEOS	64' N SEOS	64	30	30	1:21	1:26	LS	5/31/12	PASS
5/30/12	3/4	11:00	PV	M14	850	500	64' N SEOS	NEOS	442	30	30	1:17	1:22	LS	5/31/12	PASS
5/30/12	4/5	11:20	LS	M16	860	600	SEOS	230' N SEOS	230	30	30	1:24	1:29	LS	5/31/12	PASS
5/30/12	4/5	11:20	LS	M16	860	600	230' N SEOS	270' N SEOS	40	30	30	1:40	1:45	LS	5/31/12	PASS
5/30/12	4/5	11:20	LS	M16	860	600	270' N SEOS	NEOS	279	30	30	1:41	1:46	LS	5/31/12	PASS
5/30/12	5/7	11:43	AO	M40	860	600	SEOS	NEOS	483	30	28	9:31	9:36	LS	6/1/12	PASS
5/30/12	5/6	12:40	AO	M40	860	600	SEOS	NEOS	98	30	30	9:40	9:45	LS	6/1/12	PASS
5/30/12	6/7	1:17	LS	M16	860	600	WEOS	E EOS	22	30	30	9:35	9:40	LS	6/1/12	PASS
5/30/12	8/9	1:30	LS	M16	860	600	WEOS	E EOS	22	30	30	9:57	10:02	LS	6/1/12	PASS
5/30/12	7/9	1:35	PV	M14	850	550	SEOS	NEOS	384	30	30	9:53	9:58	LS	6/1/12	PASS
5/30/12	7/8	2:25	PV	M14	850	550	SEOS	NEOS	98	30	30	9:45	9:50	LS	6/1/12	PASS
5/30/12	6/8	2:35	PV	M14	850	550	SEOS	NEOS	108	30	30	9:49	9:54	LS	6/1/12	PASS
5/30/12	9/11	2:13	LS	M16	860	600	SEOS	NEOS	272	30	30	10:03	10:08	LS	6/1/12	PASS
5/30/12	9/10	2:41	LS	M16	860	600	SEOS	NEOS	113	30	30	10:01	10:06	LS	6/1/12	PASS
5/30/12	8/10	2:56	LS	M16	860	600	SEOS	NEOS	198	30	30	9:51	9:56	LS	6/1/12	PASS
5/30/12	10/11	2:01	LS	M16	860	600	WEOS	E EOS	22	30	30	10:09	10:14	LS	6/1/12	PASS
5/30/12	10/12	2:25	AO	M40	860	600	NEOS	SEOS	277	30	30	10:15	10:20	LS	6/1/12	PASS
5/30/12	11/12	2:58	AO	M40	860	600	NEOS	SEOS	140	30	30	10:22	10:27	LS	6/1/12	PASS
5/30/12	11/13	3:15	AO	M40	860	600	NEOS	SEOS	131	30	30	10:38	10:43	LS	6/1/12	PASS



Seaming and Non Destructive Test Log

Project No.: I12-011

Project Name: Hutsonville Power Plant

Date Started: 5/30/2012

Project Location: Hutsonville, IL

Material: HD Textured

Thickness: 40 mil

WELD DATE	SEAM # (P#/P#)	WELD TIME	TECH ID	Machine ID	Machine Temp	Machine Speed or Preheat	Start Point	End Point	Seam Length (Feet)	Air Pressure Test						Pass / Fail
										PSI		Time		Tech	Date	
										Start	Finish	Start	Finish			
5/30/12	12/14	3:10	PV	M14	850	550	NEOS	SEOS	391	30	30	10:26	10:31	LS	6/1/12	PASS
5/30/12	13/14	3:55	PV	M14	850	550	NEOS	SEOS	133	30	30	10:34	10:39	LS	6/1/12	PASS
5/30/12	12/13	3:40	LS	M16	860	600	WEOS	E EOS	22	30	30	10:40	10:45	LS	6/1/12	PASS
5/30/12	14/15	3:52	AO	M40	860	600	NEOS	SEOS	493	30	30	10:47	10:52	LS	6/1/12	PASS
5/30/12	16/17	3:46	LS	M16	860	600	E EOS	WEOS	22	30	29	11:40	11:45	LS	6/1/12	PASS
5/30/12	15/16	4:05	LS	M16	860	600	NEOS	SEOS	200	30	30	11:41	11:46	LS	6/1/12	PASS
5/30/12	15/17	4:32	LS	M16	860	600	NEOS	SEOS	267	30	30	10:55	11:00	LS	6/1/12	PASS
5/30/12	16/18	4:25	PV	M14	850	550	NEOS	SEOS	171	30	30	11:50	11:55	LS	6/1/12	PASS
5/30/12	17/18	4:45	PV	M14	850	550	NEOS	180' S N EOS	180	30	30	11:25	11:30	LS	6/1/12	PASS
5/30/12	17/18	4:45	PV	M14	850	550	180' S N EOS	SEOS	73	30	30	11:03	11:08	LS	6/1/12	PASS
5/30/12	17/19	5:15	PV	M14	850	550	NEOS	SEOS	16	30	30	11:01	11:06	LS	6/1/12	PASS
5/30/12	18/19	5:05	LS	M16	860	600	WEOS	E EOS	22	30	30	11:08	11:13	LS	6/1/12	PASS
5/30/12	18/20	5:08	AO	M40	860	600	NEOS	290' S N EOS	290	30	30	11:28	11:33	LS	6/1/12	PASS
5/30/12	18/20	5:08	AO	M40	860	600	290' S N EOS	SEOS	104	30	30	11:22	11:27	LS	6/1/12	PASS
5/30/12	19/20	5:54	AO	M40	860	600	NEOS	SEOS	16	30	30	11:15	11:20	LS	6/1/12	PASS
5/30/12	20/21	5:35	LS	M16	860	600	NEOS	240' S N EOS	240	30	30	11:58	12:03	LS	6/1/12	PASS
5/30/12	20/21	5:35	LS	M16	860	600	240' S N EOS	SEOS	15	30	30	12:00	12:05	LS	6/1/12	PASS
5/31/12	20/22	7:40	LS	M16	860	600	NEOS	85' S N EOS	85	30	30	12:10	12:15	LS	6/1/12	PASS
5/31/12	20/22	7:40	LS	M16	860	600	85' S N EOS	SEOS	43	30	29	1:09	1:14	LS	6/1/12	PASS
5/31/12	21/22	7:20	LS	M16	860	600	WEOS	E EOS	22	30	30	12:05	12:10	LS	6/1/12	PASS
5/31/12	21/23	7:20	AO	M40	860	600	NEOS	SEOS	224	30	30	12:08	12:13	LS	6/1/12	PASS



Seaming and Non Destructive Test Log

Project No.: 112-011

Project Name: Hutsonville Power Plant

Date Started: 5/30/2012

Project Location: Hutsonville, IL

Material: HD Textured

Thickness : 40 mil

WELD DATE	SEAM # (P#/P#)	WELD TIME	TECH ID	Machine ID	Machine Temp	Machine Speed or Preheat	Start Point	End Point	Seam Length (Feet)	Air Pressure Test						Pass / Fail
										PSI		Time		Tech	Date	
										Start	Finish	Start	Finish			
5/31/12	22/23	7:59	AO	M40	860	600	NEOS	SEOS	127	30	29	1:08	1:13	LS	6/1/12	PASS
5/31/12	23/24	7:45	PV	M14	850	600	NEOS	SEOS	203	30	30	1:18	1:23	LS	6/1/12	PASS
5/31/12	23/25	8:15	PV	M14	850	600	NEOS	SEOS	120	30	30	1:18	1:23	LS	6/1/12	PASS
5/31/12	24/25	8:05	LS	M16	860	600	WEOS	E EOS	22	30	30	1:56	2:01	LS	6/1/12	PASS
5/31/12	24/26	8:10	LS	M16	860	600	NEOS	SEOS	175	30	30	1:22	1:27	LS	6/1/12	PASS
5/31/12	25/26	9:31	LS	M16	860	600	NEOS	SEOS	120	30	30	1:20	1:25	LS	6/1/12	PASS
5/31/12	26/27	8:24	AO	M40	860	600	NEOS	SEOS	267	30	30	1:32	1:37	LS	6/1/12	PASS
5/31/12	27/28	8:34	PV	M14	850	600	NEOS	SEOS	243	30	29	1:15	1:20	LS	6/1/12	PASS
5/31/12	28/29	9:03	LS	M16	860	600	NEOS	SEOS	221	30	30	2:03	2:08	LS	6/1/12	PASS
5/31/12	29/30	9:06	AO	M40	860	600	NEOS	SEOS	197	30	30	2:09	2:14	LS	6/1/12	PASS
5/31/12	30/31	9:17	PV	M40	850	600	NEOS	SEOS	179	30	30	2:15	2:20	LS	6/1/12	PASS
5/31/12	31/32	9:38	LS	M16	860	600	NEOS	95 S NEOS	95	30	30	2:20	2:25	LS	6/1/12	PASS
5/31/12	31/32	9:38	LS	M16	860	600	95 S NEOS	SEOS	69	30	30	2:25	2:30	LS	6/1/12	PASS
5/31/12	32/33	9:39	AO	M40	860	600	NEOS	SEOS	150	30	30	2:30	2:35	LS	6/1/12	PASS
5/31/12	33/34	9:50	PV	M14	850	600	NEOS	SEOS	137	30	30	2:35	2:40	LS	6/1/12	PASS
5/31/12	34/35	10:10	LS	M16	860	600	NEOS	SEOS	55	30	29	3:01	3:06	LS	6/1/12	PASS
5/31/12	34/36	10:17	LS	M16	860	600	NEOS	SEOS	69	30	30	2:40	2:45	LS	6/1/12	PASS
5/31/12	35/36	10:05	AO	M40	860	600	WEOS	E EOS	22	30	29	2:55	1:38	LS	6/1/12	PASS
5/31/12	35/37	10:12	AO	M40	860	600	NEOS	SEOS	43	30	30	3:06	3:11	LS	6/1/12	PASS
5/31/12	36/37	10:20	AO	M40	860	600	NEOS	SEOS	69	30	30	2:49	2:54	LS	6/1/12	PASS
5/31/12	37/38	10:20	PV	M14	850	600	NEOS	SEOS	100	30	30	2:13	2:18	LS	6/1/12	PASS



Seaming and Non Destructive Test Log

Project No.: 112-011

Project Name: Hutsonville Power Plant

Date Started: 5/30/2012

Project Location: Hutsonville, IL

Material: HD Textured

Thickness: 40 mil

WELD DATE	SEAM # (P#/P#)	WELD TIME	TECH ID	Machine ID	Machine Temp	Machine Speed or Preheat	Start Point	End Point	Seam Length (Feet)	Air Pressure Test						Pass / Fail
										PSI		Time		Tech	Date	
										Start	Finish	Start	Finish			
5/31/12	38/39	10:40	LS	M16	860	600	NEOS	SEOS	88	30	30	3:19	3:24	LS	6/1/12	PASS
5/31/12	39/40	10:40	AO	M40	860	600	NEOS	SEOS	76	30	30	3:35	3:40	LS	6/1/12	PASS
5/31/12	40/41	10:40	PV	M14	850	600	NEOS	SEOS	62	30	30	3:40	3:45	LS	6/1/12	PASS
5/31/12	41/42	10:52	AO	M40	860	600	NEOS	SEOS	51	30	30	3:51	3:56	LS	6/1/12	PASS
5/31/12	42/43	10:55	PV	M14	850	600	NEOS	SEOS	39	30	30	3:56	4:01	LS	6/1/12	PASS
5/31/12	43/44	11:07	PV	M14	850	600	NEOS	SEOS	26	30	30	4:01	4:06	LS	6/1/12	PASS
5/31/12	44/45	11:00	AO	M40	860	600	NEOS	SEOS	14	30	30	4:11	4:16	LS	6/1/12	PASS
6/2/12	46/47	8:10	PV	M14	850	530	SEOS	208' N SEOS	208	30	30	2:58	3:03	DG	6/2/12	PASS
6/2/12	46/47	8:10	PV	M14	850	530	208' N SEOS	NEOS	486	30	30	1:56	2:01	DG	6/2/12	PASS
6/2/12	47/48	8:30	LS	M16	860	600	SEOS	NEOS	696	30	30	2:02	2:07	DG	6/2/12	PASS
6/2/12	48/49	8:30	JF	M41	860	560	SEOS	NEOS	695	30	30	2:26	2:31	DG	6/2/12	PASS
6/2/12	49/50	10:20	LS	M16	860	600	SEOS	20' N SEOS	20	30	30	3:50	3:55	DG	6/2/12	PASS
6/2/12	49/50	10:20	LS	M16	860	600	20' N SEOS	120' N SEOS	100	30	30	3:25	3:30	DG	6/2/12	PASS
6/2/12	49/50	10:20	LS	M16	860	600	120' N SEOS	235' N SEOS	15	30	30	3:19	3:24	DG	6/2/12	PASS
6/2/12	49/50	10:20	LS	M16	860	600	235' N SEOS	335' N SEOS	200	30	28	3:13	3:18	DG	6/2/12	PASS
6/2/12	49/50	10:20	LS	M16	860	600	335' N SEOS	NEOS	365	30	30	2:50	2:55	DG	6/2/12	PASS
6/2/12	50/51	10:00	M14	PV	830	530	SEOS	NEOS	696	30	29	2:36	2:41	DG	6/2/12	PASS
6/2/12	51/52	10:35	M41	JF	860	600	SEOS	300' N SEOS	300	30	30	3:30	3:49	DG	6/2/12	PASS
6/2/12	51/52	10:35	M41	JF	860	600	300' N SEOS	NEOS	396	30	30	2:45	2:50	DG	6/2/12	PASS
6/2/12	4/52	1:18	M14	PV	850	500	E EOS	W EOS	22	30	30	5:11	5:16	DG	6/8/12	PASS
6/2/12	5/51	1:20	M14	PV	850	500	E EOS	W EOS	22	30	30	5:07	5:12	DG	6/8/12	PASS



Seaming and Non Destructive Test Log

Project No.: I12-011

Project Name: Hutsonville Power Plant

Date Started: 5/30/2012

Project Location: Hutsonville, IL

Material: HD Textured

Thickness : 40 mil

WELD DATE	SEAM # (P#/P#)	WELD TIME	TECH ID	Machine ID	Machine Temp	Machine Speed or Preheat	Start Point	End Point	Seam Length (Feet)	Air Pressure Test						Pass / Fail
										PSI		Time		Tech	Date	
										Start	Finish	Start	Finish			
6/2/12	7/50	1:24	M14	PV	850	500	E EOS	W EOS	22	30	30	5:06	5:11	DG	6/8/12	PASS
6/2/12	9/49	1:26	M14	PV	850	500	E EOS	W EOS	22	30	30	5:02	5:07	DG	6/8/12	PASS
6/2/12	11/48	1:31	M14	PV	850	500	E EOS	W EOS	22	30	29	5:00	5:05	DG	6/8/12	PASS
6/2/12	13/47	1:35	M14	PV	850	500	E EOS	W EOS	22	30	30	4:57	5:02	DG	6/8/12	PASS
6/2/12	14/46	1:38	M14	PV	850	500	E EOS	W EOS	22	30	30	4:55	5:00	DG	6/8/12	PASS
6/4/12	46/53	7:46	M14	PV	830	860	SEOS	NEOS	691	30	30	5:30	5:35	DG	6/7/12	PASS
6/4/12	53/54	8:00	DG	M16	860	580	SEOS	492' N SEOS	492	30	30	6:30	6:35	DG	6/8/12	PASS
6/4/12	53/54	8:00	DG	M16	860	580	492' N SEOS	560' N SEOS	68	30	30	6:25	6:30	DG	6/8/12	PASS
6/4/12	53/54	8:00	DG	M16	860	580	560' N SEOS	610' N SEOS	50	30	30	5:40	5:45	DG	6/7/12	PASS
6/4/12	53/54	8:00	DG	M16	860	580	610' N SEOS	NEOS	83	30	30	5:25	5:30	DG	6/7/12	PASS
6/4/12	54/55	8:15	JF	M41	860	560	SEOS	167' N SEOS	167	30	29	7:06	7:11	DG	6/8/12	PASS
6/4/12	54/55	8:15	JF	M41	860	560	167' N SEOS	NEOS	527	30	30	6:32	6:37	DG	6/8/12	PASS
6/4/12	55/56	9:16	PV	M14	830	530	NEOS	325' S NEOS	325	30	30	7:00	7:05	DG	6/8/12	PASS
6/4/12	55/56	9:16	PV	M14	830	530	325' S NEOS	500' S NEOS	175	30	30	6:43	6:48	DG	6/8/12	PASS
6/4/12	55/56	9:16	PV	M14	830	530	500' S NEOS	SEOS	193	30	30	7:12	7:17	DG	6/8/12	PASS
6/4/12	56/57	9:10	JF	M41	860	560	NEOS	15' S NEOS	15	30	30	7:10	7:15	DG	6/8/12	PASS
6/4/12	56/57	9:10	JF	M41	860	560	15' S NEOS	30' S NEOS	15	30	30	7:15	7:20	DG	6/8/12	PASS
6/4/12	56/57	9:10	JF	M41	860	560	30' S NEOS	580' S NEOS	550	30	30	7:21	7:26	DG	6/8/12	PASS
6/4/12	56/57	9:10	JF	M41	860	560	580' S NEOS	SEOS	116	30	30	8:42	8:47	DG	6/8/12	PASS
6/4/12	57/58	10:42	DG	M16	860	580	NEOS	SEOS	695	30	30	7:24	7:29	DG	6/8/12	PASS
6/4/12	58/59	11:25	PV	M14	830	530	SEOS	430' N SEOS	430	30	30	7:46	7:51	DG	6/8/12	PASS



Seaming and Non Destructive Test Log

Project No.: I12-011

Project Name: Hutsonville Power Plant

Date Started: 5/30/2012

Project Location: Hutsonville, IL

Material: HD Textured

Thickness : 40 mil

WELD DATE	SEAM # (P#/P#)	WELD TIME	TECH ID	Machine ID	Machine Temp	Machine Speed or Preheat	Start Point	End Point	Seam Length (Feet)	Air Pressure Test						Pass / Fail
										PSI		Time		Tech	Date	
										Start	Finish	Start	Finish			
6/4/12	58/59	11:25	PV	M14	830	530	430' N S EOS	570' N S EOS	140	30	30	7:40	7:45	DG	6/8/12	PASS
6/4/12	58/59	11:25	PV	M14	830	530	570' N S EOS	640 N S EOS	70	30	30	7:35	7:40	DG	6/8/12	PASS
6/4/12	58/59	11:25	PV	M14	830	530	570' N S EOS	N EOS	55	30	30	7:30	7:35	DG	6/8/12	PASS
6/4/12	59/60	12:54	DG	M16	860	580	SEOS	450' N S EOS	450	30	30	7:48	7:53	DG	6/8/12	PASS
6/4/12	59/60	12:54	DG	M16	860	580	450' N S EOS	N EOS	243	30	30	8:27	8:32	DG	6/8/12	PASS
6/4/12	60/61	1:26	JF	M41	860	560	SEOS	N EOS	692	30	30	8:00	8:05	DG	6/8/12	PASS
6/4/12	61/62	2:00	PV	M14	800	600	SEOS	390' N S EOS	390	30	30	7:53	7:58	DG	6/8/12	PASS
6/4/12	61/62	2:00	PV	M14	800	600	390' N S EOS	N EOS	303	30	30	8:07	8:12	DG	6/8/12	PASS
6/4/12	62/63	2:35	DG	M16	860	580	N EOS	SEOS	695	30	30	8:06	8:11	DG	6/8/12	PASS
6/4/12	63/64	3:07	JF	M41	860	560	SEOS	N EOS	694	30	30	8:08	8:13	DG	6/8/12	PASS
6/4/12	64/65	3:30	PV	M14	800	600	SEOS	N EOS	695	30	30	8:23	8:28	DG	6/8/12	PASS
6/4/12	65/66	4:08	DG	M16	860	580	SEOS	320' N S EOS	320	30	30	10:16	10:21	DG	6/8/12	PASS
6/4/12	65/66	4:08	DG	M16	860	580	320' N S EOS	490' N S EOS	170	30	30	9:40	9:45	DG	6/8/12	PASS
6/4/12	65/66	4:08	DG	M16	860	580	490' N S EOS	545' N S EOS	55	30	28	10:00	10:05	DG	6/8/12	PASS
6/4/12	65/66	4:08	DG	M16	860	580	545' N S EOS	N EOS	150	30	30	8:15	8:20	DG	6/8/12	PASS
6/4/12	15/53	5:09	JF	M41	860	450	WEOS	E EOS	22	30	30	4:51	4:56	DG	6/8/12	PASS
6/4/12	17/54	5:12	JF	M41	860	450	WEOS	E EOS	22	30	29	4:49	4:54	DG	6/8/12	PASS
6/4/12	19/55	5:15	JF	M41	860	450	WEOS	E EOS	22	30	29	4:46	4:51	DG	6/8/12	PASS
6/4/12	20/56	5:18	JF	M41	860	450	WEOS	E EOS	22	30	30	4:40	4:45	DG	6/8/12	PASS
6/4/12	22/57	5:22	JF	M41	860	450	WEOS	E EOS	22	30	30	4:43	4:48	DG	6/8/12	PASS
6/4/12	23/58	5:26	JF	M41	860	450	WEOS	E EOS	22	30	30	4:34	4:39	DG	6/8/12	PASS



Seaming and Non Destructive Test Log

Project No.: 112-011

Project Name: Hutsonville Power Plant

Date Started: 5/30/2012

Project Location: Hutsonville, IL

Material: HD Textured

Thickness : 40 mil

WELD DATE	SEAM # (P#/P#)	WELD TIME	TECH ID	Machine ID	Machine Temp	Machine Speed or Preheat	Start Point	End Point	Seam Length (Feet)	Air Pressure Test						Pass / Fail
										PSI		Time		Tech	Date	
										Start	Finish	Start	Finish			
6/4/12	25/59	2:29	JF	M41	860	450	W EOS	E EOS	22	30	28	4:30	4:35	DG	6/8/12	PASS
6/4/12	26/60	5:33	JF	M41	860	450	W EOS	E EOS	22	30	30	4:28	4:33	DG	6/8/12	PASS
6/4/12	27/61	5:36	JF	M41	860	450	W EOS	E EOS	22	30	30	4:25	4:30	DG	6/8/12	PASS
6/4/12	28/62	5:41	JF	M41	860	450	W EOS	E EOS	22	30	30	4:23	4:28	DG	6/8/12	PASS
6/4/12	29/63	5:45	JF	M41	860	450	W EOS	E EOS	22	30	30	4:19	4:24	DG	6/8/12	PASS
6/4/12	30/64	5:45	JF	M41	860	450	W EOS	E EOS	22	CAPPED BY R232						PASS
6/4/12	31/65	5:51	JF	M41	860	450	W EOS	E EOS	22	30	30	4:17	4:22	DG	6/8/12	PASS
6/4/12	32/66	5:54	JF	M41	860	450	W EOS	E EOS	22	30	30	4:16	4:21	DG	6/8/12	PASS
6/5/12	66/67	8:02	JF	M41	860	560	SEOS	520' N S EOS	520	30	30	8:51	8:56	DG	6/8/12	PASS
6/5/12	66/67	8:02	JF	M41	860	560	520' N S EOS	NEOS	175	30	30	8:38	8:43	DG	6/8/12	PASS
6/5/12	67/68	8:07	PV	M14	830	530	SEOS	96' N S EOS	96	30	29	10:16	10:21	DG	6/8/12	PASS
6/5/12	67/68	8:07	PV	M14	830	530	96' N S EOS	NEOS	598	30	30	8:58	9:03	DG	6/8/12	PASS
6/5/12	68/69	8:22	DG	M16	860	550	SEOS	NEOS	693	30	28	9:05	9:10	DG	6/8/12	PASS
6/5/12	69/70	9:55	JF	M41	860	560	SEOS	515' N S EOS	515	30	30	9:29	9:34	DG	6/8/12	PASS
6/5/12	69/70	9:55	JF	M41	860	560	515' N S EOS	NEOS	178	30	30	9:12	9:17	DG	6/8/12	PASS
6/5/12	70/71	9:53	PV	M14	800	530	SEOS	NEOS	695	30	30	10:28	10:33	DG	6/8/12	PASS
6/5/12	71/72	9:58	DG	M16	860	550	SEOS	NEOS	695	30	30	10:30	10:35	DG	6/8/12	PASS
6/5/12	72/73	12:12	JF	M41	800	580	SEOS	NEOS	696	30	30	10:37	10:42	DG	6/8/12	PASS
6/5/12	73/74	12:35	PV	M14	800	600	SEOS	650' N S EOS	650	30	30	10:57	11:02	DG	6/8/12	PASS
6/5/12	-	12:35	PV	M14	800	600	650' N S EOS	NEOS	46	30	30	10:48	10:53	DG	6/8/12	PASS
6/5/12	74/75	12:34	DG	M16	800	600	SEOS	NEOS	698	30	29	10:45	10:50	DG	6/8/12	PASS



Seaming and Non Destructive Test Log

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 Date Started: 5/30/2012
 Project Location: Hutsonville, IL

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WELD DATE	SEAM # (P#/P#)	WELD TIME	TECH ID	Machine ID	Machine Temp	Machine Speed or Preheat	Start Point	End Point	Seam Length (Feet)	Air Pressure Test						Pass / Fail
										PSI		Time		Tech	Date	
										Start	Finish	Start	Finish			
6/5/12	75/76	2:15	DG	M16	800	600	SEOS	NEOS	700	30	30	10:54	10:59	DG	6/8/12	PASS
6/5/12	76/77	2:12	PV	M14	800	600	SEOS	NEOS	699	30	30	11:16	11:21	DG	6/8/12	PASS
6/5/12	77/78	2:23	JF	M41	800	580	SEOS	266' N S EOS	266	30	29	11:25	11:30	DG	6/8/12	PASS
6/5/12	77/78	2:23	JF	M41	800	580	266' N S EOS	NEOS	425	30	30	11:08	11:13	DG	6/8/12	PASS
6/5/12	33/67	3:00	PV	M40	830	500	WEOS	E EOS	22	30	30	4:10	4:15	DG	6/8/12	PASS
6/5/12	34/68	3:03	PV	M40	830	500	WEOS	E EOS	22	30	30	4:05	4:10	DG	6/8/12	PASS
6/5/12	36/69	3:05	PV	M40	830	500	WEOS	E EOS	22	30	30	4:03	4:08	DG	6/8/12	PASS
6/5/12	37/70	3:07	PV	M40	830	500	WEOS	E EOS	22	30	30	4:00	4:05	DG	6/8/12	PASS
6/5/12	38/71	3:11	PV	M40	830	500	WEOS	E EOS	22	30	28	3:54	3:59	DG	6/8/12	PASS
6/5/12	39/72	3:14	PV	M40	830	500	WEOS	E EOS	11	30	30	3:49	3:54	DG	6/8/12	PASS
6/5/12	39/72	3:14	PV	M40	830	500	WEOS	E EOS	11	CAPPED BY R234						PASS
6/5/12	40/73	3:45	PV	M40	830	500	WEOS	E EOS	22	30	30	3:39	3:44	DG	6/8/12	PASS
6/5/12	41/74	3:48	PV	M40	830	500	WEOS	E EOS	22	30	28	3:34	3:39	DG	6/8/12	PASS
6/5/12	42/75	9:08	PV	M40	830	500	WEOS	E EOS	22	30	30	3:22	3:27	DG	6/8/12	PASS
6/5/12	43/76	4:34	PV	M40	830	500	WEOS	E EOS	22	30	30	3:12	3:17	DG	6/8/12	PASS
6/5/12	44/77	4:36	PV	M40	830	500	WEOS	E EOS	22	30	30	3:10	3:15	DG	6/8/12	PASS
6/5/12	45/78	4:37	PV	M40	830	500	WEOS	E EOS	22	30	30	3:07	3:12	DG	6/8/12	PASS
6/6/12	78/79	7:00	PV	M14	830	530	SEOS	NEOS	693	30	30	11:14	11:19	DG	6/8/12	PASS
6/5/12	79/80	7:20	DG	M16	860	550	SEOS	90' N S EOS	90	30	30	11:38	11:43	DG	6/8/12	PASS
6/6/12	79/80	7:20	DG	M16	860	550	90' N S EOS	NEOS	592	30	30	11:30	11:35	DG	6/8/12	PASS
6/5/12	80/81	7:33	JF	M41	860	560	SEOS	NEOS	684	30	30	11:36	11:41	DG	6/8/12	PASS



Seaming and Non Destructive Test Log

Project No.: I12-011

Project Name: Hutsonville Power Plant

Date Started: 5/30/2012

Project Location: Hutsonville, IL

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Thickness : 40 mil

WELD DATE	SEAM # (P#/P#)	WELD TIME	TECH ID	Machine ID	Machine Temp	Machine Speed or Preheat	Start Point	End Point	Seam Length (Feet)	Air Pressure Test						Pass / Fail
										PSI		Time		Tech	Date	
										Start	Finish	Start	Finish			
6/6/12	81/82	8:43	PV	M14	860	560	SEOS	150' N S EOS	150	30	30	11:50	11:55	DG	6/8/12	PASS
6/5/12	81/82	8:43	PV	M40	870	530	150' N S EOS	NEOS	534	30	30	1:37	1:42	DG	6/8/12	PASS
6/6/12	82/83	9:06	DG	M16	860	550	SEOS	NEOS	684	30	30	11:48	11:53	DG	6/8/12	PASS
6/5/12	84/89	10:07	JF	M41	860	560	SEOS	NEOS	8	30	30	1:11	1:16	DG	6/8/12	PASS
6/6/12	83/84	10:08	JF	M41	860	560	SEOS	NEOS	682	30	28	1:19	1:24	DG	6/8/12	PASS
6/5/12	84/85	11:06	DG	M16	860	550	SEOS	120' N S EOS	120	30	30	1:40	1:45	DG	6/8/12	PASS
6/5/12	84/85	11:06	DG	M16	860	550	120' N S EOS	425' N S EOS	305	30	30	1:44	1:49	DG	6/8/12	PASS
6/5/12	84/85	11:06	DG	M16	860	550	425' N S EOS	NEOS	245	30	30	2:41	2:46	DG	6/8/12	PASS
6/6/12	85/86	11:06	PV	M40	830	530	SEOS	575' N S E	575	30	30	1:50	1:55	DG	6/8/12	PASS
6/6/12	85/86	11:06	PV	M40	830	530	575' N S E	NEOS	61	30	30	2:51	2:56	DG	6/8/12	PASS
6/6/12	86/87	1:38	JF	M41	860	560	SEOS	NEOS	325	30	30	1:56	2:01	DG	6/8/12	PASS
6/6/12	87/88	11:43	JF	M41	860	560	WEOS	E EOS	12	30	CAPPED BY R152					
6/6/12	86/88	2:15	JF	M41	860	560	SEOS	25' N S EOS	25	30	30	2:20	2:25	DG	6/8/12	PASS
6/6/12	86/88	2:15	JF	M41	860	560	25' N S EOS	NEOS	84	30	30	2:32	2:37	DG	6/8/12	PASS
6/6/12	83/89	9:30	JF	M41	860	430	E EOS	WEOS	22	30	30	6:30	6:35	DG	6/9/12	PASS
6/6/12	89/90	10:47	DG	M16	860	550	SEOS	NEOS	11	30	30	6:31	6:36	DG	6/9/12	PASS
6/6/12	83/90	10:49	DG	M16	860	550	SEOS	NEOS	14	30	30	6:36	6:41	DG	6/9/12	PASS
6/6/12	82/90	9:49	JF	M41	860	530	E EOS	WEOS	22	30	30	6:37	6:42	DG	6/9/12	PASS
6/6/12	90/91	11:03	DG	M16	860	530	NEOS	SEOS	22	30	30	6:49	6:54	DG	6/9/12	PASS
6/6/12	82/91	10:57	DG	M16	860	550	NEOS	SEOS	11	30	30	6:44	6:49	DG	6/9/12	PASS
6/6/12	81/91	9:35	JF	M41	860	430	E EOS	11' W E EOS	11	30	30	6:50	6:55	DG	6/9/12	PASS



Seaming and Non Destructive Test Log

Project No.: I12-011

Project Name: Hutsonville Power Plant

Date Started: 5/30/2012

Project Location: Hutsonville, IL

Material: HD Textured

Thickness: 40 mil

WELD DATE	SEAM # (P#/#)	WELD TIME	TECH ID	Machine ID	Machine Temp	Machine Speed or Preheat	Start Point	End Point	Seam Length (Feet)	Air Pressure Test						Pass / Fail
										PSI		Time		Tech	Date	
										Start	Finish	Start	Finish			
6/6/12	81/91	9:35	JF	M41	860	430	11' W E EOS	W EOS	11	30	30	6:58	7:03	DG	6/9/12	PASS
6/7/12	92/93	8:36	JF	M41	860	550	E EOS	172' W E EOS	172	30	30	7:14	7:19	DG	6/9/12	PASS
6/7/12	92/93	8:36	JF	M41	860	550	172' W E EOS	W EOS	525	30	30	8:36	8:41	DG	6/9/12	PASS
6/7/12	93/94	8:33	DG	M16	860	550	E EOS	W EOS	697	30	30	7:20	7:25	DG	6/9/12	PASS
6/7/12	81/94	9:28	PV	M40	830	500	N EOS	14' S N EOS	14	30	30	7:08	7:13	DG	6/9/12	PASS
6/7/12	81/94	9:28	PV	M40	830	500	14' S N EOS	S EOS	8	30	30	7:04	7:09	DG	6/9/12	PASS
6/7/12	81/93	9:30	PV	M40	830	500	N EOS	S EOS	8	30	30	7:03	7:08	DG	6/9/12	PASS
6/7/12	91/93	9:32	PV	M40	830	500	N EOS	S EOS	14	30	30	6:52	6:57	DG	6/9/12	PASS
6/7/12	91/92	9:33	PV	M40	830	500	N EOS	S EOS	22	30	30	6:57	7:02	DG	6/9/12	PASS
6/7/12	80/94	9:46	PV	M40	830	500	E EOS	W EOS	22	30	30	7:16	7:21	DG	6/9/12	PASS
6/7/12	79/94	9:48	PV	M40	830	500	E EOS	W EOS	22	30	30	7:23	7:28	DG	6/9/12	PASS
6/7/12	78/94	9:51	PV	M40	830	500	E EOS	W EOS	22	30	30	7:32	7:37	DG	6/9/12	PASS
6/7/12	77/94	9:56	PV	M40	830	500	E EOS	W EOS	22	30	30	7:33	7:38	DG	6/9/12	PASS
6/7/12	76/94	9:57	PV	M40	830	500	E EOS	W EOS	22	30	30	7:37	7:42	DG	6/9/12	PASS
6/7/12	75/94	10:00	PV	M40	830	500	E EOS	W EOS	22	30	30	7:40	7:45	DG	6/9/12	PASS
6/7/12	74/94	10:03	PV	M40	830	500	E EOS	W EOS	22	30	30	7:43	7:48	DG	6/9/12	PASS
6/7/12	73/94	10:06	PV	M40	830	500	E EOS	W EOS	22	30	30	7:46	7:51	DG	6/9/12	PASS
6/7/12	72/94	10:09	PV	M40	830	500	E EOS	W EOS	22	30	30	7:48	7:53	DG	6/9/12	PASS
6/7/12	71/94	10:12	PV	M40	830	500	E EOS	W EOS	22	30	30	7:53	7:58	DG	6/9/12	PASS
6/7/12	70/94	10:14	PV	M40	830	500	E EOS	W EOS	22	30	30	7:55	8:00	DG	6/9/12	PASS
6/7/12	69/94	10:17	PV	M40	830	500	E EOS	W EOS	22	30	30	7:58	8:03	DG	6/9/12	PASS



Seaming and Non Destructive Test Log

Project No.: 112-011

Project Name: Hutsonville Power Plant

Date Started: 5/30/2012

Project Location: Hutsonville, IL

Material: HD Textured

Thickness : 40 mil

WELD DATE	SEAM # (P#/P#)	WELD TIME	TECH ID	Machine ID	Machine Temp	Machine Speed or Preheat	Start Point	End Point	Seam Length (Feet)	Air Pressure Test						Pass / Fail
										PSI		Time		Tech	Date	
										Start	Finish	Start	Finish			
6/7/12	68/94	10:20	PV	M40	830	500	E EOS	W EOS	22	30	30	8:00	8:05	DG	6/9/12	PASS
6/7/12	67/94	10:25	PV	M40	830	500	E EOS	W EOS	22	30	30	8:04	8:09	DG	6/9/12	PASS
6/7/12	66/94	10:26	PV	M40	830	500	E EOS	W EOS	22	30	30	8:09	8:14	DG	6/9/12	PASS
6/7/12	65/94	10:29	PV	M40	830	500	E EOS	W EOS	22	30	30	8:10	8:15	DG	6/9/12	PASS
6/7/12	64/94	10:32	PV	M40	830	500	E EOS	W EOS	22	30	30	8:11	8:16	DG	6/9/12	PASS
6/7/12	63/94	10:35	PV	M40	830	500	E EOS	W EOS	22	30	30	8:15	8:20	DG	6/9/12	PASS
6/7/12	62/94	10:38	PV	M40	830	500	E EOS	W EOS	22	30	30	8:30	8:35	DG	6/9/12	PASS
6/7/12	61/94	10:41	PV	M40	830	500	E EOS	W EOS	22	30	30	8:35	8:40	DG	6/9/12	PASS
6/7/12	60/94	10:44	PV	M40	830	500	E EOS	W EOS	22	30	30	8:37	8:42	DG	6/9/12	PASS
6/7/12	59/94	10:47	PV	M40	830	500	E EOS	W EOS	22	30	30	8:43	8:48	DG	6/9/12	PASS
6/7/12	58/94	10:50	PV	M40	830	500	E EOS	W EOS	22	30	30	8:50	8:55	DG	6/9/12	PASS
6/7/12	57/94	10:53	PV	M40	830	500	E EOS	W EOS	22	30	30	8:53	8:58	DG	6/9/12	PASS
6/7/12	56/94	10:56	PV	M40	830	500	E EOS	W EOS	22	30	30	8:59	9:04	DG	6/9/12	PASS
6/7/12	55/94	11:06	PV	M40	830	500	E EOS	11' W E EOS	11	30	30	9:04	9:09	DG	6/9/12	PASS
6/7/12	55/94	11:06	PV	M40	830	500	11' W E EOS	W EOS	11	30	30	9:10	9:15	DG	6/9/12	PASS
6/7/12	54/94	11:08	PV	M40	830	500	E EOS	W EOS	22	30	30	9:11	9:16	DG	6/9/12	PASS
6/7/12	53/94	11:10	PV	M40	830	500	E EOS	W EOS	22	30	30	9:15	9:20	DG	6/9/12	PASS
6/7/12	46/94	11:12	PV	M40	830	500	E EOS	W EOS	22	30	30	9:14	9:19	DG	6/9/12	PASS
6/7/12	47/94	11:15	PV	M40	830	500	E EOS	W EOS	22	30	30	9:25	9:30	DG	6/9/12	PASS
6/7/12	48/94	11:18	PV	M40	830	500	E EOS	W EOS	22	30	30	9:30	9:35	DG	6/9/12	PASS
6/7/12	49/94	11:21	PV	M40	830	500	E EOS	W EOS	13	30	30	9:34	9:39	DG	6/9/12	PASS



Seaming and Non Destructive Test Log

Project No.: I12-011

Project Name: Hutsonville Power Plant

Date Started: 5/30/2012

Project Location: Hutsonville, IL

Material: HD Textured

Thickness: 40 mil

WELD DATE	SEAM # (P#/P#)	WELD TIME	TECH ID	Machine ID	Machine Temp	Machine Speed or Preheat	Start Point	End Point	Seam Length (Feet)	Air Pressure Test						Pass / Fail
										PSI		Time		Tech	Date	
										Start	Finish	Start	Finish			
6/7/12	94/99	4:45	PV	M40	850	500	NEOS	SEOS	22	30	30	9:34	9:39	DG	6/9/12	PASS
6/7/12	93/100	4:51	PV	M40	850	500	NEOS	SEOS	22	30	30	9:49	9:54	DG	6/9/12	PASS
6/7/12	92/102	4:55	PV	M40	850	500	NEOS	SEOS	22	30	30	10:05	10:10	DG	6/9/12	PASS
6/7/12	99/96	4:22	DG	M16	800	550	NEOS	SEOS	22	30	30	10:30	10:35	DG	6/9/12	PASS
6/7/12	96/100	4:30	DG	M16	800	550	NEOS	10' S NEOS	10	30	30	10:47	10:52	DG	6/9/12	PASS
6/7/12	96/100	4:30	DG	M16	800	550	10' S NEOS	SEOS	12	30	30	10:52	10:57	DG	6/9/12	PASS
6/7/12	96/102	4:33	DG	M16	800	550	NEOS	SEOS	22	30	30	10:57	11:02	DG	6/9/12	PASS
6/7/12	52/95	2:50	PV	M40	830	600	SEOS	NEOS	693	30	30	5:43	5:48	DG	6/9/12	PASS
6/7/12	95/96	1:16	PV	M40	830	600	SEOS	50' N SEOS	50	30	30	10:40	10:45	DG	6/9/12	PASS



Seaming and Non Destructive Test Log

Project No.: 112-011

Project Name: Hutsonville Power Plant

Date Started: 5/30/2012

Project Location: Hutsonville, IL

Material: HD Textured

Thickness : 40 mil

WELD DATE	SEAM # (P#/P#)	WELD TIME	TECH ID	Machine ID	Machine Temp	Machine Speed or Preheat	Start Point	End Point	Seam Length (Feet)	Air Pressure Test						Pass / Fail
										PSI		Time		Tech	Date	
										Start	Finish	Start	Finish			
6/7/12	95/96	1:16	PV	M40	830	600	50' N S EOS	215' N S EOS	165	30	30	10:35	10:40	DG	6/9/12	PASS
6/7/12	95/96	1:16	PV	M40	830	600	215' N S EOS	550' N S EOS	335	30	30	5:55	6:00	DG	6/9/12	PASS
6/7/12	95/96	1:16	PV	M40	830	600	550' N S EOS	NEOS	45	30	30	5:50	5:55	DG	6/9/12	PASS
6/7/12	96/97	2:05	JF	M41	800	600	SEOS	458 N S EOS	458	30	30	6:07	6:12	DG	6/9/12	PASS
6/7/12	96/97	2:05	JF	M41	800	600	458 N S EOS	NEOS	10	30	30	6:02	6:07	DG	6/9/12	PASS
6/7/12	97/98	4:07	DG	M16	800	550	SEOS	250' N S EOS	250	30	30	11:10	11:15	DG	6/9/12	PASS
6/7/12	97/98	4:07	DG	M16	800	550	250' N S EOS	NEOS	16	30	30	11:35	11:40	DG	6/9/12	PASS
6/7/12	97/103	2:38	DG	M16	800	550	SEOS	NEOS	80	30	30	11:40	11:45	DG	6/9/12	PASS
6/7/12	49/94	4:05	DG	M16	800	550	E EOS	W EOS	13	30	30	9:44	9:49	DG	6/9/12	PASS
6/7/12	50/99	4:07	DG	M16	800	550	E EOS	W EOS	22	30	30	10:10	10:15	DG	6/9/12	PASS
6/7/12	51/99	4:10	DG	M16	800	550	E EOS	W EOS	22	30	30	10:15	10:20	DG	6/9/12	PASS
6/7/12	52/99	4:13	DG	M16	800	550	E EOS	W EOS	22	30	30	10:20	10:25	DG	6/9/12	PASS
6/7/12	95/99	4:16	DG	M16	800	550	E EOS	W EOS	22	30	30	10:25	10:30	DG	6/9/12	PASS
6/7/12	99/100	3:33	JF	M41	860	600	E EOS	W EOS	100	30	30	10:54	10:59	DG	6/9/12	PASS
6/7/12	100/101	3:50	JF	M41	860	600	E EOS	W EOS	92	30	28	10:00	10:05	DG	6/9/12	PASS
6/7/12	100/102	4:00	JF	M41	860	600	E EOS	W EOS	8	CAPPED BY R255						PASS
6/7/12	101/102	3:35	DG	M16	800	550	NEOS	SEOS	22	30	30	11:05	11:10	DG	6/9/12	PASS
6/7/12	98/105	3:02	DG	M16	860	600	SEOS	NEOS	30	30	30	11:15	11:20	DG	6/9/12	PASS
6/7/12	98/104	3:06	DG	M16	860	600	SEOS	NEOS	56	30	30	11:20	11:25	DG	6/9/12	PASS
6/7/12	104/105	2:58	DG	M16	860	600	E EOS	W EOS	12	30	30	11:25	11:30	DG	6/9/12	PASS
6/7/12	3/95	4:25	PV	M14	830	660	E EOS	W EOS	17	30	30	5:12	5:17	DG	6/9/12	PASS



Repair Log

Project No.: 112-011
 Project Name: Hutsonville Power Plant
 Date: 5/30/12
 Project LocatDn: Hutsonville, IL

Material: HD TEXTURED

Thickness: 40 mil

Repair #	Defect Code	Defect Location	Repair Date	Repair Time	Repair Type	Approx Size	Machine ID	Repair Tech	Vacuum Test		Vac Test Tech
		Seam #							P/F	Date	
1	AT	1/2 S AT	6/1/2012	12:00	P	2*6	MX2	PV	PASS	6/13/12	mg
2	MD	1/2 12' N S EOS	6/1/2012	12:12	P	2*10	MX2	PV	PASS	6/13/12	mg
3	LE	2/3 S AT	6/1/2012	11:13	P	2*20	MX2	PV	PASS	6/13/12	mg
4	AT	2/3 N AT	6/1/2012	1:52	P	2*6	MX2	PV	PASS	6/13/12	mg
5	AT	3/4 N AT	6/1/2012	2:00	P	2*6	MX2	PV	PASS	6/13/12	mg
6	MD	3/4 10' S N AT	6/1/2012	1:45	P	2*8	MX2	PV	PASS	6/13/12	mg
7	DS-1	3/4 420' N S EOS	6/1/2012	2:05	P	2*6	MX2	PV	PASS	6/13/12	mg
8	BO	3/4 64' N S EOS	6/1/2012	10:20	P	2*2	MX2	PV	PASS	6/13/12	mg
9	DS-2	4/5 220' N S EOS	6/6/2012	3:50	P	2*6	MX2	AO	PASS	6/13/12	mg
10	BO	4/5 230' N S EOS	6/1/2012	10:41	P	2*2	MX2	PV	PASS	6/13/12	mg
11	BO	4/5 270' N S EOS	6/1/2012	10:46	P	2*2	MX2	PV	PASS	6/13/12	mg
12	BO	4/5 N AT	6/1/2012	2:33	P	2*6	MX2	PV	PASS	6/13/12	mg
13	LE	5-6-8 N AT	6/6/2012	2:30	P	6*50	MX2	AO	PASS	6/13/12	mg
14	T	5-6-7	6/1/2012	2:12	P	2*6	MX2	PV	PASS	6/13/12	mg
15	DS-3/A/B	5/7 100' N S EOS	6/1/2012	4:00	P	2*25	MX2	AO	PASS	6/13/12	mg
16	T	7-8-9	6/1/2012	3:30	P	2*2	MX2	PV	PASS	6/13/12	mg
17	DS-4	7/8 80' N S EOS	6/1/2012	2:30	P	2*6	MX2	PV	PASS	6/13/12	mg
18	T	6-7-8	6/1/2012	2:18	P	2*2	MX2	PV	PASS	6/13/12	mg
19	T	8-9-10	6/1/2012	3:28	P	2*2	MX2	PV	PASS	6/13/12	mg
20	DS-5	9/10 10' N S EOS	6/1/2012	3:44	P	2*6	MX2	PV	PASS	6/13/12	mg
21	T	9-10-11	6/1/2012	3:40	P	2*2	MX2	PV	PASS	6/13/12	mg
22	MD	11/13 125' S N EOS	6/12/2012	9:00	P	2*25	MX2	AO	PASS	6/13/12	mg
23	DS-7	11-12-13	6/12/2012	9:05	P	2*8	MX2	AO	PASS	6/13/12	mg
24	T	11-12-13	6/6/2012	4:10	P	4*4	MX2	AO	PASS	6/13/12	mg
25	T	10-11-12	6/1/2012	3:35	P	2*2	MX2	PV	PASS	6/13/12	mg
26	DS-6	10/12 N AT	6/1/2012	3:08	P	2*8	MX2	PV	PASS	6/13/12	mg
27	DS-8	12/14 310' S N EOS	6/1/2012	4:21	P	2*6	MX2	PV	PASS	6/13/12	mg
28	T	12-13-14	6/6/2012	4:05	P	2*2	MX2	PV	PASS	6/13/12	mg
29	DS-9	14/15 470' S N EOS	6/1/2012	8:09	P	2*6	MX2	PV	PASS	6/13/12	mg
30	AT	14/15 N AT	6/1/2012	3:15	P	2*2	MX2	PV	PASS	6/13/12	mg
31	DS-10	15/16 150' S N EOS	6/1/2012	3:55	P	2*6	MX2	PV	PASS	6/13/12	mg
32	T	15-16-17	6/1/2012	4:11	P	2*2	MX2	PV	PASS	6/13/12	mg
33	T	17-18-19	6/1/2012	5:56	P	2*2	MX2	PV	PASS	6/13/12	mg
34	BT	17/18 180' S N EOS	6/1/2012	9:15	P	2*5	MX2	ao	PASS	6/13/12	mg
35	DS-11	17/18 150' S N EOS	6/1/2012	4:30	P	2*6	MX2	PV	PASS	6/13/12	mg
36	MD	17/18 150' S N EOS 11' W P17	6/1/2012	9:22	P	2*5	MX2	ao	PASS	6/13/12	mg
37	T	16-17-18	6/1/2012	4:00	P	2*6	MX2	PV	PASS	6/13/12	mg
38	BO	16/18 N AT	6/1/2012	3:25	P	2*2	MX2	PV	PASS	6/13/12	mg
39	BO	18/20 290' S N AT	6/1/2012	4:34	P	2*2	MX2	PV	PASS	6/13/12	mg
40	T	18-19-20	6/1/2012	5:49	P	2*2	MX2	PV	PASS	6/13/12	mg
41	BO	20/22 85' S N EOS	6/1/2012	5:44	P	2*2	MX2	PV	PASS	6/13/12	mg
42	DS-12 A AND B	20-21-22	6/1/2012	5:28	P	2*26	MX2	PV	PASS	6/13/12	mg



Repair Log

Project No.: J12-011
 Project Name: Hutsonville Power Plant
 Date: 5/30/12
 Project LocatDn: Hutsonville, IL

Material: HD TEXTURED

Thickness: 40 mil

Repair #	Defect Code	Defect Location	Repair Date	Repair Time	Repair Type	Approx Size	Machine ID	Repair Tech	Vacuum Test		Vac Test Tech
		Seam #							P/F	Date	
43	MD	20/21 12' S N EOS 3' W P 20	6/6/2012	3:34	P	2*2	MX2	AO	PASS	6/13/12	mg
44	BO	20/21 N AT	6/6/2012	3:30	P	2*4	MX2	AO	PASS	6/13/12	mg
45	BO	21/23 220' S N EOS	6/1/2012	5:20	P	2*2	MX2	PV	PASS	6/13/12	mg
46	T	21-21-23	6/1/2012	5:15	P	2*2	MX2	PV	PASS	6/13/12	mg
47	DS13 A AND B	22/23 20' S N EOS	6/1/2012	5:37	P	2*25	MX2	PV	PASS	6/13/12	mg
48	T	23-24-25	6/7/2012	5:00	P	2*2	MX2	AO	PASS	6/13/12	mg
49	AT	23-24 N AT	6/7/2012	5:20	P	2*2	MX2	AO	PASS	6/13/12	mg
50	AT	24/26 N AT	6/8/2012	7:10	P	2*4	MX2	AO	PASS	6/13/12	mg
51	T	24-25-26	6/7/2012	5:05	P	2*2	MX2	AO	PASS	6/13/12	mg
52	DS-14 A AND B	26/27 150' S N EOS	6/7/2012	5:40	P	2*25	MX2	AO	PASS	6/13/12	mg
53	MD	51/52 300' N S EOS	6/8/2012	10:00	P	2*20	MX2	AO	PASS	6/13/12	mg
54	DS-25	50/51 590' N S EOS	6/8/2012	9:12	P	2*6	MX18	PV	PASS	6/13/12	mg
55	DS-24	50/51 100' N S EOS	6/8/2012	9:20	P	2*6	MX2	AO	PASS	6/13/12	mg
56	MD	49/50 25' N S EOS	6/8/2012	9:25	P	2*2	MX2	AO	PASS	6/13/12	mg
57	DS-15	27/28 100' S N EOS	6/7/2012	6:00	P	2*6	MX2	AO	PASS	6/13/12	mg
58	BO	28/29 N AT	6/8/2012	7:35	P	2*2	MX2	AO	PASS	6/13/12	mg
59	DS16	28/29 20' S N AT	6/8/2012	7:25	P	2*6	MX2	AO	PASS	6/13/12	mg
60	BO	29/30 N AT	6/8/2012	7:40	P	2*2	MX2	AO	PASS	6/13/12	mg
61	BO	31/32 95' S N AT	6/8/2012	7:50	P	2*2	MX2	AO	PASS	6/13/12	mg
62	BO	49/50 135' N S EOS	6/8/2012	9:30	P	2*2	MX2	AO	PASS	6/13/12	mg
63	MD	33/34 70' S N AT 11'W P 33	6/8/2012	7:45	P	2*2	MX2	AO	PASS	6/13/12	mg
64	T	34-35-36	6/8/2012	7:55	P	2*2	MX2	AO	PASS	6/13/12	mg
65	DS-17	35/36 15' S N AT	6/8/2012	8:05	P	2*6	MX2	AO	PASS	6/13/12	mg
66	T	35-36-37	6/8/2012	8:06	P	2*2	MX2	AO	PASS	6/13/12	mg
67	DS-18	37/38 27' S N AT	6/8/2012	8:15	P	2*2	MX2	AO	PASS	6/13/12	mg
68	DS-19	38/39 N AT	6/8/2012	8:00	P	2*28	MX2	AO	PASS	6/13/12	mg
69	DS-26	51/52 250' N S AT	6/8/2012	9:55	P	2*6	MX2	AO	PASS	6/13/12	mg
70	BO	49/50 125' N S EOS	6/8/2012	9:15	P	2*2	MX2	AO	PASS	6/13/12	mg
71	DS-23	49/50 250' N S EOS	6/8/2012	9:40	P	2*2	MX2	AO	PASS	6/13/12	mg
72	DS-22	48/49 440' N S EOS	6/8/2012	9:20	P	2*6	MX18	PV	PASS	6/13/12	mg
73	DS-21	47/48 450' N S EOS	6/8/2012	9:31	P	2*16	MX18	PV	PASS	6/13/12	mg
74	DS-20	46/47 300' N S EOS	6/8/2012	9:50	P	2*6	MX18	PV	PASS	6/13/12	mg
75	BO	46/47 208' N S EOS	6/12/2012	9:35	P	2*2	MX18	PV	PASS	6/13/12	mg
76	DS-39	46/53 400' N S E	6/8/2012	10:16	P	2*6	MX18	PV	PASS	6/13/12	mg
77	BO	53/54 610' N S EOS	6/8/2012	11:31	P	2*6	MX18	PV	PASS	6/13/12	mg
78	BO	53/54 560' N S EOS	6/8/2012	11:26	P	2*6	MX18	PV	PASS	6/13/12	mg
79	DS-52	53-54 498' N S EOS	6/8/2012	11:13	P	2*6	MX18	PV	PASS	6/13/12	mg
80	BT	53/54 492' N S EOS	6/8/2012	9:25	P	2*5	MX2	ao	PASS	6/13/12	mg
81	DS27	54/55 100' N S EOS	6/8/2012	11:17	P	2*6	MX2	AO	PASS	6/13/12	mg
82	BO	54/55 167' N S EOS	6/8/2012	11:12	P	2*2	MX2	AO	PASS	6/13/12	mg
83	DS-40	55/56 210' S N EOS	6/8/2012	11:10	P	2*6	MX18	PV	PASS	6/13/12	mg
84	BO	55/56 325' S N EOS	6/8/2012	10:25	P	2*2	MX18	PV	PASS	6/13/12	mg



Repair Log

Project No.: 112-011
 Project Name: Hutsonville Power Plant
 Date: 5/30/12
 Project LocatDn: Hutsonville, IL

Material: HD TEXTURED
 Thickness: 40 mil

Repair #	Defect Code	Defect Location	Repair Date	Repair Time	Repair Type	Approx Size	Machine ID	Repair Tech	Vacuum Test		Vac Test Tech
		Seam #							P/F	Date	
85	BO	55/56 500' S N EOS	6/8/2012	11:05	P	2*2	MX2	AO	PASS	6/13/12	mg
86	BO	56/57 15' S N EOS	6/8/2012	1:19	P	2*2	MX18	PV	PASS	6/13/12	mg
87	BO	56/57 30 S N EOS	6/8/2012	11:47	P	2*2	MX18	PV	PASS	6/13/12	mg
88	MD	56/57 265' S N EOS	6/8/2012	2:14	P	2*2	MX18	PV	PASS	6/13/12	mg
89	DS-29	56/57 315' S N EOS	6/8/2012	10:33	P	2*6	MX18	PV	PASS	6/13/12	mg
90	BO	56/57 580' S N EOS	6/8/2012	11:25	P	2*6	MX2	AO	PASS	6/13/12	mg
91	DS-53	57/58 310' S N EOS	6/8/2012	10:40	P	2*6	MX18	PV	PASS	6/13/12	mg
92	BO	58/59 640' N S EOS	6/8/2012	1:25	P	2*6	MX18	PV	PASS	6/13/12	mg
93	BO	58/59 570' N S EOS	6/8/2012	1:47	P	2*6	MX18	PV	PASS	6/13/12	mg
94	DS-42	58/59 500' N S EOS	6/8/2012	1:56	P	2*6	MX18	PV	PASS	6/13/12	mg
95	BO	58/59 430' N S EOS	6/8/2012	2:03	P	2*6	MX18	PV	PASS	6/13/12	mg
96	DS-41	58/59 10' N S EOS	6/8/2012	11:40	P	2*6	MX2	AO	PASS	6/13/12	mg
97	DS-54	59/60 100' N S EOS	6/8/2012	11:50	P	2*2	MX2	AO	PASS	6/13/12	mg
98	BO	59/60 495' N S EOS	6/8/2012	1:57	P	2*2	MX18	PV	PASS	6/13/12	mg
99	DS-55	59/60 600' N S EOS	6/8/2012	1:32	P	2*6	MX18	PV	PASS	6/13/12	mg
100	DS-30	60/61 245' N S EOS	6/8/2012	1:40	P	2*6	MX2	AO	PASS	6/13/12	mg
101	DS-43	61/62 200' N S EOS	6/8/2012	1:50	P	2*6	MX2	AO	PASS	6/13/12	mg
102	BT	61/62 390' N S EOS	6/8/2012	9:35	P	2*5	MX2	ao	PASS	6/13/12	mg
103	DS-44	61/62 680' N S EOS	6/8/2012	3:57	P	2*6	MX18	PV	PASS	6/13/12	mg
104	DS-56	62/63 350' S N EOS	6/8/2012	3:13	P	2*6	MX18	PV	PASS	6/13/12	mg
105	DS-31	63/64 20' N S EOS	6/8/2012	2:10	P	2*6	MX2	AO	PASS	6/13/12	mg
106	DS-32	63/64 500' N S EOS	6/8/2012	2:24	P	2*6	MX18	PV	PASS	6/13/12	mg
107	DS-45	64/65 500' N S EOS	6/8/2012	2:43	P	2*6	MX18	PV	PASS	6/13/12	mg
108	DS-57	65/66 140' N S EOS	6/8/2012	2:00	P	2*6	MX2	AO	PASS	6/13/12	mg
109	BO	65/66 320' N S EOS	6/12/2012	9:45	P	2*5	MX2	ao	PASS	6/13/12	mg
110	BO	65/66 490' N S EOS	6/8/2012	5:18	P	2*25	MX18	PV	PASS	6/13/12	mg
111	BO	65/66 545 N S EOS	6/8/2012	9:03	P	2*22	MX18	PV	PASS	6/13/12	mg
112	DS-58	65/66 650' N S EOS	6/8/2012	3:44	P	2*6	MX18	PV	PASS	6/13/12	mg
113	BO	66/67 520' N S EOS	6/12/2012	10:00	P	2*5	MX2	ao	PASS	6/13/12	mg
114	DS-33	66/67 445' N S EOS	6/12/2012	10:15	P	2*5	MX2	ao	PASS	6/13/12	mg
115	BT	67/68 96' N S EOS	6/12/2012	10:23	P	2*5	MX2	ao	PASS	6/13/12	mg
116	DS-46	67/68 300' N S EOS	6/12/2012	10:32	P	2*5	MX2	ao	PASS	6/13/12	mg
117	DS-59	68/69 450' N S EOS	6/8/2012	5:48	P	2*6	MX18	PV	PASS	6/13/12	mg
118	DS-34	69/70 55' N S EOS	6/8/2012	2:30	P	2*6	MX2	AO	PASS	6/13/12	mg
119	MD	69/70 155' N S EOS	6/8/2012	2:34	P	2*2	MX2	AO	PASS	6/13/12	mg
120	BT	69/70 515' N S EOS	6/12/2012	10:47	P	2*5	MX2	ao	PASS	6/13/12	mg
121	DS-35	69/70 540' N S EOS	6/12/2012	10:52	P	2*5	MX2	ao	PASS	6/13/12	mg
122	DS-48	70/71 600' N S EOS	6/12/2012	11:00	P	2*5	MX2	ao	PASS	6/13/12	mg
123	DS-47	70/71 100' N S EOS	6/8/2012	2:20	P	2*6	MX2	AO	PASS	6/13/12	mg
124	DS-60	71/72 250 N S EOS	6/12/2012	11:05	P	2*5	MX2	ao	PASS	6/13/12	mg
125	DS-36	72/73 350' N S EOS	6/12/2012	11:10	P	2*5	MX2	ao	PASS	6/13/12	mg
126	BO	73/74 650' N S EOS	6/9/2012	7:00	P	2*6	MX18	PV	PASS	6/13/12	mg



Repair Log

Project No.: I12-011
 Project Name: Hutsonville Power Plant
 Date: 5/30/12
 Project LocatDn: Hutsonville, IL

Material: HD TEXTURED

Thickness: 40 mil

Repair #	Defect Code	Defect Location	Repair Date	Repair Time	Repair Type	Approx Size	Machine ID	Repair Tech	Vacuum Test		Vac Test Tech
		Seam #							P/F	Date	
127	DS-49	73/74 400' N S EOS	6/12/2012	11:15	P	2*5	MX2	ao	PASS	6/13/12	mg
128	DS-61	74/75 50' N S EOS	6/8/2012	4:00	P	2*6	MX2	AO	PASS	6/13/12	mg
129	DS-62	74/75 560' N S EOS	6/9/2012	7:30	P	2*6	MX18	PV	PASS	6/13/12	mg
130	DS-63	75/76 350' N S EOS	6/12/2012	11:23	P	2*5	MX2	ao	PASS	6/13/12	mg
131	DS-51	76/77 10' N S EOS	6/8/2012	4:20	P	2*6	MX2	AO	PASS	6/13/12	mg
132	DS-50	76/77 200' N S EOS	6/8/2012	4:50	P	2*6	MX2	AO	PASS	6/13/12	mg
133	BT	77/78 260' N S EOS	6/12/2012	11:45	P	2*5	MX2	ao	PASS	6/13/12	mg
134	DS-37	77/78 125' N S EOS	6/8/2012	4:45	P	2*6	MX2	AO	PASS	6/13/12	mg
135	DS-38	77/78 25' N S EOS	6/8/2012	4:25	P	2*6	MX2	AO	PASS	6/13/12	mg
136	DS-64	78/79 500' N S EOS	6/9/2012	7:39	P	2*6	MX18	PV	PASS	6/13/12	mg
137	DS-74	79/80 650' N S EOS	6/9/2012	10:00	P	2*6	MX18	PV	PASS	6/13/12	mg
138	DS-73	79/80 150' N S EOS	6/8/2012	4:40	P	2*6	MX2	AO	PASS	6/13/12	mg
139	BO	79/80 90' N S EOS	6/8/2012	4:31	P	2*2	MX2	AO	PASS	6/13/12	mg
140	DS-81	80/1 500' N S EOS	6/9/2012	7:47	P	2*6	MX18	PV	PASS	6/13/12	mg
141	DS-65	81/82 300' N S EOS	6/9/2012	7:45	P	2*6	MX2	AO	PASS	6/13/12	mg
142	BO	81/82 150' N S EOS	6/9/2012	7:10	P	2*2	MX2	AO	PASS	6/13/12	mg
143	DS-75	82/83 400' N S EOS	6/9/2012	8:00	P	2*2	MX2	AO	PASS	6/13/12	mg
144	DS-82	83/84 300' N S EOS	6/9/2012	7:20	P	2*6	MX2	AO	PASS	6/13/12	mg
145	DS-76	84/85 100' N S EOS	6/8/2012	5:35	P	2*6	MX2	AO	PASS	6/13/12	mg
146	BO	84/85 120' N S EOS	6/8/2012	5:25	P	2*6	MX2	AO	PASS	6/13/12	mg
147	BO	84/85 425' N S EOS	6/9/2012	7:50	P	2*2	MX2	AO	PASS	6/13/12	mg
148	DS-67	85/86 600' N S EOS	6/9/2012	8:17	P	2*6	MX18	PV	PASS	6/13/12	mg
149	BO	85/86 575' N S EOS	6/9/2012	8:09	P	2*2	MX18	PV	PASS	6/13/12	mg
150	DS-66	85/86 100' N S EOS	6/8/2012	5:45	P	2*6	MX2	AO	PASS	6/13/12	mg
151	DS-83	86/87 120' N S EOS	6/9/2012	7:05	P	2*6	MX2	AO	PASS	6/13/12	mg
152	T	86-87-88	6/9/2012	9:00	P	2*12	MX2	AO	PASS	6/13/12	mg
153	MD	86/88 25' N S EOS	6/9/2012	8:05	P	2*30	MX2	AO	PASS	6/13/12	mg
154	LE	86/88 N AT	6/9/2012	9:00	P	2*30	MX18	PV	PASS	6/13/12	mg
155	DS EX1	86 W AT	6/9/2012	9:08	P	2*6	MX18	PV	PASS	6/13/12	mg
156	DS-77	84/85 600' N S EOS	6/9/2012	8:00	P	2*6	MX18	PV	PASS	6/13/12	mg
157	T	83-84-89	6/9/2012	11:00	P	2*6	MX2	AO	PASS	6/13/12	mg
158	T	83-89-90	6/9/2012	11:05	P	2*2	MX2	AO	PASS	6/13/12	mg
159	T	82-83-90	6/9/2012	11:10	P	2*6	MX2	AO	PASS	6/13/12	mg
160	T	82-90-91	6/9/2012	12:50	P	2*2	MX2	AO	PASS	6/13/12	mg
161	T	81-82-91	6/9/2012	1:00	P	2*6	MX3	AO	PASS	6/13/12	mg
162	BO	81/91 11' W E EOS	6/9/2012	1:10	P	2*6	MX4	AO	PASS	6/13/12	mg
163	T	91-92-93	6/9/2012	1:17	P	2*2	MX5	AO	PASS	6/13/12	mg
164	T	91-92-81	6/9/2012	1:15	P	2*2	MX6	AO	PASS	6/13/12	mg
165	T	81-93-94	6/9/2012	1:20	P	2*2	MX7	AO	PASS	6/13/12	mg
166	BO	81/94 14 S N EOS	6/9/2012	1:25	P	2*2	MX8	AO	PASS	6/13/12	mg
167	T	80-81-94	6/9/2012	1:30	P	2*2	MX9	AO	PASS	6/13/12	mg
168	MD	80/94 3'W 4' S P84	6/9/2012	1:38	P	4*4	MX10	AO	PASS	6/13/12	mg



Repair Log

Project No.: 112-011
 Project Name: Hutsonville Power Plant
 Date: 5/30/12
 Project LocatDn: Hutsonville, IL

Material: HD TEXTURED

Thickness: 40 mil

Repair #	Defect Code	Defect Location	Repair Date	Repair Time	Repair Type	Approx Size	Machine ID	Repair Tech	Vacuum Test		Vac Test Tech
		Seam #							P/F	Date	
169	DS-84	92/93 145' W E EOS	6/9/2012	1:40	P	2*6	MX2	AO	PASS	6/13/12	mg
170	MD	92-93 385' W E EOS	6/9/2012	3:15	P	2*2	MX2	AO	PASS	6/13/12	mg
171	MD	92/93 410' W E EOS	6/9/2012	3:10	P	2*2	MX2	AO	PASS	6/13/12	mg
172	BO	92/93 425' W E EOS	6/9/2012	3:05	P	2*2	MX2	AO	PASS	6/13/12	mg
173	MD	92/93 475 W E EOS	6/11/2012	11:20	P	2*2	MX2	AO	PASS	6/13/12	mg
174	DS-85	92/93 650' W E EOS	6/11/2012	8:10	P	2*2	MX2	AO	PASS	6/13/12	mg
175	DS-78	93/94 400' W E EOS	6/9/2012	3:20	P	2*6	MX2	AO	PASS	6/13/12	mg
176	T	79-80-94	6/9/2012	1:35	P	2*6	MX2	AO	PASS	6/13/12	mg
177	T	78-79-94	6/9/2012	1:44	P	2*2	MX2	AO	PASS	6/13/12	mg
178	T	77-78-94	6/9/2012	1:45	P	2*2	MX2	AO	PASS	6/13/12	mg
179	T	76-77-94	6/9/2012	1:47	P	2*2	MX2	AO	PASS	6/13/12	mg
180	T	75-76-94	6/9/2012	1:50	P	2*2	MX2	AO	PASS	6/13/12	mg
181	T	74-75-94	6/9/2012	1:53	P	2*2	MX2	AO	PASS	6/13/12	mg
182	T	73-74-94	6/9/2012	1:55	P	2*2	MX2	AO	PASS	6/13/12	mg
183	T	72-73-94	6/9/2012	1:58	P	2*2	MX2	AO	PASS	6/13/12	mg
184	T	71-72-94	6/9/2012	2:05	P	2*2	MX2	AO	PASS	6/13/12	mg
185	DS-68	71/94 11' W E EOS	6/9/2012	2:10	P	2*2	MX2	AO	PASS	6/13/12	mg
186	T	70-71-94	6/9/2012	2:15	P	2*2	MX2	AO	PASS	6/13/12	mg
187	T	69-70-94	6/9/2012	2:17	P	2*2	MX2	AO	PASS	6/13/12	mg
188	T	68-69-94	6/9/2012	2:20	P	2*2	MX2	AO	PASS	6/13/12	mg
189	T	67-68-94	6/9/2012	2:25	P	2*2	MX2	AO	PASS	6/13/12	mg
190	T	66-67-94	6/9/2012	2:30	P	2*2	MX2	AO	PASS	6/13/12	mg
191	T	65-66-94	6/9/2012	2:35	P	2*2	MX2	AO	PASS	6/13/12	mg
192	MD	65/66 6' N S EOS 1E P66	6/9/2012	2:37	P	2*2	MX2	AO	PASS	6/13/12	mg
193	T	64-65-94	6/9/2012	2:41	P	2*2	MX2	AO	PASS	6/13/12	mg
194	T	63-64-94	6/9/2012	2:45	P	2*2	MX2	AO	PASS	6/13/12	mg
195	T	62-63-94	6/9/2012	2:50	P	2*2	MX2	AO	PASS	6/13/12	mg
196	T	61-62-94	6/9/2012	2:55	P	2*2	MX2	AO	PASS	6/13/12	mg
197	T	60-61-94	6/9/2012	3:00	P	2*2	MX2	AO	PASS	6/13/12	mg
198	T	59-60-94	6/9/2012	3:25	P	2*2	MX2	AO	PASS	6/13/12	mg
199	T	58-59-94	6/9/2012	3:40	P	2*2	MX2	AO	PASS	6/13/12	mg
200	T	57-58-94	6/11/2012	6:45	P	2*2	MX2	AO	PASS	6/13/12	mg
201	T	56-57-94	6/9/2012	6:50	P	2*2	MX2	AO	PASS	6/13/12	mg
202	T	55-56-94	6/11/2012	6:50	P	2*2	MX2	AO	PASS	6/13/12	mg
203	BO	55-94-11' W E EOS	6/11/2012	6:55	P	2*6	MX2	AO	PASS	6/13/12	mg
204	T	54-55-94	6/11/2012	7:00	P	2*7	MX2	AO	PASS	6/13/12	mg
205	T	53-54-94	6/11/2012	7:05	P	2*2	MX2	AO	PASS	6/13/12	mg
206	T	45-53-94	6/11/2012	7:10	P	2*22	MX2	AO	PASS	6/13/12	mg
207	T	46-47-94	6/11/2012	7:25	P	2*2	MX2	AO	PASS	6/13/12	mg
208	DS-72	47-48-94	6/11/2012	7:30	P	2*7	MX2	AO	PASS	6/13/12	mg
209	T	48-49-94	6/11/2012	7:35	P	2*7	MX2	AO	PASS	6/13/12	mg
210	T	49-94-99	6/11/2012	7:40	P	2*2	MX2	AO	PASS	6/13/12	mg



Repair Log

Project No.: I12-011

Material: HD TEXTURED

Project Name: Hutsonville Power Plant

Date: 5/30/12

Thickness: 40 mil

Project LocatDn: Hutsonville, IL

Repair #	Defect Code	Defect Location	Repair Date	Repair Time	Repair Type	Approx Size	Machine ID	Repair Tech	Vacuum Test		Vac Test Tech
		Seam #							P/F	Date	
211	T	93-94-99-100	6/11/2012	7:50	P	2*6	MX2	AO	PASS	6/13/12	mg
212	T	92-93-100-101	6/11/2012	8:05	P	2*2	MX2	AO	PASS	6/13/12	mg
213	T	49-50-99	6/11/2012	7:45	P	2*2	MX2	AO	PASS	6/13/12	mg
214	T	50-51-99	6/11/2012	8:20	P	2*2	MX2	AO	PASS	6/13/12	mg
215	DS-80	51/99 11' W E EOS	6/11/2012	8:40	P	2*2	MX2	AO	PASS	6/13/12	mg
216	T	51-52-99	6/11/2012	8:50	P	2*2	MX2	AO	PASS	6/13/12	mg
217	T	52-95-99	6/11/2012	9:00	P	2*2	MX2	AO	PASS	6/13/12	mg
218	LE	45/78 N AT	6/9/2012	10:12	P	2*2	MX2	AO	PASS	6/13/12	mg
219	T	44-45-78-77	6/9/2012	10:14	P	4*4	MX18	PV	PASS	6/13/12	mg
220	T	43-44-76-77	6/9/2012	10:20	P	4*4	MX18	PV	PASS	6/13/12	mg
221	T	42-43-75-76	6/9/2012	10:47	P	4*4	MX18	PV	PASS	6/13/12	mg
222	T	41-42-74-75	6/9/2012	10:56	P	4*4	MX18	PV	PASS	6/13/12	mg
223	T	40-41-73-74	6/9/2012	11:04	P	4*4	MX18	PV	PASS	6/13/12	mg
224	T	39-40-72-73	6/9/2012	12:50	P	4*11	MX18	PV	PASS	6/13/12	mg
225	T	38-39-71-72	6/9/2012	1:26	P	2*2	MX18	PV	PASS	6/13/12	mg
226	T	37-38-70-71	6/9/2012	1:31	P	2*2	MX18	PV	PASS	6/13/12	mg
227	T	36-37-69-70	6/9/2012	1:35	P	2*2	MX18	PV	PASS	6/13/12	mg
228	T	34-36-68-69	6/9/2012	1:43	P	2*6	MX18	PV	PASS	6/13/12	mg
229	T	33-34-67-68	6/9/2012	1:55	P	2*6	MX18	PV	PASS	6/13/12	mg
230	T	32-33-66-67	6/9/2012	2:04	P	2*6	MX18	PV	PASS	6/13/12	mg
231	T	31-32-65-66	6/9/2012	2:24	P	2*6	MX18	PV	PASS	6/13/12	mg
232	T	30-60	6/9/2012	2:26	P	2*23	MX18	PV	PASS	6/13/12	mg
233	T	28-29-62-63	6/11/2012	7:04	P	2*2	MX18	PV	PASS	6/13/12	mg
234	T	27-28-61-62	6/11/2012	7:09	P	2*2	MX18	DG	PASS	6/13/12	mg
235	T	26-27-60-61	6/11/2012	7:14	P	2*2	MX18	DG	PASS	6/13/12	mg
236	T	25-2659-60	6/11/2012	7:19	P	2*2	MX18	DG	PASS	6/13/12	mg
237	T	23-25-58-59	6/11/2012	7:29	P	2*2	MX18	DG	PASS	6/13/12	mg
238	T	22-23-57-58	6/11/2012	7:34	P	2*2	MX18	DG	PASS	6/13/12	mg
239	T	20-22-56-57	6/11/2012	7:39	P	2*2	MX18	DG	PASS	6/13/12	mg
240	T	19-20-55-56	6/11/2012	7:52	P	2*2	MX18	DG	PASS	6/13/12	mg
241	MD	55-56 6' S EOS	6/11/2012	7:54	P	2*2	MX18	DG	PASS	6/13/12	mg
242	T	17-19-54-55	6/11/2012	7:57	P	2*2	MX18	DG	PASS	6/13/12	mg
243	T	15-17-53-54	6/11/2012	8:00	P	2*2	MX18	DG	PASS	6/13/12	mg
244	T	14-15-46-53	6/11/2012	8:05	P	2*6	MX18	DG	PASS	6/13/12	mg
245	T	13-14-46-47	6/11/2012	8:10	P	2*2	MX18	DG	PASS	6/13/12	mg
246	T	11-13-47-48	6/11/2012	8:15	P	2*2	MX18	DG	PASS	6/13/12	mg
247	T	9-11-48-49	6/11/2012	8:25	P	2*2	MX18	DG	PASS	6/13/12	mg
248	T	7-9-49-50	6/11/2012	8:30	P	2*2	MX18	DG	PASS	6/13/12	mg
249	T	5-7-50-51	6/11/2012	8:35	P	2*2	MX18	DG	PASS	6/13/12	mg
250	T	4-5-51-53	6/11/2012	8:40	P	2*2	MX18	DG	PASS	6/13/12	mg
251	T	3-4-52-95	6/11/2012	8:55	P	2*2	MX18	DG	PASS	6/13/12	mg
252	BO	3/95 W AT	6/11/2012	9:00	P	2*2	MX18	DG	PASS	6/13/12	mg



Repair Log

Project No.: 112-011
 Project Name: Hutsonville Power Plant
 Date: 5/30/12
 Project LocatDn: Hutsonville, IL

Material: HD TEXTURED
 Thickness: 40 mil

Repair #	Defect Code	Defect Location	Repair Date	Repair Time	Repair Type	Approx Size	Machine ID	Repair Tech	Vacuum Test		Vac Test Tech
		Seam #							P/F	Date	
253	DS-70	52/95 600' N S EOS	6/11/2012	9:05	P	2*6	MX18	DG	PASS	6/13/12	mg
254	DS-69	52/95 120' N S EOS	6/11/2012	11:19	P	2*6	MX18	DG	PASS	6/13/12	mg
255	T	96-100-101-103	6/11/2012	9:50	P	2*10	MX2	AO	PASS	6/13/12	mg
256	BO	96/100 10' S N EOS	6/11/2012	9:20	P	2*6	MX2	AO	PASS	6/13/12	mg
257	T	96-99-100	6/11/2012	9:15	P	2*6	MX2	AO	PASS	6/13/12	mg
258	T	95-96-99	6/11/2012	9:10	P	2*2	MX2	AO	PASS	6/13/12	mg
259	BO	95/96 50' N S EOS	6/11/2012	11:27	P	2*2	MX18	DG	PASS	6/13/12	mg
260	BO	95/96 215' N S EOS	6/11/2012	10:34	P	2*2	MX18	DG	PASS	6/13/12	mg
261	DS-71	95/96 400' N S EOS	6/11/2012	10:07	P	2*2	MX18	DG	PASS	6/13/12	mg
262	BO	95/96 552' N S EOS	6/11/2012	9:20	P	2*6	MX18	DG	PASS	6/13/12	mg
263	BO	96/97 458' N S EOS	6/11/2012	10:15	P	2*2	MX18	DG	PASS	6/13/12	mg
264	DS-86	96/97 380' N S EOS	6/11/2012	10:26	P	2*6	MX18	DG	PASS	6/13/12	mg
265	DS-79	97/98 290' N S EOS	6/11/2012	11:09	P	2*6	MX18	DG	PASS	6/13/12	mg
266	BO	97/98 254' N S EOS	6/11/2012	10:50	P	2*2	MX18	DG	PASS	6/13/12	mg
267	T	97-98-103	6/11/2012	10:56	P	2*12	MX18	DG	PASS	6/13/12	mg
268	T	98-104-105	6/11/2012	11:34	P	2*2	MX18	DG	PASS	6/13/12	mg



Geomembrane Seam Destructive Test Log

Project No.: 112-011

Project Name: Hutsonville Power Plant

Start Date: 5/30/2012

Project Location: Hutsonville, IL

Material: HD TEXTURED

Project Seam Requirements

Fusion: Extrusion:

Peel: 60	Peel:
Shear: 80	Shear:

40 mil Thickness

#DT	Location	Date Removed	Welder ID		Extruder	Seam Strength															Pass Fail	Tech ID	Remarks
			Machine	Operator		Wedge Temp/ Speed °F/fpm	Temp/ Preheat °F/°F	Peel (ppi) IN / OUT					Shear (ppi)										
					1			2	3	4	5	1	2	3	4	5							
1	3/4	6/1/12	M14	PV	850/500		125	90	90	94	101	133	126	141	132	135	PASS	BF	SS				
2	4/5	6/1/12	M16	LS	860/600		88	86	82	83	83	124	102	94	123	115	FAIL	BF	SS				
						93	85	95	62	93	139	133	139	128	129								
2A	4/5	6/6/12	M16	LS	860/600		71	96	91	87	97	139	137	149	130	132	PASS	BF	SS				
2B	4/5	6/6/12	M16	LS	860/600		89	100	66	77	85	146	137	149	130	132	PASS	BF	SS				
						81	87	67	90	77	146	137	149	130	132								
3	5/7	6/1/12	M40	AO	860/600		88	86	90	84	64						FAIL	BF	SS				
						107	83																
3A	5/7	6/1/12	M40	AO	860/600		93	96	95	88	83	149	149	147	144	144	PASS	BF	SS				
						95	95	97	92	79													
3B	5/7	6/1/12	M40	AO	860/600		93	96	92	86	83	148	150	147	150	143	PASS	BF	SS				
						87	75	95	92	92													
4	7/8	6/1/12	M14	PV	850/550		91	81	96	87	92	142	126	132	126	140	PASS	BF	SS				
						92	93	83	99	110													
5	9/10	6/1/12	M16	LS	860/600		117	98	95	95	93	137	134	140	139	139	PASS	BF	SS				
						97	88	100	86	93													
6	10/12	6/1/2012	M40	AO	860/600		82	107	114	195	93	136	135	137	139	129	PASS	BF	SS				
						116	98	94	97	94													
7	11/13	6/1/2012	M40	AO	860/600		80	84	99	90	102	137	139	115	136	141	FAIL	BF	SS				
						103	73	89	78	87													

Hutsonville Power PlantQC Logs

Geomembrane Seam Destructive Test Log

Project Location: Hutsonville, IL

Project Seam Requirements

Peel: 60 Peel:

Shear:	80	Shear:	
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40 mil Thickness

[illegible]

Hutsonville Power PlantQC Logs



Geomembrane Seam Destructive Test Log

Project No.: 112-011

Project Name: Hutsonville Power Plant

Start Date: 5/30/2012

Project Location: Hutsonville, IL

Material: HD TEXTURED

Project Seam Requirements

Fusion: Extrusion:

Peel: 60

Peel:

Shear: 80

Shear:

40 mil Thickness

#DT	Location	Date Removed	Welder ID		Wedge Temp/ Speed °F/fpm	Extruder Temp/ Preheat °F/°F	Seam Strength										Pass Fail	Tech ID	Remarks
			Machine	Operator			Peel (ppi)					Shear (ppi)							
							IN / OUT												
							1	2	3	4	5	1	2	3	4	5			
13 B	22/23	6/2/2012	M40	M40	860/600		97	92	99	94	97	128	133	132	133	135	PASS	BF	SS
14	26/27	6/2/2012	M40	M40	860/600		93	100	86	71	85								
							79	71	79	82	72								
14A	26/27	6/2/2012	M40	M40	860/600		97	92	107	101	93								
							108	89	82	90	82	155	150	142	150	153			
14B	26/27	6/2/2012	M40	M40	860/600		68	96	68	62	93								
							82	86	111	88	93	138	134	152	152	153			
15	27/28	6/1/2012	M14	PV	850/600		101	100	89	96	96								
							86	87	93	106	90	136	134	131	135	139			
16	28/29	6/1/2012	M16	LS	860/600		93	97	92	107	97								
							91	92	93	91	87	129	134	131	132	132			
17	35/37	6/1/2012	M40	AO	860/600		93	84	86	84	83								
							102	100	99	87	98	137	132	138	126	138			
18	37/38	6/1/2012	M14	PV	860/600		87	103	96	82	105								
							87	102	86	82	83	139	144	139	130	129			
19	38/39	6/1/2012	M16	LS	860/600		99	85	99	103	94								
							80	88	75	88	85	141	139	139	138	143			
19A	38/39	6/6/2012	M16	LS	860/600		81	74	74	85	87								
							90	88	81	67	90	134	155	151	137	138			
19B	38/39	6/6/2012	M16	LS	860/600		97	85	89	82	86								
							92	81	95	87	86	158	144	157	141	147			
							97	75	87	93	75								

Hutsonville Power PlantQC Logs



Geomembrane Seam Destructive Test Log

Project No.: 112-011

Project Name: Hutsonville Power Plant

Start Date: 5/30/2012

Project Location: Hutsonville, IL

Material: HD TEXTURED

Project Seam Requirements

Fusion: Extrusion:

Peel: 60

Peel: 60

Shear: 80

Shear: 80

40 mil Thickness

#	Location	Date Removed	Welder ID		Wedge	Extruder	Seam Strength										Pass Fail	Tech ID	Remarks			
			Machine	Operator	Temp/ Speed °F/fpm	Temp/ Preheat °F/°F	Peel (ppi)					Shear (ppi)										
							IN / OUT															
							1	2	3	4	5	1	2	3	4	5						
20	46/47	6/2/2012	M14	PV	830/530		111	82	107	96	90	136	138	143	147	142	PASS	BF	SS			
21	47/48	6/2/2012	M16	LS	860/600		81	77	86	75	104											
							85	90	66	76	86	142	143	141	142	139						
							96	100	91	84	105											
22	48/49	6/2/2012	M14	JF	860/600		79	104	98	88	100	140	136	140	136	131	PASS	BF	SS			
23	49/50	6/2/2012	M16	LS	860/600		90	80	92	105	83											
							78	74	72	80	79	134	135	133	136	138						
							82	92	89	89	86											
24	50/51	6/2/2012	M14	PV	830/530		99	99	111	93	97	138	136	138	136	143	PASS	BF	SS			
25	50/51	6/2/2012	M14	PV	830/530		94	95	96	93	95											
							102	102	92	89	88	138	132	143	138	144						
							91	114	106	110	107											
26	51/52	6/2/2012	M41	JF	860/600		85	112	96	60	102	146	134	148	146	137	PASS	BF	SS			
27	54/55	6/9/2012	M41	JF	860/560		86	60	86	75	82											
							85	112	96	66	102	146	134	148	146	137						
							86	60	86	75	58											
28	55/56	6/9/2012	M41	JF	860/560		82	87	75	82	84	131	140	135	135	136	PASS	BF	SS			
29	56/57	6/9/2012	M41	JF	860/560		88	89	90	84	82											
							86	90	107	94	66	142	142	149	141	142						
							77	69	89	74	82											



Geomembrane Seam Destructive Test Log

Project No.: I12-011

Project Name: Hutsonville Power Plant

Start Date: 5/30/2012

Project Location: Hutsonville, IL

Material: HD TEXTURED

Project Seam Requirements

Fusion: Extrusion:

Peel: 60 Peel:

Shear: 80 Shear:

40 mil Thickness

#	Location	Date Removed	Welder ID		Wedge	Extruder	Seam Strength										Pass Fail	Tech ID	Remarks
			Machine	Operator			Temp/ Speed °F/fpm	Temp/ Preheat °F/°F	Peel (ppi) IN / OUT					Shear (ppi)					
					1	2			3	4	5	1	2	3	4	5			
30	60/61	6/9/2012	M41	JF	860/560		71	94	76	72	86	144	133	142	128	133	PASS	BF	SS
31	63/64	6/9/2012	M41	JF	860/560		114	110	119	81	117	147	146	142	133	134	PASS	BF	SS
32	63/64	6/9/2012	M41	JF	860/560		83	83	91	107	81						PASS	BF	SS
33	66/67	6/9/2012	M41	JF	860/560		88	67	71	69	85	147	135	147	130	135	PASS	BF	SS
34	69/70	6/9/2012	M41	JF	860/560		105	95	100	95	65						PASS	BF	SS
35	69/70	6/9/2012	M41	JF	860/560		99	67	89	83	66	146	141	157	135	136	PASS	BF	SS
36	72/73	6/9/2012	M41	JF	800/580		104	72	93	84	73						PASS	BF	SS
37	77/78	6/9/2012	M41	JF	800/580		77	89	107	113	99	143	134	145	130	135	PASS	BF	SS
38	77/78	6/9/2012	M41	JF	800/580		111	73	73	69	67						PASS	BF	SS
39	77/78	6/9/2012	M41	JF	800/580		90	109	110	72	89	145	128	144	135	135	PASS	BF	SS
40	77/78	6/9/2012	M41	JF	800/580		101	87	108	102	85						PASS	BF	SS
41	77/78	6/9/2012	M41	JF	800/580		96	80	92	94	90	144	123	142	132	135	PASS	BF	SS
42	77/78	6/9/2012	M41	JF	800/580		84	73	93	90	89						PASS	BF	SS
43	77/78	6/9/2012	M41	JF	800/580		110	89	114	115	114	144	132	136	124	135	PASS	BF	SS
44	77/78	6/9/2012	M41	JF	800/580		97	86	97	87	93						PASS	BF	SS
45	77/78	6/9/2012	M41	JF	800/580		108	91	94	83	89	139	100	138	112	126	PASS	BF	SS
46	77/78	6/9/2012	M41	JF	800/580		99	65	105	87	97						PASS	BF	SS



Geomembrane Seam Destructive Test Log

Project No.: I12-011

Project Name: Hutsonville Power Plant

Start Date: 5/30/2012

Project Location: Hutsonville, IL

Material: HD TEXTURED

Project Seam Requirements

Fusion: Extrusion:

Peel: 60

Shear: 80

40 mil Thickness

# DT	Location	Date Removed	Welder ID		Wedge	Extruder	Seam Strength										Pass Fail	Tech ID	Remarks	
			Machine	Operator	Temp/ Speed °F/fpm	Temp/ Preheat °F/°F	Peel (ppi)					Shear (ppi)								
							IN / OUT													
							1	2	3	4	5	1	2	3	4	5				
39	46/53	6/9/2012	M14	PV	830/530		87	88	101	83	85	146	131	143	133	132	PASS	BF	SS	
40	55/56	6/9/2012	M14	PV	830/530		90	83	84	107	67							PASS	BF	SS
41	58/59	6/9/2012	M14	PV	830/530		81	90	90	70	89	136	122	138	126	124		PASS	BF	SS
42	58/59	6/9/2012	M14	PV	830/530		97	94	98	91	91							PASS	BF	SS
43	61/62	6/9/2012	M14	PV	800/600		110	107	111	102	72	145	134	145	133	138		PASS	BF	SS
44	61/62	6/9/2012	M14	PV	800/600		80	79	84	90	101							PASS	BF	SS
45	64/65	6/9/2012	M14	PV	800/530		94	81	81	85	85	143	135	143	131	134		PASS	BF	SS
46	67/68	6/9/2012	M14	PV	830/530		80	84	88	84	77							PASS	BF	SS
47	70/71	6/9/2012	M14	PV	800/530		92	93	102	89	82	145	135	143	138	131		PASS	BF	SS
48	70/71	6/9/2012	M14	PV	800/530		111	102	88	92	64							PASS	BF	SS
49	73/74	6/9/2012	M14	PV	800/600		92	83	86	71	100	139	127	140	128	134		PASS	BF	SS
							116	89	97	86	88							PASS	BF	SS
							91	79	96	69	96	138	127	139	132	132		PASS	BF	SS
							97	107	99	82	68							PASS	BF	SS
							102	88	103	90	72	142	132	143	136	131		PASS	BF	SS
							99	96	102	84	106							PASS	BF	SS
							107	104	98	96	72	149	132	145	142	139		PASS	BF	SS
							98	96	113	116	89							PASS	BF	SS
							95	78	92	66	83	142	132	144	125	133		PASS	BF	SS
							101	103	84	61	78							PASS	BF	SS
							88	97	112	68	77	151	142	150	138	135		PASS	BF	SS
							81	92	92	67	79							PASS	BF	SS

Hutsonville Power PlantQC Logs



Geomembrane Seam Destructive Test Log

Project No.: 112-011

Project Name: Hutsonville Power Plant

Start Date: 5/30/2012

Project Location: Hutsonville, IL

Material: HD TEXTURED

Project Seam Requirements

Fusion: Extrusion:

Peel: 60 Peel:

Shear: 80 Shear:

40 mil Thickness

# ID	Location	Date Removed	Welder ID		Wedge	Extruder	Seam Strength															Pass Fail	Tech ID	Remarks
			Machine	Operator	Temp/Speed °F/fpm	Preheat °F/°F	Peel (ppi) IN / OUT					Shear (ppi)												
							1	2	3	4	5	1	2	3	4	5								
50	76/77	6/9/2012	M14	PV	800/600		105	107	104	82	65	149	138	147	137	125	PASS	BF	SS					
51	76/77	6/9/2012	M14	PV	800/600		87	66	100	89	63						PASS	BF	SS					
							109	94	114	88	100	142	115	144	132	136								
							90	74	97	81	72													
52	53/54	6/9/2012	M16	DG	860/580		90	76	87	91	86	142	136	144	135	129	PASS	BF	SS					
53	57/58	6/9/2012	M16	DG	860/580		82	71	98	68	72						PASS	BF	SS					
							94	62	85	81	88	140	134	138	124	126								
							100	84	65	84	87													
54	59/60	6/9/2012	M16	DG	860/580		94	87	92	85	86	142	136	134	135	134	PASS	BF	SS					
55	59/60	6/9/2012	M16	DG	860/580		101	97	103	77	91						PASS	BF	SS					
							99	82	88	90	80	149	133	150	133	132								
							96	78	88	75	65													
56	62/63	6/9/2012	M16	DG	860/580		95	81	99	71	81	138	128	139	118	127	PASS	BF	SS					
57	65/66	6/9/2012	M16	DG	860/580		98	83	99	93	72						PASS	BF	SS					
							87	73	84	62	78	140	132	141	133	132								
							80	91	88	60	84													
58	65/66	6/9/2012	M16	DG	860/580		113	98	101	83	81	139	132	138	128	130	PASS	BF	SS					
59	68/69	6/9/2012	M16	DG	860/550		86	72	101	74	76						PASS	BF	SS					
							92	89	99	93	88	153	134	147	138	135								
							99	84	102	96	100													
60	71/72	6/9/2012	M16	DG	860/550		109	92	113	107	107	141	132	142	131	132	PASS	BF	SS					
							82	77	95	86	82						PASS	BF	SS					

Hutsonville Power PlantQC Logs



Geomembrane Seam Destructive Test Log

Project No.: I12-011

Project Name: Hutsonville Power Plant

Start Date: 5/30/2012

Project Location: Hutsonville, IL

Material: HD TEXTURED

Project Seam Requirements

Fusion: Extrusion:

Peel: 60

Shear: 80

Peel:

Shear:

40 mil Thickness

# ID	Location	Date Removed	Welder ID		Wedge	Extruder	Seam Strength															Pass Fail	Tech ID	Remarks
			Machine	Operator	Temp/ Speed °F/fpm	Temp/ Preheat °F/°F	Peel (ppi)					Shear (ppi)												
							IN / OUT																	
							1	2	3	4	5	1	2	3	4	5	1	2	3	4	5			
61	74/75	6/9/2012	M16	DG	800/600		104	93	116	86	93	85	94	83	144	135	144	129	134	PASS	BF	SS		
62	74/75	6/11/2012	M16	DG	860/580		85	93	85	94	83													
							82	72	100	60	63	63	68		146	138	144	132	138	PASS	BF	SS		
							104	70	88	70	68													
63	75/76	6/11/2012	M16	DG	860/580		84	78	75	75	74	74	72		149	145	149	143	141	PASS	BF	SS		
							87	78	94	85	72													
64	78/79	6/11/2012	M14	PV	800/530		92	79	88	65	85	85	72		145	136	148	148	143	PASS	BF	SS		
							88	53	84	83	80													
65	81/82	6/11/2012	M14	PV	800/530		80	71	84	68	76	76	81		146	134	145	138	135	PASS	BF	SS		
							98	68	91	76	81													
66	85/86	6/11/2012	M14	PV	800/530		84	88	91	96	95	81	82		145	136	148	137	136	PASS	BF	SS		
							101	90	85	81	82													
67	85/86	6/11/2012	M14	PV	800/530		93	78	94	95	92	92			140	130	145	141	138	PASS	BF	SS		
							74	70	89	86	87													
68	71/94	6/11/2012	M14	PV	800/530		78	77	73	62	83	83			133	127	136	119	125	PASS	BF	TS		
							88	63	95	83	84													
69	52/95	6/11/2012	M14	PV	800/530		108	76	82	91	68	68			141	130	142	128	128	PASS	BF	SS		
							82	91	119	92	70													
70	52/95	6/11/2012	M14	PV	800/530		78	68	102	78	94	94			144	141	144	140	129	PASS	BF	SS		
							102	101	69	102	74													
71	95/96	6/11/2012	M14	PV	800/530		87	68	114	68	87	87			146	136	146	139	141	PASS	BF			
							106	101	95	89	69													

Hutsonville Power PlantQC Logs



Geomembrane Seam Destructive Test Log

Project No.: I12-011

Project Name: Hutsonville Power Plant

Start Date: 5/30/2012

Project Location: Hutsonville, IL

Material: HD TEXTURED

Project Seam Requirements

Fusion:

Extrusion:

Peel: 60

Peel:

Shear: 80

Shear:

40 mil Thickness

#	Location	Date Removed	Welder ID		Extruder	Seam Strength										Pass Fail	Tech ID	Remarks	
			Machine	Operator	Wedge Temp/ Speed °F/fpm	Temp/ Preheat °F/°F	Peel (ppi) IN / OUT					Shear (ppi)							
							1	2	3	4	5	1	2	3	4				5
72	48/94	6/11/2012	M14	PV	800/530		110	93	92	108	95	129	141	143	132	132	PASS	BF	ST
73	79/80	6/11/2012	M16	DG	860/580		88	103	123	98	84	153	141	149	147	141	PASS	BF	SS
74	79/80	6/11/2012	M16	DG	860/580		97	79	104	106	73	132	143	154	147	146	PASS	BF	SS
75	82/83	6/11/2012	M16	DG	860/580		84	65	95	73	68	150	140	149	138	141	PASS	BF	SS
76	84/85	6/11/2012	M16	DG	860/580		94	89	101	77	68	151	144	151	139	146	PASS	BF	SS
77	84/85	6/11/2012	M16	DG	860/580		73	68	97	80	78	151	144	151	139	146	PASS	BF	SS
78	93/94	6/11/2012	M16	DG	860/580		83	63	82	82	72	150	142	150	138	144	PASS	BF	SS
79	97/98	6/11/2012	M16	DG	860/580		108	98	77	66	73	150	142	150	138	144	PASS	BF	SS
80	99/51	6/11/2012	M16	DG	860/580		79	65	162	99	61	151	141	154	138	138	PASS	BF	SS
81	80/81	6/11/2012	M41	JF	860/560		83	75	88	72	87	138	131	139	131	128	PASS	BF	SS
82	83/84	6/11/2012	M41	JF	860/560		101	91	91	89	63	138	131	139	131	128	PASS	BF	SS
							62	82	87	67	87	138	131	139	131	128	PASS	BF	SS
							87	81	90	76	81	138	125	138	132	117	PASS	BF	ST
							101	89	93	96	87	138	125	138	132	117	PASS	BF	ST
							95	92	93	94	95	143	133	141	131	133	PASS	BF	SS
							85	72	71	69	73	143	133	141	131	133	PASS	BF	SS
							100	68	77	89	63	150	134	147	137	142	PASS	BF	SS
							93	92	77	96	74	150	134	147	137	142	PASS	BF	SS
							86	94	106	78	72						PASS	BF	SS

Hutsonville Power PlantQC Logs



Geomembrane Seam Destructive Test Log

Project No.: I12-011

Project Name: Hutsonville Power Plant

Start Date: 5/30/2012

Project Location: Hutsonville, IL

Material: HD TEXTURED

Project Seam Requirements

Fusion: Extrusion:

Peel: 60

Peel: 60

Shear: 80

Shear: 80

40 mil Thickness

DT #	Location	Date Removed	Welder ID		Wedge	Extruder	Seam Strength															Pass Fail	Tech ID	Remarks
			Machine	Operator	Temp/ Speed °F/fpm	Temp/ Preheat °F/°F	Peel (ppi) IN / OUT					Shear (ppi)												
							1	2	3	4	5	1	2	3	4	5								
83	86/87	6/11/2012	M41	JF	860/560		100 103	78 87	87 109	81 75	76 94	145	130	139	138	135	PASS	BF	SS					
84	92/93	6/11/2012	M41	JF	860/560		90 104	109 93	110 116	72 86	89 93	149	133	150	133	132	F	BF	SS					
85	92/93	6/11/2012	M41	JF	860/560		97 74	85 70	89 89	82 86	86 87	140	136	140	136	131	PASS	BF	SS					
86	97/98	6/11/2012	M16	DG	860/580		87 80	73 71	84 84	62 68	78 76	141	139	121	131	103	PASS	BF	TT					
84A	92/93	6/11/2012	M41	JF	860/560		88 90	53 74	84 97	83 81	80 72						F	BF	TT					
84A1	92/93	6/13/2012	M41	JF	860/560		91 73	81 68	96 79	87 78	92 68	145	134	145	133	138	PASS	BF	SS					

Demtech Services, Inc.
Placerville, California, USA

CALIBRATION CERTIFICATE

Chesapeake Containment Systems

Tensiometer Model:

Pro-Tester T-0100

Device Calibrated:

S-Type load cell

Calibration Apparatus:

Range:

0 - 750 lbs. Tension

Model No:

M2405-750#

Pro-Cal unit, model TC-0100/A

Serial No:

233476

A/D Module Model No:

T-029

A/D Module Serial No:

3908233476

Channel No:

N/A

Dead Weight:

W1

2

W2

152

W3

302

Reference Cell:

R1

2

R2

152

R3

302

Indicator reading with no load:

0

Offset:

2.338462

Scale:

4.348708

Applied Force lbs.

Cell Response:

Deviation Error:

2
52
102
152
202
252
302

2
52
102
152
202
252
302

0.00
0.00
0.00
0.00
0.00
0.00
0.00

Total Deviation Error (%): 0.00%

Temperature at time of calibration: 73 degrees F

Excitation Voltage:

5

V DC

This calibration conforms to the standards set by ASTM E4 and is traceable to NIST standards

Note: A/D Module and load cell above have been systems calibrated and are considered a matched pair. In general, calibrated A/D Modules and load cells are not interchangeable.

BF



Date: 04/23/12

Demtech Services, Inc.
Placerville, California, USA

CALIBRATION CERTIFICATE

Customer Name: Chesapeake Containment Systems

Tensiometer Model: Pro-Tester T-0100

Device Calibrated: S-Type load cell
Range: 0 - 750 lbs. Tension
Model No: M2405-750#
Serial No: 209325

Calibration Apparatus:

Reference load cell (S/N 204781)

A/D Module Model No: T-029
A/D Module Serial No: 3205209325
Channel No: N/A

Dead Weight:

W1	<u>2</u>
W2	<u>152</u>
W3	<u>302</u>

Reference Cell:

R1	<u>2</u>
R2	<u>152</u>
R3	<u>302</u>

Indicator reading with no load: 0

Offset: 2.432781

Scale: 3.603864

Applied Force lbs.

<u>2</u>
<u>52</u>
<u>102</u>
<u>152</u>
<u>202</u>
<u>252</u>
<u>302</u>

Cell Response:

<u>2</u>
<u>52</u>
<u>102</u>
<u>152</u>
<u>202</u>
<u>252</u>
<u>302</u>

Deviation Error:

<u>0.00</u>
<u>0.00</u>
<u>0.00</u>
<u>0.00</u>
<u>0.00</u>
<u>0.00</u>
<u>0.00</u>

Total Deviation Error (%): 0.00%

Temperature at time of calibration: 73 degrees F

Excitation Voltage: 5 V DC

This calibration conforms to the standards set by ASTM E4 and is traceable to NIST standards

Note: A/D Module and load cell above have been systems calibrated and are considered a matched pair. In general, calibrated A/D Modules and load cells are not interchangeable.

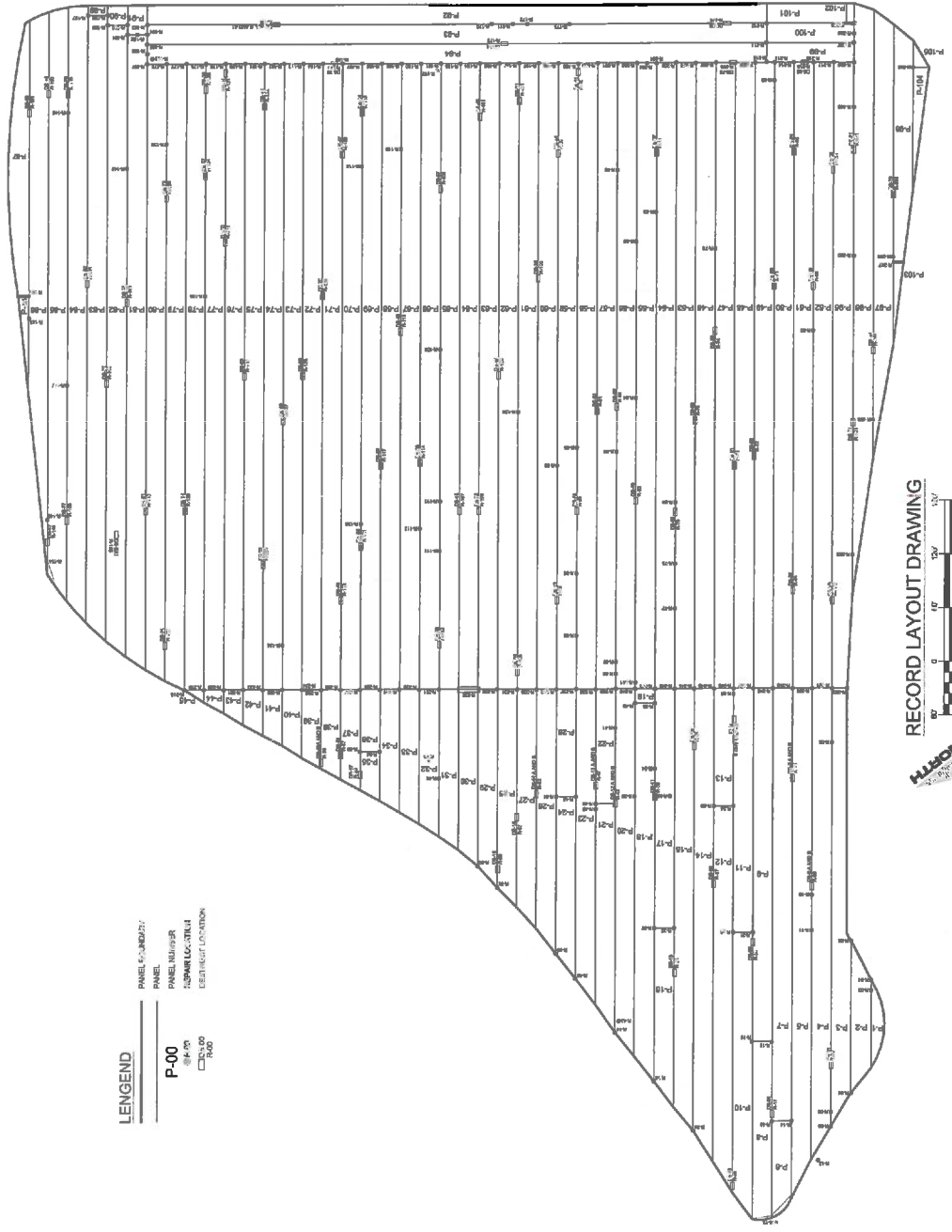
Calibration Technician:

BF



Date:

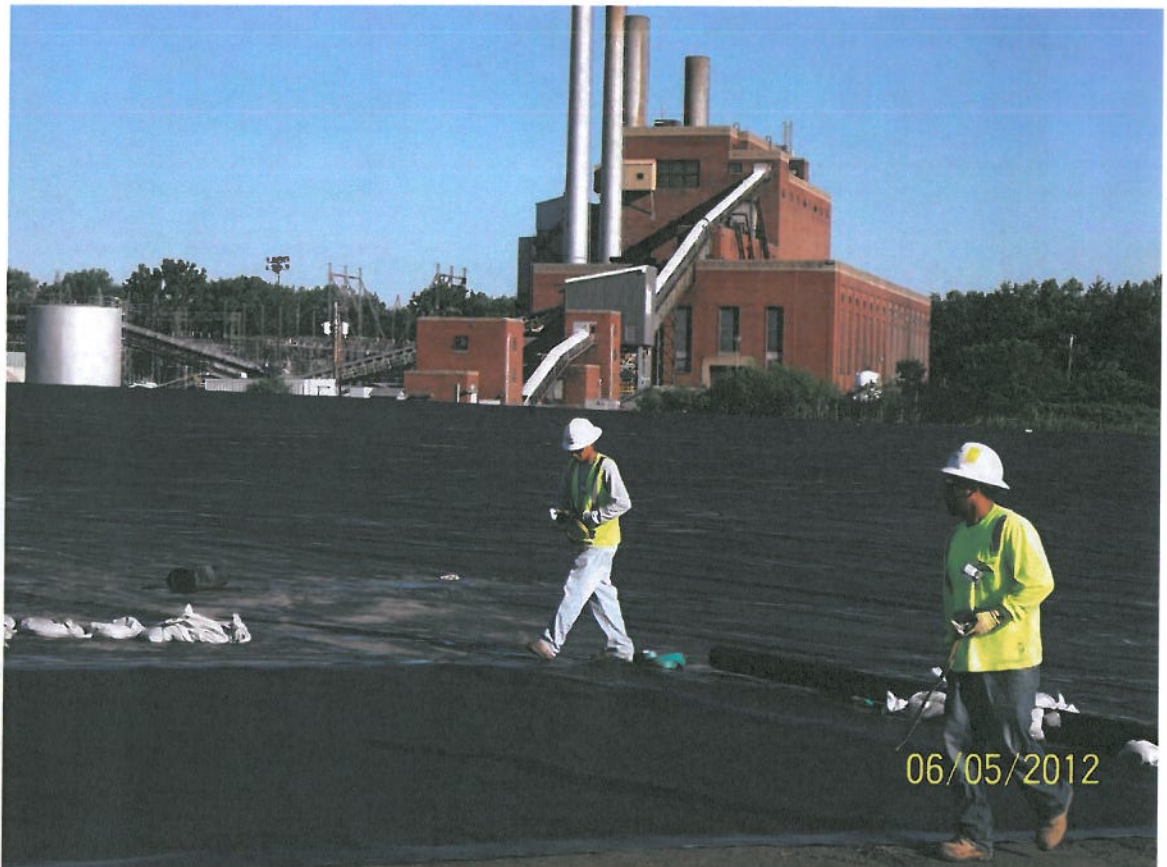
04/23/12



RECORD LAYOUT DRAWING
 SCALE 1" = 50'
 HILTI

LEGEND
 PANEL 4-1/2X21/2
 PANEL NUMBER
 PANEL LOCATION
 DESTROY LOCATION
 P-01
 1/2" x 1/2"

NOTE
 RECORD LAYOUT DRAWING IS FOR GENERAL ORIENTATION ONLY.
 INFORMATION DOCUMENTED AND SUBMITTED AS FINAL RECORD COPY
 OF INSTALLATION. THIS IS NOT A SURVEYED DRAWING.









Date: 2012-06-05

Mail To:
Anna Saindon
Geotechnology, Inc
11816 Lackland Rd
St. Louis , MO , 63146

Bill To:

Geotechnology, Inc
J019896.01

e-mail:a_saindon@geotechnology.com

Dear Ms. Saindon,

Thank you for consulting with TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs. TRI is pleased to submit this final report for laboratory testing.

Project: **Hutsonville Power Station - Ash Pond D Closure**

TRI Job Reference Number: **8395**

Material(s) Tested: (24) Heat Fusion Weld Seam(s)

Test(s) Requested: SAME DAY Peel and Shear
(ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

Codes:

AD	Adhesion Failure (100% Peel)
BRK	Break in sheeting away from Seam edge.
SE	Break in sheeting at edge of seam.
AD-BRK	Break in sheeting after some adhesion failure - partial peel.
SIP	Separation in the plane of the sheet (leaving the bond intact).
FTB	Film tearing bond (all non "AD" failures).
NON-FTB	100% peel.

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

Jennifer Tenney
Project Manager
Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8395

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-1 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	82	113	110	119	118	108
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	96	97	100	92	96	96
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	133	130	132	130	129	131
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-2 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	90	91	97	91	85	91
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	101	96	101	97	86	96
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	121	117	122	120	122	120
Shear Elongation @ Break (%)	>50	46	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8395

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-4 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	98	124	92	108	95	103
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	96	99	98	92	92	95
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	131	135	130	134	132	132
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-5 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	95	93	94	97	95	95
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	92	86	86	104	88	91
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	127	134	128	135	129	131
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8395

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-6 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	95	109	93	106	93	99
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	100	104	100	107	99	102
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	133	130	137	138	129	133
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-7 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	99	102	101	99	94	99
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	101	104	89	98	94	97
Peel Incursion (%)	<5	<5	85	<5	<5	
Peel Locus Of Failure Code	SE	SE	AD-BRK	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	134	130	128	127	133	130
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8395

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-8 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	105	112	111	112	115	111
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	94	91	93	99	95	94
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	123	131	131	126	127	128
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-9 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	91	91	103	107	99	98
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	99	104	93	94	97	97
Peel Incursion (%)	<5	<5	<5	15	<5	
Peel Locus Of Failure Code	SE	SE	SE	AD-BRK	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	132	128	122	124	122	126
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8395

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-10 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	96	93	97	105	96	97
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	104	110	98	109	109	106
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	123	127	124	123	122	124
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-11 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	103	107	106	119	102	107
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	98	104	96	105	96	100
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	123	122	125	126	124	124
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8395

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-12 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	77	96	90	97	79	88
Peel Incursion (%)	50	<5	90	<5	100	
Peel Locus Of Failure Code	AD-BRK	SE	AD-BRK	SE	AD	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	NON-FTB	
Side: B						Peel B
Peel Strength (ppi)	88	82	79	91	87	85
Peel Incursion (%)	50	<5	25	<5	30	
Peel Locus Of Failure Code	AD-BRK	SE	AD-BRK	SE	AD-BRK	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	122	124	131	131	127	127
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-13A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	108	102	92	91	82	95
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	97	104	99	107	101	102
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	131	131	130	130	136	132
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8395

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-13B Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	99	98	99	95	98	98
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	103	102	97	97	96	99
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	125	137	137	131	132	132
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-15 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	107	107	102	109	106	106
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	99	99	107	98	93	99
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	118	130	126	136	132	128
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8395

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-16 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	92	90	89	90	90	90
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	101	92	93	90	91	93
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	127	132	126	133	130	130
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-17 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	80	94	95	93	83	89
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	98	107	102	96	105	102
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	114	123	125	132	130	125
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8395

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-18 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	112	107	108	106	104	107
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	99	98	108	87	102	99
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	119	129	124	123	123	124
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-19 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	88	92	83	98	90	90
Peel Incursion (%)	<5	30	10	20	<5	
Peel Locus Of Failure Code	SE	AD-BRK	AD-BRK	AD-BRK	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	92	94	88	114	96	97
Peel Incursion (%)	30	<5	<5	<5	<5	
Peel Locus Of Failure Code	AD-BRK	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	117	127	133	127	125	126
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8395

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-20 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	102	96	105	83	87	95
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	106	107	108	102	105	106
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	130	137	137	139	136	136
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-21 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	103	103	104	85	84	96
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	90	121	117	94	89	102
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	126	138	136	142	136	136
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8395

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-22 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	92	93	95	96	100	95
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	97	110	101	106	104	104
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	121	130	131	133	129	129
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-23 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	87	87	82	94	90	88
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	98	89	93	98	89	93
Peel Incursion (%)	<5	<5	<5	5	10	
Peel Locus Of Failure Code	SE	SE	SE	AD-BRK	AD-BRK	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	122	140	132	131	131	131
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8395

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-24 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	113	114	117	113	111	114
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	102	111	105	109	110	107
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	129	137	140	137	138	136
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-25 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	93	90	97	96	95	94
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	108	109	108	113	109	109
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	124	137	139	131	127	132
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI/Environmental, Inc.
A Texas Research International Company

Date: 2012-06-06

Mail To:
Anna Saindon
Geotechnology, Inc
11816 Lackland Rd
St. Louis , MO , 63146

Bill To:
Geotechnology, Inc
J019896.01

e-mail:a_saindon@geotechnology.com

Dear Ms. Saindon,

Thank you for consulting with TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs. TRI is pleased to submit this final report for laboratory testing.

Project: **Hutsonville Power Station - Ash Pond D Closure**

TRI Job Reference Number: **8407**

Material(s) Tested: (5) Heat Fusion Weld Seam(s)

Test(s) Requested: SAME DAY Peel and Shear
(ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

Codes:

AD	Adhesion Failure (100% Peel)
BRK	Break in sheeting away from Seam edge.
SE	Break in sheeting at edge of seam.
AD-BRK	Break in sheeting after some adhesion failure - partial peel.
SIP	Separation in the plane of the sheet (leaving the bond intact).
FTB	Film tearing bond (all non "AD" failures).
NON-FTB	100% peel.

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

Jennifer Tenney
Project Manager
Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8407

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-3A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	89	96	96	91	93	93
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	93	100	106	98	97	99
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	126	126	126	128	129	127
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-3B Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	104	105	102	102	106	104
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	100	106	101	93	101	100
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	128	130	134	130	132	131
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8407

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-14A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	104	105	95	109	104	103
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	101	97	83	91	89	92
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	135	136	136	139	140	137
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-14B Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	98	109	95	98	94	99
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	88	81	85	88	89	86
Peel Incursion (%)	<5	<5	<5	10	10	
Peel Locus Of Failure Code	SE	SE	SE	AD-BRK	AD-BRK	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	136	135	133	133	135	134
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8407

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-26 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	96	89	93	94	92	93
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	102	98	99	106	106	102
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	125	122	118	121	123	122
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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Date: 2012-06-07

Mail To:
Anna Saindon
Geotechnology, Inc
11816 Lackland Rd
St. Louis , MO , 63146

Bill To:
Geotechnology, Inc
J019896.01

e-mail: a_saindon@geotechnology.com

Dear Ms. Saindon,

Thank you for consulting with TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs. TRI is pleased to submit this final report for laboratory testing.

Project: **Hutsonville Power Station - Ash Pond D Closure**

TRI Job Reference Number: **8417**

Material(s) Tested: (6) Heat Fusion Weld Seam(s)

Test(s) Requested: SAME DAY Peel and Shear
(ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

Codes:

AD	Adhesion Failure (100% Peel)
BRK	Break in sheeting away from Seam edge.
SE	Break in sheeting at edge of seam.
AD-BRK	Break in sheeting after some adhesion failure - partial peel.
SIP	Separation in the plane of the sheet (leaving the bond intact).
FTB	Film tearing bond (all non "AD" failures).
NON-FTB	100% peel.

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

Melissa Hunter
Project Manager
Geosynthetic Services Division
<http://www.geosyntheticstesting.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8417

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-7A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	98	92	99	94	95	96
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	100	94	93	100	100	97
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	142	138	137	143	140	140
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-7B Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	93	97	92	93	95	94
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	95	99	102	102	102	100
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	137	144	140	138	139	140
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8417

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-12A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	97	94	98	95	102	97
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	97	96	89	93	96	94
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	136	137	139	145	138	139
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-12B Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	101	94	93	91	94	95
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	100	85	89	96	87	91
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	141	139	133	133	135	136
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8417

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-19A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	103	93	103	101	103	101
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	100	94	97	101	98	98
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	140	141	140	147	141	142
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-19B Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	102	96	97	97	100	98
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	100	105	101	101	104	102
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	145	144	143	149	150	146
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI/Environmental, Inc.
A Texas Research International Company

Date: 2012-06-09

Mail To:
Anna Saindon
Geotechnology, Inc
11816 Lackland Rd
St. Louis , MO , 63146

Bill To:
Geotechnology, Inc
J019896.01

e-mail: a_saindon@geotechnology.com

Dear Ms. Saindon,

Thank you for consulting with TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs. TRI is pleased to submit this final report for laboratory testing.

Project: **Hutsonville Power Station - Ash Pond D Closure**

TRI Job Reference Number: **8440**

Material(s) Tested: (2) Heat Fusion Weld Seam(s)

Test(s) Requested: SAME DAY Peel and Shear
(ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

Codes:

AD	Adhesion Failure (100% Peel)
BRK	Break in sheeting away from Seam edge.
SE	Break in sheeting at edge of seam.
AD-BRK	Break in sheeting after some adhesion failure - partial peel.
SIP	Separation in the plane of the sheet (leaving the bond intact).
FTB	Film tearing bond (all non "AD" failures).
NON-FTB	100% peel.

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

Melissa Hunter
Project Manager
Geosynthetic Services Division
<http://www.geosyntheticstesting.com>



TRI/Environmental, Inc.
A Texas Research International Company

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology, Inc

Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8440

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS2A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	92	91	96	91	94	93
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	98	95	99	93	99	97
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	114	115	121	125	112	117
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-2B Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	94	90	90	83	93	90
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	81	97	89	77	90	87
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	126	125	125	125	128	126
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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Date: 2012-06-12

Mail To:
Anna Saindon
Geotechnology, Inc
11816 Lackland Rd
St. Louis , MO , 63146

Bill To:
Geotechnology, Inc
Project # : J019896.01

e-mail: a_saindon@geotechnology.com

Dear Ms. Saindon,

Thank you for consulting with TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs. TRI is pleased to submit this final report for laboratory testing.

Project: **Hutsonville Power Station - Ash Pond D Closure**

TRI Job Reference Number: **8458**

Material(s) Tested: (60) Heat Fusion Weld Seam(s)
(2) Single Extrusion Weld Seam(s)

Test(s) Requested: SAME DAY Peel and Shear
(ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

Codes:

AD	Adhesion Failure (100% Peel)
BRK	Break in sheeting away from Seam edge.
SE	Break in sheeting at edge of seam.
AD-BRK	Break in sheeting after some adhesion failure - partial peel.
SIP	Separation in the plane of the sheet (leaving the bond intact).
FTB	Film tearing bond (all non "AD" failures).
NON-FTB	100% peel.

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

Jennifer Tenney
Project Manager
Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8458

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-27 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	90	91	88	83	90	88
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	115	111	103	110	109	110
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	122	126	125	132	131	127
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-29 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	96	94	101	93	99	97
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	97	92	111	112	114	105
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	126	133	126	127	128	128
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8458

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-30 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	80	82	80	81	79	80
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	107	115	107	107	105	108
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	120	124	126	122	125	123
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-31 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	93	97	95	99	96	96
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	103	104	115	110	114	109
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	123	125	125	125	130	126
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8458

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-32 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	85	84	86	87	89	86
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	105	103	104	97	106	103
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	124	125	129	128	126	126
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-33 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	94	99	85	101	101	96
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	107	111	100	104	110	106
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	134	125	125	131	127	128
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8458

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-34 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	84	83	84	85	77	83
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	98	106	97	102	98	100
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	82	100	127	131	124	113
Shear Elongation @ Break (%)	16	22	>50	>50	28	
Sample ID: DT-35 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	100	105	100	96	99	100
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	103	96	105	104	93	100
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	127	126	127	132	132	129
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8458

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-36 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	115	111	124	114	115	116
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	99	103	95	95	101	99
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	123	124	125	129	129	126
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-37 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	109	117	106	106	104	108
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	98	97	100	100	105	100
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	124	121	120	119	123	121
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8458

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-38 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	102	107	106	103	116	107
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	102	97	105	95	112	102
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	120	121	122	127	122	122
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-39 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	97	95	117	114	111	107
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	103	104	106	105	102	104
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	128	126	126	132	127	128
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8458

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-40 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	101	111	114	107	104	107
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	106	113	106	111	106	108
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	119	118	118	120	118	119
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-41 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	101	96	99	98	100	99
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	109	114	106	113	107	110
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	126	125	124	125	125	125
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8458

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-42 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	99	100	100	101	105	101
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	102	104	107	103	97	103
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	127	126	126	129	125	127
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-43 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	95	103	100	97	97	98
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	102	108	108	107	102	105
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	127	127	122	127	118	124
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8458

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-44 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	89	101	99	93	95	95
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	98	98	99	96	92	97
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	120	126	120	118	122	121
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-45 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	106	105	104	99	96	102
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	107	112	106	107	105	107
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	124	127	126	126	128	126
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8458

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-46 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	95	96	101	99	85	95
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	102	104	103	102	105	103
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	124	126	124	125	123	124
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-47 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	111	114	111	110	110	111
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	95	95	92	91	102	95
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	122	121	125	119	121	122
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8458

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-48 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	108	98	109	102	94	102
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	93	92	92	90	91	92
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	123	122	125	119	123	122
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-49 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	109	104	107	112	109	108
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	88	100	90	97	92	93
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	129	128	130	134	129	130
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8458

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-50 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	110	107	91	105	104	103
Peel Incursion (%)	<5	25	45	<5	<5	
Peel Locus Of Failure Code	SE	AD-BRK	AD-BRK	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	95	93	85	101	99	95
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	132	130	127	128	129	129
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-51 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	104	104	102	106	86	100
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	92	107	92	88	94	95
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	124	126	122	125	124	124
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8458

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-52 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	79	91	94	93	87	89
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	96	78	74	98	98	89
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	124	123	126	126	125	125
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-53 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	94	92	88	94	88	91
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	88	86	96	81	79	86
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	117	118	118	119	118	118
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8458

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-54 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	97	99	104	103	103	101
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	85	92	97	92	92	92
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	124	125	125	124	123	124
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-55 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	93	96	88	91	97	93
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	113	107	93	116	96	105
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	128	126	128	128	125	127
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8458

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-56 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	94	94	90	98	92	94
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	93	96	93	97	92	94
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	120	117	118	118	118	118
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-57 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	94	93	97	93	90	93
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	89	91	104	102	99	97
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	123	123	124	122	123	123
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8458

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-58 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	91	94	95	107	97	97
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	96	86	101	77	88	90
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	122	121	122	121	123	122
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-59 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	104	96	103	96	99	100
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	106	99	109	100	105	104
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	129	127	129	127	126	128
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8458

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-60 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	96	95	91	92	89	93
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	93	109	106	106	86	100
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	127	127	127	126	126	127
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-61 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	94	82	89	88	92	89
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	85	82	83	78	78	81
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	124	123	126	125	124	124
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8458

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-62 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	90	88	88	83	87	87
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	100	96	98	102	90	97
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	123	125	124	124	124	124
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-63 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	85	85	83	88	83	85
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	91	91	96	92	96	93
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	128	128	128	130	127	128
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8458

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-64 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	91	99	93	97	91	94
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	116	107	106	112	110	110
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	127	126	127	128	128	127
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-65 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	101	110	99	96	87	99
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	83	108	96	96	94	95
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	124	123	126	128	123	125
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8458

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-66 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	97	90	101	101	103	98
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	106	113	110	111	95	107
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	125	126	128	126	119	125
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-67 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	98	102	104	102	96	100
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	104	94	87	89	101	95
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	116	115	117	118	116	116
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8458

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-68 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	109	89	110	78	85	94
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	96	99	98	103	93	98
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	114	118	115	115	112	115
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-69 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	112	111	112	107	106	110
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	96	84	95	96	93	93
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	116	117	118	118	118	117
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8458

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-70 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	83	99	89	92	105	94
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	74	77	80	85	101	83
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	117	117	117	117	117	117
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-71 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	109	111	109	99	112	108
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	99	100	97	97	96	98
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	124	126	119	124	99	118
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8458

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-72 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	93	114	109	106	110	106
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	105	107	105	93	96	101
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	117	119	114	119	109	116
Shear Elongation @ Break (%)	>50	>50	>50	>50	48	
Sample ID: DT-73 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	92	97	98	97	87	94
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	90	106	96	88	91	94
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	132	133	131	131	133	132
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8458

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-74 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	105	108	106	90	110	104
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	99	94	94	92	93	94
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	127	128	131	126	131	129
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-75 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	89	92	92	90	94	91
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	95	97	99	98	104	99
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	129	128	130	130	129	129
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8458

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-76 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	107	98	94	93	101	99
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	109	96	99	97	109	102
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	129	129	131	130	130	130
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-77 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	89	86	86	85	87	87
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	106	108	102	103	110	106
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	132	128	129	126	126	128
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8458

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-78 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	90	99	97	89	95	94
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	110	107	109	104	103	107
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	128	133	129	129	128	129
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-79 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	84	88	89	82	102	89
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	88	106	98	90	85	93
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	119	119	120	119	122	120
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8458

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-80 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	112	96	109	102	105	105
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	93	73	93	98	92	90
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	121	120	115	126	121	121
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-81 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	89	96	93	98	90	93
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	88	91	90	91	87	89
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	122	125	123	123	119	122
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8458

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-82 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	108	103	110	109	88	104
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	92	107	97	94	96	97
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	128	125	126	126	128	127
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-83 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	97	98	105	75	93	94
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	106	104	86	100	105	100
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	122	123	121	123	122	122
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8458

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-84A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	99	96	93	93	96	95
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	100	96	96	94	97	97
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	125	127	127	128	129	127
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-84B Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	96	105	102	105	105	103
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	102	92	99	97	101	98
Peel Incursion (%)	<5	50	<5	<5	<5	
Peel Locus Of Failure Code	SE	AD-BRK	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	124	125	123	123	126	124
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8458

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-85 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	102	104	101	102	97	101
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	95	102	107	99	99	100
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	124	129	124	124	127	126
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-86 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	107	117	113	121	118	115
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	90	110	102	101	101	101
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	123	124	123	124	123	123
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS - SINGLE TRACK

TRI Client: Geotechnology, Inc

Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8458

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-28 Weld: Single Extrusion						
Side: Peel						Peel
Peel Strength (ppi)	101	94	94	102	99	98
Peel Incursion (%)	<5%	<5%	<5%	<5%	<5%	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	115	114	120	116	120	117
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-87 Weld: Single Extrusion						
Side: Peel						Peel
Peel Strength (ppi)	107	113	116	108	107	110
Peel Incursion (%)	<5%	<5%	<5%	<5%	<5%	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	121	125	127	123	127	125
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI/Environmental, Inc.
A Texas Research International Company

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Geotechnology, Inc
Project # : J019896.01

e-mail: a_saindon@geotechnology.com

Dear Ms. Saindon,

Thank you for consulting with TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs. TRI is pleased to submit this final report for laboratory testing.

Project: **Hutsonville Power Station - Ash Pond D Closure**

TRI Job Reference Number: **8486**

Material(s) Tested: (7) Heat Fusion Weld Seam(s)

Test(s) Requested: SAME DAY Peel and Shear
(ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

Codes:

AD	Adhesion Failure (100% Peel)
BRK	Break in sheeting away from Seam edge.
SE	Break in sheeting at edge of seam.
AD-BRK	Break in sheeting after some adhesion failure - partial peel.
SIP	Separation in the plane of the sheet (leaving the bond intact).
FTB	Film tearing bond (all non "AD" failures).
NON-FTB	100% peel.

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

Melissa Hunter
Project Manager
Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology, Inc

Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8486

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-34A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	107	96	95	104	90	98
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	92	96	94	97	94	95
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	127	129	132	131	129	130
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-34B1 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	110	78	102	79	98	93
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	106	99	89	59	90	89
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	131	132	129	132	132	131
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

The testing is based upon accepted industry practices as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claims as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8486

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-50A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	99	109	100	101	101	102
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	111	99	100	92	91	99
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	128	129	129	129	130	129
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-50B Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	96	97	79	84	93	90
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	90	93	78	101	82	89
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	120	119	116	117	120	118
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology, Inc

Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8486

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-72A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	105	114	98	107	98	104
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	89	93	89	102	96	94
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	121	121	118	118	113	118
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-72B Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	83	94	90	80	97	89
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	111	97	108	98	109	105
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	123	115	122	124	122	121
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI/Environmental, Inc.
A Texas Research International Company

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8486

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-84B1 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	87	79	105	104	110	97
Peel Incursion (%)	90	30	<5	90	<5	
Peel Locus Of Failure Code	AD-BRK	AD-BRK	SE	AD-BRK	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	95	91	88	103	102	96
Peel Incursion (%)	<5	<5	25	<5	<5	
Peel Locus Of Failure Code	SE	SE	AD-BRK	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	134	135	135	135	130	134
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

The testing is based upon accepted industry practices as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claims as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.



Date: 2012-06-15

Mail To:
Anna Saindon
Geotechnology, Inc
11816 Lackland Rd
St. Louis , MO , 63146

Bill To:

Geotechnology, Inc
Project # : J019896.01

e-mail:a_saindon@geotechnology.com

Dear Ms. Saindon,

Thank you for consulting with TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs. TRI is pleased to submit this final report for laboratory testing.

Project: **Hutsonville Power Station - Ash Pond D Closure**

TRI Job Reference Number: **8500**

Material(s) Tested: (1) Heat Fusion Weld Seam(s)

Test(s) Requested: SAME DAY Peel and Shear
(ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

Codes:

AD	Adhesion Failure (100% Peel)
BRK	Break in sheeting away from Seam edge.
SE	Break in sheeting at edge of seam.
AD-BRK	Break in sheeting after some adhesion failure - partial peel.
SIP	Separation in the plane of the sheet (leaving the bond intact).
FTB	Film tearing bond (all non "AD" failures).
NON-FTB	100% peel.

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

Jennifer Tenney
Project Manager
Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Geotechnology, Inc
Project: Hutsonville Power Station - Ash Pond D Closure

Material: 40mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 8500

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DT-84B2 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	91	94	98	85	94	92
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	95	104	107	99	90	99
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	133	137	137	132	131	134
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

The testing is based upon accepted industry practices as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claims as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.



Ash Management Services, LLC
12601 Plantside Drive
Louisville, Kentucky 40299
Phone: 502-245-1353

Hutsonville APD Closure

HUT-APD-SUB-023-02

Let-down Chute Geotextile

02373-1.4.A Product Data – Geotextile Fabric Properties...

Submittal Information

Submittal No.	Date	Contact	Phone no.
SUB-023-02	2012-07-19	Paul Zinsious AMS	502-640-2918

SHOP DRAWING / SUBMITTAL REVIEW

Shop drawing/submittal review is for design conformity and general conformance with the design concept of the project as given in the contract documents. Subcontractor is responsible for full compliance with contract documents, confirming and correcting all quantities, correlating dimensions at project work site for tolerance, clearance, fabrication process, and techniques of construction. Subcontractor is responsible for coordination of his work with that of all other trades, and performance of the work in a safe and satisfactory manner.

☒ Reviewed.
☐ Reviewed with corrections.
☐ Revise and resubmit.
☐ Rejected. See Remarks.

2012-07-19 Date

By

AMS, LLC



GEOTEX[®] 861 is a polypropylene, staple fiber, needlepunched nonwoven geotextile produced by Propex, and will meet the following Minimum Average Roll Values (MARV) when tested in accordance with the methods listed below. The fibers are needled to form a stable network that retains dimensional stability relative to each other. The geotextile is resistant to ultraviolet degradation and to biological and chemical environments normally found in soils.

GEOTEX 861 conforms to the property values listed below¹. Propex performs internal Manufacturing Quality Control (MQC) tests that have been accredited by the Geosynthetic Accreditation Institute – Laboratory Accreditation Program (GAI-LAP). This product is NTPEP approved for AASHTO standards.

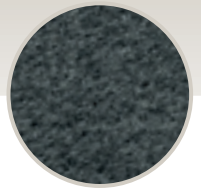
MARV ²			
PROPERTY	TEST METHOD	ENGLISH	METRIC
ORIGIN OF MATERIALS			
% U.S. Manufactured Inputs		100%	100%
% U.S. Manufactured		100%	100%
PHYSICAL			
Mass/ Unit Area	ASTM D-5261	8.0 oz/yd ²	271 g/m ²
Thickness	ASTM D-5199	90 mils	2.3 mm
MECHANICAL			
Tensile Strength (Grab)	ASTM D-4632	220 lbs	979 N
Elongation	ASTM D-4632	50%	50%
CBR Puncture	ASTM D-6241	575 lbs	2559 N
Trapezoidal Tear	ASTM D-4533	95 lbs	423 N
ENDURANCE			
UV Resistance % Retained at 500 hrs	ASTM D-4355	70%	70%
HYDRAULIC			
Apparent Opening Size (AOS) ³	ASTM D-4751	80 US Std. Sieve	0.180 mm
Permittivity	ASTM D-4491	1.5 sec ⁻¹	1.5 sec ⁻¹
Permeability	ASTM D-4491	0.38 cm/sec	0.38 cm/sec
Water Flow Rate	ASTM D-4491	110 gpm/ft ²	4482 l/min/m ²
ROLL SIZES		15 ft x 300 ft	4.57 m x 91.5 m

NOTES:

1. The property values listed above are effective 04/2011 and are subject to change without notice.
2. Values shown are in weaker principal direction. Minimum average roll values (MARV) are calculated as the typical minus two standard deviations. Statistically, it yields a 97.7% degree of confidence that any samples taken from quality assurance testing will exceed the value reported.
3. Maximum average roll value.



GEOTEX® NONWOVEN GEOTEXTILES



Made from the highest quality polypropylene fibers, our Geotex® nonwoven geotextiles are needlepunched to form a strong fabric that retains its dimensional stability, adding years to the life of any roadway, railroad, landfill or civil/environmental engineering project. Used in subsurface drainage, separation, stabilization, erosion control and cushioning applications, our geotextiles are resistant to ultraviolet (UV) degradation and to biological and chemical environments normally found in soils.

FEATURES & BENEFITS

- ▶ Mass per unit areas range from 3 to 17 oz/yd² (100 to 575 g/m²) to guarantee an available product for every application (heavier products may be available by special order)
- ▶ Superior chemical resistance in even the most aggressive environmental applications
- ▶ Staple fibers needlepunched together to form a sturdy fabric capable of withstanding construction installation stresses
- ▶ Contains additives for maximum UV resistance
- ▶ Produced at some of the largest, state-of-the-art production facilities to assure uniform product quality

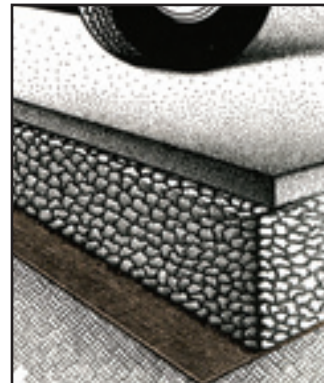
Outperforms and is more cost effective than conventional methods, including:

- ▶ Thicker aggregate layers
- ▶ Undercutting and removal
- ▶ Chemical stabilization
- ▶ Graded, granulated filters

GEOTEX® NONWOVEN GEOTEXTILES PRODUCT FAMILY TABLE

CIVIL	ENVIRONMENTAL
GEOTEX® 311	GEOTEX® 651
GEOTEX 351	GEOTEX 861
GEOTEX 401	GEOTEX 1071
GEOTEX 451	GEOTEX 1291
GEOTEX 501	GEOTEX 1701
GEOTEX 601	
GEOTEX 701	
GEOTEX 801	
GEOTEX 1001	
GEOTEX 1071	
GEOTEX 1201	
GEOTEX 1601	

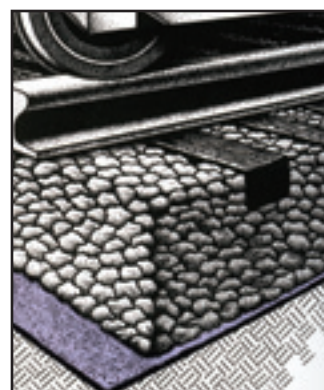
You can plan and implement road designs that will lower the cost and extend the life of your pavement—and our Roadways And Civil Engineering (R.A.C.E.) software can help. Download it today at geotextile.com.



Geotex® nonwoven geotextiles can be deployed directly on a soft, saturated subgrade.



Wrapping a subsurface drainage system with a Geotex® nonwoven geotextile will improve roadway life.



Robust Geotex® nonwovens stabilize subgrades and prevent the fouling of ballast beneath railway track.



Geotex® heavyweight nonwoven geotextiles allow the construction of landfill drainage layers without fear of liner damage.

GEOTEX® NONWOVEN GEOTEXTILES

APPLICATION RECOMMENDATIONS FOR GEOTEX® NONWOVEN GEOTEXTILES

	APPLICATION	ORGANIZATION / REFERENCE #	CATEGORY	GEOTEX® STYLE
CIVIL	PERMANENT EROSION CONTROL	AASHTO M288-05/FHWA FP-03	CLASS 1/TYPE IV (A-C) CLASS 2/TYPE IV (D-F)	GEOTEX® 801 GEOTEX 601
	DRAINAGE	AASHTO M288-05/FHWA FP-03	CLASS 2/TYPE I (A-C) CLASS 3/TYPE I (D-F)	GEOTEX 601 GEOTEX 401
	ROADWAY SEPARATION	AASHTO M288-05/FHWA FP-03	CLASS 1/TYPE II (A) CLASS 2/TYPE II (B) CLASS 3/TYPE II (C)	GEOTEX 801 GEOTEX 601 GEOTEX 401
	ROADWAY STABILIZATION	AASHTO M288-05/FHWA FP-03	CLASS 1/TYPE III (A) CLASS 2/TYPE III (B)	GEOTEX 801 GEOTEX 601
	RAILROAD STABILIZATION	AREMA/CH. 1, PART 10	REGULAR HEAVY EXTRA HEAVY	GEOTEX 1201 GEOTEX 1601 GEOTEX 1701
	GEOMEMBRANE LINER PROTECTION	—	—	GEOTEX 861-1701
ENVIRONMENTAL	GAS VENTING	—	—	GEOTEX 861-1701
	LANDFILL LEACHATE COLLECTION	EPA/GRI REPORT NO. 15	—	GEOTEX 651 GEOTEX 861
	LANDFILL DRAINAGE SYSTEMS	—	—	GEOTEX 651

NOTES: • AASHTO: American Association of State Highway Transportation Officials • AREMA: American Railway Engineering and Maintenance Association
• GRI: Geosynthetics Research Institute • EPA: Environmental Protection Agency

GEOTEX® NONWOVEN CIVIL GEOTEXTILES PROPERTY TABLE¹ ENGLISH & METRIC UNITS

[illegible]

NOTES: 1. The property values listed are effective 06/2009 and are subject to change without notice. 2. Values reported in weaker principal direction. 3. All values listed are Minimum Average Roll Values (MARV) unless otherwise noted, calculated as the typical minus two standard deviations. Statistically, it yields a 97.7% degree of confidence that any sample taken during quality assurance testing will exceed the value reported. Maximum Average Roll Values (MaxARV) represents typical plus two standard deviations. 4. Underlined styles meet and/or exceed the American Association of State Highway Transportation Officials (AASHTO) M288-05 specifications.

GEOTEX® NONWOVEN ENVIRONMENTAL GEOTEXTILES PROPERTY TABLE¹

ENGLISH & METRIC UNITS

	PROPERTY	TEST METHOD	VALUE ³	UNIT	651	861	1071	1291	1701
MECHANICAL	GRAB TENSILE STRENGTH	ASTM D-4632	MARV	lb N	170 756	220 979	270 1202	320 1424	390 1736
	GRAB ELONGATION	ASTM D-4632	MARV	%	50	50	50	50	50
	PUNCTURE STRENGTH	ASTM D-4833	MARV	lb N	110 490	135 601	160 712	210 934	250 1112
	CBR PUNCTURE	ASTM D-6241	MARV	lb N	435 1935	575 2558	725 3225	925 4115	1125 5004
	MULLEN BURST	ASTM D-3786	MARV	psi kPa	330 2275	420 2895	520 3585	620 4274	800 5515
	TRAPEZOIDAL TEAR	ASTM D-4533	MARV	lb N	70 312	95 423	105 467	125 556	155 690
HYDRAULIC	APPARENT OPENING SIZE (AOS)	ASTM D-4751	MaxARV	US Sieve mm	70 0.212	80 0.180	100 0.150	100 0.150	100 0.150
	PERMITTIVITY	ASTM D-4491	MARV	sec ⁻¹	1.5	1.5	1.2	0.8	0.7
	PERMEABILITY	ASTM D-4491	MARV	cm/sec	0.24	0.38	0.30	0.29	0.27
	WATER FLOW RATE	ASTM D-4491	MARV	gpm/ft ² l/min/m ²	110 4480	110 4480	85 3463	60 2445	50 2037
PHYSICAL	MASS PER UNIT AREA	ASTM D-5261	MARV	oz/yd ² g/m ²	6.0 203	8.0 271	10.0 339	12.0 407	16.0 542
	THICKNESS	ASTM D-5199	MARV	mils mm	80 2.0	90 2.3	105 2.7	115 2.9	165 4.2
ENDURANCE	UV RESISTANCE	ASTM D-4355	MARV	% Retained @ 500 hours	70	70	70	70	70
PACKAGING	ROLL WIDTH	MEASURED	TYPICAL	ft m	15 4.57	15 4.57	15 4.57	15 4.57	15 4.57
	ROLL LENGTH	MEASURED	TYPICAL	ft m	300 91.5	300 91.5	300 91.5	300 91.5	300 91.5
	ROLL WEIGHT	CALCULATED	TYPICAL	lb kg	235 107	291 132	372 169	434 197	577 262
	ROLL AREA	MEASURED	TYPICAL	yd ² m ²	500 418	500 418	500 418	500 418	500 418

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KEY PROPERTIES OF GEOTEX® NONWOVEN GEOTEXTILES

- Mass Per Unit Area: Relevant in the design of geomembrane liner protection, this value often “qualifies” a nonwoven geotextile.
- Puncture Strength: Especially during construction, the geotextile must withstand pressures applied from surrounding aggregate.
- Apparent Opening Size: A measurement of the opening sizes of the geotextile, this property is used when selecting the correct filter.
- Permittivity: This value is a measure of the geotextile’s ability to pass water. When multiplied by the thickness, you can determine the permeability of the geotextile.

For downloadable documents like construction specifications, installation guidelines, case studies and other technical information, please visit our web site at geotextile.com. These documents are available in easy-to-use Microsoft® Word format.



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6025 Lee Highway, Suite 425 PH: 800 621 1273
PO Box 22788 FAX: 423 899 7619
Chattanooga, TN 37422 www.geotextile.com

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INSTALLATION GUIDELINES

SEPARATION/STABILIZATION GEOTEXTILE FABRICS

INTRODUCTION

Propex's Geotex® family of geotextiles can enhance the performance of paved and unpaved roadways, parking lots, airports, loading docks, and storage areas through separation/stabilization of the roadway structure. The geotextiles provide three important functions: separation/stabilization, drainage, and reinforcement. The fabric serves as a permeable separation/stabilization layer, preventing the aggregate and subgrade soils from intermixing while allowing the passage of water. The geotextile also enhances the structural properties of the subgrade and the roadway aggregate to minimize the cost of the road structure.

The successful use of geotextiles in these applications requires proper installation. The four basic steps of proper installation include:

- Subgrade preparation
- Geotextile placement
- Aggregate placement
- Aggregate compaction

Geotex stabilization geotextiles can be used in most weather and temperature conditions.

Adequate planning and preparation for each installation step will speed construction and ensure good performance.

These guidelines provide recommendations for installation of geotextiles in separation/stabilization applications.

The guidelines are intended to assist the contractor responsible for installation of the specified geotextile.

They are to be considered general guidelines, appropriate for common construction conditions. Specific site conditions, design requirements, or other variables may require modification to these guidelines.

Subgrade Preparation

Initially, the site should be cleared of tree stumps, large stones, and other sharp objects that could puncture the fabric. This step should be performed regardless of subgrade strength.

Roadway subgrade preparation typically involves removal of all vegetation, roots, and topsoil. Localized soft or otherwise unsuitable subgrade areas may be required to be excavated and backfilled with select material. In some very soft soil applications, it is beneficial to leave vegetation, roots, and topsoil in place to limit subgrade soil disturbance and loss of strength.

Geotextile Placement

Two people can easily place Geotex® separation/stabilization geotextiles. The fabric should be rolled out onto the subgrade beginning at a point that allows easy access for construction equipment yet is consistent with the layout plan. On very soft subgrades (CBR<1) the fabric layout and aggregate placement should begin on firm soil on the site perimeter, to establish an "anchor point." From there the fabric can be rolled onto softer sections. The geotextile should not be dragged across the subgrade. The geotextile is usually laid in the direction of construction traffic; however, specific project dimensions may alter this layout. Geotextile panels should be overlapped both side-to-side and end-to-end, in the direction of aggregate placement. The recommended overlap ranges from 1.5 to 3 feet, depending on subgrade strength. Overlap recommendations are provided in Table 1.

Table 1. Recommended Geotextile Overlaps

Subgrade CBR Value	Subgrade R-Value (California)	Subgrade Shear Strength (lb/in ²)	Field Estimation of CBR	Recommended Minimum Overlap
< 0.5	_____	≤ 2	_____	Sewn seam required
> 0.5 to 1	_____	> 2 to 4.5	A person can easily walk on the site	3 ft.
> 1 to 2	> 0 to 10	> 4.5 to 8.5	A low ground pressure bulldozer can access the site without significant rutting	2.5 ft.
> 2	> 10	> 8.5	A D4 bulldozer can access the site without significant rutting	1.5 ft.

Alternatively, adjacent fabric edges can be sewn together rather than overlapped. Sewn seams must be used when the geotextile provides significant tensile reinforcement. This is the case, for example, when the subgrade is very soft (CBR<0.5). Sewn seam strength and fabric orientation are important design parameters. In these critical applications, adjacent panels must be placed and sewn in accordance with the specifications provided by the design engineer. Field sewing is performed using a portable sewing machine and typically requires three or four laborers. Presewn panels can be supplied from the factory. Propex Engineering Bulletin No. 611, "Geotextile Sewn Seams," provides detailed information on both field-sewn and factory-sewn seams.

Soil, rocks, or pins can be used to hold fabric edges and overlaps down until aggregate is placed. On curves, the geotextile may be folded or cut to conform to the curve, as shown in Figure 1. The fold or overlap should be in the direction of construction and can be held in place as described above.

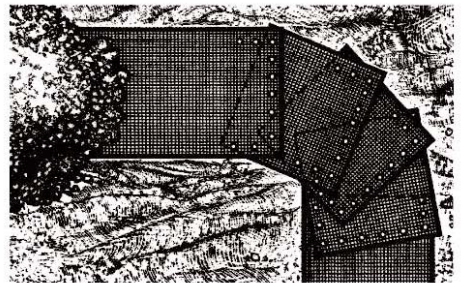
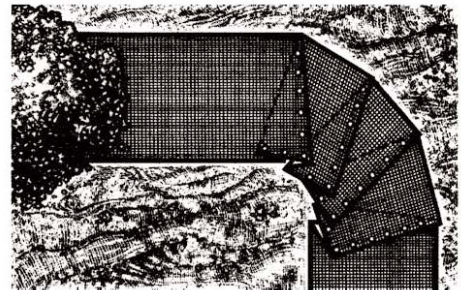


Figure 1 - Top, forming a curve using folds. Bottom, forming a curve using cut pieces.

Aggregate Placement

Aggregate is placed and spread on the fabric using conventional construction practices and equipment. Soil, rocks, or pins should be used to anchor the leading edge of the fabric to prevent it from lifting during placement of the first aggregate lift. The aggregate is typically back-dumped onto the geotextile, as the truck should not drive directly on the fabric. The aggregate is then spread over the geotextile. A tracked bulldozer is best used for this operation. Low ground pressure models are recommended for work on soft subgrades.

Lift thickness should not be less than 6 inches. The first lift should be as thick as necessary to limit rutting to less than 4 inches. During spreading, the bulldozer should blade into the load and slightly upward to prevent stressing the fabric. This procedure should be followed for each load until the fabric is completely covered. The dozer operator can determine which areas may need additional aggregate for good stability by observing aggregate layer rutting.

On very soft subgrades, care should be taken during aggregate placement to ensure that the fabric is not moved out of position nor the subgrade overstressed. Over some very soft soil conditions, "mud waves" may appear during or subsequent to aggregate placement. Mud waves result from overstressing the subgrade during fill placement, causing the subsurface soil to move away and up from the loaded area. They are normally not a problem if they do not heave above the surface of the aggregate base. If severe mud waves are anticipated, a Propex representative can provide information on construction procedures to minimize their adverse effects.

Sudden stops or turns by equipment operating over the geotextile should be avoided. Under typical conditions, vehicles should not be allowed to drive directly on the geotextile. If space constraints make this impractical, the possible damage from direct vehicle contact should be evaluated on a test section of the geotextile. If the fabric is damaged such that it cannot fulfill project requirements, a more damage-resistant geotextile should be specified. If the fabric is damaged during installation, the damaged section should be exposed and a patch of fabric placed over it. The patch should be large enough to overlap onto undamaged areas as recommended in Table 1. The aggregate is then replaced and compacted.

Aggregate Compaction

The aggregate must be compacted as required by the project specifications. The aggregate should be initially compacted by "walking" the tracked bulldozer back and forth over the aggregate while waiting for the next aggregate load. Construction traffic will then compact the aggregate until reasonable stability is obtained. Final compaction is achieved by rolling the area with a vibratory compactor, first without vibration for several passes and then with full vibration. Any weak areas found during final compaction usually indicate inadequate aggregate thickness in those locations. Do not grade ruts down; simply fill with additional aggregate and compact to the specified density. This also applies to any future rut maintenance that might be required.

Construction Monitoring

It is important that the construction conditions and process be monitored. If the actual subgrade has lower strength than that assumed for design, the structural section design thicknesses must be re-evaluated. Observation of rutting of the aggregate layer, for example, can pinpoint weak subgrade areas, allowing design adjustments to be made on site if necessary. One advantage of an unpaved road is the ability to identify and resurface weak areas to avoid overdesigning the entire road. Aggregate base placed for a new pavement may also be monitored for weak areas and corrected before the pavement layer(s) is placed.



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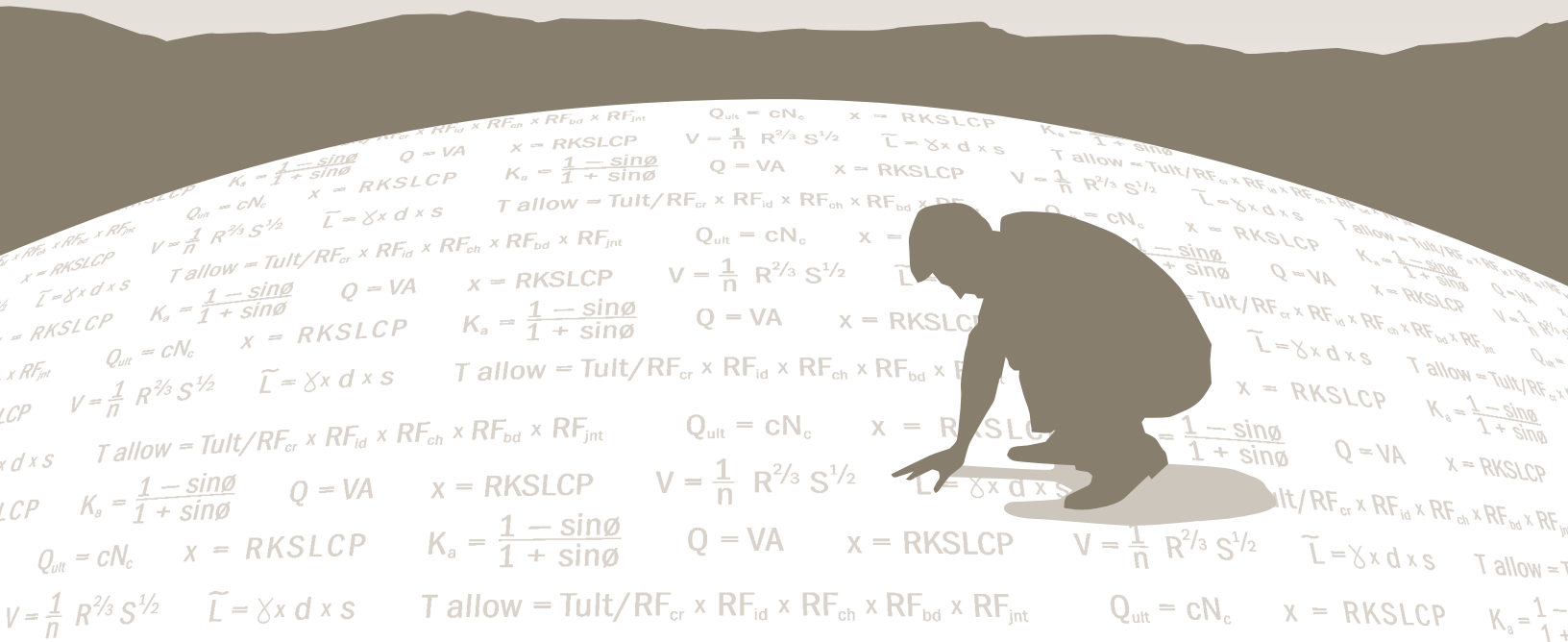
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GEOTEXTILE SOLUTIONS

PERFORMANCE GROUNDED IN **TECHNOLOGY**

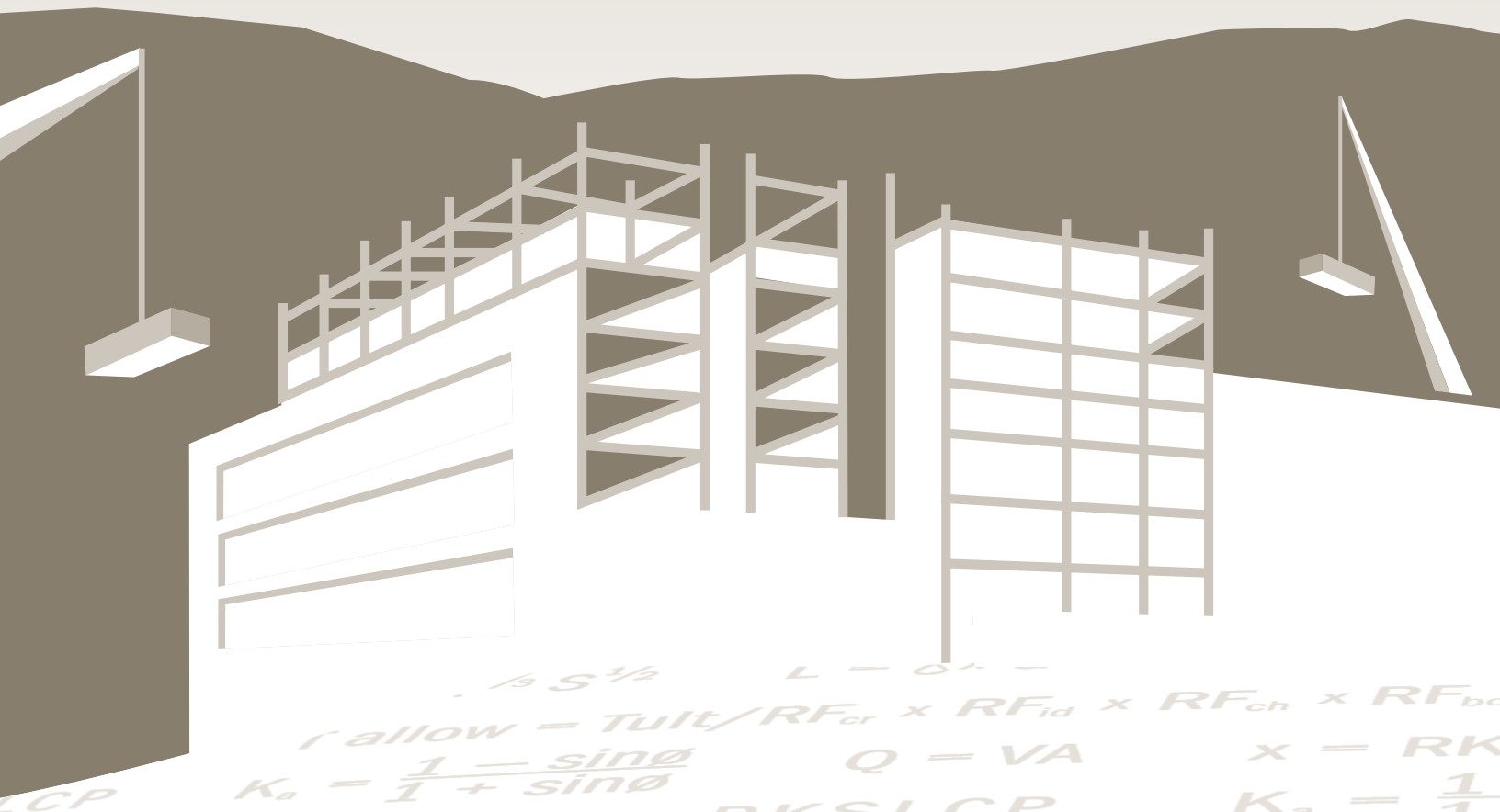


PROPEX

THE ADVANTAGE CREATORS.™

GEOSYNTHETICS

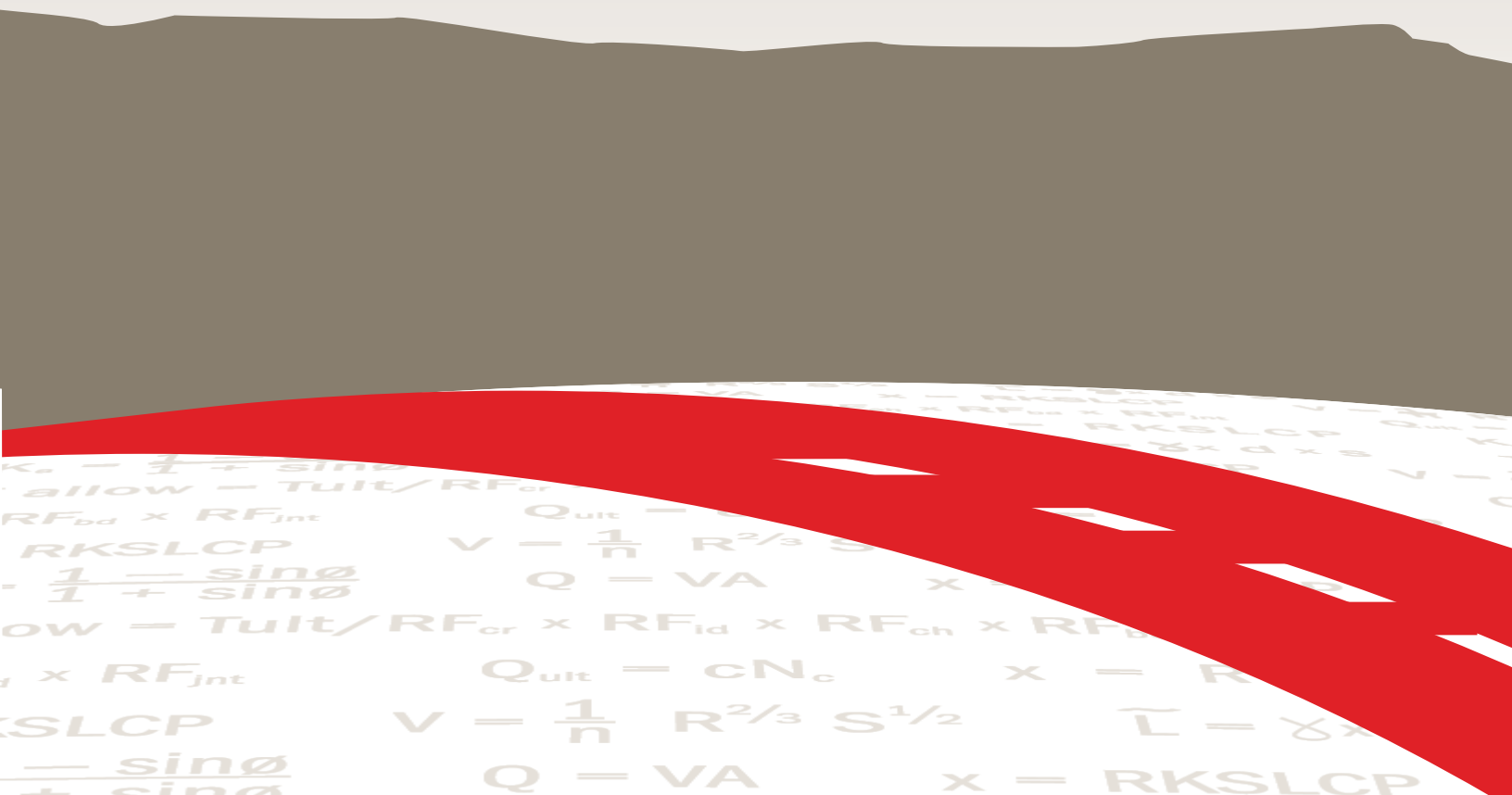
OUR PASSION
FOR CREATING
GEOSTABILIZATION
SOLUTIONS BEGAN
DECADES AGO ►



Starting with just a few nonwoven geotextiles, we quickly perfected and expanded a scientific approach to soil stabilization challenges that helped build an industry as much as our company. A proven solution for a variety of civil and environmental engineering challenges, geotextiles are used to improve performance and reduce costs of subsurface drains, roadways, railroads, embankments, landfills and more.

As the largest geotextile manufacturer in the world, we have designed a wide variety of geotextiles created to deliver superior

performance under even the most demanding construction conditions. We also work in partnership with universities, public agencies and private consultants across the U.S. to investigate improvements in civil engineering designs and approaches, and we've developed the industry standards that have made geotextiles such a critical engineering tool. So when you choose a Propex geotextile, you are not just choosing one of the industry's highest performing products, you're choosing the technical knowledge, experience and support that backs it up. Propex—creating the advantages that make you more successful.





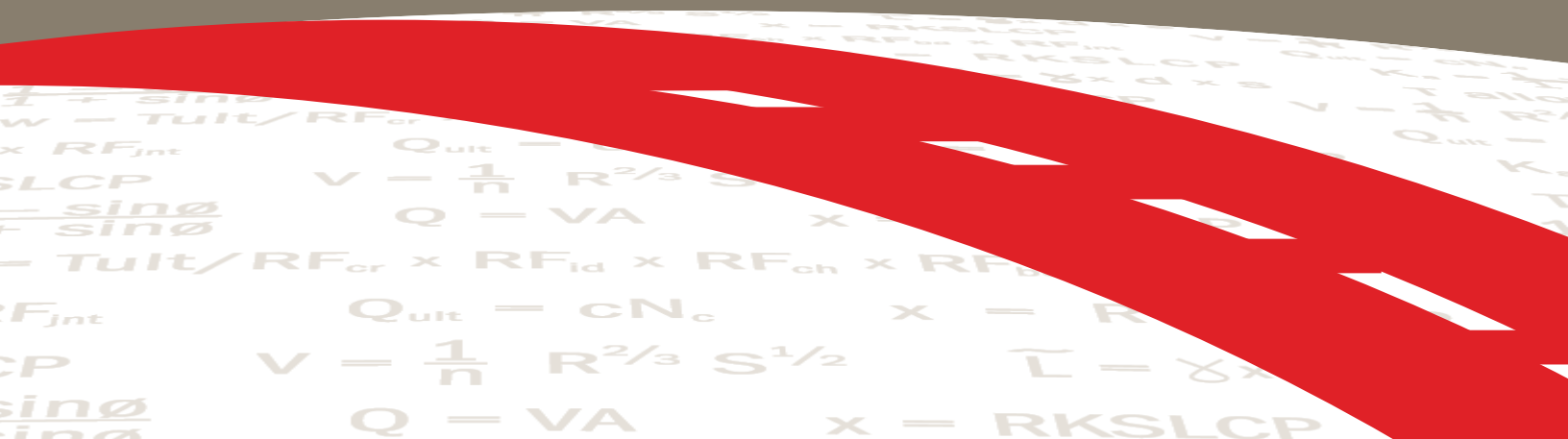
INNOVATIONS

- ▶ Pioneered paving fabrics and the geosynthetic interlayer technology that have improved over one billion square yards of pavement
- ▶ As a leader in geotextile production and research, Propex has developed industry standards that have made geotextiles a vital and widely used engineering tool
- ▶ Introduced Roadways and Civil Engineering (R.A.C.E.) software for the design of economical new flexible pavements or unpaved roads and for pavement rehabilitation strategies



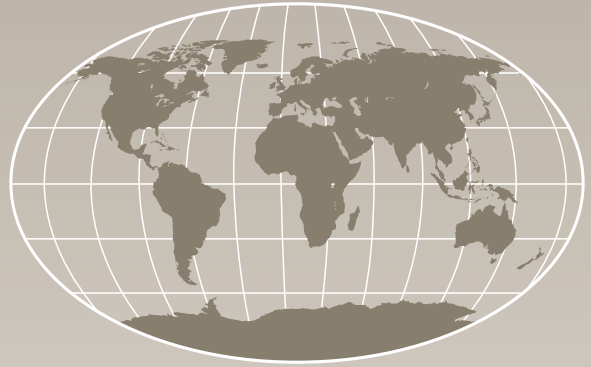
PERFORMANCE

- ▶ Well-documented performance case studies on every product we provide, including over 35 years of performance testing for paving fabrics and a 30-year performance study on woven geotextiles
- ▶ Propex has developed the industry's widest range of geostabilization solutions for virtually any construction project
- ▶ Strict manufacturing specifications, quality control monitoring and laboratory testing ensure our products consistently meet or exceed the most demanding construction specifications



AVAILABILITY

- ▶ Vast global network of distributors and representatives assures local product availability
- ▶ Utilizing the latest software in forecasting demand, we always have product where and when you need it: distributors have ready access to our full line of geotextiles and keep locally popular products in inventory for quick pickup or delivery to your job site



COST EFFICIENCY

- ▶ Our geotextiles are much less costly to install than traditional geostabilization practices such as lime, soil cement or thicker layers of aggregate and pavement
- ▶ In unpaved roads, our products reduce the required aggregate by about one-third, and in paved roads, they reduce the structural section while maintaining the full section indefinitely
- ▶ Our products can be handled and installed easily

PEOPLE

- ▶ Staff includes dedicated engineering professionals with advanced degrees who can provide you with technical expertise, research and specification information
- ▶ Maintain industry leadership in trade associations and professional societies



GEOTEX[®] GEOTEXTILES ▶

THE FABRIC OF TODAY'S SITE DEVELOPMENT, TRANSPORTATION AND WASTE CONTAINMENT INDUSTRIES.

Propex has been a leading manufacturer of geotextiles for decades with billions of square yards of nonwoven and woven geotextiles installed around the world. From geotextiles for the construction and closure of solid waste landfills to the separation, stabilization and reinforcement of roads, our geotextiles are renowned for their ability to reduce construction and life-cycle costs in a wide range of applications. In fact, Propex has the widest selection of woven and nonwoven geotextiles available, including products that are used for:

GEOTEX[®] GEOTEXTILES AT A GLANCE

- ▶ Dimensionally stable woven and nonwoven solutions for everything from soil stabilization and filtration to roadway and landfill applications
- ▶ Resistant to ultraviolet (UV) degradation and to biological and chemical environments normally found in soil
- ▶ Outperforms and are more cost-effective than conventional soil methods

- ▶ Subsurface drainage
- ▶ Roadway separation/stabilization
- ▶ Railroad stabilization
- ▶ Embankment reinforcement
- ▶ Earth-retaining structures
- ▶ Silt fences
- ▶ Lagoon closures
- ▶ Geomembrane liner protection
- ▶ Landfill gas collection
- ▶ Landfill drainage systems



GEOTEX[®] GEOTEXTILES ▶



SUBSURFACE DRAINAGE ▶

During wet weather, water can penetrate a pavement surface into the road base course below. Foundation soils can also retain water that migrates up to the road's base course, causing the pavement to lose its strength, rut, heave in freezing weather and crack at the surface. While aggregate French drains help drain water away, they can become clogged with small soil particles. Nonwoven geotextiles are cost-effective, easily installed filter/separators that keep aggregate or geosynthetic drainage systems clog-free to ensure long-term performance.



ROADWAY SEPARATION/STABILIZATION ▶

As anyone who has dug up and repaired a failed road knows, loss of roadbase support due to subgrade soil contamination is the leading cause of failure. This contamination can happen quickly over soft or wet soils, but still develops even over competent subgrades. Once some of the original road structural section is lost to contamination, the road progressively fails, due to inadequate support for the traffic loading. When placed at the subgrade/roadbase interface, Propex geotextiles provide four functions to enhance roadway performance: separation, stabilization, reinforcement and drainage. These functions help maintain the integrity and strength of the pavement foundation, which ensures long-term performance of any pavement and reduces the required aggregate section to lower project cost.



RAILROAD STABILIZATION ▶

Maintaining track geometry is critical for efficient railroad operation. When subgrade pumps into the overlying ballast, it can destroy the track support system and create an uneven track bed. Nonwoven geotextiles prevent aggregate and ballast from punching into the subgrade and intermixing, reducing maintenance costs and ensuring long-term durability and drainability. High-strength woven geotextiles can reinforce railroad embankments over weak subgrade soils.



EMBANKMENT REINFORCEMENT ▶

During construction of roadways over organic deposits and highly compressible soils, construction equipment often can't travel across the soil without sinking. The soil needs to be strengthened and consolidated. Woven geotextiles provide long-term reinforcement for embankments constructed over soft soil, and can be installed easily. The added reinforcement allows construction equipment to travel across the soft soil, increasing overall site safety and reducing excavation costs.

GEOTEX[®] GEOTEXTILES ▶



EARTH-RETAINING STRUCTURES ▶

Mechanically Stabilized Earth (MSE) retaining structures built with soil reinforcement fabrics are economical alternatives for designers looking to open up new land for development. Segmental Retaining Walls (SRWs), for example, are the most economical permanent retaining wall system available for fill slope construction. Reinforced steepened slopes using cost-effective high-strength geotextiles between soil lifts reinforce the slope surface and prevent deep-seated failure. In almost every case, earth-retaining structure solutions provide advantages over conventional concrete retaining structures, including:

- Increased land for development
- Installed cost savings of as much as 50% when compared to traditional concrete structures
- Quick and easy installation with reduced labor and equipment costs
- Improved aesthetics and reduced slope failures



SILT FENCES ▶

When attached to wood or metal posts and properly trenched, silt fence fabrics contain overland flow and filter suspended soil particles from water. This not only allows the water to drain efficiently, it also prevents environmental damage to areas next to construction sites. Plus, as sediment accumulates, the fabric's high tensile strength, UV resistance and low maintenance features ensure continued performance throughout the entire life span of the project.



LAGOON CLOSURES ▶

Woven geotextiles make it safe for the rapid deployment of soil caps over industrial sludge lagoons, allowing water to pass vertically during construction and soil separation—an application where geogrids alone can't perform adequately.



GEOMEMBRANE LINER PROTECTION ▶

When High-Density Polyethylene (HDPE) and other liners are installed during EPA Subtitle D-mandated solid waste landfill construction, they are susceptible to puncture and gouging during and after construction. This type of damage can weaken and possibly rupture the liner if it stretches due to unexpected tension. Heavyweight nonwoven geotextiles can cushion and protect geomembranes from damage by sharp objects. These fabrics enhance puncture, impact and abrasion resistance, allowing landfill system construction and operation without fear of damaging critical liners.



LANDFILL GAS COLLECTION ▶

Maintaining a conduit for gases to escape from landfills can be challenging. Heavyweight nonwoven geotextiles help collect and transport gases that can build up beneath the flexible geomembranes used in the closure of solid waste facilities.

Overall, these geotextiles:

- Allow gas to travel through the porous geotextile laterally across the top of the landfill until it reaches a vent
- Help prevent gas pressure build-up that could explode the liner system
- Are used in the construction of drainage geonet composites for use on more active sites



LANDFILL DRAINAGE SYSTEMS ▶

When placed in close contact with geonet or drainage stone, medium-weight nonwoven geotextiles can filter soil and waste while allowing water and leachate to pass. In new landfill cell construction, workers install a series of liquid or leachate collection pipes or stone filters along the bottom surface. These initial collection areas transport the leachate into one primary collection pipe, which transfers the liquid to a centralized treatment center. To ensure proper leachate collection, medium-weight nonwoven and woven monofilament geotextiles line the initial collection areas.

Specifically, these fabrics:

- Allow the liquid to pass through the initial collection areas
- Prevent clogging of the collection pipe and drainage stone
- Ensure a maintenance-free collection system
- Are used in the construction of drainage geonet composites

PAVING PRODUCTS ►

One of the biggest contributors to roadway deterioration is the softening of subgrade soil that occurs when water infiltrates the base through cracks and pores in the pavement surface. A pavement with a base that is saturated as little as 10% of the time has just 50% of the life of a pavement protected from water infiltration. While typical road maintenance overlays or surface treatments provide only short-term relief, they do not address the real problem: moisture in the roadbase and crack-inducing stresses from the underlying pavement.

Our specialty paving fabrics and repair membranes are specifically engineered to reduce water infiltration and reflective cracking, thereby saving on costly repaving cycles. They have been proven to extend the life of highways, city streets, parking lots, and airport runways and taxiways. These versatile products are used in new asphalt concrete pavements, beneath overlays of rigid and flexible pavements and beneath chip-seal surface treatments.



PETROMAT® PAVING FABRIC ►

Petromat is the oldest and most widely used fabric interlayer system. This nonwoven fabric is field-saturated with an asphalt cement tack coat to become a continuous moisture barrier and a stress-absorbing interlayer in new or rehabilitated pavements. Petromat typically doubles asphalt concrete overlay life and can more than double the life of a chip-seal surface treatment. When Petromat is included, thicker overlays may also be reduced by as much as 1.5 inches in thickness without losing performance. The installed Petromat system typically costs less than 0.5 inches of asphalt concrete pavement.



PETROTAC® STRIP MEMBRANE ►

Petrotac is a unique “peel and stick” waterproofing membrane for effective repair of pavement cracks, joints or potholes and for sealing bridge decks. This product is a composite of Petromat nonwoven fabric coated with a rubberized asphalt adhesive mastic. The adhesive mastic easily bonds to the existing pavement surface, allowing for quick, uncomplicated product installation. A unique asphalt top coating ensures an excellent bond with the pavement overlay.

HELP WHEN YOU NEED IT ►

ONE MORE PROPEX ADVANTAGE

With over 10 locations and more than 2,500 people worldwide, Propex has the resources to help you execute a plan that works. Not only do we have a complete line of products and educational programs for geotextiles, we have the expertise and tools to walk you through the process.

Online. A good place to start is the Propex web site—geotextile.com. There you'll find information about all our geotextile products as well as a complete library of downloadable technical support materials.

Roadway design and rehabilitation software. For help designing the newest, most economical flexible pavements or unpaved surfaces, order our Roadways and Civil Engineering (R.A.C.E.) software. Created to help you plan pavement rehabilitation strategies that will lower the cost and extend the life of your pavement repairs. To order, visit our web site at geotextile.com.



Contact us. Because we are committed to technical support during every phase of your project, Propex has on staff registered, professional engineers to aid you in your civil engineering design, geotextile selection and preparation of specifications. For help and more information, call Propex at **800-621-1273** or visit geotextile.com.



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12601 Plantside Drive
Louisville, Kentucky 40299
Phone: 502-245-1353

Hutsonville APD Closure

HUT-APD-SUB-023-03

Let-down Chute Geotextile

02373-1.4.B Samples [delivered to the site]

02373-1.4.C Roll Inventory [and material certification by manufacturer]

Submittal Information

Submittal No.	Date	Contact	Phone no.
SUB-023-03	2012-08-02	Paul Zinsious AMS	502-640-2918

SHOP DRAWING / SUBMITTAL REVIEW	
Shop drawing/submittal review is for design conformity and general conformance with the design concept of the project as given in the contract documents. Subcontractor is responsible for full compliance with contract documents, confirming and correcting all quantities, correlating dimensions at project work site for tolerance, clearance, fabrication process, and techniques of construction. Subcontractor is responsible for coordination of his work with that of all other trades, and performance of the work in a safe and satisfactory manner.	
<input checked="" type="checkbox"/> Reviewed.	2012-08-02 Date
<input type="checkbox"/> Reviewed with corrections.	By
<input type="checkbox"/> Revise and resubmit.	
<input type="checkbox"/> Rejected. See Remarks.	

AMEREN SERVICES DRAWING REVIEW	
<input checked="" type="checkbox"/> No Comments.	Submit final drawings. Supplier may proceed.
<input type="checkbox"/> Comments noted.	Make noted changes. Submit final drawings. Supplier may proceed.
<input type="checkbox"/> Unacceptable.	Revise and resubmit.
<input type="checkbox"/> Review not required.	
Review of this drawing does not relieve Supplier from responsibility for errors, correctness of details or compliance with Contract or Purchase Order requirements.	
By <u>M. Wagstaff</u>	Date <u>8/16/12</u>



GEOTEX[®]
BY PROPEX

Certificate of Compliance

August 1, 2012

Erosion Resources & Supply

BOL: 80509000 PO: 1510

GEOTEX[®] 861 is a polypropylene, staple fiber, needlepunched nonwoven geotextile produced by Propex, and will meet the following Minimum Average Roll Values (MARV) when tested in accordance with the methods listed below. The fibers are needed to form a stable network that retains dimensional stability relative to each other. The geotextile is resistant to ultraviolet degradation and to biological and chemical environments normally found in soils.

GEOTEX 861 conforms to the property values listed below¹. Propex performs internal Manufacturing Quality Control (MQC) tests that have been accredited by the Geosynthetic Accreditation Institute – Laboratory Accreditation Program (GAI-LAP).

MARV²

PROPERTY	TEST METHOD	ENGLISH	METRIC
ORIGIN OF MATERIALS			
% U.S. Manufactured Inputs		100%	100%
% U.S. Manufactured		100%	100%
PHYSICAL			
Mass/ Unit Area	ASTM D-5261	8.0 oz/yd ²	271 g/m ²
Thickness	ASTM D-5199	90 mils	2.3 mm
MECHANICAL			
Tensile Strength (Grab)	ASTM D-4632	220 lbs	979 N
Elongation	ASTM D-4632	50%	50%
Puncture	ASTM D-4833	135 lbs	601 N
CBR Puncture	ASTM D-6241	575 lbs	2559 N
Mullen Burst	ASTM D-3786	420 psi	2895 kPa
Trapezoidal Tear	ASTM D-4533	95 lbs	423 N
ENDURANCE			
UV Resistance % Retained at 500 hrs	ASTM D-4355	70%	70%
HYDRAULIC			
Apparent Opening Size (AOS) ³	ASTM D-4751	80 US Std. Sieve	0.180 mm
Permittivity	ASTM D-4491	1.5 sec ⁻¹	1.5 sec ⁻¹
Permeability	ASTM D-4491	0.38 cm/sec	0.38 cm/sec
Water Flow Rate	ASTM D-4491	110 gpm/ft ²	4482 l/min/m ²
ROLL SIZES		15 ft x 300 ft	4.57 m x 91.5 m

Richard G Bledsoe

Richard G Bledsoe
Quality Manager

NOTES:

1. The property values listed above are effective 04/2011 and are subject to change without notice.
2. Values shown are in weaker principal direction. Minimum average roll values (MARV) are calculated as the typical minus two standard deviations. Statistically, it yields a 97.7% degree of confidence that any samples taken from quality assurance testing will exceed the value reported.
3. Maximum average roll value.



**GEOTEXTILE
SYSTEMS**
BY PROPEX

ENGINEERING EARTH
www.geotextile.com

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BOL: 80509000
Cust PO: 1520

Certificate of Analysis

MV: 1004499 861 15ftx300ft blk GEOTEX

R. Gene Bledsoe
R. Gene Bledsoe
Quality Manager

HU#/Rolls		AOS (mm)	CBR	Mass/Unit Area	MD Elong @ Break	MD Tensile @ Break	MD Trap Tear	Mullen Burst	Permeability	Permittivity	Puncture
Shipped	units	mm	lb	oz/yd2	%	lb	lb	psi	cm/s	1/sec	lb
ASTM Test		D-4751	D-6241	D-5261	D-4632	D-4632	D-4533	D-3786	D-4491	D-4491	D-4833
2022355105	2258331	0.180	787.76	9.27	69	231.75	99.77	473	0.546	1.640	156.41
2022355188	2258331	0.180	864.11	9.57	70	272.79	122.39	487	0.516	1.904	166.73
2022355382	2258331	0.180	782.80	9.33	67	268.97	112.01	499	0.563	1.995	154.70
2022355388	2258331	0.180	782.80	9.33	67	268.97	112.01	499	0.563	1.995	154.70

1. Data listed above was determined in accordance with standard test methods, frequencies and procedures defined internally by plant and product type
2. Rolls tested on this shipment are identified with an asterisk(*)
3. HU# is handling unit and is terminology for roll number and "production order" equates to lot number.
Our enterprise resource planning system generates sequential handling unit and production order designations independent of the manufacturing facility producing the product.
Therefore, handling unit numbers may not be in sequential order within a production order.
Propex Operating Company, LLC, 6025 Lee Hwy, Suite 425, PO Box 22788 Chattanooga TN 37422



BOL: 80509000

Cust PO: 1520

Certificate of Analysis

MV: 1004499 861 15ftx300ft blk GEOTEX

R. Gene Bledsoe
Quality Manager

HU#/Rolls		Thickness	Water Flow Rate	XMD Elong @ Break	XMD Tensile @ Break	XMD Trap Tear
Shipped	units	mil	gpm/sf	%	lb	lb
	ASTM Test	D-5199	D-4491	D-4632	D-4632	D-4533
2022355105	2258331	135	121.15	78	298.06	117.24
2022355188	2258331	141	140.58	78	329.85	149.40
2022355382	2258331	124	147.38	85	325.18	132.21
2022355388	2258331	124	147.38	85	325.18	132.21

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Therefore, handling unit numbers may not be in sequential order within a production order.
Propex Operating Company, LLC, 6025 Lee Hwy, Suite 425, PO Box 22788 Chattanooga TN 37422



Ash Management Services, LLC
12601 Plantside Drive
Louisville, Kentucky 40299
Phone: 502-245-1353

Hutsonville APD Closure

HUT-APD-SUB-023-05 **Let-down Chute Geotextile [add roll info]**

02373-1.4.A **Product Data – Geotextile Fabric Properties...**

Additional rolls were ordered for the project.

Submittal Information

Submittal No.	Date	Contact	Phone no.
SUB-023-05	2012-08-16	Paul Zinsious AMS	502-640-2918

SHOP DRAWING / SUBMITTAL REVIEW

Shop drawing/submittal review is for design conformity and general conformance with the design concept of the project as given in the contract documents. Subcontractor is responsible for full compliance with contract documents, confirming and correcting all quantities, correlating dimensions at project work site for tolerance, clearance, fabrication process, and techniques of construction. Subcontractor is responsible for coordination of his work with that of all other trades, and performance of the work in a safe and satisfactory manner.

<input checked="" type="checkbox"/>	Reviewed.	2012-08-16	Date
<input type="checkbox"/>	Reviewed with corrections.		
<input type="checkbox"/>	Revise and resubmit.		By
<input type="checkbox"/>	Rejected. See Remarks.		AMS, LLC



GEOTEX[®]
BY PROPEX

Certificate of Compliance

August 16, 2012

Erosion Resources & Supply

BOL: 80509534

PO: 1525

GEOTEX[®] 861 is a polypropylene, staple fiber, needlepunched nonwoven geotextile produced by Propex, and will meet the following Minimum Average Roll Values (MARV) when tested in accordance with the methods listed below. The fibers are needled to form a stable network that retains dimensional stability relative to each other. The geotextile is resistant to ultraviolet degradation and to biological and chemical environments normally found in soils.

GEOTEX 861 conforms to the property values listed below¹. Propex performs internal Manufacturing Quality Control (MQC) tests that have been accredited by the Geosynthetic Accreditation Institute – Laboratory Accreditation Program (GAI-LAP).

MARV²

PROPERTY	TEST METHOD	ENGLISH	METRIC
ORIGIN OF MATERIALS			
% U.S. Manufactured Inputs		100%	100%
% U.S. Manufactured		100%	100%
PHYSICAL			
Mass/ Unit Area	ASTM D-5261	8.0 oz/yd ²	271 g/m ²
Thickness	ASTM D-5199	90 mils	2.3 mm
MECHANICAL			
Tensile Strength (Grab)	ASTM D-4632	220 lbs	979 N
Elongation	ASTM D-4632	50%	50%
Puncture	ASTM D-4833	135 lbs	601 N
CBR Puncture	ASTM D-6241	575 lbs	2559 N
Mullen Burst	ASTM D-3786	420 psi	2895 kPa
Trapezoidal Tear	ASTM D-4533	95 lbs	423 N
ENDURANCE			
UV Resistance % Retained at 500 hrs	ASTM D-4355	70%	70%
HYDRAULIC			
Apparent Opening Size (AOS) ³	ASTM D-4751	80 US Std. Sieve	0.180 mm
Permittivity	ASTM D-4491	1.5 sec ⁻¹	1.5 sec ⁻¹
Permeability	ASTM D-4491	0.38 cm/sec	0.38 cm/sec
Water Flow Rate	ASTM D-4491	110 gpm/ft ²	4482 l/min/m ²
ROLL SIZES		15 ft x 300 ft	4.57 m x 91.5 m

Richard G Bledsoe

Richard G Bledsoe
Quality Manager

NOTES:

1. The property values listed above are effective 04/2011 and are subject to change without notice.
2. Values shown are in weaker principal direction. Minimum average roll values (MARV) are calculated as the typical minus two standard deviations. Statistically, it yields a 97.7% degree of confidence that any samples taken from quality assurance testing will exceed the value reported.
3. Maximum average roll value.



**GEOTEXTILE
SYSTEMS**
BY PROPEX

ENGINEERING EARTH
www.geotextile.com

Propex Operating Company, LLC · 6025 Lee Highway, Suite 425 · PO Box 22788 · Chattanooga, TN 37422

ph 423 899 0444 · ph 800 621 1273 · fax 423 899 7619

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BOL: 80509534
Cust PO: 1525

Certificate of Analysis

MV: 1004499 861 15ftx300ft blk GEOTEX

Gene Bledsoe
R. Gene Bledsoe
Quality Manager

HU#/Rolls Shipped	units ASTM Test	AOS (mm) mm	CBR lb	Mass/Unit Area oz/yd ²	MD Elong @ Break %	MD Tensile @ Break lb	MD Trap Tear lb	Mullen Burst psi	Permeability cm/s	Permittivity 1/sec	Puncture lb
2022355242	2258331	D-4751 0.180	D-6241 779.60	D-5261 9.61	D-4632 72	D-4632 252.31	D-4533 100.22	D-3786 487	D-4491 0.711	D-4491 2.162	D-4833 170.27
2022355243	2258331	0.180	779.60	9.61	72	252.31	100.22	487	0.711	2.162	170.27
2022355247	2258331	0.180	779.60	9.61	72	252.31	100.22	487	0.711	2.162	170.27
2022355249	2258331	0.180	779.60	9.61	72	252.31	100.22	487	0.711	2.162	170.27
2022355252	2258331	0.180	779.60	9.27	73	278.06	98.63	479	0.711	2.162	143.49
2022355256	2258331	0.180	779.60	9.27	73	278.06	98.63	479	0.711	2.162	143.49
2022355260	2258331	0.180	779.60	9.27	73	278.06	98.63	479	0.711	2.162	143.49
2022355262	2258331	0.180	779.60	9.27	73	278.06	98.63	479	0.711	2.162	143.49
2022355264	2258331	0.180	779.60	9.27	73	278.06	98.63	479	0.711	2.162	143.49

1. Data listed above was determined in accordance with standard test methods, frequencies and procedures defined internally by plant and product type
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- Propex Operating Company, LLC, 6025 Lee Hwy, Suite 425, PO Box 22788 Chattanooga TN 37422



BOL: 80509534

Cust PO: 1525

Certificate of Analysis

MV: 1004499 861 15ftx300ft blk GEOTEX

R. Gene Bledsoe
R. Gene Bledsoe
Quality Manager

HU#/Rolls	Thickness	Water Flow Rate	XMD Elong @ Break	XMD Tensile @ Break	XMD Trap Tear
Shipped	mil	gpm/sf	%	lb	lb
	D-5199	D-4491	D-4632	D-4632	D-4533
2022355242	139	159.68	79	315.63	127.47
2022355243	139	159.68	79	315.63	127.47
2022355247	139	159.68	79	315.63	127.47
2022355249	139	159.68	79	315.63	127.47
2022355252	139	159.68	84	350.16	136.00
2022355256	139	159.68	84	350.16	136.00
2022355260	139	159.68	84	350.16	136.00
2022355262	139	159.68	84	350.16	136.00
2022355264	139	159.68	84	350.16	136.00

1. Data listed above was determined in accordance with standard test methods, frequencies and procedures defined internally by plant and product type

2. Rolls tested on this shipment are identified with an asterisk(*)

3. HU# is handling unit and is terminology for roll number and "production order" equates to lot number.

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Ash Management Services, LLC
12601 Plantside Drive
Louisville, Kentucky 40299
Phone: 502-245-1353

Hutsonville APD Closure

HUT-APD-SUB-010-01-Bentonite [digital-final]

[Original hard copy submission date at Progress Meeting on 05-01]

02245-1.4.A Product Data – Bentonite Properties

02245-1.4.B Method of Delivery...

02245-3.4.A Prequalification Testing of Bentonite

Submittal Information

Submittal No.	Date	Contact	Phone no.
SUB-010-01	2012-05-01	Paul Zinsious AMS	502-640-2918

SHOP DRAWING / SUBMITTAL REVIEW	
Shop drawing/submittal review is for design conformity and general conformance with the design concept of the project as given in the contract documents. Subcontractor is responsible for full compliance with contract documents, confirming and correcting all quantities, correlating dimensions at project work site for tolerance, clearance, fabrication process, and techniques of construction. Subcontractor is responsible for coordination of his work with that of all other trades, and performance of the work in a safe and satisfactory manner.	
<input checked="" type="checkbox"/> Reviewed.	2012-05-01 Date
<input type="checkbox"/> Reviewed with corrections.	By AMS, LLC
<input type="checkbox"/> Revise and resubmit.	
<input type="checkbox"/> Rejected. See Remarks.	

Paul H. Zinsious, PMP

From: Paul H. Zinsious, PMP
Sent: Thursday, May 10, 2012 12:31 PM
To: 'Wagstaff, Michael J'
Cc: j_cravens@geotechnology.com; Anna Saindon (a_saindon@geotechnology.com); Jimmy Boone [AMS]; Randy Porter [AMS]; John Denham [AMS]
Subject: RE: Hutsonville Contractor Submittal - Vent Cap] review
Attachments: SK-HUT-APD-020-R0.pdf

Good morning Mike:

Thank you for the time on the phone yesterday discussing the Bentonite VES-01. We submit the following comments referencing the "Terms of Substitution" in Hanson Professional Service, Inc. [HPS] review dated 2012-05-07:

- 01 GCL Seam realignment for parallel and perpendicular relative the actual in place panel layout [see sketch].
- 02 No issue.
- 03 The vendor recommends Bentonite facing down so if there ever was a tear in the geomembrane the Bentonite has an opportunity to swell and close the opening.
- 04 We submit additional overlap [on center 2 FT MIN] on GCL seams in lieu of sheets rolled under. We do not anticipate settlement of high magnitude.
- 05 No issue.
- 06 No issue. We will overlap GCL seams 1 FT MIN, and will use powdered Bentonite.

The GCL we are submitting is 30 MIL.

From: Wagstaff, Michael J [mailto:MWagstaff@ameren.com]
Sent: Monday, May 07, 2012 4:52 PM
To: Paul H. Zinsious, PMP
Cc: j_cravens@geotechnology.com; Anna Saindon (a_saindon@geotechnology.com)
Subject: FW: Hutsonville Contractor Submittal - Vent Cap

Paul,
Attached is Hanson's review of the value engineering proposal.
Please respond to the comments accordingly.
Thanks
Mike

Michael J. Wagstaff, P.E., PMP :: Consulting Engineer / Dam Safety, Civil & Structural Engineering :
: T 618.343.7790 : C 618.406.3478
Ameren Energy Resources :: 1500 Eastport Plaza Drive :: Collinsville, IL 62234

From: Steve Bishoff [mailto:SBishoff@hanson-inc.com]
Sent: Monday, May 07, 2012 3:35 PM
To: Wagstaff, Michael J

Cc: Dan Whalen; Kevin Kreipe
Subject: RE: Hutsonville Contractor Submittal - Vent Cap

Mike –

Attached is the approval with comments on the GCL. It's 6 mg, so please let me know that you got it.

Thanks –

Steve

From: Wagstaff, Michael J [<mailto:MWagstaff@ameren.com>]

Sent: Monday, May 07, 2012 2:03 PM

To: Steve Bishoff

Subject: RE: Hutsonville Contractor Submittal - Vent Cap

Thanks Steve.

Can you forward the submittal review of the pelletized bentonite vs. GCL as well?

Thanks – Mike

Michael J. Wagstaff, P.E., PMP :: Consulting Engineer / Dam Safety, Civil & Structural Engineering :
: T 618.343.7790 :: C 618.406.3478
Ameren Energy Resources :: 1500 Eastport Plaza Drive :: Collinsville, IL 62234

From: Steve Bishoff [<mailto:SBishoff@hanson-inc.com>]

Sent: Monday, May 07, 2012 1:31 PM

To: Wagstaff, Michael J

Cc: Kevin Kreipe; Dan Whalen

Subject: Hutsonville Contractor Submittal - Vent Cap

Mike –

Here is the approved cap vent submittal.

Steve

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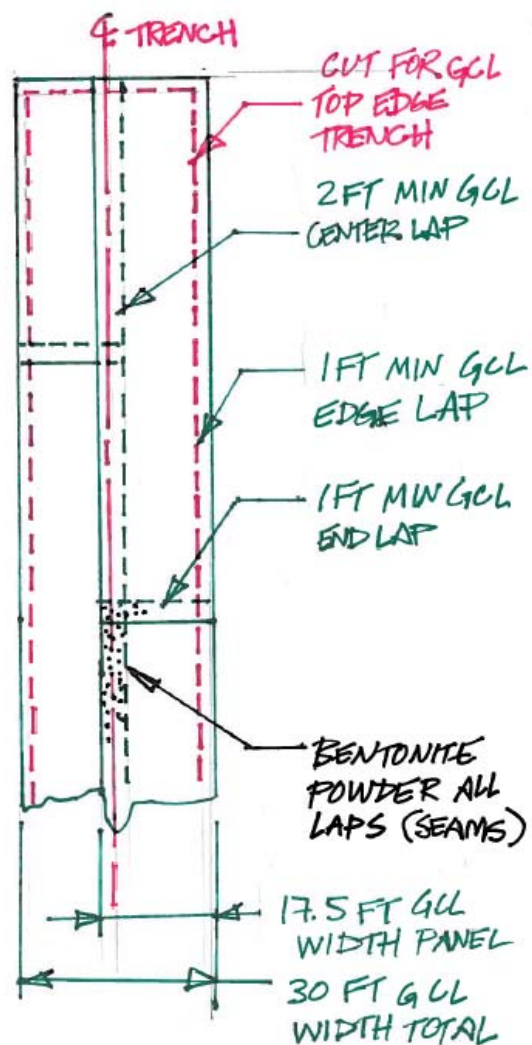
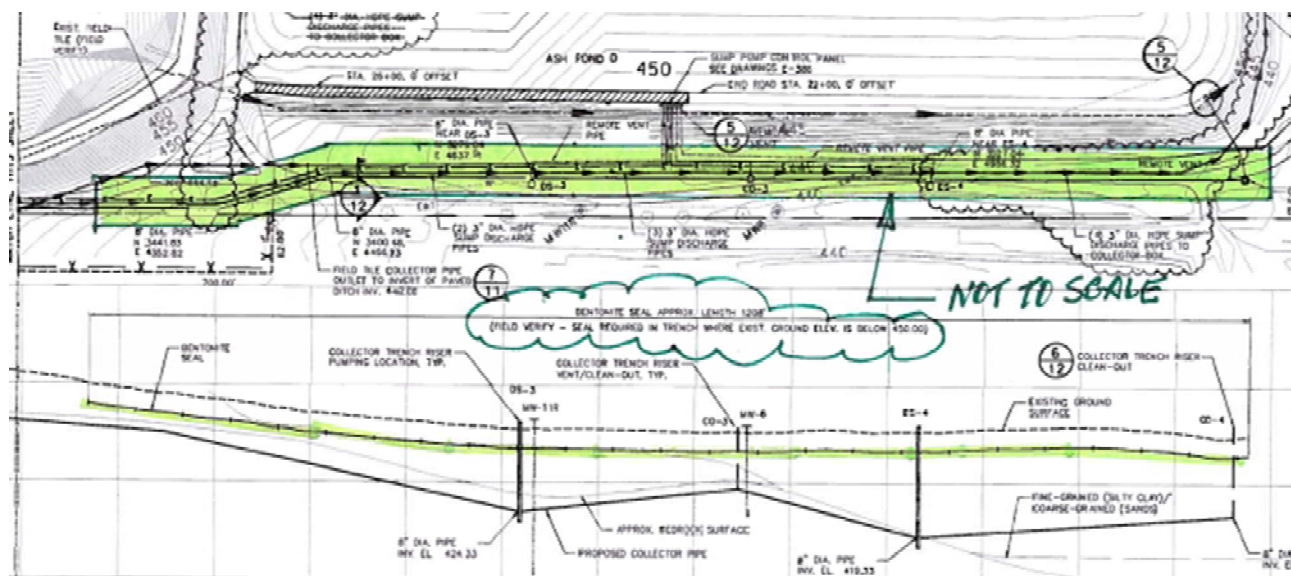
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To: Paul H. Zinsious, PMP
Cc: j_cravens@geotechnology.com; Anna Saindon (a_saindon@geotechnology.com)
Subject: FW: Hutsonville Contractor Submittal - Vent Cap
Attachments: HUT-APD-SUB-001-05-Bentonite-Seal.pdf

Paul,
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Thanks
Mike

Michael J. Wagstaff, P.E., PMP :: Consulting Engineer / Dam Safety, Civil & Structural Engineering :
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To: Wagstaff, Michael J
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Project Name: Ameren Ash Pond Closure

Owner: Ameren

Project Location: Hutsonville, IL

Hanson Project Number: 10E0035

Date Received: 04-26-12

Work Discipline: Civil

Architect/Engineer: Hanson

Construction Mgr./Gen. Contr: AMS

Submitting Contractor: AMS

Vendor: GSE

Hanson Submittal No. : C-05

Specification Section: 2245 - Bentonite

Reviewed By: K. Kreipe

Date Reviewed: 05-07-12

REVIEW BY HANSON PROFESSIONAL SERVICES INC (HANSON)

Hanson's review of submittals is solely for their general conformance with Hanson's design intent and general conformance with information given in the construction documents. Hanson shall not be responsible for any aspects of a submittal that affect or are affected by means, methods, techniques, sequences and operations of construction, or safety precautions and programs incidental thereto, all of which are the contractor's responsibility. The contractor will be responsible for lengths, dimensions, elevations, quantities and coordination of the work with other trades. The contractor shall be responsible to review submittals and approve them in these respects. **Based on such review, actions (as defined below) are noted for each item submitted.**

Action	Action Comment	Action Definition
1	No Exceptions Taken	Fabrication, manufacture, or construction may proceed on the basis that the submittal is in conformance with the design concept and the contract documents.
2	Furnish As Corrected	Fabrication, manufacture, or construction may proceed after making the noted corrections to satisfy compliance with the design concept and/or the contract documents.
3	Revise and Resubmit	No fabrication, manufacture, or construction may proceed. Resubmit for review after requested revisions are made.
4	Submit Specified Item	No fabrication, manufacture, or construction may proceed. Submit specified item to Hanson for review.
5	Rejected - See Remarks	No fabrication, manufacture, or construction may occur for reasons stated in "Remarks."

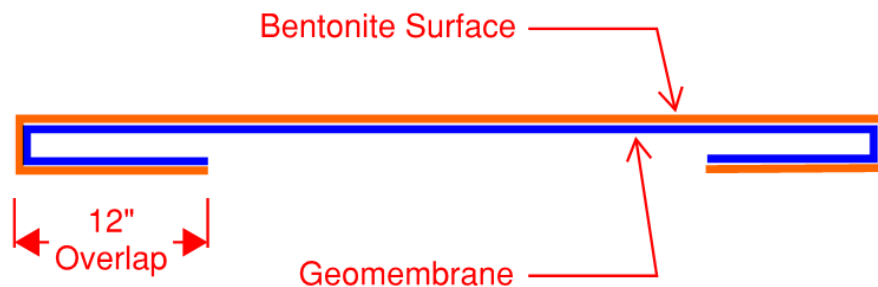
Value Engineering Submittal VES-01 - Bentonite-Seal

May 7, 2012

We approve the use of a geomembrane backed GCL (Gundseal) if the following criteria is met. A standard GCL is not suitable for this application.

Terms of this substitution are as follows:

1. Panels must be installed so that there is no seam perpendicular to the axis of the trench. (Any settlement will pull along the seam rather than pull the seam apart)
2. Backfill placed below the GCL must be mounded slightly above installation grade. (Settlement will eventually cause the GCL to lay flat)
3. Installation shall be such that the orientation of the GCL shall have the bentonite facing up and the geomembrane facing down.
4. Bentonite sheets shall be rolled under itself at the sides of the trench for a distance of one foot. (see sketch below)
5. Backfilled subgrade shall be smooth drum rolled prior to the installation of the GCL. CQA officer is required to inspect and sign-off on smooth surface per CQA plan.
6. Seams perpendicular to the axis of the trench shall be overlapped 6". Powdered Bentonite is required along seams (similar to CGL installation).





Tuesday, May 01, 2012

Mr. Michael J. Wagstaff, PE, PMP
Consulting Engineer - Dam Safety Structural Engineering
Ameren Energy Resources
1500 Eastport Plaza Drive
Collinsville, Illinois 62234
CL 618-406-3478
EM mwagstaff@ameren.com

RE: Hutsonville Ash Pond D Closure
Ameren PO No. 567523 R2 - AMS-Charah No. 4115-06-6120
Value Engineering Submittal VES-01 – Bentonite cap option

Dear Mike:

We are offering for Ameren's consideration this Value Engineering Submittal [VES] to replace the specified Bentonite cap for the Perforate Collector Pipe [PCP] trench with a Geosynthetic Clay Liner [GCL] alternate. Use of this material in lieu of the 6 IN thick loose Bentonite cap we believe can provide the same level of permeability, decrease the installation time, provide a better quality of constructability for the sequencing of trench and utility, and realize a credit to Ameren. We submit the following for your review and comment:

Supporting documents attached:

1. GSE Fabric Encased Geosynthetic Clay Liners [Application Sheet]
2. GSE Bentoliner NWL Geosynthetic Clay Liner [Product Data Sheet]
3. GSE Geomembrane Supported Geosynthetic Clay Liners [Application Sheet]
4. GSE Gundseal Geosynthetic Clay Liner – Textured HDPE [Product Data Sheet]
5. AMS SK-HUT-APD-19-R1 "Perforated Collector Pipe – Trench Cross Section – GCL Option"

Benefits of the GCL:

1. GSE indicates the GCL has ability to provide the same level of permeability, for less profile.
2. Material is rolled out onto the trench back fill, saving time over using bulk Bentonite which has to be spread across the trench. This will shorten the overall duration of the PCP schedule.
3. The GCL will provide a more uniform installation thickness, thus ensuring continuous coverage.
4. Installation of the material does not require being wetted down before initial back fill. Since the trench area is not being wetted down, the area will be much cleaner and safer to access.
5. Once backfilled, the trench can be accessed immediately for installation of the utilities [pipe and conduit]. Whereas the loose Bentonite after being wetted and back filled, may require some set time before access for utility installation.
6. No impact to schedule in terms of delivery or installation.

Mr. Michael J. Wagstaff, PE, PMP
Consulting Engineer - Dam Safety Structural Engineering
Ameren Energy Resources

RE: Hutsonville Ash Pond D Closure
Ameren PO No. 567523 R2 - AMS-Charah No. 4115-06-6120
Value Engineering Submittal VES-01 – Bentonite cap option

Credit calculations for using the GCL:

The construction documents require the Bentonite cap in the areas of the PCP where grade elevation is below 450 FT, for a length of about 1,203 FT. If the trench average width is approximately 28 FT wide, and we overlap the GCL 1 FT each side, we have a total width of 30 FT. Considering excavation each end of the PCP, we will use 1,250 FT for the total length. We then calculate the total area of GCL:

$$1,250 \text{ LF} \times 30 \text{ FT} = 37,500 \text{ SF} \text{ Adding } 10\% \text{ contingency} = 37,500 \times 1.10 = 41,250 \text{ SF}$$

We are submitting two types of GCL for consideration, the NWL GCL, and the Gundseal which has a geomembrane layer. The approximate cost for each [including delivery and tax] per square foot we calculate:

NWL GCL	\$ 0.43/SF x 41,250 SF = \$ 17,737.50
Gundseal	\$ 0.54/SF x 41,250 SF = \$ 22,275.00

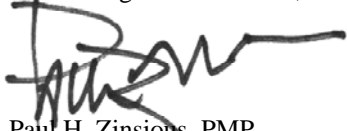
AMS has a budget line item cost for the Bentonite of \$ 55,108.00. We propose a cost savings plan if this alternate is chosen to split the savings 50% between Ameren and AMS:

NWL GCL	\$ 55,108 - \$ 17,737.50 = \$ 37,370.50	Split 50% = \$ 18,685.25
Gundseal	\$ 55,108 - \$ 22,275.00 = \$ 32,833.00	Split 50% = \$ 16,416.50

We will use union labor rates per the original contract and in accordance working under the National Maintenance Agreement [NMA]. All workers will be Ameren CBT and AMS safety trained, with adherence to Ameren "Rules-to-live-by". Work will be performed during standard work hours, without consideration for overtime.

Please advise if this alternate is acceptable to Ameren, and if Ameren would like to pursue further investigation. Feel free to call with any questions.

Respectfully,
Ash Management Services, LLC



Paul H. Zinsious, PMP
Project Controls Manager

Cc: Mr. John Denham – Regional Operations Manager – AMS
Mr. Jimmy Boone – Regional Manager - AMS
File: HUT-APD-VES-01-R0-2012-04-30
Attachments: As noted above.



The Pioneer Of Geosynthetics

S I N C E 1 9 7 2

Fabric Encased Geosynthetic Clay Liners

FABRIC ENCASED GEOSYNTHETIC CLAY LINERS (GCLS)

GSE BentoLiner GCL is produced by distributing a uniform layer of the sodium bentonite between two geotextiles. Fibers from the upper nonwoven geotextile are needlepunched through the layer of bentonite and incorporated into the lower geotextile (either a woven or a scrim nonwoven). This process results in a strong mechanical bond between the fabrics. A heat treating process is then used to modify and more permanently lock the needlepunched fibers into place.

The sodium bentonite clay utilized in GSE BentoLiner GCL is a naturally occurring clay mineral that swells as liquid enters between its clay platelets. When hydrated under confinement, the bentonite swells to form a low permeability clay layer with a hydraulic conductivity value of 5×10^{-9} cm/sec which is an equivalent hydraulic protection of several feet of compacted clay. Unique properties, including increased internal shear resistance and long term creep resistance, make GSE BentoLiner GCL ideal for a wide range of containment lining applications.



GSE BentoLiner GCL

NEEDLEPUNCHING MAKES A DIFFERENCE

By needlepunching fibers through the sodium bentonite clay layer, a completely uniform, reinforced GCL is produced with shear strength, creep resistance, and stability advantages important to any application.

HIGH SHEAR RESISTANCE

Needlepunching reinforces the otherwise weak layer of sodium bentonite clay. Unreinforced bentonite is susceptible to shear failure, even on gentle slopes. The GSE BentoLiner GCL needlepunching process consistently reinforces the bentonite layer with thousands of high tenacity fibers that resist and transfer the shearing stresses into the encapsulating geotextiles.

UNIFORM BENTONITE CONTENT

The uniform confinement provided by the fibers from the needlepunching process resist lateral migration of the bentonite clay within the GSE BentoLiner GCL in either the dry or hydrated state. As a result, a consistent bentonite content is preserved throughout the composite, in turn resulting in a consistent low permeability.

GREATER INSTALLATION DURABILITY

During installation, the needlepunched fibers hold the bentonite in place and prevent the GCL from separating. GSE BentoLiner GCL is more durable over a wider range of installation conditions, and, because it is needlepunched, it can greatly reduce the adverse effects of premature hydration during installation.



Soil cover operations over installed GSE BentoLiner GCL.

SUPERIOR GCL SLOPE PERFORMANCE

With GSE BentoLiner GCL, the clay component is no longer the limiting factor on side slopes. You can use GSE BentoLiner GCL to replace compacted clay layers on steep side slopes and be assured of low permeability without sacrificing slope stability. The inherent confining stress from the needlepunching also improves the hydraulic properties of GSE BentoLiner GCL under low confining stress applications.



Improved slope stability utilizing GSE BentoLiner GCL.

ASSURANCE QUALITY CONTROL

Because GSE BentoLiner GCL is factory manufactured liner products, the controlled environment of the production facility allows for greater control over critical performance characteristics. The intensive manufacturing quality control program ensures consistent hydraulic and physical properties through the latest ASTM testing procedures.

The thorough manufacturing quality control minimizes the expensive and time consuming on-site quality assurance testing required for compacted clay liners. GSE BentoLiner GCL provides consistent high quality performance.



GSE BentoLiner deployed in a composite bottom liner system.

MORE VERSATILE THAN COMPACTED CLAY

GSE BentoLiner GCL is part of an important trend towards the combined use of geosynthetics and clay materials in containment applications. In a typical composite liner system, GCL works synergistically with polyethylene and other geomembrane materials to maximize liner system efficiency.

INCREASED AIRSPACE AND LINER EFFICIENCY

In a composite landfill liner system, GSE BentoLiner GCL can in many cases completely replace or significantly reduce the required thickness of the compacted clay layer. This results in less excavation and re-compaction as well as increased containment volume. And, in a landfill, increased airspace means increased revenues.

CAPS AND CLOSURES

GSE BentoLiner GCL is ideally suited for use in landfill caps and closures. Used alone, or in conjunction with a geomembrane, GSE BentoLiner GCL is resistant to



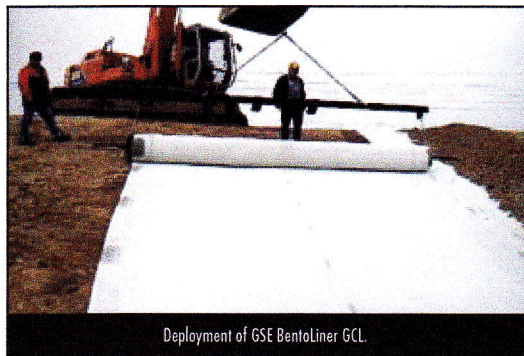
GSE BentoLiner deployed on a landfill closure.

the deleterious effects of differential settlement and seasonal temperature fluctuations.

EASY TO INSTALL

GSE BentoLiner GCL is the widest fabric encased GCL in the industry. The widest width, coupled with available custom lengths, makes GSE BentoLiner the most versatile GCL available.

Simple, cost-effective installation techniques make GSE BentoLiner GCL a practical alternative to a compacted clay liner for a wide range of applications.



Deployment of GSE BentoLiner GCL.

ENGINEERING SUPPORT

The GSE Engineering Support Staff is comprised of multidisciplinary product professionals to support you across a range of project requirements. This includes knowledge in geomembrane, geosynthetic clay liners, geonet, geocomposite, nonwoven geotextile and concrete protection products and application solutions. Rely on our technical staff to help you solve your project issues.

CUSTOM FABRICATION

The GSE Custom Fabrication Group builds products to your exact specifications. We have extensive experience in prefabricated polyethylene products and components. A few examples of our custom fabricated products are Aqua Tanks, Quick Containment, concrete protection liners, boots, sumps, pads, pipes, daily covers, temporary containment, containment boom and other products to fulfill your fabrication needs.

INSTALLER NETWORK

The GSE Installer Network leads the industry with the most experienced, large, and flexible crews available around the world to meet your installation requirements. Each installer is equipped with state-of-the-art welding and testing equipment to ensure a successful installation. Selecting a qualified installer with the right product knowledge is critical to your success. Let GSE connect you to the right installer to handle your installation project of any size from start to finish.

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GSE BentoLiner NWL Geosynthetic Clay Liner

GSE BentoLiner “NWL” is a needle-punched reinforced composite geosynthetic clay liner (GCL) comprised of a uniform layer of granular sodium bentonite encapsulated between a nonwoven and a scrim-nonwoven geotextile for dimensional stability. The product is intended for moderate to steep slopes and moderate to high load applications where increased internal shear strength is required.



AT THE CORE:

This composite clay liner is composed of a uniform layer of granular sodium bentonite between a nonwoven and scrim-nonwoven textile for dimensional stability.

Product Specifications

Tested Property	Test Method	Frequency	Value
Geotextile Property			
Cap Nonwoven, Mass/Unit Area	ASTM D 5261	1/200,000 ft ²	6.0 oz/yd ² MARV ⁽¹⁾
Carrier Scrim Nonwoven, Mass/Unit Area	ASTM D 5261	1/200,000 ft ²	6.0 oz/yd ² MARV
Bentonite Property			
Swell Index	ASTM D 5890	1/100,000 lb	24 ml/2 g min
Moisture Content	ASTM D 4643	1/100,000 lb	12% max
Fluid Loss	ASTM D 5891	1/100,000 lb	18 ml max
Finished GCL Property			
Bentonite, Mass/Unit Area ⁽²⁾	ASTM D 5993	1/40,000 ft ²	0.75 lb/ft ² MARV
Tensile Strength ⁽³⁾	ASTM D 6768	1/40,000 ft ²	45 lb/in MARV
Peel Strength	ASTM D 6496 ASTM D 4632 ⁽⁴⁾	1/40,000 ft ²	3.5 lb/in MARV 21 lb MARV
Hydraulic Conductivity ⁽⁵⁾	ASTM D 5887	1/Week	5 x 10 ⁻¹¹ m/sec max
Index Flux ⁽⁵⁾	ASTM D 5887	1/Week	1 x 10 ⁻⁸ m ³ /m ² /sec max
Internal Shear Strength ⁽⁶⁾	ASTM D 6243	Periodically	500 psf Typical
TYPICAL ROLL DIMENSIONS			
Width x Length ⁽⁷⁾	Typical	Every Roll	15.5 ft x 150 ft
Area per Roll	Typical	Every Roll	2,325 ft ²
Packaged Weight	Typical	Every Roll	2,600 lb

NOTES:

- ⁽¹⁾Minimum Average Roll Value.
- ⁽²⁾Oven-dried measurement. Equates to 0.84 lb/ft when indexed to a 12% moisture content.
- ⁽³⁾Tested in machine direction.
- ⁽⁴⁾Modified ASTM D 4632 to use a 4 in wide grip. The maximum peak of five specimens averaged in machine direction.
- ⁽⁵⁾Deaired, deionized water @ 5 psi maximum effective confining stress and 2 psi head pressure.
- ⁽⁶⁾Typical peak value for specimen hydrated for 24 hours and sheared under a 200 psf normal stress.
- ⁽⁷⁾Roll widths and lengths have a tolerance of ±1%.

GSE is a leading manufacturer and marketer of geosynthetic lining products and services. We've built a reputation of reliability through our dedication to providing consistency of product, price and protection to our global customers.

Our commitment to innovation, our focus on quality and our industry expertise allow us the flexibility to collaborate with our clients to develop a custom, purpose-fit solution.

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The Pioneer Of Geosynthetics

S I N C E 1 9 7 2

Geomembrane Supported Geosynthetic Clay Liners

GEOMEMBRANE SUPPORTED GEOSYNTHETIC CLAY LINERS (GCLS)

The GSE GundSeal GCL product composite provides the highest swelling and sealing of bentonite clay with the chemical resistance and impermeability of a polyethylene geomembrane.

GSE GundSeal consists of high quality sodium bentonite adhered to a 15 mil to 80 mil smooth or texture HDPE geomembrane, making it a unique one product composite liner for containment applications. A spunbonded geotextile is adhered to the bentonite surface to protect the bentonite during installation.

Given the documented hydraulic sealing provided by GSE GundSeal, the ease of its installation, and cost savings made possible by the simplicity of installing a single product, GSE GundSeal provides an effective alternative to conventional geomembrane and compacted clay or fabric GCL liner installations.



GSE GundSeal geomembrane supported GCL.

APPLICATIONS

GSE GundSeal is generally used in one of two fundamental capacities: (1) In a bottom liner system to contain fluid, such as in landfills, surface impoundments, and secondary containment applications, and (2) In a cover system to keep fluid out, such as in landfill caps and remediation closure applications. In either capacity, there are two general installation configurations to consider:

1. Single composite mode. In this mode the bentonite side of the material is installed face down and the geomembrane side face up, to form a one-product composite (geomembrane-clay) liner. Normally, given the effectiveness of the overlap seams, the overlaps are not mechanically joined but are simply overlapped for self-sealing. Alternately, it is possible

to weld the geomembrane seams together, either using standard geomembrane hot-wedge or extrusion welding procedures.



Installation of overlapped GSE GundSeal as a composite liner on a closure project.

2. Encapsulated mode. In this mode, a supplemental overlying geomembrane is installed against the bentonite side of GSE GundSeal forming a geomembrane-bentonite-geomembrane composite liner. In this case, GSE GundSeal is usually installed with the bentonite side facing up with a supplemental geomembrane installed over the GSE GundSeal bentonite surface. The advantages of the encapsulated mode are that it increases fluid containment capability and also improves slope stability by keeping the bentonite dry over most of the area where GSE GundSeal has been deployed.



Installation of GSE GundSeal with an overlying GSE White geomembrane, forming encapsulated GundSeal.

HYDRAULIC PERFORMANCE

When utilized as a one product composite liner, the hydraulic performance of GSE GundSeal is superior to conventional geomembrane/compacted clay lining systems, given its excellent intimate contact, minimal wrinkles, and self sealing overlapped seams.

When utilized in an encapsulated liner (geomembrane/clay/geomembrane), GSE GundSeal hydraulic performance results in 17,000 times less leakage when compared to conventional geomembrane /compacted clay composite liner systems.

Examples of hydraulic and leakage comparisons between GSE GundSeal and conventional composite liner systems for different composite liner applications can be found in the GSE GundSeal Design Manual.

OVERLAPPED SEAM INTEGRITY

Given the excellent lay flat properties of installed GSE GundSeal liner, resulting in minimal geomembrane wrinkles, proven hydraulic performance of the overlap seams, and regulatory acceptance, GSE GundSeal seams can simply be overlapped with confidence that the composite lining system integrity will be maintained. Overlapped GSE GundSeal vs. conventional composite liners with welded geomembrane seams derive hydraulic performance benefits as well as economic savings due to decreased installation costs.

BENTONITE PROTECTION BY THE HDPE GEOMEMBRANE BACKING

The geomembrane backing of GSE GundSeal includes a high quality GSE HDPE geomembrane ranging in thickness from 15 mil to 80 mil (0.4 mm to 2.0 mm), and can be smooth or textured surface, depending on project slope requirements. In addition to providing an impermeable and chemical resistant carrier for the bentonite, the geomembrane backing also provides effective long-term protection and durability of the bentonite against cation exchange, wet/dry cycles, differential settlement, and bentonite contact with liquids and soils that may decrease the swelling and sealing capability of the bentonite.

SHEAR STRENGTH

If the bentonite must be kept dry in order to maintain a higher factor of safety for stability, then the 'encapsulated' GSE GundSeal liner system is used. When GSE GundSeal is deployed in the encapsulated mode with a separate overlying geomembrane (geomembrane/bentonite/geomembrane), the textured geomembranes protect the bentonite from hydration and provide long term stability for sloping applications. Hydration of the bentonite is limited to areas adjacent to geomembrane defects and overlapped GSE GundSeal seams, resulting in up to 90% of the bentonite remaining dry over the life of the project.

The encapsulated GSE GundSeal liner system has been used successfully on many critical sloping applications in Europe, Asia, and the U.S. The design approach includes using a prorated shear strength design methodology that is discussed in detail in the GSE GundSeal Design Manual.

EASE OF INSTALLATION

Another advantage of the GSE GundSeal GCL is that with its HDPE geomembrane backing, it is easy to install. GSE GundSeal GCL panels are the longest and widest GCL rolls available in the industry thus providing fewer seams, lower scrap factor, and decreased roll handling during installation. A spun-bonded geotextile is attached to the bentonite surface for protection during material installation. GundSeal material can be unrolled or pulled into position without dislodging the bentonite.



Geomembrane deployed over GSE GundSeal forming encapsulated bentonite for slope performance.

THE GSE GUNDSEAL GCL DESIGN MANUAL

For a free copy of the state-of-the-practice design manual for utilizing GCLs in composite lining (geomembrane-clay) applications, please give us a call.



ENGINEERING SUPPORT

The GSE Engineering Support Staff is comprised of multidisciplinary product professionals to support you across a range of project requirements. This includes knowledge in geomembrane, geosynthetic clay liners, geonet, geocomposite, nonwoven geotextile and concrete protection products and application solutions. Rely on our technical staff to help you solve your project issues.

GSE GundSeal Geosynthetic Clay Liner (Textured HDPE)

GSE GundSeal geosynthetic clay liner (GCL) is a composite liner system that consists of a high quality sodium bentonite adhered to a textured high density polyethylene (HDPE) geomembrane with a spunbonded geotextile to protect the bentonite during installation. This one product composite liner system combines the low permeability of an HDPE geomembrane with the self-seaming characteristics of bentonite clay. The intimate contact of the bentonite with the geomembrane provides the best leak protection in the industry.



AT THE CORE:
A composite liner system that combines the low permeability of an HDPE geomembrane with the self-seaming characteristics of bentonite clay to provide the best leak protection in the industry.

Product Specifications

Tested Property	Test Method	Frequency	Minimum Average Value				
Finished GCL Property			20 mil	30 mil	40 mil	60 mil	80 mil
Bentonite Coating ⁽¹⁾ , lb/ft ²	ASTM D 5993	1/40,000 ft ²	≥ 0.75				
Effective Hydraulic Conductivity, m/s	ASTM D 5887/E96	periodically	≤ 4 x 10 ⁻¹⁴				
Bentonite Moisture Content	ASTM D 2216	1/40,000 ft ²	25% Typical				
GCL Tensile Strength ⁽³⁾ , lb/in	ASTM D 6768	1/200,000 ft ²	40	63	84	130	173
Geomembrane Property ⁽²⁾							
Thickness, mil Lowest individual reading	ASTM D 5199	1/100,000 ft ²	20 18	30 27	40 36	60 54	80 72
Density, g/cm ³	ASTM D 1505	1/200,000 ft ²	0.94	0.94	0.94	0.94	0.94
Tensile Properties Tensile Break Strength, lb/in Elongation at Break, %	ASTM D 6693 ASTM D 6693	1/200,000 ft ² 1/200,000 ft ²	30 100	45 100	60 100	90 100	120 100
Puncture Resistance, lb	ASTM D 4833	1/200,000 ft ²	30	45	60	75	120
Sodium Bentonite Property							
Hydraulic Flux: Bentonite, m ³ /m ² /sec	ASTM D 5887	periodically	≤ 1 x 10 ⁻⁸				
Hydraulic Conductivity, m/s	ASTM D 5887	periodically	≤ 5 x 10 ⁻¹¹				
Swell Index, ml/2 g	ASTM D 5890	1/60,000 lb	≥ 24				
Fluid Loss, ml	ASTM D 5891	1/60,000 lb	≥ 18				
TYPICAL ROLL DIMENSIONS							
Roll Width ⁽⁴⁾ , ft			17.5	17.5	17.5	17.5	17.5
Roll Length ⁽⁴⁾ , ft			180	180	170	170	150
Roll Area, ft ²			3,150	3,150	2,975	2,975	2,625
Roll Weight, lb			3,900	4,100	4,300	4,600	4,400

NOTES:

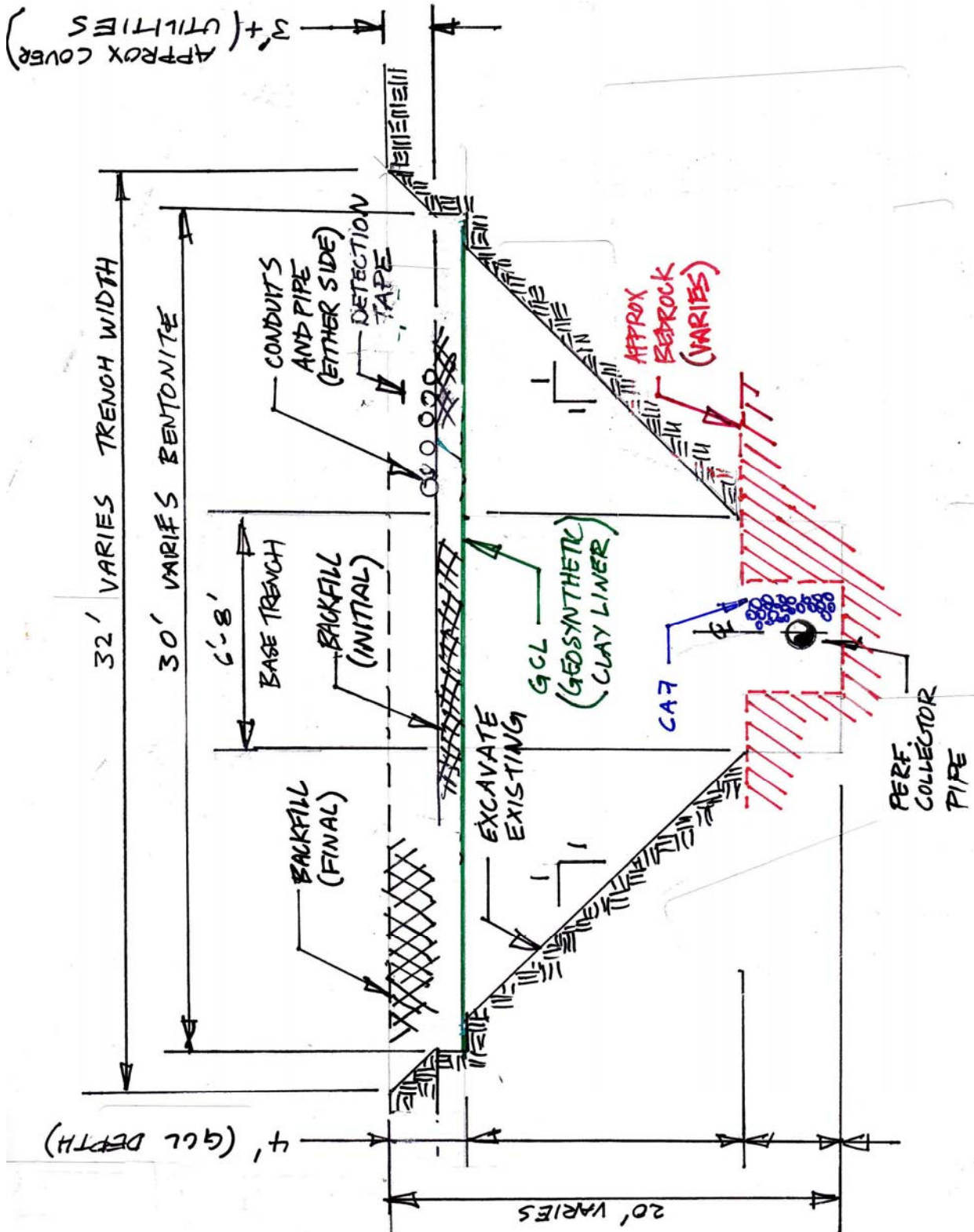
- ⁽¹⁾0% moisture content.
- ⁽²⁾See specific GSE HD geomembrane product data sheet for additional information.
- ⁽³⁾4 in wide sample, 12 in/min. Values are representative of the geomembrane tensile yield strength.
- ⁽⁴⁾Roll lengths and widths have a tolerance of ± 1%.

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SK-HUT-APD-19-R1

Installation Quality Assurance Manual



GSE GundSeal

Geomembrane Supported Geosynthetic Clay Liner Products





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1.0 INTRODUCTION

This manual provides an overview of the GSE Installation Quality Assurance procedures consistent with industry accepted practices to ensure that the GSE GundSeal GCL products installed will best perform for its intended purpose. In addition, all installation work will be performed in strict accordance per the customer's specifications. Please read the procedures below completely before you begin. If you need further clarification, contact the GSE Installation Department for assistance or please refer to ASTM D 6102, Standard Guide for Installation of Geosynthetic Clay Liners and ASTM D 5888, Standard Guide for Storage and Handling of Geosynthetic Clay Liners. Remember safety first and use safe practices always on every project.

2.0 UNLOADING PROCEDURES

As with all lifting or unloading operations, appropriate equipment and experienced personnel should be employed along with proper safe handling methods. The party responsible for unloading the GSE GundSeal, should contact GSE prior to shipment, to determine the correct unloading methods and equipment, if different from the pre-approved and specified methods as described below.

Lifting GCL rolls can typically be accomplished with by using a 2.5 in - 3.0 in (63 mm - 75 mm) outside diameter (O.D.) steel pipe (preferably solid), with a wall thickness capable of providing sufficient beam strength to support the weight of the roll, which average less than 3,000 lb (1,364 kg) and the length is approximately 18 ft (5.5 m). This core pipe is inserted through the hollow center of the GCL cardboard core. Heavy-duty slings or chains, which are approximately 10 ft (3.1 m) long, each are attached to each end of the pipe, which are then fastened to a I-beam spreader bar or a GSE approved alternative. Care should be taken to ensure that lifting chains or straps do not rub, chafe, or otherwise damage the GCL. A crane, backhoe, front-end loader or another suitable piece of construction equipment can then lift the entire assembly.

An all-terrain, extendable boom forklift, such as a Lull or Caterpillar Telehandler, can be fitted with a special, solid steel "carpet pole" or stinger, typically 14.0 ft (4.3 m) in length having an outside diameter of no more than 3.38 in (8.6 mm). The carpet pole can be inserted into the hollow cardboard core of the GCL roll.

The roll should not be fully suspended until the pole extends through the entire length of the core tube or you run the risk that the core may break creating additional handling and unloading difficulties.

A properly structured and supported pole can be used to unload GCL rolls onsite. As an alternative, straps that are appropriately rated can be used as a GSE approved lifting method to unload GCL rolls. Lifting straps are supplied on every roll. Each GCL roll label contains roll weight information that should be consulted in determining appropriate lifting equipment and factors of safety.

The CQA inspector or owner's representative should verify that only appropriate handling equipment is utilized, i.e. equipment that does not pose any danger to personnel or undue risk of damage or deformation to the liner material.



All roll numbers should be recorded during the unloading operations and compared to shipping papers to ensure receipt of only project compliant materials. Furthermore, rolls should be visually inspected for damage and suspect rolls marked, recorded, and set aside for further investigation by CQA personnel.

3.0 STORAGE

While stored GCL needs to be kept dry and away from potential flooding or high storm runoff. On the job site storage methods include; storing the rolls tarped on pallets; storing the rolls under roof in a clean, dry protected area; and storing the rolls on a flat, dry, stable surface suitably covered with protective waterproof tarps. Rolls can be stacked as long as it is done in a manner that prevents them from rolling, shifting, or spontaneously moving. Maximum roll height should be determined by CQA personnel, but never more than can be safely managed considering site conditions, equipment and personnel.

Stored rolls should be tarped and remain in their original, unopened plastic shipping sleeves to prevent damage and undue prehydration prior to installation. Any rolls that come in contact with water should be examined by CQA or an owner's representative prior to installation. Prehydrated or physically damaged rolls should be set aside for further examination to determine the plausibility of repair or need to replace.

4.0 SUBGRADE PREPARATION

The surface upon which the GSE GundSeal is installed should be smooth and free of wheel ruts, debris, roots, sticks, and sharp rocks larger than 1.0 inch. Site specific compaction requirements should be followed in accordance with the project plans and specifications. At a minimum, the site should be smooth rolled the level of compaction such that installation equipment or other construction vehicles traffic does not cause rutting greater than 1.0 in (25 mm).

In applications where the product is the sole barrier, subgrade surfaces consisting of gravel or granular soils may not be acceptable due to their large void content. For these applications, the subgrade shall contain no sharp objects greater than 0.75 in (18 mm). Immediately prior to deployment of the GCL, the subgrade shall be final compacted to fill in any remaining voids or desiccation cracks and to ensure that no sharp irregularities or abrupt elevation changes exist greater than 1.0 in (25 mm). The surfaces to be lined shall be maintained in this condition, free of standing water. The subgrade surface and preparation should be inspected and certified by a CQA inspector prior to GSE GundSeal placement.

Upon approval by the CQA inspector, it is the geosynthetic installer's responsibility to communicate to the engineer of any changes in the condition of the subgrade, that might render it out of compliance, with any of the requirements of the project specification or ASTM standard.

5.0 DEPLOYMENT FOR OVERLAPPED SEAMS

As rolls are selected for deployment, the labels should be removed and recorded by the installer, along with any other pertinent information. The rolls should only be transported from the storage area using approved lifting equipment as described in section 2.0 and the rolls should be deployed properly as outlined below.

A. Installation Options

GSE GundSeal can either be installed with the geomembrane side down, facing the subgrade, or



with the bentonite side down, facing the subgrade. The installation procedures for these two methods are different given that additional care must be taken when installing the bentonite side down to prevent the bentonite from dislodging from the geomembrane backing.

Final decision on GSE GundSeal deployment should be left to the design or CQA engineer or an owner's representative.

Care should also be taken to keep unloading and installation equipment and vehicles from making excessive contact with the bentonite portion of the product during installation operations.

1. *Deployment Geomembrane Side Down*

Methods of deployment range from manually pulling the GSE GundSeal from a suspended roll to securing the roll end and unrolling each panel as the equipment slowly moves backwards.

Laborers should manually move the panels to their final and proper position paying strict adherence to required overlaps. Cutting the panels after placement is accomplished with a sharp hook blade utility knife or equivalent.

2. *Deployment Bentonite Side Down*

The GSE GundSeal roll should be aligned next to the adjacent product sheet prior to unrolling. The installation equipment then begins unrolling the panel as the equipment moves in the direction of material deployment. For final material alignment, laborers should manually move the panels to the proper position with the required overlap distance. Care should be taken not to dislodge the sodium bentonite during installation.

B. *Seams*

Seaming between adjacent GSE GundSeal panels is accomplished by overlapping adjacent roll edges. The addition of supplemental granular bentonite into the seams is not required. When deployed geomembrane side up, longitudinal/lengthwise seams should be overlapped a minimum of 12.0 in (300 mm) unless engineering specifications indicate otherwise. Overlap of butt/widthwise seams should be a minimum of 12.0 in (300 mm), unless engineering specifications indicate otherwise. Overlap line markings can be printed on the longitudinal/lengthwise edges during the manufacturing process to facilitate added accuracy of the overlap distance.

When deployed geomembrane side down, overlapped longitudinal/lengthwise seams should be a minimum 6.0 in (150 mm), unless engineering specifications indicate otherwise. Overlapped butt/widthwise seams should be a minimum 12.0 in (300 mm), unless engineering specifications indicate otherwise.

If the bentonite coating of the product becomes wet (> 30% moisture) allow the bentonite layer to air-dry before completing installation. [Note: GSE GundSeal bentonite coating will be dry for installation when desiccation marks show across the bentonite surface]. Alternately, the hydrated bentonite area can be patched with the same product material. For installations where shear strength is of concern, the hydrated area should be removed and patched with the equivalent material. If roll edges become



hydrated, the overlap should be increased by the width of hydrated area to ensure a minimum 6.0 in (150 mm) of dry bentonite overlap.

6.0 DEPLOYMENT FOR WELDING GEOMEMBRANE SEAMS

The following procedures are guidelines for fusion welding and extrusion welding GSE GundSeal GCL geomembrane seams. These procedures are in addition to the standard GSE GundSeal installation procedures as discussed in sections 1.0 to 5.0 of this manual and in the GSE Installation Quality Assurance Manual for geomembrane products.

To facilitate welding panels together a 9.0 in (225 mm) wide protective tape is placed on both lengthwise edges during the manufacturing process. The tape is typically removed after winding rolls, thus providing bentonite free edges for welding prior to edge welding, the GSE GundSeal is installed in accordance with sections 1.0 to 5.0 of these guidelines.

A. Seam Layout

GSE GundSeal with bentonite free edges material should be deployed bentonite side down (geomembrane side up) in accordance with sections 1.0 to 5.0.

For fusion welded seams, a GSE GundSeal seam strip is deployed below the seam area with the bentonite facing up and centered under the overlap to be welded. Seam strips are typically GSE GundSeal with 15.0 mil (0.4 mm) HDPE geomembrane backing fabricated into 2.0 ft (600 mm) wide panels, effectively replaces the bentonite removed from the GSE GundSeal rolls during manufacturer to facilitate welding. The typical length of each is 200 ft (61 m).

End of roll edges (widthwise) do not have bentonite free edges. Therefore, seams are made by overlapping panels a minimum of 6.0 in (150 mm) and extrusion welding a separate overlying geomembrane cap strip over the seam area. Alternately, the widthwise seams can be extrusion welded by scraping, or removing, a bentonite strip approximately 3.0 in (75 mm) wide and directly extrusion welding the two geomembranes together.

B. Lengthwise Seaming Preparation & Fusion Welding

Standard welding and support equipment should be used as outlined in the GSE Installation Quality Assurance Manual for geomembrane products.

1. After aligning the adjacent panels lengthwise, manually fold back the edges to inspect the bentonite free edge or remaining protective edge tape. The edges of the GSE GundSeal should be folded back far enough to allow the edges to lay flat with no undue stress applied to the geomembrane backing. The taped edges, the entire length of the seam, should be exposed.
2. Unroll the seam strip, bentonite side up. The seam strip should be installed directly below the two GSE GundSeal panels, centered directly under the final seam location, with the bentonite side of the seam strip facing upward. Seam strips should be overlapped a minimum of 6.0 in (150 mm) with the overlying bentonite coating of both base panel edges.

3. Visually inspect the upper and lower exposed geomembrane surfaces. The surfaces must be clean and free of moisture, dust, dirt and any foreign materials.
4. Fold the roll edges back into the position to be welded. The overlap should lay flat and directly on top of the seam strip. Seams should be aligned with the fewest possible number of wrinkles and "fish mouths".
5. Trial seams should be made in accordance with standard GSE geomembrane seaming procedures prior to each welding period. Fusion welded and extrusion welded trial seams should be made with representative GSE GundSeal material and bentonite free geomembrane edges.
6. Fusion weld the seam using standard geomembrane seaming procedures as outlined in the GSE Installation Quality Assurance Manual for geomembrane products.
7. Non-destructive seam testing should be carried out on the complete length of the fusion weld using standard air pressure testing methods.
8. Destructive seam testing should be carried out as outlined in the GSE Installation Quality Assurance Manual for geomembrane products.

C. Widthwise Seam Preparation & Extrusion Welding

1. Widthwise seams, typically 17.5 ft (5.3 m) wide, should be overlapped a minimum of 6.0 in (150 mm).
2. Seams should be aligned with the fewest possible number of wrinkles and "fish mouths".
3. The seams should be welded by placement of a geomembrane cap strip over the seam and extrusion welding the cap strip to the geomembrane backings on both sides of the overlap. Alternately, the geomembrane backings of the GSE GundSeal panels can be extrusion welded together directly. This is accomplished by removing approximately 3.0 in (75 mm) of the bentonite coating from the outer edge of the upper geomembrane. Bentonite can be removed by "scraping" the geomembrane with a dull putty knife or equivalent that will not damage the geomembrane. The overlap should include a minimum 6.0 in (150 mm) of bentonite overlap that does not include the edge with scraped off bentonite.
4. Non-destructive seam testing should be carried out on the complete length of weld by standard vacuum testing procedures.
5. Destructive seam testing should be carried out as outlined in the GSE Installation Quality Assurance Manual for geomembrane products.



D. Patching & Repairs For Welded GSE GundSeal

1. GSE GundSeal material should be inspected for cuts, tears or areas of bentonite loss.
2. The area to be repaired or patched must be free of contamination by foreign matter. Patches should be constructed of the same material as the damaged or affected area. Patches should have a minimum 6.0 in (150 mm) of bentonite overlap completely around the perimeter of the damaged area.
3. All patches should be secured to the underlying geomembrane backing material by extrusion welding the complete perimeter of the patch to base the GSE GundSeal liner as outlined in this section.
4. Non-destructive seam testing should be carried out on the complete length of weld by standard vacuum testing procedures.

7.0 ATTACHMENT DETAILS

GSE GundSeal attachments to structures, including concrete, steel and fiber glass, is accomplished by mechanically attaching the edge of the product liner to the structure by stainless steel batten strip. Alternately, for irregular shapes and PVC or HDPE pipe penetrations, GSE GundSeal is attached utilizing a supplemental fabricated HDPE geomembrane pipe boot.

The GSE GundSeal panel is deployed against concrete or steel structures with the bentonite side against the structure. As with geomembrane attachments, the leading edge of the GSE GundSeal liner is secured to the structure by a stainless steel batten strip around the perimeter of the structure. The liner should extend a minimum 6.0 in (150 mm) vertically upward on side walls.

Loose granular sodium bentonite or bentonite paste should be liberally applied at corners and areas where the bentonite may not be continuously in direct contact with the structure or subgrade.

GSE GundSeal should be attached to pipes and fiberglass with a separate HDPE pipe boot fabricated to fit snugly against the pipe or protrusion. The boot must lay flat against the adjacent installed GSE GundSeal panels.

GSE GundSeal should be deployed with the geomembrane side facing up adjacent to the pipe penetration. The end of the pipe boot sleeve should be attached to the pipe surface with a steel band fastened snugly around the perimeter of the pipe surface. Alternately, if the pipe is polyethylene, the end of the pipe boot sleeve can be extrusion welded to pipe surface. The pipe boot skirt should extend completely around the perimeter of the structure or penetration through the base of the liner and extend a minimum 1.0 ft (300 mm) over the adjacent geomembrane backing.

8.0 ANCHORING

GSE GundSeal is typically anchored in a trench around the perimeter of the lined area, which provides the required pullout resistance. In most cases, GCL can be anchored in the same trench as any adjacent



geosynthetic liner components (if used). Dimensions and locations of the trench should be provided in the project drawings. Alternately, the material may be anchored by deploying additional run out of material, a minimum of 3.0 ft (1.0 m), past the slope crest and toe. Typically GCL should not be deployed in tension. The force holding the GCL in place should be provided by friction between the GCL and adjacent materials.

Steps should be taken to ensure that precipitation does not accumulate in the trench prior to backfilling. The GCL should only cover the front face and bottom of the anchor trench. The trench should be backfilled and properly compacted prior to placing cover soil on the slopes.

9.0 REPAIRS

Repair all damaged areas by placing a patch of the same material over the damaged area. Overlap of the patch around the damaged area should be a minimum 12.0 in (300 mm) in all directions. For installations with the geomembrane side up, the patch may be secured to the installed GSE GundSeal geomembrane backing with duct tape or equivalent adhesive tape if desired.

10.0 INSPECTION

Prior to soil covering the panels, penetrations and any other details should be visually inspected to ensure full coverage and proper orientation. Once the installed GSE GundSeal material has been approved the next layer of geosynthetics or soil covering may be applied.

11.0 COVER MATERIAL

When placing cover material directly on top of the GSE GundSeal geomembrane backing, the soil should be pushed perpendicular to the product seams, where possible from the upper sheet to the lower sheet. Care should be taken to prevent soil from being lodged into and separating the product seams. A minimum of 1.0 ft (300 mm) of cover soil should be placed over the deployed liner with approximately 2.0 ft (600 mm) for high traffic areas to ensure adequate protection and prevent sodium bentonite free swell.

Cover soil should be free of all rocks greater than 0.75 in (18 mm) diameter, sharp or angular objects, sticks, roots or debris.

When the product is deployed with the bentonite side up (geomembrane against the subgrade), it is recommended to cover all exposed bentonite within the same day. This is typically accomplished by installing a geomembrane directly over the bentonite layer.



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Ash Management Services, LLC
12601 Plantside Drive
Louisville, Kentucky 40299
Phone: 502-245-1353

Hutsonville APD Closure

HUT-APD-SUB-015-02-PCP - PVC pipe certification

02640-1.4.B Pipe Certifications from the Manufacturer

Submittal No.	Date	Contact	Phone no.
SUB-015-02	2012-06-1	Paul Zinsious AMS	502-640-2918

SHOP DRAWING / SUBMITTAL REVIEW	
Shop drawing/submittal review is for design conformity and general conformance with the design concept of the project as given in the contract documents. Subcontractor is responsible for full compliance with contract documents, confirming and correcting all quantities, correlating dimensions at project work site for tolerance, clearance, fabrication process, and techniques of construction. Subcontractor is responsible for coordination of his work with that of all other trades, and performance of the work in a safe and satisfactory manner.	
<input checked="" type="checkbox"/> Reviewed.	2012-06-14 Date
<input type="checkbox"/> Reviewed with corrections.	By AMS, LLC
<input type="checkbox"/> Revise and resubmit.	
<input type="checkbox"/> Rejected. See Remarks.	



Municipal and Utility Supplies

To Whom This May Concern:

IMCO CERTIFIES THAT THE 8" NORTH AMERICAN C-900 DR-18 PVC PIPE SOLD TO
B & T DRAINAGE ON THE HUTSONVILLE PROJECT MEETS THE FOLLOWING STANDARDS:

ASTM D1784

PIPE STANDARD AWWA C900-07

CERTIFICATIONS: ANSI/NSF STANDARD 61

UL STANDARD

DR18 + DR14: FM 1612

SINCERELY,

JASON COZADD
IMCO



North American Pipe Corporation™

AWWA C900-07: Municipal Water Pipe

North American Pipe's AWWA C900-07 PVC product line is manufactured to meet the needs of modern municipal water distribution systems. With top quality raw materials and modern processing technology North American Pipe's C900-07 pipe meets all industry standards in addition to our own rigorous quality control standards. North American Pipe's C900-07 pipe utilizes Reiber style gaskets throughout the entire product offering. North American Pipe produces a full range of CIOD pipe in DR-14, DR-18, and DR-25 classifications. Whether specifying or installing our pipe you can be assured that North American Pipe will provide the pipe "Right, On Time, All the Time".



Short Form Specification AWWA C900-07 Municipal Water Pipe

Pipe Standard:	AWWA C900-07
Pipe Compound:	ASTM D1784 Cell Class 12454
Gasket:	ASTM F477
Integral Bell Joint:	ASTM D3139
Certifications:	ANSI/NSF Standard 61 UL Standard 1285 DR18 & DR14: FM 1612
Applications:	Water
Color:	Blue
Lay Length:	20'
Installation:	North American Pipe's Installation Guide for PVC Pressure Pipe

Rev: 04/2012

Right, On Time, All the Time®

www.northamericanpipe.com



Ash Management Services, LLC
12601 Plantside Drive
Louisville, Kentucky 40299
Phone: 502-245-1353

Hutsonville APD Closure

HUT-APD-SUB-015-03-PCP – filter sock

02620 2.1.C Subdrainage – filter sock

Submittal No.	Date	Contact	Phone no.
SUB-015-03	2012-06-1	Paul Zinsious AMS	502-640-2918

SHOP DRAWING / SUBMITTAL REVIEW	
Shop drawing/submittal review is for design conformity and general conformance with the design concept of the project as given in the contract documents. Subcontractor is responsible for full compliance with contract documents, confirming and correcting all quantities, correlating dimensions at project work site for tolerance, clearance, fabrication process, and techniques of construction. Subcontractor is responsible for coordination of his work with that of all other trades, and performance of the work in a safe and satisfactory manner.	
<input checked="" type="checkbox"/> Reviewed.	2012-06-14 Date
<input type="checkbox"/> Reviewed with corrections.	By AMS, LLC
<input type="checkbox"/> Revise and resubmit.	
<input type="checkbox"/> Rejected. See Remarks.	

ADS FILTER SOCK SPECIFICATION

Scope

This specification describes 2- through 24-inch (50- to 600 mm) ADS SOCK synthetic wrap.

Filter Fabric Requirements

- The ADS SOCK shall meet the requirements of ASTM D6707.
- ADS sock products as listed on this specification meet Ontario Provincial Standard Specification 1860, Material Specifications for Geotextiles, dated March 1998.

Filter Fabric Properties

Property	Test Method	
Material	-	Polyester
Fabric	-	Knitted
Permitivity (min.)	ASTM D4491	5.5 sec ⁻¹
Puncture Resistance (min.)	ASTM D6241	1000 N
AOS (max.)	ASTM D4751	0.600 mm 30 U.S. Sieve
FOS (max.)	CAN/CGSB-148.1, M10-94	450 microns
Mass (relaxed)	ASTM D3887	3.0-3.9 oz/yd ²
Mass (applied minimum)		2.7-3.5 oz/yd ²
Thickness (min.)	ASTM D4491	24.0 mils
Permeability (K) (min.)	ASTM D4491	0.390 cm/sec
Burst Strength (min.)	ASTM D3887	830 kpa
Air Permeability (min.)	ASTM D737	700 ft ³ /ft ² /min
Water Flow Rate (min.)	ASTM D4491 (2" constant head)	300 gal/min/ft ²
Yarn Denier	-	150
Specific Gravity	-	1.3
Melt Temperature	-	450° F



Ash Management Services, LLC
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Phone: 502-245-1353

Hutsonville APD Closure

HUT-APD-SUB-016-01-HDPE welding

2640-1.4.A HDPE Piping - Qualifications-Welding Supervisor

2640-3.3.A HDPE Piping - Temperature, Fusion Pressure, and Graphic...

Submittal No.	Date	Contact	Phone no.
SUB-016-01	2012-06-15	Paul Zinsious AMS	502-640-2918

SHOP DRAWING / SUBMITTAL REVIEW	
Shop drawing/submittal review is for design conformity and general conformance with the design concept of the project as given in the contract documents. Subcontractor is responsible for full compliance with contract documents, confirming and correcting all quantities, correlating dimensions at project work site for tolerance, clearance, fabrication process, and techniques of construction. Subcontractor is responsible for coordination of his work with that of all other trades, and performance of the work in a safe and satisfactory manner.	
<input checked="" type="checkbox"/> Reviewed.	2012-06-15 Date
<input type="checkbox"/> Reviewed with corrections.	By AMS, LLC
<input type="checkbox"/> Revise and resubmit.	
<input type="checkbox"/> Rejected. See Remarks.	

BONDER PERFORMANCE QUALIFICATION RECORD

(BPQR) H.D.P.E. Butt Fusion

TEST RESULTS

BPQR No. HDPE-1 PQR No. HDPE-1 BPS No. HDPE-1 Date 11/28/11
 Bonderer's Name Scott Burch (^{STAMP#} 9326) Test Joint Diameter 14"

Guided Bend Test (If Applicable)

Specimen No.	Type	Diameter	Remarks	Pass	Fail
1. <u>Root Bend</u>	<u>DR11</u>	<u>14"</u>	<u>Bent over Root</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. <u>Face Bend</u>	<u>DR11</u>	<u>14"</u>	<u>Bent over Face</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

VISUAL TEST:

Specimen No.	Joint No.	Diameter	Remarks	Pass	Fail
1. <u>Root Bend</u>	<u>DR11</u>	<u>14"</u>	<u>Acceptable profile</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. <u>Face Bend</u>	<u>DR11</u>	<u>14"</u>	<u>Acceptable profile</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

HYDROSTATIC TEST 3 TIMES MAWP (If Applicable)

Joint No.	Diameter	MAWP	Test PSI	Pass	Fail
1. _____	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>

We certify that the information in this record is correct and that the test bonded joint(s) were prepared, bonded, and tested in accordance with the requirements of Freitag-Weinhardt, FW-HDPE-1 Welding Procedure and Qualification Specification.

Date 11/28/2011

Approved By Charles Mille

Title Quality Manager

Company: Freitag-Weinhardt, INC.

WELDING PROCEDURE
&
QUALIFICATION SPECIFICATION

NO. HDPE-1

FOR
BUTT FUSION

OF
H.D.P.E PIPE, VALVES, FITTINGS

Rev Z



THIS DOCUMENT IS THE PROPERTY OF

Freitag-Weinhardt, Inc.

(Company)



Freitag-Weinhardt, Inc HDPE PIPE/FITTINGS BUTT FUSION BONDING PROCEDURE HDPE - 1		Revision : 2 Date: July 7, 2009						
Scope: Butt fusion bonding high-density polyethylene (HDPE) piping and fittings. This butt fusion bonding procedure is acceptable for use on Local Plumbing Code, NFPA and Factory Mutual HDPE plastic pipe where formal qualification is required in accordance with Project Specifications.								
Materials to be Joined: Pipe: <u>ASTM D3350, PE</u> Fittings: <u>ASTM D3350, PE</u> Resin: <u>345464C</u> Other: _____	Diameter and Thickness Range Qualified: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center; border-bottom: 1px solid black;">Diameter</th> <th style="text-align: center; border-bottom: 1px solid black;">Thickness</th> </tr> </thead> <tbody> <tr> <td>Pipe: <u>Table 1, 2, 3, 4</u></td> <td><u>Table 1, 2, 3, 4</u></td> </tr> <tr> <td>Fitting: <u>Table 1, 2, 3, 4</u></td> <td><u>Table 1, 2, 3, 4</u></td> </tr> </tbody> </table>		Diameter	Thickness	Pipe: <u>Table 1, 2, 3, 4</u>	<u>Table 1, 2, 3, 4</u>	Fitting: <u>Table 1, 2, 3, 4</u>	<u>Table 1, 2, 3, 4</u>
Diameter	Thickness							
Pipe: <u>Table 1, 2, 3, 4</u>	<u>Table 1, 2, 3, 4</u>							
Fitting: <u>Table 1, 2, 3, 4</u>	<u>Table 1, 2, 3, 4</u>							
Joint Design Butt Fusion	Procedure Qualification Record: In accordance with Project Specification.							
<p>Butt Fusion Machines-</p> <p>1"-4" OD Pipe- McElroy Model Pitbull #14, No Data Logger (Mechanical Bonding)</p> <p>2"-8" OD Pipe- McElroy Model 28 with Data Logger</p> <p>8"-24" OD Pipe- McElroy Model 824 with Data Logger</p> <p>4"-12" OD Pipe- McElroy Model 412 with Data Logger</p> <p>Note- This procedure was specifically prepared for the above pipe/fitting materials and butt fusion machines and is not suitable for any other pipe/fitting material or butt fusion machine combination. If other pipe/fitting materials or butt fusion machines are contemplated for use, preparation and issuance of a suitable butt fusion bonding procedure for those materials and butt fusion machine combinations. The Tables in this procedure contain the butt fusion parameters specifically for the materials and machines listed herein.</p> <ul style="list-style-type: none"> * All fusion machines shall be supplied with the appropriate clamp insets for all pipe diameters that will be bonded. * Spare facer blades. * Must have sufficient amount of pipe support stands for each machine in operation. * Stub end holder for butt fusion. * Hydraulic extension hoses as necessary for ditch fusion. * All fusion machines shall be supplied with a heater plate, properly sized heater adapters, and a built in surface temperature pyrometer . Hand held infrared heat indicator will be used to verify temperature per checklist. * Where power is not available, electrical generator(s) sized in accordance with the fusion machine manufacturer's recommendations. * Clean rags or paper towels with isopropyl alcohol and or approved alcohol wipes for one time use to clean the facer plate and blades, hot plate and prepared pipe ends. 								



- * Electric or gas powered chain saws, with extra chains and extra chain guides that can use a water/detergent mix as the chain lubricant. **Warning-** Oil is "prohibited" as a chain lubricant. The exhaust on gas powered chain saws must be directed away from the HDPE pipe surface. Oil deposits on the HDPE pipe from the chain lubricant or engine exhaust must be removed.

Daily Fusion Machine Maintenance Checklist:

1. At the start of each shift for each fusion machine used, complete top section of Form 1a or 1b as applicable.

Daily Heater Maintenance Checklist:

1. At the start of each shift for each heater used, complete the bottom section of Form 1a or 1b as applicable.

Bonding Procedure:

1. When fusing full-length pipe, position pipe support roller stands on each end of the fusion machine to help support and align the pipe. On shorter lengths use stands needed on each side of the fusion machine if at all possible.
2. Sections of pipe that have visible oil, hydraulic fluid, gasoline, diesel or other oily contaminate must be cleaned prior to installation in fusion machine. Solvent or detergent cleaning is acceptable.
3. Clamp the two pipe sections in the jaws. On short sections of pipe or fittings that use only one clamp, it is important that they are properly oriented in the clamp to avoid an uneven fusion bead. Install the long item that uses two stationary clamps first, and face it square. Place the short item loosely in the moving clamp and butt it flush against the face of the stationary item. Tighten the clamp on the short item, insuring the item stays flush with the stationary item. When both items are short they should be butted flush and kept flush until they are both tightly clamped in the fusion machine. **Caution-**The weld face of each short item must be square prior to final butt fusion set up. Other methods of insuring proper pipe to pipe or pipe to fitting orientation will be considered when submitted for review.
4. It is acceptable to directly bond fittings that are one SDR larger than the pipe SDR, otherwise the fitting must be counter bored to a depth of 1 1/2 to 2 inches with a trailing tapered transition of 33-45 degrees. In instances where the maximum counter bore shoulder height is no greater than the maximum allowable single bead width (see Tables as applicable), a trailing tapered transition is preferred, but not necessary. Actual fitting end wall thickness measurements shall be made for fabricated or mitered fittings to verify the fitting dimension is no more than one SDR larger than the pipe size. The minimum wall thickness for the pipe size shall be used as the basis of comparison. Fittings, due to their size or configuration, that cannot be counter bored shall have pre-bored and tapered pup piece bonded onto the fitting prior to installation in the piping system. Fitting configurations that deviate from these requirements shall be reviewed and dispositioned by project engineering on an item by item basis.
5. If necessary, use the lifting roller (on machines that have a lifting roller) to help straighten the pipe long enough to get it clamped in the jaws.
6. Position the facer between the two ends of pipe.
7. Face the pipe until no visible gap exists
8. Remove facer.
9. Bring the two ends of pipe together at fusion pressure to make sure they don't slip in the clamp jaws. If slippage occurs, the pipe will have to be reloaded in the jaws and facing repeated until no slippage occurs.

**Bonding Procedure: (continued)**

10. Move the pipe ends together and visually check for alignment. There shall not be any visible gap between the two pipe faces. The OD misalignment shall be less than 10% of the pipe wall thickness. The pipe clamps shall be adjusted as necessary until pipe ends are properly aligned. Pipe ends that are necked down and are difficult to align shall be cut off a minimum of 6 inches. Out of round pipe that cannot be aligned may be cut off from 6 to 24 inches prior to attempting realignment. **Caution-** The pipe shall not be contaminated by chain saw chain oil or direct impingement of the exhaust on gasoline powered chain saws (see last comment in above tools and equipment section).
11. Prior to final trimming, to control dust intrusion and to preclude rapid internal cooling of the pipe, insure open ends of the pipe are covered with a cap or a plastic bag tapered to the pipe. Also clean the pipe ends prior to final trimming using clean rags or paper towel and a 70-98% solution of isopropyl alcohol.
12. Clean both sides of the heater plate using paper towel or clean rags and isopropyl alcohol just prior to heating pipe.
13. The isopropyl alcohol shall be dispensed using a plastic bottle or hand spray bottles.
Used rags or paper towels shall be discarded.
14. Once the pipe is aligned and final trimmed, insert the heater plate and heat the pipe in accordance with Table 1, 2, 3 or 4 depending on the pipe size and fusion machine being used.
15. Once the heater is clear of the pipe ends, quickly move the carriage to the left (or together depending on the fusion machine being used) and bring the pipe ends together and hold them at fusion pressure through the fusion time and cool down times listed in Table 1, 2, 3 or 4.
At any time after bonding, the pipe end covers may be removed to aid in cooling.
16. When using a Fully Hydraulic Butt Fusion Machine the operator shall monitor the pressure gauge to insure the machine maintains the fusion pressure according to the values and times listed in the appropriate Table.
17. When using a Manual Hydraulic Butt Fusion Machine the operator shall monitor the pressure gauge and maintain the fusion pressure according to the values and time listed in Table.
18. When using a Mechanical Butt Fusion Machine the operator shall bring the pressure/torque up the valve required and once achieved then the locking cam shall be engaged to hold the pressure for the time listed.
19. Once the pipe has been maintained under pressure for the minimum time indicated in the appropriate Table, and has cooled per table the clamps can be removed from the pipe
20. At this point the pipe may be handled very carefully insuring no stresses are induced on the completed bond. If pipe is to be rough handled, end pulled or lifted where the pipe bond area bends or is stretched, then the pipe must be additionally cooled in accordance with Figure 1.

Bonding Qualification Procedure:

1. When the Machine butt fusion technique is used for bonding HDPE pipe and fitting, destructive testing of trial samples shall be performed:
 - * At the start of each shift, unless bonder has already been tested on previous shift.
 - * When the ambient temperature changes more than 30 deg F.
 - * Pipe Diameter Changes,
 - * Or the pipe wall thickness changes.

**Bonding Qualification Procedure: (continued)**

2. The primary destructive fusion bond test to be used shall be the bend strap test. The bend strap test shall be prepared as follows:

- * A trial fusion bond shall be made and allowed to cool to ambient temperature;
- * A test strap that is at least 15 pipe wall thicknesses long on each side of the fused joint, and about 1-1/2 wall thicknesses wide shall be cut from the pipe;
- * The strap shall be bent across the root (root bend) so that both ends of the strap touch;
- * Any disbondment or cracking at the fusion bond is unacceptable.

If failure occurs, fusion procedures and/or machine set-up shall be changed, and a new trial fusion bond and bent strap test specimen prepared and tested. Production fusion bonding shall not proceed until a test joint has passed the strap test. A test strap from thick wall may require considerable force to bend.

3. A continuous data recording system ("data-logger") shall be approved for substitution of portions of the required production testing. Production bend testing shall be mandatory (See Paragraph 2 above) when the continuous data recording system is not utilized. Seller shall submit details, including any forms, for approval by the Buyer. Approval for use of a continuous data recording system, in lieu of production bend testing, shall be based on acceptable output.

Shipping, Handling, Unloading and Storage of Pipe and Fittings:

During shipping, handling or storage, pipe and fittings shall be bundled or stacked in accordance with the pipe/fitting manufacturer's recommendations. Excessive bundling or stacking that results in bends, knicks, or uncorrectable ovality shall be rejected. Nylon straps shall be used to tie down loads during shipping. Wide web nylon slings and spreader bars shall be used during pipe handling. Chains, cables shall not be used for material handling. Cuts and gouges greater than 10% of the pipe wall thickness shall be cut out and discarded. Minor scuffing or scratching is acceptable.

Environmental Requirements:

Outside Temperature: 50F to 100F Method of Measurement: Thermometer

(Actual pipe temperature at the time of fusion, will indicate bonding procedure requirements such as heat soak time. Temperatures outside this range shall require special fusion temperature/heat soak time charts.)

Particulates: Indications of airborne/surface dust, grit, chemicals or other contaminants will require cleaning to maintain fusion equipment cleanliness and in particular pipe and end face cleanliness prior to and during fusing activities.

Bonding Documentation:

1. At the beginning of every shift the fusion machine, facer unit and heaters shall be inspected in accordance with the maintenance checklist Form 1a or 1b as applicable. Items on the checklist that are not applicable to a given machine can be ignored and items missing shall be added.
2. At the beginning of each shift and at any time power is lost or pipe size is changed, the heater plate shall be checked for proper heat level. Refer to Table 1, 2, 3, or 4 for parameters applicable for the fusion machine being used.
3. The actual bonding parameters used for each and every bond shall be documented.
4. HDPE Bonder Certification shall be documented.

**Bonder Qualification:**

1. Every HDPE Bonder shall receive training on the use of the specific fusion machine and the bonding procedure, and shall perform at least one pipe to pipe bond on each fusion machine that they will be required to use. The field-welding engineer shall select the Bonder qualification pipe size, normally the largest pipe OD or within 25% of the largest pipe OD, to be bonded on a specific fusion machine. The Bonder must satisfactorily demonstrate his/her knowledge on the bonding procedure, the use of the specific fusion machine and make at least one pipe to pipe test bond. The test bond can either be cut out of the pipe and bend tested or the bonded pipe can be hydrotested.
2. The Bonder qualification test shall be documented on HDPE Bonder Certification Record (Test Strap Log) and shall include copies of Daily Bonding Report for the test bond.

Inspection:

1. Visual inspection shall include the following-
 - Proper ID of the Item
 - Proper DR for pipe to fitting bonds (check actual wall thickness and fabricated or mitered fittings for possible counter boring)
 - Alignment of the item during fit up
 - Completed fusion bead width
 - Surface gouges, kinks, cuts or cracks
 - Evidence of mishandling
 - Documentation of the work in progress or completed
2. Visually inspect at least 5% of each Bonder's work. The fusion beads shall be within the minimum and maximum limits listed in the bonding procedure. All fusion beads shall be uniformly shaped and sized the full circumference of the bond.
3. Visually observe the Bonder perform a bond on approximately one of every 20 bonds.
The Field Welding Engineer has the discretion to extend or reduce the inspection frequency based on past performance.
4. Bonds that are visually suspect or where it has been determined that the Bonder has not followed approved procedures shall require the bond to be cut out and three inside face bend back test performed. Should the bend back samples fail, further cut outs from other bonds from the same Bonder's work shall be made until all bend back tests pass.

Bonding Parameters:

Table 1: 2"-8" OD Pipe- McElroy Model 28 with Data Logger

Table 2: 8"-24" OD Pipe- McElroy Model 824 with Data Logger

Table 3: 1"-4" OD Pipe-McElroy Model Pitbull 314 - No Data Logger (Mechanical Bonding)

Table 4: 4"-12" OD Pipe- McElroy Model 412 with Data Logger



ELECTROFUSION - HDPE-2
FORM 1A DAILY MAINTENANCE CHECKLIST

PROJECT: _____ MANUFACTURE: _____
JOB #: _____ Checker: _____
LINE # _____ SPEC./TYPE: _____
Electrofusion machine ID _____ DATE/TIME: _____

Electrofusion Bonding

	SAT.	UNSAT.	NA	COMMENTS: needs repair
Electrofusion Processor is clean	()	()	()	_____
All wiring in good condition	()	()	()	_____
Power source in good condition	()	()	()	_____
electric cords acceptable	()	()	()	_____
leads/cables in good condition	()	()	()	_____
<i>FACER</i> / Scraping tools correct	()	()	()	_____
Isopropyl alcohol for cleaning	()	()	()	_____
acceptable markers	()	()	()	_____
pipe clamps	()	()	()	_____
fitting restraints	()	()	()	_____
<i>heater surface clean AND IN GOOD CONDITION</i>	()	()	()	_____

CONTRACTOR REP: _____ DATE _____

INSPECTION REP: _____ DATE _____



Freitag-Weinhardt
Mechanical Constructors

HDPE PIPE/FITTINGS BUTT FUSION BONDING PROCEDURE HDPE-1

REVISION:2

DATE:7/6/09

FORM1a-HYDRAULIC BONDING EQUIPMENT MAINTENANCE CHECKLIST			
Daily Fusion Machine Checklist		Date/Time:	
Fusion Machine ID:		Checker:	
Item to Check	Satisfactory	Needs Repair	Repair comment
1. Fusion Machine is clean			
2. Hydraulic Reservoir is filled to correct level.			
3. Hydraulic gauges are calibrated.			
4. Hydraulic cylinders are free of leaks, scratches, or gouges.			
5. All pivot points lubricated(jaws, front axle)			
6. All hydraulic hoses free of leaks and in good condition.			
7. All hardware is with unit.(inserts, pins, etc.)			
8. Inserts fit and pin properly.			
9. All rest buttons are on facer.			
10. Rest buttons are on inner movable and inner fixed jaw.			
11. Pipe lift and roller lubricated and in good condition.			
12. Brake functions properly.			
13. Jaws are aligned properly.			
14. Power cord and plug in good condition.			
15. Spare fuses in electric control panel.			
16. All hydraulic valves and pressure reducing valves function.			
17. All nuts and bolts are tight.			
18. Generator in good condition and voltage output correct.			
19. All wiring in good condition and functions properly.			
Daily Facer Unit Maintenance Checklist		Facer Unit ID:	
Item to Check	Satisfactory	Needs Repair	Repair comment
1. Facer motor rotates the facer properly.			
2. Facer is secure to support arms and in alignment with jaws.			
3. Facer hydraulic cylinder travel is adjusted correctly.			
4. Cutting blades are sharp and properly positioned.			
5. Facer is clean, free of dirt, oil, grease, etc.			
Item to Check	Satisfactory	Needs Repair	Repair comment
1. Verify cord and plug are in good condition.			
2. Verify heater surface is clean and in good condition.			
3. Verify heater is secured to support arms and in alignment with jaws.			
4. Verify heater hydraulic cylinder travel is adjusted correctly.			
5. Verify the thermometer is in good working order.			
6. Test temp. controller by allowing heater to cycle 4 times.			
7. Surface temperature of heater shall be checked with a pyrometer at the start of each shift, when pipe size changes during the shift, and whenever power is lost to the heater. Test 4 spots at (12,3, 6 and 9 O' clock) on each side of heater in the area of contact for each pipe size being welded.			
8. Pyrometer calibration verified at the start of each shift using a standard Pyrometer/Calibrator			
9. Check receptacles for damage.			



FREITAG-WEINHARDT, INC.

MECHANICAL CONSTRUCTORS

HDPE PIPE/FITTINGS BUTT FUSION BONDING PROCEDURE HDPE- 1

Revision: 2

Date: 7-6-09

FORM 1b - MECHANICAL BONDING EQUIPMENT MAINTENANCE CHECKLIST

Daily Fusion Machine Maintenance Checklist:

Date/Time: /

Fusion Machine ID: _____

Checker: _____

Item to Check	Satisfactory	Needs Repair	Repair Comment
1. Unit- Machine is clean			
2. Unit- Clamp knob bearings lubricated and moves freely			
3. Unit- Moveable jaw lubricated and moves freely			
4. Unit- Locking cam works properly			
5. Unit- Guide rods are not damaged			
6. Unit- Clamping jaw and insert grooves are clean			
7. Unit- Spring clips work properly			
8. Unit- All nuts and bolts are tight			
9. Unit- Lever handles are with unit			
10. Unit- Torque wrench adapter available and in good condition			
11. Unit- Torque wrench is available, calibrated and in good condition			
12. Chassis- Brake and unit lockdown clamps are adjusted properly			
13. Chassis- Outtrigger adjusting screws work freely			
14. Chassis- All nuts and bolts tight			

Daily Facer Unit Maintenance Checklist:

Facer Unit ID: _____

Item to Check	Satisfactory	Needs Repair	Repair Comment
1. Facer motor rotates the facer properly			
2. Facer is secure to support arms and in alignment with jaws			
3. Facer hydraulic cylinder travel is adjusted correctly			
4. Cutting blades are sharp and properly positioned			
5. Facer is clean, free of dirt, oil, grease, etc.			

Daily Heater Maintenance Checklist:

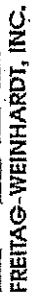
Heater Plate ID: _____

Item to Check	Satisfactory	Needs Repair	Repair Comment
1. Verify cord and plug are in good condition			
2. Verify heater surface is clean and in good condition			
3. Verify heater is secured to support arms and in alignment with jaws			
4. Verify heater hydraulic cylinder travel is adjusted correctly			
5. Verify thermometer is in good working order			
6. Test temp controller by allowing heater to cycle 4 times			
7. Surface Temperature of heater shall be checked with a pyrometer at the start of each shift, when pipe sizes change during the shift and whenever power is lost to the heater. Test 4 spots (at 12, 3, 6 and 9 O'clock) on each side of heater in the area of contact for each pipe size being welded.			
8. Pyrometer calibration verified at the start of every shift using a standard Pyrometer / Calibrator.			
9. Check receptacles for damage			

Daily Data Logger Maintenance Checklist:

Date Logger ID: _____

Item to Check	Satisfactory	Needs Repair	Repair Comment
1. Condition of wiring and unit is properly functioning			
2. Verify Output coincide with Maintenance Outputs above.			



HDPE-1

[illegible]

Note: Allowable Butt Fusion Temperature Range is Min. 400 To Max. 450 degrees F

Pipe O.D. Alignment < 10 % of wall thickness, Cool Time is 30 - 90 seconds per 1" of pipe size.

**** Data Logger will be used to record Time of Weld, Date of Weld, Welder ID, Drag, Fusion Pressure Temperature and Cooling Time**



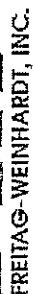
Table 2

[illegible]

Note: Allowable Butt Fusion Temperature Range is Min. 400 To Max. 450 degrees F

pipe O.D. Alignment < 10 % of wall thickness , Cool Time is 30 - 90 seconds per 1" of pipe size.

* Data Logger will be used to record Time of Weld, Date of Weld, Drag, Fusion Pressure Temperature and Cooling Time



HDPE-1

[illegible]

Note: Allowable Butt Fusion Temperature Range is Min. 400 To Max. 450 degrees F

Pipe O.D. Alignment < 10 % of wall thickness , Cool Time is 30 - 90 seconds per 1" of pipe size.

**** Data Logger will be used to record Time of Weld, Date of Weld, Welder ID, Drag, Fusion Pressure Temperature and Cooling Time**



HDPE-1 BF Bonding
Bonding Qualification

HDPE Test Strap Log

No.	Bonding ID	Date	Size	Spec.	Q.C.Accept	Witness	Comments
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							



HDPE-1 BF Bonding
Bonded Continuity

HDPE RE-Test Strap Log						
No.	DATE	Size	MACHINE	Q.C. Accept	RETEST DUE	Comments
1					BY SIZE	DR11 Qualification
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

Note : Date Trained 11/14/2011 HDPE-1



INSTALLER CERTIFICATE OF ACCEPTANCE
(Form CQAP-4.1)

INSTALLER: AMS

DATE: 6-11-12

GEOSYNTHETIC MATERIAL: 40 mil textured HDPE

AREA ACCEPTED: A

INSTALLER: The undersigned authorized representative of the Installer certifies that the representative or a staff member has visually inspected the geosynthetic material daily for the above referenced area and has found the surface to be acceptable for installation of the vegetative layer.

The Installer shall be responsible for the integrity and suitability of the finished geosynthetic material from this date to completion of the installation.

CERTIFICATION OF ACCEPTANCE:

Signature of Installer's Authorized Representative: Randy Porter

Printed Name of Installer's Authorized Representative: Randy Porter

Title of Installer's Authorized Representative: Site Manager

Date: 6-11-12

CERTIFICATE OF ACCEPTANCE RECEIVED BY CQA OFFICER:

Signature of CQA Officer-in-Absentia (if applicable): _____

Printed Name of CQA Officer-in-Absentia: _____

Date: _____

Signature of CQA Officer: Anna Saindon

Printed Name of CQA Officer: Anna Saindon

Date: 6-18-12



INSTALLER CERTIFICATE OF ACCEPTANCE
(Form CQAP-4.1)

INSTALLER: Ams

DATE: 7-03-12

GEOSYNTHETIC MATERIAL: 40 mil textured HDPE

AREA ACCEPTED: C

INSTALLER: The undersigned authorized representative of the Installer certifies that the representative or a staff member has visually inspected the geosynthetic material daily for the above referenced area and has found the surface to be acceptable for installation of the vegetative layer.

The Installer shall be responsible for the integrity and suitability of the finished geosynthetic material from this date to completion of the installation.

CERTIFICATION OF ACCEPTANCE:

Signature of Installer's Authorized Representative: Randy Porter

Printed Name of Installer's Authorized Representative: Randy Porter

Title of Installer's Authorized Representative: Site Manager

Date: 7-03-12

CERTIFICATE OF ACCEPTANCE RECEIVED BY CQA OFFICER:

Signature of CQA Officer-in-Absentia (if applicable): _____

Printed Name of CQA Officer-in-Absentia: _____

Date: _____

Signature of CQA Officer: Anna Saindon

Printed Name of CQA Officer: Anna Saindon

Date: 7-9-12



INSTALLER CERTIFICATE OF ACCEPTANCE
(Form CQAP-4.1)

INSTALLER: AMS

DATE: 7-17-12

GEOSYNTHETIC MATERIAL: 40 mil textured HDPE

AREA ACCEPTED: B

INSTALLER: The undersigned authorized representative of the Installer certifies that the representative or a staff member has visually inspected the geosynthetic material daily for the above referenced area and has found the surface to be acceptable for installation of the vegetative layer.

The Installer shall be responsible for the integrity and suitability of the finished geosynthetic material from this date to completion of the installation.

CERTIFICATION OF ACCEPTANCE:

Signature of Installer's Authorized Representative: Randy Postel

Printed Name of Installer's Authorized Representative: Randy Postel

Title of Installer's Authorized Representative: Site Manager

Date: 7-17-12

CERTIFICATE OF ACCEPTANCE RECEIVED BY CQA OFFICER:

Signature of CQA Officer-in-Absentia (if applicable): _____

Printed Name of CQA Officer-in-Absentia: _____

Date: _____

Signature of CQA Officer: Anna Saindon

Printed Name of CQA Officer: Anna Saindon

Date: 7-23-12



INSTALLER CERTIFICATE OF ACCEPTANCE
(Form CQAP-4.1)

INSTALLER: AMS

DATE: 7-31-12

GEOSYNTHETIC MATERIAL: 40 mil textured HDPE

AREA ACCEPTED: D

INSTALLER: The undersigned authorized representative of the Installer certifies that the representative or a staff member has visually inspected the geosynthetic material daily for the above referenced area and has found the surface to be acceptable for installation of the vegetative layer.

The Installer shall be responsible for the integrity and suitability of the finished geosynthetic material from this date to completion of the installation.

CERTIFICATION OF ACCEPTANCE:

Signature of Installer's Authorized Representative: [Signature]

Printed Name of Installer's Authorized Representative: Randy Poetel

Title of Installer's Authorized Representative: Site Manager

Date: 7-31-12

CERTIFICATE OF ACCEPTANCE RECEIVED BY CQA OFFICER:

Signature of CQA Officer-in-Absentia (if applicable): _____

Printed Name of CQA Officer-in-Absentia: _____

Date: _____

Signature of CQA Officer: [Signature]

Printed Name of CQA Officer: Anna Saindon

Date: 8-3-12

A Leaktest has been requested by the customer and performed by InstronTek, Inc. on the following gauge for the company below:

Model	Serial #:	Cs-137 Serial #	Am241:Be Serial#	Leaktest Date
MC1DRP	80108947	08947	08947	3/19/2012

Contact:	Brandon Robbs	Email:	b.robbs@geotechnology.com				
Company:	Geotechnology (St Louis)	Phone:	314.568.9073	Fax:	314.241.3526		
Shipping Address:	11816 Lackland Rd Ste 150	City:	St Louis	St:		Zip:	
Center:	Michigan	Technician:	SJ				

InstroTek, Inc. Grand Rapids, MI

Gauge Model: MC1DRP
Gauge S/N: 8947

Calib. Date: 3/23/2012
Dens. Std. Count: 47854
Moist. Std Count: 8958

Calibration Counts

<u>Depth</u>	<u>MAG</u>	<u>M/A</u>	<u>Alum</u>	<u>Lime</u>	<u>Granite</u>	<u>A</u>	<u>B</u>	<u>C</u>
0	30516	23037	16933	21190	16989	2.799022	60.77459487	0.164614
AC	58332	44587	31884	47243	35471	4.129142	83.92637224	0.079317
2	136903	103770	71385	97004	71228	9.408374	101.2325715	-0.3751
3	0	0	0	0	0	0	0	0
4	125769	88500	56737	81591	55616	12.77338	67.24602136	0.066464
5	0	0	0	0	0	0	0	0
6	95530	60925	36064	55528	35130	17.62485	47.31290383	0.199994
7	0	0	0	0	0	0	0	0
8	62620	36606	19940	32462	19399	18.26501	39.4279878	0.1295
9	0	0	0	0	0	0	0	0
10	38178	20446	10682	17922	10382	19.8705	32.27909868	0.098673
11	0	0	0	0	0	0	0	0
12	18376	11414	6128	10036	6148	18.26694	28.11194145	0.074074

Check Densities

<u>Depth</u>	<u>108.0</u>	<u>132.4</u>	<u>163.7</u>
0	108.0	132.4	163.7
AC	108.0	132.4	163.7
2	108.0	132.4	163.7
3	108.0	132.4	163.7
4	108.0	132.4	163.7
5	108.0	132.4	163.7
6	108.0	132.4	163.7
7	108.0	132.4	163.7
8	108.0	132.4	163.7
9	108.0	132.4	108.0
10	108.0	132.4	163.7
11	108.0	132.4	108.0
12	108.0	132.4	163.7

Moisture Parameters

<u>Blk 1</u>	<u>Blk 2</u>	<u>A</u>	<u>B</u>
0	37.5		
492	5873	62.42799	-3.42873

InstroTek, Inc.

Expected Standard Count Report

Note: The calculation of the expected density standard count is based on decay of the Cesium 137 source used for density measurements.

Gauge Serial Number: 8947
Gauge Model: MC1DRP
Calibration Density Standard: 47854
Calibration Date: 3/23/2012

<u>Date</u>	<u>From</u>	<u>To</u>
Apr-12	47348	48305
May-12	47257	48212
Jun-12	47166	48119
Jul-12	47075	48026
Aug-12	46985	47934
Sep-12	46895	47842
Oct-12	46804	47750
Nov-12	46714	47658
Dec-12	46625	47566
Jan-13	46535	47475
Feb-13	46445	47384
Mar-13	46356	47293
Apr-13	46267	47202
May-13	46178	47111
Jun-13	46089	47020
Jul-13	46000	46930
Aug-13	45912	46840
Sep-13	45824	46749



Calibration Technician



Date



Wagner Equipment Co.

2420 Uravan St.
Aurora, CO 80011.
303-365-3200 office
303-365-3296 fax
www.wagnerequipment.com



May 9, 2012

Wagner Technology Solutions

William Massmann
Massmann Surveying
7751 Carondelet Ave., Ste. 502
Clayton, Missouri 63105

REF: Calibration of Trimble 5603 DR 200 SN# 63320778

Dear Mr. Massmann,

Please note that the above unit has been calibrated to meet with the factory specified tolerances for this unit. The summary of the tolerances is given below. If you require any further details please feel free to call us.

Prism Mode accuracy (STD)	= 0.007 ft \pm 2ppm (2mm \pm 2 ppm)
Prism Mode accuracy (D- bar)	= 0.003 ft \pm 1ppm (1mm \pm 1 ppm)
DR Mode accuracy <200 m	= 0.007 ft \pm 2ppm (2mm \pm 2 ppm)
Angle accuracy	= 3" σ based on DIN 18723

Yours sincerely

Farshad Behbahani
Repair Center Manager-Technology Solutions

Doc: wagner-cust.massmann-cert.63320778

Facilities throughout Colorado, New Mexico and far west Texas:

Albuquerque, Aurora, Burlington, Colorado Springs, Durango, El Paso, Farmington, Grand Junction, Hayden, Hobbs, Pueblo, Windsor



INSTRUMENT
S & MANUFACTURING COMPANY, INC.
3433 Tree Court Industrial Blvd.
St. Louis, MO 63122 USA
800-489-2282 • 314-968-2282
Fax: 314-968-2637 Corporate
Fax: 314-968-9217 Survey
Fax: 314-968-3601 Microscope



NIST CERTIFICATE OF CALIBRATION

INSTRUMENT MODEL: TRIMBLE 5603
SERIAL NUMBER: 63321222

DATE CALIBRATED: 5-3-11
EXPIRATION DATE: 5-3-12
STANDARD USED: 71-7020S K&E OPTICAL WEDGE S/N411646
CALIBRATION SYSTEM: SOKKIA SN: 091031, 091032, 091033, 091034
SPECTRA RANGE 894VR S/N 317

CERTIFICATION: AT THE TIME OF CALIBRATION, THIS CERTIFIES THAT THE ABOVE REFERENCED INSTRUMENT WAS CALIBRATED IN ACCORDANCE WITH THE MANUFACTURER'S PROCEDURE. MEASURING AND TEST EQUIPMENT ARE TRACEABLE TO NIST STANDARDS. SUPPORTING DOCUMENTATION RELATIVE TO TRACEABILITY IS ON FILE AND IS AVAILABLE FOR EXAMINATION UPON REQUEST. NATIONAL STANDARDS ARE ADMINISTERED BY NIST (NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY).

CALIBRATED BY:

CUSTOMER: LAMAC ENG.
323 W. 3RD ST.
MT. CARMEL, IL. 62863

Jim Fujarski
Service Manager
Seiler Instrument
SUP-7.6,F2 Revision 5

Sept. 4, 2009



"World Class Accreditation"

The American Association for Laboratory Accreditation

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

ARDL, INC.
400 Aviation Drive
Mt. Vernon, Illinois 62864
Richard L. Curtin Phone: 618-244-3235
rlcurtin@ardlinc.com

ENVIRONMENTAL

Valid To: March 31, 2013

Certificate Number: 3115.01

In recognition of the successful completion of the A2LA evaluation process, (including an assessment of the laboratory's compliance with ISO IEC 17025:2005, the 2003 NELAC Chapter 5 Standard, and the requirements of the DoD Environmental Laboratory Accreditation Program (DoD ELAP) as detailed in the DoD Quality Systems Manual for Environmental Laboratories (DoD QSM v4.1)) accreditation is granted to this laboratory to perform recognized EPA methods using the following testing technologies and in the analyte categories identified below:

Testing Technologies

ICP-AES Spectrometry, Gas Chromatography, Gas Chromatography/Mass Spectrometry, High Performance Liquid Chromatography, Ion Chromatography

<u>Parameter/Analyte</u>	<u>Nonpotable Water</u>	<u>Solid Hazardous Waste</u>
<u>Metals</u>		
Aluminum	EPA 200.7/6010B	EPA 6010B
Antimony	EPA 200.7/6010B	EPA 6010B
Arsenic	EPA 200.7/6010B	EPA 6010B
Barium	EPA 200.7/6010B	EPA 6010B
Beryllium	EPA 200.7/6010B	EPA 6010B
Boron	EPA 200.7/6010B	EPA 6010B
Cadmium	EPA 200.7/6010B	EPA 6010B
Calcium	EPA 200.7/6010B	EPA 6010B
Chromium	EPA 200.7/6010B	EPA 6010B
Cobalt	EPA 200.7/6010B	EPA 6010B
Copper	EPA 200.7/6010B	EPA 6010B
Iron	EPA 200.7/6010B	EPA 6010B
Lead	EPA 200.7/6010B	EPA 6010B
Magnesium	EPA 200.7/6010B	EPA 6010B
Manganese	EPA 200.7/6010B	EPA 6010B
Mercury	EPA 7470A	EPA 7470A/7471A
Nickel	EPA 200.7/6010B	EPA 6010B
Potassium	EPA 200.7/6010B	EPA 6010B



The American Association for Laboratory Accreditation

World Class Accreditation

Accredited DoD ELAP Laboratory

A2LA has accredited

ARDL, INC.

Mount Vernon, IL


for technical competence in the field of

Environmental Testing

In recognition of the successful completion of the A2LA evaluation process that includes an assessment of the laboratory's compliance with ISO/IEC 17025:2005, the 2003 NELAC Chapter 5 Standard, and the requirements of the Department of Defense Environmental Laboratory Accreditation Program (DoD ELAP) as detailed in the current DoD Quality System Manual for Environmental Laboratories (QSM); accreditation is granted to this laboratory to perform recognized EPA methods as defined on the associated A2LA Environmental Scope of Accreditation. This accreditation demonstrates technical competence for this defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009).

Presented this 14th day of November 2011.




President & CEO
For the Accreditation Council
Certificate Number 3115.01
Valid to March 31, 2013

For the tests or types of tests to which this accreditation applies, please refer to the laboratory's Environmental Scope of Accreditation.

Parameter/Analyte	Nonpotable Water	Solid Hazardous Waste
Metals (Continued)		
Selenium	EPA 200.7/6010B	EPA 6010B
Silver	EPA 200.7/6010B	EPA 6010B
Sodium	EPA 200.7/6010B	EPA 6010B
Thallium	EPA 200.7/6010B	EPA 6010B
Vanadium	EPA 200.7/6010B	EPA 6010B
Zinc	EPA 200.7/6010B	EPA 6010B
Nutrients		
Nitrate (as N)	EPA 300.0	-----
Orthophosphate (as P)	EPA 300.0	-----
Wet Chemistry		
Chloride	EPA 300.0	-----
Fluoride	EPA 300.0	-----
Sulfate	EPA 300.0	-----
Purgeable Organics (Volatiles)		
1,1,1,2-Tetrachloroethane	EPA 8260B/EPA 624	EPA 8260B
1,1,1-Trichloroethane	EPA 8260B/EPA 624	EPA 8260B
1,1,2,2-Tetrachloroethane	EPA 8260B/EPA 624	EPA 8260B
1,1,2-Trichloroethane	EPA 8260B/EPA 624	EPA 8260B
1,1-Dichloroethane	EPA 8260B/EPA 624	EPA 8260B
1,1-Dichloroethene	EPA 8260B/EPA 624	EPA 8260B
1,1-Dichloropropene	EPA 8260B/EPA 624	EPA 8260B
1,2-Dibromoethane (EDB)	EPA 8260B/EPA 624	EPA 8260B
1,2,3-Trichlorobenzene	EPA 8260B/EPA 624	EPA 8260B
1,2,3-Trichloropropane	EPA 8260B/EPA 624	EPA 8260B
1,2,4-Trichlorobenzene	EPA 8260B/EPA 624	EPA 8260B
1,2,4-Trimethylbenzene	EPA 8260B/EPA 624	EPA 8260B
1,2-Dibromo-3-chloropropane (DBCP)	EPA 8260B/EPA 624	EPA 8260B
1,2-Dichlorobenzene	EPA 8260B/EPA 624	EPA 8260B
1,2-Dichloroethane	EPA 8260B/EPA 624	EPA 8260B
1,2-Dichloropropane	EPA 8260B/EPA 624	EPA 8260B
1,2-Xylene	EPA 8260B/EPA 624	EPA 8260B
1,3,5-Trimethylbenzene	EPA 8260B/EPA 624	EPA 8260B
1,3-Dichlorobenzene	EPA 8260B/EPA 624	EPA 8260B
1,3-Dichloropropane	EPA 8260B/EPA 624	EPA 8260B
1,3-Xylene	EPA 8260B/EPA 624	EPA 8260B
1,4-Dichlorobenzene	EPA 8260B/EPA 624	EPA 8260B
1,4-Isopropyltoluene	EPA 8260B/EPA 624	EPA 8260B
1,4-Xylene	EPA 8260B/EPA 624	EPA 8260B
2-Butanone (MEK)	EPA 8260B/EPA 624	EPA 8260B
2-Chlorotoluene	EPA 8260B/EPA 624	EPA 8260B
2-Hexanone	EPA 8260B/EPA 624	EPA 8260B
4-Chlorotoluene	EPA 8260B/EPA 624	EPA 8260B

Parameter/Analyte	Nonpotable Water	Solid Hazardous Waste
Purgeable Organics (Continued)		
4-Methyl-2-pentanone (MIBK)	EPA 8260B/EPA 624	EPA 8260B
Acetone	EPA 8260B/EPA 624	EPA 8260B
Acrylonitrile	EPA 8260B/EPA 624	EPA 8260B
Benzene	EPA 8260B/EPA 624	EPA 8260B
Bromobenzene	EPA 8260B/EPA 624	EPA 8260B
Bromochloromethane	EPA 8260B/EPA 624	EPA 8260B
Bromodichloromethane	EPA 8260B/EPA 624	EPA 8260B
Bromoform	EPA 8260B/EPA 624	EPA 8260B
Bromomethane	EPA 8260B/EPA 624	EPA 8260B
Carbon disulfide	EPA 8260B/EPA 624	EPA 8260B
Carbon tetrachloride	EPA 8260B/EPA 624	EPA 8260B
Chlorobenzene	EPA 8260B/EPA 624	EPA 8260B
Chloroethane	EPA 8260B/EPA 624	EPA 8260B
Chloroform	EPA 8260B/EPA 624	EPA 8260B
Chloromethane	EPA 8260B/EPA 624	EPA 8260B
cis-1,2-Dichloroethene	EPA 8260B/EPA 624	EPA 8260B
cis-1,3-Dichloropropene	EPA 8260B/EPA 624	EPA 8260B
Dibromochloromethane	EPA 8260B/EPA 624	EPA 8260B
Dibromomethane	EPA 8260B/EPA 624	EPA 8260B
Dichlorodifluoromethane	EPA 8260B/EPA 624	EPA 8260B
Ethyl benzene	EPA 8260B/EPA 624	EPA 8260B
Hexachlorobutadiene	EPA 8260B/EPA 624	EPA 8260B
Isopropylbenzene	EPA 8260B/EPA 624	EPA 8260B
m,p-Xylene	EPA 8260B/EPA 624	EPA 8260B
Methylene chloride	EPA 8260B/EPA 624	EPA 8260B
Methyl-t-butyl ether	EPA 8260B/EPA 624	EPA 8260B
Naphthalene	EPA 8260B/EPA 624	EPA 8260B
n-Butylbenzene	EPA 8260B/EPA 624	EPA 8260B
n-Propylbenzene	EPA 8260B/EPA 624	EPA 8260B
Sec-Butylbenzene	EPA 8260B/EPA 624	EPA 8260B
Styrene	EPA 8260B/EPA 624	EPA 8260B
Tert-Butylbenzene	EPA 8260B/EPA 624	EPA 8260B
Tetrachloroethene	EPA 8260B/EPA 624	EPA 8260B
Toluene	EPA 8260B/EPA 624	EPA 8260B
trans-1,2-Dichloroethene	EPA 8260B/EPA 624	EPA 8260B
trans-1,3-Dichloropropene	EPA 8260B/EPA 624	EPA 8260B
Trichloroethene	EPA 8260B/EPA 624	EPA 8260B
Trichlorofluoromethane	EPA 8260B/EPA 624	EPA 8260B
Vinyl chloride	EPA 8260B/EPA 624	EPA 8260B
Xylenes, total	EPA 8260B/EPA 624	EPA 8260B
Extractable Organics (Semivolatiles)		
Acenaphthene	EPA 8270C/EPA 625	EPA 8270C
Acenaphthylene	EPA 8270C/EPA 625	EPA 8270C
Aniline	EPA 8270C/EPA 625	EPA 8270C
Anthracene	EPA 8270C/EPA 625	EPA 8270C

Parameter/Analyte	Nonpotable Water	Solid Hazardous Waste
<u>Extractable Organics (Continued)</u>		
Benzoic acid	EPA 8270C/EPA 625	EPA 8270C
Benzo (a) anthracene	EPA 8270C/EPA 625	EPA 8270C
Benzo (b) fluoranthene	EPA 8270C/EPA 625	EPA 8270C
Benzo (k) fluoranthene	EPA 8270C/EPA 625	EPA 8270C
Benzo (a) pyrene	EPA 8270C/EPA 625	EPA 8270C
Bis (2-chloroisopropyl) ether	EPA 8270C/EPA 625	EPA 8270C
Bis (2-ethylhexyl) phthalate	EPA 8270C/EPA 625	EPA 8270C
Bis (2-chloroethoxy) methane	EPA 8270C/EPA 625	EPA 8270C
Butyl benzyl phthalate	EPA 8270C/EPA 625	EPA 8270C
4-Chloroaniline	EPA 8270C/EPA 625	EPA 8270C
4-Chloro-3-methylphenol	EPA 8270C/EPA 625	EPA 8270C
2-Chloronaphthalene	EPA 8270C/EPA 625	EPA 8270C
2-Chlorophenol	EPA 8270C/EPA 625	EPA 8270C
4-Chlorophenyl phenyl ether	EPA 8270C/EPA 625	EPA 8270C
Chrysene	EPA 8270C/EPA 625	EPA 8270C
2-Methylphenol (o-Cresol)	EPA 8270C/EPA 625	EPA 8270C
3-Methylphenol (m-Cresol)	EPA 8270C/EPA 625	EPA 8270C
4-Methylphenol (p-Cresol)	EPA 8270C/EPA 625	EPA 8270C
Dibenzo (a,h) anthracene	EPA 8270C/EPA 625	EPA 8270C
Dibenzofuran	EPA 8270C/EPA 625	EPA 8270C
1,2-Dichlorobenzene	EPA 8270C/EPA 625	EPA 8270C
1,3-Dichlorobenzene	EPA 8270C/EPA 625	EPA 8270C
1,4-Dichlorobenzene	EPA 8270C/EPA 625	EPA 8270C
3,3'-Dichlorobenzidine	EPA 8270C/EPA 625	EPA 8270C
2,4-Dichlorophenol	EPA 8270C/EPA 625	EPA 8270C
Diethyl phthalate	EPA 8270C/EPA 625	EPA 8270C
2,4-Dimethylphenol	EPA 8270C/EPA 625	EPA 8270C
Dimethyl phthalate	EPA 8270C/EPA 625	EPA 8270C
Di-n-butyl phthalate	EPA 8270C/EPA 625	EPA 8270C
Di-n-octyl phthalate	EPA 8270C/EPA 625	EPA 8270C
2,4-Dinitrophenol	EPA 8270C/EPA 625	EPA 8270C
2,4-Dinitrotoluene	EPA 8270C/EPA 625	EPA 8270C
2,6-Dinitrotoluene	EPA 8270C/EPA 625	EPA 8270C
1,2-Diphenylhydrazine	EPA 8270C/EPA 625	EPA 8270C
Fluoranthene	EPA 8270C/EPA 625	EPA 8270C
Fluorene	EPA 8270C/EPA 625	EPA 8270C
Hexachlorocyclopentadiene	EPA 8270C/EPA 625	EPA 8270C
Hexachloroethane	EPA 8270C/EPA 625	EPA 8270C
Indeno (1,2,3-cd) pyrene	EPA 8270C/EPA 625	EPA 8270C
Isophorone	EPA 8270C/EPA 625	EPA 8270C
2-Methyl-4,6-Dinitrophenol	EPA 8270C/EPA 625	EPA 8270C
Naphthalene	EPA 8270C/EPA 625	EPA 8270C
2-Nitroaniline	EPA 8270C/EPA 625	EPA 8270C
3-Nitroaniline	EPA 8270C/EPA 625	EPA 8270C
4-Nitroaniline	EPA 8270C/EPA 625	EPA 8270C
Nitrobenzene	EPA 8270C/EPA 625	EPA 8270C

<u>Parameter/Analyte</u>	<u>Nonpotable Water</u>	<u>Solid Hazardous Waste</u>
<u>Extractable Organics (Continued)</u>		
2-Nitrophenol	EPA 8270C/EPA 625	EPA 8270C
4-Nitrophenol	EPA 8270C/EPA 625	EPA 8270C
N-Nitrosodi-n-propylamine	EPA 8270C/EPA 625	EPA 8270C
N-Nitrosodiphenylamine	EPA 8270C/EPA 625	EPA 8270C
Pentachlorophenol	EPA 8270C/EPA 625	EPA 8270C
Phenanthrene	EPA 8270C/EPA 625	EPA 8270C
Phenol	EPA 8270C/EPA 625	EPA 8270C
1,2,4,5-Tetrachlorobenzene	EPA 8270C/EPA 625	EPA 8270C
2,3,4,5-Tetrachlorophenol	EPA 8270C/EPA 625	EPA 8270C
1,2,4-Trichlorobenzene	EPA 8270C/EPA 625	EPA 8270C
2,4,5-Trichlorophenol	EPA 8270C/EPA 625	EPA 8270C
2,4,6-Trichlorophenol	EPA 8270C/EPA 625	EPA 8270C
<u>Pesticides/Herbicides/PCBs</u>		
Aldrin	EPA 8081B/EPA 608	EPA 8081B
alpha-BHC	EPA 8081B/EPA 608	EPA 8081B
beta-BHC	EPA 8081B/EPA 608	EPA 8081B
delta-BHC	EPA 8081B/EPA 608	EPA 8081B
gamma-BHC	EPA 8081B/EPA 608	EPA 8081B
4,4'-DDD	EPA 8081B/EPA 608	EPA 8081B
4,4'-DDE	EPA 8081B/EPA 608	EPA 8081B
4,4',-DDT	EPA 8081B/EPA 608	EPA 8081B
Dieldrin	EPA 8081B/EPA 608	EPA 8081B
Endosulfan I	EPA 8081B/EPA 608	EPA 8081B
Endosulfan II	EPA 8081B/EPA 608	EPA 8081B
Endosulfan sulfate	EPA 8081B/EPA 608	EPA 8081B
Endrin	EPA 8081B/EPA 608	EPA 8081B
Endrin aldehyde	EPA 8081B/EPA 608	EPA 8081B
Endrin ketone	EPA 8081B/EPA 608	EPA 8081B
Heptachlor	EPA 8081B/EPA 608	EPA 8081B
Heptachlor epoxide	EPA 8081B/EPA 608	EPA 8081B
Methoxychlor	EPA 8081B/EPA 608	EPA 8081B
gamma-Chlordane	EPA 8081B/EPA 608	EPA 8081B
alpha-Chlordane	EPA 8081B/EPA 608	EPA 8081B
PCB-1016 (Aroclor)	EPA 8082/EPA 608	EPA 8082
PCB-1221	EPA 8082/EPA 608	EPA 8082
PCB-1232	EPA 8082/EPA 608	EPA 8082
PCB-1242	EPA 8082/EPA 608	EPA 8082
PCB-1248	EPA 8082/EPA 608	EPA 8082
PCB-1254	EPA 8082/EPA 608	EPA 8082
PCB-1260	EPA 8082/EPA 608	EPA 8082
<u>Hazardous Waste Characteristics</u>		
Explosives	----	EPA 8330A/B
Toxicity Characteristic Leaching Procedure	----	EPA 1311

<u>Parameter/Analyte</u>	<u>Nonpotable Water</u>	<u>Solid Hazardous Waste</u>
<u>Preparation Methods</u>		
8260B/624	-----	1311- Zero Headspace/5030B
8270C	-----	1311/3510C
8270C	3510C	3550B
8260B	5030B	5035
6010B/200.7	-----	1311/3010A
6010B/200.7	3010A	3050B



STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY
NELAP - RECOGNIZED
ENVIRONMENTAL LABORATORY ACCREDITATION



is hereby granted to

ARDL, INC.
400 AVIATION DRIVE, P.O. BOX 1566
MT. VERNON, IL 62864
NELAP ACCREDITED
ACCREDITATION NUMBER #100308



According to the Illinois Administrative Code, Title 35, Subtitle A, Chapter II, Part 186, ACCREDITATION OF LABORATORIES FOR DRINKING WATER, WASTEWATER AND HAZARDOUS WASTES ANALYSIS, the State of Illinois formally recognizes that this laboratory is technically competent to perform the environmental analyses listed on the scope of accreditation detailed below.

The laboratory agrees to perform all analyses listed on this scope of accreditation according to the Part 186 requirements and acknowledges that continued accreditation is dependent on successful ongoing compliance with the applicable requirements of Part 186. Please contact the Illinois EPA Environmental Laboratory Accreditation Program (IL ELAP) to verify the laboratory's scope of accreditation and accreditation status. Accreditation by the State of Illinois is not an endorsement or a guarantee of validity of the data generated by the laboratory.

Gary Germann
Manager
Environmental Laboratory Accreditation Program

Janet Cruse
Accreditation Officer
Environmental Laboratory Accreditation Program

Certificate No.: 002869
Expiration Date: 04/30/2012
Issued On: 01/25/2012

State of Illinois
Environmental Protection Agency

Certificate No.:

002869

Awards the Certificate of Approval

ARDL, Inc.
400 Aviation Drive, P.O. Box 1566
Mt. Vernon, IL 62864

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Hazardous and Solid Waste, Inorganic

1311

TCLP (Organic and Inorganic)

6010B

Aluminum	Antimony	Arsenic
Barium	Beryllium	Boron
Cadmium	Calcium	Chromium
Cobalt	Copper	Iron
Lead	Magnesium	Manganese
Nickel	Potassium	Selenium
Silver	Sodium	Strontium
Thallium	Vanadium	Zinc

7470A

Mercury

Hazardous and Solid Waste, Organic

8081A

4,4'-DDD	4,4'-DDE	4,4'-DDT
Aldrin	alpha-BHC	alpha-Chlordane
beta-BHC	delta-BHC	Dieldrin
Endosulfan I	Endosulfan II	Endosulfan sulfate
Endrin	Endrin aldehyde	Endrin ketone
gamma-BHC (Lindane)	gamma-Chlordane	Heptachlor
Heptachlor epoxide	Methoxychlor	

8082

PCB-1016	PCB-1221	PCB-1232
PCB-1242	PCB-1248	PCB-1254
PCB-1260		

8260B

1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene
1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane
1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (EDB)	1,2-Dichlorobenzene	1,2-Dichloroethane
1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene
1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane
2-Butanone (Methyl ethyl ketone, MEK)	2-Chlorotoluene	2-Hexanone
4-Bromofluorobenzene	4-Chlorotoluene	4-Methyl-2-pentanone (Methyl isobutyl ketone)

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Hazardous and Solid Waste, Organic

Benzene
Bromodichloromethane
Carbon disulfide
Chloroethane
cis-1,2-Dichloroethene
Dibromomethane
Ethylbenzene
Methyl ethyl ketone
Naphthalene
o-Xylene
sec-Butylbenzene
Tetrachloroethene
trans-1,3-Dichloropropene
Vinyl chloride

8270C

1,2,4,5-Tetrachlorobenzene
1,2-Diphenylhydrazine
2,4,5-Trichlorophenol
2,4-Dimethylphenol
2,6-Dinitrotoluene (2,6-DNT)
2-Methylnaphthalene
2-Nitrophenol
4,6-Dinitro-2-methylphenol
4-Chloroaniline
4-Nitroaniline
Acenaphthylene
Benzidine
Benzo(b)fluoranthene
Benzoic acid
Bis(2-chloroethyl) ether
Butyl benzyl phthalate
Chrysene
Dichlorovos
Di-n-butyl phthalate
Fluorene
Hexachlorocyclopentadiene
Isodrin
Naphthalene
N-Nitrosodi-n-propylamine
Phenanthrene
Pyridine

8330

1,3,5-Trinitrobenzene (1,3,5-TNB)
2,4-Dinitrotoluene (2,4-DNT)
4-Amino-2,6-dinitrotoluene (4-Am-DNT)
m-Nitrotoluene (3-Nitrotoluene, 3-NT)

8260B

Bromobenzene
Bromoform
Carbon tetrachloride
Chloroform
cis-1,3-Dichloropropene
Dichlorodifluoromethane
Hexachlorobutadiene
Methyl-t-butyl ether
n-Butylbenzene
p-Isopropyltoluene
Styrene
Toluene
Trichloroethene
Xylenes (Total)

1,2,4-Trichlorobenzene
1,3-Dichlorobenzene
2,4,6-Trichlorophenol
2,4-Dinitrophenol
2-Chloronaphthalene
2-Methylphenol (o-Cresol)
3,3'-Dichlorobenzidine
4-Bromophenyl phenyl ether
4-Chlorophenyl phenyl ether
4-Nitrophenol
Aniline
Benzo(a)anthracene
Benzo(g,h,i)perylene
Benzyl alcohol
Bis(2-chloroisopropyl) ether
Carbazole
Dibenz(a,h)anthracene
Diethyl phthalate
Di-n-octyl phthalate
Hexachlorobenzene
Hexachloroethane
Isophorone
Nitrobenzene
N-Nitrosodiphenylamine
Phenol

1,3-Dinitrobenzene (1,3-DNB)
2,6-Dinitrotoluene (2,6-DNT)
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)
Nitrobenzene

Acetone

Bromochloromethane
Bromomethane
Chlorobenzene
Chloromethane
Dibromofluoromethane
Dichloromethane (Methylene chloride)
Isopropylbenzene
m-Xylene
n-Propylbenzene
p-Xylene
tert-Butylbenzene
trans-1,2-Dichloroethene
Trichlorofluoromethane

1,2-Dichlorobenzene
1,4-Dichlorobenzene
2,4-Dichlorophenol
2,4-Dinitrotoluene (2,4-DNT)
2-Chlorophenol
2-Nitroaniline
3-Nitroaniline
4-Chloro-3-methylphenol
4-Methylphenol (p-Cresol)
Acenaphthene
Anthracene
Benzo(a)pyrene
Benzo(k)fluoranthene
Bis(2-chloroethoxy) methane
Bis(2-ethylhexyl) phthalate
Chlorfenvinphos
Dibenzofuran
Dimethyl phthalate
Fluoranthene
Hexachlorobutadiene
Indeno(1,2,3-cd) pyrene
m-Cresol (3-Methylphenol)
N-Nitrosodimethylamine
Pentachlorophenol
Pyrene

2,4,6-Trinitrotoluene (2,4,6-TNT)
2-Amino-4,6-dinitrotoluene (2-Am-DNT)
Methyl-2,4,6-trinitrophenylnitramine (Tetryl)
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocin

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Mt. Vernon, IL 62864

Hazardous and Solid Waste, Organic	8330	o-Nitrotoluene (2-Nitrotoluene, 2-NT)
p-Nitrotoluene (4-Nitrotoluene, 4-NT)		
Wastewater, Inorganic		
USEPA200.7		
Aluminum	Antimony	Arsenic
Barium	Beryllium	Boron
Cadmium	Chromium	Cobalt
Copper	Iron	Lead
Manganese	Nickel	Selenium
Silver	Sodium	Thallium
Vanadium	Zinc	
USEPA300.0R2.1		
Chloride	Fluoride	Nitrate
Nitrate-Nitrite (sum)	Sulfate	
Wastewater, Organic		
USEPA608		
4,4'-DDD	4,4'-DDE	4,4'-DDT
Aldrin	alpha-BHC	beta-BHC
delta-BHC	Dieldrin	Endosulfan I
Endosulfan II	Endosulfan sulfate	Endrin
Endrin aldehyde	gamma-BHC (Lindane)	Heptachlor
Heptachlor epoxide	Methoxychlor	
USEPA624		
1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane
1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichlorobenzene
1,2-Dichloroethane	1,2-Dichloropropane	1,3-Dichlorobenzene
1,4-Dichlorobenzene	Benzene	Bromodichloromethane
Bromoform	Bromomethane	Carbon tetrachloride
Chlorobenzene	Chloroethane	Chloroform
Chloromethane	cis-1,3-Dichloropropene	Dichloromethane (Methylene chloride)
Ethylbenzene	Methyl tert-butyl ether (MTBE)	Tetrachloroethene
Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene
Trichloroethene	Trichlorofluoromethane	Vinyl chloride
Xylenes (total)		
USEPA625		
1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene
1,4-Dichlorobenzene	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol
2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol
2,4-Dinitrotoluene (2,4-DNT)	2,6-Dinitrotoluene (2,6-DNT)	2-Chloronaphthalene
2-Chlorophenol	2-Methyl-4,6-dinitrophenol	2-Nitrophenol
3,3'-Dichlorobenzidine	4-Bromophenyl phenyl ether	4-Chloro-3-methylphenol
4-Chlorophenyl phenyl ether	4-Nitrophenol	Acenaphthene
Acenaphthylene	Anthracene	Benzidine
Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene
Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Bis(2-chloroethoxy) methane

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Mt. Vernon, IL 62864

Wastewater, Organic

Bis(2-ethylhexyl) phthalate
Diethyl phthalate
Di-n-octyl phthalate
Hexachlorobenzene
Hexachloroethane
Naphthalene
N-Nitrosodi-n-propylamine
Phenanthrene

USEPA625

Chrysene
Dimethyl phthalate
Fluoranthene
Hexachlorobutadiene
Indeno(1,2,3-cd) pyrene
Nitrobenzene
N-Nitrosodiphenylamine
Phenol

Bis(2-chloroethyl) ether

Dibenz(a,h)anthracene
Di-n-butyl phthalate
Fluorene
Hexachlorocyclopentadiene
Isophorone
N-Nitrosodimethylamine
Pentachlorophenol
Pyrene



**STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY
NELAP - RECOGNIZED**



ENVIRONMENTAL LABORATORY ACCREDITATION

is hereby granted to

**TEKLAB, INCORPORATED
5445 HORSESHOE LAKE RD.
COLLINSVILLE, IL 62234
NELAP ACCREDITED
ACCREDITATION NUMBER #100226**



According to the Illinois Administrative Code, Title 35, Subtitle A, Chapter II, Part 186, ACCREDITATION OF LABORATORIES FOR DRINKING WATER, WASTEWATER AND HAZARDOUS WASTES ANALYSIS, the State of Illinois formally recognizes that this laboratory is technically competent to perform the environmental analyses listed on the scope of accreditation detailed below.

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Celeste M. Crowley
Acting Manager
Environmental Laboratory Accreditation Program

John South
Accreditation Officer
Environmental Laboratory Accreditation Program

Certificate No.: 003000
Expiration Date: 01/31/2013
Issued On: 10/18/2012

State of Illinois
Environmental Protection Agency
Awards the Certificate of Approval

Certificate No.: 003000

Teklab, Incorporated
5445 Horseshoe Lake Rd.
Collinsville, IL 62234

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Drinking Water, Inorganic

SM2120B, 18Ed

Color

SM2130B, 18Ed

Turbidity

SM2320B, 18Ed

Alkalinity

SM2340B, 18Ed

Hardness

SM2340C, 18Ed

Hardness

SM2510B, 18Ed

Conductivity

SM2540C, 18Ed

Total dissolved solids

SM2550, 18Ed

Temperature

SM3112B, 18Ed

Mercury

SM3113B, 18Ed

Antimony

Arsenic

Lead

Selenium

SM4500Cl-G, 18Ed

Chlorine (free,combined,total)

SM4500CN-CE, 18Ed

Cyanide

SM4500F-C, 18Ed

Fluoride

SM4500H-B, 18Ed

Hydrogen ion (pH)

SM4500NO2-B, 18Ed

Nitrite

SM4500P-E, 18Ed

Orthophosphate

SM4500Si-E, 18Ed

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Certificate No.: 003000

Teklab, Incorporated
 5445 Horseshoe Lake Rd.
 Collinsville, IL 62234

Drinking Water, Inorganic

SM4500Si-E, 18Ed

Silica

SM5310C, 19Ed

Dissolved Organic Carbon

Total Organic Carbon (TOC)

SM5540C, 18Ed

Foaming agent

USEPA180.1

Turbidity

USEPA200.7R4.4

Aluminum

Barium

Beryllium

Cadmium

Calcium

Chromium

Copper

Iron

Magnesium

Manganese

Nickel

Silver

Sodium

Zinc

USEPA200.9R2.2

Thallium

USEPA245.1R3.0

Mercury

USEPA353.2R2.0

Nitrate

Nitrite

Hazardous and Solid Waste, Inorganic

1010A

Ignitability

1020B

Ignitability

1311

TCLP (Organic and Inorganic)

1312

Synthetic Precipitation Leaching Procedure

6010B

Aluminum

Antimony

Arsenic

Barium

Beryllium

Boron

Cadmium

Calcium

Chromium

Cobalt

Copper

Iron

Lead

Magnesium

Manganese

Molybdenum

Nickel

Potassium

Selenium

Silver

Sodium

Strontium

Thallium

Tin

Vanadium

Zinc

7010

Antimony

Lead

Selenium

Thallium

7196A

Chromium VI

State of Illinois
Environmental Protection Agency
Awards the Certificate of Approval

Certificate No.: 003000

Teklab, Incorporated
5445 Horseshoe Lake Rd.
Collinsville, IL 62234

Hazardous and Solid Waste, Inorganic

7470A

Mercury

7471B

Mercury

9012A

Cyanide

9014

Cyanide

9020B

TOX - Total Organic Halides

9023

EOX-Extractable Organic Halides

9034

Sulfides

9036

Sulfate

9038

Sulfate

9040B

Hydrogen Ion (pH)

9045C

Hydrogen Ion (pH)

9050A

Specific conductance

9060A

Total Organic Carbon (TOC)

9065

Phenolics

9066

Phenolics

9071B

Oil and Grease Extractable

9095A

Paint Filter

9214

Fluoride

9251

Chloride

Hazardous and Solid Waste, Organic

8015B

1,4-Dioxane

2-Methyl-1-propanol (Isobutyl alcohol)

1-Butanol (n-Butyl alcohol)

2-Propanol (Isopropyl alcohol)

1-Propanol

Diesel range organics (DRO)

State of Illinois
Environmental Protection Agency

Certificate No.: 003000

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Teklab, Incorporated
5445 Horseshoe Lake Rd.
Collinsville, IL 62234

Hazardous and Solid Waste, Organic	8015B	Ethanol
Ethylene glycol	Methanol	t-Butyl alcohol
8015C		
1-Propanol (n-Propyl alcohol)	Diesel range organics (DRO)	Ethanol
Isopropyl alcohol (2-Propanol)	Methanol	t-Butyl alcohol (TBA)
8081B		
4,4'-DDD	4,4'-DDE	4,4'-DDT
Alachlor	Aldrin	alpha-BHC
alpha-Chlordane	beta-BHC	Chlordane - not otherwise specified
delta-BHC	Dieldrin	Endosulfan I
Endosulfan II	Endosulfan sulfate	Endrin
Endrin aldehyde	Endrin ketone	gamma-BHC (Lindane)
gamma-Chlordane	Heptachlor	Heptachlor epoxide
Methoxychlor	Toxaphene	
8082		
PCB-1016	PCB-1221	PCB-1232
PCB-1242	PCB-1248	PCB-1254
PCB-1260		
8151A		
2,4,5-T	2,4,5-TP (Silvex)	2,4-D
2,4-DB	3,5-Dichlorobenzoic acid	4-Nitrophenol
Acifluorfen	Bentazon	Chloramben
Dalapon	DCPA diacid	Dicamba
Dichloroprop	Dinoseb	MCPA
MCPP	Pentachlorophenol	Picloram
8260B		
1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene
1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane
1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (EDB)	1,2-Dichlorobenzene	1,2-Dichloroethane
1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene
1,3-Dichloropropane	1,4-Dichlorobenzene	1-Chlorobutane
2,2-Dichloropropane	2-Butanone (Methyl ethyl ketone, MEK)	2-Chloro-1,3-butadiene (Chloroprene)
2-Chloroethyl vinyl ether	2-Chlorotoluene	2-Hexanone
2-Nitropropane	4-Chlorotoluene	4-Methyl-2-pentanone (Methyl isobutyl ketone)
Acetone	Acetonitrile	Acrolein (Propenal)
Acrylonitrile	Allyl chloride	Benzene
Bromobenzene	Bromochloromethane	Bromodichloromethane
Bromoform	Bromomethane	Carbon disulfide
Carbon tetrachloride	Chlorobenzene	Chlorodibromomethane (Dibromochloromethane)
Chloroethane	Chloroform	Chloromethane
Chloroprene	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene
cis-1,4-Dichloro-2-butene	Dibromomethane	Dichlorodifluoromethane
Dichloromethane (Methylene chloride)	Diethyl ether	Ethyl acetate
Ethyl ether	Ethyl methacrylate	Ethylbenzene

State of Illinois
Environmental Protection Agency
Awards the Certificate of Approval

Certificate No.: 003000

Teklab, Incorporated
5445 Horseshoe Lake Rd.
Collinsville, IL 62234

Hazardous and Solid Waste, Organic

Hexachloroethane
Methacrylonitrile
Methyl iodide (Iodmethane)
Methyl-t-butyl ether
n-Butylbenzene
o-Xylene
Propionitrile (Ethyl cyanide)
Styrene
Tetrachloroethene
trans-1,2-Dichloroethene
Trichloroethene
Vinyl acetate
Xylenes (Total)

8270C

1,2,4,5-Tetrachlorobenzene
1,2-Diphenylhydrazine
1,4-Dioxane
2,4,5-Trichlorophenol
2,4-Dimethylphenol
2,6-Dinitrotoluene (2,6-DNT)
2-Methylnaphthalene
2-Nitrophenol
3-Methylcholanthrene
4-Aminobiphenyl
4-Chloroaniline
4-Nitrophenol
Acenaphthene
Aniline
Benzo(a)anthracene
Benzo(g,h,i)perylene
Benzyl alcohol
Bis(2-chloroisopropyl) ether
Carbazole
Chrysene
Dibenzofuran
Dimethyl phthalate
Diphenylamine
Fluoranthene
Hexachlorobutadiene
Hexachloropropene
Isophorone
m-Dinitrobenzene
Naphthalene
N-Nitrosodimethylamine
N-Nitrosodiphenylamine
N-Nitrosopyrrolidine

8260B

Isopropyl ether
Methyl acrylate
Methyl isobutyl ketone
m-Xylene
Nitrobenzene
Pentachloroethane
p-Xylene
t-Butyl alcohol
Tetrahydrofuran
trans-1,3-Dichloropropene
Trichlorofluoromethane
Vinyl chloride

1,2,4-Trichlorobenzene
1,3-Dichlorobenzene
1,4-Naphthoquinone
2,4,6-Trichlorophenol
2,4-Dinitrophenol
2-Chloronaphthalene
2-Naphthylamine
3,3'-Dichlorobenzidine
3-Nitroaniline
4-Bromophenyl phenyl ether
4-Chlorophenyl phenyl ether
5-Nitro-o-toluidine
Acenaphthylene
Anthracene
Benzo(a)pyrene
Benzo(k)fluoranthene
Bis(2-chloroethoxy) methane
Bis(2-ethylhexyl) phthalate
Carbofuran (Furaden)
Diallate
Diethyl phthalate
Di-n-butyl phthalate
Ethyl methanesulfonate
Fluorene
Hexachlorocyclopentadiene
Indeno(1,2,3-cd) pyrene
Isosafrole
Methapyrilene
Nitrobenzene
N-Nitrosodi-n-butylamine (N-Nitrosodibutylamin)
N-Nitrosomethylethylamine
O,O,O-Triethyl phosphorothioate

Hexachlorobutadiene

Isopropylbenzene
Methyl ethyl ketone
Methyl methacrylate
Naphthalene
n-Propylbenzene
p-Isopropyltoluene
sec-Butylbenzene
tert-Butylbenzene
Toluene
trans-1,4-Dichloro-2-butene
Trichlorotrifluoroethane
Vinylidene chloride

1,2-Dichlorobenzene
1,4-Dichlorobenzene
1-Naphthylamine
2,4-Dichlorophenol
2,4-Dinitrotoluene (2,4-DNT)
2-Chlorophenol
2-Nitroaniline
3,3'-Dimethylbenzidine
4,6-Dinitro-2-methylphenol
4-Chloro-3-methylphenol
4-Nitroaniline
7,12-Dimethylbenz(a)anthracene
Acetophenone
Benzidine
Benzo(b)fluoranthene
Benzoic acid
Bis(2-chloroethyl) ether
Butyl benzyl phthalate
Chlorobenzilate
Dibenz(a,h)anthracene
Dimethoate
Di-n-octyl phthalate
Famphur
Hexachlorobenzene
Hexachloroethane
Isodrin
m-Cresol (3-Methylphenol)
Methyl methanesulfonate
N-Nitrosodiethylamine
N-Nitrosodi-n-propylamine
N-Nitrosopiperidine
o-Cresol (2-Methylphenol)

State of Illinois
Environmental Protection Agency

Certificate No.:

003000

Awards the Certificate of Approval

Teklab, Incorporated
5445 Horseshoe Lake Rd.
Collinsville, IL 62234

Hazardous and Solid Waste, Organic

Parathion
Pentachlorobenzene
Phenanthrene
Pyrene

8270C Mod_Farm Chemicals

Acetochlor
Butylate
Metolachlor
Simazine

8270C

p-Cresol (4-Methylphenol)
Pentachloronitrobenzene
Phenol
Pyridine

Alachlor
Cyanazine
Metribuzin
Trifluralin

o-Toluidine

p-Dimethylaminoazobenzene
Pentachlorophenol
Pronamide
Safrole

Atrazine

EPTC
Pendimethalin

Wastewater, Inorganic

SM2120B,2001

Color

SM2130B,2001

Turbidity

SM2310B,1997

Acidity

SM2320B,1997

Alkalinity

SM2340B,1997

Hardness

SM2340C,1997

Hardness

SM2510B,1997

Specific conductance

SM2540B,1997

Residue (Total)

SM2540C,1997

Residue (TDS)

SM2540D,1997

Residue (TSS)

SM2540F,1997

Residue (Settable solids)

SM2550B,2000

Temperature

SM3112B,2009

Mercury

SM3113B,2004

Antimony

Selenium

SM3120B,1999

Aluminum

Barium

Arsenic

Thallium

Antimony

Beryllium

Lead

Arsenic

Boron

State of Illinois
Environmental Protection Agency
Awards the Certificate of Approval

Certificate No.: 003000

Teklab, Incorporated
 5445 Horseshoe Lake Rd.
 Collinsville, IL 62234

Wastewater, Inorganic

Calcium
 Copper
 Magnesium
 Nickel
 Silver
 Vanadium

SM3120B, 1999

Chromium
 Iron
 Manganese
 Potassium
 Sodium
 Zinc

Cadmium

Cobalt
 Lead
 Molybdenum
 Selenium
 Thallium

SM3500Cr-B, 2009

Chromium VI

SM4500CL-C, 1997

Chloride

SM4500CL-E, 1997

Chloride

SM4500Cl-G, 2000

Chlorine, Total Residual

SM4500CN-E, 1999

Cyanide

SM4500CN-G, 1999

Cyanide, Available

SM4500F-C, 1997

Fluoride

SM4500H-B, 2000

Hydrogen ion (pH)

SM4500NH3-H, 1997

Ammonia

SM4500NO2-B, 2000

Nitrite

SM4500NO3-F, 2000

Nitrate-nitrite (as N)

SM4500O-G, 2001

Oxygen - Dissolved

SM4500P-E, 1999

Orthophosphate (as P)

Phosphorus

SM4500S-D, 2000

Sulfide

SM4500SO3-B, 2000

Sulfite

SM5210B, 2001

Biochemical Oxygen Demand (BOD)

Carbonaceous Biochemical Oxygen Demand (C

SM5220D, 1997

Chemical Oxygen Demand (COD)

SM5310C, 2000

Total organic carbon (TOC)

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Teklab, Incorporated
5445 Horseshoe Lake Rd.
Collinsville, IL 62234

Wastewater, Inorganic

SM5540C, 2000

Surfactants

USEPA120.1, 1982

Specific conductance

USEPA160.4, 1971

Residue (Volatile)

USEPA1631E

Mercury

USEPA1664A

Oil and Grease

USEPA180.1R2.0, 1993

Turbidity

USEPA200.7, 1994

Aluminum

Antimony

Arsenic

Barium

Beryllium

Boron

Cadmium

Calcium

Chromium

Cobalt

Copper

Iron

Lead

Magnesium

Manganese

Molybdenum

Nickel

Potassium

Selenium

Silver

Sodium

Thallium

Tin

Vanadium

Zinc

USEPA245.1R3.0, 1994

Mercury

USEPA335.4R1.0, 1993

Cyanide

USEPA350.1R2.0, 1993

Ammonia

USEPA351.2R2.0, 1993

Total Kjeldahl Nitrogen

USEPA353.2R2.0, 1993

Nitrate

Nitrate-nitrite (as N)

Nitrite (as N)

USEPA365.4, 1974

Phosphorus

USEPA375.2R2.0, 1993

Sulfate

USEPA410.4R2.0, 1993

Chemical Oxygen Demand (COD)

USEPA420.1, 1978

Phenolics

USEPA420.4R1.0, 1993

Phenolics

Wastewater, Organic

State of Illinois
Environmental Protection Agency
Awards the Certificate of Approval

Certificate No.: 003000

Teklab, Incorporated
5445 Horseshoe Lake Rd.
Collinsville, IL 62234

Wastewater, Organic

4,4'-DDD
Aldrin
Chlordane
Endosulfan I
Endrin
Heptachlor
PCB-1016
PCB-1242
PCB-1260

USEPA608

4,4'-DDE
alpha-BHC
delta-BHC
Endosulfan II
Endrin aldehyde
Heptachlor epoxide
PCB-1221
PCB-1248
Toxaphene

4,4'-DDT
beta-BHC
Dieldrin
Endosulfan sulfate
gamma-BHC (Lindane)
Methoxychlor
PCB-1232
PCB-1254

USEPA624

1,1,1-Trichloroethane
1,1-Dichloroethane
1,2-Dichloroethane
1,4-Dichlorobenzene
Acrolein (Propenal)
Bromodichloromethane
Carbon tetrachloride
Chloroform
Dibromochloromethane
Methyl tert-butyl ether (MTBE)
trans-1,2-Dichloroethene
Trichlorofluoromethane

1,1,2,2-Tetrachloroethane
1,1-Dichloroethene
1,2-Dichloropropane
2-Chloroethylvinyl ether
Acrylonitrile
Bromoform
Chlorobenzene
Chloromethane
Dichloromethane (Methylene chloride)
Tetrachloroethene
trans-1,3-Dichloropropene
Vinyl chloride

1,1,2-Trichloroethane
1,2-Dichlorobenzene
1,3-Dichlorobenzene
Acetonitrile
Benzene
Bromomethane
Chloroethane
cis-1,3-Dichloropropene
Ethylbenzene
Toluene
Trichloroethene
Xylenes (total)

USEPA625

1,2,4-Trichlorobenzene
1,4-Dichlorobenzene
2,4-Dichlorophenol
2,4-Dinitrotoluene (2,4-DNT)
2-Chlorophenol
3,3'-Dichlorobenzidine
4-Chlorophenyl phenyl ether
Acenaphthylene
Benzo(a)anthracene
Benzo(g,h,i)perylene
Bis(2-chloroethoxy) methane
Chrysene
Dimethyl phthalate
Fluoranthene
Hexachlorobutadiene
Indeno(1,2,3-cd) pyrene
Nitrobenzene
N-Nitrosodiphenylamine
Phenol

1,2-Dichlorobenzene
2,2-Oxybis(1-chloropropane)
2,4-Dimethylphenol
2,6-Dinitrotoluene (2,6-DNT)
2-Methyl-4,6-dinitrophenol
4-Bromophenyl phenyl ether
4-Nitrophenol
Anthracene
Benzo(a)pyrene
Benzo(k)fluoranthene
Bis(2-chloroethyl) ether
Dibenz(a,h)anthracene
Di-n-butyl phthalate
Fluorene
Hexachlorocyclopentadiene
Isophorone
N-Nitrosodimethylamine
Pentachlorophenol
Pyrene

1,3-Dichlorobenzene
2,4,6-Trichlorophenol
2,4-Dinitrophenol
2-Chloronaphthalene
2-Nitrophenol
4-Chloro-3-methylphenol
Acenaphthene
Benzidine
Benzo(b)fluoranthene
Benzyl butyl phthalate
Bis(2-ethylhexyl) phthalate
Diethyl phthalate
Di-n-octyl phthalate
Hexachlorobenzene
Hexachloroethane
Naphthalene
N-Nitrosodi-n-propylamine
Phenanthrene



Ash Management Services, LLC
12601 Plantside Drive
Louisville, Kentucky 40299
Phone: 502-245-1353

Hutsonville APD Closure

HUT-APD-SUB-027-02

HDPE Welding Certification Revised

02640-1.4.A Qualifications Welding Supervisor [S. Burch and J. Barrett]

Submittal Information

Submittal No.	Date	Contact	Phone no.
SUB-027-02	2012-07-19	Paul Zinsious AMS	502-640-2918

SHOP DRAWING / SUBMITTAL REVIEW

Shop drawing/submittal review is for design conformity and general conformance with the design concept of the project as given in the contract documents. Subcontractor is responsible for full compliance with contract documents, confirming and correcting all quantities, correlating dimensions at project work site for tolerance, clearance, fabrication process, and techniques of construction. Subcontractor is responsible for coordination of his work with that of all other trades, and performance of the work in a safe and satisfactory manner.

☒ Reviewed.
☐ Reviewed with corrections.
☐ Revise and resubmit.
☐ Rejected. See Remarks.

2012-07-19

Date

By

AMS, LLC



Freitag-Weinhardt, Inc.

5900 North Thirteenth Street
Terre Haute, IN 47805

TELEPHONE (812)-466-9861
FAX (812)-466-7583

LETTER OF TRANSMITTAL

DATE 7-2-12	JOB NO- 3613
RE: Proof of 10,000' of HDPE Piping Experience	

TO:
Ash Management Services, LLC.
12601 Plantside Drive
Louisville, Kentucky 40299

ATTENTION:

Paul H. Zinsious, PMP
Project Controls Manager

WE ARE SENDING YOU:

- | | | |
|---|-------------------------------------|--|
| <input type="checkbox"/> Bid Form | <input type="checkbox"/> Cut Sheets | <input type="checkbox"/> Specifications |
| <input type="checkbox"/> Drawings | <input type="checkbox"/> Plans | <input type="checkbox"/> Contract Agreement |
| <input type="checkbox"/> Copy of letter | <input type="checkbox"/> Samples | <input checked="" type="checkbox"/> Submittal Data |

COPIES	DATE	DESCRIPTION	RETURN
1	7-2-12	Bonder Performance Records (Jarred Barrett & Scott Burch)	
1	7-2-12	Reference	
1	7-2-12	Pipe Product Invoices	

IF ITEMS RECEIVED ARE NOT AS LISTED ABOVE KINDLY NOTIFY US AT ONCE.
THESE ARE TRANSMITTED as checked below

- | | | |
|--|---|---|
| <input checked="" type="checkbox"/> For approval | <input type="checkbox"/> Approval as resubmitted | <input type="checkbox"/> Resubmit ___ copies for approval |
| <input type="checkbox"/> For your use | <input type="checkbox"/> Approved as noted | <input type="checkbox"/> Submit _____ copies for distribution |
| <input type="checkbox"/> As requested | <input type="checkbox"/> Returned for corrections | <input type="checkbox"/> Return 1 signed contract |
| <input type="checkbox"/> For review and comment | <input type="checkbox"/> For proposal due | <input type="checkbox"/> For Quotation due on |

REQUESTED RETURN DATE: July 9, 2012

REMARKS:

SIGNED: _____

Jessica M. Jackson

CC:

- ☒ File- BonderPerformanceRecord.pdf
- ☒ File- Reference.pdf
- ☒ File - PipeProductInvoices.pdf
- ☐ File -
- ☐ File -
- ☐ File -

BONDER PERFORMANCE QUALIFICATION RECORD (BPQR) H.D.P.E. Butt Fusion TEST RESULTS

BPQR No. HDPE-1 PQR No. HDPE-1 BPS No. HDPE-1 Date 11/9/11
 Bonderer's Name JARRED BARRETT Test Joint Diameter 4"
STAMP# 4424

Guided Bend Test (If Applicable)

Specimen No.	Type	Diameter	Remarks	Pass	Fail
1. <u>Root BEND</u>	<u>DR11</u>	<u>4"</u>	<u>STRAP BENT OVER ROOT UNTIL END TOUCH AND EXAMINED.</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. <u>FACE BEND</u>	<u>DR11</u>	<u>4"</u>	<u>STRAP BENT OVER FACE UNTIL ENDS TOUCH AND EXAMINED</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

VISUAL TEST: 4" COUPON WELD EXAMINED ID/OD

Specimen No.	Joint No.	Diameter	Remarks	Pass	Fail
1. <u>Root BEND</u>	<u>DR11</u>	<u>4"</u>	<u>ACCEPTABLE PROFILE</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. <u>FACE BEND</u>	<u>DR11</u>	<u>4"</u>	<u>ACCEPTABLE PROFILE</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

HYDROSTATIC TEST 3 TIMES MAWP (If Applicable)

Joint No.	Diameter	MAWP	Test PSI	Pass	Fail
1. <u>N/A</u>				<input type="checkbox"/>	<input type="checkbox"/>

We certify that the information in this record is correct and that the test bonded joint(s) were prepared, bonded, and tested in accordance with the requirements of Freitag-Weinhardt, FW-HDPE-1 Welding Procedure and Qualification Specification.

Date 11/9/11 Approved By Charles Wildt
 Title QUALITY MANAGER
 Company: Freitag Weinhardt,

FERGUSON®
Industrial Plastics Division
a WOLSELEY company

PER THE HEAT FUSION JOINING PROCEDURES SET FORTH IN
PERFORMANCE PIPE'S HEAT FUSION JOINING PROCEDURES AND QUALIFICATION GUIDE PP 750
FOR OPERATOR QUALIFICATION IN THE HEAT FUSION JOINING OF POLYETHYLENE PIPE AND FITTINGS

JARRED BARRETT of FREITAG - WEINHARDT, INC.


HAS SUCCESSFULLY COMPLETED THE FERGUSON INDUSTRIAL PLASTICS' POLYETHYLENE HEAT FUSION
JOINING AND QUALIFICATION CLASS
FOR THE PROCESSES OF

MEDIUM DIAMETER HYDRAULIC BUTT FUSION

Per the Heat Fusion Joining procedures presented in Performance Pipe's Heat Fusion Joining Procedures and Qualification Guide PP 750 and utilizing McElroy Mfg, Inc.'s fusion equipment and DataLogger

LARGE DIAMETER HYDRAULIC BUTT FUSION

Per the Heat Fusion Joining procedures presented in Performance Pipe's Heat Fusion Joining Procedures and Qualification Guide PP 750 and utilizing McElroy Mfg, Inc.'s fusion equipment and DataLogger


Bill Breckenridge, Manager of Training and Developing
Ferguson Industrial Plastics
Ferguson, a Wolseley company

June 5, 2009

An individual's qualification will remain valid for a period of one year from the date of course completion, at which time a retest will be required.
A proof of completion is not a warrantee of workmanship or a guarantee of pipeline integrity for any work completed by the above named individual.

BONDER PERFORMANCE QUALIFICATION RECORD

(BPQR) H.D.P.E. Butt Fusion

TEST RESULTS

BPQR No. HDPE-1 PQR No. HDPE-1 BPS No. HDPE-1 Date 11/28/11
 Bonderer's Name Scott Burch (^{STAMP#} 9326) Test Joint Diameter 14"

Guided Bend Test (If Applicable)

Specimen No.	Type	Diameter	Remarks	Pass	Fail
1. <u>Root Bend</u>	<u>DR11</u>	<u>14"</u>	<u>Bent over Root</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. <u>Face Bend</u>	<u>DR11</u>	<u>14"</u>	<u>Bent over Face</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

VISUAL TEST:

Specimen No.	Joint No.	Diameter	Remarks	Pass	Fail
1. <u>Root Bend</u>	<u>DR11</u>	<u>14"</u>	<u>Acceptable profile</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. <u>Face Bend</u>	<u>DR11</u>	<u>14"</u>	<u>Acceptable profile</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

HYDROSTATIC TEST 3 TIMES MAWP (If Applicable)

Joint No.	Diameter	MAWP	Test PSI	Pass	Fail
1. _____	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>

We certify that the information in this record is correct and that the test bonded joint(s) were prepared, bonded, and tested in accordance with the requirements of Freitag-Weinhardt, FW-HDPE-1 Welding Procedure and Qualification Specification.

Date 11/28/2011

Approved By Charles Mille

Title Quality Manager

Company: Freitag-Weinhardt, INC.

Reference for

**SCOTT BURCH
JARED BARRETT**

10,000'+ OF HDPE PIPE INSTALLATION

Will Kaufman

Project Coordinator

Hoosier Energy

812.875.3048

PIPE PRODUCTS

A FERGUSON ENTERPRISE

A FERGUSON ENTERPRISE
5420 WEST 84TH ST
INDIANAPOLIS, IN 46268-1519

RECEIVED

NOV 16 2011

Please contact with Questions:
317-872-8876

FREITAG-WEINHARDT

00008332 01 MB 0.390 01 TR 036 FRIDCA01 000000
FREITAG WEINHARDT INC
HOOSIER ENERGY
FREITAG WEINHARDT INC
5900 NORTH 13TH STREET
TERRE HAUTE, IN 47805

INVOICE NUMBER	CUSTOMER	PAGE
2887874	128523	1

PLEASE REFER TO INVOICE NUMBER WHEN
MAKING PAYMENT AND REMIT TO:

PIPE PRODUCTS #1480
A FERGUSON ENTERPRISE
PO BOX 644054
PITTSBURGH, PA 15264-4054

SHIP TO

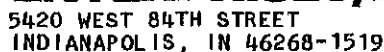
FREITAG WEINHARDT
C/O HOOSIER ENERGY MEROM STAT
5500 WEST OLD 54
SULLIVAN, IN 47882



SHIP WHSE.	SELL WHSE.	TAX CODE	CUSTOMER ORDER NUMBER	SALESMAN	JOB NAME	INVOICE DATE	BATCH ID
1483	1483	INE	3564-68730	MDR	HOOSIER ENERGY	11/10/11	106548
ORDERED	SHIPPED	ITEM NUMBER	DESCRIPTION	UNIT PRICE	QTY	AMOUNT	
3300	2100	PE111A1450	GET A 1% REBATE ON ONLINE ORDERS THRU 12/31/11! BE SURE TO ASK HOW!				
1680	1680	PE111AX40	14X50 IPS SDR11 HDPE PIPE		C		
1680	1680	PE111AU40	8X40 IPS SDR11 HDPE PIPE 160#		C		
5280	5280	PE111AP40	6X40 IPS SDR11 HDPE PIPE AWWA		C		
1400	1400	PE111AK40	4X40 IPS SDR11 HDPE PIPE AWWA		C		
1	0	PE111HB914F3	2X40 IPS SDR11 HDPE PIPE NSF		C		
6	6	PE111AB9K	14 IPS SDR11 PC128 90 ELL FAB 3PC		EA		
1	0	PE111HB414F2	2 IPS SDR11 HDPE BF 90 ELL MLD		EA		
3	3	PE111HB4UF3	14 IPS SDR11 PC128 45 ELL FAB 2PC		EA		
11	11	PE111AB4P	6 IPS SDR11 PC128 HDPE 45 FAB 3PC		EA		
19	19	PE111AB4K	4 IPS SDR11 HDPE BF 45 ELL MLD		EA		
3	3	PE111HBCA14F	2 IPS SDR11 HDPE BF 45 ELL MLD		EA		
3	3	PE111ABCAUX	14 IPS SDR11 HDPE CAP FAB		EA		
3	3	PE111ABCAU	8 IPS SDR11 HDPE BF CAP		EA		
2	2	PE111ABCAP	6 IPS SDR11 HDPE BF CAP MLD		EA		
1	1	PE111ABCAK	4 IPS SDR11 HDPE BF CAP		EA		
1	1	PE111HBTXPF	2 IPS SDR11 HDPE BF CAP MLD		EA		
2	2	PE111HBTXKF	8X4 IPS SDR11 PC160 TEE FAB		EA		
1	1	PE111HTUPF	8X2 IPS SDR11 PC160 TEE FAB		EA		
2	2	PE111HBTUKF	6X4 IPS SDR11 PC160 HDPE FAB TEE		EA		
8	8	PE111HBTPKF	6X2 IPS SDR11 PC160 TEE FAB		EA		
2	2	PE111ABTP	4X2 IPS SDR11 PC160 TEE FAB		EA		
9	9	PE111ABRPK	4 IPS SDR11 HDPE BF TEE MLD		EA		
16	16	P7100200CS11	4X2 A FERGUSON HDPE BF RED MLD		EA		
			2 MPT CS SDR11 TRAN COUP		EA		
INVOICE SUB-TOTAL							
FREIGHT							

3564 70000

TERMS:	NET 10TH PROX	ORIGINAL INVOICE	TOTAL DUE	92,699.07
All accounts are due and payable per the invoiced terms. All past due amounts are subject to a service charge at the maximum rate allowed by state law plus costs of collection including attorney fees if incurred. Freight terms are FOB our dock unless otherwise specified above.			WARRANTY PROVISIONS: SEE REVERSE SIDE	



**PLEASE REFER TO INVOICE NUMBER WHEN
MAKING PAYMENT AND REMIT TO:**

FEI #290
FERGUSON ENTERPRISES INC.
PO BOX 802817
CHICAGO, IL 60680-2817

00009754 01 MB 0.390 01 TR 044 FRIDCW01 000000
FREITAG WEINHARDT INC
HOOSIER ENERGY
5900 NORTH 13TH STREET
TERRE HAUTE, IN 47805

DEC 09 2011

FREITAG-WEINHARDT



**FERGUSON
ENTERPRISES, INC.**

3564 70000.
No Receiver

TERMS:	NET 10TH PROX	ORIGINAL INVOICE
All accounts are due and payable per the invoiced terms. All past due amounts are subject to a service charge at the maximum rate allowed by state law plus costs of collection including attorney fees if incurred. Freight terms are FOB our dock unless otherwise specified above.		

TOTAL DUE	2,098.69
WARRANTY PROVISIONS: SEE REVERSE SIDE: A	



5420 WEST 84TH STREET
INDIANAPOLIS, IN 46268-1519

Please contact with Questions:
317-872-8876

RECEIVED

NOV 28 2011

FREITAG WEINHARDT INC
HOOSIER ENERGY
5900 NORTH 13TH STREET
TERRE HAUTE, IN 47805

FREITAG-WEINHARDT

INVOICE NUMBER	CUSTOMER	PAGE
2911613	128523	1

PLEASE REFER TO INVOICE NUMBER WHEN
MAKING PAYMENT AND REMIT TO:

FEI #290
FERGUSON ENTERPRISES INC.
PO BOX 802817
CHICAGO, IL 60680-2817

SHIP TO

SHIP WHSE.	SELL WHSE.	TAX CODE	CUSTOMER ORDER NUMBER	SALESMAN	JOB NAME	INVOICE DATE	BATCH ID
290	290	INE	3564-68732	MDR	HOOSIER ENERGY	11/17/11	106961
ORDERED	SHIPPED	ITEM NUMBER	DESCRIPTION	UNIT PRICE	UM	AMOUNT	
640	117	PE111AP40	GET A 1% REBATE ON ONLINE ORDERS THRU 12/31/11! BE SURE TO ASK HOW! TAG PO#3564-68732 4X40 IPS SDR11 HDPE PIPE AWWA INVOICE SUB-TOTAL FREIGHT		C		
3564 700.00 NO RECEIVED NO PO							

TERMS: NET 10TH PROX
All accounts are due and payable per the invoiced terms. All past due amounts are subject to a service charge at the maximum rate allowed by state law plus costs of collection, including attorney fees if incurred. Freight terms are FOB our dock unless otherwise specified above.

ORIGINAL INVOICE

TOTAL DUE 1,256.62

WARRANTY PROVISIONS: SEE REVERSE SIDE

A