



**CONSTRUCTION QUALITY ASSURANCE REPORT
CLOSURE OF THE BOTTOM ASH POND
AND FLY ASH POND
MEREDOSIA POWER STATION
800 SOUTH WASHINGTON STREET
MEREDOSIA, MORGAN COUNTY, ILLINOIS**

Prepared for:

**AMEREN ENERGY RESOURCES
ST. LOUIS, MISSOURI**

Prepared by:

**GEOTECHNOLOGY, INC.
ST. LOUIS, MISSOURI**

Date:

JANUARY 18, 2019

Geotechnology Project No.:

J024917.04

SAFETY
QUALITY
INTEGRITY
PARTNERSHIP
OPPORTUNITY
RESPONSIVENESS



January 18, 2019

Mr. Mike Wagstaff, P.E.
Ameren Energy Resources
3700 South Lindbergh Boulevard
St. Louis, Missouri

RE: Construction Quality Assurance Report
Closure of the Bottom Ash Pond and Fly Ash Pond
Meredosia Power Station
800 South Washington Street
Meredosia, Morgan County, Illinois
Geotechnology Project Number: J024917.04

Dear Mr. Wagstaff:

Attached is the Construction Quality Assurance report for the referenced site. This report is documentation of the activities associated with the closure of the Bottom Ash Pond and the Fly Ash Pond at the Meredosia Power Station in Meredosia, Morgan County, Illinois performed through December 5, 2018. Site activities ceased on December 5, 2018 after reaching substantial completion. Final punch-list activities will be performed after the conclusion of winter weather and will be summarized in an addendum letter.

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

Very truly yours,

GEOTECHNOLOGY, INC.

Anna M. Saindon, P.E., Ph.D.
Project Manager

JYG/AMS/JAW:jyg/jsj



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1.0 PROJECT BACKGROUND

Geotechnology, Inc. prepared this Construction Quality Assurance (CQA) report for the Bottom Ash Pond and Fly Ash Pond closure at the Meredosia Power Station in Meredosia, Morgan County, Illinois. The CQA report was prepared in general accordance with the Coal Combustion Residual (CCR) surface impoundment closure guidance of 35 Illinois Administrative Code (IAC) 840.146 entitled Site-Specific Closures of Coal Combustion Waste Surface Impoundments Subpart A: Closure of Ash Pond D, Hutsonville Power Station Construction Quality Assurance Program.

The Meredosia Power Station is located in the floodplain east of the Illinois River, south of Meredosia in Morgan County, Illinois, which is located in west-central Illinois. The Meredosia Power Station ash ponds are located in the south half of Section 21 and the north half of Section 28, T.16N, R.13W. The plant generated electricity from 1948 until February 2012. A third ash pond referred to as the “Old Ash Pond” was previously closed, and will not be further discussed in this report. The Bottom Ash Pond and Fly Ash Pond were constructed of native materials. A site overview with key feature locations is provided on Figure 1.

The Bottom Ash Pond was constructed in 1972 with a design surface area of 11 acres, a height of 24 feet and a volume of approximately 90 acre-feet. The Bottom Ash Pond reportedly received low-volume wastewater, bottom ash, and storm water runoff. The site operates under NPDES Permit IL0000116 Outfall 003 for the Bottom Ash Pond.

The Fly Ash Pond was constructed in 1968. The Fly Ash Pond has a surface area of 34 acres, a height of 24 feet and a volume of approximately 500 acre-feet. The Fly Ash Pond reportedly received fly ash, low-volume wastewater, and storm water runoff. The site operates under NPDES Permit IL0000116 Outfall 004 for the Fly Ash Pond. A Fly Ash Stockpile formerly located southeast of the Fly Ash Pond was clean closed as part of closure activities.

Clean closure activities for the Bottom Ash Pond generally consisted of CCR material removal, backfill to design grade with soil fill, construction of surface water control structures, and vegetation. A berm with CCR materials was closed-in-place in order to provide access to a river dock on the site. Closure activities for the berm generally consisted of placement, grading, and compaction of bottom ash and soil fill to design grade and installation of a ClosureTurf system consisting of 40-mil high density polyethylene (HDPE) MicroSpike geomembrane, a synthetic turf geotextile, and sand infill. ArmorFill was placed in the sand infill.

Closure activities for the Fly Ash Pond included placement of CCR materials excavated from the Bottom Ash Pond and the Fly Ash Stockpile, grading and compacting the subgrade to design slopes, construction of surface water control structures, and installation of a ClosureTurf system consisting of 40-mil MicroSpike HDPE geomembrane, a synthetic turf geotextile, and sand infill. ArmorFill will be placed in the sand infill in the stormwater ditches at the perimeter of the Fly Ash Pond in the spring of 2019.



2.0 CLEAN CLOSURE ACTIVITIES

2.1 CCR Removal Activities

CCR was removed from the Bottom Ash Pond and the Fly Ash Stockpile to facilitate clean closure of these areas. The berm in the Bottom Ash Pond was excluded from clean closure activities and is discussed later in this report. CCR removal at the Bottom Ash Pond began on March 12, 2018 and concluded on May 23, 2018. CCR removal at the Fly Ash Stockpile began on June 12, 2018 and concluded on July 11, 2018. A CQA representative periodically observed the CCR removal activities to assess the extent of CCR removal. CCR removed from the Bottom Ash Pond and the Fly Ash Stockpile was placed in the Fly Ash Pond. The CQA Certifications by the CQA Officer are provided in Appendix B. After CCR removal and CQA Officer approval, the areas were brought to final grade, stormwater controls were installed, and the areas were vegetated.

2.2 Coal Pile

The Coal Pile was used to store coal for use at the power plant during operation. The excess coal stored in the Coal Pile after the power plant operation ceased was removed prior to the beginning of this project. Residual coal spoils were present in the coal yard after removal activities were performed. Approximately two feet of soil and residual coal spoils were removed from the Coal Pile and a runoff area southwest of the Coal Pile. The residual coal materials and mixed soils were placed in the Fly Ash Pond. The CQA Certifications by the CQA Officer are provided in Appendix B.

2.3 Survey of Final Grade

The finished grade of the Bottom Ash Pond, the Coal Pile, and the Fly Ash Stockpile was surveyed by a licensed surveyor for a final as-built drawing. The results of the survey are illustrated and summarized on Figure 2.

2.4 Surface Water Management

Surface water management structures in the Bottom Ash Pond, the Coal Pile, and the Fly Ash Stockpile, including ditches and outfalls, were built in accordance with the design and approved modifications thereof.

2.5 Vegetation

After the Bottom Ash Pond, the Coal Pile, and the Fly Ash Stockpile were brought to final grade, they were fertilized and seeded using synthetic mats and straw to establish vegetation.

3.0 SUBGRADE PREPARATION

Subgrade preparation at the Bottom Ash Pond Berm began on June 5, 2018 and was completed on June 29, 2018. Subgrade preparation at the Fly Ash Pond began on May 7, 2018 and was completed on August 14, 2018.



Subgrade preparation activities at the Bottom Ash Pond Berm generally consisted of placement and compaction of fill soils in approximately 12-inch lifts, performing compaction testing, and surveying the final subgrade elevations.

Subgrade preparation activities at the Fly Ash Pond generally consisted of placing CCR material excavated from the Bottom Ash Pond and the Fly Ash Stockpile, placing residual coal spoils and mixed soils from the Coal Pile, grading the CCR materials placed in the Fly Ash Pond, compacting the top 12-inches 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, irregularly-shaped protrusions) that could damage the geomembrane.

3.1 Laboratory Testing

Two soil fill bulk samples and four CCR bulk samples were collected and submitted to the Geotechnology soil laboratory for standard Proctor moisture-density relationship testing. The laboratory testing results are summarized and presented in Appendix C.

One pre-qualification sample was collected of off-site backfill soils to be used as backfill in the Bottom Ash Pond (outside the berm area) and in the Fly Ash Stockpile. Additional conformance samples were collected for every 25,000 cubic yards of backfill brought onto the site. The laboratory testing results are summarized and presented in Appendix C.

3.2 Subgrade Compaction

Moisture/density tests were performed on each 12-inch lift of soil fill placed at the Bottom Ash Pond Berm and on the upper 12 inches of the Fly Ash Pond subgrade. The moisture/density results were compared to the standard Proctor moisture-density relationship laboratory testing data to assess the compaction. The project specifications require the subgrade to be compacted to 90 percent of the maximum standard Proctor dry density. Areas of failed moisture/density tests were re-compacted and re-tested as needed. Based on the laboratory and field testing results, the subgrade was compacted in general conformance with the CQA plan. The field tests are summarized in Table 1 (Bottom Ash Pond Berm) and Table 2 (Fly Ash Pond), and field reports with results are provided in Appendix C.

In addition to moisture/density testing, the Fly Ash Pond and the Bottom Ash Pond Berm subgrade were proof rolled using an 84-inch Sakai smooth drum roller under the observation of a CQA Representative to visually confirm firmness and stability of fill prior to placement of HDPE geomembrane.

Compaction of backfill materials at the Bottom Ash Pond (outside of the berm area) was performed using an 84-inch Sakai smooth drum roller. A proof roll of each lift using the smooth drum roller was used to confirm compaction of the Bottom Ash Pond backfill materials.



3.3 Survey of Final Grade

The finished grade of the Fly Ash Pond was surveyed by a licensed surveyor prior to installation of the geomembrane. The results of the survey are illustrated and summarized on Figure 2.

4.0 HDPE GEOMEMBRANE

40-mil HDPE MicroSpike geomembrane placement at the Bottom Ash Pond Berm began on August 6, 2018 and was completed on August 16, 2018.

40-mil HDPE MicroSpike geomembrane placement at the Fly Ash Pond began on August 17, 2018 and was completed on October 30, 2018.

Site activities ceased on December 5, 2018 after reaching substantial completion. Final punch-list activities will be performed after the conclusion of winter weather and will be summarized in an addendum letter.

Final punch-list activities are not required at the Bottom Ash Pond Berm. Final punch-list activities at the Fly Ash Pond include minor repair to the HDPE geomembrane.

4.1 Prequalification Testing

The geomembrane manufacturer, Agru America, Inc., supplied an inventory list of the 40-mil HDPE MicroSpike 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 2-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 tested 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. Copies of the testing results are provided in Appendix D.

4.2 Installer Certification of Placement Surface

The geomembrane installer's inspection and acceptance of the prepared subgrade surface as suitable for the geomembrane installation is documented through Certificates of Acceptance (Appendix F). Certificates of Acceptance were provided to the CQA Officer each day for the area covered by geomembrane that day.



4.3 Seam Overlap Testing

The 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 3 inches of overlap was met for each seam. Seam overlaps were generally “shingled” in the direction of the downslope. The CQA Officer and field representatives made independent measurements of the seam overlaps for additional verification.

4.4 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 (i.e., spark testing for geomembrane boots around penetrations for pipeline supports and electric pole guy wires) approved by the CQA Officer. Vacuum testing and air pressure testing procedures are presented in Sections 4.4.1 and 4.4.2. 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).

4.4.1 Air Pressure Testing (Double Fusion Welds)

Double fusion welders were typically used to fuse two panels of geomembrane together. Air pressure testing procedures for double fusion welds follow.

The air pressure test equipment included:

- Air pump (manual or motor driven) or air compressor 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,
- Rubber hose with fittings and connections, and
- Sharp hollow needle with pressure gauge.

The air pressure test procedure was as follows:

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. An extrusion-welded repair is required at each air test penetration.

4.4.2 Vacuum Testing (Extrusion Welds)

Extrusion welds were typically used for repairs and protrusions through the geomembrane. Vacuum testing procedures for extrusion welds follow.

The vacuum test equipment included:

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

The vacuum test procedure was as follows:

1. The vacuum pump was energized and tank pressure was adjusted to approximately 10 inches of mercury.
2. A strip of geomembrane approximately 12 inches wide by 48 inches 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. A leak tight seal was verified.
6. The geomembrane was observed for at least ten 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.

4.4.3 Spark Testing (Extrusion Welds at Penetrations)

The spark test equipment included:

- An electrically conductive tape or wire placed beneath the seam prior to welding;
- A hand-held holiday spark tester; and
- A conductive wand that generates a high voltage.



The spark test procedure was as follows:

1. Note: Care should be taken if flammable gases may be present in the area of testing.
2. Place the electrically conductive tape or wire beneath the seam prior to welding.
3. A trial seam containing a con-welded segment shall be subject to a visual calibration test to ensure that such a defect will be identified under the planned machine settings and procedures (i.e., exposed wire will cause a spark to occur).
4. Upon completion of the weld, enable the spark tester and hold approximately 1 inch above the weld, moving slowly over the entire length of the weld in accordance with ASTM 6365.
5. A spark indicates a hole in the seam. If there is no spark, the weld has a passing test.
6. Mark, repair, and retest areas where sparks occur.

4.5 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 or field representatives observed the field 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, consisting of peel and shear strength testing. The destructive seam testing results (field-testing and independent testing) are presented in Appendix D.

4.5.1 Testing Location and Frequency

The CQA Officer or field representative selected the destructive test locations where seam samples were removed for testing at a minimum frequency of one sample per 500 feet of seaming. This minimum frequency is the average taken throughout the entire area of placement and does not include retests. 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).

4.5.2 Sampling Procedures

Destructive seam samples were obtained as the seaming progressed. This method was used to facilitate approval of the destructive testing results prior to covering the geomembrane with the next layer of the closure construction. The CQA Officer or field representative 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 locations of the destructive seam samples were repaired in accordance with the CQA Plan. The repairs were subsequently vacuum tested.



4.5.3 Field Testing

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

4.5.4 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: five specimens were tested for shear strength and five specimens were tested for peel adhesion. 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 Geosynthetic Research Institute (GRI) standard GRI GM19 as provided in the CQA Plan.

4.5.5 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 10 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 for testing 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).

5.0 SYNTHETIC TURF GEOTEXTILE

Synthetic turf geotextile placement at the Bottom Ash Pond Berm began on August 14, 2018 and was completed on August 16, 2018.

Synthetic turf geotextile placement at the Fly Ash Pond began on August 17, 2018 and was completed on November 22, 2018.

Site activities ceased on December 5, 2018 after reaching substantial completion. Final punch-list activities will be performed after the conclusion of winter weather and will be summarized in a Final Construction Quality Assurance Report.



Final punch-list activities are not required at the Bottom Ash Pond Berm. Final punch-list activities at the Fly Ash Pond include minor repair of synthetic turf geotextile.

5.1 Prequalification Testing

The geomembrane manufacturer, Agru America, Inc., supplied an inventory list of the synthetic turf geotextile rolls to the owner and the CQA Officer. The synthetic turf geotextile manufacturer submitted samples from the roll list to an independent geosynthetics laboratory for verification of selected manufacturer's guaranteed properties (presented in Appendix E). On each synthetic turf geotextile roll selected for sampling, a 2-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 tested rolls met the manufacturer's guaranteed properties in accordance with the specified testing frequency rate (Appendix E).

Synthetic turf geotextile prequalification testing was completed prior to delivery. Copies of the testing results are provided in Appendix E.

5.2 Field Installation Monitoring

The CQA Officer or designated representative observed the synthetic turf geotextile as it was placed and welded. The placed synthetic turf geotextile was observed for wrinkles that could fold over and, if observed, required repairs were performed in these areas. The synthetic turf geotextile welds were observed for locations where the surface synthetic turf was melted and, if observed, required repairs were performed in these areas.

6.0 SAND INFILL AND ARMORFILL

Sand infill placement at the Bottom Ash Pond Berm occurred on October 15-16, 2018. ArmorFill placement at the Bottom Ash Pond Berm occurred on October 17, 2018.

Sand infill placement at the Fly Ash Pond began on September 12, 2018 and was substantially completed on November 30, 2018.

One prequalification test and one conformance test were performed for the sand used as synthetic turf geotextile infill. The analytical testing results are provided and summarized in Appendix C.

The sand was spread and brushed into place on the synthetic turf geotextile with a thickness between 0.50 and 0.75 inch. The CQA Officer or designated representative measured the thickness of the sand using a caliper on an approximately 100-foot grid.



Site activities ceased on December 5, 2018 after reaching substantial completion. Final punch-list activities will be performed after the conclusion of winter weather and will be summarized in an addendum letter.

Final punch-list activities are not required at the Bottom Ash Pond Berm.

At the Fly Ash Pond, cold temperatures and wet weather prevented effective sand placement and brushing near the conclusion of site activities for winter weather. Final punch-list activities at the Fly Ash Pond include final brushing and thickness testing of sand on the eastern portion and the perimeter ditch of the Fly Ash Pond, as well as placement, brushing, and testing at HDPE geomembrane repair locations.

7.0 SURFACE WATER MANAGEMENT

Surface water control structures generally included ditch and outlet structures at the Fly Ash Pond perimeter, two outfalls from the site to the Illinois River, and other piping/rip-rap placements on the site. A final as-built survey was performed.

A copy of the surface water management structure survey data is provided on Figure 2. Additional information on the field observations are provided in Appendix A.

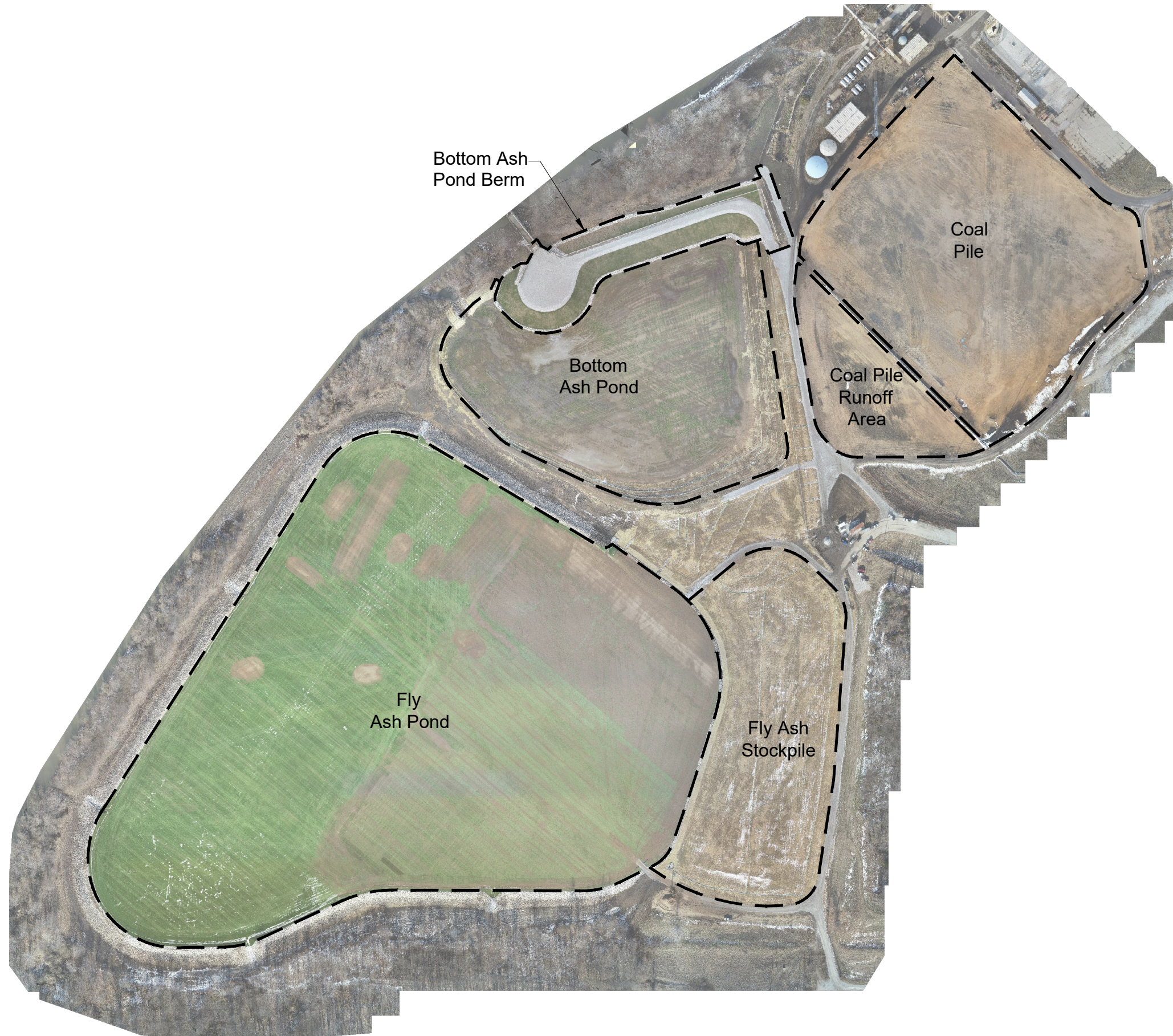


8.0 SIGNATURE

As Construction Quality Assurance (CQA) Officer for the construction of the closure of the Fly Ash Pond and the Bottom Ash Pond (from February 9, 2018 to December 5, 2018), located at the Ameren Energy Resources, Meredosia Power Station in Meredosia, Illinois, I am familiar with the plans and specifications, and the CQA Plan as prepared and approved for the project. Based on my observations and the observations of the Construction Quality Assurance Officers-In-Absentia (Steve Graham, Jessie Goodwin, Kyle Henson, and Alyssa Okorn), 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.

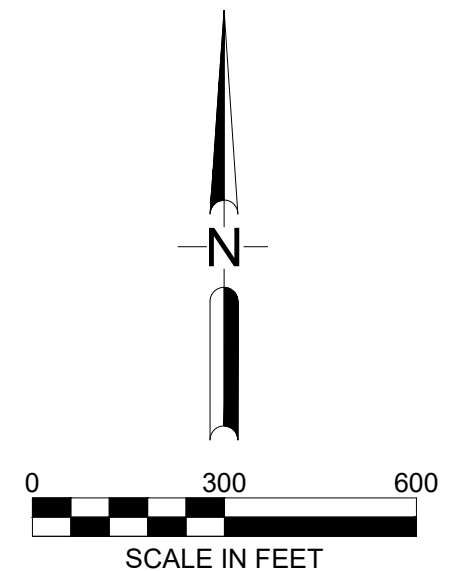
Rosanna M. Saindon, P.E., Ph.D.
Illinois Licensed Professional Engineer
Project Manager
Geotechnology, Inc.




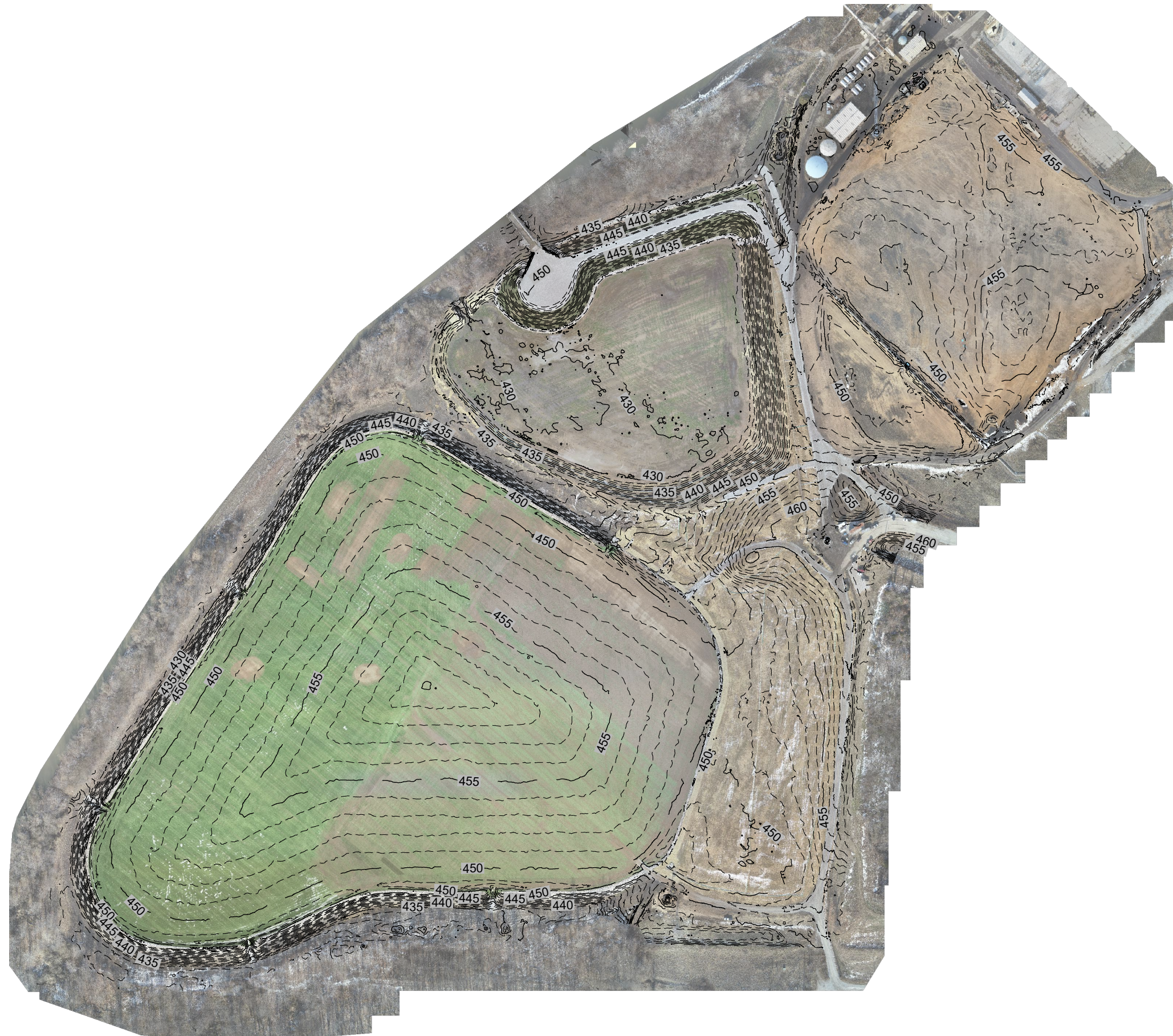


NOTES

1. Ground surface contours and aerial photograph provided by David Mason & Associates, Inc. on November 30, 2018.

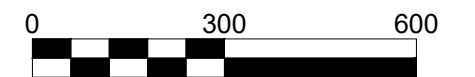
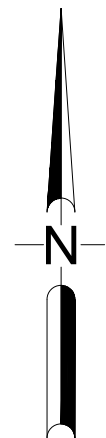


Drawn By: WAH	Ck'd By: JYG	App'vd By: AMS
Date: 1-16-19	Date: 1-17-19	Date: 1-17-19
<div> GEOTECHNOLOGY <small>FROM THE GROUND UP</small></div>		
Meredosia Power Station 800 South Washington Street Meredosia, Illinois		
SITE OVERVIEW		
Project Number J024917.04		FIGURE 1




NOTES

1. Ground surface contours and aerial photograph provided by David Mason & Associates, Inc. on November 30, 2018.
2. Elevations reference to NAVD88.
3. Contour interval is 1 foot.



SCALE IN FEET

Drawn By: WAH	Ck'd By: JYG	App'vd By: AMS
Date: 1-16-19	Date: 1-17-19	Date: 1-17-19
		
Meredosia Power Station 800 South Washington Street Meredosia, Illinois		
FINAL AS-BUILT SURVEY		
Project Number J024917.04		FIGURE 2



APPENDIX A - WEEKLY REPORTS



MEMORANDUM

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

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

DATE: April 3, 2018

SUBJECT: Summary Report for March 7, 2018 to March 30, 2018

PROJECT: Fly Ash Pond and Bottom Ash Pond Closures
Meredosia Power Station
Meredosia, Morgan County, Illinois
Geotechnology Project No. J024917.04

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

Weather

The weather was generally cloudy to clear. Temperature (^oF) lows ranged from 22 to 41^oF, and temperature highs ranged from 37 to 64^oF. Blankenship Construction Company did not move bottom ash to the Fly Ash Pond on March 27-28, 2018 due to rain on site.

Construction Activities

Geotechnology representatives conducted site visits on March 7 (pre-construction meeting), March 14, March 19, March 21, and March 28, 2018. The following summary reflects observations during Geotechnology's site visits.

Prior to Geotechnology's first site visit, Blankenship Construction Company completed clearing and grubbing of the Bottom Ash Pond, built a haul road from the Bottom Ash Pond to the Fly Ash Pond, installed a pump and HDPE pipeline to move water from the Bottom Ash Pond to the Fly Ash Pond, and began moving bottom ash from the Bottom Ash Pond to the Fly Ash Pond.

Blankenship Construction Company moved bottom ash from the Bottom Ash Pond to the Fly Ash Pond and graded fly ash in the Fly Ash Pond. Blankenship Construction Company did not move bottom ash to the Fly Ash Pond on March 27-28, 2018 due to rain on site.

Equipment and Personnel On-Site

Blankenship Construction Company had the following equipment on site: One Caterpillar excavator, one Komatsu excavator (removed from site March 21, 2018), one Komatsu long-reach excavator (delivered March 21, 2018), two Case tractors (tracked), two pull-behind side-dump trailers, one Komatsu bulldozer, one Caterpillar bulldozer, two pull-behind skimmers (delivered March 28, 2018), one Godwin water pump.

Due to partial-day site visits, Geotechnology did not record the number of personnel on-site for Blankenship Construction Company.

Meetings

Weekly progress meetings were held on Wednesdays: March 7, March 14, March 21, and March 28, 2018. Refer to the meeting minutes for additional information.

Photographs

A photograph log with selected photographs obtained while Geotechnology was on site is attached.

Materials

Bottom ash was excavated at the Bottom Ash Pond, transported, and placed and graded at the Fly Ash Pond.

Testing/Sampling

On March 14, 2018, Jessie Goodwin and Alyssa Okorn of Geotechnology collected three fly ash samples from the fly ash stockpile and two bottom ash samples from the Bottom Ash Pond for standard Proctor testing. Additional fly ash was collected for interface shear testing. One sample of backfill material from the off-site borrow source (Central Stone Company, 38084 County Highway 21, Chambersburg, IL) was collected for pre-qualification testing.

On March 19, 2018 and March 21, 2018, Jessie Goodwin of Geotechnology observed material in the Bottom Ash Pond to assess the presence of CCR.

Signature of CQA Officer



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

Attachments: Daily Reports
Photograph Log

DAILY REPORTS



Meeting Minutes

Note: Meeting minutes are provided for the March 7, 2018 meeting; however, a daily was not prepared.

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 03-07-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology, and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Mike W., Steve P., Pat B., Randy B., Mike S. (phone),
BCCO- Rob F., Garrett B.
OTHERS- Geotechnology, Anna Saindon, Jessie Goodwin

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

Below are the items discussed at the progress meeting held for the Medina Valley COGEN, LLC- Meredosia Power Station Ash Pond Closures on march 7th, 2018. Below the discussion items are action items, miscellaneous discussion/notes, and any potential attachments as necessary.

1. Safety.
 - a. Safety Minute: Good housekeeping. Good Housekeeping needs to be maintained in all offices, storage areas, parking areas, travel ways including hallways, landings, walking paths, roadways, and haul paths. Electrical cords, air hoses, and other trip hazards need to be maintained in an orderly fashion and tied overhead if possible. Be aware of trip hazards outdoors where there may not be a means to tie cables/wire overhead. Do not park in or along roadways where haul traffic is regularly occurring, find a parking area to stop in. Maintain all trash, rubbish, demo material, and other scrap materials in as neat and orderly of a fashion as possible, place all material in proper disposal bins as necessary.
2. Contractor Progress Report.
 - a. Mobilization: 6" self-contained water pump is onsite with appropriate hoses and discharge piping. Additional nurse fuel tank for the 6" pump has also arrived onsite and is in position.



- b. Dewatering ditches are under construction, BCCO plans to implement 3 additional ditches that head in an easterly direction off of the current in place main north/south ditch. The ditches currently in place have yielded significant amounts of water and BCCO is hopeful that the additional ditches will help remove some of the water from the existing ash area.
- c. Removal of fence material partially complete. This mostly includes from the oil dock headed south around the ash pond towards the construction trailer staging area.
- d. Preparation for ash hauling routes and activity is underway, including preparation of haul roads as necessary. Additionally, BCCO has begun preparation of Fly Ash Pond for receiving ash, including preparation of haul roads and dump areas. It was discussed that BCCO would need to supplement the haul road between the two ponds with good bottom ash, Ameren was acceptable of this on the condition that BCCO clean up and remove ash upon completion of the project as well as install and maintain proper BMP measures.
- e. BMP materials are onsite. Additional Oil boom is ordered and scheduled for arrival on 3/13/18. Anna Saindon informed the group that once the BMP's are fully or large majority installed, that CDG will need to come onsite and perform an inspection of said BMP items. Currently, only the wattles between the two pond areas are planned to be installed, as current flooding prohibits the installation of additional measures.
- f. Heat trace wire and conduit removal is underway, as well as the removal of light poles. The poles are already removed but the bases remain.

3. Contractor's Weekly Work Plan

- a. Update: Rob F.
 - i. Upcoming work items include additional dewatering ditches, haul road and fly ash pond preparation, demolition of additional improvements, and potentially beginning to haul ash material. Magellan has been contacted about crossing the pipeline between the two ash ponds, and they have provided written consent to cross the pipeline.

4. Schedule Forecast

- a. Two Week Look Ahead.
 - i. The two-week look ahead coordinates with the upcoming work activities.
 - ii. Submittals will continue as needed.



- iii. Magellan discussion/direction on the coal yard pipeline excavation and final product needs to be continued between Blankenship and Magellan.

5. New Item/Miscellaneous

- a. BCCO to present pricing for floating absorber pads (pigs) in the bottom ash pond ditches as well as floating oil boom in the fly ash pond area. Update: BCCO is providing additional oil boom and has material ordered for arrival early next week.
- b. Removal of coal along the paved plant road on the northern side of the coal yard was discussed. Upon further field review, it would appear that the coal yard can be graded to drain to the south, towards the current coal run off area. This area has already been discussed as needing removed, and Mike, Rob. F., and Garrett B. discussed potentially handling this work on a T&M basis moving forward.
- c. The RFI that was generated by GSI, the liner supplier and installer for the project, was submitted to Ameren by BCCO. Geotechnology stated that the RFI has been received, reviewed, and is mostly complete. Geotechnology will finish preparing the RFI response and return it to Ameren and BCCO for review.
- d. Geotechnology, in relation to the above mentioned RFI, is reviewing the current CQA plan and will follow up with an updated version. This mostly pertains to the switch from the initial proposed 50-mil Super Grip Net liner to the 40-mil textured liner.
- e. Mike Smallwood requested 1-week notice, if possible, for pond testing and release of stored water. BCCO made mention that effort to keep the pool elevation during construction as low as possible, is appreciated.
- f. A "hi level" spillway was discussed as being needed in the plant storm water pump distilling basin. Discussion prior to the meeting was had that resulted in an agreement to install an outflow pipe to account for this need.
- g. Mike W. would like to schedule a Safety Luncheon for the site, upon better weather, tentatively May timeframe.
- h. Geotechnology will be onsite once a week for ash removal inspection. BCCO may call upon Ameren and Geotechnology for additional visits if needed, with proper lead time. Geotechnology communicated that usually within 1-2 days they could have a representative onsite.
- i. Blankenship Construction mentioned the potential need for settlement plates and suggested between 4-6 plates in the bottom of the Bottom Ash Pond Excavation, prior to soil placement. This will help accurately depict the amount of backfill soils imported.



6. Action Items

a. BCCO Items:

- i. Contact Local Utility to move poles on the bottom ash roadway, BCCO to manage and pay for through utility allowance. Update- BCCO has met with the local Ameren construction engineer, he is working on a proposed cost for pole and line relocation. BCCO is also working with Scott Bros. Electric to budget cost for items related to the utility relocate that Ameren construction scope will not cover. Update: {Status- Open}
- ii. BCCO to begin submittals. Update- BCCO has submitted product submittals to Ameren for erosion products, roadway fabric, geosynthetics cap materials such as 40 mil liner and closure turf, and fence shop drawings. Update: BCCO to submit rock gradation submittals next. {Status- Open}
- iii. BCCO to provide estimated budget of cost for removal of coal fines in coal yard runoff area, upon completion of minor test pitting. Update: to be addressed on T&M basis. {Status- Closed}
- iv. Magellan Pipeline discussion is to be continued. BCCO reached out to Magellan both last week and earlier this week to check status of answers for pipeline crossing and coal yard removal items. Mike W. was to consult his team about potential options for grading coal yard in a different manner. {Status- Open}

b. Ameren Items:

- i. Ameren to verify non-asbestos material in steam line protective wrap, SITEX scheduled to arrive onsite sometime in near future to perform study. Update: Sitex coming on 3/8 or 3/9. {Status-Open}
- ii. Ameren to verify power to line that was located during excavation of settling basin is dead. Randy B. was planning to close this item after last week's meeting. Update- 03-07-18: This line has been found to be dead and was discovered to be a communication line, that had power supply from a crossover within a phone box. {Status- Closed}

The next progress meeting for this project will be held on March 14th, at 9:00 a.m.



DAILY REPORT

DATE: 3/14/2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: JYG and AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.0) Lunch

Arrive: 0830 Depart: 1345 Travel: 5.00 Total: 10.25

AM Conditions: Clear AM Temperature: 29 F

PM Conditions: Clear PM Temperature: 50 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Equipment: 2 excavators, 2 tractors (tracked) with 2 side-dump trailers each, 1 pump

Personnel: _____

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Bottom ash was moved to fly ash pond.

Deliveries: _____

Testing: Geotechnology collected 3 fly ash samples for standard Proctor, 2 bottom ash samples for standard Proctor, and 1 backfill sample for pre-qualification testing.

CONSTRUCTION SITE LOCATIONS:

Bottom ash was excavated from Bottom Ash Pond and placed in the Fly Ash Pond.

See attached location drawing for more information.

[Signature] 3/14/2018
Geotechnology, Inc. Rep. Date

[Signature] 3/16/18
Geotechnology, Inc. Engineer Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Two excavators loaded out wet ash material from the southwest end of the Bottom Ash Pond. Two tractors (tracked), each with two side-dump trailers, hauled bottom ash material to the Fly Ash Pond.

Blankenship held the weekly coordination meeting on site at 0900. See the meeting minutes for additional information.

Geotechnology:

Jessie Goodwin and Alyssa Okorn were on site for the site coordination meeting and to collect samples. Three fly ash samples from the fly ash stockpile and two bottom ash samples from the Bottom Ash Pond were collected for standard Proctor testing. One sample of backfill material from the off-site borrow source (Central Stone Company, 38084 County Highway 21, Chambersburg, IL) was collected for pre-qualification testing.

LEGEND:

	ROCK DITCH LINER SEE SHEET C-304
	CURLEX™ 20" SED1 SEE SHEET C-603
	SILT FENCE SEE SHEET C-603
	ROCK BLANKET SEE SHEET C-304

Bottom Ash
Excavation

Bottom Ash
Placement

Δ Proctor Sample
collection locations.

Note: BA-1 and BA-2 were collected from disturbed material.



8/12/16

MEDINA VALLEY COGEN, LLC
ASH POND CLOSURE
GENERAL PLANS
SWPPP PLAN

OWER STATION	
C-602	

SCALE RATIO = 1

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NONEXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SHALL LOCATE THE UTILITIES IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.

GEOTECHNOLOGY
1949 225 5400 3 00

NOTE: 1" = 120' CW 24x36
1" = 240' CW 12x18

T:\Working\15093 - Geotechnology - Mercedez Ash Pond Drilling\C-602 Suppl.Gwg
Bosman

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2



Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 03-14-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology, and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Mike W., Steve P., Pat B., Randy B., Mike S. (phone),
BCCO- Rob F., Garrett B.
OTHERS- Geotech. Inc.- Jessie Goodwin, Alyssa Okorn, Anna Saindon (phone)

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

Below are the items discussed at the progress meeting held for the Medina Valley COGEN, LLC- Meredosia Power Station Ash Pond Closures on March 14th, 2018. Below the discussion items are action items, miscellaneous discussion/notes, and any potential attachments as necessary.

1. Safety.
 - a. Safety Minute: Randy B. started the safety minute by noting that BCCO's onsite operators were conscious of on-foot employees being in their work vicinity and at any time these employees were within the risk zone of the equipment the operators grounded their buckets. Mike W. elaborated on that point reminding everyone of the Ameren Rules to Live By and that they include not working under suspended loads and requiring fall protection for any heights greater than 6'.
 - b. Mike W. suggested that each week a different member of the group volunteer a safety minute topic and lead the discussion based on such, with discussion by the group following. Mike W. volunteered to provide the safety minute topic for the March 21st meeting.
2. Contractor Progress Report.



- a. Water pumping from the bottom ash has continued. There is a large amount of water coming through the dewatering ditches, from the ash and sand in the pond. The 6" pump is now being operated on floats overnight, and during the dayshift, the flow is enough that the pump can stay operational all shift without loss of suction. Currently, pumping is adding approx. 1' of water per day to the fly ash pond.
- b. Additional demolition continued earlier this week including conduit and fence removal, pipe removal in the fly ash pond, and staging of pipe material for removal/storage.
- c. Access preparation for hauling continued, mostly consisting of ash road prepping in the fly ash pond. Rob intends to add a culvert for storm water flows under the roadway between the two ponds.
- d. Ash hauling commenced this week. Ash excavation started in the SW corner near the outfall and pump location. The ash is still very saturated, but with established haul roads, crane mats for excavators, and double handling, the crew has been able to get an open excavated area established in the far SW corner. Excavation at this time is to 424' elevation or below.

3. Contractor's Weekly Work Plan

- a. Update: Rob F.
 - i. Continued ash hauling. Haul road repair/maintenance as needed. BCCO intends to bring another hauling unit to site possibly in the week of 3/19. Excavation will continue with 3 hauling units as needed, once site conditions improve and allow for additional hauling units, BCCO will add units as possible.
 - ii. Water Pumping will continue as needed. This includes weekends. Pumping needs to be continued over the weekend to ensure water levels in the pond stay as low as possible. Once the excavation heads east and hauling conditions improve, BCCO may be able to suspend weekend pumping at that time. Rob and Garrett will update the team as possible.
 - iii. It was discussed amongst the group that expected river levels would allow for fly ash pond discharge around the end of March. The level of the pond is currently up 6' from pre-pumping levels. Steve P. mentioned that he spoke with the testing laboratory and was hoping to schedule them for some time around the 29th or 30th of March. Mike W. expressed concern that the PH may be high on the water to be discharged and stated that if needed Ameren will coordinate CO2 injection into the pool. Mike S. suggested having a third-party inspection done on the pool, to which the group confirmed is currently the arrangement.



4. Schedule Forecast

a. Two Week Look Ahead.

- i. The two-week look ahead coordinates with the upcoming work activities.
- ii. Mike W. noted that he adjusted the two week and overall schedule by moving the bottom ash excavation item up slightly, to coincide with onsite activities. Mike also noted that the two week look ahead does not include the embankment fill for the bottom ash pond roadway. Rob F. requested that this option be available, as it provides an alternative ash hauling activity in the event foul weather or other changes don't allow for hauling to the fly ash pond. Geotechnology is to take samples for conformance testing and proctor for the bottom ash compaction, today while onsite.

5. New Item/Miscellaneous

- a. Geotechnology to take ash samples from onsite, as well as soil samples from the Chambersburg borrow area, after the meeting today, 03/14/18.
- b. As an update to the below action item concerning the utility power relocation, Rob F. informed the group that the local Ameren transmission engineer stated that he believes they can make arrangements to relocate the power poles without causing an overnight disruption in power to the oil loading/unloading dock owned by Sunrise FS. Ameren Transmission to provide a formal budget to BCCO, to then be presented to Mike W. Mike W. mentioned that if necessary, he may take a deduction from BCCO's contract amount of the \$60,000 allowance and issue the transmission department a direct PO, but for the time being, BCCO is working under the assumption that the billing will proceed through BCCO.
- c. The Fencing specification has been adjusted to coincide with the onsite fence, rather than utilizing the sub-station specification. This removes the need for 1" mesh and adjusts pole spacing, among some other minor changes. Mike W. sent the fencing submittal back to Garrett B. with "Approved as Noted" status.
- d. Mike confirmed that Ameren wishes to use the non-woven geotextile under the roadway base rock, in-lieu of a woven that BCCO suggested and submitted. Garrett B. to check on pricing of product.
- e. Initial liner submittal is approved as noted. The sample warranty noted LLDPE, instead of HDPE, which is the material specified for this project. GSI is to provide BCCO an updated sample warranty for submittal to Ameren.



- f. Anna Saindon clarified to the group that Jesse G. is authorized to inspect subgrade for ash material but noted to the group that as she is the signing engineer, she will need to make a visual inspection/s herself at one point.
 - g. Garrett B. made note to the group that at one point in time, discussion was had regarding the use of RR6 rip rap as noted on the plans for placement on the lined toe of slope on the bottom ash pond, may not be desirable due to RR6's large size. Garrett B. to follow up further with Mike W. in email. Mike W. also mentioned that Ameren/Geotechnology may request written letter from Central Stone Co. (the producer of the rip rap material) verifying that the elected rip rap meets IDOT size/weight/gradation requirements. Generally, rip rap is not a graded with sieve analysis, but instead is visually inspected.
6. Action Items
- a. BCCO Items:
 - i. Contact Local Utility and electrician for utility relocate. Updated: In process, waiting on formal quote from both Ameren Transmission and Scott Bros. Electric. {Status- Open}
 - ii. BCCO to continue submittals. Update- BCCO to submit rock gradations. BCCO to coordinate with GSI to submit samples for shear testing to Ameren/Geotechnology. {Status- Open}
 - iii. Magellan Pipeline coordination for planned activity in coal yard. Update BCCO has not had any response from Magellan, will continue to reach out. {Status- Open}
 - b. Ameren Items:
 - i. Ameren to verify non-asbestos material in steam line protective wrap. Update: SITEX made a site visit and inspected suspect areas. Ameren hope to have results around 4/16/18. {Status-Open}
 - ii. Mike W. offered to prepare and distribute a full contact list of all necessary contacts and distribute to the group. {Status- Open}

The next progress meeting for this project will be held on March 21st, at 9:00 a.m.



DAILY REPORT

DATE: 3/19/2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: JYG

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.0) Lunch

Arrive: 0945

Depart: 1130

Travel: 5.00

Total: 6.75

AM Conditions: Clear

AM Temperature: 46 F

PM Conditions: ---

PM Temperature: ---

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Equipment: 2 excavators, 2 tractors (tracked) with 2 side-dump trailers each, 1 bulldozer, 1 pump

Personnel:

Visitors:

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Bottom ash was moved to the fly ash pond.

Deliveries:

Testing: Geotechnology observed material in the Bottom Ash Pond to assess the presence of CCR

CONSTRUCTION SITE LOCATIONS:

Bottom ash was excavated from Bottom Ash Pond and placed in the Fly Ash Pond.

See attached location drawing for more information.


Geotechnology, Inc. Rep.

3/19/2018
Date


Geotechnology, Inc. Engineer

3/21/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Two excavators loaded out wet ash material from the southwest end of the Bottom Ash Pond. Two tractors (tracked), each with two side-dump trailers, hauled bottom ash material to the Fly Ash Pond. One bulldozer graded bottom ash placed in the Fly Ash Pond.

Geotechnology:

Jessie Goodwin met with Rob Fosnock of Blankenship Construction to assess material for the presence of coal combustion residuals (CCR) at the southwest end of the Bottom Ash Pond. Goodwin observed sand materials in the western portion of the Bottom Ash Pond and an area of clay near the former outfall structure.

LEGEND:

- ROCK DITCH LINING SEE SHEET C-304
- SEDIMENT LOGS (TYP) SEE SHEET C-304
- SILT FENCE SEE SHEET C-304
- ROCK BLANKET SEE SHEET C-304

Bottom Ash Loadout Area

Bottom Ash Placement & Grading Area

3/6 Observed substrate material to assess presence of CCR.

ILLINOIS RIVER

COAL PILE

SEDIMENT LOGS (TYP) BOTTOM ASH POND


FLY ASH POND


CLOSED ASH POND


SILT FENCE (TYP)


8/12/16

MEDINA VALLEY COGEN, LLC


 ROCK DITCH LINER
 SEE SHEET C-304


 CURLEX™ 20' SEDIMENT
 SEE SHEET C-603


 SILTY FENCE
 SEE SHEET C-603


 ROCK BLANKET
 SEE SHEET C-304

Bottom Ash
Loadout Area

Bottom Ash
Placement +
Grading Area

Δ YG observed
substrate material
to assess presence
of CCR.

COAL PILE

SEDIMENT LOGS (TYP) -
BOTTOM ASH POND

11T FENCE (TYP)

CLOSED ASH POND

FLY ASH POND

NOTE: 1" = 120' CH 24X36
1" = 240' CH 12X18

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM THE AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, LOCATION, SIZE, TYPE, NUMBER, OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL UNDERGROUND UTILITIES SHOWN OR NOT SHOWN, AND SHALL LOCATE THE UTILITIES IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.

MEDINA VALLEY COGEN, LLC
WASH POND CLOSURE
GENERAL PLANS
SWPPP PLAN

MEREDOSIA POWER STATION

C-602


GEOLOGY
 THE JOURNAL OF
 THE GEOLOGICAL SOCIETY OF AMERICA

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TIME: 8/10/2016 10:40:49 AM

SCHEMATIC - 1



DAILY REPORT

DATE: 3/21/2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: JYG & AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.0) Lunch

Arrive: 0845 Depart: 1115 Travel: 5.00 Total: 7.50

AM Conditions: Clear AM Temperature: 34 F

PM Conditions: --- PM Temperature: ---

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Equipment: 2 excavators (one long-reach), 2 tractors (tracked) with 2 side-dump trailers each,
1 bulldozer, 1 pump

Personnel: _____

Visitors: A Teklab representative was on site to sample water at outfall and monitoring wells on site.

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Bottom ash was moved to the fly ash pond.

Deliveries: _____

Testing: Geotechnology observed material in the Bottom Ash Pond for identification.

CONSTRUCTION SITE LOCATIONS:

Bottom ash was excavated from Bottom Ash Pond and placed in the Fly Ash Pond.

See attached location drawing for more information.

Eric J. Good
Geotechnology, Inc. Rep.

3/21/2018
Date

Sam M. Sandoz
Geotechnology, Inc. Engineer

3/22/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Two excavators, including one long-reach excavator, loaded out wet ash material from the southwest end of the Bottom Ash Pond. Two track-tractors, each with two side-dump trailers, hauled bottom ash material to the Fly Ash Pond. One bulldozer graded bottom ash placed in the Fly Ash Pond.

Blankenship held the weekly coordination meeting on site at 0900. See the meeting minutes for additional information.

Geotechnology:

Jessie Goodwin and Alyssa Okorn met with Rob Fosnock of Blankenship Construction to assess material for the presence of coal combustion residual (CCR) at the southwest end of the Bottom Ash Pond. An area of clay cleared of CCR was observed near the former outfall structure.

See the attached location drawing for additional information.



Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 03-21-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology, and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Steve P., Pat B., Randy B.
BCCO- Rob F., Garrett B.
OTHERS- Geotechnology Inc.- Jessie Goodwin, Alyssa Okorn, Anna Saindon (phone)

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

Below are the items discussed at the progress meeting held for the Medina Valley COGEN, LLC- Meredosia Power Station Ash Pond Closures on March 14th, 2018. Below the discussion items are action items, miscellaneous discussion/notes, and any potential attachments as necessary.

1. Safety.
 - a. Safety Minute: Randy B. started the safety minute discussing lightning safety. Randy noted the bullets on the lightning safety document that Mike provided the group. Randy and Steve also described the plant lightning policy that had been observed while the plant was operational. At the site or sound of lightning, operations are to stop and everyone is to proceed as quickly as possible to a lightning approved shelter. Do not use metal buildings such as lean-to's or open face sheds as shelter, do not use trees, tents or other insufficient structures as shelter. Try to enter a fully finished building with electrical wiring, plumbing, and grounding. If in a vehicle, close all windows and do not touch any metal surface of said vehicle. If outside, do not touch any metals surfaces such as machines, fences, building siding, etc. Garrett will follow up Randy's question regarding BCCO lightning policy by sending along a copy of the Lightning Safety Policy that BCCO observes.
 - b. Steve P. volunteered to take the safety meeting for next week's meeting on the 28th.



2. Contractor Progress Report.

- a. Water pumping from the bottom ash has continued. BCCO has moved forward with adding auto floats and manning the pump over weekends. Randy and Steve discussed the water quality based on sampling and PH testing they did this week. By appearances, the TSS would seem high due to the settling of solids in the sample container Ameren had onsite. Prior to this meeting, the Ameren onsite team discussed with Rob placing some checks/wattles in the flow line of the pump ditch, to help settle as much material as possible. Rob had these checks in place prior to the meeting. Additional oil boom was placed around the FAP outfall as well.
- b. Additional demolition continued earlier this week including steam line cutting and preparation for removal, as well as additional northern fence removal.
- c. The BCCO crew installed access roadways on the BAP this week to provide means to load out ash material in the otherwise inaccessible SW corner of the ash pond.
- d. Ash hauling continued this week. Ash excavation started in the SW corner near the outfall and pump location. The ash is still very saturated, but with established haul roads, crane mats for excavators, and double handling, the crew has been able to get an open excavated area established in the far SW corner. This area has expanded now that a long reach excavator has been added to the crew, and together the two excavators are able to clear a decent size area as they proceed outward from the SW starting point. As of the time of this meeting, the crew had excavated an area approximately 75' X 75' down to 424' elevation.
- e. Mobilization. Additional crane mats were brought to site the morning of this meeting. Earlier this week a Komatsu Long reach excavator was also mobilized to site.
- f. Steve P. questioned some stakes Rob had placed around the BAP. Rob informed the group that these stakes were placed to help designate to the excavation crew the limits of excavation. On the west/northwest side of the BAP, the stake represents the toe of the slope along the existing roadway to the oil dock, that is to receive bottom ash fill. On the east/northeast side of the BAP the stakes represent the top of proposed slope shown on the grading plan for the BAP.
- g. Test pits were performed in the coal yard and coal yard run off area. Based on these test pits it would appear the coal fines in the coal yard area are between 6 and 8 inches deep, and in the coal yard run off area, the fines are between 2 and 3 feet deep. Test pitting was performed in 10-12 locations in the coal yard and 5-6 in the coal yard runoff area.



3. Contractor's Weekly Work Plan

- a. Update: Rob F.
 - i. Continued ash hauling.
 - ii. Water Pumping will continue as needed.
 - iii. As previously mentioned, late in March or early April, if possible, a discharge from the FAP will need to occur. Monitoring by Ameren onsite is ongoing with actual testing scheduled for later this month.

4. Schedule Forecast

- a. Two Week Look Ahead.
 - i. The two-week look ahead coordinates with the upcoming work activities.
 - ii. Garrett B. did note that even though removal of improvements does show ending on April 27th, this in reality will not be the case as the FAP outfall will be towards the latter end of the ash filling and grading in the FAP, later than April. Steve P. also asked if removal of the fence on the roadway side of the coal yard had been added to the list of demolition. Garrett B. stated that yes, he believed that it had and that it was to be performed on a T&M basis, but needed to confirm with Mike that he wants BCCO to proceed with this work when possible.

5. New Item/Miscellaneous

- a. Geotechnology reported that the ash sample results were in hand, some of which arrived to Anna S. during the meeting. Jesse and Anna reported that the proposed BAP soil backfill samples were passing in regard to plasticity, but that the content was borderline so care would need to be taken during import to limit any high plastics soils. Geo. will observe during placement for high plasticity soils. This only partially approves the soil samples, as Geo. is waiting for the environmental results to return. The bottom ash proctor is returned and available.
- b. Garrett B. was discussing rock submittals with the group and Anna S. updated everyone that the CA6 and RR1 submittals had been sent to her group by Ameren/Mike. While discussing this, the rip rap sizing came up and Anna stated that it would appear the answer is to match existing site rip rap for sizing, and to including bedding with all placed rip rap. This is not final yet, only a tentative update. Garrett asked Anna if she would be willing to have someone from their group visually inspect the rip rap prior to starting import and she implied that they would be willing to do so and added that they



would need a letter from Central Stone stating the rip rap is manufactured to IDOT standards.

- c. Garrett B. discussed with the group the liner sampling for shear testing that Geotechnology/Anna had requested and clarified with Anna that a representative sample of the same product material is acceptable, as long as it was manufactured recently, preferable less than a year prior.
- d. Garrett B. noted to the group that after attempting to use the fly ash material from the eastern stockpile in a travel path, Rob F. reported that material is easily liquefiable and caution will need to be used placing and traveling on it. Garrett asked Anna if it would be possible to consider using a different material as the top 1' graded and compacted layer on the FAP prior to liner, to which she replied that this would not be acceptable, and that only Fly Ash material could be using in the top 1' on the FAP.
- e. Illinois State Police (ISP) will be conducting training onsite on 3/22/18, Steve P. and Randy B. made everyone aware during this day that no one is to come near the plant. ISP will be using a variety of training tools including blank rounds, paint rounds (non-lethal), and possibly live ammunition. There may also be breach practices ongoing including the use of explosives for door removal. Again, DO NOT go on or near any buildings during this time. It is currently expected that they will be onsite to train again on 3/28/18, and possibly again at a later unspecified date.

6. Action Items

a. BCCO Items:

- i. Contact Local Utility and electrician for utility relocate. Updated: In process, waiting on formal quote from both Ameren Transmission and Scott Bros. Electric. {Status- Open}
- ii. BCCO to continue submittals. Update- BCCO has submitted CA6 and RR1 subs. BCCO waiting for final answer on Rip Rap sizing prior to letter, also waiting on further information for shear test sample submittal. {Status- Open}
- iii. Magellan Pipeline coordination for planned activity in coal yard. Update BCCO has not had any response from Magellan, will continue to reach out. {Status- Open}

b. Ameren Items:



- i. Ameren to verify non-asbestos material in steam line protective wrap. Update: Ameren presented Sitex reports onsite inspection, no asbestos present. {Status-Closed}
- ii. Mike W. offered to prepare and distribute a full contact list of all necessary contacts and distribute to the group. Update: Mike sent out list on 3/15. {Status-Closed}

The next progress meeting for this project will be held on March 28st, at 9:00 a.m.



DAILY REPORT

DATE: March 28, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: Alyssa A. Okorn
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(- 0.0) Lunch

Arrive: 08:30 Depart: 11:45 Travel: 4.75 Total: 8.00

AM Conditions: Overcast AM Temperature: 37 F

PM Conditions: Light Rain PM Temperature: 42 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship
Equipment: One long reach excavator, two excavators, two tractors, two bulldozers, four pull-behind side- dump trailers, two pull-behind skimmers, one water pump
Personnel: Blankenship
Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Bottom Ash Pond material stockpiled for removal

Deliveries: Two pull-behind skimmers delivered

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Bottom Ash Pond

See attached location drawing for more information.

Alyssa A. Okorn
Geotechnology, Inc. Rep.

3/28/18
Date

[Signature]
Geotechnology, Inc. Engineer

3/30/18
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment on site: 1 Komatsu long reach excavator, 1 Komatsu excavator, 1 Caterpillar excavator, 2 Case tractors, 4 pull-behind side-dump trailers, 2 pull-behind skimmers, 1 Komatsu bulldozer, 1 Caterpillar bulldozer, 1 Godwin water pump

One Komatsu long reach excavator stockpiled ash in the Bottom Ash Pond. One Caterpillar excavator loaded pipe onto two flatbed semi-trailers. One Godwin water pump operated in continuous, supervised use. Other equipment was not used.

See attached location drawing for additional information.

Blankenship held the weekly coordination meeting on site at 0900. See the meeting minutes for additional information.



Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 03-28-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology, and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Steve P., Pat B., Randy B., Mike W.
BCCO- Rob F., Garrett B. (phone)
OTHERS- Geotechnology Inc.- Alyssa O., Anna S. (phone), Jessie G. (phone)

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

Below are the items discussed at the progress meeting held for the Medina Valley COGEN, LLC- Meredosia Power Station Ash Pond Closures on March 28th, 2018. Below the discussion items are action items, miscellaneous discussion/notes, and any potential attachments as necessary.

1. Safety.
 - a. Safety Minute: Steve P. started the safety minute with discussion about slips, trips, and falls. Steve made specific mention of rainy site conditions and the fact that everyday normal tasks can become hazardous with wet slippery metal surfaces. Places such as dozer tracks, metal stairs and walkways, even concrete floors can be hazardous slip areas with muddy boots. Mike W. asked Rob to incorporate this into his daily toolbox talks, Rob F. stated that it already had been, but additional focus and attention would be given to the subject since we are experiencing additional wet weather.
 - b. No volunteers for next week's safety minute.
2. Contractor Progress Report.
 - a. Water pumping from the bottom ash has continued. The site received over 3" of rain this past week, leading to a large amount of both storm water pumping, and infiltrated water pumping, assumed from high river levels.



- b. Demolition continued this week, with all of the northern fence being removed, all of the steam line being removed, and steam line foundations being partially removed.
- c. Mobilization: BCCO expects (2) John Deere 2112 scrapers, a John Deere four-wheel drive scraper tractor, and a CAT D6T dozer to all arrive onsite today.
- d. Ash hauling continued this week. The excavation has worked its way out of the SW corner and has progressed northward. The crew is using a Komatsu long reach excavator with 60' of reach, along with crane mats, to extend the size of the excavated area as they move northward. This leaves a smaller area of inaccessible material (meaning hauling equipment cannot travel on it) left for the crew to remove. This will help speed the excavation along by removing the need for access roads and backing of hauling equipment to the loading area. BCCO provided Mike points which he plotted on a KMZ file for the group to view. Mike is also going to provide BCCO a SharePoint file to place the time-lapse progress video on for everyone to view.

3. Contractor's Weekly Work Plan

- a. Update: Rob F.
 - i. Continued ash hauling.
 - ii. Water Pumping will continue as needed.
 - iii. Removal of demolished material as available.

4. Schedule Forecast

- a. Two Week Look Ahead.
 - i. The two-week look ahead coordinates with the upcoming work activities.
 - ii. Mike W. noted that he would incorporate the rain delays into the schedule as they occurred. As of this meeting, 1.5 days have been lost to rain delays.
 - iii. The BMP installation final date needs pushed out, as current river levels will not allow for BMP installation to occur.
 - iv. Fly ash pond grading shown for 4/2/18, the group agreed that the start date for this item needed pushed back to 5/2/18. The coal yard grading is to be moved up to 4/9/18, and the bottom ash pond backfill will be moved up to early or mid-May.
 - v. Anna S. will not be onsite on 4/4/18 but will be onsite on 4/11/18.



vi. Mike W. is adding the start of liner production to the schedule, as of May 1st.

5. New Item/Miscellaneous

- a. Coal yard removal depth was discussed, based on prior test pitting it would appear that if a 10" overall strip depth was used, that would remove all coal. Test pits showed a depth range of 6-8". This could help when determining the best method to drain the coal yard area toward the coal runoff area, while still maintain sufficient covert over the Magellan Pipeline.
- b. Electrical Pole relocation discussion. Based on ballpark quantities, it would appear that the electrical relocation costs should come in around \$25K. However, final location has to be coordinated with Ameren Transmission and their local construction engineer. This may adjust the final location of poles and possibly the length of underground conduit, affecting cost. BCCO has also been asked to price dusk to dawn lights as well, which may further adjust pricing.
- c. GSI- Eng. Turf: manufacturer quality control certs should be in GSI control by 3/28. GSI waiting on COC from TRI/Geotechnology. Anna Saindon is sending the COC's over soon.
- d. Anna Saindon requested information regarding the liner sample that previously shipped without authorization to TRI. Garrett B. will work to provide as much of this info as possible.
- e. Rob F. discussed with the onsite group prior to the meeting the concern of the high-water level in the fly ash pond. During the meeting, Rob asked if pumping would be a potential option for lowering the fly ash pond. The concern is that if the water discharge is left up to the weather and river levels, a substantial amount of time could pass before water could be released. Ameren stated that pumping is an option, and Mike asked to add this as an action item for him to coordinate with Mike S. regarding testing procedures during the pumping efforts. As of this time, the sampling date for the Fly Ash pond is to remain the 2nd of April.
- f. Rob F. expressed concern about having enough suitable bottom ash to make the necessary fills in the bottom ash roadway. Much of the "good" bottom ash will be incorporated into the excavation, to better condition the material for placement in the FAP. This will help with the placement of material as well as provide a more suitable subgrade for future work. That being said, Rob asked if the existing bottom ash pond berm material that is to be removed, would be acceptable as fill in the bottom ash roadway fill. Geotechnology acknowledged that it would be but that additional sampling



and proctors would be needed, and that they would attempt to collect samples the following week, possibly on 4/4/18.

- g. Mike W. requested a price for the fence removal on the north side of the coal yard, as well as the previously requested pricing for the coal yard run off area removal. Mike also asked for a price to include the pipe from the coal yard run off area to the BAP. BCCO to provide as soon as possible.
- h. Mike informed the group that CDG had made a decision on the rip rap material to be used onsite, stating; RR4 is to be utilized with proper RR1 bedding rock and fabric. Mike to follow up with formal email.

6. Action Items

a. BCCO Items:

- i. Contact Local Utility and electrician for utility relocate. Updated: BCCO has ballpark quotes from both Ameren and Scott Bros. Electric, but due to the ongoing pole location discussion and added lighting, needs to procure formal quotes from both. {Status- Open}
- ii. BCCO to continue submittals. Update- BCCO has submitted CA6 and RR1 subs. BCCO has received a verbal answer on Rip Rap sizing, will procure letter statement from Central Stone. {Status- Open}
- iii. Magellan Pipeline coordination for planned activity in coal yard. Update BCCO spoke with Derrick Love with Magellan, who stated that they are waiting on answers from their in-house engineers regarding the coal yard removal over the pipeline. {Status- Open}

b. Ameren Items:

- i. Mike W. to send out updated schedule. {Status- Open}
- ii. Mike W. to coordinate with Mike Smallwood regarding the necessary pumping monitoring in the event that BCCO pump water out of the FAP. {Status- Open}

The next progress meeting for this project will be held on April 4th, at 9:00 a.m.

PHOTOGRAPH LOG



Photograph 1 ▲ - View of bottom ash removal operations observed March 14, 2018, looking west.



Photograph 2 ▲ - View of drainage ditches for dewatering the Bottom Ash Pond as observed March 14, 2018, looking east northeast.



Photograph 3 ▲ - View of supervised pump operation at the west end of the Bottom Ash Pond as observed March 14, 2018, looking west.



Photograph 4 ▲ - View of bottom ash removal operations observed March 19, 2018, looking southeast.



Photograph 5 ▲ - View of bottom ash grading activities at the Fly Ash Pond, looking northwest.



Photograph 6 ▲ - View of site conditions and activities at the Bottom Ash Pond on March 28, 2018.



MEMORANDUM

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

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

DATE: May 1, 2018

SUBJECT: Summary Report for April 2, 2018 to April 30, 2018

PROJECT: Fly Ash Pond and Bottom Ash Pond Closures
Meredosia Power Station
Meredosia, Morgan County, Illinois
Geotechnology Project No. J024917.04

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

Weather

The weather was generally cloudy to clear. Temperature (^oF) lows ranged from 19 to 59^oF, and temperature highs ranged from 32 to 85^oF.

Construction Activities

Geotechnology representatives conducted site visits on April 4, April 11, April 18, and April 25, 2018. The following summary reflects observations during Geotechnology's site visits.

Blankenship Construction Company moved bottom ash from the Bottom Ash Pond to the Fly Ash Pond and graded fly ash in the Fly Ash Pond. Fence demolition at the northeast boundary of the coal yard was in progress on April 4, 2018. Beginning the week of April 25, 2018, Coal Pile runoff material was moved from southwest of the Coal Pile to the Fly Ash Pond.

Equipment and Personnel On-Site

Blankenship Construction Company had the following equipment on site: One Caterpillar excavator, one Komatsu excavator (removed from site March 21, 2018), one Komatsu long-reach excavator (delivered March 21, 2018), two Case tractors (tracked), two pull-behind side-dump trailers, one Komatsu bulldozer, one Caterpillar bulldozer, two pull-behind skimmers (delivered March 28, 2018), one Godwin water pump.

Due to partial-day site visits, Geotechnology did not record the number of personnel on-site for Blankenship Construction Company.

Meetings

Weekly progress meetings were held on Wednesdays: April 4, April 11, April 18, and April 25, 2018. Refer to the meeting minutes for additional information.

Photographs

A photograph log with selected photographs obtained while Geotechnology was on site is attached.

Materials

Bottom ash was excavated at the Bottom Ash Pond, transported, and placed and graded at the Fly Ash Pond.

Coal runoff material was excavated southwest of the Coal Pile, transported, and placed and graded at the Fly Ash Pond.

Testing/Sampling

On April 4, 2018, Jessie Goodwin and Alyssa Okorn of Geotechnology collected one sample of berm soil material from the Bottom Ash Pond berm for standard Proctor testing.

On April 11, 2018, Anna Saindon of Geotechnology observed material in the Bottom Ash Pond to assess the presence of CCR.

Signature of CQA Officer



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

Attachments: Daily Reports
Photograph Log

DAILY REPORTS



DAILY REPORT

DATE: April 4, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: JYG & AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.0) Lunch

Arrive: 0900 Depart: 1115 Travel: 5.00 Total: 7.25

AM Conditions: Clear with wind AM Temperature: 26 F

PM Conditions: --- PM Temperature: ---

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship
Equipment: 2 excavators (one long-reach), 2 tractors (tracked) with 2 side-dump trailers each,
2 bulldozers, 1 tractor with a scraper, and 1 pump were observed in operation.

Personnel: _____

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

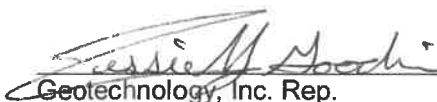
Materials Used: Bottom ash was moved to the Fly Ash Pond.


Deliveries: _____

Testing: Geotechnology collected one Bottom Ash Pond berm soil sample for standard Proctor analysis.

CONSTRUCTION SITE LOCATIONS:

Bottom ash was excavated from Bottom Ash Pond and placed in the Fly Ash Pond. Fence demolition was performed at the northeast edge of the Coal Pile. See attached location drawing for more information.

 4/4/2018
Geotechnology, Inc. Rep. Date

 4-6-2018
Geotechnology, Inc. Engineer Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar excavator; one Komatsu excavator; two Case tractors (tracked), each with two side-dump trailers; one Komatsu bulldozer; one Caterpillar bulldozer, one New Holland tractor with a scraper, and one Godwin pump.

Additional equipment observed on site (not in use): One Komatsu long-reach excavator, one Case tractor with two side-dump trailers, one Caterpillar bulldozer, two John Deere scraper boxes, and one Caterpillar skid steer.

One excavator loaded out wet ash material from the Bottom Ash Pond. Two tractors (tracked), each with two side-dump trailers, hauled bottom ash material to the Fly Ash Pond.

One bulldozer graded bottom ash placed in the Fly Ash Pond.

One bulldozer spread wet bottom ash material in the Bottom Ash Pond to facilitate drying.

One tractor with a scraper graded the top of interior berms in the Fly Ash Pond.

One excavator assisted two laborers in fence demolition material management at the northeast edge of the coal pile.

Blankenship held the weekly coordination meeting on site at 0900. See the meeting minutes for additional information.

Geotechnology:

Jessie Goodwin and Alyssa Okorn met with Rob Fosnock of Blankenship Construction to collect a soil sample from the Bottom Ash Berm for standard Proctor testing. At R. Fosnock's direction, one excavator exposed sandy soil in the Bottom Ash Berm for sampling. A. Okorn collected one sample of sandy soil for standard Proctor testing.

See the attached location drawing for additional information.

FILE: C:\Working\15083 - Geotechnology - Meradosia Ash Pond\Drawings\15083 SWPP.dwg
 PRINTED BY: MTT WGS
 TIME: 17/10/2015 10:05:45 AM

C:\Working\15083 - Geotechnology - Meradosia Ash Pond\Drawings\15083 SWPP.dwg
 08/08/16-1610



THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NONEXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SHALL LOCATE THE UTILITIES IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.

REV	DATE	DESCRIPTION

MEDINA VALLEY COGEN, LLC
 ASH POND CLOSURE
 GENERAL PLANS
 SWPPP PLAN

MEREDOSIA POWER STATION

C-602

0

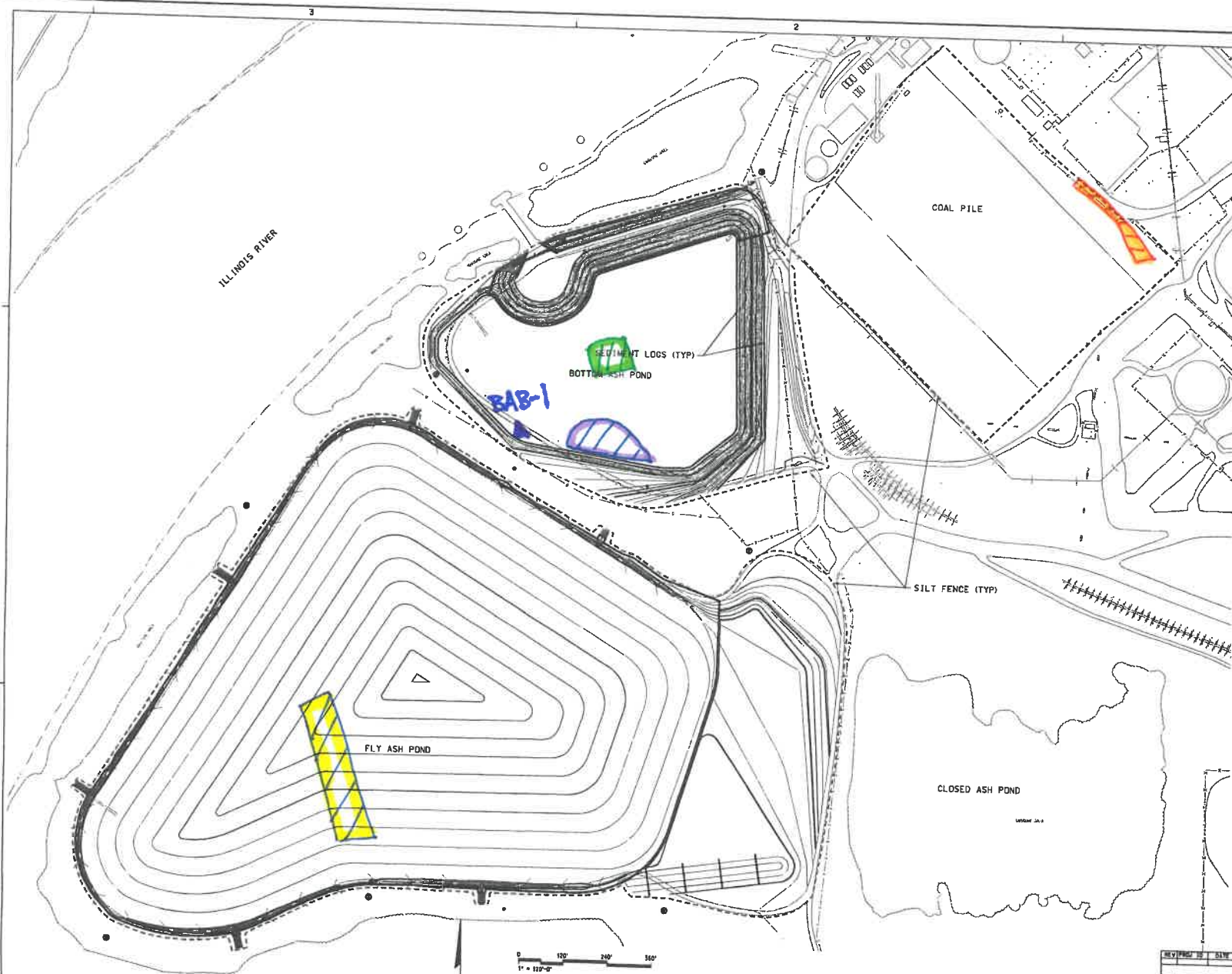
SCALE RATIO = 1

LEGEND:

- ROCK DITCH LINER
SEE SHEET C-304
- CURBED 20" SEDIMENT LOGS™ (OR APPROVED EQUAL)
SEE SHEET C-603
- SILT FENCE
SEE SHEET C-603
- ROCK BLANKET
SEE SHEET C-304

April 4, 2018

- Excavate Bottom Ash
- Grade Bottom Ash for drying
- Grade Bottom ash material
- Fence demolition
- Standard Proctor Sample Location





Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 04-04-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology, and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Steve P., Pat B., Randy B., Mike W., Mike S. (phone),
BCCO- Rob F., Garrett B. (phone)
OTHERS- Geotechnology Inc.- Alyssa O., Jessie G.

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

Below are the items discussed at the progress meeting held for the Medina Valley COGEN, LLC- Meredosia Power Station Ash Pond Closures on April 4th, 2018. Below the discussion items are action items, miscellaneous discussion/notes, and any potential attachments as necessary.

1. Safety.
 - a. Safety Minute: Randy B. led the safety meeting with a discussion about the "2 Minute Drill", an Ameren Safety policy that focus on employee's awareness of their surroundings. Key points of this activity include;
 - i. Re-evaluate safety hazards for every task, establish a "way out" for every task as well.
 - ii. Note any factors that may affect the job, your level of safety, or safety of others around you.
 - iii. Ensure that you have the right procedure, tools, and equipment for every task, and be aware of any risks associated with using each.
 - b. Alyssa volunteered for next week's safety minute.
2. Contractor Progress Report.



- a. Water pumping from the BAP has continued. The site received over 3" of rain this past week, leading to a large amount of both storm water pumping, and infiltrated water pumping, assumed from high river levels. The site started to discharge water from the FAP, which results in a net drop in water level of 0.8' every day. TSS results have yet to return, but PH is holding steady within conformance levels.
- b. Demolition continued this week, all fence is removed including the fence on the north side of coal yard, steam line and steam line foundations are 100% removed. Rob mentioned that they need to take some time and clean up some minor trash/debris from the steam line removal.
- c. Mobilization: BCCO has a set of 2 John Deere 2112 scrapers on site, as well as a D6T Cat bulldozer with Trimble GPS, and an additional Case QuadTrac tractor for pulling side dump buggies.
- d. Ash hauling continued this week. With the addition of the third Case tractor, BCCO is running three hauling units consisting of (3) Case tractors with (2) SmithCo Side Dump buggies each. Today is the first day for running the third hauling unit. The excavation has reached a point where the tractors are able to stay on the flat bench area of better ash, while the excavators reach out to the area with very saturated ash and remove it to the sub grade depth.
- e. Rain delays have caused lost ash hauling days a total of 5.5 days. This includes a half day on 3/26, and full days on 3/27, 3/28, 3/29, 4/2 and 4/3.

3. Contractor's Weekly Work Plan

- a. Update: Rob F.
 - i. Continued ash hauling.
 - ii. Water Pumping will continue as needed.
 - iii. Removal of demolished material as available. Clean up trash/debris from steam line removal.
 - iv. Continue discharging water from the FAP as needed. This will continue until the water reaches an acceptable level. Once it has, the valve will be shut and sampling will stop. The group agreed to attempt to keep the pond to more manageable level moving forward, possibly trying to adhere to a two-week schedule for sampling and discharge. BCCO will prolong pumping of any FAP water until later in the project when necessary to complete FAP fills in the pool area.



4. Schedule Forecast

- a. Two Week Look Ahead.
 - i. The two-week look ahead coordinates with the upcoming work activities.
 - ii. Mike W. noted that he would incorporate the rain delays into the schedule as they occurred. As of this meeting, 5.5 days have been lost to rain delays.
 - iii. No other changes needed made as of this week's meeting.

5. New Items/Miscellaneous

- a. River-side slope fills were discussed. Based on Rob's exploration with a GPS rover unit, it would appear that there are some fills, up to 4', to be made toward the oil dock on the outer slope of the BAP roadway that is to receive liner. It also shows that there are some minor cuts to be made near the existing oil pipeline foundations, which is not acceptable as this could affect the integrity of the foundations. Further discussion and review of this has been added as an Ameren Action Item below.
- b. Discussion regarding FS/Sunrise Ag's request to salvage the existing roadway rock was had. BCCO/Rob voiced concern over doing this as there is no practical way to ensure no ash is present in this rock. Ameren expressed concern that this could be costly to BCCO in taking the time to process this material separately. The group mutually decided it made the most sense to not salvage the rock, but Ameren did leave the final decision up to BCCO, to be made in the field.
- c. BCCO brought to the groups attention that consideration needed to be made regarding the conduit placement from the last BAP roadway power pole over to the existing meter box/panel. This could present potential phasing problems with liner installation, sub grade removal/grading, roadway construction, etc. Mike W. expressed that it made sense to assume placing the conduit below liner grade, allow the liner company to boot it, and in the event that there were issues later on, the conduit could be abandoned in place and a new one placed in the proposed roadway.
- d. Geotechnology was planning on collecting samples of the BAP berm material, for approval to use as backfill material in the new BAP roadway slopes and turnaround area, after today's meeting.
- e. Rob asked the group about final closeout procedure regarding the FAP pool and the remaining water it will likely have in it. The group discussed potential staging and various ways to complete this work, and Mike W. asked the group to think on that subject and offer suggestions at a later date.



- f. Mike W. asked about the removal of the BAP vault structure. Rob informed the group that the re-bar would be salvaged to an extent practical, and that the remainder of the concrete and re-bar would be buried in a pit on the FAP.

6. Action Items

a. BCCO Items:

- i. Contact Local Utility and electrician for utility relocate. Updated: BCCO has ballpark quotes from both Ameren and Scott Bros. Electric, but due to the ongoing pole location discussion and added lighting, needs to procure formal quotes from both. {Status- Open}
- ii. BCCO to continue submittals. Update- BCCO has received the CA-6 and RR1 rock submittals back as Accepted. BCCO has received a verbal answer on Rip Rap sizing, will procure letter statement from Central Stone. {Status- Open}
- iii. Magellan Pipeline coordination for planned activity in coal yard. Update BCCO spoke with Derrick Love with Magellan, who stated that they are waiting on answers from their in-house engineers regarding the coal yard removal over the pipeline. {Status- Open}

b. Ameren Items:

- i. Mike W. to send out updated schedule. Update: Complete prior to this meeting. {Status- Closed}
- ii. Mike W. to coordinate with Mike Smallwood regarding the necessary pumping monitoring in the event that BCCO pump water out of the FAP. Update: Pumping to be withheld until a later date. {Status- Closed}
- iii. Mike W. to finish review of pricing as presented by BCCO for additional fence removal, culvert installation, and coal yard run off excavation, and issue an EWO as necessary. {Status- Open}
- iv. Mike W. to review cut/fills on the river side of the BAP oil dock roadway berm and advise the group of planned action. {Status- Open}

The next progress meeting for this project will be held on April 11th, at 9:00 a.m.



DAILY REPORT

DATE: April 11, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AMS & AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.75) Lunch

Arrive: 0900 Depart: 1300 Travel: 5.00 Total: 8.25

AM Conditions: Clear with wind AM Temperature: 65 F

PM Conditions: --- PM Temperature: ---

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Equipment: 2 excavators (one long-reach), 3 tractors (tracked) with 2 side-dump trailers each,
1 bulldozer, and 1 pump were observed in operation.

Personnel: _____

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

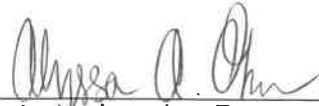
Materials Used: Bottom ash was moved to the Fly Ash Pond.

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Bottom ash was excavated from Bottom Ash Pond and placed in the Fly Ash Pond. Bottom ash was
spread on berm sides to dry out in the Fly Ash Pond. See attached location drawing for more information.


Geotechnology, Inc. Rep.

4/11/2018
Date


Geotechnology, Inc. Engineer

4/16/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar excavator; one Komatsu long-reach excavator; three Case tractors (tracked), each with two side-dump trailers; one Caterpillar bulldozer, and one Godwin pump.

Additional equipment observed on site (not in use): One Komatsu excavator, two side-dump trailers, one Caterpillar bulldozer, two John Deere scraper boxes, and one Caterpillar skid steer.

One long-reach excavator loaded out wet ash material from the Bottom Ash Pond. Three tractors (tracked), each with two side-dump trailers, hauled bottom ash material to the Fly Ash Pond and dumped it down the sides of the interior berms to dry out.

One bulldozer graded the top of interior berms in the Fly Ash Pond.

One excavator removed an area of the Fly Ash Pond berm to allow draining of water from one area to the other.

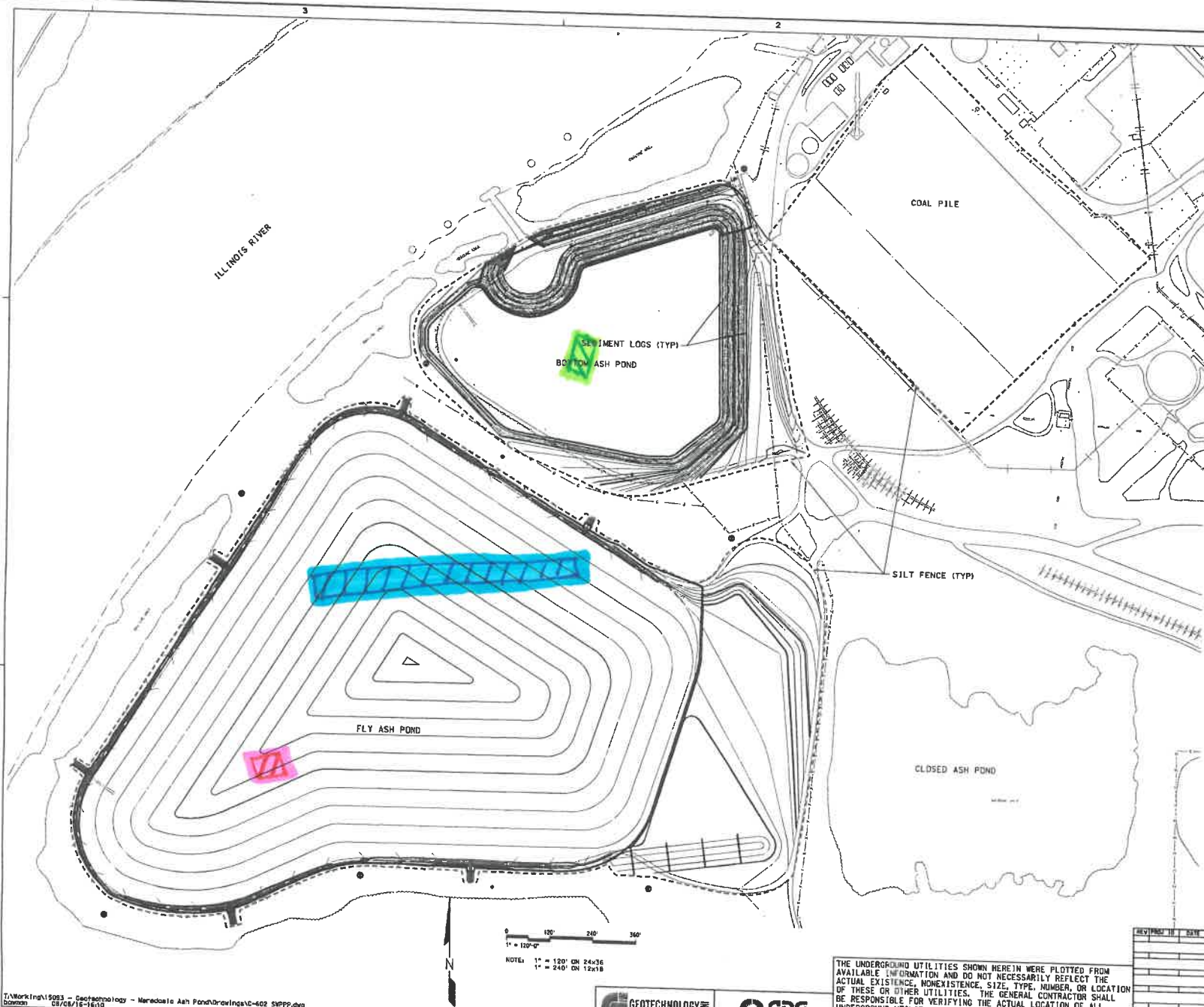
Blankenship held the weekly coordination meeting on site at 0900. See the meeting minutes for additional information.

Geotechnology:

Anna Saindon and Alyssa Okorn observed the site with Mike Wagstaff after the weekly coordination meeting.

See the attached location drawing for additional information.

T:\Projects\15083 - Geotechnology - Mercedia Ash Pond\Drawings\C-602 SWPPP.dwg
PLOT DATE: 10/10/2016 10:40:49 AM
T:\Working\15083 - Geotechnology - Mercedia Ash Pond\Drawings\C-602 SWPPP.dwg
C:\Users\jg\Documents\15083 - Geotechnology - Mercedia Ash Pond\Drawings\C-602 SWPPP.dwg



- LEGEND:
- ROCK BLANEY LINE
SEE SHEET C-304
 - CABLEX™ 20" SEDIMENT LOGS™ (ON APPROVED EQUAL)
SEE SHEET C-603
 - SILT FENCE
SEE SHEET C-603
 - ROCK BLANEY
SEE SHEET C-304

April 11, 2018

-  Excavate Ash - Bottom Ash Pond
-  Fly Ash Pond Interior Berm Excavation
-  Bottom Ash Deposited Along Berms to Dry



THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NONEXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SHALL LOCATE THE UTILITIES IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.

REVISION	DATE	DESCRIPTION

MEDINA VALLEY COGEN, LLC ASH POND CLOSURE GENERAL PLANS SWPPP PLAN	
MEREDOSIA POWER STATION	
C-602	0



SCALE: 1" = 120'



Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 04-11-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology, and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Steve P., Pat B., Randy B., Mike W., Mike S. (phone), Gail Gary (phone)
BCCO- Rob F., Garrett B., Dave Willis (phone),
OTHERS- Geotechnology Inc.- Anna S., Alyssa O., Jessie G. (phone)

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

Below are the items discussed at the progress meeting held for the Medina Valley COGEN, LLC- Meredosia Power Station Ash Pond Closures on April 11th, 2018. Below the discussion items are action items, miscellaneous discussion/notes, and any potential attachments as necessary.

1. Safety.
 - a. Safety Minute: Alyssa led the group safety minute discussion regarding Vehicle Safety Tips and safe driving practices. She provided the group with a handout of safety tips such as;
 - i. Make sure your vehicle is up to date on maintenance and you should carry a roadside emergence kit.
 - ii. Wear your seatbelt every time, and ensure your passengers are as well. Be aware of road hazards and other vehicles. As the weather warms up, be aware that motorcycle and bicyclists will become more prevalent. Be extremely vigilant in your awareness of these riders.
 - iii. Back your vehicle into the parking spot when possible and do a walk around for hazards and/or damage.



- b. Garrett B. volunteered for next week's safety minute.

2. Contractor Progress Report.

- a. Mobilization: (1) additional set of SmithCo Side Dump trailers (for a total of 4 sets/8 trailers onsite), CAT 330 excavator, utility tractor with box blade and water wagon for dust control and haul road maintenance. Garrett mentioned that the utility tractor actually showed up prior to last week's meeting, but that it need to be added to the list. Rob also included that the CAT 326 excavator had been de-mobilized from site.
- b. Ash hauling continued this week. BCCO hopes to have a tractor on site this week to pull the 4th set of side dump trailers, which should help increase the CY moved per day. Current topographic surveys show that approx. 18,000 CY of material has been moved out of the bottom ash pond thus far. The group estimates this at about 10% of BAP ash and 20% of the BAP floor area.
- c. Water pumping has continued as additional rain and additional groundwater have increased the pumping needed to maintain the BAP level. The FAP pool has continued to fall in elevation as the discharge has continued. Steve P. projects a net discharge per day of 750,000 gal, with BCCO attributing approx. 200,000 gal per day to the pool. The pool was approx. 15' deep when discharge began, is about 8' deep now. Steve hopes to be around 5' by the end of the day Friday and will most likely slow or shut off the discharge flow so as to not let the pond get to low over the weekend.
- d. Komatsu PC490LC rollover incident: On April 10th, 2018 at approximately 9:43 a.m., an incident occurred at the Meredosia PowerStation located at 800 S. Washington in Meredosia, IL. Blankenship Construction Co. was operating a Komatsu PC490LC excavator in the Bottom Ash pond onsite, excavating ash for hauling and disposal in the Fly Ash pond onsite. It was during this time that liquified ash under the harder layer of bottom ash bridge material, failed and sloughed off into the cut area, causing the excavator to roll over onto its side, a rotation of 90 degrees. The operator inside was wearing his seat belt and was able to brace for the impact. He sustained no injuries, did not require any first aid, and reported that he did not wish to seek medical attention at the question of Rob F., onsite supervisor.
 - i. The group discussed the incident and what measures had already been taken and needed to yet be implemented to protect against an incident like this happening again. Corrective actions will be outlined in the full project summary BCCO is to provide late this week. Mike W. emphasized the importance of



keeping the operators and other crew members onsite aware of the fact that this is a saturated ash site and that conditions can change in seconds. BCCO agrees and has already made changes in operating procedure to better handle changes in ash material, to safely move product without endangering personnel of machines.

- ii. BCCO will be preparing a root cause analysis/full incident summary in the next couple days. Dave Willis, BCCO safety officer, will oversee Garrett's preparation of said report. This report will include additional details regarding the incident and the corrective actions to follow.
- iii. It was noted that no fluids, either diesel or oils, was lost during this event.

3. Contractor's Weekly Work Plan

- a. Update: Rob F.
 - i. Continued ash hauling.
 - ii. Water Pumping will continue as needed.

4. Schedule Forecast

- a. Two Week Look Ahead.
 - i. The two-week look ahead coordinates with the upcoming work activities.
 - ii. Silt Fence and other BMP's were discussed as being installed when berm removal/modifications were to begin.
 - iii. Rob F. stated that he thinks the BAP ash removal needs extended between 2-4 weeks, including the removal of berm material.
 - iv. Rob F. also stated that he would like to move the start of the coal removal out 1 week, to allow time for an additional tractor to arrive to site.
 - v. No other changes needed made as of this week's meeting.

5. New Items/Miscellaneous

- a. GSI has provided a partial submittal on the synthetic grass to BCCO. Garrett will provide to Mike and Anna ASAP.
- b. The electrical layout as provided is approved by Ameren. BCCO will move forward with installing the poles and new underground wiring as proposed. Barring any other changes



that could affect price, the current pricing is below budget, and if completed as such, Mike will adjust the SOV later in the project.

- c. Anna wanted to mention to the group that their proctors may take slightly longer due to personnel changes within Geotechnology, but this should be short lived. Anna already has the proctor back on the berm material for bottom ash pond roadway fill, so at this time there are not any proctors outstanding.
- d. Anna also stated that Geotechnology will have someone onsite every Wednesday for the foreseeable future.
- e. Anna also requested/inquired about GSI's submittal of training certification and experience documentation. Garrett agreed to follow up with GSI and procure this when possible.
- f. Anna stated that they should have the answers on the shear testing in two weeks' time.
- g. Mike Wagstaff and Mike Smallwood introduced Gail Gary as the new point of contact for Ameren Environmental Services. She will be replacing Mike S. as he is leaving Ameren for other opportunities (Good Luck Mike!). Gail will be the point of contact for FAP discharges going into the future. Mike W. will add her contact information to the contact list and provide to the group.

6. Action Items

- a. BCCO Items:
 - i. Contact GSI and request training certification and experience documentation from them. {Status- Open}
 - ii. BCCO to continue submittals. Update- BCCO has provided a certification letter from Central Stone regarding the RR4 material to be used onsite and has passed that along to Ameren and Geotechnology. {Status- Open}
 - iii. Magellan Pipeline coordination for planned activity in coal yard. Update BCCO spoke with Derrick Love with Magellan, who stated that they are waiting on answers from their in-house engineers regarding the coal yard removal over the pipeline. {Status- Open}
- b. Ameren Items:
 - i. Mike W. to provide updated contact list to include Gail G. and send to the group. {Status- Open}



- ii. Mike W. to finish review of pricing as presented by BCCO for additional fence removal, culvert installation, and coal yard run off excavation, and issue an EWO as necessary. {Status- Open}
- iii. Mike W. to review cut/fills on the river side of the BAP oil dock roadway berm and advise the group of planned action. Update: As of this time, it is assumed that minor fills will be made, if at all, and no cutting is allowed as that could potentially weaken the oil line foundations. Ameren and Geotechnology will receive the results of the shear test and determine acceptable slope based upon that. Once that is determined, a final plan will be discussed. {Status- Open}

The next progress meeting for this project will be held on April 18th, at 9:00 a.m.



DAILY REPORT

DATE: April 18, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.0) Lunch

Arrive: 0845

Depart: 1115

Travel: 5.00

Total: 7.50

AM Conditions: Overcast with wind

AM Temperature: 40 F

PM Conditions: ---

PM Temperature: ---

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Equipment: 2 excavators, 4 tractors (tracked) with 2 side-dump trailers each,
3 bulldozers, 1 skid steer, and 1 pump were observed in operation.

Personnel: _____

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

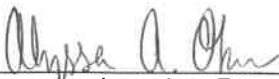
Materials Used: Bottom ash was moved to the Fly Ash Pond.

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Bottom ash was excavated from Bottom Ash Pond and spread to dry in the Fly Ash Pond. Fly Ash Pond
haul roads were cleaned continuously. Wooden loading pads were moved to south end of Fly Ash Pond.


Geotechnology, Inc. Rep.

4/18/18
Date


Geotechnology, Inc. Engineer

4/20/18
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 3300 excavator; one Komatsu PC490 excavator; four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers; one Komatsu bulldozer; two Caterpillar bulldozers, one Caterpillar skid steer, and one Godwin pump.

Additional equipment observed on site (not in use): One Komatsu long-reach excavator, two John Deere scraper boxes, one New Holland TG275 tractor with one Blankenship water wagon, and one Holcomb scraper.

Two excavators loaded out wet ash material from the Bottom Ash Pond. Four tractors (tracked), each with two side-dump trailers, hauled bottom ash material to the Fly Ash Pond.

Two bulldozers spread and graded wet bottom ash material in the Bottom Ash Pond to facilitate drying.

One bulldozer cleaned the top of interior berms in the Fly Ash Pond used as haul roads.

One skid steer moved wooden loading pads from the southeast corner of the Bottom Ash Pond to the south end of the Fly Ash Pond, outside the berms.

Blankenship held the weekly coordination meeting on site at 0900. See the meeting minutes for additional information.

Geotechnology:

Alyssa Okorn attended the weekly coordination meeting and then observed progress on site.

See the attached drawing for additional information.


4/19/18

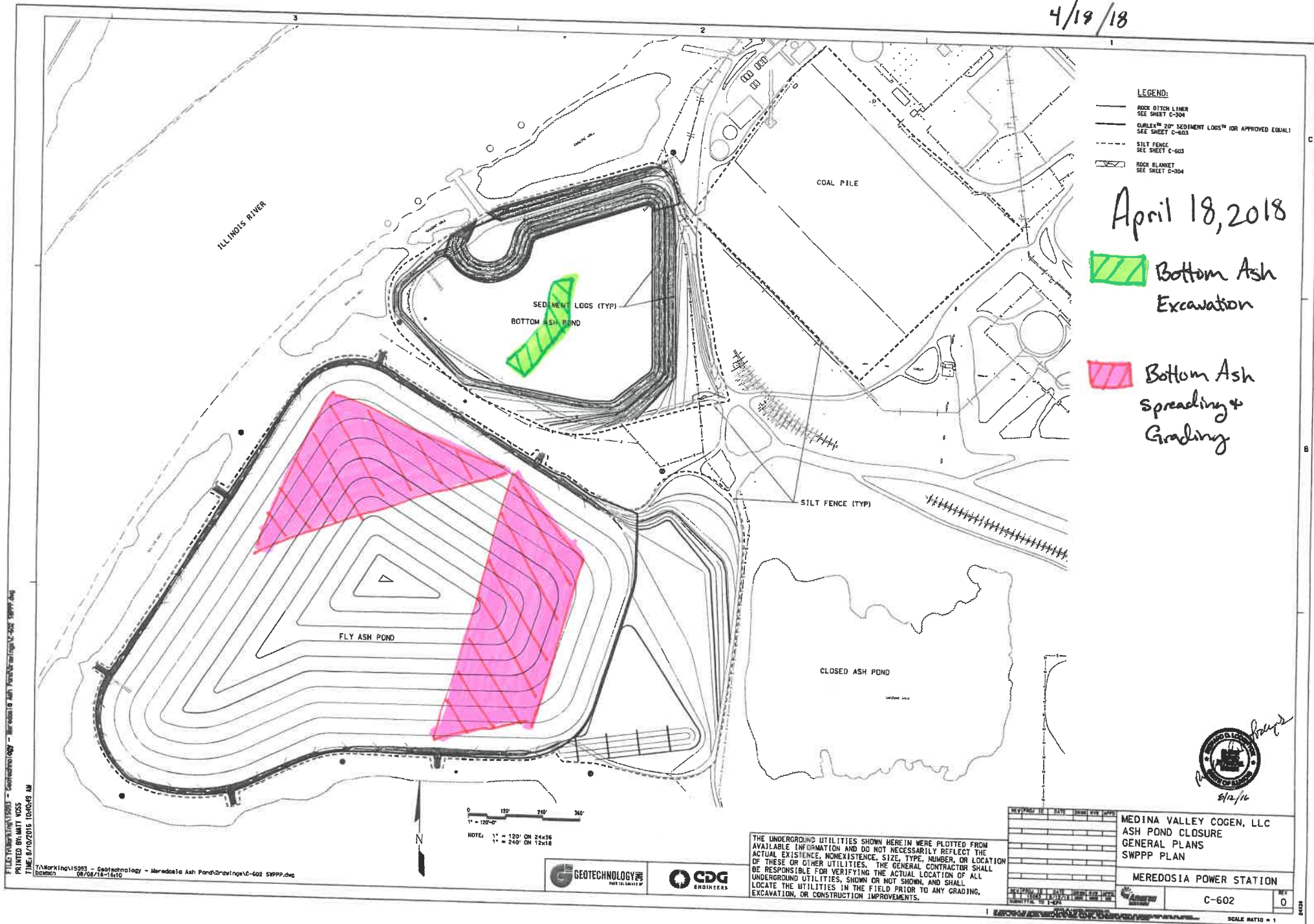
LEGEND:

- ROCK DITCH LINER
SEE SHEET C-304
- CURLEX™ 20" SEDIMENT LOGS™ (OR APPROVED EQUAL)
SEE SHEET C-603
- - - SILT FENCE
SEE SHEET C-603
- ROCK BLANKET
SEE SHEET C-304

April 18, 2018

 Bottom Ash
Excavation

 Bottom Ash
Spreading &
Grading



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 PRINTED BY: MVT LSSS
 TIME: 8/10/2016 10:40:48 AM

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 08/08/16-1610



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REVISION NO.	DATE	DESCRIPTION

MEDINA VALLEY COGEN, LLC
 ASH POND CLOSURE
 GENERAL PLANS
 SWPPP PLAN

MEREDOSIA POWER STATION

C-602

0

SCALE RATIO = 1



Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 04-18-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology, and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Steve P., Pat B., Randy B., Mike W., Gail Gary (phone)
BCCO- Rob F., Garrett B.
OTHERS- Geotechnology Inc.- Alyssa O., Anna S. (ph.), Jessie G. (ph.)

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

Below are the items discussed at the progress meeting held for the Medina Valley COGEN, LLC- Meredosia Power Station Ash Pond Closures on April 11th, 2018. Below the discussion items are action items, miscellaneous discussion/notes, and any potential attachments as necessary.

1. Safety.
 - a. Safety Minute: Garrett led the group safety minute discussion regarding Fall Protection. He provided the group with a handout of the OSHA Fall Protection Overview;
 - i. Falls are among the most common causes of work related injuries and deaths.
 - ii. Different industries have different requirements for minimum fall height protection; the construction industry requires fall protection above 6', as does Ameren Rules to Live By.
 - iii. Garrett discussed with the group the free-standing tie off point that they had designed and had constructed for the task of unloading liner rolls from flatbed truck. Garrett to provide the engineer stamped drawing to Randy for approval for use onsite.
 - b. Mike W. volunteered for next week's safety minute.



2. Contractor Progress Report.

- a. Mobilization: (1) additional Case Quad Trac Tractor arrived to site last Friday, to pull the fourth set of side dump trailers. BCCO has operated 4 sets of tractors and side dump for most of this week. BCCO expects a John Deere 9630 to arrive onsite this week. This unit will be utilized to pull the two John Deere scrapers already onsite and will be utilized initially on the coal yard.
- b. Ash hauling continued this week. BCCO has operated 4 hauling units most of this week, and production has seen an increase in CY moved per day. The additional yards per day hauled, in combination with the cloudy and cold weather, has started to cause some minor backup over at the FAP due to decreased room for dump area. BCCO did not provide shots to the group for removal area tracking last Friday but will do so this Friday as well as provide a CY takeoff report.
- c. Water pumping has continued, and the water level in the FAP pool area has risen since the outfall was shut last week. Steve P. stated that they need to start ejecting water late this week or early next, Gail followed up stating that Ameren would contact the lab for appropriate testing.

3. Contractor's Weekly Work Plan

- a. Update: Rob F.
 - i. Continued ash hauling.
 - ii. Water Pumping will continue as needed.
 - iii. Ameren to start releasing FAP water again this week or early next.

4. Schedule Forecast

- a. Two Week Look Ahead.
 - i. The two-week look ahead coordinates with the upcoming work activities.
 - ii. With the extension of the BAP ash removal item, the group discussed how this ultimately moved the liner installation back as well as other items. Considering the rainy times potentially ahead, the group agreed to leave the schedule as is at this time.

5. New Items/Miscellaneous



- a. Rob F. brought to the group's attention that it is going to be necessary to have backfill in place prior to starting fill in the BAP oil dock roadway extension area. This is due to the assumption based on current conditions that the toe of slope would most likely fail due to saturated ash. Once backfill soil is in place, the fill can be placed as necessary.
- b. Rob F. also brought to the groups attention that the east slope would appear to have some ash beyond the proposed final contours. He questioned at this time what proper procedure would be, to which Mike W. responded that the ash material should be removed to clean fill, and then the remaining slope graded to suitable grade with existing material.
- c. Anna S. noted to the group that there will need to be additional cleanup of the BAP sub grade floor prior to backfill. The group acknowledged this, attributing most of the remaining ash to the large amount of water flow leaving the excavation face and flowing across to the sump point. Rob F. stated that he intended to do a final clean up pass, once the majority of the BAP ash was removed, to avoid having the same problem reoccur.
- d. Steve P. and Randy B. discussed that Ameren transmission will be installing a new pole, transformer, and underground feed to the plant, within the next couple months. Coal will need to be removed prior to the placement of the underground line, to avoid any work above the new line, or contamination of their utility trench with coal fines.
- e. Randy B. and Steve P. stated that two power poles near the coal yard were confirmed dead and that BCCO could remove them for access purposes if necessary.

6. Action Items

- a. BCCO Items:
 - i. Contact GSI and request training certification and experience documentation from them. {Status- Open}
 - ii. BCCO to continue submittals. Update- BCCO has received the RR4 certification letter from Ameren as approved. {Status- Open}
 - iii. Magellan Pipeline coordination for planned activity in coal yard. Update BCCO spoke with Derrick Love with Magellan, who stated that they are waiting on answers from their in-house engineers regarding the coal yard removal over the pipeline. {Status- Open}
- b. Ameren Items:



- i. Mike W. to finish review of pricing as presented by BCCO for additional fence removal, culvert installation, and coal yard run off excavation, and issue an EWO as necessary. {Status- Open}
- ii. Mike W. to review cut/fills on the river side of the BAP oil dock roadway berm and advise the group of planned action. Update: As of this time, it is assumed that minor fills will be made, if at all, and no cutting is allowed as that could potentially weaken the oil line foundations. Ameren and Geotechnology will receive the results of the shear test and determine acceptable slope based upon that. Once that is determined, a final plan will be discussed. Anna informed the group that the shear test result should be in next week. {Status- Open}

The next progress meeting for this project will be held on April 25th, at 9:00 a.m.



DAILY REPORT

DATE: April 25, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.0) Lunch

Arrive: 0830 Depart: 1145 Travel: 5.00 Total: 8.25

AM Conditions: Overcast AM Temperature: 55 F

PM Conditions: --- PM Temperature: ---

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

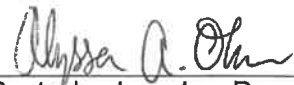
Contractors: Blankenship
Equipment: 2 excavators, 4 tractors with 2 side-dump trailers each, 1 tractor with scraper pan, 1 tractor with scraper box, 3 bulldozers, 1 skid steer, and 1 pump were observed in operation.
Personnel: _____
Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Bottom ash and coal yard runoff material were moved to the Fly Ash Pond.
Deliveries: _____
Testing: _____

CONSTRUCTION SITE LOCATIONS:

Bottom ash was excavated from Bottom Ash Pond and spread out to dry in the Fly Ash Pond.
Coal Yard runoff material was moved to the Fly Ash Pond.


Geotechnology, Inc. Rep.

4/25/18
Date


Geotechnology, Inc. Engineer

4/30/18
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 3300 excavator; one Komatsu PC490 excavator; four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers; one Komatsu bulldozer; two Caterpillar D7E LGP bulldozers, one John Deere 9570R tractor with one John Deere 2112c scraper pan, one New Holland TG275 tractor with a Holcomb scraper box, one Caterpillar 299D skidsteer, and one Godwin pump.

Additional equipment observed on site (not in use): One Komatsu long-reach excavator, one John Deere scraper box (in repair), one Blankenship water wagon.

Two excavators loaded out wet ash material from the Bottom Ash Pond. Four tractors (tracked), each with two side-dump trailers, hauled bottom ash material to the Fly Ash Pond.

One tractor with a scraper pan collected material from the Coal Yard runoff area and moved it to the Fly Ash Pond for drying and grading.

One tractor with a scraper box spread and graded drier material in the Fly Ash Pond.

Two bulldozers spread and graded wet material in the Fly Ash Pond to facilitate drying.

One bulldozer cleaned the top of interior berms in the Fly Ash Pond being used as haul roads.

One skid steer assisted with repairs on one scraper pan.

One supervised pump moved water from the Bottom Ash Pond to the Fly Ash Pond continuously.

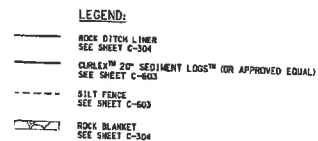
Blankenship held the weekly coordination meeting on site at 0900. See the meeting minutes for additional information.

Geotechnology:

Alyssa Okorn attended the weekly coordination meeting and then observed progress on site.

See the attached location drawing for additional information.

April 25, 2018



- Excavation of Bottom Ash
- Coal Yard Runoff Scraping
- Spreading + Grading Activities



8/12/16

MEDINA VALLEY COGEN, LLC
ASH POND CLOSURE
GENERAL PLANS
SWPPP PLAN

MEREDOSIA POWER STATION

C-602	0
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SCALE RATIO = 1

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NONEXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SHALL LOCATE THE UTILITIES IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.

0 120' 240' 360'

1" = 120'-0"

NOTE: 1" = 120' ON 24x36
1" = 240' ON 12x18



GEOTECHNOLOGY
Earth Construction



CDG
ENGINEERS

PRINTED BY: MATT VOSS

Tr\Working\15093 - Geotechnology - Merceda Ash Pond\Drawings\C-502 SWPP.dwg
boston 08/08/16-1610



Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 04-25-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology, and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Steve P., Pat B., Randy B., Mike W., Gail Gary, Ken B.
BCCO- Rob F., Garrett B.
OTHERS- Geotechnology Inc.- Alyssa O., Anna S. (ph.), Jessie G. (ph.)

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

Below are the items discussed at the progress meeting held for the Medina Valley COGEN, LLC- Meredosia Power Station Ash Pond Closures on April 25th, 2018. Below the discussion items are action items, miscellaneous discussion/notes, and any potential attachments as necessary.

1. Safety.
 - a. Safety Minute: Mike Wagstaff led the group safety minute discussion regarding safe cell phone usage. He provided the group with a handout of Safe Cell Phone Usage tips as well as rules for using mobile phone while operating motorized equipment and working on jobsite;
 - i. Cell phone usage while operating any type of motorized device is strictly prohibited. If an employee needs to make or receive a call, the vehicle must be stopped and in park prior to doing so. Do no resume operation until your call is complete.
 - ii. Not only should cell phones not be used while operating machinery or vehicles, but they can also be a hazard any time while on an industrial or commercial jobsite. Cell phones reduce your chance of hearing a backup alarm, and they take your focus away from the task at hand as well as others around you. Cell



phone result in over 2,000 deaths in the U.S. alone per year, so their use and safe rules to do so are not to be taken lightly.

- b. Anna S. volunteered for next week's safety minute, she will be presenting on wrist safety/carpal tunnel.

2. Contractor Progress Report.

- a. Mobilization: (1) John Deere 9570 Scraper Tractor arrived to site since last week's meeting, to pull the set of 21 CY John Deere Scrapers onsite. This unit is being utilized initially on the coal yard.
- b. Ash hauling continued this week. Large volume of water is present both in the excavated ash as well as welling up from the sub-grade floor surface as well. Moved CY at this point in time is exceeding 65,000 CY. There is a possibility that their soil backfill may proceed in approx. 3 weeks. BCCO needs to begin coordination with Central Stone.
- c. Water pumping has continued, with estimates of the daily input somewhere around 500,000 gallons and the daily outflow of the pool through the discharge structure at 700,000. Water quality has still been satisfactory, but there is concern that the PH has risen. At this point, the plan is to test PH at the pump discharge and monitor from there. Treatment methods were again discussed, and addition of acid at the pump discharge was mentioned as a possible method. Ameren to move forward with identifying third party consultant who could potentially perform this task.

3. Contractor's Weekly Work Plan

- a. Update: Rob F.
 - i. Continued ash hauling.
 - ii. Water Pumping will continue as needed.
 - iii. Continued discharging of FAP water and monitoring by onsite Ameren personnel and 3rd party as needed.

4. Schedule Forecast

- a. Two Week Look Ahead.
 - i. The two-week look ahead coordinates with the upcoming work activities.
 - ii. Garrett updated the group that current liner production shows the order being complete by May 15th, as updated by GSI.



5. New Items/Miscellaneous

- a. Rob F. brought to the group's attention that it may be necessary to increase the pump size to keep up with the influx of water in the BAP. This would be additional water in the FAP, which could affect monitoring.
- b. Gail Gary discussed that the option to leave the FAP outflow open full time is an option, necessary coordination will need to be had between Gail, Ameren onsite personnel, and the 3rd party testing lab.
- c. Anna S. noted to the group that HDPE geomembrane testing time and approval by Tri and then Geotechnology would take approx. 3 weeks, from the time roll selection was made. This was to provide the group a general guideline as to the time required post-production of liner, prior to release for shipment.
- d. Garrett to follow up with an email detailing better GSI's response regarding the certification of training for installation components for the liner system.
- e. Garrett to provide the BAP oil dock roadway topo points to Geotechnology for analysis for slope purposes. BCCO would also work to provide backup analysis but does not have them at this time.

6. Action Items

- a. BCCO Items:
 - i. Contact GSI and request training certification and experience documentation from them. BCCO to follow up with email to Mike and Anna regarding. {Status- Open}
 - ii. BCCO to continue submittals. Update- BCCO has received the RR4 certification letter from Ameren as approved. {Status- Open}
 - iii. Magellan Pipeline coordination for planned activity in coal yard. Update BCCO spoke with Derrick Love with Magellan, who stated that they are waiting on answers from their in-house engineers regarding the coal yard removal over the pipeline. {Status- Open}
- b. Ameren Items:
 - i. Mike W. to finish review of pricing as presented by BCCO for additional fence removal, culvert installation, and coal yard run off excavation, and issue an EWO as necessary. {Status- Open}



- ii. Mike W. to review cut/fills on the river side of the BAP oil dock roadway berm and advise the group of planned action. Update: BCCO has taken a topo of the outside berm area. It appears that there is approx. 1,000 CY of fill required on the outside of the berm to reach proposed contours/grades. BCCO will be sending the survey shots on both the slope and the concrete foundations for the pipeline, as well as takeoff report for cut/fill, to Geotechnology and Ameren.
{Status- Open}

The next progress meeting for this project will be held on May 2nd, at 9:00 a.m.

PHOTOGRAPH LOG



Photograph 1 ▲ - View of bottom ash removal operations observed April 4, 2018, looking northeast.



Photograph 2 ▲ - View of bottom ash removal operations observed April 25, 2018, looking northeast.



Photograph 3 ▲ - View of supervised pump operation at the west end of the Bottom Ash Pond as observed April 14, 2018, looking west.



Photograph 4 ▲ - View of bottom ash removal operations observed April 11, 2018, looking northeast.

Photographs taken by Anna Saindon, Jessie Goodwin, and Alyssa Okorn of Geotechnology, Inc. April 4-25, 2018.



Photograph 5 ▲ - View of bottom ash grading activities at the Fly Ash Pond on April 11, 2018, looking northwest.



Photograph 6 ▲ - View of Coal Pile material runoff removal activities southwest of the Coal Pile on April 25, 2018, looking north.

Photographs taken by Anna Saindon, Jessie Goodwin, and Alyssa Okorn of Geotechnology, Inc. April 4-25, 2018.



MEMORANDUM

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

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

DATE: June 1, 2018

SUBJECT: Summary Report for May 2, 2018 to May 25, 2018

PROJECT: Fly Ash Pond and Bottom Ash Pond Closures
Meredosia Power Station
Meredosia, Morgan County, Illinois
Geotechnology Project No. J024917.04

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

Weather

The weather was generally cloudy to clear. Temperature (°F) lows ranged from 51 to 68°F, and temperature highs ranged from 70 to 90°F.

Construction Activities

Geotechnology representatives conducted site visits on May 2, May 9, and May 16. Geotechnology personnel were on site full time on May 23-25, 2018. The following summary reflects observations during Geotechnology's site visits.

Blankenship Construction Company moved bottom ash from the Bottom Ash Pond to the Fly Ash Pond and graded fly ash in the Fly Ash Pond (observed through May 16, 2018). Residual coal material was moved from the Coal Pile to the Fly Ash Pond. Material in the Fly Ash Pond was graded. On May 23 through 25, 2018, borrow material was placed in the Bottom Ash Pond. On May 24 and 25, 2018, ash from the toe of the Bottom Ash Pond north slope was placed on the north slope.

Equipment and Personnel On-Site

Blankenship Construction Company had the following equipment on site: One Caterpillar excavator, one Komatsu excavator, one Komatsu long-reach excavator, four Case tractors (tracked), eight Smith pull-behind side-dump trailers, one Komatsu bulldozer, two Caterpillar bulldozers, one John Deere tractor with two scraper pans, one New Holland tractor with water wagon, one Holcomb scraper box, one Caterpillar skidsteer, one Godwin water pump.

Due to partial-day site visits, Geotechnology did not record the number of personnel on-site for Blankenship Construction Company for May 2 through May 22, 2018.

On May 24 and 25, 2018, Blankenship Construction Company had 17 personnel on site.

Meetings

Weekly progress meetings were held on Wednesdays: May 2, May 9, May 16, and May 23, 2018. Refer to the meeting minutes for additional information.

Photographs

A photograph log with selected photographs obtained while Geotechnology was on site is attached.

Materials

Bottom ash was excavated at the Bottom Ash Pond, transported, and placed and graded at the Fly Ash Pond (observed through May 16, 2018).

Residual coal material was excavated from the Coal Pile, transported, and placed and graded at the Fly Ash Pond.

Borrow source soil was placed on the east slope and floor of the Bottom Ash Pond.

Testing/Sampling

On May 16, 2018, Anna Saindon of Geotechnology observed material in the Bottom Ash Pond to assess the presence of CCR. A CQA Certification was issued for the “clean closure” of the Bottom Ash Pond floor. The east road and slope were excluded from this CQA Certification.

On May 23, 2018, Anna Saindon of Geotechnology observed material in the Bottom Ash Pond to assess the presence of CCR. A CQA Certification was issued for the “clean closure” of the Bottom Ash Pond east road and slope.

On May 24, 2018, Matthew Voss of CDG performed a site SWPPP inspection.

On May 25, 2018, Alyssa Okorn of Geotechnology collected one sample of delivered borrow soil material for conformance testing.

Ameren Energy Resources
June 1, 2018
Page 3

J024917.04

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., Ph.D.
Geotechnology, Inc.

Attachments: Daily Reports
Photograph Log

DAILY REPORTS



DAILY REPORT

DATE: May 2, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO & AMS

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.0) Lunch

Arrive: 0845

Depart: 1100

Travel: 5.00

Total: 7.25

AM Conditions: Clear

AM Temperature: 75 F

PM Conditions: ---

PM Temperature: ---

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Equipment: 2 excavators, 4 tractors with 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with water wagon, 3 bulldozers, and 1 pump were observed in operation.

Personnel: _____

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Bottom ash and coal yard material were moved to the Fly Ash Pond.

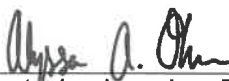
Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Bottom ash was excavated from Bottom Ash Pond and spread out to dry in the Fly Ash Pond.

Coal Yard material was moved to the Fly Ash Pond.


Geotechnology, Inc. Rep.

5/2/2018
Date


Geotechnology, Inc. Engineer

5/4/18
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Komatsu PC490 excavator; one Komatsu long-reach excavator; four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers; one Komatsu bulldozer; two Caterpillar D7E LGP bulldozers, one John Deere 9570R tractor with two John Deere 2112c scraper pan, one New Holland TG275 tractor with one Blankenship water wagon, and one Godwin pump.

Additional equipment observed on site (not in use): One Caterpillar 3300 excavator, one Holcomb scraper box, and one Caterpillar 299D skidsteer.

Two excavators loaded out wet ash material from the Bottom Ash Pond. Four tractors (tracked), each with two side-dump trailers, hauled bottom ash material to the Fly Ash Pond.

One tractor with two scraper pans collected material from the Coal Yard and moved it to the Fly Ash Pond for grading.

One tractor with a water wagon sprayed water across site for dust suppression.

Three bulldozers spread and graded wet material in the Fly Ash Pond to facilitate drying.

One supervised pump moved water from the Bottom Ash Pond to the Fly Ash Pond continuously.

Blankenship held the weekly coordination meeting on site at 0900. See the meeting minutes for additional information.

Geotechnology:

Alyssa Okorn and Anna Saindon attended the weekly coordination meeting and then observed progress on site.

See the attached location drawing for additional information.

5.2.2018

- LEGEND:
- BOX WITH LINE SEE SHEET C-501
 - CURB/POD SEDIMENT LOGS ON APPROVED EQUAL
 - ALL FENCES SEE SHEET C-502
 - ROCK BLANKET SEE SHEET C-504

May 2, 2018

Bottom Ash Excavations

Fly Ash Pond

Grading

Debris Clean Up



DATE	BY	CHKD	APP'D
8/12/16			
MEDINA VALLEY COGEN, LLC			
ASH POND CLOSURE			
GENERAL PLANS			
SWPPP PLAN			
MEREDOSIA POWER STATION			
C-602			

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION. THE CONTRACTOR SHALL VERIFY THE ACTUAL EXISTENCE, NON-EXISTENCE, SIZE, TYPE, NUMBER, DEPTH, AND LOCATION OF ALL UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES. THE CONTRACTOR SHALL LOCATE THE UTILITIES IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION IMPROVEMENTS.



NOTES:
1" = 120' ON 24x36
1" = 240' ON 12x18

Working\5693 - Geotechnology - Meredosias Ash Pond\Drawings\C-602 SWPPP.dwg
08/02/18 (R10)

PRINTED BY: MATT ROSS
DATE: 8/10/2016 10:40:43 AM

FILE: F:\Working\5693 - Geotechnology - Meredosias Ash Pond\Drawings\C-602 SWPPP.dwg



Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 05-02-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology, and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Steve P., Pat B., Randy B., Mike W., Gail Gary (ph.)
BCCO- Rob F., Garrett B. (ph.)
OTHERS- Geotechnology Inc.- Alyssa O., Anna S.

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

Below are the items discussed at the progress meeting held for the Medina Valley COGEN, LLC- Meredosia Power Station Ash Pond Closures on May 2nd, 2018. Below the discussion items are action items, miscellaneous discussion/notes, and any potential attachments as necessary.

1. Safety.

a. Safety Minute: Anna S. – Wrist Safety;

- i. Most people think of typing and other activities when they consider causes of Carpal tunnel syndrome. In fact, driving and cell phone use are two of the major contributing factors of Carpal Tunnel Syndrome today.
- ii. When driving, make an effort to not rest your wrist on the steering wheel, ensure nice straight alignment of the wrist while holding the wheel that is comfortable. During cell phone use, if possible use voice command features, speakerphone, and possibly headsets. These features can limit your time holding the phone with your wrist in a potentially compromising position.
- iii. Stretches are very advantageous for wrist health and should be performed daily to help prevent injuries and promote wrist health. Try to perform a couple stretches at stop lights (if safe to do so) or just prior to starting daily tasks. These efforts can help ensure wrist health well into your future.



of the sand material that appears to be “extra” on the east slope and fill the excavated areas to a suitable slope if needed.

- iii. Rob intends to begin making “clean up” passes in the BAP to try and collect any runoff ash that has moved with the water flow. This will help achieve clean conditions necessary to begin backfill.
- iv. Anna intends on being back in two weeks to approve any available sub grade on BAP and coal areas.
- v. Water Pumping will continue as needed.
- vi. Continued discharging of FAP water and monitoring by onsite Ameren personnel and 3rd party as needed.
- vii. Garrett will contact both the hauling contractor and borrow source and begin any necessary arrangements with them for beginning borrow excavation and hauling to site.

4. Schedule Forecast

- a. Two Week Look Ahead.
 - i. The two-week look ahead coordinates with the upcoming work activities.
 - ii. Rob updated the group that he would estimate the coal yard removal being complete with the next 2-3 weeks, which is slightly longer duration than the schedule shows. Mike agreed to extend that duration to make accurate.
 - iii. Silt fence installation should commence late this week or early next week.

5. New Items/Miscellaneous

- a. Rob F. asked about wood debris in the way of the silt fence installation, the Ameren group clarified that it could simply be pushed out of the way, toward to the river.
- b. Mike W. expressed the importance of keeping communication open with GSI to ensure that they are well aware of our schedule and are devoting us the necessary resources for that time. Garrett to continue this as needed approaching installation time.
- c. Mike also asked about some fill material being placed on the east side of the FAP and if BCCO was monitoring the fills required in that area. Rob agreed that it was near the edge of the FAP limits and that they were using it as a conditioning area for wet ash that would be moved later as it dries and placed within grades and limits. BCCO has GPS



DAILY REPORT

DATE: May 9, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.0) Lunch

Arrive: 0845

Depart: 1145

Travel: 5.00

Total: 8.00

AM Conditions: Cloudy

AM Temperature: 65 F

PM Conditions: ---

PM Temperature: ---

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Equipment: 3 excavators, 4 tractors with 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with scraper box, 4 bulldozers, and 1 pump were observed in operation.

Personnel: _____

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Bottom ash and coal yard material were moved to the Fly Ash Pond.

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Bottom ash was excavated from Bottom Ash Pond and spread out to dry in the Fly Ash Pond.

Coal Yard material was moved to the Fly Ash Pond. Clearing in NE corner of Coal Yard for road.

Allyce A. Olin
Geotechnology, Inc. Rep.

5/9/2018
Date

[Signature]
Geotechnology, Inc. Engineer

5-18-18
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Komatsu PC490 excavator; one Komatsu long-reach excavator; one Caterpillar 3300 excavator; four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers; one Komatsu bulldozer; one Caterpillar D6 bulldozer; two Caterpillar D7E LGP bulldozers, one John Deere 9570R tractor with two John Deere 2112c scraper pans, one New Holland TG275 tractor with one Holcomb scraper box, and one Godwin pump.

Additional equipment observed on site (not in use): One Blankenship water wagon and one Caterpillar 299D skidsteer.

Two excavators loaded out wet ash material from the Bottom Ash Pond. Four tractors (tracked), each with two side-dump trailers, hauled bottom ash material to the Fly Ash Pond.

One excavator worked on clearing the northeast corner of the Coal Yard for an access road for dump trucks.

One tractor with two scraper pans collected material from the Coal Yard and moved it to the Fly Ash Pond for grading.

One tractor with a scraper box graded material in the Fly Ash Pond.

Four bulldozers spread and graded material in the Fly Ash Pond.

One supervised pump moved water from the Bottom Ash Pond to the Fly Ash Pond continuously.

Blankenship held the weekly coordination meeting on site at 0900. See the meeting minutes for additional information.

Geotechnology:

Alyssa Okorn attended the weekly coordination meeting and then observed progress on site.

See the attached location drawing for additional information.

COAL PILE

SEDIMENT LOGS (TYP)
BOTTOM ASH POND

SILT FENCE (TYP)

CLOSED ASH POND

FLY ASH POND

ILLINOIS RIVER

0 100 200 300



Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER
STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 05-09-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology, and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Steve P., Pat B., Randy B., Mike W.
BCCO- Rob F., Garrett B.
OTHERS- Geotechnology Inc.- Alyssa O., Anna S. (ph.)

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

Below are the items discussed at the progress meeting held for the Medina Valley COGEN, LLC- Meredosia Power Station Ash Pond Closures on May 9th, 2018. Below the discussion items are action items, miscellaneous discussion/notes, and any potential attachments as necessary.

1. Safety.

a. Safety Minute: Rob F. – Job Safety Checklist;

- i. Rob presented from a handout a list of Job Safety Checklist items that apply to all industrial and commercial construction projects. This list was a great all-inclusive list of items that employees should use as often as possible to help keep everyone onsite safe.
- ii. Mike noted that all of these checklist items applied to the workplace, and that most of them not only applied, but played a vital role in the type of projects that we are involved in daily, working in the power generation industry.
- iii. One of the main notes of the handout, something that Rob tries to remind everyone of daily, is to keep in mind this phrase; "If it doesn't look, feel, or smell right, save the day and back away!"
- iv. Please see attached list of Job Safety items at the bottom of this report.



- iii. Water Pumping will continue as needed.
- iv. Continued discharging of FAP water and monitoring by onsite Ameren personnel and 3rd party as needed. The pool elevation in the FAP is acceptable to all parties, it is a sufficient level to help control TSS as well as keep water off the areas filling operations need to start using.
- v. Grading at the Fly Ash pond will continue as fill is brought in. Grading operations have started to incorporate the perimeter berms as well.

4. Schedule Forecast

- a. Two Week Look Ahead.
 - i. The two-week look ahead coordinates with the upcoming work activities.
 - ii. Rob updated the group that he would estimate the coal yard removal being complete in approx. 3 weeks.

5. New Items/Miscellaneous

- a. Rob F. stated that he will fill out SWPPP inspection forms. Garrett to send inspection forms up for this use.
- b. Discussion was had regarding the BAP berm being cut to allow water to freely flow in and out of the BAP basin area once the berm removal was complete. Mike stated that even though it is not shown, he feels as though the intent was to place a swale in the area of the old BAP outfall to allow for this. Mike said that he would confer with Anna and CDG to get this planned.
- c. Mike again expressed to the group the importance of needing to excavate the ditches of the FAP below subgrade to allow for backfill just prior to lining. This would help reduce the possibility of the ditch areas becoming over saturated to the point that they cannot be compacted and made suitable for liner placement. The group discussed that the ditches will actually be in the tops of the old berms, so the thought is that this won't be as much of a problem as initially anticipated.
- d. Ameren mentioned that monitoring well installation was to begin sometime in the future and BCCO may need to assist with access.
- e. Garrett asked about the UV test results, to which Anna replied that test results should be arriving by weeks end.

6. Action Items

TOOLBOXTOPICS.COM

Company Name

Meredosia
BLCO

Job Name

Meredosia

Date

5-9-18

JOB SAFETY CHECKLIST

Always follow all safety rules and regulations.

Learn to recognize unsafe conditions and be sure to correct them.

Make safety your responsibility -- don't depend on others.

Handle hazardous materials properly -- check the MSDS for accurate information.

Develop good housekeeping habits.

Inspect electrical and hand tools before use.

When it's heavy get some help. Don't be a hurt hero.

Never smoke around flammables.

Read and heed signs and other warnings.

Don't take chances -- check it out first -- only fools rush in.

Watch out for pinch points and sharp edges. Keep your work area neat and clean.

Avoid horseplay -- someone always gets hurt. Report injuries to your supervisor promptly.

Near misses are warnings -- the next time could be much worse.

Wear personal protective gear properly and whenever required.

When in doubt -- lock it out.

Select the right tool for the job.

Wear your seat belt -- the life you save may be yours.

Check the label and read the manufacturer's instructions before use. Watch out for others on the job.

Follow proper trenching safety guidelines -- bench, shore, or sheet.

Call for help when there is an emergency.

Ask questions whenever you're in doubt.

IF IT DOESN'T LOOK, FEEL OR SMELL RIGHT SAVE THE DAY & BACK AWAY!

Safety Recommendations:

Job Specific Topics:

S.D.S Reviewed:

Attended By:

<u>Brenden Lomas</u>	<u>Rick Kempf</u>	<u>Christy Parrell</u>
<u>Rose H. Wheeler</u>	<u>Allen Berghaus</u>	<u>Tom Groover</u>
<u>Janet Kent</u>	<u>Carra Ann</u>	<u>Chad Johnson</u>
<u>Robert Minton</u>	<u>Phillip Springer</u>	<u>Denton Berger</u>
<u>Danell Brewer</u>	<u>Ryan Pittsburgh</u>	<u>Shawn Vazell</u>
<u>Rob Foswick</u>	<u>Ross Wilson</u>	



DAILY REPORT

DATE: May 16, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO & AMS
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.0) Lunch

Arrive: 0800 Depart: 1100 Travel: 5.00 Total: 8.00
AM Conditions: Partly Cloudy AM Temperature: 80 F
PM Conditions: --- PM Temperature: ---

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship
Equipment: 2 excavators, 4 tractors with 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with scraper box, 3 bulldozers, and 1 pump were observed in operation.
Personnel: _____
Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Bottom ash and coal yard material were moved to the Fly Ash Pond.
Deliveries: _____
Testing: _____

CONSTRUCTION SITE LOCATIONS:

Bottom ash was excavated from Bottom Ash Pond and spread out to dry in the Fly Ash Pond.
Coal Yard material was moved to the Fly Ash Pond.

Alyssa A. Olin
Geotechnology, Inc. Rep.

5/16/2018
Date

[Signature]
Geotechnology, Inc. Engineer

5-18-18
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Komatsu PC490 excavator; one Caterpillar 3300 excavator; four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers; one Caterpillar 299D skidsteer; two Caterpillar D7E LGP bulldozers, one John Deere 9570R tractor with two John Deere 2112c scraper pan, one New Holland TG275 tractor with one Holcomb scraper box, and one Godwin pump.

Additional equipment observed on site (not in use): One Komatsu long-reach excavator, one Blankenship water wagon, and one Komatsu bulldozer.

Two excavators loaded out ash material from the Bottom Ash Pond. Four tractors (tracked), each with two side-dump trailers, hauled bottom ash material to the Fly Ash Pond.

One tractor with two scraper pans collected material from the Coal Yard and moved it to the Fly Ash Pond for grading.

One tractor with a scraper pan graded material in the Fly Ash Pond.

Three bulldozers spread and graded wet material in the Fly Ash Pond to facilitate drying.

One supervised pump moved water from the Bottom Ash Pond to the Fly Ash Pond continuously.

One skidsteer cleaned up around site.

Blankenship held the weekly coordination meeting on site at 0900. See the meeting minutes for additional information.

Geotechnology:

Alyssa Okorn and Anna Saindon attended the weekly coordination meeting and then observed progress on site.

See the attached location drawing for additional information.

5.16.2018

- LEGEND:
- NEW ASH POND C-400
 - EXISTING SEDIMENT LOSS" OR APPROVED EQUAL
 - SEE SHEET C-400
 - SILT FENCE
 - SEE SHEET C-400
 - ROCK BLANKET
 - SEE SHEET C-400

May 16, 2018

Bottom Ash Pond
Excavations
Fly Ash Pond
Grading



MEDINA VALLEY COGEN, LLC	
ASH POND CLOSURE	
GENERAL PLANS	
SWPPP PLAN	
MEREDOSIA POWER STATION	
PROJECT NO.	C-602
DATE	0
BY	
CHECKED BY	
APPROVED BY	

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT REPRESENT THE ACTUAL LOCATION OF ANY UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.



NOTES:
1" = 100'
1" = 100'
1" = 100'

DATE: 8/10/2016 10:40:49 AM

PROJECT: Meredosia Ash Pond Closures
DRAWN BY: [Name]
CHECKED BY: [Name]
DATE: 8/10/2016





Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 05-16-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology, and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Steve P., Pat B., Randy B., (Mike W., Gail G. on phone)
BCCO- Rob F., Garrett B.
OTHERS- Geotechnology Inc.- Alyssa O., Anna S., (Jessie G. on ph.)

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

Below are the items discussed at the progress meeting held for the Medina Valley COGEN, LLC- Meredosia Power Station Ash Pond Closures on May 16th, 2018. Below the discussion items are action items, miscellaneous discussion/notes, and any potential attachments as necessary.

1. Safety.

a. Safety Minute: Pat B. – Hi Visibility Clothing;

- i. Hi Visibility clothing has 3 standards in the construction industry. Type 1 is acceptable only in off-road areas and requires a minimum of 117 Sq. In. of Hi-Viz clothing, Type 2 is for roadways or right of way areas and requires a minimum of 775 Sq. In. of Hi-Viz clothing. Type 3 combines Hi-Viz cloth with reflective materials, placed strategically to better portray the human body and movement. Type 3 has a minimum requirement of 1240 Sq. In. of Hi-Viz and reflective material.
- ii. It is key to remember to keep your Hi-Viz clothing washed and in good condition, to maintain the best performance of the product.

b. Randy B. volunteered for next week's safety minute, on Black Fly Insect awareness.

2. Contractor Progress Report.



- iv. Water Pumping will continue as needed.
- v. Continued discharging of FAP water and monitoring by onsite Ameren personnel and 3rd party as needed.
- vi. Grading at the Fly Ash pond will continue as fill is brought in. Grading operations have started to incorporate the perimeter berms as well.
- vii. Start offsite import and backfill of BAP floor. Backfill will start next to the BAP oil dock roadway berm first. Rob and crew will work on the gate for trucks to enter.
- viii. Anna is tentatively planning on being onsite May 30th with CDG to inspect BMP's.

4. Schedule Forecast

- a. Two Week Look Ahead.
 - i. The two-week look ahead coordinates with the upcoming work activities.

5. New Items/Miscellaneous

- a. Garrett B. asked for clarification if the intent was to completely remove the BAP outflow pipe, or just the vertical structure. Mike and Anna clarified and agreed that the intent was to remove the vertical and leave the grouted pipe in place.
- b. Anna stated as an early heads up that she may have a group from Geotechnology up to view the Closure Turf system installation.
- c. Anna asked for notification as soon as possible as to when Alyssa needs to be onsite to observe backfill operations. Rob stated that he would update Alyssa Friday morning.
- d. Randy stated that they discussed the need to CBT the truck drivers and it was decided as long as the drivers stay in the truck there is no need to CBT them.
- e. Anna stated that she is satisfied with the submittal progress and schedule at this time.

6. Action Items

- a. BCCO Items:
 - i. BCCO to continue submittals. Update- BCCO has submitted the remainder of Synthetic Turf Grass order submittal to Ameren and Geotechnology. GSI is to select rolls from last batch of Synthetic turf for Geotechnology to approve for conformance testing samples. Anna clarified that TRI can also make roll



DAILY REPORT

DATE: May 23, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO & AMS
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0715 Depart: 1530 Travel: 0.50 Total: 8.25

AM Conditions: Clear AM Temperature: 75 F

PM Conditions: Sunny & clear PM Temperature: 80 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Equipment: 2 excavators, 4 tractors with 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with water wagon, 3 bulldozers, and 1 pump were observed in operation.

Personnel: _____

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:


Materials Used: Coal was moved to Fly Ash Pond and borrow material was spread in Bottom Ash Pond.

Deliveries: Eight dump trucks brought borrow material from the quarry.

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Coal Yard material was moved to the Fly Ash Pond. Borrow material from the quarry was spread on the northeast slope of the Bottom Ash Pond


Geotechnology, Inc. Rep.

5/23/2018
Date


Geotechnology, Inc. Engineer

5-24-18
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Komatsu PC490 excavator; one Caterpillar 3300, four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, one Caterpillar D6 bulldozer, two Caterpillar D7E LGP bulldozers, one John Deere 9570R tractor with two John Deere 2112c scraper pan, one New Holland TG275 tractor with one Blankenship water wagon, and one Godwin pump.

Additional equipment observed on site (not in use): One Komatsu long-reach excavator, one Komatsu bulldozer, one Holcomb scraper box, and one Caterpillar 299D skidsteer.

Two excavators loaded out coal from the Coal Yard to the Fly Ash Pond. Four tractors (tracked), each with two side-dump trailers, hauled coal material to the Fly Ash Pond for grading.

One tractor with two scraper pans collected material from the Coal Yard and moved it to the Fly Ash Pond for grading.

One tractor with a water wagon kept dust down across site.

Two bulldozers spread and graded material in the Fly Ash Pond.

One bulldozer spread borrow material on the northeast slope of the Bottom Ash Pond.

One supervised pump moved water from the Bottom Ash Pond to the Fly Ash Pond continuously.

Blankenship held the weekly coordination meeting on site at 0900. See the meeting minutes for additional information.

Geotechnology:

Alyssa Okorn and Anna Saindon attended the weekly coordination meeting. Anna departed site at 1000. Alyssa then observed progress on the northeast slope of the Bottom Ash Pond until end of day.

See the attached location drawing for additional information.



Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER
STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 05-23-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology, and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Steve P., Pat B., Randy B., Mike W.,
BCCO- Rob F., Garrett B., (Phil White, ph.)
OTHERS- Geotechnology Inc.- Alyssa O., Anna S., (Jessie G. ph.)

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

Below are the items discussed at the progress meeting held for the Medina Valley COGEN, LLC- Meredosia Power Station Ash Pond Closures on May 23rd, 2018. Below the discussion items are action items, miscellaneous discussion/notes, and any potential attachments as necessary.

1. Safety.
 - a. Safety Minute: Randy B. – Black Fly Insect Awareness;
 - i. Black Flies are present on the Meredosia Plant site and the surrounding area in Illinois. They breed in clean running water and bite their food source to access blood flow. Their bit can leave sizable welts. They have been proven to carry disease in other parts on the world, but at this time have not been known to do so in the U.S.
 - ii. Deet repellants are not effective on these insects, with the recommendation being to use Permethrin, full length clothing, and head nets if possible. Eventually, heat from the summer will stop the breeding cycle and they will depart the area.
 - b. Steve P. volunteered for next week's safety minute.
2. Contractor Progress Report.



limit over the fiber optic or roadway. Clean up efforts at the above ground oil line (FS/Sunrise Ag) will continue. The rail road ties that are in the middle of the western half of the coal yard will need to be removed to make the area clean.

- f. Soil Backfill of the BAP began today. 8 trucks are running today, BCCO plans to continue to add trucks as needed.

3. Contractor's Weekly Work Plan

a. Update: Rob F.

- i. Continue pumping effort.
- ii. Continue backfill in the BAP. This is dependent on weather and pumping efforts.
- iii. Coal yard cleanup will continue. The main excavation is essentially complete, but the more detailed cleanup/dress up efforts will continue.
- iv. Continued discharging of FAP water and monitoring by onsite Ameren personnel and 3rd party as needed.
- v. Grading at the Fly Ash pond will continue as fill is brought in. Grading operations have started to incorporate the perimeter berms as well. BCCO, after discussion with the group about ash volumes, has started to grade the FAP surface at a negative 2' offset.
- vi. As needed/available, Rob may move a portion of the hauling crew over to the BAP berm area to be removed, and start removing that material for placement in the FAP or the BAP oil dock berm.

4. Schedule Forecast

a. Two Week Look Ahead.

- i. The two-week look ahead coordinates with the upcoming work activities, excluding the below.
- ii. The BAP berm excavation will be adjusted to start date of 5/28/18.

5. New Items/Miscellaneous

- a. Garrett B. introduced Phil White and informed the group that he would fill in next week while Garrett is out. Phil can be reached at the BCCO offices (618) 326-8467 or email phil@bcc1968.com.



The next progress meeting for this project will be held on May 30th, at 9:00 a.m.



DAILY REPORT

DATE: May 24, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645

Depart: 1530

Travel: 0.50

Total: 8.75

AM Conditions: Sunny & clear

AM Temperature: 70 F

PM Conditions: Sunny & clear

PM Temperature: 85 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Equipment: 2 excavators, 4 tractors with 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with water wagon, 3 bulldozers, and 1 pump were observed in operation.

Personnel: Blankenship: 17 on site; Ameren: 2 on site; Geotechnology: 1 on site

Visitors: Matthew Voss with CDG on site 1015-1115

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Coal was moved to Fly Ash Pond and borrow material was spread in Bottom Ash Pond.

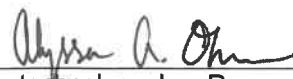
Deliveries: Eleven dump trucks brought borrow material from the quarry.

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Coal Yard material was moved to the Fly Ash Pond. Borrow material from the quarry was spread on

the northeast slope and the floor of the Bottom Ash Pond. Additional ash excavation in Bottom Ash Pond.


Geotechnology, Inc. Rep.

5/24/2018
Date


Geotechnology, Inc. Engineer

5/29/18
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Komatsu PC490 excavator, one Caterpillar 3300 excavator, one Komatsu long-reach excavator, four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, one Caterpillar D6 bulldozer, two Caterpillar D7E LGP bulldozers, one John Deere 9570R tractor with two John Deere 2112c scraper pans, one New Holland TG275 tractor with one Blankenship water wagon, and one Godwin pump.

Additional equipment observed on site (not in use): One Komatsu bulldozer, one Holcomb scraper box, and one Caterpillar 299D skidsteer.

Blankenship held the daily safety and coordination meeting on site at 0700. The topic was hearing protection.

Two excavators loaded out coal from the Coal Yard to the Fly Ash Pond. Four tractors (tracked), each with two side-dump trailers, and one tractor with two scraper pans hauled coal material to the Fly Ash Pond for grading.

One long-reach excavator moved ash from the floor of the Bottom Ash Pond at the toe of the north slope and placed it onto the north slope in lifts.

One tractor with a water wagon kept dust down across site.

Two bulldozers spread and graded material in the Fly Ash Pond.

One bulldozer spread borrow material on the northeast slope and the floor of the Bottom Ash Pond.


One supervised pump moved water from the Bottom Ash Pond to the Fly Ash Pond continuously.

Geotechnology:

Alyssa Okorn attended the daily safety meeting with Blankenship and observed progress on the northeast slope and the floor of the Bottom Ash Pond throughout the day. Rode along with Matthew Voss of CDG and Rob Fosnock of Blankenship during a SWPPP inspection.

See the attached location drawing for additional information.

3



Fly Ash Pond
Grading



SCALE RATIO = 1



T:\Working\15093 - Gas Technology - Mercedale Ash Pond Drawings\15-1510
08/20/15-1510

Amount of the 1st

100

100



DAILY REPORT

DATE: May 25, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0630

Depart: 1330

Travel: 3.0

Total: 9.5

AM Conditions: Sunny & clear

AM Temperature: 70 F

PM Conditions: Mostly cloudy

PM Temperature: 85 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Equipment: 3 excavators, 4 tractors with 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with water wagon, 3 bulldozers, and 1 pump were observed in operation.

Personnel: Blankenship: 17 on site; Ameren: 2 on site; Geotechnology: 1 on site

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Coal was moved to Fly Ash Pond and borrow material was spread in Bottom Ash Pond.

Deliveries: Twelve dump trucks brought borrow material from the quarry.

Testing: Alyssa O. collected a sample of the borrow material.

CONSTRUCTION SITE LOCATIONS:

Coal Yard material was moved to the Fly Ash Pond. Borrow material from the quarry was spread on

the northeast slope and the floor of the Bottom Ash Pond. Additional ash excavation in Bottom Ash Pond.

Alyssa A. Ozm
Geotechnology, Inc. Rep.

5/25/2018
Date

[Signature]
Geotechnology, Inc. Engineer

5/29/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Komatsu PC490 excavator, one Caterpillar 3300 excavator, one Komatsu long-reach excavator, four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, one Caterpillar D6 bulldozer, two Caterpillar D7E LGP bulldozers, one John Deere 9570R tractor with two John Deere 2112c scraper pans, one New Holland TG275 tractor with one Blankenship water wagon, and one Godwin pump.

Additional equipment observed on site (not in use): One Komatsu bulldozer, one Holcomb blade box, and one Caterpillar 299D skidsteer.

Blankenship held the daily safety and coordination meeting on site at 0700. The safety topic was heart attacks.

Two excavators loaded out coal from the Coal Yard to the Fly Ash Pond. Four tractors (tracked), each with two side-dump trailers, and one tractor with two scraper pans hauled coal material to the Fly Ash Pond for grading.

One long-reach excavator moved ash from the floor of the Bottom Ash Pond at the toe of the north slope and placed it onto the north slope in lifts.

One tractor with a water wagon kept dust down across site.

Two bulldozers spread and graded material in the Fly Ash Pond.

One bulldozer spread borrow material on the northeast slope and the floor of the Bottom Ash Pond.

One supervised pump moved water from the Bottom Ash Pond to the Fly Ash Pond continuously.

Geotechnology:

Alyssa Okorn attended daily safety meeting with Blankenship and observed progress on the northeast slope and the floor of the Bottom Ash Pond throughout the day. Collected a sample of the borrow material at 0710.

See the attached location drawing for additional information.

PHOTOGRAPH LOG



Photograph 1 ▲ - View of bottom ash removal operations observed May 2, 2018, looking northeast.



Photograph 2 ▲ - View of the Coal Yard runoff area after coal runoff material was removed, observed May 2, 2018, looking south.



Photograph 3 ▲ - View of bottom ash removal operations observed May 16, 2018, looking northeast.



Photograph 4 ▲ - View of grading activities at the Fly Ash Pond on May 16, 2018, looking northwest.



Photograph 5 ▲ - View of SWPPP measures at Outfall 004 on May 16, 2018, looking northwest.



Photograph 6 ▲ - View of Coal Pile material removal activities at the Coal Pile on May 23, 2018, looking east.



Photograph 7 ▲ - View of borrow soil placement at the Bottom Ash Pond on May 24, 2018, looking east.



Photograph 8 ▲ - View of bottom ash removal activities at the Bottom Ash Pond on May 24, 2018, looking west.



Photograph 9 ▲ - View of supervised pumping of water from the Bottom Ash Pond on May 25, 2018, looking southwest.



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Missouri

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

DATE: June 4, 2018

SUBJECT: Summary Report for May 29, 2018 to June 1, 2018

PROJECT: Fly Ash Pond and Bottom Ash Pond Closures
Meredosia Power Station
Meredosia, Morgan County, Illinois
Geotechnology Project No. J024917.04

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

Weather

The weather was generally cloudy to clear. Light rain was observed on site on the afternoon of May 31, 2018. Temperature (°F) lows ranged from 69 to 70°F, and temperature highs ranged from 83 to 94°F.

Construction Activities

Blankenship Construction Company moved residual coal material from the Coal Pile to the Fly Ash Pond and graded material in the Fly Ash Pond. Borrow material was placed in the Bottom Ash Pond. Material from the southwest berm of the Bottom Ash Pond was removed to reach the planned grade.

Equipment and Personnel On-Site

Blankenship Construction Company had the following equipment on site: One Caterpillar excavator, one Komatsu excavator, one Komatsu long-reach excavator, four Case tractors (tracked), eight Smith pull-behind side-dump trailers, one Komatsu bulldozer, two Caterpillar bulldozers, one John Deere tractor with two scraper pans, one New Holland tractor with water wagon, one Holcomb scraper box, one Caterpillar skidsteer, one Godwin water pump. An 84-inch Sakai CV 500D smooth drum roller was delivered to site on May 30, 2018.

On May 29, 2018, Blankenship Construction Company had 17 personnel on site. On May 30 to June 1, 2018, Blankenship Construction Company had 18 personnel on site.

Meetings

A weekly progress meeting was held on Wednesday, May 30, 2018. Refer to the meeting minutes for additional information.

Photographs

A photograph log with selected photographs obtained while Geotechnology was on site is attached.

Materials

Residual coal material was excavated from the Coal Pile, transported, and placed and graded at the Fly Ash Pond.

Borrow source soil was placed on the east slope and floor of the Bottom Ash Pond.

Testing/Sampling

Testing and sampling was not performed this week on site.

Signature of CQA Officer



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

Attachments: Daily Reports
Photograph Log

DAILY REPORTS



DAILY REPORT

DATE: May 29, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645

Depart: 1530

Travel: 0.50

Total: 8.75

AM Conditions: Overcast

AM Temperature: 75 F

PM Conditions: Partly Cloudy

PM Temperature: 80 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Equipment: 2 excavators, 4 tractors with 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with water wagon, 3 bulldozers, and 1 pump were observed in operation.

Personnel: Blankenship – 17; Ameren – 2

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Coal yard material moved to the Fly Ash Pond; borrow material spread on NE BAP slope

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Coal Yard material was moved to Fly Ash Pond, and borrow material from the quarry was spread on BAP floor and the NE slope.

Allyson A. Oh
Geotechnology, Inc. Rep.

5/29/2018
Date

Richardson
Geotechnology, Inc. Engineer

6/4/18
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 3300 excavator; one Komatsu PC490 excavator; four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers; one Caterpillar D7E LGP bulldozer, two Caterpillar D6T bulldozers, one John Deere 9570R tractor with two John Deere 2112c scraper pans, one New Holland TG275 tractor with one Blankenship water wagon, and one Godwin pump.

Additional equipment observed on site (not in use): One Komatsu long-reach excavator, one Komatsu bulldozer, one Caterpillar 299D skidsteer, and one Holcomb scraper box.

Attended daily morning safety and coordination meeting, topic was New Employee/New Job.

Two excavators loaded out coal material from the Coal Yard. Four tractors (tracked), each with two side-dump trailers, and one tractor with two scraper pans hauled this material to the Fly Ash Pond.

One tractor with a water wagon maintained dust control on hauling roads.

Two bulldozers spread and graded material in the Fly Ash Pond.

One bulldozer spread borrow material from the quarry on the northeast inner slope and corner of the floor of the Bottom Ash Pond.

One supervised pump moved water from the Bottom Ash Pond to the Fly Ash Pond continuously.

Geotechnology:

Alyssa Okorn located the nine monitoring wells on site, and spoke to Steve and Randy (Ameren) about the locks and recommended access points for each one. Alyssa then observed hauling and spreading of borrow material in the Bottom Ash Pond. Borrow material seemed to be difficult to compact and visible pumping was observed in all areas on the floor. An 84" smooth drum roller is expected for delivery on 5.30.2018 to assist with compaction.

See the attached location drawing for additional information.



DAILY REPORT

DATE: May 30, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1530 Travel: 0.50 Total: 8.75
AM Conditions: Overcast AM Temperature: 70 F
PM Conditions: Partly Cloudy PM Temperature: 86 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship
Equipment: 2 excavators, 4 tractors with 2 side-dump trailers each, 1 tractor with water wagon, 3 bulldozers, 1 roller, and 1 pump were observed in operation.
Personnel: Blankenship – 18; Ameren – 3
Visitors: Mike Wagstaff - Ameren

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Coal yard and runoff material; borrow material; BAP berm material
Deliveries: 1030 – 84" Sakai CV 550D smooth drum roller
Testing: _____

CONSTRUCTION SITE LOCATIONS:

Coal Yard material was moved to Fly Ash Pond, borrow material from the quarry was spread on BAP floor and the NE slope, and BAP berm material was moved to Fly Ash Pond.

Alyssa A. Oh
Geotechnology, Inc. Rep.

5/30/2018
Date

Anna M. Smith
Geotechnology, Inc. Engineer

6/4/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 3300 excavator; one Komatsu PC490 excavator; four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers; one Caterpillar D7E LGP bulldozer, one Caterpillar D6T bulldozer, one New Holland TG275 tractor with one Blankenship water wagon, one Sakai CV 550D 84" smooth drum roller, and one Godwin pump.

Additional equipment observed on site (not in use): One Komatsu long-reach excavator, one Komatsu bulldozer, one John Deere 9570R tractor with two John Deere 2112c scraper pans, one Caterpillar 299D skidsteer, and one Holcomb scraper box.

Attended daily morning safety and coordination meeting, topic was OSHA Top 25 Violations.

Two excavators loaded out coal material from the Coal Yard and the runoff area. Four tractors (tracked), each with two side-dump trailers, hauled this material to the Fly Ash Pond until 1430.

Beginning at 1430, one excavator moved to the south Bottom Ash Pond berm and began removing it. The four tractors cycled between the two excavation areas as they were needed.

One tractor with a water wagon maintained dust control on hauling roads.

Two bulldozers spread and graded material in the Fly Ash Pond.

One bulldozer spread borrow material from the quarry on the northeast inner slope and corner of the floor of the Bottom Ash Pond. One roller compacted borrow material until removed from use because of a suspected hydraulic leak at 1330.

One supervised pump moved water from the Bottom Ash Pond to the Fly Ash Pond continuously.

Blankenship held the weekly coordination meeting from 0900-1000. See meeting minutes for further details.

Geotechnology:

Alyssa Okorn attended the weekly coordination meeting. Alyssa then observed hauling and spreading of borrow material in the Bottom Ash Pond. Borrow material seemed to be difficult to compact and visible pumping was observed in all areas on the floor before and after roller attempted compaction.

See the attached location drawing for additional information.

5.30.2018

LEGEND:
PIPE (NOT TO SCALE)
SEE SHEET C-100
CABLEWAY (NOT TO SCALE)
SEE SHEET C-100
SILT FENCE
SEE SHEET C-100
ROCK BLANKET
SEE SHEET C-100

May 30, 2018

Borrow Material
Spread Areas

Coal Yard Clean
Up Areas

Fly Ash Grading
Areas

Barn Excavations



PROJECT NO.	150003
CLIENT	MEDINA VALLEY COGEN, LLC
PROJECT NAME	ASH POND CLOSURE
GENERAL PLANS	SWPPP PLAN
DATE	5/30/18
BY	MD
CHECKED BY	MD
SCALE	C-602
STATION	0

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE LOCATED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REPRESENT THE EXISTENCE, NONEXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.

CDG
ENGINEERS
GEOTECHNOLOGY
CONSULTANTS

SCALE: 1" = 100'-0"
HORIZONTAL
1" = 100'-0"
VERTICAL
1" = 100'-0"

DATE: 5/30/18
BY: MD

PROJECT: MEDINA VALLEY COGEN, LLC
ASH POND CLOSURE

GENERAL PLANS
SWPPP PLAN

DATE: 5/30/18
BY: MD

PROJECT: MEDINA VALLEY COGEN, LLC
ASH POND CLOSURE

GENERAL PLANS
SWPPP PLAN



DATE: 5/30/18
BY: MD



Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER
STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 05-30-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology Inc., and Blankenship participants
BY: PLW
PARTICIPANTS: AMEREN- Mike W., Steve P., Pat B., Randy B., Gail G.
BCCO- Rob F., Phil W.(phone)
OTHERS- Geotechnology Inc.- Alyssa O., (Jessie G. ph.)

The following minutes express Blankenship Construction Company's representative's understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

1. Safety.

- a. Safety Minute: Steve P. – Heat Related Illness Awareness;
 - i. There are four (4) stages of heat illness. They are Heat Fatigue, Heat Cramps, Heat Exhaustion and Heat Stroke in order of severity.
 - ii. Some common symptoms of Heat Fatigue and Heat Cramps are weakness, muscle cramps, headache, nausea, dizziness, clammy skin, agitation and confusion. Treatment includes getting the subject to a cool place, drinking plenty of fluids (slightly salty water and electrolytes such as Gatorade are helpful if possible).
 - iii. Be particularly aware of the symptoms of Heat Exhaustion and Heat Stroke. In these cases, the subject loses his ability to sweat, the body is unable to regulate itself, will have hot red skin, rapid heart beat, shallow breathing, nausea or vomiting and muscle weakness. Call 911 immediately and provide first aid until help arrives
- b. Next week's volunteer: Alyssa O.



2. Contractor Progress Report.

- a. Water pumping of the bottom ash pond. Discharge from the FAP has continued. The water level lowered approximately 18" over the weekend and 2" from yesterday to today. Ameren has opened the valve 3 turns in an attempt to lower the water level another 12". It was reported that the latest TSS results were very good.
- b. Mobilization: Mobilization of additional equipment and supplies; BCCO will be mobilizing an 84" smooth drum to site today. We will also be swapping the John Deere tractor for a Case Quad Trac this week.
- c. Ash hauling: Ash hauling from the BAP is complete and the BAP
- d. Coal yard cleanup has been ongoing. Rob anticipates finishing the coal yard excavation and clean up today. Taking approximately 6" out of the west sedimentation basin to the Sunrise Ag pipeline. All coal has been removed from the Magellan line. BCCO will provide a coal yard quantity update this week.
- e. Soil Backfill of the BAP is ongoing. BCCO has been running about 10-11 trucks and estimates around 1,500 CY per day have been incoming. At the current production rate, we anticipate completion of the import in late August. BCCO intends to attempt to achieve some compaction on the soil import to allow for truck traffic and increase placement efficiency.
- f. Well Drilling – it was briefly discussed that the well drillers will be responsible for their own One-Call locates.
- g. Silt Fence: BMP repairs / additions were completed to satisfy Matt's requirements. These include adding silt fence between the BAP & FAP and installing straw wraps.

3. Contractor's Weekly Work Plan

- a. Update: Rob F.
 - i. Continue pumping effort. BCCO intends to move the pump discharge to the coal runoff sedimentation basin. Once the coal sedimentation basin is cleaned up, we will run discharge pipe along the outside toe of the embankment and cut through road to sedimentation basin. Anticipate completing this within the next 2 weeks



- ii. Continue backfill in the BAP. This is dependent on weather and pumping efforts.
- iii. Continued discharging of FAP water and monitoring by onsite Ameren personnel and 3rd party as needed.
- iv. Grading at the Fly Ash pond will continue as fill is brought in. As the fill advances and pushes the west pool area water to the discharge, Ameren will make adjustments in the valve to continue draining the pool until it will no longer drain itself. At that point, a small pump will be placed to pump the remaining water out. The rest of the FAP has been graded and is within 1-2' of grade at a 1% slope.

4. Schedule Forecast

a. Two Week Look Ahead.

- i. The two-week look ahead coordinates with the upcoming work activities excluding the items below.
- ii. SWPPP repairs have been completed
- iii. BAP berm excavation. As of the time of the meeting, the land disturbance permit had not been issued. This would prevent any BAP berm excavation and BAP outer slope work such as removing rip rap, clearing etc. It was discussed if BCCO could use the Eastern Fly Ash stockpile for general fill in the western pool and use the berm material for the FAP cap in order to prevent significant schedule impacts. Shortly after the meeting, Mike emailed confirming the permit has been issued and we can proceed with the berm excavation as planned.

5. New Items/Miscellaneous

a.

6. Action Items

a. BCCO Items:

- i. BCCO to continue submittals. Update- Garrett submitted a geomembrane submittal for approx. 70% of the geomembrane order. {Status- Open}
- ii. BCCO submitted the roll selection for conformance testing to Geotechnologies for approval. Anna has approved the selection.



b. Ameren Items:

- i. Mike W. to finish review of pricing as presented by BCCO for additional fence removal, culvert installation, and coal yard run off excavation, and issue an EWO as necessary. {Status- Open}

7. Questions, Comments, Open Discussion

a. Update

The next progress meeting for this project will be held on June 6th at 9:00 a.m.



DAILY REPORT

DATE: May 31, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645

Depart: 1530

Travel: 0.50

Total: 8.75

AM Conditions: Clear

AM Temperature: 75 F

PM Conditions: Partly Cloudy with some Light Rain

PM Temperature: 80 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Equipment: 2 excavators, 4 tractors with 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with water wagon, 3 bulldozers, 1 roller, and 1 pump were observed in operation.

Personnel: Blankenship – 18; Ameren – 2

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

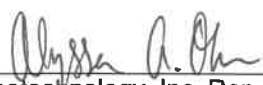
Materials Used: Clean up materials; borrow material; BAP berm material

Deliveries: 0945 – Case IH QuadTrak tractor delivered

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Clean up material from all over site was stockpiled or moved to the FAP, borrow material from the quarry was spread on BAP NE slope, and BAP berm material was moved to FAP.


Geotechnology, Inc. Rep.

5/31/2018
Date


Geotechnology, Inc. Engineer

6/4/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 3300 excavator; one Komatsu PC490 excavator; four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers; one Caterpillar D7E LGP bulldozer, two Caterpillar D6T bulldozers, one New Holland TG275 tractor with one Blankenship water wagon, one Sakai CV 550D 84" smooth drum roller, one John Deere 9570R tractor with two John Deere 2112c scraper pans, and one Godwin pump.

Additional equipment observed on site (not in use): One Komatsu long-reach excavator, one Case IH QuadTrak 550 tractor, one Caterpillar 299D skidsteer, one Komatsu bulldozer, and one Holcomb scraper box.

Attended daily morning safety and coordination meeting, topic was Permits. Discussed dust precautions on site as well.

One excavator stockpiled clean up material from all around site, including abandoned railroad tracks and ties, concrete foundations from removed lines, brush, etc.

One excavator loaded out material from the south Bottom Ash Pond berm. Four tractors (tracked), each with two side-dump trailers, hauled this material to the Fly Ash Pond.

One tractor with a water wagon maintained dust control on hauling roads.

One tractor with two scraper pans made cuts in the Fly Ash Pond.

Two bulldozers spread and graded material in the Fly Ash Pond.

One bulldozer spread borrow material from the quarry on the northeast inner slope and corner of the floor of the Bottom Ash Pond. One roller compacted borrow material.

Rob F. lead preparations to begin removing the outfall structure in the Bottom Ash Pond.

One supervised pump moved water from the Bottom Ash Pond to the Fly Ash Pond continuously.

Geotechnology:

Alyssa Okorn observed hauling and spreading of borrow material in the Bottom Ash Pond. Borrow material seemed to be difficult to compact and visible pumping was observed in all areas on the floor before and after roller attempted compaction. Rob F. and Phil (Blankenship operator) decided to focus on spreading the material across the slope of the Bottom Ash Pond to let it dry.

See the attached location drawing for additional information.



DAILY REPORT

DATE: June 1, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1430 Travel: 2.75 Total: 10.00
AM Conditions: Clear AM Temperature: 80 F
PM Conditions: Clear PM Temperature: 90 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship
Equipment: 2 excavators, 4 tractors with 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with water wagon, 3 bulldozers, 1 roller, and 1 pump were observed in operation.
Personnel: Blankenship – 18; Ameren – 2
Visitors: Scrap trucks for iron

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Clean up materials; borrow material; BAP berm material
Deliveries: _____
Testing: _____

CONSTRUCTION SITE LOCATIONS:

Clean up material from all over site was stockpiled or moved to the FAP, borrow material from the quarry was spread on BAP NE slope, and BAP berm material was moved to FAP.

Alyson A. Olin
Geotechnology, Inc. Rep.

6/1/2018
Date

Sam M. Smith
Geotechnology, Inc. Engineer

6/1/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 3300 excavator; one Komatsu PC490 excavator; four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers; one Caterpillar D7E LGP bulldozer, two Caterpillar D6T bulldozers, one New Holland TG275 tractor with one Blankenship water wagon, one John Deere 9570R tractor with two John Deere 2112c scraper pans, and one Godwin pump.

Additional equipment observed on site (not in use): One Komatsu long-reach excavator, one Case IH QuadTrak 550 tractor, one Caterpillar 299D skidsteer, one Sakai CV 550D 84" smooth drum roller, one Komatsu bulldozer, and one Holcomb scraper box.

Attended daily morning safety and coordination meeting, topic was Housekeeping.

One excavator stockpiled clean up material from all around site, including abandoned railroad tracks and ties, concrete foundations from removed lines, brush, etc. Iron was loaded into scrap trucks when they were on site.

One excavator loaded out material from the south Bottom Ash Pond berm. Four tractors (tracked), each with two side-dump trailers, hauled this material to the Fly Ash Pond.

One tractor with a water wagon maintained dust control on hauling roads.

One tractor with two scraper pans made cuts in the Fly Ash Pond.

Two bulldozers spread and graded material in the Fly Ash Pond.

One bulldozer spread borrow material from the quarry on the northeast inner slope of the Bottom Ash Pond. One roller compacted borrow material.

One supervised pump moved water from the Bottom Ash Pond to the Fly Ash Pond continuously.

Geotechnology:

Alyssa Okorn observed hauling and spreading of borrow material in the Bottom Ash Pond. Borrow material seemed fairly wet and difficult to compact.

See the attached location drawing for additional information.

6.1.2018

LEGEND:

- SEE SHEET C-100
- SEE SHEET C-100
- SEE SHEET C-100
- SEE SHEET C-100
- SEE SHEET C-100
- SEE SHEET C-100

June 1, 2018

Clean Up Areas

Borrow Material Spread Area

BAP Burn Excavation

FAP Grading Area



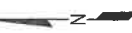
MEDINA VALLEY COGEN, LLC	
ASH POND CLOSURE	
GENERAL PLANS	
SWPPP PLAN	
MEREDOSIA POWER STATION	
C-602	0
SCALE: 1" = 100'	SCALE: 1" = 100'

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REPRESENT THE ACTUAL LOCATION, DEPTH, OR SIZE OF SUCH UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE GENERAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.



INVESTIGATION - Geotechnology - Meredosia Ash Pond Closure Project
07/07/18-1010

NOTE: 1" = 100' OR 2448
1" = 200' OR 1640



PHOTOGRAPH LOG



Photograph 1 ▲ - View of borrow soil placement at the Bottom Ash Pond, looking west.



Photograph 2 ▲ - View of residual coal removal operations at the Coal Pile, looking southeast.



Photograph 3 ▲ - View of cleanup activities at the Coal Yard after residual coal material was removed, looking east.



Photograph 4 ▲ - View of grading activities at the Fly Ash Pond, looking southeast.



Photograph 5 ▲ - View of supervised pumping of water from the Bottom Ash Pond, looking east.



Photograph 6 ▲ - View of removal of the southwest berm of the Bottom Ash Pond, looking west.



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Missouri

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

DATE: June 14, 2018

SUBJECT: Summary Report for June 4, 2018 to June 8, 2018

PROJECT: Fly Ash Pond and Bottom Ash Pond Closures
Meredosia Power Station
Meredosia, Morgan County, Illinois
Geotechnology Project No. J024917.04

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

Weather

The weather was generally clear. Temperature (°F) lows ranged from 53 to 73°F, and temperature highs ranged from 81 to 91°F.

Construction Activities

Blankenship Construction Company moved berm material from the southwest berm of the Bottom Ash Pond and graded material in the Fly Ash Pond. Borrow material was placed in the Bottom Ash Pond. Blankenship moved the Bottom Ash Pond discharge pipe to discharge in the Coal Yard runoff area and demolished the Outfall 003 structure at the Bottom Ash Pond.

Equipment and Personnel On-Site

Blankenship Construction Company had the following equipment on site: One Caterpillar excavator, one Komatsu excavator, one Komatsu long-reach excavator, four Case tractors (tracked), eight Smith pull-behind side-dump trailers, one Komatsu bulldozer, two Caterpillar bulldozers, one John Deere tractor with two scraper pans, one New Holland tractor with water wagon, one Holcomb scraper box, one Caterpillar skidsteer, one Godwin water pump, one 84-inch Sakai CV 500D smooth drum roller, and one John Deere 9520 tractor with offset discs.

Blankenship Construction Company had 15 to 17 personnel on site.

Meetings

A weekly progress meeting was held on Wednesday, June 6, 2018. Refer to the meeting minutes for additional information.

Photographs

A photograph log with selected photographs obtained while Geotechnology was on site is attached.

Materials

Berm material was excavated from the southwest berm of the Bottom Ash Pond, transported, and placed and graded at the Fly Ash Pond.

Borrow source soil was placed on the east slope and floor of the Bottom Ash Pond.

Testing/Sampling

On June 5, 2018, Teklab, Inc. collected groundwater samples from monitoring wells on site and collected a surface water sample at the Fly Ash Pond Outfall 004.

Signature of CQA Officer



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

Attachments: Daily Reports
Photograph Log

DAILY REPORTS



DAILY REPORT

DATE: June 4, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0830

Depart: 1530

Travel: 2.75

Total: 9.25

AM Conditions: Clear

AM Temperature: 68 F

PM Conditions: Clear

PM Temperature: 78 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Equipment: 2 excavators, 4 tractors with 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with water wagon, 2 bulldozers, and 1 pump were observed in operation.

Personnel: Blankenship – 15; Ameren – 2

Visitors: Serviceperson for Caterpillar equipment

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Clean up materials; borrow material; BAP berm material

Deliveries: 1230: John Deere 9520 tractor with offset discs; 1530: Teklab buggy

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Pump pipe moved, clean up material moved to the FA Pond, borrow material spread in BA Pond, and BA Pond berm material was moved to the FA Pond.

Alyssa A. Omer
Geotechnology, Inc. Rep.

6/4/18
Date

[Signature]
Geotechnology, Inc. Engineer

6/14/18
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 3300 excavator; one Komatsu PC490 excavator; four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, two Caterpillar D6T bulldozers, one New Holland TG275 tractor with one Blankenship water wagon, one Case IH QuadTrak 550 tractor with two John Deere 2112c scraper pans, and one Godwin pump.

Additional equipment observed on site (not in use): One Komatsu long-reach excavator, one John Deere 9570R tractor, one Sakai CV 550D 84" smooth drum roller, one Caterpillar D7E LGP bulldozer, one Caterpillar 299D skidsteer, one Komatsu bulldozer, and one Holcomb blade box.

One excavator stockpiled loaded scrap material from all around site.

One excavator loaded out material from the south BA Pond berm. Four tractors (tracked), each with two side-dump trailers, hauled this material to the Fly Ash Pond.

One tractor with a water wagon tried to maintain dust control on hauling roads.

One tractor with two scraper pans made cuts in the Fly Ash Pond.

One bulldozers spread and graded material in the Fly Ash Pond.

One bulldozer spread borrow material from the quarry on the northeast inner slope and corner of the floor of the Bottom Ash Pond. One roller compacted borrow material.

One supervised pump was turned off in the morning in order for the pipe to be moved from the Fly Ash Pond to the coal yard runoff area to allow for the drainage of the Fly Ash Pond.

Teklab arrived at the end of the day to drop off a buggy for their use in water sampling tomorrow (6.5.2018).

Geotechnology:

Alyssa Okorn observed hauling and spreading of borrow material in the Bottom Ash Pond. Borrow material seemed to be difficult to compact and visible pumping was observed in all areas on the floor before and after roller attempted compaction. Welty owner, Gary, drove one empty tandem down the new ramp to check if the trucks could begin dumping straight onto the floor of the BA Pond, however, he felt that it was still too soft for his trucks to go on when they were loaded.

See the attached location drawing for additional information.



DAILY REPORT

DATE: June 5, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.0) Lunch

Arrive: 0645

Depart: 1530

Travel: 0.5

Total: 9.25

AM Conditions: Clear

AM Temperature: 73 F

PM Conditions: Clear

PM Temperature: 85 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Equipment: 1 excavator, 4 tractors with 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with water wagon, 2 bulldozers, and 1 pump were observed in operation.

Personnel: Blankenship – 17; Ameren – 2

Visitors: Servicemen from Roland, Fabick, Sievers, & RideTech Suspensions; Jordan - Teklab

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Borrow material, BAP berm material

Deliveries: _____

Testing: Teklab collected water samples from the monitoring wells around site and took weekly Fly Ash Pond discharge sample

CONSTRUCTION SITE LOCATIONS:

Borrow material spread in BA Pond, and BA Pond berm material was moved to FA Pond.

Alyssa A. Orr
Geotechnology, Inc. Rep.

6/5/18
Date

Chris M. Smith
Geotechnology, Inc. Engineer

6/14/18
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Komatsu PC490 excavator, four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one New Holland TG275 tractor with one Blankenship water wagon, one Sakai CV 550D 84" smooth drum roller, John Deere 9520 tractor with offset discs, one Case IH QuadTrak 550 tractor with two John Deere 2112c scraper pans, and one Godwin pump.

Additional equipment observed on site (not in use): One Komatsu long-reach excavator, one John Deere 9570R tractor, one Caterpillar 299D skidsteer, one Komatsu bulldozer, one Caterpillar 3300 excavator, and one Holcomb blade box.

Blankenship held the daily safety meeting at 0700. Topic was Emergency Procedures.

One excavator loaded out material from the south BA Pond berm. Four tractors (tracked), each with two side-dump trailers, hauled this material to the Fly Ash Pond.

One tractor with a water wagon maintained dust control on hauling roads.

One tractor with two scraper pans made cuts in the Fly Ash Pond.

One bulldozer spread and graded material in the Fly Ash Pond.

Two bulldozers spread borrow material from the quarry on the northeast inner slope and corner of the floor of the Bottom Ash Pond. One roller compacted borrow material.

One supervised pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Geotechnology:

Alyssa Okorn observed borrow material arrival and spreading from 0710 to 0900. Observed TekLab's monitoring well sampling from 0900 to 1500. Afterward, took pictures and notes about progress on site until 1530.

See the attached location drawing for additional information.

6.5.2018

- LEGEND:
- ROAD DITCH (1/4" = 1' ON SHEET C-500)
 - CANAL (1/4" = 1' ON SHEET C-500)
 - SEWAGE (1/4" = 1' ON SHEET C-500)
 - WATER (1/4" = 1' ON SHEET C-500)
 - SEWER (1/4" = 1' ON SHEET C-500)
 - WATER (1/4" = 1' ON SHEET C-500)
 - SEWER (1/4" = 1' ON SHEET C-500)

June 5, 2018

BA Pond Berm

Excavation

Borrow Material
Spread Area

FA Pond
Grading



MEDINA VALLEY COGEN, LLC
ASH POND CLOSURE
GENERAL PLANS
SMPPP PLAN

MEREDOSIA POWER STATION

C-602

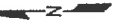
SCALE: 1" = 100'

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT REPRESENT THE ACTUAL LOCATION, DEPTH, OR CHARACTERISTICS OF SUCH UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL UNDERGROUND UTILITIES, SURF OR NOT, PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.



Drawn: 6/14/16
Checked: 6/14/16
Designed: 6/14/16
Reviewed: 6/14/16
Project: Meredosias Ash Pond Closures C-602 SMPPP PLAN

NOTES:
1" = 100' ON 24x36
1" = 200' ON 12x18



FLY ASH POND

SEDIMENT LOSS (TYP)
BOTTOM ASH POND

COAL PILE

SILT FENCE (TYP)

CLOSED ASH POND

ILLINOIS RIVER



DAILY REPORT

DATE: June 6, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645

Depart: 1545

Travel: 0.5

Total: 9.0

AM Conditions: Clear

AM Temperature: 67 F

PM Conditions: Clear

PM Temperature: 86 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Equipment: 2 excavators, 4 tractors with 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with water wagon, 2 bulldozers, and 1 pump were observed in operation.

Personnel: Blankenship – 16; Ameren – 3

Visitors: Garrett Blankenship & Mike Wagstaff for Weekly Coordination Meeting

MATERIALS USED, DELIVERIES, AND TESTING:


Materials Used: Borrow material, BA Pond berm material

Deliveries: Pallet of water at 1050


Testing: _____

CONSTRUCTION SITE LOCATIONS:

Borrow material spread in BA Pond, and BA Pond berm material was moved to FA Pond.


Geotechnology, Inc. Rep.

6/6/18
Date


Geotechnology, Inc. Engineer

6/14/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Komatsu PC490 excavator, one Caterpillar 3300 excavator, four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one New Holland TG275 tractor with one Blankenship water wagon, one Sakai CV 550D 84" smooth drum roller, John Deere 9520 tractor with offset discs, one Case IH QuadTrak 550 tractor with two John Deere 2112c scraper pans, and one Godwin pump.

Additional equipment observed on site (not in use): One Komatsu long-reach excavator, one Caterpillar 299D skidsteer, one Komatsu bulldozer, and one Holcomb blade box.

Blankenship held the daily safety meeting at 0700. Topic was Electricity.

One excavator removed the outfall structure from the BA Pond.

One excavator loaded out material from the south BA Pond berm. Four tractors (tracked), each with two side-dump trailers, hauled this material to the Fly Ash Pond.

One tractor with a water wagon maintained dust control on hauling roads.

One tractor with two scraper pans made cuts in the Fly Ash Pond.

One bulldozer spread and graded material in the Fly Ash Pond.

Two bulldozers spread borrow material from the quarry on the northeast inner slope and corner of the floor of the Bottom Ash Pond. One roller compacted borrow material.

One supervised pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Blankenship held the weekly coordination meeting at 0900. See meeting minutes for more details.

Geotechnology:

Alyssa Okorn observed borrow material spreading and attended the Weekly Coordination Meeting at 0900.

See the attached location drawing for additional information.

6.6.2018

LEGEND:

- BOLD DOTTED LINES
- ALL SHEET C-400
- CIRCLE "X" 20" SEDIMENT LOGS™ ON APPROVED EXHAUST
- SEE SHEET C-400
- ALL FENCE
- SEE SHEET C-400
- ROAD BLANKET
- SEE SHEET C-400

June 6, 2018

BA Pond Berm
Excavation

Borrow Material
Spread Area

FA Pond
Grading

MEDINA VALLEY COGEN, LLC	
ASH POND CLOSURE	
GENERAL PLANS	
SWPPP PLAN	
MEREDOSTA POWER STATION	
C-602	
0	
SCALE: 1" = 100'	

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REPRESENT THE ACTUAL EXISTENCE, LOCATION, DEPTH, TYPE, NUMBER OR LOCATION OF ANY UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL UNDERGROUND UTILITIES. SHOW OR NOT SHOW ALL UTILITIES IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION IMPROVEMENTS.



Springfield, IL - 61801
 PHONE: 618/215-1111
 FAX: 618/215-1112
 WWW: www.csp-engineers.com

1" = 100'
 1" = 100' ON 24x36
 1" = 200' ON 12x18





Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 06-06-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology Inc., and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Mike W., Steve P., Pat B., Randy B., (Gail G., Meghan K. ph.)
BCCO- Rob F., Garrett B.
OTHERS- Geotechnology Inc.- Alyssa O.

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

1. Safety.
 - a. Safety Minute: Alyssa O. – Vibration Hazards and Injury Awareness;
 - i. Alyssa provided a handout that discussed the potential for vibration injuries on the job. These injuries can be much more common than most people would expect. Vibration injuries result from blood flow restrictions and can be first observed as whiteness in fingers/hands. As this progress, the affected areas will become less sensitive to pressure and temperature, and small tedious tasks will become more difficult. If the problem is allowed to progress, ultimately the affected person will be unable to perform normal tasks at work and home, and the affected limbs can actually become dead and at high risk for infection.
 - ii. Some preventative measures for vibration injuries can include shift/job sharing with other employees, anti-vibration gloves, anti-vibration handles on equipment, keep hands as warm as possible in cold weather, and try to always use proper body positioning when operating a vibratory tool.
 - b. Next week's volunteer: Garrett B. – Blood Born Pathogens



2. Contractor Progress Report.

- a. Water pumping of the bottom ash pond has continued. On Monday the discharge was moved from the FAP to the Coal Yard Run Off area. It appears that the water is dissipating from the run off area quickly enough to not allow a very large build up. It is not apparent yet if this is having an effect on the east side of the BAP. Discharge from the FAP has continued in an effort to remove as much water as possible prior to the area being filled with spoil from the BAP. Steve P. clarified with Gail G. that if the site were to experience a rain that resulted in additional water in the FAP pool area, that a sampling would have to be performed of that discharge.
- b. Mobilization: Mobilization of additional equipment and supplies; BCCO has mobilized an 84" smooth drum roller to site, as well as swapped a CASE IH quad trac for the John Deere 9630 that was on the 21 CY scraper pans. BCCO also brought up early this week a John Deere 9520 with a large spacing disc for soil conditioning.
- c. Ash hauling from the BAP is complete. The BAP berm removal is in progress, and SWPPP approval to remove the berm has been secured. Rob asked about ash outside the limits of the BAP berm removal, and if the same procedures applied as before (remove all ash). Mike answered that yes, we need to remove all ash, but that does not mean we have to remove all soil to the proposed contour lines. Once excavation is free of ash and native or clean soils are present, the excavation can stop, even if not at the proposed contours. Mike did ask that if ash is found outside of the proposed limits, to review with Geotechnology and Ameren prior to proceeding.
- d. Hauling of the East Fly Ash stockpile has commenced. At this time, any material hauled has been with the Tractor and pans, which has been self-loading. This material is being utilized for the time being in the west pool area.
- e. Coal yard cleanup is complete. A topographic survey was performed on the coal yard to provide a total removed quantity. The surface comparison yielded a total of 58,670 CY.
- f. Soil Backfill of the BAP is ongoing. BCCO has been running about 13-14 trucks and estimates around 1,700 CY per day have been incoming. The goal is still to fill soil in at the toe of the oil dock roadway berm as soon as possible, to allow backfill operations on the oil dock road to proceed. Some of the backfill soil is higher in moisture content, causing some issues with compaction and truck access in the BAP floor. When additional compaction measures were discussed, Mike clarified to the group that he does not want to include additional, costly, compaction measures such as Lime Kiln Dust or a geogrid. Mike also indicated that the floor of the BAP is not intended for a structure and that



continued effort by Blankenship Const. to dry and compact the floor would yield a satisfactory product for the purpose of backfill.

- g. Geomembrane and synthetic turf production is 100% complete at this time. The last MQC submittal on the geomembrane has been sent from BCCO to Geotechnology/Ameren. Action Item for Garrett- Check on stacking procedures with GSI prior to liner delivery.

3. Contractor's Weekly Work Plan

a. Update: Rob F.

- i. Continue pumping effort. BCCO will continue to monitor the pumping work as well as the BAP area for signs that the pump discharge is causing issues by infiltrating back into the BAP from the coal yard run off area.
- ii. Continue backfill in the BAP. BCCO has mobilized a disc for soil conditioning and is utilizing an 84" roller for compaction at this time. The expectation is with this additional conditioning effort that the soil will yield better proof roll results. This is dependent on weather and pumping efforts.
- iii. Continued discharging of FAP water and monitoring by onsite Ameren personnel and 3rd party as needed.
- iv. Grading at the Fly Ash pond will continue as fill is brought in. The major filling operations are ongoing in the west pool area and will continue as such until that area is filled. Upon completing the mass fill in the west pool, the remaining fly ash will be used to place the final top compacted layer on the FAP.
- v. Rob F. has intentions of starting the Rip Rap removal and preparation of the outside slope of the oil dock berm for fill. The rip rap to be removed is to be utilized as cap stone for the FAP anchor trench.
- vi. It was also discussed that demolition of the BAP outfall structure will commence soon (the metal walkways had already been removed at this point). Rob clarified that he only needs to remove the structure to the point that it is below the surface of the BAP, to which Mike agreed as correct. Mike requested that in the BAP and FAP both, when the structures area demolished, to make efforts to size the material down as much as possible, to eliminate any potential voids or settlement issues.

4. Schedule Forecast



- a. Two Week Look Ahead.
 - i. The two-week look ahead coordinates with the upcoming work activities excluding the items below.
 - ii. SWPPP repairs have been completed
 - iii. The geomembrane work is slated for July 12th as of this meeting. The group discussed that the schedule for this date is tightening as the material has yet been released to ship and there is still a sizable amount of ash work left onsite. Mike requested that Garrett coordinate a kick off meeting, or possibly even a couple meetings, with GSI to begin coordinating schedules and making sure GSI is planning their resources as required.

5. New Items/Miscellaneous

- a. During discussion of the FAP removal, it was discussed that at some point the FAP discharge structure will not be available any longer, and that due to the design of the FAP cap, water will want to pool in the areas of future discharge structures. Mike and Gail clarified that BCCO can handle this water as storm water and can pump it out or free drain it out of the FAP ditches as needed, as long as proper effective BMP's are utilized. Clarification: Per Gail, any storm water runoff that contacts the ash material needs to be treated as such and discharged properly through the FAP discharge/NPDES discharge. This water can also be allowed to evaporate or sprayed on the ash as a wetting agent. Once the ash is covered/capped with the liner system, storm water runoff on top of the liner system can be discharged off of the FAP per the closure plan.
- b. The group discussed the extremely sandy nature of the coal yard subgrade. Garrett has the action item to contact the seeding contractor and ask for suggestions. If there are no viable options for seeding, the scope to seed this area may ultimately be removed from the contract and the funds retained.
- c. Mike W. asked about settlement plates in the FAP, of which BCCO had no intentions of placing. The group agreed that the area would settle, but the settlement should be fairly immediate and occur all at once. At this time, it was agreed upon to not install settlement plates.
- d. BCCO needs to contact Lenny with Ameren Transmission to update him on the approx. installation timeframe for the overhead power at the oil dock roadway.
- e. Rob F. began the weekly SWPPP inspections this week. BCCO will keep these inspections on file and provide to Geotechnology as requested or at the end of the project.



6. Action Items

a. BCCO Items:

- i. BCCO to continue submittals. Update- Garrett has submitted the final geomembrane submittal for the remainder of the geomembrane order, rolls 85-115. {Status- Open}
- ii. Schedule Kick-Off/Coordination meeting/s with GSI for the liner installation. {Status- Open}
- iii. Finalize stacking requirements with GSI for geomembrane and turf. {Status- Open}
- iv. Contact seeding contractor for ideas/suggestions on the coal yard and coal yard run off area, as they are extremely sandy. {Status- Open}

b. Ameren Items:

- i. Mike W. to finish review of pricing as presented by BCCO for additional fence removal, culvert installation, and coal yard run off excavation, and issue an EWO as necessary. {Status- Open}

7. Questions, Comments, Open Discussion

a. Update

The next progress meeting for this project will be held on June 13th at 9:00 a.m.



DAILY REPORT

DATE: June 7, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0630

Depart: 1530

Travel: 0.5

Total: 9.0

AM Conditions: Clear

AM Temperature: 75 F

PM Conditions: Clear

PM Temperature: 90 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Equipment: 2 excavators, 4 tractors with 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with water wagon, 3 bulldozers, and 1 pump were observed in operation.

Personnel: Blankenship – 16; Ameren – 2

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Borrow material, BA Pond berm material

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Borrow material spread in BA Pond, and BA Pond berm material was moved to FA Pond.

Alyssa A. O'Neil
Geotechnology, Inc. Rep.

6/7/18
Date

[Signature]
Geotechnology, Inc. Engineer

6/14/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Komatsu PC490 excavator, one Caterpillar 3300 excavator, four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one New Holland TG275 tractor with one Blankenship water wagon, one Sakai CV 550D 84" smooth drum roller, John Deere 9520 tractor with offset discs, one Case IH QuadTrak 550 tractor with two John Deere 2112c scraper pans, and one Godwin pump.

Additional equipment observed on site (not in use): One Komatsu long-reach excavator, one Caterpillar 299D skidsteer, one Komatsu bulldozer, and one Holcomb blade box.

Blankenship held the daily safety meeting at 0700. Topic was Fire Extinguishers.

One excavator removed the outfall structure from the BA Pond.

One excavator loaded out material from the south BA Pond berm. Four tractors (tracked), each with two side-dump trailers, hauled this material to the Fly Ash Pond.

One tractor with a water wagon maintained dust control on hauling roads.

One tractor with two scraper pans made cuts in the Fly Ash Pond.

One bulldozer spread and graded material in the Fly Ash Pond.

Two bulldozers spread borrow material from the quarry on the northeast inner slope and corner of the floor of the Bottom Ash Pond. One roller compacted borrow material. One tractor with pull-behind offset discs disked up the material to dry it at the end of the day.

One supervised pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Geotechnology:

Alyssa Okorn worked on monitoring well redevelopment, completing wells 1, 5, 7, and 9. Monitoring well 4 was begun, but needed to be continued on 6.8.2018.

See the attached location drawing for additional information.



DAILY REPORT

DATE: June 8, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0630

Depart: 1445

Travel: 2.75

Total: 10.5

AM Conditions: Clear

AM Temperature: 80 F

PM Conditions: Clear

PM Temperature: 86 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Equipment: 2 excavators, 4 tractors with 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with water wagon, 3 bulldozers, 1 roller, 1 tractor with offset discs, and 1 pump.

Personnel: Blankenship - 17; Ameren - 2

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

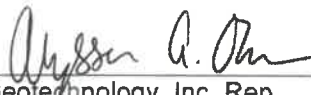
Materials Used: Borrow material, BA Pond berm material

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Borrow material spread in BA Pond, and BA Pond berm material was moved to FA Pond.


Geotechnology, Inc. Rep.

6/8/18
Date


Geotechnology, Inc. Engineer

6/14/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Komatsu PC490 excavator, one Caterpillar 3300 excavator, four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one New Holland TG275 tractor with one Blankenship water wagon, one Sakai CV 550D 84" smooth drum roller, John Deere 9520 tractor with offset discs, one Case IH QuadTrak 550 tractor with two John Deere 2112c scraper pans, and one Godwin pump.

Additional equipment observed on site (not in use): One Komatsu long-reach excavator, one Caterpillar 299D skidsteer, one Komatsu bulldozer, and one Holcomb blade box.

Blankenship held the daily safety meeting at 0700.

One excavator removed the riprap from the outside of the south BA Pond berm.

One excavator loaded out material from the south BA Pond berm. Four tractors (tracked), each with two side-dump trailers, hauled this material to the Fly Ash Pond.

One tractor with a water wagon maintained dust control on hauling roads.

One tractor with two scraper pans made cuts in the Fly Ash Pond.

One bulldozer spread and graded material in the Fly Ash Pond.

Two bulldozers spread borrow material from the quarry on the northeast inner slope and corner of the floor of the Bottom Ash Pond. One roller tried to compact borrow material. One tractor with pull-behind offset discs disked up the material to dry it at the end of the day.

One roller also began compacting the BA Pond turnaround ash.

One supervised pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Geotechnology:

Alyssa Okorn worked on monitoring well redevelopment, completing wells 6, 2, 8, and 3. Plan to revisit monitoring well 4 after further discussion due to slow progress.

See the attached location drawing for additional information.

LEGEND:

ROCK DITCH LINER SEE SHEET C-304	ROCK MANTLE SEE SHEET C-304
CURBLY 20" SEDIM SEE SHEET C-403	
SILT FINES SEE SHEET C-403	

June 8, 2018

BA Pond Berm
Excavation

Borrow Material Spread Area

FA Pond Grading

[illegible]

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NONEXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SHALL LOCATE THE UTILITIES IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION WORK.

GEOTECHNOLOGY
SPECIALIZING IN
FOUNDATION ENGINEERING

CDG
ENGINEERS

Work(ing)title - Gastrology - Maracato Ash Productive nos 2-200 (1999-2000)
08/02/15-16/10

PRINTED BY: BAIT WOSS
DATE: 8/10/2015 10:40:49 AM



7101. 1" = 120' ON 24x36
1" = 240' ON 14x14

PHOTOGRAPH LOG



Photograph 1 ▲ - View of borrow soil placement at the Bottom Ash Pond, looking west.



Photograph 2 ▲ - View of a long-reach excavator moving the Bottom Ash Pond discharge pipe, looking northwest.

Photographs taken by Alyssa Okorn of Geotechnology, Inc. May 30 to June 1, 2018.



Photograph 3 ▲ - View of the new Bottom Ash Pond discharge location in the Coal Yard runoff area, looking northwest.



Photograph 4 ▲ - View of grading activities at the Fly Ash Pond, looking northwest.



Photograph 5 ▲ - View of demolition of the Outfall 003 structure at the Bottom Ash Pond, looking southwest.



Photograph 6 ▲ - View of removal of the southwest berm of the Bottom Ash Pond, looking northeast.



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Missouri

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

DATE: June 21, 2018

SUBJECT: Summary Report for June 12 2018 to June 15, 2018

PROJECT: Fly Ash Pond and Bottom Ash Pond Closures
Meredosia Power Station
Meredosia, Morgan County, Illinois
Geotechnology Project No. J024917.04

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

Weather

The weather was generally clear. Temperature (°F) lows ranged from 69 to 80°F, and temperature highs ranged from 74 to 91°F.

Construction Activities

Blankenship Construction Company moved berm material from the southwest berm of the Bottom Ash Pond and graded material in the Fly Ash Pond. Borrow material was placed on the Bottom Ash Pond floor.

Equipment and Personnel On-Site

Blankenship Construction Company had the following equipment on site: One Caterpillar excavator, one Komatsu excavator, one Komatsu long-reach excavator, four Case tractors (tracked), eight Smith pull-behind side-dump trailers, one Komatsu bulldozer, two Caterpillar bulldozers, one John Deere tractor with two scraper pans, one New Holland tractor with water wagon, one Holcomb scraper box, one Caterpillar skidsteer, one Godwin water pump, one 84-inch Sakai CV 500D smooth drum roller, and one John Deere 9520 tractor with offset discs.

Blankenship Construction Company had 16 to 18 personnel on site.

Meetings

A weekly progress meeting was held on Wednesday, June 13, 2018. Refer to the meeting minutes for additional information.

Photographs

A photograph log with selected photographs obtained while Geotechnology was on site is attached.

Materials

Berm material was excavated from the southwest berm of the Bottom Ash Pond, transported, and placed and graded at the Fly Ash Pond.

Borrow source soil was placed on the east slope and floor of the Bottom Ash Pond.

Testing/Sampling

Density testing of the fill on the Bottom Ash Pond north berm as needed.

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., Ph.D.
Geotechnology, Inc.

Attachments: Daily Reports
Photograph Log

DAILY REPORTS



DAILY REPORT

DATE: June 12, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1530 Travel: 0.5 Total: 8.75

AM Conditions: Overcast AM Temperature: 73 F
PM Conditions: Clear PM Temperature: 85 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:


Contractors: Blankenship
Equipment: 3 excavators, 4 tractors with 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with water wagon, 3 bulldozers, 1 roller, 1 tractor with offset discs, and 1 pump.
Personnel: Blankenship – 17; Ameren – 2
Visitors: Sievers Technician for QuadTrak tractor

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Borrow material, BA Pond berm material, FA Pond berm material
Deliveries: _____
Testing: _____

CONSTRUCTION SITE LOCATIONS:

Borrow material spread in BA Pond, FA Pond and BA Pond berm material was moved to FA Pond.


Geotechnology, Inc. Rep.

6/12/18
Date


Geotechnology, Inc. Engineer

6/18/18
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Komatsu PC490 excavator, one Komatsu long-reach excavator, four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one New Holland TG275 tractor with one Blankenship water wagon, one Sakai CV 550D 84" smooth drum roller, John Deere 9520 tractor with offset discs, one Case IH QuadTrak 550 tractor with two John Deere 2112c scraper pans, and one Godwin pump.

Additional equipment observed on site (not in use): One Caterpillar 3300 excavator, one Caterpillar 299D skidsteer, one Komatsu bulldozer, and one Holcomb blade box.

Blankenship held the daily safety meeting at 0700. Topic was Task Appropriate Boots.

One excavator loaded out material from the north FA Pond berm. Four tractors (tracked), each with two side-dump trailers, hauled this material to the south end of the Fly Ash Pond.

One tractor with a water wagon maintained dust control on hauling roads.

One tractor with two scraper pans made cuts in the Fly Ash Pond.

One bulldozer and one long-reach excavator spread and graded material in the Fly Ash Pond.

Two bulldozers spread borrow material off the Bottom Ash Pond turnaround on the floor.

One tractor with pull-behind offset discs disked up the material to dry it at the end of the day.

One roller worked on compaction of the Bottom Ash Pond turnaround ash for testing.

One supervised pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Geotechnology:

Alyssa Okorn observed spread and grading of borrow material in the Bottom Ash Pond, as well as the compaction efforts on the turnaround area.

See the attached location drawing for additional information.

6.12.2018

LEGEND:
--- EXISTING LINE
--- SEE SHEET C-100
--- CHAIN OF SEDIMENT LOSS™ (ON APPROVED CHAIN)
--- SEE SHEET C-100
--- SILT FENCE
--- SEE SHEET C-100
--- ROCK BLANKET
--- SEE SHEET C-100

June 12, 2018

BA Pond berm

Excavation

FA Pond

Grading

Borrow Material

Spread Area



MEDINA VALLEY COGEN, LLC
ASH POND CLOSURE
GENERAL PLANS
SWPPP PLAN

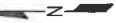
MEREDOSIA POWER STATION
C-602
0

SCALE: NITD = 1

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REPRESENT THE ACTUAL LOCATION, DEPTH, OR TYPE OF SUCH UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE GENERAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.



NOTES:
1" = 120' OR 2400
1" = 240' OR 4800



FLY ASH POND

SEDIMENT LOSS (TYP)
BOTTOM ASH POND

SILT FENCE (TYP)

CLOSED ASH POND

COAL PILE

ILLINOIS RIVER



DAILY REPORT

DATE: June 13, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1545 Travel: 0.5 Total: 8.0
AM Conditions: Overcast AM Temperature: 77 F
PM Conditions: Clear PM Temperature: 80 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship
Equipment: 3 excavators, 4 tractors with 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with water wagon, 3 bulldozers, 1 roller, 1 tractor with offset discs, and 1 pump.
Personnel: Blankenship – 17; Ameren – 3
Visitors: Garrett Blankenship (0845-1430); Mike Wagstaff (0830-1115); Best Drive tire technician

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Borrow material, BAP berm material, material from East fly ash stockpile
Deliveries: Caterpillar 323 excavator with rock bucket
Testing: 2 density tests on turnaround foundation level

CONSTRUCTION SITE LOCATIONS:

Borrow material spread in BA Pond, BA Pond berm material was moved to FA Pond, and East Fly Ash
Stockpile material was moved to the western end of FA Pond


Geotechnology, Inc. Rep.

6/13/18
Date


Geotechnology, Inc. Engineer

6/18/18
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Komatsu PC490 excavator, one Caterpillar 3300 excavator, one Komatsu long-reach excavator, four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one New Holland TG275 tractor with one Blankenship water wagon, one Sakai CV 550D 84" smooth drum roller, one Case IH QuadTrak 550 tractor with two John Deere 2112c scraper pans, and one Godwin pump.

Additional equipment observed on site (not in use): One Caterpillar 323 excavator, one Caterpillar 299D skidsteer, one Komatsu bulldozer, John Deere 9520 tractor with offset discs, and one Holcomb blade box.

Blankenship held the daily safety meeting at 0700. Topic was Gloves.

One excavator loaded out material from the East Fly Ash Pond Stockpile. One excavator loaded out material from the south Bottom Ash Pond berm. Four tractors (tracked), each with two side-dump trailers, hauled this material to the Fly Ash Pond.

One long-reach excavator mixed dry material from the side-dumps into the slop material in the bottom of the West pool area of the Fly Ash Pond.

One tractor with a water wagon maintained dust control on hauling roads.

One tractor with two scraper pans made cuts in the Fly Ash Pond.

One bulldozer spread and graded material in the Fly Ash Pond.

Two bulldozers spread borrow material from the quarry around the toe of the turnaround.

One roller also continued compacting the BA Pond turnaround ash.

One supervised pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Blankenship held the weekly coordination meeting from 0900-1000. See meeting minutes for details.

Geotechnology:

Alyssa Okorn attended the weekly coordination meeting and observed spreading of borrow material. After lunch, two density tests were taken on the turnaround ash with a nuclear gauge. These both passed the density tests, but soft areas with pumping were observed and discussed with Rob F. with regards to remediation of these areas.

See the attached location drawing for additional information.

6.13.2018

LEGEND:

- SIZE OTHER LINES
- SEE SHEET C-100
- CONSTRUCTION LIMITS (OR APPROVED EQUAL)
- SEE SHEET C-100
- SILT FENCE
- SEE SHEET C-100
- ROCK BLANKET
- SEE SHEET C-100

June 13, 2018



FA Pond

Grading



Fly Ash

Excavation



Borrow Material

Spread Area



MEDINA VALLEY COGEN, LLC
ASH POND CLOSURE
GENERAL PLANS
SWPPP PLAN

MEREDOSIA POWER STATION

C-602

0

SCALE: 1" = 100'

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REPRESENT THE ACTUAL LOCATION, DEPTH, OR TYPE OF THESE UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.



DATE: 06/13/2018
DRAWN BY: JMM
CHECKED BY: JMM
APPROVED BY: JMM
PROJECT: MEREDOSIA ASH POND CLOSURE
SHEET: C-602 OF 100

1" = 100'
1" = 200'



FLY ASH POND

BOTTOM ASH POND

SEDIMENT LOSS (TYP)

COAL PILE

SILT FENCE (TYP)

CLOSED ASH POND

ILLINOIS RIVER



DAILY REPORT

DATE: June 14, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1515 Travel: 0.5 Total: 8.5
AM Conditions: Clear AM Temperature: 74 F
PM Conditions: Thunderstorms PM Temperature: 69 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:


Contractors: Blankenship
Equipment: 3 excavators, 4 tractors with 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with water wagon, 3 bulldozers, 1 roller, 1 tractor with offset discs, and 1 pump.
Personnel: Blankenship – 18; Ameren – 2
Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Borrow material, BAP berm material, material from East fly ash stockpile
Deliveries: _____
Testing: 5 density tests on turnaround foundation level

CONSTRUCTION SITE LOCATIONS:

Borrow material spread in BA Pond, material from between ponds was moved to FA Pond, and East Fly
Ash Stockpile material was moved to the western end of FA Pond


Geotechnology, Inc. Rep.

6/14/18
Date


Geotechnology, Inc. Engineer

6/18/18
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 323 excavator, one Caterpillar 3300 excavator, one Komatsu long-reach excavator, four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one New Holland TG275 tractor with one Blankenship water wagon, one Sakai CV 550D 84" smooth drum roller, one Case IH QuadTrak 550 tractor with two John Deere 2112c scraper pans, and one Godwin pump.

Additional equipment observed on site (not in use): One Caterpillar 299D skidsteer, one Komatsu bulldozer, John Deere 9520 tractor with offset discs, and one Holcomb blade box.

Blankenship held the daily safety meeting at 0700. Topic was Appropriate Footwear.

One excavator loaded out material from the East Fly Ash Pond Stockpile. One excavator loaded out material from an ash fill area found between the Fly Ash and Bottom Ash Ponds. Four tractors (tracked), each with two side-dump trailers, hauled this material to the Fly Ash Pond.

One long-reach excavator mixed dry material from the side-dumps into the slop material in the bottom of the West pool area of the Fly Ash Pond.

One tractor with a water wagon maintained dust control on hauling roads.

One tractor with two scraper pans made cuts in the Fly Ash Pond.

One bulldozer spread and graded material in the Fly Ash Pond and between the ponds.

Two bulldozers spread borrow material from the quarry around the toe of the turnaround.

One roller compacted the Bottom Ash Pond turnaround ash and the borrow material on the Bottom Ash Pond.

One supervised pump moved water from the Bottom Ash Pond to the coal yard runoff area..

Geotechnology:

Alyssa Okorn observed remediation of soft areas on the Bottom Ash turnaround and then retested the lift. All five tests taken passed. Site progress and the spread and grading of the borrow material was observed for the rest of the day.

See the attached location drawing for additional information.

6.14.2018

LEGEND:

- SEE SHEET C-602
- SEE SHEET C-603
- SEE SHEET C-604
- SEE SHEET C-605
- SEE SHEET C-606
- SEE SHEET C-607
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June 14, 2018

Fly Ash
Excavation

FA Pond
Grading

Borrow Material
Spread Area



MEDINA VALLEY COGEN, LLC
ASH POND CLOSURE
GENERAL PLANS
SWPPP PLAN

C-602
0

SCALE: 1" = 100'

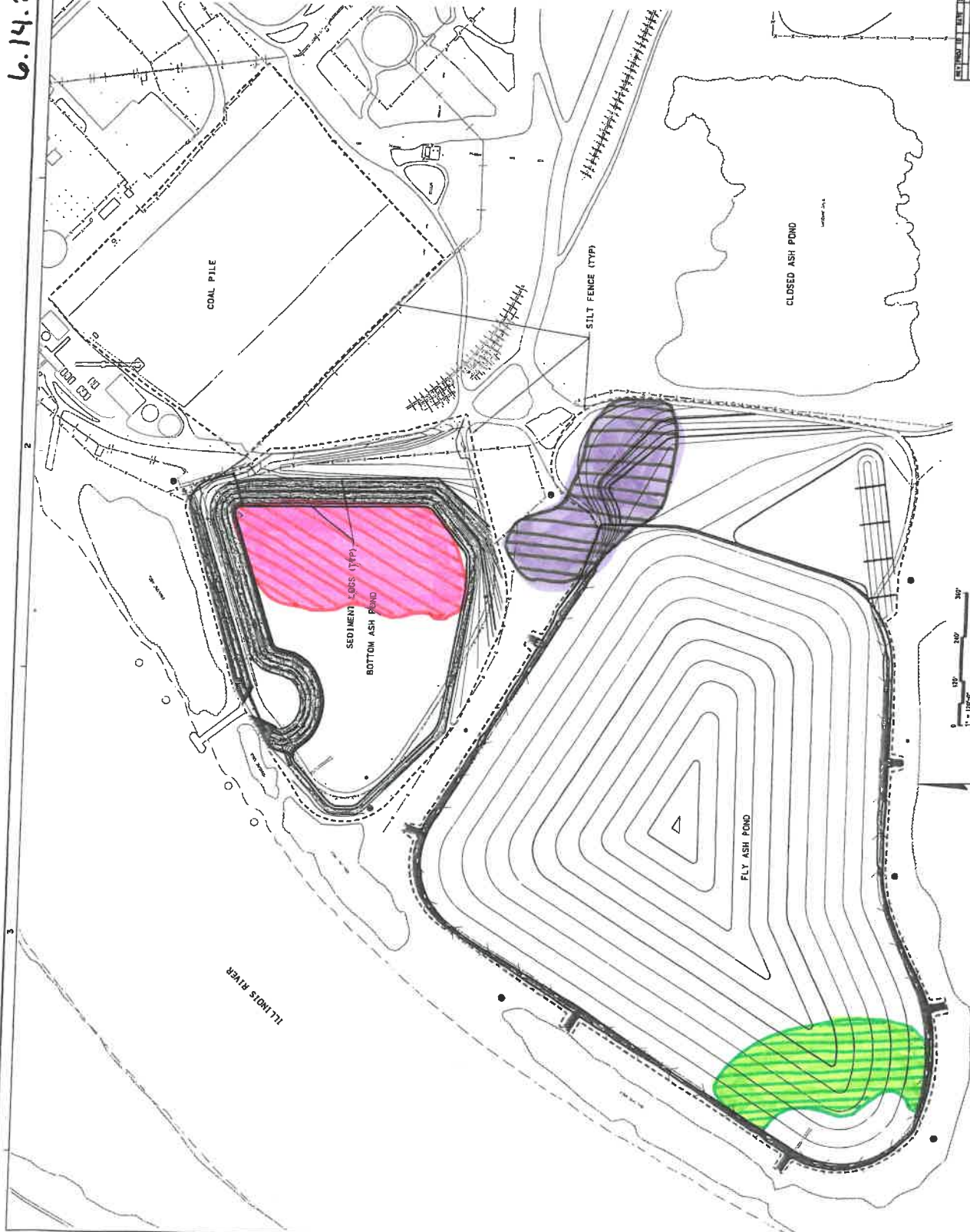
THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REPRESENT THE ACTUAL LOCATION OF THE UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL UNDERGROUND UTILITIES SHOWN OR NOT SHOWN. LOCATE THE UTILITIES IN THE FIELD PRIOR TO ANY GRADING, ELEVATION, OR CONSTRUCTION IMPROVEMENTS.



GEOTECHNOLOGY
ENGINEERS

1" = 100'
0 100 200 300
NOTES: 1. 100' ON 24x36
2. 200' ON 12x18

FILE: 17-000001-1000 - Geotechnology - Mercedia Ash Pond Closure SWPPP.dwg
DATE: 6/14/2018
BY: [Signature]
CHECKED: [Signature]
APPROVED: [Signature]





DAILY REPORT

DATE: June 15, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1400 Travel: 2.75 Total: 9.5
AM Conditions: Clear AM Temperature: 80 F
PM Conditions: Clear PM Temperature: 90 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:


Contractors: Blankenship
Equipment: 3 excavators, 4 tractors with 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with water wagon, 3 bulldozers, 1 roller, and 1 pump.
Personnel: Blankenship – 16; Ameren – 2
Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Borrow material, ash material between ponds, material from East fly ash stockpile
Deliveries: _____
Testing: _____

CONSTRUCTION SITE LOCATIONS:

Borrow material spread in BA Pond, material from between ponds was moved to FA Pond, and East Fly
Ash Stockpile material was moved to the western end of FA Pond


Geotechnology, Inc. Rep.

6/15/18
Date


Geotechnology, Inc. Engineer

6/18/18
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Komatsu 490 excavator, one Caterpillar 3300 excavator, one Komatsu 360 long-reach excavator, four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one New Holland TG275 tractor with one Blankenship water wagon, one Sakai CV 550D 84" smooth drum roller, one Case IH QuadTrak 550 tractor with two John Deere 2112c scraper pans, and one Godwin pump.

Additional equipment observed on site (not in use): One Caterpillar 323 excavator, one Caterpillar 299D skidsteer, one Komatsu bulldozer, John Deere 9520 tractor with offset discs, and one Holcomb blade box.

Blankenship held the daily safety meeting at 0700. Topic was Seatbelts.

One excavator loaded out material from the East Fly Ash Pond Stockpile. One excavator loaded out material from an ash fill area found between the Fly Ash and Bottom Ash Ponds. Four tractors (tracked), each with two side-dump trailers, hauled this material to the Fly Ash Pond.

One long-reach excavator mixed dry material from the side-dumps into the slop material in the bottom of the West pool area of the Fly Ash Pond.

One tractor with a water wagon maintained dust control on hauling roads.

One tractor with two scraper pans made cuts in the Fly Ash Pond.

One bulldozer spread and graded material in the Fly Ash Pond.

Two bulldozers spread borrow material from the quarry around the toe of the turnaround and across the floor of the Bottom Ash Pond. One of these bulldozers occasionally graded around the excavation site between the ponds.

One roller compacted the borrow material on the Bottom Ash Pond floor.

One supervised pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Geotechnology:

Alyssa Okorn observed site progress and the spread and grading of the borrow material.

See the attached location drawing for additional information.

PHOTOGRAPH LOG



Photograph 1 ▲ - View of borrow soil placement at the Bottom Ash Pond, looking west.



Photograph 2 ▲ - View of the Bottom Ash Pond discharge location in the Coal Yard runoff area, looking southwest.



Photograph 3 ▲ - View of grading activities at the Fly Ash Pond, looking northeast.



Photograph 4 ▲ - View of Bottom Ash Pond berm backfill activities with pumping subgrade (repaired next day), looking east.



Photograph 5 ▲ - View of removal of the southwest berm of the Bottom Ash Pond, looking north.



Photograph 6 ▲ - View of Bottom Ash Pond floor fill activities, looking north.

Photographs taken by Alyssa Okorn of Geotechnology, Inc. June 12-15, 2018.



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Missouri

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

DATE: June 27, 2018

SUBJECT: Summary Report for June 18, 2018 to June 22, 2018

PROJECT: Fly Ash Pond and Bottom Ash Pond Closures
Meredosia Power Station
Meredosia, Morgan County, Illinois
Geotechnology Project No. J024917.04

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

Weather

The weather was generally overcast. Temperature (°F) lows ranged from 65 to 72°F, and temperature highs ranged from 71 to 92°F.

Construction Activities

Geotechnology did not have a representative on site on June 18, 2018.

Blankenship Construction Company moved berm material from the southwest berm of the Bottom Ash Pond to the Bottom Ash Pond north berm, moved fly ash stockpile material to the Fly Ash Pond, and graded material in the Fly Ash Pond. Borrow material was placed on the Bottom Ash Pond floor on June 19, 2018. Overnight rains prevented additional borrow material placement on June 20-22, 2018.

Equipment and Personnel On-Site

Blankenship Construction Company had the following equipment on site: One Caterpillar excavator, one Komatsu excavator, one Komatsu long-reach excavator (removed June 22, 2018), four Case tractors (tracked), eight Smith pull-behind side-dump trailers, one Komatsu bulldozer, two Caterpillar bulldozers, one John Deere tractor with two scraper pans, one New Holland tractor with water wagon, one Holcomb scraper box, one Caterpillar skidsteer, one Godwin water pump, one 84-inch Sakai CV 500D smooth drum roller, and one John Deere 9520 tractor with offset discs.

Blankenship Construction Company had 17 to 18 personnel on site.

Meetings

A weekly progress meeting and liner installation preconstruction meeting was held on Wednesday, June 20, 2018. Refer to the meeting minutes for additional information.

Photographs

A photograph log with selected photographs obtained while Geotechnology was on site is attached.

Materials

Berm material was excavated from the southwest berm of the Bottom Ash Pond, transported, placed, and graded at the Bottom Ash Pond north berm.

Fly ash stockpile material was excavated from the fly ash stockpile, transported, placed, and graded at the Fly Ash Pond.

Borrow source soil was placed on the east slope and floor of the Bottom Ash Pond.

Testing/Sampling

Density testing of the fill on the Bottom Ash Pond north berm as needed.

A prequalification sample for a soil backfill source was collected on June 22, 2018.

Signature of CQA Officer



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

Attachments: Daily Reports
Photograph Log

DAILY REPORTS



DAILY REPORT

DATE: June 19, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0845 Depart: 1545 Travel: 2.75 Total: 9.75
AM Conditions: Partly Cloudy AM Temperature: 83 F
PM Conditions: Mostly Cloudy PM Temperature: 90 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship
Equipment: 2 excavators, 4 tractors with 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with water wagon, 3 bulldozers, 1 roller, and 1 pump.
Personnel: Blankenship – 17; Ameren – 2
Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Borrow material, north BA Pond berm material, material from east fly ash stockpile
Deliveries: _____
Testing: 12 compaction tests with a nuclear gauge

CONSTRUCTION SITE LOCATIONS:

Borrow material spread in BA Pond, material from the north BA Pond berm was moved to the turnaround, and east fly ash stockpile material was moved to the western end of FA Pond

Alyssa A. Olin
Geotechnology, Inc. Rep.

6/29/28
Date

Sam M. Mandy
Geotechnology, Inc. Engineer

6/27/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Komatsu 490 excavator, one Caterpillar 3300 excavator, four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one New Holland TG275 tractor with one Blankenship water wagon, one Sakai CV 550D 84" smooth drum roller, one Case IH QuadTrak 550 tractor with two John Deere 2112c scraper pans, and one Godwin pump.

Additional equipment observed on site (not in use): One Caterpillar 323 excavator, one Komatsu 360 long-reach excavator, one Caterpillar 299D skidsteer, one Komatsu bulldozer, John Deere 9520 tractor with offset discs, and one Holcomb blade box.

Blankenship held the daily safety meeting at 0700. Topic was Screwdrivers.

One excavator loaded out material from the east fly ash stockpile. One excavator loaded out material from the north berm of the Bottom Ash Pond. Four tractors (tracked), each with two side-dump trailers, hauled the stockpile material to the Fly Ash Pond and the berm material to the turnaround.

One tractor with a water wagon maintained dust control on hauling roads.

One tractor with two scraper pans made cuts in the Fly Ash Pond stockpile.

One bulldozer spread and graded material in the Fly Ash Pond.

Two bulldozers spread borrow material from the quarry around the toe of the turnaround and across the floor of the Bottom Ash Pond.

One roller compacted the borrow material on the Bottom Ash Pond floor and the berm material on the turnaround.

One supervised pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Geotechnology:

Alyssa Okorn observed site progress including the spreading and grading of the borrow material and completed 12 compaction tests on the berm material placed on the Bottom Ash Pond turnaround. Ten tests were original passing tests, one was a failing tests, and one was a passing retest of the failed test area after re-compaction.

See the attached location drawing for additional information.

6.19.2018

LEGEND:

- RIVER DITCH LINE
- RIVER DITCH C-400
- COAL PILE BY SEDIMENT LOSS™ OR APPROVED EQUIV.
- ALLY FENCE
- ALLY FENCE C-400
- RIVER BLANKET
- SEE SHEET C-400

June 19, 2018

BA Pond Basin
Excavation

Fly Ash
Stockpile
Excavation

FA Pond
Grading
Area

Compaction
Testing



MEDINA VALLEY CODE, LLC
ASH POND CLOSURE
GENERAL PLANS
SWPPP PLAN

MERIDOSTA POWER STATION

C-602

SCALE: 1" = 100'

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE RECORDS AND FIELD SURVEY. THE ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THESE UTILITIES. THE USER SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION. (APPENDIX B)



NOTES:
1" = 120' ON PLANS
1" = 240' ON TIE-INS

PROJECT: Ash Pond Closure - Meridosta Ash Pond
DATE: 6/19/2018
DRAWN BY: [Signature]
CHECKED BY: [Signature]
APPROVED BY: [Signature]





DAILY REPORT

DATE: June 20, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO & AMS
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1530 Travel: 0.5 Total: 8.75

AM Conditions: Partly Cloudy AM Temperature: 77 F

PM Conditions: Partly Cloudy PM Temperature: 85 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

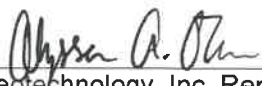
Contractors: Blankenship
Equipment: 1 excavators, 4 tractors with 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with blade box, 3 bulldozers, and 1 pump.
Personnel: Blankenship – 17; Ameren – 3
Visitors: Ameren – Gail, Megan, Mike; Blankenship – Garrett; Geotechnology – Anna

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Material from east fly ash stockpile
Deliveries: Blankenship flatbed removed the long reach excavator from site
Testing: Sample of borrow material

CONSTRUCTION SITE LOCATIONS:

East fly ash stockpile material was moved to the western end of FA Pond


Geotechnology, Inc. Rep.

6/20/18
Date


Geotechnology, Inc. Engineer

6/27/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 3300 excavator, four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one New Holland TG275 tractor with one Holcomb blade box, one Case IH QuadTrak 550 tractor with two John Deere 2112c scraper pans, and one Godwin pump.

Additional equipment observed on site (not in use): One Komatsu 490 excavator, one Caterpillar 323 excavator, one Komatsu 360 long-reach excavator, one Caterpillar 299D skidsteer, one Blankenship water wagon, one Komatsu bulldozer, John Deere 9520 tractor with offset discs, and one Sakai CV 550D 84" smooth drum roller.

Blankenship held the daily safety meeting at 0800. Topic was Bridges.

One excavator loaded out material from the east fly ash stockpile. Four tractors (tracked), each with two side-dump trailers, hauled the stockpile material to the Fly Ash Pond.

One tractor with a blade box maintained the hauling roads.

One tractor with two scraper pans made cuts in the Fly Ash Pond stockpile.

Two bulldozers spread and graded material in the Fly Ash Pond.

One bulldozer back-dragged material in various areas of site to facilitate drying.

One supervised pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Blankenship held the weekly coordination meeting at 0900. See meeting minutes for more details.

Geotechnology:

Anna Saindon and Alyssa Okorn observed site with Rob Fosnock (Blankenship) before attending the weekly coordination meeting. Alyssa then observed site progress and visited the quarry to observe installation of a water pump. While there, Alyssa observed the future borrow material, which appears similar to initial borrow material.

See the attached location drawing for additional information.

6.20.2018

LEGEND

- ROAD DITCH LINE
- SEE SHEET C-404
- GRAVELLY TOP SEDIMENT LOGS ON APPROVED GRAD
- SEE SHEET C-403
- FLY ASH
- SEE SHEET C-403
- ROAD BLANKET
- SEE SHEET C-404

June 20, 2018



FA Pond

Grading Area



Fly Ash

Stockpile
Excavation



MEDINA VALLEY COGEN, LLC
ASH POND CLOSURE
GENERAL PLANS
SWPPP PLAN

MEREDUSIA POWER STATION

C-602

SCALE: 1" = 100'

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND ARE NOT GUARANTEED TO REFLECT THE ACTUAL EXISTENCE, NON-EXISTENCE, SIZE, TYPE, LOCATION, OR DEPTH OF ANY UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.



SCALE: 1" = 100'
NOTES: 1" = 100' OR 24x36
2" = 240' OR 12x18

DATE: 6/20/2018 10:04:58 AM
PRINTED BY: MATT BOSS
FILE: T:\MEREDUSIA\ASH POND CLOSURE\SWPPP\SWPPP.dwg





Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 06-20-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology Inc., and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Mike W., Pat B., Randy B., Gail G., Meghan K.
BCCO- Rob F., Garrett B.
OTHERS- Geotechnology Inc.- Alyssa O., Anna S.
GSI- Dave Clausen (ph.)

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

1. Safety.
 - i. Safety Minute: Rob F. – Eye Protection.
 - b. Next week's volunteer: Pat B.
2. Contractor Progress Report.
 - a. Water pumping of the bottom ash pond has continued. Rain events in our area and up north have the river level on the rise. Charts show the river cresting next week at about 430.20' elevation. This could be a problem as the BAP is losing flood protection as the berm is removed, current berm level is still 435'.
 - b. Mobilization: BCCO mobilized a CAT 323 excavator to site, it is GPS equipped. No other mobilization notes at this time.
 - c. The BAP berm removal is in progress, with consideration to what elevation the outside slope is removed to. Currently the berm is lowered to about elevation 435' in one location. BCCO does not have a yardage update on the BAP berm removal at this time. Operations have been removing some ash from the east Fly Ash Pile as well as a cut area in the FAP in the Northeast corner. BCCO discussed that the ash on the northeast side of the FAP was extending outside the limits, and that removal had followed it until Rob



mad the decision to stop until Mike and Anna could review. Anna and Mike stated that they were pleased with the removal at this point.

- d. Soil Backfill of the BAP is ongoing, and was able to continue on Monday and Tuesday, but due to 2.2" of rain on Tuesday afternoon, was unable to continue Wednesday. It does not appear that the forecast looks good for soil import. The soil import lost some yards per day due to the new bridge opening, which resulted in the hauling company having to use Yeck Rd. versus Washington as they were before.
 - i. In addition, due to concerns of being able to pass a final proof roll, Garrett asked Anna to join the group onsite for a conversation regarding the backfill. Anna asked for specifications on the smooth drum roller that was being used as backfill. At this time, Anna and Mike are pleased with the effort BCCO has been making on the soil backfill and instructed them to continue import and that a source change was not required. That being said, effort will most likely be required later on to improve the soil area at the bottom of the oil dock roadway slope, where the anchor trench is located. The group discussed a few options, and agreed that at a later point, the soil could be re-evaluated, and a final option discussed prior to installing the liner product.

3. Contractor's Weekly Work Plan

- a. Update: Rob F.
 - i. Continue pumping effort. BCCO will monitor the pumping at the coal yard run off area and see if it has any effect on the backfill operations at the BAP. The pumping effort may have to be put temporarily on hold if the river appears as though it may flood the work area.
 - ii. Continue backfill in the BAP. This is dependent on weather and pumping efforts. BCCO continues to make every effort to condition the soil backfill as fill is made, including discing and smooth drum roller compaction. Additionally, there is the possibility that better soil may become available in the borrow area, and BCCO will make an effort to utilize the best materials near the BAP oil dock roadway toe of slope.
 - iii. Discharge of FAP water will be needed again, and monitoring by onsite Ameren personnel and 3rd party as well. Currently, the group is waiting on Tecklab to come take a sample, which Gail G. has already requested.
 - iv. Grading at the Fly Ash pond will continue as fill is brought in. Grading operations have been focused mostly on the west pool area. This area is "filled" in that the



initial bridge lift has been placed over the pool area. Now as fill is brought it, it will be placed as necessary to achieve final proposed grades. As areas are filled, BCCO will grade the FAP in areas that are lower than -1' of final grade, until all cut material is consumed.

- v. BAP berm removal on the south berm has temporarily been halted, except for material needed to make fills on the oil road turn around. Once the river crests and recedes, and the forecast is favorable, BCCO will continue BAP south berm removal.

4. Schedule Forecast

a. Two Week Look Ahead.

- i. The two-week look ahead coordinates with the upcoming work activities excluding the items below.
- ii. Garrett B. informed the group that the liner installation would need to be moved based on GSI's availability and also indicated that it would benefit Blankenship Construction to push the start as the weather delays have caused lost time/production. Dave C. stated at this point the 16th of July would be the earliest start date.

5. New Items/Miscellaneous

- a. Dave Clausen with GSI joined the meeting, and an "early kick off" meeting was held. Notes for this meeting are presented below along with the agenda.

6. Action Items

a. BCCO Items:

- i. BCCO to continue submittals. Update- Garrett, in coordination with GSI, will need to submit samples of sand for infill, Armor fill component, and welded turf seam. {Status- Open}
- ii. Schedule Kick-Off/Coordination meeting/s with GSI for the liner installation. {Status- Closed}
- iii. Finalize stacking requirements with GSI for geomembrane and turf. Update: BCCO will place synthetics on the asphalt roadway, ensuring the surface is clean prior to placement. {Status- Closed}



- iv. Contact seeding contractor for ideas/suggestions on the coal yard and coal yard run off area, as they are extremely sandy. Update: Garrett presented Mike with an option for the coal yard to review. {Status- Closed}

- b. Ameren Items:

- i. Mike W. to finish review of pricing as presented by BCCO for additional fence removal, culvert installation, and coal yard run off excavation, and issue an EWO as necessary. {Status- Open}

- 7. Questions, Comments, Open Discussion

- a. Update

The next progress meeting for this project will be held on June 27th at 9:00 a.m.

-Attachments: Meredosia Liner Installation early kick off meeting notes:



Meredosia Ash Pond Closure
Meeting with GSI

Meeting notes in red.

<u>Submittal</u>	<u>Responsible Party</u>	<u>Date Required</u>
------------------	--------------------------	----------------------

HDPE Panel Layout	GSI	6/27/2018
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Dave C. suggested that panel layout be discussed onsite by GSI's superintendent and a Geotechnology representative, hand drawn, and then developed in CAD form by GSI to present to the group.

on the mobilization day for GSI and Geotechnology, which should be 1 day before deployment.

Closure Turf Panel Layout	GSI	6/27/2018
---------------------------	-----	-----------

Dave indicated that synthetic turf panel layout is not something that is typically provided for this type of installation, Anna clarified that GSI could indicated that the turf panels followed the membrane layout with adjustment for roll size.

HDPE Staging Discussion (Unloading/Acceptance)	GSI/BCCO	Meeting
---	----------	---------

Garrett discussed the onsite unloading plan and procedures, and also clarified to the group that Dave provided an update from the manufacturers that the asphalt roadway was acceptable to place materials on, as long as it was swept clean prior to placement and drained freely. Mike and Anna both stated that they have no objection to beginning the liner shipments.

Pre-Deployment Discussion (Subgrade approval)	CQA Officer	Meeting
--	-------------	---------

Anna stated that the subgrade compaction and structural approval will be taken care of prior to liner installation, and then day of liner install, the surface would pass additional inspection. Upon passing inspection, GSI would sign off on a subgrade acceptance form from Geotechnology.

HDPE/Turf Phasing discussion	GSI/BCCO	Meeting
------------------------------	----------	---------

The install duration without weather delays or other issues is schedule for 75-80 days. Geomembrane will be placed first, obviously due to being the bottom layer but also to provide subgrade protection. As membrane is placed, applicable field and lab destruct testing will be performed. As these results come back approved, GSI will alternate placing turf on previously placed membrane and placing new membrane. Dave mentioned that turf could possibly be placed on days when rain delays may have otherwise caused membrane deployment to stop. Dave also answered Mike's question about crew size stating that at this time a 10-man crew is planned, but that could fluctuate up to 14 possibly.

Seam Discussion (50-mil micro-spike) testing/documentation discussion	GSI/CQA	Meeting
--	---------	---------

Seaming will be a double wedge weld on the geomembrane, Geotechnology will mark the destructs and GSI will cut and perform field destruct test. Once field destructs pass, Geotechnology will send off the remaining samples to the lab.



HDPE Perimeter Trench Anchor
(construction details/backfill)

BCCO

Meeting

Garrett included a question regarding using the anchor trench backfill in the regular meeting agenda. Mike/Anna confirmed plan to use trench spoils as backfill.

HDPE boot/batten/flashing
Discussion

GSI/BCCO

Meeting

The group discussed that the pipeline supports are square, not round, and Rob will take pictures to provide GSI. Dave indicated that this shouldn't be a problem and would review the pictures when available. Dave and Anna agreed that a final discussion should be had in-field prior to installing boots. Garrett mentioned that utility pole locations had changed, but this should not affect the boot installation.

ClosureTurf Seaming Discussion

GSI

Meeting

The seams on the synthetic turf will be a welded seam as well and offered to send Geotechnology a sample after Anna stated that they are unfamiliar with this method. Dave to send the welding procedures for the turf, for additional information.

This information is going to be provided prior to mobilization of the crews to the site.

ArmorFill Submittal

GSI/BCCO

7/6/2018

Mike asked that BCCO/GSI provide the standard submittal on the Armor fill chemical component when available. Anna also asked if there were any requirements from the manufacture as far as application timeframe prior to rain. Dave did not have a definite answer at this point but will provide when possible.

ArmorFill installation Discussion

GSI/BCCO

Meeting

GSI/BCCO described to the group the process for applying ArmorFill component, and essentially the chemical is pump from large totes into a sprayer/hydroseed applicator and once mixed with water is applied via overspray to the infill sand.

Sand Infill Discussion
(Methods/Equipment)

GSI/BCCO

Meeting

The sand infill will be applied with a spreader type wagon and then brushed in with power brushes behind turf tractors.

Sand Infill Submittal

BCCO

7/6/2018

To be provided by GSI/BCCO as soon as available.

Sandbags for temporary ballast

BCCO

Meeting

BCCO to have sand onsite for GSI, GSI to provide bags and labor to fill.

Warranty (1 year)

GSI

10/1/2018



DAILY REPORT

DATE: June 21, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645

Depart: 1545

Travel: 0.5

Total: 9.0

AM Conditions: Overcast

AM Temperature: 71 F

PM Conditions: Mostly Cloudy

PM Temperature: 77 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Equipment: 2 excavators, 4 tractors with 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with blade box, 1 tractor with water wagon, 3 bulldozers, and 1 pump.

Personnel: Blankenship – 18; Ameren – 2

Visitors: Ameren visitor (electrical); Sitech technician (GPS); Teklab technician (grab sample)

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Material from East fly ash stockpile; rip-rap from exterior BA Pond berm

Deliveries:

Testing:

CONSTRUCTION SITE LOCATIONS:

East fly ash stockpile material was moved to the western end of FA Pond; Rip-rap from the exterior of the

BA Pond berm was moved to the exterior of the FA Pond berm

Alyssa A. Oh
Geotechnology, Inc. Rep.

6/21/18
Date

[Signature]
Geotechnology, Inc. Engineer

6/27/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 3300 excavator, one Komatsu 490 excavator, four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers; two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one New Holland TG275 tractor with one Blankenship water wagon, one John Deere 9520 tractor with one Holcomb blade box, one Case IH QuadTrak 550 tractor with two John Deere 2112c scraper pans, and one Godwin pump.

Additional equipment observed on site (not in use): One Caterpillar 323 excavator, one Caterpillar 299D skidsteer, one Komatsu bulldozer, offset discs, and one Sakai CV 550D 84" smooth drum roller.

Blankenship held the daily safety meeting at 0800. Topic was Flagging for Traffic Control.

One excavator loaded out material from the east fly ash stockpile. One excavator loaded out rip-rap material from the exterior of the Bottom Ash Pond berms. Four tractors (tracked), each with two side-dump trailers, hauled the stockpile material to the Fly Ash Pond and the rip-rap material to the exterior of the Fly Ash Pond berm.

One tractor with a blade box maintained the hauling and access roads.

One tractor with a water wagon maintained dust control on the hauling roads

One tractor with two scraper pans made cuts in the Fly Ash Pond stockpile.

Two bulldozers spread and graded material in the Fly Ash Pond.

One bulldozer back-dragged material in various areas of site to facilitate drying and assisted with rip-rap loading.

One supervised pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Geotechnology:

Alyssa Okorn observed site progress and discussed new borrow material options with Rob Fosnock.

See the attached location drawing for additional information.

6.21.2018

LEGEND:

- PIPE AFTER LAMIN
- SEE SHEET C-504
- CHARLTON ST SEDIMENT LOSS" OR APPROVED EQUAL
- SEE SHEET C-502
- ALL FENCE
- SEE SHEET C-502
- PIPE BLANKET
- SEE SHEET C-504

June 21, 2018

Rip-Rap Removal

Rip-Rap Placement

Fly Ash Pond Grading

Fly Ash Stockpile Excavation



MEDINA VALLEY COGEN, LLC
ASH POND CLOSURE
GENERAL PLANS
SWPPP PLAN

MEREDOSIA POWER STATION

C-502

DATE: 6/21/18

SCALE: 1" = 100'

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE RECORDS AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NUMBER, DEPTH, LOCATION, OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL LOCATION OF ALL UNDERGROUND UTILITIES SHOWN OR NOT SHOWN, AND SHALL LOCATE THE UTILITIES PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.



0 100 200 300
1" = 100'
NOTES: 1" = 100' ON 24x36
1" = 500' ON 18x18

DESIGNED BY: [Name] DATE: 6/21/18
CHECKED BY: [Name] DATE: 6/21/18
APPROVED BY: [Name] DATE: 6/21/18
PROJECT: Ash Pond Closure
SHEET: C-502





DAILY REPORT

DATE: June 22, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645

Depart: 1315

Travel: 2.75

Total: 8.75

AM Conditions: Overcast

AM Temperature: 68 F

PM Conditions: Mostly Cloudy

PM Temperature: 77 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Equipment: 2 excavators, 4 tractors with 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with water wagon, 4 bulldozers, 1 skidsteer, and 1 pump.

Personnel: Blankenship – 18; Ameren – 2

Visitors: Sitech – 1 GPS technician

MATERIALS USED, DELIVERIES, AND TESTING:

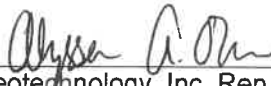
Materials Used: Material from East fly ash stockpile

Deliveries: _____

Testing: Collected sample from quarry for pre-qualification testing

CONSTRUCTION SITE LOCATIONS:

East fly ash stockpile material was moved to the western end of FA Pond


Geotechnology, Inc. Rep.

6/22/18
Date


Geotechnology, Inc. Engineer

6/27/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 3300 excavator, one Caterpillar 323 excavator, one Komatsu 490 excavator, four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, one Caterpillar 299D skidsteer, one Komatsu bulldozer, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one John Deere 9520 tractor with one Holcomb blade box, one Case IH QuadTrak 550 tractor with two John Deere 2112c scraper pans, and one Godwin pump.

Additional equipment observed on site (not in use): One New Holland TG275 tractor with one Blankenship water wagon, offset discs, and one Sakai CV 550D 84" smooth drum roller.

Blankenship held the daily safety meeting at 0800. Topics were Wet Conditions and stacked loads.

Two excavators loaded out material from the east fly ash stockpile. Four tractors (tracked), each with two side-dump trailers, hauled the stockpile material to the Fly Ash Pond.

One excavator and one skidsteer assisted with the cutting and breakdown of assorted pipes onsite.

One tractor with a blade box maintained the hauling and access roads.

One tractor with two scraper pans made cuts in the Fly Ash Pond stockpile.

Three bulldozers spread and graded material in the Fly Ash Pond.

One bulldozer graded wet material on the Fly Ash Stockpile.

One supervised pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Blankenship held a safety lunch from 1200-1230.

Geotechnology:

Alyssa Okorn observed site progress and collected a pre-qualification sample from the quarry. After leaving site, the sample was delivered to Teklab and Geotechnology labs for testing.

See the attached location drawing for additional information.

800-225-2700/1-800-225-2700 - 1-800-225-2700 - 1-800-225-2700

PHOTOGRAPH LOG



Photograph 1 ▲ - View of Bottom Ash Pond berm backfill and grading activities, looking southwest.



Photograph 2 ▲ - View of Bottom Ash Pond floor fill, looking northwest.



Photograph 3 ▲ - View of grading activities at the Fly Ash Pond, looking northeast.



Photograph 4 ▲ - View of southwest Bottom Ash Pond berm removal activities, looking southwest.



Photograph 5 ▲ - View of removal of the fly ash stockpile material, looking northeast.



Photograph 6 ▲ - View of Fly Ash Pond at Outfall 004 showing the water level on June 22, 2018 after overnight rains, looking south.



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Missouri

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

DATE: July 3, 2018

SUBJECT: Summary Report for June 25, 2018 to June 29, 2018

PROJECT: Fly Ash Pond and Bottom Ash Pond Closures
Meredosia Power Station
Meredosia, Morgan County, Illinois
Geotechnology Project No. J024917.04

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

Weather

The weather was generally overcast. Temperature (°F) lows ranged from 65 to 69°F, and temperature highs ranged from 76 to 91°F.

Construction Activities

Blankenship Construction Company moved berm material from the west berm of the Bottom Ash Pond to the Bottom Ash Pond north berm for grading/compaction, moved fly ash stockpile material to the Fly Ash Pond for grading, and graded borrow material placed in the Bottom Ash Pond floor.

Equipment and Personnel On-Site

Blankenship Construction Company had the following equipment on site: One Caterpillar excavator, one Komatsu excavator, one Komatsu long-reach excavator (removed June 22, 2018), four Case tractors (tracked), eight Smith pull-behind side-dump trailers, one Komatsu bulldozer, two Caterpillar bulldozers, one John Deere tractor with two scraper pans, one New Holland tractor with water wagon, one Holcomb scraper box, one Caterpillar skidsteer, one Godwin water pump, one 84-inch Sakai CV 500D smooth drum roller, and one John Deere 9520 tractor with offset discs.

Blankenship Construction Company had 7 to 19 personnel on site.

Meetings

A weekly progress meeting was held on Wednesday, June 27, 2018. Refer to the meeting minutes for additional information.

Photographs

A photograph log with selected photographs obtained while Geotechnology was on site is attached.

Materials

Geomembrane (40-mil HDPE MicroSpike) was delivered to the site on June 27, 2018 (48 rolls) and June 29, 2018 (12 rolls).

Berm material was excavated from the west berm of the Bottom Ash Pond, transported, placed, graded, and compacted at the Bottom Ash Pond north berm.

Fly ash stockpile material was excavated from the fly ash stockpile, transported, placed, and graded at the Fly Ash Pond.

Borrow source soil was placed and graded on the floor of the Bottom Ash Pond.

Testing/Sampling

Density testing of the fill on the Bottom Ash Pond north berm was performed as needed.

Two prequalification samples for soil backfill sources were provided by Blankenship Construction Company on June 29, 2018.

Signature of CQA Officer



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

Attachments: Daily Reports
Photograph Log

DAILY REPORTS



DAILY REPORT

DATE: June 25, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0930 Depart: 1545 Travel: 2.75 Total: 8.5

AM Conditions: Partly Cloudy AM Temperature: 70 F

PM Conditions: Overcast PM Temperature: 80 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship
Equipment: 2 excavators, 4 tractors with 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with blade box, 4 bulldozers, 1 roller, and 1 pump.
Personnel: Blankenship – 18; Ameren – 2
Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: East fly ash stockpile, North BA Pond berm, quarry borrow material
Deliveries: _____
Testing: 12 compaction tests with nuclear gauge

CONSTRUCTION SITE LOCATIONS:

East Fly Ash Stockpile material was moved to the western end of FA Pond, North BA Pond berm material was moved to build the turnaround, quarry borrow material was spread on the floor of the BA Pond

Alissa A. Olin
Geotechnology, Inc. Rep.

6/25/18
Date

[Signature]
Geotechnology, Inc. Engineer

7/3/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 323 excavator, one Komatsu 490 excavator, four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, one Komatsu bulldozer, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one John Deere 9520 tractor with one Holcomb blade box, one Case IH QuadTrak 550 tractor with two John Deere 2112c scraper pans, one Sakai CV 550D 84" smooth drum roller, and one Godwin pump.

Additional equipment observed on site (not in use): One New Holland TG275 tractor with one Blankenship water wagon, one Caterpillar 3300 excavator, and one Caterpillar 299D skidsteer, offset discs.

Blankenship held the daily safety meeting at 0700. Topic was Teamwork.

One excavator loaded out material from the East Fly Ash Pond Stockpile. Two tractors (tracked), each with two side-dump trailers, hauled the stockpile material to the Fly Ash Pond.

One excavator loaded out material from the north berm of the Bottom Ash Pond. Two tractors (tracked), each with two side-dump trailers, hauled the material to the Bottom Ash Pond turnaround.

One bulldozer spread and graded the berm material on the turnaround in the Bottom Ash Pond.

One bulldozer spread and graded borrow material on the floor of the Bottom Ash Pond.

One roller assisted in both of the Bottom Ash Pond areas.

Two bulldozers spread and graded material in the Fly Ash Pond.

One tractor with a blade box maintained the hauling and access roads.

One tractor with two scraper pans made cuts in the Fly Ash Pond stockpile.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Geotechnology:

Alyssa Okorn observed site progress and completed 6 passing compaction tests on each of two turnaround lifts, 7 feet & 6 feet below final grade.

See the attached location drawing for additional information.

6.25.2018

LEGEND:

- ROAD DITCH LINE
- SEE SHEET C-304
- CONCRETE 20" SEDIMENT LOGS ON APPROVED EMAIL
- SEE SHEET C-400
- SILT FENCE
- SEE SHEET C-400
- SEE SHEET C-400
- SEE SHEET C-400
- SEE SHEET C-400

June 25, 2018

Barrow Material Spread Area

BA Pond Bottom Excavation

Compaction Testing Area

Fly Ash Stackpile Excavation

FA Pond

Grading



MEDINA VALLEY COGEN, LLC
ASH POND CLOSURE
GENERAL PLANS
SWPPP PLAN

MERODOSIA POWER STATION

C-602

SCALE NOTE = 1"

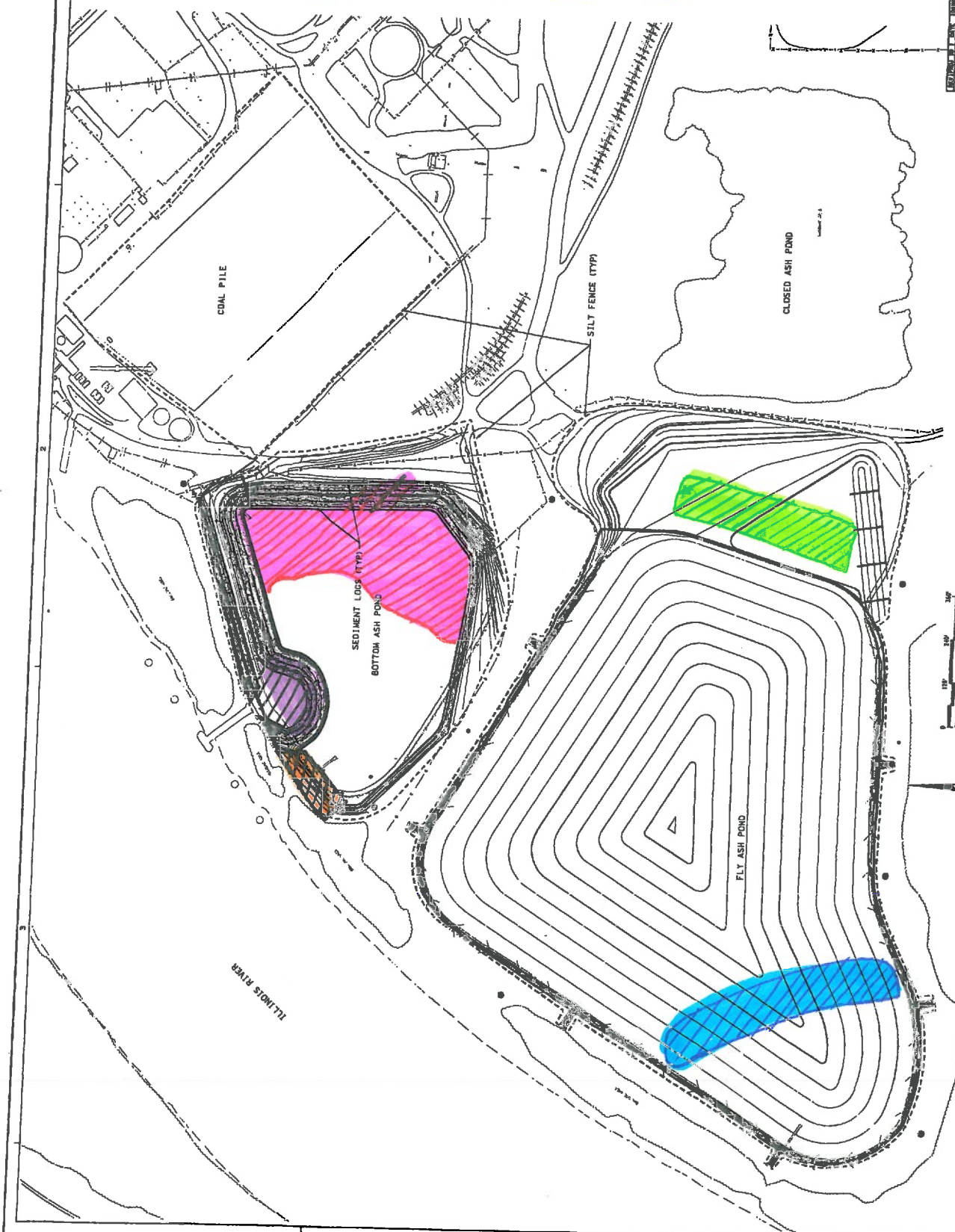
THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE RECORDS AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NUMBER, SIZE, DEPTH, LOCATION, OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SHALL LOCATE THE UTILITIES PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.



NOTES:
1" = 100'
1" = 120' ON 24x36
1" = 540' ON 18x18

EXAMINER'S NAME - Geotechnology - Merodisia Ash Pond/Cogen/Ingraham-SWPPP-Plan
DATE - 6/25/2018

PRINTED BY: MATT BOSS
TIME: 8/10/2018 10:40:49 AM





DAILY REPORT

DATE: June 26, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1545 Travel: 0.5 Total: 9.0

AM Conditions: Partly Cloudy AM Temperature: 71 F

PM Conditions: Partly Cloudy PM Temperature: 72 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship
Equipment: 2 excavators, 3 tractors with 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with blade box, 4 bulldozers, 1 roller, and 1 pump.
Personnel: Blankenship – 16; Ameren – 2
Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: East fly ash stockpile, North BA Pond berm, quarry borrow material
Deliveries: _____
Testing: 6 compaction tests with nuclear gauge

CONSTRUCTION SITE LOCATIONS:

East Fly Ash Stockpile material was moved to the western end of FA Pond, North BA Pond berm material was moved to build the turnaround, quarry borrow material was spread on the floor of the BA Pond

Allyson G. Olin
Geotechnology, Inc. Rep.

6/26/18
Date

[Signature]
Geotechnology, Inc. Engineer

7/3/18
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:**Blankenship:**

Equipment observed in use: One Caterpillar 3300 excavator, one Komatsu 490 excavator, three Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, one Komatsu bulldozer, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one John Deere 9520 tractor with one Holcomb blade box, one Case IH QuadTrak 550 tractor with two John Deere 2112c scraper pans, one Sakai CV 550D 84" smooth drum roller, and one Godwin pump.

Additional equipment observed on site (not in use): One New Holland TG275 tractor with one Blankenship water wagon, one Case IH QuadTrak 550 tractors, with two Smith Co. side-dump trailers, one Caterpillar 323 excavator, and one Caterpillar 299D skidsteer, offset discs.

Blankenship held the daily safety meeting at 0700. Topic was Teamwork.

One excavator loaded out material from the East Fly Ash Pond Stockpile. Two tractors (tracked), each with two side-dump trailers, hauled the stockpile material to the Fly Ash Pond.

One excavator loaded out material from the north berm of the Bottom Ash Pond. Two tractors (tracked), each with two side-dump trailers, hauled the material to the Bottom Ash Pond turnaround.

One bulldozer spread and graded the berm material on the turnaround in the Bottom Ash Pond. One bulldozer spread and graded borrow material on the floor of the Bottom Ash Pond. One roller assisted in both of these areas.

Two bulldozers spread and graded material in the Fly Ash Pond.

One tractor with a blade box maintained the hauling and access roads.

One tractor with two scraper pans made cuts in the Fly Ash Pond stockpile.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Geotechnology:

Alyssa Okorn observed site progress and completed 6 passing compaction test on a turnaround lift 5 feet below final grade.

See the attached location drawing for additional information.



DAILY REPORT

DATE: June 27, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1545 Travel: 0.5 Total: 9.0

AM Conditions: Partly Cloudy AM Temperature: 76 F

PM Conditions: Mostly Cloudy PM Temperature: 83 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship
Equipment: 3 excavators, 4 tractors with 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with blade box, 1 tractor with water wagon, 4 bulldozers, 1 roller, and 1 pump.
Personnel: Blankenship – 18; Ameren – 2
Visitors: Mike Wagstaff

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: East fly ash stockpile, North BA Pond berm, quarry borrow material
Deliveries: 48 rolls of geomembrane – 4 flatbed semis (0730-1145)
Testing: _____

CONSTRUCTION SITE LOCATIONS:

East Fly Ash Stockpile material was moved to the western end of FA Pond, North BA Pond berm material
was moved to build the turnaround, quarry borrow material was spread on the floor of the BA Pond


Geotechnology, Inc. Rep.

6/27/18
Date


Geotechnology, Inc. Engineer

7/3/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 3300 excavator, one Komatsu 490 excavator, one Caterpillar 323 excavator, four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, one Komatsu bulldozer, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one John Deere 9520 tractor with one Holcomb blade box, one New Holland TG275 tractor with one Blankenship water wagon, one Case IH QuadTrak 550 tractor with two John Deere 2112c scraper pans, one Sakai CV 550D 84" smooth drum roller, one Caterpillar 299D skidsteer, and one Godwin pump.

Additional equipment observed on site (not in use): One pull-behind set of offset discs.

Blankenship held the daily safety meeting at 0700. Topic was Screwdrivers.

Two excavators loaded out material from the East Fly Ash Pond Stockpile. Four tractors (tracked), each with two side-dump trailers, hauled the stockpile material to the Fly Ash Pond.

One excavator and one skidsteer unloaded geomembrane rolls from the delivery trucks and stacked it for staging.

One tractor (tracked), with two scraper pans, hauled material to the Bottom Ash Pond turnaround from the Bottom Ash Pond north berm.

One bulldozer spread and graded borrow material on the floor of the Bottom Ash Pond. One roller assisted.

Three bulldozers spread and graded material in the Fly Ash Pond.

One tractor with a blade box and one tractor with a water wagon alternately maintained the hauling and access roads.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Blankenship held the weekly coordination meeting at 0900. See meeting minutes for more detail.

Geotechnology:

Alyssa Okorn observed and inventoried each roll during the unloading of geomembrane. Afterwards, Alyssa observed progress on site.

See the attached location drawing for additional information.



Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER
STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 06-27-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology Inc., and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Mike W., Pat B., Steve P.
BCCO- Rob F., (Garrett B. ph.)
OTHERS- Geotechnology Inc.- (Anna S. & Jessie G. ph.)

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

1. Safety.
 - i. Safety Minute: Pat B. – Heat Exhaustion and Heat Strokes.
 - ii. Steve P. updated the group that he is replacing the batteries in their onsite AED's and verified that the electrode pads are still within expiration date.
- b. Next week's volunteer: Alyssa O.
2. Contractor Progress Report.
 - a. Water pumping of the bottom ash pond has continued. Rain events in our area and up north have the river level on the rise. Rob and Steve reported that the new crest level is at 432.7', which should be below the remaining BAP berm which is at elevation 437' approx.
 - b. Mobilization: Mobilization of additional equipment and supplies; BCCO de-mobilized a Komatsu PC360 Long reach excavator from the site. No other mobilization notes at this time.
 - c. The BAP berm removal is essentially on hold, until river levels return to a safe level. Some berm excavation has been ongoing to continue to fill the BAP oil dock road turnaround, but excavation has been limited to above elevation 437' and the innermost portion of the berm to maintain flood protection. Garrett reported that the BAP berm is



currently lowered to about elevation 435' at the lowest point, but talking with Rob, the BAP is still protected to roughly elevation 437'. BCCO does not have a yardage update on the BAP berm removal at this time. Rob and Garrett have discussed having BCCO's PLS Lucas onsite next week to perform some survey and yardage updates. Rob stated that once the river levels drop, BCCO will remove the BAP berm to proposed/clean elevations, which will take away flood protection for the BAP floor.

- d. Ash Excavation in the East Fly pile has resulted in some significant cuts, and an elevation transition at the eastern liner limit. Through discussion, the group decided to utilize extra sand material to contour the east liner limit area at a gentler slope. Anna also confirmed that the anchor trench was acceptable to install in sand material.
- e. Ash removal outside the northern limit resulted in approx. 17,000 CY of excavation. This will contribute to the final Earthwork Ash Quantity.
- f. Ash fill in the FAP has been ongoing. Due to the nature of the Fly ash out of the E. Stockpile, BCCO has been conditioning the ash for dryness and access as this material is coming out of the excavation very saturated.
- g. The electrical line at the BAP Dock Road from the last powerline to the meter/panel box has been uncovered by BCCO. Once the remaining fills are complete on the BAP oil dock (1-2 days) this area will be ready for Ameren and Scott Bros Electric to relocate the power. The outside of the berm has been stripped of rip rap, but the rip rap needs hauled to the FAP and then the fills can be made (1-2 days). Anna clarified that there will need to be CQA surveys performed on the Top of Ash surface prior to liner placement.
- h. BAP earth backfill has been ongoing minus the lost three days last week. The group discussed that the delays at the bridge have been causing major delays. Rob asked if Anna would be willing to consider alternate soil/sand sources of which she is. Sampling tests will have to be performed of any new sources. If any new sources cannot be located, Mike W. stated that a temporary shutdown of soil import would not hurt the schedule. BCCO is looking into other infill options.
- i. Discharge of the FAP will continue through this Friday and at that time the valve will be closed as it will have most/all of the FAP water discharged if the river levels perform as expected. This should be the last discharge for the expected future. BCCO may look into demolishing the FAP outlet structure within the next 2-3 weeks.
- j. Liner material is on the way to site, and as of the meeting, two loads had arrived to site. There were a couple issues concerning the membrane, one with onsite stacking but Alyssa and Rob resolved that, the other with the second load of liner in that the onsite



roll numbers were not coordinating with Alyssa's roll list. It was corrected by Geotechnology quickly and rolls were accepted. Anna is hoping to have her results on UV testing by this Friday and indicated that she could possibly issue a release to ship by the 4th of July.

3. Contractor's Weekly Work Plan

a. Update: Rob F.

- i. Continue pumping effort. BCCO will monitor the pumping at the coal yard run off area and see if it has any effect on the backfill operations at the BAP. The pumping effort may have to be put temporarily on hold if the river appears as though it may flood the work area.
- ii. Continue backfill in the BAP. This is dependent on weather and pumping efforts. BCCO is investigating other backfill sources and will update the group accordingly. If necessary, hauling operations may be suspended due to the bridge restrictions.
- iii. Oil dock roadway surface removal will continue, as will BAP oil dock road fills on the slopes and turn around. Expected timeline is less than a week.
- iv. Grading at the Fly Ash pond will continue as fill is brought in. Grading operations will continue placing fill, per the proposed design surface until all cut material is consumed. Cut operations in the East Fly Ash Stockpile area will continue until material is removed to clean condition is this location. Conditioning of the ash will continue as needed.
- v. BAP berm removal on the south berm has temporarily been slowed, except for material needed to make fills on the oil road turn around. Once the river crests and recedes, and the forecast is favorable, BCCO will continue BAP south berm removal.

4. Schedule Forecast

a. Two Week Look Ahead.

- i. The two-week look ahead coordinates with the upcoming work activities excluding the items below.
- ii. Garrett confirmed with Rob that he is still comfortable with the current schedule and he stated that he was.



5. New Items/Miscellaneous

- a. Rip Rap that has been salvaged from the BAP will not be enough to rip rap the gap area between the anchor trench and the existing rip rap. Assuming that the current rip rap has been enough to make it approx. half way around the FAP, this would leave another 2,500 LF by an estimated 15' wide a 1' deep. Rob and Mike are going to look into verifying the anchor trench location but based on these dimensions and a 1.6 conversion factor, this could be up to 2,200 ton of rip rap.
- b. Rob clarified that the demolished BAP outfall was approved to be buried in the BAP subgrade, Mike confirmed that this was acceptable.
- c. Mike asked the question as to what the contingency plan is for failed welded turf seams. Anna stated that it would be one of two options: 1. Cut and remove the entire weld and re-seam, or 2. Sew the welded seam with a sewing machine with the failed weld in place. GB will follow up with GSI to confirm their contingency.

6. Action Items

- a. BCCO Items:
 - i. BCCO to continue submittals. Update- Garrett, in coordination with GSI, will need to submit samples of sand for infill, Armor fill component, and welded turf seam. Update: A Closure Turf Installation manual was provided to BCCO and in turn Geotechnology that detailed the seaming procedure for turf as well as Armor Fill drying time. The remaining items are still forthcoming. Anna did state that they would need a sample off the sand material for infill. {Status- Open}
- b. Ameren Items:
 - i. Mike W. to finish review of pricing as presented by BCCO for additional fence removal, culvert installation, coal yard run off excavation, and coal yard seeding, and issue an EWO as necessary. {Status- Open}

7. Questions, Comments, Open Discussion

- a. Update

The next progress meeting for this project will be held on July 11th at 9:00 a.m.



DAILY REPORT

DATE: June 28, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1545 Travel: 0.5 Total: 9.0
AM Conditions: Partly Cloudy AM Temperature: 76 F
PM Conditions: Mostly Cloudy PM Temperature: 84 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship
Equipment: 2 excavators, 4 tractors with 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with blade box, 1 tractor with water wagon, 4 bulldozers, 1 roller, and 1 pump.
Personnel: Blankenship – 19; Ameren – 2
Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: East fly ash stockpile, North BA Pond berm, quarry borrow material
Deliveries: _____
Testing: Completed 14 compaction tests with nuclear gauge on the BA Pond turnaround

CONSTRUCTION SITE LOCATIONS:

East Fly Ash Stockpile material was moved to the western end of FA Pond, North BA Pond berm material was moved to build the turnaround, quarry borrow material was spread on the floor of the BA Pond

Alyssa A. O'Neil
Geotechnology, Inc. Rep.

6/28/18
Date

[Signature]
Geotechnology, Inc. Engineer

7/3/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:**Blankenship:**

Equipment observed in use: One Caterpillar 3300 excavator, one Komatsu 490 excavator, , four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, one Komatsu bulldozer, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one John Deere 9520 tractor with one Holcomb blade box, one New Holland TG275 tractor with one Blankenship water wagon, one Case IH QuadTrak 550 tractor with two John Deere 2112c scraper pans, one Sakai CV 550D 84" smooth drum roller, and one Godwin pump.

Additional equipment observed on site (not in use): One pull-behind set of offset discs, one Caterpillar 323 excavator, and one Caterpillar 299D skidsteer.

Blankenship held the daily safety meeting at 0700. Topic was Rigging.

Two excavators loaded out material from the East Fly Ash Pond Stockpile. Four tractors (tracked), each with two side-dump trailers, hauled the stockpile material to the Fly Ash Pond.

One tractor (tracked), with two scraper pans, hauled material to the Bottom Ash Pond turnaround from the Bottom Ash Pond north and west berms.

One bulldozer spread and graded borrow material on the floor of the Bottom Ash Pond, and berm material on the turnaround. One roller assisted in both areas.

Three bulldozers spread and graded material in the Fly Ash Pond.

One tractor with a blade box and one tractor with a water wagon alternately maintained the hauling and access roads.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Geotechnology:

Alyssa Okorn observed progress on site and completed 7 passing compaction tests with nuclear gauge on each of two turnaround lifts, 4 feet and 3 feet below final grade.

See the attached location drawing for additional information.



DAILY REPORT

DATE: June 29, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1430 Travel: 0.5 Total: 9.0
AM Conditions: Clear AM Temperature: 79 F
PM Conditions: Clear PM Temperature: 89 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship
Equipment: 3 excavators, 1 skidsteer, and 1 pump.
Personnel: Blankenship – 7; Ameren – 2
Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: East fly ash pond
Deliveries: _____
Testing: Collected two pre-qual samples

CONSTRUCTION SITE LOCATIONS:

Material in the North Area of the Fly Ash Pond was mixed with drier material and spread out to dry

Allyson A. O'Neil
Geotechnology, Inc. Rep.

6/29/18
Date

[Signature]
Geotechnology, Inc. Engineer

7/3/18
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 3300 excavator, one Komatsu 490 excavator, one Caterpillar 323 excavator, one Caterpillar 299D skidsteer, and one Godwin pump.

Additional equipment observed on site (not in use): One pull-behind set of offset discs, four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, one Komatsu bulldozer, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one John Deere 9520 tractor with one Holcomb blade box, one New Holland TG275 tractor with one Blankenship water wagon, one Case IH QuadTrak 550 tractor with two John Deere 2112c scraper pans, and one Sakai CV 550D 84" smooth drum roller.

Blankenship held the daily safety meeting at 0700.

Two excavators mixed material in the North Fly Ash Pond with drier material and spread it out to facilitate drying.

One excavator and one skidsteer unloaded one truck of geomembrane rolls.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Geotechnology:

Alyssa Okorn observed unloading of one truck of geomembrane rolls and inventoried them. Two pre-qualification samples of Bottom Ash Pond backfill material were provided by Blankenship Construction Company from two different sources. Alyssa delivered the samples to TekLab and the lab at Geotechnology for analysis.

See the attached location drawing for additional information.

6.29.2018

LEGEND:

- ROAD DITCH LINER
- SEE SHEET C-504
- CARBON 20% SEDIMENT LOSS PM FOR APPROVED CLOSURE
- SEE SHEET C-505
- SILT FENCE
- SEE SHEET P-403
- SEE SHEET P-404
- SEE SHEET P-405
- SEE SHEET P-406

June 29, 2018



FA Pond

Grading,
Spreading, &
Drying



MEDINA VALLEY COGEN, LLC	
ASH POND CLOSURE	
GENERAL PLANS	
SWPPP PLAN	
MEREDOSIA POWER STATION	
C-602	0

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE RECORDS AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, LOCATION, DEPTH, OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL LOCATION OF UNDERGROUND UTILITIES IS SHOWN OR NOT SHOWN, AND SHALL LOCATE THE UTILITIES IN SUCH A MANNER AS TO AVOID ANY EXCAVATION OR CONSTRUCTION IMPROVEMENTS.



NOTE: 1" = 120' ON 24" X 36" SCALE
1" = 240' ON 12" X 18" SCALE



PROJECT: MEDINA VALLEY COGEN, LLC - MEREDOSIA ASH POND CLOSURE
DATE: 6/29/2018
DRAWN BY: [Signature]
CHECKED BY: [Signature]
APPROVED BY: [Signature]

PHOTOGRAPH LOG



Photograph 1 ▲ - View of Bottom Ash Pond berm backfill and grading activities, looking west.



Photograph 2 ▲ - View of Bottom Ash Pond floor fill activities, looking west.

Photographs taken by Alyssa Okorn of Geotechnology, Inc. June 25-29, 2018.



Photograph 3 ▲ - View of grading activities at the Fly Ash Pond, looking south.



Photograph 4 ▲ - View of removal of the fly ash stockpile material, looking northeast.



Photograph 5 ▲ - View of fly ash spreading activities at the Fly Ash Pond to facilitate drying, looking northwest.



Photograph 6 ▲ - View of geomembrane (40-mil HDPE MicroSpike) storage on site, looking southeast.

Photographs taken by Alyssa Okorn of Geotechnology, Inc. June 25-29, 2018.



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Missouri

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

DATE: July 11, 2018

SUBJECT: Summary Report for July 2, 2018 to July 6, 2018

PROJECT: Fly Ash Pond and Bottom Ash Pond Closures
Meredosia Power Station
Meredosia, Morgan County, Illinois
Geotechnology Project No. J024917.04

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

Weather

The weather was generally clear to overcast, with a thunderstorm in the afternoon of July 5, 2018. Temperature (°F) lows ranged from 63 to 73°F, and temperature highs ranged from 83 to 95°F.

Construction Activities

Blankenship Construction Company moved berm material from the west berm of the Bottom Ash Pond to the Bottom Ash Pond north berm for grading/compaction, moved fly ash stockpile material to the Fly Ash Pond for grading, and graded borrow material placed in the Bottom Ash Pond floor.

Equipment and Personnel On-Site

Blankenship Construction Company had the following equipment on site: One Caterpillar excavator, one Komatsu excavator, one Komatsu long-reach excavator (removed June 22, 2018), four Case tractors (tracked), eight Smith pull-behind side-dump trailers, one Komatsu bulldozer, two Caterpillar bulldozers, one John Deere tractor with two scraper pans, one New Holland tractor with water wagon, one Holcomb scraper box, one Caterpillar skidsteer, one Godwin water pump, one 84-inch Sakai CV 500D smooth drum roller, and one John Deere 9520 tractor with offset discs.

Blankenship Construction Company had 17 to 18 personnel on site.

Meetings

Due to the Independence Day holiday, a coordination meeting was not held during the referenced week.

Photographs

A photograph log with selected photographs obtained while Geotechnology was on site is attached.

Materials

Geomembrane (40-mil HDPE MicroSpike) was delivered to the site on July 2, 2018 (36 rolls).

Berm material was excavated from the west berm of the Bottom Ash Pond, transported, placed, graded, and compacted at the Bottom Ash Pond north berm.

Fly ash stockpile material was excavated from the fly ash stockpile, transported, placed, and graded at the Fly Ash Pond.

Borrow source soil was placed and graded on the floor of the Bottom Ash Pond.

Testing/Sampling

Density testing of the fill on the Bottom Ash Pond north berm was performed as needed.

Signature of CQA Officer



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

Attachments: Daily Reports
Photograph Log

DAILY REPORTS



DAILY REPORT

DATE: July 2, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures
Project Number: J024917.04
Project Client: Ameren

Representative: AAO

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0830

Depart: 1545

Travel: 2.25

Total: 9.5

AM Conditions: Partly Cloudy

AM Temperature: 76 F

PM Conditions: Partly Cloudy

PM Temperature: 84 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Equipment: 3 excavators, 4 tractors w/ 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with blade box, 1 tractor with water wagon, 4 bulldozers, 1 skidsteer, 1 roller, and 1 pump.

Personnel: Blankenship - 18; Ameren - 2

Visitors: Best Drive (Brayler Tire)

MATERIALS USED, DELIVERIES, AND TESTING:


Materials Used: East fly ash stockpile, west BA Pond berm, quarry borrow material

Deliveries: Three truckloads of geomembrane

Testing: Completed 7 compaction tests with nuclear gauge on the BA Pond turnaround

CONSTRUCTION SITE LOCATIONS:

East fly ash stockpile material was moved to the western end of FA Pond. West BA Pond berm material was moved to build the turnaround. Quarry borrow material was spread on the floor of the BA Pond.


Geotechnology, Inc. Rep.

7/2/18
Date


Geotechnology, Inc. Engineer

7/9/18
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 330D excavator, one Komatsu 490 excavator, four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, one Komatsu bulldozer, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one John Deere 9520 tractor with one Holcomb blade box, one New Holland TG275 tractor with one Blankenship water wagon, one Case IH QuadTrak 550 tractor with two John Deere 2112c scraper pans, one Sakai CV 550D 84" smooth drum roller, one Caterpillar 323 excavator, one Caterpillar 299D skidsteer and one Godwin pump.

Additional equipment observed on site (not in use): One pull-behind set of offset discs.

Blankenship held the daily safety meeting at 0700. Topic was Excavations.

Two excavators loaded out material from the east fly ash stockpile. Four tractors (tracked), each with two side-dump trailers, hauled the stockpile material to the Fly Ash Pond.

One tractor (tracked), with two scraper pans, hauled material to the Bottom Ash Pond turnaround from the Bottom Ash Pond west berm.

Two bulldozers spread and graded borrow material on the floor of the Bottom Ash Pond, and berm material on the turnaround. One smooth drum roller assisted in both areas.

Two bulldozers spread and graded material in the Fly Ash Pond.

One tractor with a blade box and one tractor with a water wagon alternately maintained the hauling and access roads.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Geotechnology:

Alyssa Okorn inventoried and observed unloading of 36 rolls of geomembrane. Alyssa then observed progress on site and completed 7 passing compaction tests with nuclear gauge on the final lift of the Bottom Ash Pond turnaround.

See the attached location drawing for additional information.

ILLINOIS RIVER



DAILY REPORT

DATE: July 3, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1300 Travel: 2.75 Total: 9.0

AM Conditions: Clear AM Temperature: 80 F
PM Conditions: Cloudy PM Temperature: 86 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship
Equipment: 3 excavators, 4 tractors w/ 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with blade box, 1 tractor with water wagon, 4 bulldozers, 1 skidsteer, 1 roller, and 1 pump.
Personnel: Blankenship – 18; Ameren – 2
Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: East fly ash stockpile, west BA Pond berm, quarry borrow material
Deliveries: _____
Testing: _____

CONSTRUCTION SITE LOCATIONS:

East fly ash stockpile material was moved to the western end of FA Pond. Quarry borrow material was spread on the floor of the BA Pond.

Allyson A. Orr
Geotechnology, Inc. Rep.

7/3/18
Date

Samuel M. Sante
Geotechnology, Inc. Engineer

7/9/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 330D excavator, one Komatsu 490 excavator, four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, one Komatsu bulldozer, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one John Deere 9520 tractor with one Holcomb blade box, one New Holland TG275 tractor with one Blankenship water wagon, one Case IH QuadTrak 550 tractor with two John Deere 2112c scraper pans, one Sakai CV 550D 84" smooth drum roller, one Caterpillar 323 excavator, one Caterpillar 299D skidsteer and one Godwin pump.

Additional equipment observed on site (not in use): One pull-behind set of offset discs.

Blankenship held the daily safety meeting at 0700. Topic was Safety Checklist.

Two excavators loaded out material from the east fly ash stockpile. Four tractors (tracked), each with two side-dump trailers, hauled the stockpile material to the Fly Ash Pond.

Two bulldozers spread and graded borrow material on the floor of the Bottom Ash Pond. One smooth drum roller assisted.

Two bulldozers spread and graded material in the Fly Ash Pond.

One tractor with a blade box and one tractor with a water wagon alternately maintained the hauling and access roads.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Geotechnology:

Alyssa Okorn observed progress on site.

See the attached location drawing for additional information.

7.3.2018

LEGEND:

- BORE PILE
- SEE SHEET C-401
- CANAL 20" SEDIMENT LOSS" OR APPROVED EQUAL
- SEE SHEET C-402
- SILT FENCE
- SEE SHEET C-403
- ROCK BLANKET
- SEE SHEET C-404

July 3, 2018

Borrow Material
Spread Area

Fly Ash Pond
Grading

Fly Ash Stockpile
Excavation



THE UNDERGROUND UTILITIES SHOWN HEREIN WERE LOCATED FROM
ACTUAL EXISTENCE AND DO NOT NECESSARILY REFLECT THE
LOCATION OF THESE OR OTHER UTILITIES. SIZE, TYPE, NUMBER, OR LOCATION
OF THESE OR OTHER UTILITIES, SHOWING THE ACTUAL LOCATION OF
LOCATE THE UTILITIES, SHOWING OR NOT SHOWING, AND SHALL
EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.



DATE: 7/10/2018
TIME: 8:10 AM
PROJECT: MERIDOSTA POWER STATION
DRAWN: [Name]
CHECKED: [Name]
APPROVED: [Name]

MEDINA VALLEY COGEN, LLC	
ASH POND CLOSURE	
GENERAL PLANS	
SWPPP PLAN	
MERIDOSTA POWER STATION	
C-602	0
SCALE: 1" = 100'	



DAILY REPORT

DATE: July 5, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0730

Depart: 1545

Travel: 2.75

Total: 10.5

AM Conditions: Partly Cloudy

AM Temperature: 80 F

PM Conditions: Thunderstorm

PM Temperature: 73 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Equipment: 2 excavators, 4 tractors w/ 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with blade box, 1 tractor with water wagon, 3 bulldozers, 1 roller, and 1 pump.

Personnel: Blankenship – 18; Ameren – 2

Visitors: Roland – working on 490 excavator

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: East fly ash stockpile, quarry borrow material

Deliveries: FS Fuel Refill

Testing:

CONSTRUCTION SITE LOCATIONS:

East fly ash stockpile material was moved to the western end of the FA Pond. Quarry borrow material was spread on the floor of the BA Pond.

Alyssa A. Olu
Geotechnology, Inc. Rep.

7/5/18
Date

[Signature]
Geotechnology, Inc. Engineer

7/9/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 330D excavator, four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one John Deere 9520 tractor with one Holcomb blade box, one New Holland TG275 tractor with one Blankenship water wagon, one Case IH QuadTrak 550 tractor with two John Deere 2112c scraper pans, one Sakai CV 550D 84" smooth drum roller, one Caterpillar 323 excavator, and one Godwin pump.

Additional equipment observed on site (not in use): One pull-behind set of offset discs, one Komatsu 490 excavator, one Caterpillar 299D skidsteer, one Komatsu bulldozer.

Blankenship held the daily safety meeting at 0700. Topic was Safety Checklist.

Two excavators loaded out material from the east fly ash stockpile. Four tractors (tracked), each with two side-dump trailers, and one tractor (tracked) with two scraper pans, hauled the stockpile material to the Fly Ash Pond.

One bulldozer spread and graded borrow material on the floor of the Bottom Ash Pond. One smooth drum roller compacted the material.

Two bulldozers spread and graded material in the Fly Ash Pond.

One tractor with a blade box and one tractor with a water wagon alternately maintained the hauling and access roads.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Geotechnology:

Alyssa Okorn observed progress on site.

See the attached location drawing for additional information.

7.5.2018

LEGEND:

- ROCK BLANKET
- SEE SHEET P-401
- SEE SHEET P-402
- SEE SHEET P-403
- SEE SHEET P-404
- SEE SHEET P-405
- SEE SHEET P-406

July 5, 2018

Borrow Material
Spread Area

Fly Ash Pond
Grading

Fly Ash Stockpile
Excavation



MEDINA VALLEY COGEN, LLC
ASH POND CLOSURE
GENERAL PLANS
SNPPP PLAN

MEREDOSIA POWER STATION

C-602

SCALE: 1" = 100'

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM
EXISTING RECORDS AND DO NOT REPRESENT THE ACTUAL LOCATION
OF THESE UTILITIES. THE GENERAL CONTRACTOR SHALL
BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL
UNDERGROUND UTILITIES IN THE FIELD PRIOR TO ANY GRADING,
EXCAVATION OR CONSTRUCTION IMPROVEMENTS.



NOTES:
1" = 100' ON 8-10-18
1" = 100' ON 8-10-18

DESIGNED BY: [Name]
CHECKED BY: [Name]
DATE: 7/5/2018

PRINTED BY: [Name]
DATE: 7/10/2018 10:00:49 AM





DAILY REPORT

DATE: July 6, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645

Depart: 1330

Travel: 2.75

Total: 9.0

AM Conditions: Cloudy

AM Temperature: 75 F

PM Conditions: Clear

PM Temperature: 80 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Equipment: 2 excavators, 4 tractors w/ 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with blade box, 3 bulldozers, and 1 pump.

Personnel: Blankenship – 17; Ameren – 2

Visitors: Roland – fixing the 490 excavator

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: East fly ash stockpile

Deliveries:

Testing:

CONSTRUCTION SITE LOCATIONS:

East fly ash stockpile material was moved to the western end of the FA Pond.

Alyssa A. Olin
Geotechnology, Inc. Rep.

7/6/18
Date

[Signature]
Geotechnology, Inc. Engineer

7/9/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 330D excavator, four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one John Deere 9520 tractor with one Holcomb blade box, one Case IH QuadTrak 550 tractor with two John Deere 2112c scraper pans, one Caterpillar 323 excavator, one Caterpillar 299D skidsteer and one Godwin pump.

Additional equipment observed on site (not in use): One Komatsu 490 excavator, one Komatsu bulldozer, one New Holland TG275 tractor with one Blankenship water wagon, one Sakai CV 550D 84" smooth drum roller, and one pull-behind set of offset discs.

Blankenship held the daily safety meeting at 0700.

Two excavators loaded out material from the east fly ash stockpile. Four tractors (tracked), each with two side-dump trailers, and one tractor (tracked) with scraper pans hauled the stockpile material to the Fly Ash Pond.

Three bulldozers spread and graded material in the Fly Ash Pond.

One tractor with a blade box maintained the hauling and access roads.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Geotechnology:

Alyssa Okorn observed progress on site.

See the attached location drawing for additional information.

7.6.2018

LEGEND

- ROCK BATTER LINE
- COAL PILE
- SEDIMENT LOSS ON APPROVED (SLO)
- SILT FENCE
- SEE SHEET P-402
- ROCK BLANKET
- SEE SHEET C-602

July 6, 2018

Fly Ash Pond
Grading

Fly Ash Stockpile
Excavation



THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT REPRESENT THE ACTUAL LOCATION OF THESE UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.



MEDINA VALLEY COGEN, LLC	
ASH POND CLOSURE	
GENERAL PLANS	
SNPPP PLAN	
MEREDOSTA POWER STATION	
C-602	0

Client: MVS
 Date: 7/6/2018
 Project: Ash Pond Closure
 Sheet: C-602

PHOTOGRAPH LOG



Photograph 1 ▲ - View of Bottom Ash Pond berm compaction activities, looking south.



Photograph 2 ▲ - View of Bottom Ash Pond floor fill activities, looking south.



Photograph 3 ▲ - View of grading activities at the Fly Ash Pond, looking northwest.



Photograph 4 ▲ - View of removal of the fly ash stockpile material, looking south.



Photograph 5 ▲ - View of ditch construction at the Fly Ash Pond, looking west.



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Missouri

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

DATE: July 17, 2018

SUBJECT: Summary Report for July 8, 2018 to July 13, 2018

PROJECT: Fly Ash Pond and Bottom Ash Pond Closures
Meredosia Power Station
Meredosia, Morgan County, Illinois
Geotechnology Project No. J024917.04

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

Weather

The weather was generally clear. Temperature (°F) lows ranged from 65 to 71°F, and temperature highs ranged from 90 to 94°F.

Construction Activities

Blankenship Construction Company moved fly ash stockpile material to the Fly Ash Pond for grading, graded borrow material placed in the Bottom Ash Pond floor, excavated and backfilled an electrical trench at the Bottom Ash Pond berm, and demolished the Outfall 004 structure at the Fly Ash Pond.

On July 12, 2018, Scott Brothers Electric placed conduit in the utility trench excavated in the Bottom Ash Pond berm.

Equipment and Personnel On-Site

Blankenship Construction Company had the following equipment on site: One Caterpillar excavator, one Komatsu excavator, four Case tractors (tracked), eight Smith pull-behind side-dump trailers, one Komatsu bulldozer, two Caterpillar bulldozers, one John Deere tractor with two scraper pans, one New Holland tractor with water wagon, one Holcomb scraper box, one Caterpillar skidsteer, one Godwin water pump, one 84-inch Sakai CV 500D smooth drum roller, one John Deere 9520 tractor with offset discs, and one Caterpillar mini-excavator.

Blankenship Construction Company had 16 to 18 personnel on site.

Meetings

A weekly progress meeting was held on Wednesday, July 11, 2018. Refer to the meeting minutes for additional information.

Photographs

A photograph log with selected photographs obtained while Geotechnology was on site is attached.

Materials

Geomembrane (40-mil HDPE MicroSpike) was delivered to the site on July 9, 2018 (7 rolls).

Fly ash stockpile material was excavated from the fly ash stockpile, transported, placed, and graded at the Fly Ash Pond.

Borrow source soil was placed and graded on the floor of the Bottom Ash Pond.

Testing/Sampling

Testing and sampling was not performed on site during the referenced week.

Signature of CQA Officer



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

Attachments: Daily Reports
Photograph Log

DAILY REPORTS



GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0715

Depart: 1545

Travel: 2.25

Total: 10.75

AM Conditions: Clear

AM Temperature: 72 F

PM Conditions: Clear

PM Temperature: 88 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Equipment: 3 excavators, 4 tractors w/ 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with water wagon, 3 bulldozers, 1 skidsteer, 1 roller, and 1 pump.

Personnel: Blankenship – 18; Ameren – 2

Visitors: Best Drive (Baylor Tire)

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: East fly ash stockpile, quarry borrow material

Deliveries: Geomembrane – 7 rolls

Testing:

CONSTRUCTION SITE LOCATIONS:

East fly ash stockpile material was moved to the western end of FA Pond. Quarry borrow material was spread on the floor of the BA Pond

Geotechnology, Inc. Rep.

7/9/18
Date

Geotechnology, Inc. Engineer

7/17/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 330D excavator, four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, one Komatsu bulldozer, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one New Holland TG275 tractor with one Blankenship water wagon, one Case IH QuadTrak 550 tractor with two John Deere 2112c scraper pans, one Sakai CV 550D 84" smooth drum roller, one Caterpillar 323 excavator, one Caterpillar 299D skidsteer, and one Godwin pump.

Additional equipment observed on site (not in use): One pull-behind set of offset discs, one Komatsu 490 excavator, and one John Deere 9520 tractor with one Holcomb blade box.

Blankenship held the daily safety meeting at 0700. Topic was Reporting Unsafe Equipment.

Two excavators loaded out material from the east fly ash stockpile. Four tractors (tracked), each with two side-dump trailers, hauled the stockpile material to the western end of the Fly Ash Pond. One tractor (tracked) with two scraper pans assisted.

Two bulldozers spread and graded borrow material on the floor of the Bottom Ash Pond. One smooth drum roller compacted the material.

Two bulldozers spread and graded material in the Fly Ash Pond.

One tractor with a water wagon maintained the hauling and access roads.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Geotechnology:

Alyssa Okorn inventoried the geomembrane delivery and observed the unloading and stacking of the geomembrane rolls. Alyssa then observed progress on site.

See the attached location drawing for additional information.



DAILY REPORT

DATE: July 10, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645

Depart: 1545

Travel: 0.5

Total: 9.0

AM Conditions: Clear

AM Temperature: 74 F

PM Conditions: Partly Cloudy

PM Temperature: 93 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Equipment: 2 excavators, 4 tractors w/ 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with water wagon, 3 bulldozers, 1 skidsteer, 1 roller, and 1 pump.

Personnel: Blankenship – 16; Ameren – 2

Visitors: Beard Equipment – QuadTrak; Altofer CAT technician - dozers

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: East fly ash stockpile, quarry borrow material

Deliveries: Blankenship – Caterpillar 308 Mini-excavator at 1100

Testing:

CONSTRUCTION SITE LOCATIONS:

East fly ash stockpile material was moved to the western end of the FA Pond. Quarry borrow material was spread on the floor of the BA Pond.


Geotechnology, Inc. Rep.

7/10/18
Date


Geotechnology, Inc. Engineer

7/17/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 330D excavator, one Komatsu 490 excavator, three Case IH QuadTrak 550 tractors and one John Deere 9520 tractor, each with two Smith Co. side-dump trailers, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one New Holland TG275 tractor with one Blankenship water wagon, one Case IH QuadTrak 550 tractor with two John Deere 2112c scraper pans, one Sakai CV 550D 84" smooth drum roller, one Caterpillar 299D skidsteer, and one Godwin pump.

Additional equipment observed on site (not in use): One pull-behind set of offset discs, one Caterpillar 323 excavator, one Komatsu bulldozer, one Case IH QuadTrak 550 tractor, one Caterpillar 308 mini-excavator, and one Holcomb blade box.

Blankenship held the daily safety meeting at 0700. Topic was "When You Least Expect It – Lesson Learned".

Two excavators loaded out material from the east fly ash stockpile. Four tractors (3 tracked, 1 wheels), each with two side-dump trailers, hauled the stockpile material to the western end of the Fly Ash Pond. One tractor (tracked) with two scraper pans assisted.

One bulldozer spread and graded borrow material on the floor of the Bottom Ash Pond. One smooth drum roller compacted the material.

Two bulldozers spread and graded material in the Fly Ash Pond.

One tractor with a water wagon maintained the hauling and access roads.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Geotechnology:

Alyssa Okorn observed progress on site.

See the attached location drawing for additional information.



DAILY REPORT

DATE: July 11, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645

Depart: 1545

Travel: 0.5

Total: 9.0

AM Conditions: Clear

AM Temperature: 70 F

PM Conditions: Clear

PM Temperature: 87 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Equipment: 3 excavators, 4 tractors w/ 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with water wagon, 3 bulldozers, 1 skidsteer, 1 roller, and 1 pump.

Personnel: Blankenship – 18; Ameren – 3

Visitors: Mike Wagstaff (Ameren) 0830-1200

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: East fly ash stockpile, quarry borrow material

Deliveries:

Testing:

CONSTRUCTION SITE LOCATIONS:

East fly ash stockpile material was moved to the western end of the FA Pond. Quarry borrow material was spread on the floor of the BA Pond.


Geotechnology, Inc. Rep.

7/11/18
Date


Geotechnology, Inc. Engineer

7/17/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 330D excavator, one Komatsu 490 excavator, one Caterpillar 308E mini-excavator, four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one New Holland TG275 tractor with one Blankenship water wagon, one Case IH QuadTrak 550 tractor with two John Deere 2112c scraper pans, one Sakai CV 550D 84" smooth drum roller, and one Godwin pump.

Additional equipment observed on site (not in use): One pull-behind set of offset discs, one Caterpillar 323 excavator, one Komatsu bulldozer, one Caterpillar 299D skidsteer, one John Deere 9520 tractor, and one Holcomb blade box.

Blankenship held the daily safety meeting at 0700. Topic was Eye Safety.

Two excavators loaded out material from the east fly ash stockpile. Four tractors (3 tracked, 1 wheels), each with two side-dump trailers, hauled the stockpile material to the western end of the Fly Ash Pond. One tractor (tracked) with two scraper pans assisted. When the East Fly Ash Pond Stockpile was depleted, these pieces of equipment assisted in grading the Fly Ash Pond, mainly around the edges.

One excavator dug a utility trench for Scott Electric to place conduit in on the top of the Bottom Ash Pond roadway and turnaround. Placement is scheduled for July 12, 2018.

One bulldozer spread and graded borrow material on the floor of the Bottom Ash Pond. One smooth drum roller compacted the material.

Two bulldozers spread and graded material in the Fly Ash Pond.

One tractor with a water wagon maintained the hauling and access roads.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Blankenship held the weekly coordination meeting at 0900. See meeting minutes for more details.

Geotechnology:

Alyssa Okorn attended the weekly coordination meeting. Afterwards, Alyssa accompanied Mike Wagstaff (Ameren) and Rob Fosnock (Blankenship) around site to observe progress and discuss details about geomembrane placement on the turnaround.

See the attached location drawing for additional information.



Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 07-11-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology Inc., and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Mike W., Randy B., Pat B., Steve P.
BCCO- Rob F., (Garrett B. ph.)
OTHERS- Geotechnology Inc.- Alyssa O., (Jessie G. ph.)

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

1. Safety.

- i. Safety Minute: Alyssa O. – Ticks.
- ii. Alyssa selected this tick after finding one on herself onsite. Some facts about ticks include that they are arachnids with eight legs and no antennae, can be found in almost all vegetative areas including brush, wood piles, grass, weeds, and trees. Preventative measures can include protective clothing, light colored clothing making ticks easier to spot, permethrin or deet protectants, and regular checks for ticks. You can help prevent ticks near your home by keeping wood piles away from your home, tall grass and weeds trimmed, and keeping the area around your home dry as possible.
- b. Next week's volunteer: Steve P.

2. Contractor Progress Report.

- a. Water pumping of the bottom ash pond has continued. The river chart shows the level projected at 11.9' for 7/11/18 and falling through the 17th. This low level should allow for FAP outfall pipe grouting and hopefully should help with water infiltration in the BAP.
- b. Mobilization: Mobilization of additional equipment and supplies; BCCO received at CAT 308 excavator onsite on 7/10/18. Liner materials have been incoming, and as of the 9th



of July, all 115 rolls of liner are onsite. Anna provided a release to ship to Garrett on 7/10/18 for the synthetic grass turf material, of which GSI is aware and making shipping arrangements.

- c. The BAP berm removal has been on hold since the turn around area fill is complete. Once the crew is done with the East Stockpile area, they will focus efforts on the BAP berm area.
- d. Ash removal in the East Fly Ash Stockpile area has been ongoing. BCCO expects to have the East Stockpile area excavated completely by the end of 7/11/18. BCCO will perform a survey on the East Fly Ash Stockpile area today, 7/11. This will represent the actual mass excavated CY from this area. BCCO will then excavate, place, and grade extra sand material from this area and the area just outside the NE corner of the FAP to help create drainage and a suitable transition from the liner limit to the east drainage area. BCCO will perform a survey once this grading work is done and compare to the 7/11/18 survey for a total CY of sand grading performed. This will then be added to the cumulative CY total for the project. Mike asked if grading operations in the NE area of the FAP outside of the pond limits would affect or come near the Magellan petroleum line, to which Rob responded that based on prior locates and visits from Magellan reps., that the excavation would not be close to this line.
- e. Soil Backfill of the BAP is ongoing but has experienced some delays due to bridge construction and lane shutdowns. The sand and clay samples that BCCO submitted as alternate backfill sources failed testing. That being said, backfill will continue to come from the Chambersburg quarry unless an alternate option is located. Mike asked if the wet material from Chambersburg and the additional conditioning that it may require would slow the schedule. Garrett indicated that it could affect that particular item slightly, and possibly the BAP berm liner installation, but it should not affect the overall schedule greatly.
- f. Oil Dock Roadway and Turnaround fills are complete, minus the river side slope fills. Rip Rap removal is complete, and the existing roadway cut is also complete. BCCO is moving forward with installing the underground electric on the 11th – 13th. This will eliminate the need for overhead electric and power poles from Ameren. Rob stated that besides the soil fill at the toe of the interior slope of the BAP oil dock berm, the rest of the berm prep should only take 3-4 days. Rob wanted to clarify with the group regarding the anchor trenches at the sheet piling, stating that being immediately adjacent to the sheet piling on the north side would be difficult. Mike suggest the group revisit on the 18th.



- g. Geomembrane shipping to site is complete at this time. Alyssa tracked all shipments and rolls, and provided copies of the BOL's, liner damage pictures, and Roll List to Garrett as they were available. Synthetic Turf material is cleared to ship to site.

3. Contractor's Weekly Work Plan

a. Update: Rob F.

- i. Continue pumping effort. BCCO will monitor the pumping at the coal yard run off area and see if it has any effect on the backfill operations at the BAP. BCCO will continue to monitor the river levels and precipitation in the area.
- ii. Continue backfill in the BAP. This is dependent on weather and pumping efforts. BCCO will continue hauling out of the Chambersburg Quarry unless an alternative source is found.
- iii. Grading at the Fly Ash pond will continue as fill is brought in. Excavation at the East Stockpile will be complete, so additional fill will come from the BAP berm area. Rob has the crew moving sand in the East Stockpile area to grade that area to drain, once this is done they will switch to the South BAP berm removal.
- iv. BAP berm removal will continue once the East Stockpile is depleted. The BAP Oil Dock Berm fills are complete as well as the turnaround area. This does not include the fills on the river side slope. Rob plans on dropping 1 side dump buggy off of two tractors and will use these single buggy unit to remove the final rip rap and place fill soils on the BAP berm river slope.
- v. Excavate and install conduit and underground wire in the BAP roadway, prior to liner. This will be complete by 7/13, not counting Ameren's SOW. They will be onsite in the next week or so to remove poles and relocated transformer. They are behind schedule, which may affect liner installation in that area. Mike reminded BCCO to track all costs for presentation against the utility allowance.

4. Schedule Forecast

a. Two Week Look Ahead.

- i. The two-week look ahead coordinates with the upcoming work activities excluding the items below.
- ii. Rob is still comfortable with liner crew arrival on the week of 23rd or later. Garrett will get an update from GSI.



- iii. Rob Plans on demolishing and grouting the FAP structure on the 17th, tentatively. Garrett to submit mix designs.

5. New Items/Miscellaneous

- a. Randy mentioned that due to TWIC regulations, BCCO should be mindful that no non-TWIC personnel can be on the dock. The group is aware and will proceed with that understanding.
- b. Mike stated that he would be requesting additional road installation budgets from Garrett for the switchyard/AIC group.

6. Action Items

- a. BCCO Items:
 - i. BCCO to continue submittals. Update- Garrett needs to get submittals on the following: Pumpable grout mix for culvert and concrete for bulkhead, GSI installer qualifications. {Status- Open}
- b. Ameren Items:
 - i. Mike W. to finish review of pricing as presented by BCCO for additional fence removal, culvert installation, coal yard run off excavation, and coal yard seeding, and issue an EWO as necessary. {Status- Open}

7. Questions, Comments, Open Discussion

- a. Update

The next progress meeting for this project will be held on July 18th at 9:00 a.m.



DAILY REPORT

DATE: July 12, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1545 Travel: 0.5 Total: 9.0
AM Conditions: Clear AM Temperature: 75 F
PM Conditions: Clear PM Temperature: 87 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship
Equipment: 4 excavators, 4 tractors w/ 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with water wagon, 3 bulldozers, 1 skidsteer, 1 roller, and 1 pump.
Personnel: Blankenship – 17; Ameren – 2
Visitors: Scott Bros Electric (0915) – placing conduit utility trench on BA Pond berm & turnaround

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: East fly ash grading, quarry borrow material, BA Pond berm rip-rap
Deliveries: _____
Testing: _____

CONSTRUCTION SITE LOCATIONS:

East fly ash stockpile material was moved to the western end of FA Pond. Quarry borrow material was spread on the floor of the BA Pond. Rip-rap on outside of BA Pond berm was pulled down.

Geotechnology, Inc. Rep.

7/12/2018
Date

Geotechnology, Inc. Engineer

7/17/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 330D excavator, one Komatsu 490 excavator, one Caterpillar 323 excavator, one Caterpillar 308E mini-excavator, four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one New Holland TG275 tractor with one Blankenship water wagon, one Case IH QuadTrak 550 tractor with two John Deere 2112c scraper pans, one Caterpillar 299D skidsteer, one John Deere 9520 tractor with pull-behind set of offset discs, one Sakai CV 550D 84" smooth drum roller, and one Godwin pump.

Additional equipment observed on site (not in use): One Komatsu bulldozer, and one Holcomb blade box.

Blankenship held the daily safety meeting at 0700. Topic was Buckle Up – Save a Life.

Two excavators loaded out material from the east Fly Ash Pond. Four tractors, each with two side-dump trailers, hauled the material to the low areas of Fly Ash Pond. One tractor (tracked) with two scraper pans assisted.

One excavator backfilled a utility trench after Scott Bros Electric placed conduit on the top of the Bottom Ash Pond roadway and turnaround.

One bulldozer spread and graded borrow material on the floor of the Bottom Ash Pond. One smooth drum roller compacted the material.

Two bulldozers spread and graded material in the Fly Ash Pond.

One tractor with a water wagon maintained the hauling and access roads.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Geotechnology:

Alyssa Okorn attended the morning safety and coordination meeting and observed progress onsite.

See the attached location drawing for additional information.



DAILY REPORT

DATE: July 13, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645

Depart: 1345

Travel: 2.75

Total: 9.25

AM Conditions: Clear

AM Temperature: 75 F

PM Conditions: Clear

PM Temperature: 92 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Equipment: 3 excavators, 4 tractors w/ 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with water wagon, 3 bulldozers, 1 skidsteer, 1 roller, and 1 pump.

Personnel: Blankenship – 18; Ameren – 2

Visitors: Lucas Grote (Blankenship) 0700-1315; Blankenship flatbed to pick up outfall structure

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: East fly ash grading, quarry borrow material, BA Pond berm rip-rap

Deliveries:

Testing:

CONSTRUCTION SITE LOCATIONS:

East fly ash stockpile material was moved to the western end of the FA Pond. Quarry borrow material was spread on the floor of the BA Pond. Rip-rap on the BA Pond berm was moved to the FA Pond berm.

Alyssa A. Olin
Geotechnology, Inc. Rep.

7/13/18
Date

[Signature]
Geotechnology, Inc. Engineer

7/17/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 330D excavator, one Komatsu 490 excavator, one Caterpillar 308E mini-excavator, four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one New Holland TG275 tractor with one Blankenship water wagon, one Case IH QuadTrak 550 tractor with two John Deere 2112c scraper pans, one Caterpillar 299D skidsteer, one Sakai CV 550D 84" smooth drum roller, and one Godwin pump.

Additional equipment observed on site (not in use): One pull-behind set of offset discs, one Caterpillar 323 excavator, one Komatsu bulldozer, one John Deere 9520 tractor, and one Holcomb blade box.

Blankenship held the daily safety meeting at 0700. Topic was Cold Weather Safety.

One excavator loaded out material from the Fly Ash Pond. Three tractors, each with two side-dump trailers, assisted with grading of the Fly Ash Pond. One tractor with two scraper pans assisted.

One excavator loaded the Fly Ash Pond outfall structure onto a semi for removal from site.

One excavator removed rip-rap from the outside of the Bottom Ash Pond berm. One tractor with two side dump trailers hauled the rip-rap to the Fly Ash Pond berm.

One bulldozer spread and graded borrow material on the floor of the Bottom Ash Pond. One smooth drum roller compacted the material.

Two bulldozers spread and graded material in the Fly Ash Pond.

One skidsteer assisted with cleanup around site.

One tractor with a water wagon maintained the hauling and access roads.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Geotechnology:

Alyssa Okorn attended the morning safety and coordination meeting and observed progress onsite.

See the attached location drawing for additional information.

PHOTOGRAPH LOG



Photograph 1 ▲ - View of Bottom Ash Pond floor fill activities, looking south.



Photograph 2 ▲ - View of grading activities at the Fly Ash Pond, looking northwest.



Photograph 3 ▲ - View of removal of the fly ash stockpile material, looking north.



Photograph 4 ▲ - View of utility trench excavation at the Bottom Ash Pond berm, looking northwest.



Photograph 5 ▲ - View of rock blanket removal at the Bottom Ash Pond berm, looking west.



Photograph 6 ▲ - View of Outfall 004 removal at the Fly Ash Pond, looking southwest.



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Missouri

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

DATE: July 25, 2018

SUBJECT: Summary Report for July 16, 2018 to July 20, 2018

PROJECT: Fly Ash Pond and Bottom Ash Pond Closures
Meredosia Power Station
Meredosia, Morgan County, Illinois
Geotechnology Project No. J024917.04

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

Weather

The weather was generally cloudy to clear. Thunderstorms and heavy rain were observed on Monday, July 16, 2018. Temperature (°F) lows ranged from 64 to 73°F, and temperature highs ranged from 84 to 91°F.

Construction Activities

Blankenship Construction Company graded borrow material placed in the Bottom Ash Pond floor, excavated material from the western berm of the Bottom Ash Pond, graded the outer slope of the northern Bottom Ash Pond berm, placed rip rap at the Fly Ash Pond northern berm, and graded the Fly Ash Pond.

On July 19, 2018, Scott Brothers Electric placed electrical wiring in the utility conduit in the Bottom Ash Pond berm.

Equipment and Personnel On-Site

Blankenship Construction Company had the following equipment on site: One Caterpillar excavator, one Komatsu excavator, four Case tractors (tracked), eight Smith pull-behind side-dump trailers, one Komatsu bulldozer, two Caterpillar bulldozers, one John Deere tractor with two scraper pans, one New Holland tractor with water wagon, one Holcomb scraper box, one Caterpillar skidsteer, one Godwin water pump, one 84-inch Sakai CV 500D smooth drum roller, one John Deere 9520 tractor with offset discs, and one Caterpillar mini-excavator.

Blankenship Construction Company had 16 to 18 personnel on site.

Meetings

A weekly progress meeting was held on Wednesday, July 18, 2018. Refer to the meeting minutes for additional information.

Photographs

A photograph log with selected photographs obtained while Geotechnology was on site is attached.

Materials

Geotextile (ClosureTurf) was delivered to the site on July 18, 19, and 20, 2018.

Borrow source soil was placed and graded on the floor of the Bottom Ash Pond.

Testing/Sampling

Blankenship provided two sand samples to Geotechnology for pre-qualification testing for use as ClosureTurf infill sand.

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., Ph.D.
Geotechnology, Inc.

Attachments: Daily Reports
Photograph Log

DAILY REPORTS



DAILY REPORT

DATE: July 16, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0830 Depart: 1530 Travel: 2.25 Total: 9.25
AM Conditions: Clear AM Temperature: 80 F
PM Conditions: Heavy Rain/Thunderstorm PM Temperature: 74 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship
Equipment: 2 excavators, 4 tractors w/ 2 side-dump trailers each, 1 tractor with 2 scraper pans, 1 tractor with water wagon, 3 bulldozers, 1 skidsteer, 1 roller, and 1 pump.
Personnel: Blankenship - 17; Ameren - 2
Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: East fly ash grading, quarry borrow material, BA Pond berm rip-rap, BA Pond berm
Deliveries: _____
Testing: _____

CONSTRUCTION SITE LOCATIONS:

Berm material from the BA Pond was moved to the floor of the BA Pond or the FA Pond, quarry borrow
material was spread on the floor of the BA Pond, BA Pond berm rip-rap was moved to the FA Pond berm

Alyssa A. Olin
Geotechnology, Inc. Rep.

7/16/18
Date

Don Smith
Geotechnology, Inc. Engineer

7/24/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Komatsu 490 excavator, one Caterpillar 323F excavator, four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one New Holland TG275 tractor with one Blankenship water wagon, one Case IH QuadTrak 550 tractor with two John Deere 2112c scraper pans, one Caterpillar 299D skidsteer, one Sakai CV 550D 84" smooth drum roller, and one Godwin pump.

Additional equipment observed on site (not in use): One Caterpillar 330D excavator, one Caterpillar 308E mini-excavator, one pull-behind set of offset discs, one Komatsu bulldozer, one John Deere 9520 tractor, and one Holcomb blade box.

Blankenship held the daily safety meeting at 0700. Topic was Heat Exhaustion and Heat Cramps.

One excavator loaded out material from the Bottom Ash Pond berm. Four tractors, each with two side-dump trailers, assisted with grading of the Fly Ash Pond.

One excavator removed rip-rap from the outside of the Bottom Ash Pond berm. One tractor with two side dump trailers hauled the rip-rap to the Fly Ash Pond berm.

One tractor with two scraper pans assisted with grading in the Fly Ash Pond.

One bulldozer spread and graded borrow material on the floor of the Bottom Ash Pond. One smooth drum roller assisted.

Two bulldozers spread and graded material in the Fly Ash Pond.

One skidsteer assisted with cleanup around site.

One tractor with a water wagon maintained the hauling and access roads.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Geotechnology:

Alyssa Okorn attended the morning safety and coordination meeting and observed progress onsite.

See the attached location drawing for additional information.

7.16.2018

LEGEND:

- ROAD DITCH LINER
SEE SHEET C-504
- CARLEIGH 20" SEDIMENT LOSSER OR APPROVED EQUIV
SEE SHEET C-504
- 24" PIPE
SEE SHEET C-504
- 24" PIPE
SEE SHEET C-504
- 24" PIPE
SEE SHEET C-504
- 24" PIPE
SEE SHEET C-504

July 16, 2018

BA Pond Berm
Excavation

Borrow Material
Spread Area

Fly Ash Pond
Grading

Outer BA Pond
Berm Slope
Grading



MEDINA VALLEY COGEN, LLC
ASH POND CLOSURE
GENERAL PLANS
SWPP PLAN

MEREDOSIA POWER STATION
C-602

SCALE: 1" = 100'

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM
EXISTING RECORDS AND DO NOT NECESSARILY REFLECT THE
ACTUAL EXISTING UTILITIES. THE TYPE, NUMBER, OR LOCATION
OF THESE OR OTHER UTILITIES, THE TYPE, NUMBER, OR LOCATION
OF THESE OR OTHER UTILITIES, SHOWN OR NOT SHOWN, SHALL
BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL
UTILITIES PRIOR TO ANY CONSTRUCTION. THE USER SHALL
EXCAVATE THE UTILITIES PRIOR TO ANY GRADING,
EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.



GLOTECHNOLOGY, INC.
MADE IN USA

NOTE: 1" = 300' OR 24x18
1" = 240' OR 12x18





DAILY REPORT

DATE: July 17, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1630 Travel: 0.5 Total: 9.75
AM Conditions: Clear AM Temperature: 70 F
PM Conditions: Clear PM Temperature: 82 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship
Equipment: 3 excavators, 2 tractors w/ 2 side-dump trailers each, 2 tractors with 1 side-dump each, 1 tractor with water wagon, 3 bulldozers, 1 roller, and 1 pump.
Personnel: Blankenship - 17; Ameren - 2
Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: East fly ash grading, BA Pond berm grading
Deliveries: _____
Testing: _____

CONSTRUCTION SITE LOCATIONS:

BA Pond west berm material was moved to the outer north BA Pond berm, material in the FA Pond was graded

Alyssa A. Oliver
Geotechnology, Inc. Rep.

7/17/18
Date

[Signature]
Geotechnology, Inc. Engineer

7/24/18
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 330D excavator, one Komatsu 490 excavator, one Caterpillar 323 excavator, two Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, two Case IH QuadTrak 550 tractors, each with one Smith Co. side-dump trailers, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one New Holland TG275 tractor with one Blankenship water wagon, one Sakai CV 550D 84" smooth drum roller, and one Godwin pump.

Additional equipment observed on site (not in use): One pull-behind set of offset discs, one Caterpillar 308E mini-excavator, one Komatsu bulldozer, one Case IH QuadTrak 550 tractor with two John Deere 2112c scraper pans, one John Deere 9520 tractor, one Caterpillar 299D skidsteer, and one Holcomb blade box.

Blankenship held the daily safety meeting at 0700. Topic was Wood Working Tools.

One excavator buried material in the Fly Ash Pond. Two tractors, each with two side-dump trailers, assisted.

Two excavators spread borrow material in the northwest corner of the Bottom Ash Pond.

One bulldozer spread and graded material in the northwest corner of the Bottom Ash Pond. One smooth drum roller assisted.

One bulldozer spread and graded material on the outside of the Bottom Ash Pond north berm. Two tractors with one side dump trailer each hauled the rip-rap to the Fly Ash Pond berm.

One bulldozer spread and graded material in the Fly Ash Pond.

One tractor with a water wagon maintained the hauling and access roads.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Geotechnology:

Alyssa Okorn attended the morning safety and coordination meeting and observed progress onsite.

See the attached location drawing for additional information.



DAILY REPORT

DATE: July 18, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1645 Travel: 0.5 Total: 10.0
AM Conditions: Cloudy AM Temperature: 66 F
PM Conditions: Clear PM Temperature: 80 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, Scott Bros. Electric
Equipment: 3 excavators, 4 tractors w/ 2 side-dump trailers each, 1 tractor with water wagon,
3 bulldozers, 1 skidsteer, 1 roller, and 1 pump.
Personnel: Blankenship - 17; Ameren - 2
Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Quarry borrow material, BA Pond grading
Deliveries: Four truckloads of turf
Testing: _____

CONSTRUCTION SITE LOCATIONS:

Quarry borrow material was spread on the top of the southern BA Pond berm for drying, grading in BA
Pond, grading in FA Pond, electrical installation on north BA Pond berm

Alyssa A. Oh 7/18/18
Geotechnology, Inc. Rep. Date

[Signature] 7/24/2018
Geotechnology, Inc. Engineer Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 330D excavator, one Komatsu 490 excavator, one Caterpillar 308E mini-excavator, two Case IH QuadTrak 550 tractors, each with one Smith Co. side-dump trailer, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one New Holland TG275 tractor with one Blankenship water wagon, one Caterpillar 299D skidsteer, one Sakai CV 550D 84" smooth drum roller, and one Godwin pump.

Additional equipment observed on site (not in use): One pull-behind set of offset discs, one Caterpillar 323 excavator, two Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, one Case IH QuadTrak 550 tractor with two John Deere 2112c scraper pans, one Komatsu bulldozer, one John Deere 9520 tractor, and one Holcomb blade box.

Blankenship held the daily safety meeting at 0700. Topic was Confined Spaces.

One excavator loaded out material from along the toe of the turnaround in the Bottom Ash Pond. Two tractors, each with one side-dump trailer, assisted with grading of the Bottom Ash Pond.

One excavator graded the northwest corner of the Bottom Ash Pond. One bulldozer assisted.

One excavator assisted Scott Bros. Electric with installation of electrical lines on top of the north Bottom Ash Pond.

One bulldozer spread and graded borrow material on the floor of the Bottom Ash Pond. One smooth drum roller assisted.

One bulldozers spread and graded material in the Fly Ash Pond.

One skidsteer assisted with cleanup around site.

One tractor with a water wagon maintained the hauling and access roads.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Blankenship held the weekly coordination meeting at 0900. See the meeting minutes for more details.

Geotechnology:

Alyssa Okorn attended the morning safety and coordination meeting, observed unloading of and inventoried turf rolls, and observed progress onsite.

See the attached location drawing for additional information.

7.18.2018

LEGEND:

- BENCH MARK
- SEE SHEET C-601
- CURLEW 20" SEDIMENT LOGS ON APPROVED COAL
- SEE SHEET C-602
- FLY POND
- SEE SHEET C-603
- MUCK BLANKET
- SEE SHEET C-604

July 18, 2018

- BA Pond Grading
- BA Pond Excavation
- FA Pond Grading
- Borrow Material Spread Area



MEDINA VALLEY COHEN, LLC
ASH POND CLOSURE
GENERAL PLANS
SMPP PLAN

MEREDOSIA POWER STATION
C-602

SCALE: AS SHOWN

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL LOCATION, DEPTH, SIZE, TYPE, NUMBER, OR LOCATION OF THESE OR OTHER UTILITIES. THE USER OF THESE PLANS SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SHALL EXCAVATE OR CONSTRUCTION IMPROVEMENTS.



NOTES: 1" = 300' ON PLANS
1" = 240' ON ELEVATIONS





Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER
STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 07-18-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology Inc., and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Mike W., Randy B., Pat B., Steve P.
BCCO- Rob F., Garrett B.
OTHERS- Geotechnology Inc.- (Anna S. and Jessie G. ph.) Alyssa
onsite but attending to liner unloading.

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

1. Safety.

- i. Safety Minute: Steve P. – AED Emergency Use.
- ii. Ameren has two Life Pak 500 AED devices onsite. Mike offered to have one placed in the job trailer for closer access to BCCO employees. Rob will have a safety meeting regarding its use soon.
- iii. When you open the AED device, power on, then follow directions. The electrode pads have directions on where to place these pads, and placement is critical. If needed, place the first set of pads and then rip off to remove body hair if AED cannot read correctly. Once the pads are connected, allow the machine to run analysis and follow directions. If no shock is advised and no pulse is present, begin CPR. After a set amount of time, the AED will re-analyze and administer shock if needed.

b. Next week's volunteer: Rob F.

2. Contractor Progress Report.

- a. Water pumping of the bottom ash pond has continued. The river level has continued to fall, the chart shows the level at 7.1' for 7/17/18 and falling to 5.2' through the 23rd. BCCO had to relocate the pump accommodate the BAP berm excavation. When this was



done, BCCO also excavated a new sump and a couple new dewatering ditches to try and channel water to the sump for more expediate pumping, if possible. The pump is still operating full time. The southwest area of the BAP has a good amount of groundwater entering this area BAP.

- b. Mobilization: Mobilization of additional equipment and supplies; BCCO will be demobilizing a QuadTrac and 21 CY John Deere pans by the end of this week. Additional hauling equipment may be demobilized next week as well. 40 mil liner materials are onsite. The synthetic turf has already started arriving onsite and should be 100% onsite by the 23rd.
- c. The BAP berm removal has been underway since the crew finished the East Stockpile Area and moved the sand material around to drain the east area as necessary. The BAP berm material is being utilized in the FAP fills as well in the BAP Oil Dock Berm outside slope fills. Some of this material is very wet and consists of dark colored clay and topsoil type materials. It is believed that some of this may be old pond stripping's from construction. There is also groundwater making its way up through this area.
- d. Ash removal in the East Fly Ash Stockpile is complete. BCCO performed an onsite TOPO on 7/11/18 and did a volume comparison afterward. Initial excavation on the east stockpile area yielded around 103,000 CY of material. BCCO will perform another TOPO and comparison when the sand moving/grading is complete.
- e. Soil Backfill of the BAP is ongoing. Bridge construction slowdowns have not been as bad this week. BCCO hopes to increase the incoming soil amount soon. BCCO has segregated some of the better clay content material for onsite drying and conditioning, in an effort to provide better material for the BAP Oil Dock berm toe area. BCCO should have enough of this material onsite today to fill this toe area and may start excavating and filling this area possibly as soon as the 19th.
- f. Oil Dock Roadway and Turnaround fills are underway on the river side slope, which was the only remaining fills to be made. The fills for the most part are complete, but there are some minor detail items to take care of, such as the triangular shaped piece of earth next to the pipeline that Rob will cut out once the overhead electric is out of the way. The underground electric from the north end of the BAP roadway to the meter box is installed and backfilled as of last week, and Scott Bros should be installing wire today, the 18th.
- g. Synthetic Turf material is cleared to ship to site and began arriving on the 18th.



- h. Rip Rap removal on the BAP is complete, and all of this salvaged material is placed around the FAP, for use later on the liner trench and area between the liner and existing rip rap. Rob has saved some rip rap at the BAP turnaround area for lining the new swale to the river. BCCO has not progressed on the additional rip rap at this time but Mike gave verbal approval to proceed.
- i. FAP perimeter ditch grading is set to begin in the next week. BCCO had some minor issues incorporating the new ditch design into our GPS system on our CAT excavator, but the surface is now uploaded and operational. Rob noted that in places the ditch layout is still close to the edge of the existing slope and asked if field adjustments were ok, Mike agreed that minor field adjustments are acceptable.
- j. BCCO has submitted pricing to Mike W. for the AIC group access roadway as well as the FAP herbicide spraying that was requested. Mike asked that Garrett schedule the spraying and that he would coordinate with AIC on the additional roadway.

3. Contractor's Weekly Work Plan

- a. Update: Rob F.
 - i. Continue pumping effort. BCCO will monitor the pumping at the coal yard run off area and see if it has any effect on the backfill operations at the BAP. BCCO will continue to monitor the river levels and precipitation in the area.
 - ii. Continue backfill in the BAP. This is dependent on weather and pumping efforts. BCCO will continue hauling out of the Chambersburg Quarry unless an alternative source is found.
 - iii. Grading at the Fly Ash pond will continue as fill is brought in. Excavation at the BAP berm area will continue but is near completion. The only remaining cut material is the perimeter ditch on the FAP.
 - iv. BAP berm removal will continue until completed. Rob plans on moving forward with the BAP to River swale/ditch very soon, possibly even this week. He will utilize old BAP rip rap to armor the ditch. BCCO will track hours for this work. Rob has some minor detailing work to complete at the BAP prior to liner but is waiting until the overhead electric is removed to proceed.
 - v. The conduit is installed and the wire should be installed on 7/18. Ameren will be onsite asap to remove the poles and relocate the transformer.



- vi. Rob has the bulkhead on the FAP outlet pipe complete and plans on grouting the FAP pipe full on 7/20 or 7/23. Then the inlet structure will be demolished and disposed of in place. The grout hose will be cut off at the bulkhead.
- vii. Rob will have the crew continue to clean up roadways, ditches, and other small areas as needed and place this material in the FAP for fill as well. He will excavate material as needed to bury any rock material under ash cover.
- viii. Rob will move forward with procuring rip rap for the FAP extra as needed. He will also install 2-3 ditch checks with rip rap at the north end of the east stockpile area for erosion protection.
- ix. Anna will have a surveyor coming to site in the future to preform As-built/certification surveys.

4. Schedule Forecast

a. Two Week Look Ahead.

- i. The two-week look ahead coordinates with the upcoming work activities excluding the items below.
- ii. Liner installation is being pushed back a week to August 6th.
- iii. Anna is planning on having a surveyor come to site on the 30th of July to perform a partial as-built/certification survey on all areas BCCO will have ready
- iv. Geotechnology well installers will be coming to site on the 20th of August to install 3 wells. BCCO can assist if necessary.

5. New Items/Miscellaneous

- a. Garrett forgot to bring the seam sample to this meeting but will have delivered to Rob to bring to site before Anna's visit next week.
- b. Garrett asked if Anna would be agreeable to looking at a sieve analysis for a different sand source for Closure Turf infill, and she was.
- c. Rob asked Garrett to coordinate with Dave C. about GSI's agreement with the local laborers.
- d. Rob stated that Western Asphalt has a sand pit near site that Garrett could investigate for another potential sand source.



- e. The group discussed minor modifications to the fence layout and gate installations. At this time, the two southern gates will stay, the originally proposed 30' gate on the BAP oil dock roadway will still be installed, and an additional gate will be installed to allow others to access the bottom of the oil dock structure. Mike also discussed that extra rock will be needed in three places: at the extra gate for oil dock bottom access/monitoring well, at the southern FAP road that will stay- to cross onto the FAP closure area, and at the east access road from the south public road gate up to the gate at the NE corner of the FAP. As mentioned before, Rob will also add RR4 rock checks at the north end of the old East Stockpile Area.

6. Action Items

a. BCCO Items:

- i. BCCO to continue submittals. Update- Garrett needs to schedule Woolsey Pest control for Herbicide spraying, and coordinate with GSI on labor agreement. {Status- Open}

b. Ameren Items:

- i. Mike W. to finish review of pricing as presented by BCCO for additional fence removal, culvert installation, coal yard run off excavation, and coal yard seeding, and issue an EWO as necessary. {Status- Open}

7. Questions, Comments, Open Discussion

a. Update

The next progress meeting for this project will be held on July 25th at 9:00 a.m.



DAILY REPORT

DATE: July 19, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1545 Travel: 0.5 Total: 9.0
AM Conditions: Mostly Cloudy AM Temperature: 65 F
PM Conditions: Clear PM Temperature: 81 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship
Equipment: 4 bulldozers, 1 skidsteer, 1 roller, and 1 pump
Personnel: Blankenship – 17; Ameren – 2
Visitors: 2 Blankenship flatbeds picked up 1 tractor & 2 scraper pans; Scott Bros. Electric

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: East fly ash grading, quarry borrow material, BA Pond berm rip-rap
Deliveries: 4 truckloads of turf
Testing:

CONSTRUCTION SITE LOCATIONS:

Grading in northwest corner of BA Pond, floor of BA Pond, and outside of north BA Pond berm

Alyssa A. Ohn 7/19/2018
Geotechnology, Inc. Rep. Date

Paul M. Sauter 7/24/2018
Geotechnology, Inc. Engineer Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Komatsu bulldozer, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one Caterpillar 299D skidsteer, one Sakai CV 550D 84" smooth drum roller, and one Godwin pump.

Additional equipment observed on site (not in use): One Caterpillar 330D excavator, one Komatsu 490 excavator, one Caterpillar 308E mini-excavator, four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, one New Holland TG275 tractor with one Blankenship water wagon, one pull-behind set of offset discs, one Caterpillar 323 excavator, one John Deere 9520 tractor, and one Holcomb blade box.

Blankenship held the daily safety meeting at 0700. Topic was Stacking Up A Pile of Trouble.

Two bulldozers spread and graded borrow material on the floor of the Bottom Ash Pond. One smooth drum roller assisted.

Two bulldozers spread and graded material in the northwest corner of the Bottom Ash Pond.

One skidsteer assisted with cleanup around site.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Geotechnology:

Alyssa Okorn attended the morning safety and coordination meeting, observed the unloading of and inventoried turf rolls, and observed progress onsite.

See the attached location drawing for additional information.



DAILY REPORT

DATE: July 20, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1515 Travel: 3.0 Total: 11.5
AM Conditions: Clear AM Temperature: 70 F
PM Conditions: Partly Cloudy PM Temperature: 80 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship
Equipment: 2 excavators, 1 tractor with water wagon, 3 bulldozers, 1 skidsteer, 1 roller, and 1 pump.
Personnel: Blankenship – 16; Ameren – 2
Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Quarry borrow material, BA Pond grading, rip-rap on outer FA Pond berm
Deliveries: Four truckloads of turf
Testing: _____

CONSTRUCTION SITE LOCATIONS:

Quarry borrow material was spread and graded, rip-rap on outside of FA Pond berm was spread out,
material in the northwest corner of BA Pond was graded

Alyssa A. O'Neil 7/20/18 Am M Smith 7/24/2018
Geotechnology, Inc. Rep. Date Geotechnology, Inc. Engineer Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 330D excavator, one Caterpillar 323 excavator, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one Caterpillar 299D skidsteer, one Sakai CV 550D 84" smooth drum roller, and one Godwin pump.

Additional equipment observed on site (not in use): One pull-behind set of offset discs, one Komatsu 490 excavator, one Caterpillar 308E mini-excavator, four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, one New Holland TG275 tractor with one Blankenship water wagon, one Komatsu bulldozer, one John Deere 9520 tractor, and one Holcomb blade box.

Blankenship held the daily safety meeting at 0700.

One excavator spread rip-rap on the outer berm of the Fly Ash Pond

One excavator cleaned out underneath the pipeline on the Bottom Ash Pond.

One bulldozer spread and graded borrow material on the floor of the Bottom Ash Pond. One smooth drum roller assisted.

One bulldozer spread and graded material in the Fly Ash Pond.

One bulldozer graded the northwest corner of the Bottom Ash Pond.

One skidsteer assisted with cleanup around site.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Geotechnology:

Alyssa Okorn attended the morning safety and coordination meeting, observed the unloading of and inventoried turf rolls, and observed progress onsite.

See the attached location drawing for additional information.

7.20.2018

LEGEND:

- BENCH MARK
- SEE SHEET C-501
- SEE SHEET C-502
- SEE SHEET C-503
- SEE SHEET C-504
- SEE SHEET C-505

July 20, 2018

Borrow Material
Spread Area

BA Pond
Grading

Clean Up
Around Pipeline

Rip-Rap
Spread Area



MEDINA VALLEY COGEN, LLC
ASH POND CLOSURE
GENERAL PLANS
SWPPP PLAN

MEREDOSIA POWER STATION
C-602

SCALE: 1"=100'

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLACED FROM ANY AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE OF UTILITIES. THE GENERAL LOCATION OF THESE UTILITIES IS FOR INFORMATION ONLY. THE USER SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SHALL LOCATE THE UTILITIES PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.



GEOTECHNOLOGY
INC.

NOTE: 1" = 120' ON 24x36
1" = 240' ON 32x48

1" = 120'



FLY ASH POND

SEDIMENT LUG
BOTTOM ASH POND

COAL PILE

SILT FENCE (TYP)

CLOSED ASH POND

ILLINOIS RIVER

PROJECT: MEREDOSIA POWER STATION
DRAWN: J. B. BROWN
CHECKED: J. B. BROWN
DATE: 7/20/2018

FILE: MEREDOSIA_POW_STATION_C-602_SWPPP.dwg

PRINTED BY: J. B. BROWN

TIME: 8/10/2018 10:40:49 AM

PHOTOGRAPH LOG



Photograph 1 ▲ - View of Bottom Ash Pond floor fill activity status, looking northeast.



Photograph 2 ▲ - View of grading activities at the Fly Ash Pond, looking northeast.



Photograph 3 ▲ - View of Bottom Ash Pond southwest berm removal activities, looking south.



Photograph 4 ▲ - View of electrical line installation in the utility trench at the Bottom Ash Pond north berm, looking southwest.



Photograph 5 ▲ - View of Bottom Ash Pond north berm grading activities, looking west.



Photograph 6 ▲ - View of grading activities at the former east fly ash stockpile.



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Missouri

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

DATE: July 31, 2018

SUBJECT: Summary Report for July 23, 2018 to July 27, 2018

PROJECT: Fly Ash Pond and Bottom Ash Pond Closures
Meredosia Power Station
Meredosia, Morgan County, Illinois
Geotechnology Project No. J024917.04

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

Weather

The weather was generally clear to overcast. Temperature (°F) lows ranged from 59 to 66°F, and temperature highs ranged from 80 to 87°F.

Construction Activities

Blankenship Construction Company graded borrow material placed in the Bottom Ash Pond floor, graded the outer slope of the northern Bottom Ash Pond berm, placed rip rap at the Fly Ash Pond berm, graded the Fly Ash Pond, constructed a swale at the west berm of the Bottom Ash Pond, and grouted Outfall 004 at the Fly Ash Pond.

Woolsey Pest Control was on site to spray herbicide on July 26, 2018.

Equipment and Personnel On-Site

Blankenship Construction Company had the following equipment on site: Two Caterpillar excavator, one Komatsu excavator, four Case tractors (tracked), eight Smith pull-behind side-dump trailers, one Komatsu bulldozer, three Caterpillar bulldozers, one New Holland tractor with water wagon, one Holcomb scraper box, one Caterpillar skidsteer, one Godwin water pump, one 84-inch Sakai smooth drum roller, one John Deere tractor with offset discs, and one Caterpillar mini-excavator.

Blankenship Construction Company had 12 to 15 personnel on site.

Meetings

A weekly progress meeting was held on Wednesday, July 25, 2018. Refer to the meeting minutes for additional information.

Photographs

A photograph log with selected photographs obtained while Geotechnology was on site is attached.

Materials

Geotextile (ClosureTurf) was delivered to the site on July 23, 24, 2018.

Borrow source soil was placed and graded on the floor of the Bottom Ash Pond.

Rip-rap was delivered for placement at the Fly Ash Pond berm.

Testing/Sampling

Alyssa Okorn of Geotechnology performed compaction testing at the Fly Ash Pond.

Signature of CQA Officer



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

Attachments: Daily Reports
Photograph Log

DAILY REPORTS



DAILY REPORT

DATE: July 23, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0745 Depart: 1545 Travel: 2.75 Total: 10.25

AM Conditions: Clear AM Temperature: 67 F
PM Conditions: Partly Cloudy PM Temperature: 82 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship
Equipment: 1 excavator, 1 tractor with water wagon, 3 bulldozers, 1 skidsteer, 1 roller, and 1 pump.
Personnel: Blankenship – 15; Ameren – 2
Visitors: Aldorfer – Servicing equipment

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Quarry borrow material, BA Pond grading
Deliveries: Three truckloads of turf
Testing: _____

CONSTRUCTION SITE LOCATIONS:

Quarry borrow material was spread and graded, FA Pond outfall structure was grouted in, material in the northwest corner of BA Pond was graded

Alyssa A. O'Neil
Geotechnology, Inc. Rep.

7/23/2018
Date

Ryan Smith
Geotechnology, Inc. Engineer

7/31/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 308E mini-excavator, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one Caterpillar 299D skidsteer, one New Holland TG275 tractor with one Blankenship water wagon, one Sakai CV 550D 84" smooth drum roller, and one Godwin pump.

Additional equipment observed on site (not in use): One pull-behind set of offset discs, one Caterpillar 330D, excavator one Komatsu 490 excavator, one Caterpillar 323 excavator, four Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, one Komatsu bulldozer, one John Deere 9520 tractor, and one Holcomb blade box.

Blankenship held the daily safety meeting at 0700. The safety topic was Excavations.

One excavator cleaned out underneath the pipeline on the Bottom Ash Pond.

Three bulldozers spread and graded borrow material on the floor of the Bottom Ash Pond. One smooth drum roller assisted.

One tractor with water wagon maintained dust control on access and hauling roads around site.

One skidsteer assisted with cleanup around site.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Geotechnology:

Alyssa Okorn attended the morning safety and coordination meeting, observed the unloading of and inventoried turf rolls, and observed progress onsite.

See the attached location drawing for additional information.



DAILY REPORT

DATE: July 24, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO, AMS, & JYG
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1545 Travel: 0.5 Total: 9.0

AM Conditions: Clear AM Temperature: 67 F

PM Conditions: Partly Cloudy PM Temperature: 82 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Equipment: 2 excavators, 1 tractor with water wagon, 3 bulldozers, 1 skidsteer, 1 roller, and 1 pump.

Personnel: Blankenship – 13; Ameren – 2

Visitors: L. Grote (0830-1430), M. Wagstaff (0830-1130), A. Saindon & J. Goodwin (0845-1145)

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Quarry borrow material, BA Pond grading

Deliveries: One truckload of turf; Sievers – picked up 1 QuadTrak; Blankenship Semi – picked up two side-dump trailers

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Quarry borrow material and existing material in the northwest corner of BA Pond was graded, outer slope of the north berm of the BA Pond was graded, underneath the BA Pond pipeline was cleaned up

Alyson A. Oh
Geotechnology, Inc. Rep.

7/24/2018
Date

[Signature]
Geotechnology, Inc. Engineer

7/31/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 330D, one Caterpillar 323 excavator, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one Caterpillar 299D skidsteer, one New Holland TG275 tractor with one Blankenship water wagon, one Sakai CV 550D 84" smooth drum roller, and one Godwin pump.

Additional equipment observed on site (not in use): One pull-behind set of offset discs, one Caterpillar 308E mini-excavator, excavator one Komatsu 490 excavator, three Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, one Komatsu bulldozer, one John Deere 9520 tractor, and one Holcomb blade box.

Blankenship held the daily safety meeting at 0700. The safety topic was 'Do Cellular Phones Cause More Vehicle Accidents?'

Two excavators graded in the northwest corner of the Bottom Ash Pond. Three bulldozers spread and graded borrow material on the floor of the Bottom Ash Pond. One smooth drum roller assisted.

One tractor with water wagon maintained dust control on access and hauling roads around site.

One skidsteer assisted with cleanup around site.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Geotechnology:

Alyssa Okorn attended the morning safety and coordination meeting, then observed the unloading of and inventoried turf rolls. Alyssa rode with Mike Wagstaff, Anna Saindon, Jessie Goodwin, and Rob Fosnock on a site tour. Anna observed and verbally approved the clean closure of the east fly ash stockpile. Anna, Mike, and Rob discussed rip-rap on the Fly Ash Pond berms, the geomembrane layout on the Bottom Ash Pond turnaround, and the grading in the northwest corner of the Bottom Ash Pond. After Mike, Anna, and Jessie departed site, Alyssa observed progress onsite.

See the attached location drawing for additional information.

7.24.2018

LEGEND:

- PIPE CENTER LINE
- SEE SHEET C-504
- DAKOTA 50" SEDIMENT LOGS™ ON APPROVED DAM
- SEE SHEET C-403
- ALL FENCE
- SEE SHEET C-403
- PIPE CENTER LINE
- SEE SHEET C-404

July 24, 2018

BA Pond
Grading +
Borrow Material
Spread Area

Pipeline Clean Up



MEDINA VALLEY COGEN, LLC
ASH POND CLOSURE
GENERAL PLANS
SWPPP PLAN

NEREDOSTIA POWER STATION
C-602

SCALE: HORIZ. = 1" = 100' VERT. = 1" = 20'

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM
INFORMATION AND DO NOT NECESSARILY REFLECT THE
ACTUAL EXISTING UTILITIES. SIZE, TYPE, NUMBER, OR LOCATION
OF THESE OR OTHER UTILITIES, SIZE, TYPE, NUMBER, OR LOCATION
BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL
UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SHALL
LOCATE THEM PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.



NOTE: 1" = 100' OR 20' x 10'
1" = 20' OR 10' x 10'

FILE: 1708171003 - Geotechnology - Neredostia Ash Pond Closure - SWPPP.dwg
PRINTED BY: MATT WESS
TIME: 8/10/2016 10:43:49 AM





DAILY REPORT

DATE: July 25, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1545 Travel: 0.5 Total: 9.0

AM Conditions: Clear AM Temperature: 65 F
PM Conditions: Clear PM Temperature: 82 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship
Equipment: 2 excavators, 1 tractor with water wagon, 3 bulldozers, 1 skidsteer, 1 roller, and 1 pump.
Personnel: Blankenship – 13; Ameren – 2
Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Quarry borrow material, BA Pond grading, FA Pond outfall structure, rip-rap
Deliveries: Rip-rap throughout the day
Testing: _____

CONSTRUCTION SITE LOCATIONS:

Quarry borrow material and existing material in the northwest corner of BA Pond was graded, outer slope
Of the north berm of the BA Pond was graded, FA Pond outfall structure demolition

Olyssa A. Orr
Geotechnology, Inc. Rep.

7/25/18
Date

[Signature]
Geotechnology, Inc. Engineer

7/31/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 330D, one Caterpillar 323 excavator, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one Caterpillar 299D skidsteer, one New Holland TG275 tractor with one Blankenship water wagon, one Sakai CV 550D 84" smooth drum roller, and one Godwin pump.

Additional equipment observed on site (not in use): One pull-behind set of offset discs, one Caterpillar 308E mini-excavator, excavator one Komatsu 490 excavator, three Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, one Komatsu bulldozer, one John Deere 9520 tractor, and one Holcomb blade box.

Blankenship held the daily safety meeting at 0700. The safety topic was Heavy Equipment.

One excavators graded in the northwest corner of the Bottom Ash Pond. Two bulldozers spread and graded borrow material on the floor of the Bottom Ash Pond. One smooth drum roller assisted.

One excavator spread new rip-rap that was being delivered on the Fly Ash Pond berm.

One bulldozer graded in the Fly Ash Pond.

One tractor with water wagon maintained dust control on access and hauling roads around site.

One skidsteer assisted with cleanup around site.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Blankenship held the weekly coordination meeting at 0900. See meeting minutes for details.

Geotechnology:

Alyssa Okorn attended the morning safety and coordination meeting. Afterward, Alyssa observed the demolition of the outfall structure before attending the weekly coordination meeting. Following that, Alyssa observed progress onsite.

See the attached location drawing for additional information.

7.25.2018

- LEGEND:**
- ROAD DITCH LINER SEE SHEET C-501
 - OVERLAP 20" SEDIMENT LOSS™ OR APPROVED EQUIV SEE SHEET C-403
 - 20" PIPE SEE SHEET C-403
 - 24" DUCT SEE SHEET C-404
 - 24" DUCT SEE SHEET C-404
 - 24" DUCT SEE SHEET C-404

July 25, 2018

- FA Pond Outfall
- Structure Demolition
- New Rip-Rap Spread Area
- Borrow Material Spread Area
- Swail Installation
- BA Pond Grading



MEDINA VALLEY COGEN, LLC
ASH POND CLOSURE
GENERAL PLANS
SWPPP PLAN

MERDOSIA POWER STATION

C-602

SCALE: AS SHOWN

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE RECORDS AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, UNLESS OTHERWISE NOTED. THE LOCATION OF THESE UTILITIES IS FOR INFORMATION ONLY. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.



NOTES:
1" = 100'-0"
1" = 100'-0" ON 24x36
1" = 210' ON 24x18

FILE: T:\MKTG\115923 - Merdosia Ash Pond\Grading\115923.dwg
DATE: 7/10/2016 10:45:49 AM
PRINTED BY: J. W. H. T. W. S. S.





Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 07-25-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology Inc., and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- (Mike W. ph.), Randy B., Pat B., Steve P., (Megan K. and Gail Gary ph.)
BCCO- Rob F., (Garrett B. ph.)
OTHERS- Geotechnology Inc.- Alyssa O.

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

1. Safety.
 - i. Safety Minute: Rob F. – Heavy Equipment.
 - ii. Can be dangerous for both operators and ground personnel.
 - iii. Blind spots or common and troublesome on heavy equipment, never assume the operator can see you.
 - iv. Backup alarms are required on all heavy equipment.
- b. Next week's volunteer: Pat B.
2. Contractor Progress Report.
 - a. Water pumping of the bottom ash pond has continued. The river level has continued to fall, the chart shows the level at 4.45' for 7/24/18 and falling to 3.7' through the 31st. The site had close to an inch of rain over Sunday. The pump is running roughly 11 hours per day.
 - b. Mobilization; BCCO has de-mobilized (2) Case 580 tractors, (2) John Deere 2112C pans, and (2) SmithCo Side dump trailers. BCCO has plans to de-mobilize (2) more side dumps and (1) Case 580 tractor soon. The synthetic turf is delivered to site, except for the



following notes: There are 5 damaged rolls of turf, there is 1 roll missing/not delivered to site that were on the manufacturers rolls list (AA1G43X), and there is 1 roll that is onsite that was not on the manufactures roll list (AA1FJA9). The onsite roll count is 430 rolls of turf material. Dave Clausen is aware of all of these items.

- c. The BAP berm removal has been underway since the crew finished the East Stockpile Area and moved the sand material around to drain the east area as necessary. The BAP berm material is being utilized in the FAP fills as well as in the BAP Oil Dock Berm outside slope fills. At this point, all of the BAP berm that is to be excavated to the FAP, is complete.
- d. Soil Backfill of the BAP is ongoing. BCCO placed the conditioned clay in the BAP Oil Dock berm toe area last week after it was dumped on top and disked. The lower river level is an improvement, but groundwater infiltration is still a heavy factor in BAP soil backfill operation. Randy B. mentioned that the contractor on the bridge project in Meredosia may be blowing the bridge on the 26th, which could have a large impact on the hauling. Rob is following up with the bridge contractor.
- e. Oil Dock Roadway and Turnaround fills are essentially complete on the river side slope, which were the only remaining fills to be made. The "pie shaped" piece of soil next to the oil pipeline is removed and BCCO also removed some steel angle brackets that were on the pipeline bases. BCCO will have the final grade on the BAP berm done by Friday, when Anna will have the survey crew perform the as-built survey. This will have the berm area to the point that it will only need smooth drummed and anchor trenches for liner placement. The plan is to focus on the BAP berm for liner placement first.
- f. The underground electric from the north end of the BAP roadway to the meter box is complete including Ameren's pole removal and transformer relocation. The hookup is complete and the oil dock is functional. The only remaining item is the outdoor lights, Scott Bros will install these as soon as they ship in. Rob is going to follow up with Scott Bros to determine when they expect to complete this work.
- g. Rip Rap removal on the BAP is complete, and all of this salvaged material is placed around the FAP, for use later on the liner trench and area between the liner and existing rip rap. BCCO has left a small amount of rip rap over at the BAP area for placement in the river/BAP swale. The river swale work should also be complete prior to next week's meeting. BCCO has started the additional rip rap as of the time of this meeting.
- h. FAP perimeter ditch grading is set to begin this week. BCCO has had continued issues incorporating the new ditch design into our GPS system on our CAT excavator. The design was not correct from our third-party service that converts the CAD files into



usable surfaces but we are working on getting the surface revised and uploaded to the machine. As of this meeting, it appears as though the revised design from SITECH is functional and is ready to go in the machine. Rob plans to start this work by next Monday.

- i. The FAP outlet pipe has been grouted full and the structure is demolished. This will complete the site demolition, minus any miscellaneous items that may present themselves during final grading operations.
- j. BCCO has submitted pricing to Mike W. for the AIC group access roadway as well as the FAP herbicide spraying that was requested. The herbicide spraying is set to proceed, and the proposed chemicals are acceptable to Ameren. The plan is to perform this work on 7/26/18.

3. Contractor's Weekly Work Plan

- a. Update: Rob F.
 - i. Continue pumping effort. BCCO will monitor the pumping at the coal yard run off area and see if it has any effect on the backfill operations at the BAP. BCCO will continue to monitor the river levels and precipitation in the area.
 - ii. Continue backfill in the BAP. This is dependent on weather and pumping efforts. BCCO will continue to condition the soil to promote drying placement.
 - iii. Grading at the Fly Ash pond will continue as fill is brought in. Excavation will come from the FAP perimeter ditch excavation for the remainder of this item, unless other excavations are directed by Ameren.
 - iv. The BAP Oil Dock Berm will continue to be final graded and prepared for liner. This area should be the initial area to be lined.
 - v. Excavate the FAP perimeter ditch in preparation for final survey and liner installation. BCCO will also need to excavate anchor trench just prior to start of liner installation.
 - vi. Apply herbicide to the FAP rip rap slopes.

4. Schedule Forecast

- a. Two Week Look Ahead.
 - i. No Two week look ahead provided at the time this document was composed.



- ii. GSI has reported that their arrival date will now be the week of August 6th.

5. New Items/Miscellaneous

- a. Garrett sent the seam sample of the Turf material with Rob for Geotechnology. Rob delivered to Alyssa who in turned provided in to Jesse for review.
- b. BCCO has submitted 2 sand samples for analysis. 1 sample is from Otter Creek Sand and Gravel which is the primary source for the sand infill that GSI assumed using for their bid. The second sample is a potential alternative source from Western Asphalt's pit that is much closer than Otter creek. Alyssa to follow up with the group on an expected date for sample results.
- c. GSI reported that they are coordinating with the Local Laborer's regarding their PLA, and that the agreement is currently in review by GSI's team.

6. Action Items

- a. BCCO Items:
 - i. BCCO to continue submittals. Update: The next upcoming submittals should include HDPE and Turf Closeout submittals, Seeding and Mulching certification of seed mix. If there are any other upcoming items not listed here, please let Garrett know. {Status- Open}
 - ii. Garrett to clarify crew size for initial mobilization with GSI. {Status- Open}
- b. Ameren Items:
 - i. Mike W. to finish review of pricing as presented by BCCO for additional fence removal, culvert installation, coal yard run off excavation, coal yard seeding, and AIC roadway, and issue an EWO as necessary. Update: AIC is reviewing the proposal, Mike hopes to have a PO issued in the next few weeks. {Status- Open}

7. Questions, Comments, Open Discussion

- a. Update

The next progress meeting for this project will be held on August 1st at 9:00 a.m.



DAILY REPORT

DATE: July 26, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1545 Travel: 0.5 Total: 9.0

AM Conditions: Partly Cloudy AM Temperature: 70 F
PM Conditions: Clear PM Temperature: 74 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship
Equipment: 2 excavators, 1 tractor with water wagon, 3 bulldozers, 1 skidsteer, 1 roller, and 1 pump.
Personnel: Blankenship – 12; Ameren – 2
Visitors: Woolsey Pest Control (0730-1140)

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Quarry borrow material, BA Pond grading, rip-rap, FA Pond grading
Deliveries: Rip-rap throughout the day
Testing: Compaction tests in the Fly Ash Pond

CONSTRUCTION SITE LOCATIONS:

Quarry borrow material and existing material in the northeast corner of BA Pond was graded, outer slope
Of the north berm of the BA Pond was graded

Alyson A. Olin
Geotechnology, Inc. Rep.

7/26/18
Date

Mike Sanzola
Geotechnology, Inc. Engineer

7/31/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 330D, one Caterpillar 323 excavator, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one Caterpillar 299D skidsteer, one New Holland TG275 tractor with one Blankenship water wagon, one Sakai CV 550D 84" smooth drum roller, and one Godwin pump.

Additional equipment observed on site (not in use): One pull-behind set of offset discs, one Caterpillar 308E mini-excavator, excavator one Komatsu 490 excavator, three Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, one Komatsu bulldozer, one John Deere 9520 tractor, and one Holcomb blade box.

Blankenship held the daily safety meeting at 0700. The safety topic was Refueling.

One excavator graded in the northeast corner of the Bottom Ash Pond. One bulldozer assisted.

One bulldozer spread and graded borrow material on the floor of the Bottom Ash Pond. One smooth drum roller assisted.

One excavator spread new rip-rap that was being delivered on the Fly Ash Pond berm.

One bulldozer graded in the Fly Ash Pond.

One tractor with water wagon maintained dust control on access and hauling roads around site.

One skidsteer assisted with cleanup around site.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Geotechnology:

Alyssa Okorn attended the morning safety and coordination meeting. After the meeting, Alyssa began compaction testing on the north end of the Fly Ash Pond. This was interrupted by accompanying the Woolsey Pest Control herbicide sprayer around site. After lunch, compaction testing resumed in the Fly Ash Pond.

See the attached location drawing for additional information.



DAILY REPORT

DATE: July 27, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1330 Travel: 2.25 Total: 9.0

AM Conditions: Clear AM Temperature: 61 F
PM Conditions: Mostly Cloudy PM Temperature: 74 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship
Equipment: 2 excavators, 1 tractor with one side dump trailer, 1 tractor with water wagon, 3 bulldozers, 1 skidsteer, 1 roller, and 1 pump.
Personnel: Blankenship – 12; Ameren – 2
Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Quarry borrow material, rip-rap, FA Pond grading
Deliveries: Rip-rap throughout the day
Testing: _____

CONSTRUCTION SITE LOCATIONS:

Quarry borrow material was graded, outer slope of the north berm of the FA Pond was graded, rip-rap was spread down the berms of the FA Pond, miscellaneous grading on the FA Pond

Alyssa A. Olm
Geotechnology, Inc. Rep.

7/27/2018
Date

[Signature]
Geotechnology, Inc. Engineer

7/31/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 330D excavator, one Caterpillar 323 excavator, one Case IH QuadTrak 550 tractor with one Smith Co. side-dump trailer, two Caterpillar D6T bulldozers, one Caterpillar D7E LGP bulldozer, one Caterpillar 299D skidsteer, one New Holland TG275 tractor with one Blankenship water wagon, one Sakai CV 550D 84" smooth drum roller, and one Godwin pump.

Additional equipment observed on site (not in use): One pull-behind set of offset discs, one Caterpillar 308E mini-excavator, excavator one Komatsu 490 excavator, three Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, one Komatsu bulldozer, one John Deere 9520 tractor, and one Holcomb blade box.

Blankenship held the daily safety meeting at 0700. The safety topic was Selecting Suitable Eye Protection.

One excavator graded the north berm of the Fly Ash Pond. One tractor with one side dump assisted

One bulldozer spread and graded borrow material on the floor of the Bottom Ash Pond. One smooth drum roller assisted.

One excavator spread new rip-rap that was being delivered on the Fly Ash Pond berm.

One bulldozer graded in the Fly Ash Pond.

One tractor with water wagon maintained dust control on access and hauling roads around site.

One skidsteer assisted with cleanup around site.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Geotechnology:

Alyssa Okorn attended the morning safety and coordination meeting. Following the morning meeting, reports and site progress observation was completed.

See the attached location drawing for additional information.

7.27.2018

LEGEND:

- ROAD DITCH LINE
SEE SHEET C-504
- CABLEWAY 20" SEDIMENT LOSSTM OR APPROVED EQUIV
SEE SHEET C-602
- FLY FENCE
SEE SHEET C-403
- BAE BLANKET
SEE SHEET C-504

July 27, 2018

- Borrow Material Spread Area
- FA Pond Grading
- New Rip-Rap Spread Area
- BA Pond Grading

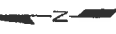


MEDINA VALLEY COHEN, LLC	
ASH POND CLOSURE	
GENERAL PLANS	
SNPPP PLAN	
MERDOSIA POWER STATION	
C-602	SCALE: 1" = 100'

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE RECORDS AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE. THE ENGINEER HAS NOT BEEN RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF UNDERGROUND UTILITIES. THE ENGINEER SHALL LOCATE THE UTILITIES PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.



NOTE: 1" = 100' ON 84x36
1" = 240' ON 18x18



PHOTOGRAPH LOG



Photograph 1 ▲ - View of Bottom Ash Pond floor fill activities, looking northwest.



Photograph 2 ▲ - View of rip rap loading activities at the Fly Ash Pond, looking southwest.



Photograph 3 ▲ - View of rip rap placement activities at the Fly Ash Pond, looking southwest.



Photograph 4 ▲ - View of grouted Outfall 004 at the Fly Ash Pond.



Photograph 5 ▲ - View of Bottom Ash Pond north berm after pipeline clearing activities, looking east.



Photograph 6 ▲ - View of Bottom Ash Pond western swale, looking north.



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Missouri

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

DATE: August 6, 2018

SUBJECT: Summary Report for July 30, 2018 to August 3, 2018

PROJECT: Fly Ash Pond and Bottom Ash Pond Closures
Meredosia Power Station
Meredosia, Morgan County, Illinois
Geotechnology Project No. J024917.04

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

Weather

The weather was generally clear to overcast. Temperature (°F) lows ranged from 59 to 68°F, and temperature highs ranged from 77 to 91°F.

Construction Activities

Geotechnology did not have a representative on site on July 30, 2018 or August 3, 2018.

Blankenship Construction Company graded borrow material placed in the Bottom Ash Pond floor, excavated the Fly Ash Pond drainage ditches, and graded the Fly Ash Pond.

David Mason & Associates conducted a survey of the Bottom Ash Pond berm/turnaround on July 31, 2018 and August 1, 2018.

Equipment and Personnel On-Site

Blankenship Construction Company had the following equipment on site: Two Caterpillar excavator, two Case tractors (tracked), four Smith pull-behind side-dump trailers, two Caterpillar bulldozers, one New Holland tractor with water wagon, one Holcomb scraper box, one Caterpillar skidsteer, one Godwin water pump, one 84-inch Sakai smooth drum roller, one John Deere tractor with offset discs, and one Caterpillar mini-excavator.

Blankenship Construction Company had 12 personnel on site.

Meetings

A weekly progress meeting was held on Wednesday, August 1, 2018. Refer to the meeting minutes for additional information.

Photographs

A photograph log with selected photographs obtained while Geotechnology was on site is attached.

Materials

Borrow source soil was placed and graded on the floor of the Bottom Ash Pond.

Testing/Sampling

Alyssa Okorn of Geotechnology performed compaction testing at the Fly Ash Pond.

Signature of CQA Officer



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

Attachments: Daily Reports
Photograph Log

DAILY REPORTS



DAILY REPORT

DATE: July 31, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0845 Depart: 1615 Travel: 2.25 Total: 9.75

AM Conditions: Cloudy AM Temperature: 64 F

PM Conditions: Scattered Showers PM Temperature: 72 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Equipment: 3 excavators, 2 bulldozers, 1 skidsteer, and 1 pump.

Personnel: Blankenship – 12; Ameren – 2

Visitors: Surveyors: All Day; Blankenship: CAT D7E dozer & Komastu 490 excavator; Scott Bros.

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: FA Pond grading & excavation, BA Pond grading

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

FA Pond drainage ditch excavations & grading of material produced, spreading of material on floor of BA

Pond to facilitate drying, grading of material on the west berm of BA Pond

Alyssa A. Olin
Geotechnology, Inc. Rep.

7/31/18
Date

Sam M. Smith
Geotechnology, Inc. Engineer

8/6/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 330D excavator, one Caterpillar 323 excavator, two Caterpillar D6T bulldozers, one Caterpillar 299D skidsteer, and one Godwin pump.

Additional equipment observed on site (not in use): One pull-behind set of offset discs, one Caterpillar 308E mini-excavator, two Case IH QuadTrak 550 tractors, each with two Smith Co. side-dump trailers, one New Holland TG275 tractor with one Blankenship water wagon, one John Deere 9520 tractor, one Sakai CV 550D 84" smooth drum roller, and one Holcomb blade box.

Blankenship held the daily safety meeting at 0700. The safety topic was Guardrails, Handrails, & Covers.

One excavator began excavating the drainage ditch on the Fly Ash Pond. One excavator and one dozer assisted with grading.

One bulldozer graded material on the west berm of the Bottom Ash Pond.

One skidsteer assisted with cleanup around site.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Geotechnology:

Alyssa Okorn attended the morning safety and coordination meeting. Following the morning meeting, Alyssa worked on reports and site progress observation, as well as assisted the surveyors as needed.

See the attached location drawing for additional information.

7.31.2018

LEGEND:

- ROCK BLANKET LINDER
SEE SHEET C-602
- CONCRETE OR SEDIMENT LINER
SEE SHEET C-602
- SILT FENCE
SEE SHEET C-602
- ROCK BLANKET
SEE SHEET C-604

July 31, 2018

Spreading to
facilitate drying

Excavation of
Drainage Ditch



MEDINA VALLEY COHEN, LLC	
ASH POND CLOSURE	
GENERAL PLANS	
SWPPP PLAN	
MEREDOSIA POWER STATION	
PROJECT NO.	C-602
DATE	0

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REPRESENT THE ACTUAL LOCATION, DEPTH, SIZE, TYPE, NUMBER, OR LOCATION OF THESE UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.



NOTES:
1" = 100' ON 24x36
1" = 200' ON 18x18



FLY ASH POND

SEDIMENT LINDER (TYP)

BOTTOM ASH POND

SILT FENCE (TYP)

CLOSED ASH POND

ILLINOIS RIVER



DAILY REPORT

DATE: August 1, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1545 Travel: 0.5 Total: 9.0

AM Conditions: Clear AM Temperature: 61 F

PM Conditions: Clear PM Temperature: 82 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Equipment: 2 excavators, 2 bulldozers, 1 tractor with 1 side-dump trailer, 1 tractor with 2 side-dump trailers, 1 skidsteer, and 1 pump.

Personnel: Blankenship – 12; Ameren – 2

Visitors: Surveyors (0830-1210); Garrett Blankenship (0815-1100); Scrap Trailer (1450-1515)

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: FA Pond grading & excavation, BA Pond grading, quarry borrow material

Deliveries: _____

Testing: FA Pond density testing

CONSTRUCTION SITE LOCATIONS:

FA Pond drainage ditch excavations & grading of material produced, spreading of borrow material on floor of BA Pond


Geotechnology, Inc. Rep.

8/1/18
Date


Geotechnology, Inc. Engineer

8/6/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 330D excavator, one Caterpillar 323 excavator, two Caterpillar D6T bulldozers, two Case IH QuadTrak 550 tractors, one with two Smith Co. side-dump trailers and one with one Smith Co. side-dump trailer, one Caterpillar 299D skidsteer, one John Deere 9520 tractor with one Blankenship water wagon, and one Godwin pump.

Additional equipment observed on site (not in use): One pull-behind set of offset discs, one Caterpillar 308E mini-excavator, one New Holland TG275 tractor, one Sakai CV 550D 84" smooth drum roller, and one Holcomb blade box.

Blankenship held the daily safety meeting at 0700. The safety topic was Respirators.

One excavator continued excavating the drainage ditch on the Fly Ash Pond. One excavator, two tractors with side-dump trailers, and one dozer assisted with grading.

One bulldozer graded borrow material on the floor of the Bottom Ash Pond.

One tractor with a water wagon maintained dust control around site.

One skidsteer assisted with cleanup around site.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Blankenship held the weekly coordination meeting at 0900. See meeting minutes for more details.

Geotechnology:

Alyssa Okorn attended the morning safety and coordination meeting. Following the morning safety meeting, Alyssa worked on reports and site progress observation. At 0900, Alyssa attended the weekly coordination meeting, and participated in discussions with Blankenship afterward. The afternoon was spent observing site and density testing on the Fly Ash Pond.

See the attached location drawing for additional information.



Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER
STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 08-01-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology Inc., and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Randy B., Steve P., (Mike W., Megan K. ph.)
BCCO- Rob F., Garrett B.
OTHERS- Geotechnology Inc.- Alyssa O. (Anna S., Jessie G. ph.)

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

1. Safety.
 - a.
 - i. Safety Minute: Randy B. – Good Communication Among Employees.
 - ii. Please see attached handout.
 - b. Next week's volunteer: Pat B.
 - c. Randy noted to Garrett at the end of the meeting that the straw delivery personnel were not wearing appropriate clothing and were not properly using a cellular device. Garrett will follow up with Midwest Seedling.
2. Contractor Progress Report.
 - a. Water pumping of the bottom ash pond has continued. The river level stayed fairly consistent with the chart showing the level at 3.45' for 7/30/18 and staying under 4.0' through the August 6th. The site had right at 2" of rain over Sunday/Monday, which caused a complete loss day on 7/30 and 7/31 with no operations. 8/01/18 was a partially lost day, with soil import able to start late morning.
 - b. Mobilization; BCCO has de-mobilized a (4) SmithCo Side dump trailers and (1) Case 580 quad trac tractor since last meeting. This leaves (2) Case 580 tractors and (4) SmithCo



side dump buggies onsite. BCCO has de-mobilized the CAT D7 dozer. BCCO has also moved the Komatsu PC490 excavator over to the borrow area, and de-mobilized the CAT 336. The synthetic turf is onsite, minus the issues that were mentioned last week. Dave Clausen is aware of all of these items. More on that below.

- c. The BAP berm removal is complete.
- d. Soil Backfill of the BAP is ongoing. BCCO was able to utilize some onsite soil from the southwest corner for fill. Backfilling operations were unable to continue due to rain on 7/30 and 7/31, but resumed on 8/01 mid-morning.
- e. Oil Dock Roadway and Turnaround fills are complete. The "pie shaped" piece of soil next to the oil pipeline is removed and the BAP Oil Dock Berm is ready for survey, which was performed via drone earlier this week. The rain did cause some minor erosions, that will need repaired prior to liner.
- f. The outdoor lights on the Oil Dock have been installed by Scott Bros. Unless unknown items are needed, this concludes the associated work in regards to the utility relocate.
- g. FAP perimeter ditch grading began this week. BCCO has had continued issues with the new ditch design. Upon additional review, it appears as though the new design did not correctly account for varying width related to deeper cuts as the ditch slopes downward toward the outfalls. BCCO coordinate with Mike who gave approval for BCCO to modify the design. BCCO had SITECH make the necessary changes and received an updated surface on 7/30. BCCO has installed this design and has started excavating the ditch. The newest issue has been that due to the whole FAP site being 1' low in regards to proposed final surface, this creates a problem where the interior surface and high points of the ditch intersect. Rob has continued to move forward by creating a slight swale in these areas that does not have as much fall as the originally proposed ditch line. Matt V. is planning a sight visit soon to view and hopefully approve these modifications. Mike W. is following up to determine when Matt can be onsite.
- h. Alyssa O. has double checked the roll lists and with help from Dave C. with GSI, checked the BOL's and it appears that at this time, all rolls are onsite plus the 1 extra roll that was not on the original MQC reports. GSI has provided the MQC data on this roll and provided to Garrett who in turn provided to Geotechnology. Anna believes that this roll will be acceptable for use onsite, but needs to review more closely prior to final approval. Anna also stated that 3rd party lab testing of this individual roll should not be necessary.



- i. BCCO has begun importing RR4 as approved by Mike W. The current tonnage is believed to be around 1200 tons. BCCO will continue this work until the needed tonnage is on site.
 - j. BCCO has submitted pricing to Mike W. for the AIC group access roadway as well as the FAP herbicide spraying that was requested. The herbicide spraying is complete. Mike said the AIC PO may take a few days to procure, but this should affect the schedule as this item would be performed later when the final roadways go in on the rest of the site.
3. Contractor's Weekly Work Plan
- a. Update: Rob F.
 - i. Continue pumping effort. BCCO will monitor the pumping at the coal yard run off area and see if it has any effect on the backfill operations at the BAP. BCCO will continue to monitor the river levels and precipitation in the area.
 - ii. Continue backfill in the BAP. This is dependent on weather and pumping efforts. BCCO will continue to condition the soil to promote drying placement.
 - iii. Grading at the Fly Ash pond will continue as excavation from the FAP perimeter ditch is continued, unless other excavations are directed by Ameren.
 - iv. Excavate the FAP perimeter ditch in preparation for final survey and liner installation. BCCO will also need to excavate anchor trench just prior to start of liner installation. The group agreed to schedule the FAP final survey for 8/13/18.
 - v. Make final preparations for liner placement on the BAP Oil Dock Berm.
 - vi. Continue rip rap import as necessary.
4. Schedule Forecast
- a. Two Week Look Ahead.
 - i. No Two week look ahead provided at the time this document was composed.
 - ii. GSI has reported that their arrival date will now be the week of August 6th.
 - iii. FAP final survey on 8/13/18.
 - iv. Alyssa delivering sand and soil samples on 8/2/18.
5. New Items/Miscellaneous



- a. BCCO has submitted a second sample for the Otter Creek site to test for PH. Historical PH data was provided by Otter Creek as well.
- b. Anna wanted to confirm with GSI that they would be ready for panel layout discussion and kick off items on 8/6/18. Garrett will confirm. Anna plans on having her whole team onsite Monday. Additionally, Garrett will confirm start/quit times for the liner crew as well as their initial arrival time on the 6th for site specific training.
- c. Anna hopes to have the survey data for the BAP by this Friday and release approval same day.
- d. There is a 15' gate onsite that can be used for the access point for the bottom of the oil dock roadway. BCCO will have to coordinate with Collins and Hermann on install cost.

6. Action Items

- a. BCCO Items:
 - i. BCCO to continue submittals. Update: The next upcoming submittals should include HDPE and Turf Closeout submittals, Seeding and Mulching certification of seed mix. If there are any other upcoming items not listed here, please let Garrett know. {Status- Open}
- b. Ameren Items:
 - i. Mike W. to finish review of pricing as presented by BCCO for additional fence removal, culvert installation, coal yard run off excavation, coal yard seeding, and AIC roadway, and issue an EWO as necessary. {Status- Open}

7. Questions, Comments, Open Discussion

- a. Update

The next progress meeting for this project will be held on August 8th at 9:00 a.m.

WEEK 6

Talking Points on Communication

1. Verbalize your intended actions to your fellow employees
 - a. Do not assume everyone around you knows every step you intend to take, discuss the actions needed to perform your task before beginning.
2. Ask fellow employees to verify understanding by repeating back instructions.
 - a. Repeating back instructions is very useful in eliminating misunderstandings do to partially heard or misunderstood communication.
 - b. Repeating instructions is doubly important when communicating by radio, due to the often excessively noisy conditions in the work area.
 - c. Do not use abbreviations when communicating, use the proper terms for the job to be performed.
3. Allow other employees to offer opinions as to the safest way to perform the job.
 - a. You should actively solicit other opinions and ideas before beginning a task.
 - b. Other employees may remember things that have gone wrong when the task now assigned to you was performed in the past. Listen to their advice and try not to repeat the same mistakes.
4. If it doesn't sound right it probably isn't. Stop and ask for directions.
 - a. Maintain a questioning attitude.
 - b. Do not assume
5. Ask for clarification when unsure.
 - a. No one remembers everything about everything. Ask for advice when you are unsure
 - b. Do not try to guess the correct way to proceed.
6. Never answer your own questions.
 - a. If you do not have all of the information you need guessing at an answer is a poor choice.
 - b. Attempting to proceed with a task when you have questions about how to perform the task can only lead to errors or accidents,
7. Avoid using slang terms for equipment.
 - a. While the two people talking may understand the Slang terms and abbreviations, they can be easily misinterpreted by people in other work groups.
8. Use fellow employees names to assure instructions are given to the correct person.
 - a. Many instructions sound similar when pronounced over a radio. Assure the person you intended to receive the message is the one communicating with you.
9. Practice three way communications.
 - a. Repeating the instructions not only helps you set them in your head it assures the person on the other end of the radio that they have been thoroughly understood.
10. Use the phonetic alphabet when repeating instructions to prevent misunderstandings.
 - a. Due to the noisy conditions many conversations over the plant radios have to be repeated numerous times to reach a level of understanding that satisfies both parties. The use of the phonetic alphabet will help alleviate this problem in the future.

Communicate Clearly

Verbalize your intended actions to your fellow employees

Ask fellow employees to verify understanding by repeating back instructions.

Allow other employees to offer opinions as to the safest way to perform job.

If it doesn't sound right it probably isn't. Stop and ask for instructions to be repeated.

Ask for clarification when unsure.

NEVER answer your own questions.

Avoid slang terms for equipment.

Use fellow employees name to assure instructions are given to the correct person.

Practice three way communication.

Use the phonetic alphabet when repeating instructions to prevent misunderstandings.



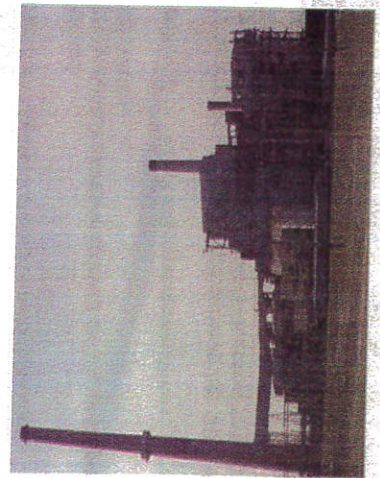
Ameren
ENERGY RESOURCES

OUR MISSION

**To Safely, Reliably, and
Efficiently Generate Electricity**

Ameren Meredosia Station

800 South Washington
Meredosia, IL 62665



TWO MINUTE DRILL

STOP

When Beginning a Task
When task is interrupted
If job conditions change

THINK

Inspect Your Work area
Look for Hazards

Will equipment around you cause a hazard to your job?
Are there electrical components in your area?
Do you have the correct tools?
Do you have the correct WPA?
Is fighting adequate to perform your job safely?

ACT

Eliminate hazards in area before beginning job
Do you have barriers in place?

Have you discussed any needed precautions with fellow employees?
Do you have a contingency plan?
Have other departments that may be affected been notified?

REVIEW

Are the results the ones you expected?
Notify your Supervisor if results are other than expected.
Document any problems experienced while performing job.
Leave your job area cleaner than you found it.



Individual Prevention Tools

Self Checking

Peer Checking

(help out your partner)

Stop When Unsure

Questioning Attitude

Procedure Use and Adherence

Clear Communication Techniques

Two Minute Drill

Keep Work Area Clean and Free From Hazards

Use Extra Caution on Familiar Tasks

Self Checking

What? Review the intended action and expected response before performing the task.

Why? Focus your attention on the details of the task to ensure the right actions, the desired results, and potential for mistakes.

When? At the beginning, after interruptions, if conditions change, and when completed.

How? While physically touching the device to be operated, Pause/focus on the task, understand what is to be done, verbalize guidance & perform the task, and verify results.

JOB BRIEFING

What?
A discussion among task participants to ensure an understanding of the task

WHY?

To understand scope, limits, precautions, sequence and responsibilities of the task to be performed.
To allow experienced personnel to contribute knowledge of potential hazards.

WHEN?

Before all activities that have the potential to challenge personnel safety or plant reliability

HOW?

Review the 5 OSHA subjects.

- Work procedures used
- Hazards associated with the job
- Special precautions
- Energy source controls (WPA)
- Personal protective equipment requirements

Procedure use

WHAT?

If a procedure exists for the task to be performed it is expected that it will be followed as written.

WHY?

To ensure we perform safely, reliably, efficiently, and to the high standards needed to operate the plant.

WHEN?

Anytime written instructions govern our work activities,

HOW?

If a procedure exists for an activity it shall be used to perform that activity.

Follow all procedures with a questioning attitude.

If the procedure cannot be performed as written STOP the activity, place work in a safe condition, contact your supervisor, and resolve questions and concerns.

Common Causes of Accidents to be Avoided

Time Pressure (in a hurry)

Distractions/ Interruptions

Stress

Complacency

Lack of Knowledge of Task to be Performed

Fatigue

Poor Communication

Workarounds

Unexpected Equipment Conditions (hidden system response)

Unsafe Attitude

Changes/Departure From Routine

Failure to STOP When Unsure

RULES TO LIVE BY

Fall Protection, Electrical Safety, Confined Space, Rigging and Hoisting, Trenching and Shoring

Lock out Tag out



DAILY REPORT

DATE: August 2, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645

Depart: 1300

Travel: 3.25

Total: 9.0

AM Conditions: Clear

AM Temperature: 67 F

PM Conditions: Cloudy

PM Temperature: 79 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Equipment: 2 excavators, 2 bulldozers, 1 tractor with 1 side-dump trailer, 1 tractor with 2 side-dump trailers, 1 skidsteer, one tractor with water wagon, and 1 pump.

Personnel: Blankenship – 12; Ameren – 2

Visitors: Scrap Trailer (1010-1045)

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: FA Pond grading & excavation, BA Pond grading, quarry borrow material

Deliveries: _____

Testing: FA Pond density testing

CONSTRUCTION SITE LOCATIONS:

FA Pond drainage ditch excavations & grading of material produced, spreading of borrow material on floor of BA Pond


Geotechnology, Inc. Rep.

8/2/18
Date


Geotechnology, Inc. Engineer

8/6/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 330D excavator, one Caterpillar 323 excavator, two Caterpillar D6T bulldozers, two Case IH QuadTrak 550 tractors, one with two Smith Co. side-dump trailers and one with one Smith Co. side-dump trailer, one Caterpillar 299D skidsteer, one John Deere 9520 tractor with one Blankenship water wagon, and one Godwin pump.

Additional equipment observed on site (not in use): One pull-behind set of offset discs, one Caterpillar 308E mini-excavator, one New Holland TG275 tractor, one Sakai CV 550D 84" smooth drum roller, and one Holcomb blade box.

Blankenship held the daily safety meeting at 0700. The safety topic was Respirators.

One excavator continued excavating the drainage ditch on the Fly Ash Pond. One excavator, two tractors with side-dump trailers, and one dozer assisted with grading.

One bulldozer graded borrow material on the floor of the Bottom Ash Pond.

One tractor with a water wagon maintained dust control around site.

One skidsteer assisted with cleanup around site.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Geotechnology:

Alyssa Okorn attended the morning safety and coordination meeting. Following the morning safety meeting, Alyssa worked on reports and then density testing on the Fly Ash Pond. After leaving site, Alyssa took one sample of sand to TekLab and one sample to the Geotechnology lab.

See the attached location drawing for additional information.

8.2.2018

LEGEND:

- ROCK WATER LINDER SEE SHEET C-404
- GROUNDWATER MONITORING LOGS OR APPROVED EQUIVALENT SEE SHEET C-402
- SILT FENCE SEE SHEET C-403
- ROCK BLANKET SEE SHEET C-404

August 2, 2018

Borrow Material Spread Area

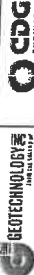
Drainage Ditch Excavation



MEDINA VALLEY COGEN, LLC
ASH POND CLOSURE
GENERAL PLANS
SWPPP PLAN

DATE	BY	DESCRIPTION
8/2/2018	WRT	SWPPP PLAN

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REPRESENT THE ACTUAL LOCATION OF THE UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.



NOTES: 1" = 200' OR 244.8'



FILE: \\mvs\projects\15003 - Mercedia Ash Pond\Drawings\15003-SWPPP.dwg
DATE: 8/10/2016 10:40:49 AM
PRINTED BY: WRT VOSS

PROJECT: MEREDOSIA POWER STATION
SHEET: C-602
SCALE: 1" = 200'

DATE: 8/2/2018
BY: WRT



PHOTOGRAPH LOG



Photograph 1 ▲ - View of Bottom Ash Pond floor fill activities, looking northwest.



Photograph 2 ▲ - View of drainage excavation activities at the Fly Ash Pond, looking northeast.



Photograph 3 ▲ - View of drainage excavation activities at the Fly Ash Pond, looking east.



Photograph 4 ▲ - View of scrap removal activities, looking northeast.



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Missouri

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

DATE: August 14, 2018

SUBJECT: Summary Report for August 6, 2018 to August 11, 2018

PROJECT: Fly Ash Pond and Bottom Ash Pond Closures
Meredosia Power Station
Meredosia, Morgan County, Illinois
Geotechnology Project No. J024917.04

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

Weather

The weather was generally clear to overcast. Temperature (°F) lows ranged from 62 to 75°F, and temperature highs ranged from 80 to 93°F.

Construction Activities

Geotechnology did not have a representative on site on August 6, 2018.

Blankenship Construction Company graded borrow material placed in the Bottom Ash Pond floor, excavated the Fly Ash Pond drainage ditches, graded the Fly Ash Pond, and excavated the anchor trench for the Bottom Ash Berm geomembrane.

GSI placed geomembrane at the Bottom Ash Berm on August 9-11, 2018.

Equipment and Personnel On-Site

Blankenship Construction Company had the following equipment on site: Two Caterpillar excavators, two Case tractors (tracked), three Smith pull-behind side-dump trailers, two Caterpillar bulldozers, one New Holland tractor with water wagon, one Holcomb scraper box, one Caterpillar skidsteer, one Godwin water pump, one 84-inch Sakai smooth drum roller, one John Deere tractor, One DD Grade King box blade, one set of pull-behind offset discs, and one Caterpillar mini-excavator.

Blankenship Construction Company had 10-11 personnel on site.

GSI had 12-14 personnel on site.

Meetings

A weekly progress meeting was held on Wednesday, August 8, 2018. Refer to the meeting minutes for additional information.

Photographs

A photograph log with selected photographs obtained while Geotechnology was on site is attached.

Materials

Borrow source soil was placed and graded on the floor of the Bottom Ash Pond.

40-mil MicroSpike geomembrane was placed on the Bottom Ash Berm.

Testing/Sampling

Alyssa Okorn of Geotechnology performed compaction testing at the Fly Ash Pond.

GSI and Geotechnology performed quality control and construction quality assurance testing, respectively, of geomembrane placed on the Bottom Ash Berm.

Signature of CQA Officer



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

Attachments: Daily Reports
Photograph Log

DAILY REPORTS



DAILY REPORT

DATE: August 7, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0815 Depart: 1730 Travel: 2.25 Total: 11.50

AM Conditions: Cloudy AM Temperature: 71 F

PM Conditions: Cloudy & Spotty Showers PM Temperature: 77 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship
Equipment: 2 excavators, 2 bulldozers, 1 tractor with 2 side-dump trailers, 1 skidsteer, one tractor with blade box roller, one tractor with water wagon, and 1 pump.
Personnel: Blankenship – 11; Ameren – 2; GSI - 10
Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: FA Pond grading & excavation, BA Pond grading, quarry borrow material
Deliveries: _____
Testing: FA Pond density testing

CONSTRUCTION SITE LOCATIONS:

FA Pond drainage ditch excavations & grading, spreading of borrow material on floor of BA Pond

Allyson A. Olin
Geotechnology, Inc. Rep.

8/7/18
Date

Geotechnology, Inc. Engineer

Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 330D excavator, one Caterpillar 323 excavator, two Caterpillar D6T bulldozers, one Case IH QuadTrak 550 tractors, one with two Smith Co. side-dump trailers, one Sakai CV 550D 84" smooth drum roller, one Caterpillar 299D skidsteer, one John Deere 9520 tractor with one DD Grade King box blade, one New Holland TG275 tractor with one Blankenship water wagon, and one Godwin pump.

Additional equipment observed on site (not in use): One pull-behind set of offset discs, on Case IH QuadTrak tractor with one Smith Co. side-dump trailer, one Caterpillar 308E mini-excavator, and one Holcomb blade box.

Blankenship held the daily safety meeting at 0700. The safety topic was High Voltage Accidents.

One excavator continued excavating the drainage ditch on the Fly Ash Pond. One excavator, one tractor with side-dump trailers, one tractor with blade box roller, and one dozer assisted with grading.

One bulldozer graded borrow material on the floor of the Bottom Ash Pond.

One tractor with a water wagon maintained dust control around site.

One skidsteer assisted with cleanup around site.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Geotechnology:

Alyssa Okorn attended the morning safety meeting. Following the meeting, Alyssa performed density testing at the Fly Ash Pond.

See the attached location drawing for additional information.

8.7.2018

- LEGEND:**
- EXIST. DITCH LINES
 - SEE SHEET C-504
 - EXIST. PROPERTY BOUNDARY LINES OR APPROVED EQUAL
 - SEE SHEET C-503
 - SILT FENCE
 - SEE SHEET C-503
 - EXIST. BLANKET
 - SEE SHEET C-504

August 7, 2018

Borrow Material
Spread Area

Fly Ash Pond
Grading



MEDINA VALLEY COGEN, LLC
ASH POND CLOSURE
GENERAL PLANS
SWPPP PLAN

MERDOSIA POWER STATION

C-602

SCALE: NOT TO SCALE

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AN EXISTENCE RECORD. THE ENGINEER HAS CONDUCTED A VISUAL GENERAL VERIFICATION OF THESE UTILITIES. THE ENGINEER'S RESPONSIBILITY IS TO LOCATE THE UTILITIES, SHOW OR NOT SHOW, AND SHALL LOCATE THE UTILITIES PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.



0 100 200
1" = 100' ON 8/18
1" = 200' ON 7/18

FILE: 10/10/2016 10:04:45 AM
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C:\Users\matt\Documents\Projects\Ash Pond\Drawings\10-10-2016\10-10-2016.dwg





DAILY REPORT

DATE: August 8, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO, SWG, & KLH
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1730 Travel: 0.5 Total: 10.75

AM Conditions: Foggy AM Temperature: 69 F

PM Conditions: Clear PM Temperature: 83 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship
Equipment: 3 excavators, 2 bulldozers, 1 skidsteer, one tractor with blade box roller, one tractor with water wagon, and 1 pump.
Personnel: Blankenship – 11; Ameren – 2; GSI – 12; Geotechnology - 3
Visitors: Lucas Grote – 0900-1330; Garrett Blankenship – 0830-1330

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: FA Pond grading & excavation, BA Pond berm, quarry borrow material

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

FA Pond drainage ditch excavations & grading, spreading of borrow material on floor of BA Pond,
excavation of BA Pond berm anchor trenches

Alyssa A. O'Neil
Geotechnology, Inc. Rep.

8/8/2018
Date

Geotechnology, Inc. Engineer

Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 330D excavator, one Caterpillar 323 excavator, one Caterpillar 308E mini-excavator, two Caterpillar D6T bulldozers, one Sakai CV 550D 84" smooth drum roller, one Caterpillar 299D skidsteer, one John Deere 9520 tractor with one Double D Grade King box blade with roller, one New Holland TG275 tractor with one Blankenship water wagon, Caterpillar 1055 L, and one Godwin pump.

Additional equipment observed on site (not in use): One pull-behind set of offset discs, two Case IH QuadTrak tractors with two Smith Co. side-dump trailers each, and one Holcomb blade box.

Blankenship held the daily safety meeting at 0700. The safety topic was Fueling Operations and Static Electricity.

One excavator finished excavating the drainage ditch on the Fly Ash Pond. One tractor with blade box roller and one dozer assisted with grading.

Two excavators dug the anchor trenches for the liner of

One bulldozer graded borrow material on the floor of the Bottom Ash Pond.

One tractor with a water wagon maintained dust control around site.

One skidsteer assisted with cleanup around site.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Blankenship held the Weekly Coordination Meeting at 0900. See meeting minutes for more details.

Geotechnology:

Alyssa Okorn attended the morning safety meeting and the weekly coordination meeting at 0900. Steve Graham and Kyle Henson arrived onsite at 1045 and departed at 1530.

See the attached location drawing for additional information.

8.8.2018

LEGEND:

- BORE DITCH LINER
SEE SHEET C-504
- GROUND 20' SEDIMENT LOSS™ OR APPROVED EQUIV.
SEE SHEET C-505
- ALL PILES
SEE SHEET C-505
- ALL PILES
SEE SHEET C-504
- ALL PILES
SEE SHEET C-504

August 8, 2018

Borrow Material
Spread Area

FA Pond Grading

Anchor Trenches
Dug



MEDINA VALLEY COGEN, LLC	
ASH POND CLOSURE	
GENERAL PLANS	
SWPPP PLAN	
MEREDOSIA POWER STATION	
DATE	0
BY	C-602
SCALE: 1" = 100'	

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTING UTILITIES. THE GENERAL TYPE, NUMBER, OR LOCATION OF THESE OR OTHER UTILITIES, THE GENERAL TYPE, NUMBER, OR LOCATION OF THESE OR OTHER UTILITIES, SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SHALL LOCATE THE UTILITIES IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.



Project: mer115053 - Geotechnical - Mercedia Ash Pond Grading C-602 SWPPP.dwg
 Date: 8/10/2016 10:40:45 AM
 Printed by: BARRY VOSS





Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 08-08-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology Inc., GSI, and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Randy B., Steve P., Pat B., (Mike W., Gail G. ph.)
BCCO- Rob F., Garrett B.
OTHERS- Geotechnology Inc.- Alyssa O. (Anna S., Jessie G. ph.)
OTHERS- Geo-synthetics Systems- Dave Hina

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

1. Safety.
 - a. Safety Minute: Pat B. – Bloodborne Pathogens.
 - i. Bloodborne pathogens can be encountered in blood and other bodily fluids, especially during emergency first aid situations. Remember to utilize safety gloves and other precautions prior to administering first aid to an injured coworker needing assistance.
 - b. Next week's volunteer: Garrett B.
 - c. Randy noted to Garrett last week that the delivery personnel from Midwest Seedling that were delivering straw, did not have proper PPE. Garrett followed up with Jim at Midwest and Jim is following up to correct the situation.
2. Contractor Progress Report.
 - a. Water pumping of the bottom ash pond has continued. The pump has been operating only a few hours a day, so the Auto Control floats have been removed and the full-time pump operator has been laid off. The river level has stayed consistently low with the chart showing the level at 2.6' for 8/07/18 and staying under 3.0' through August 14th. The site had minor rain over Monday night/early Tuesday morning.



- b. Mobilization; BCCO mobilized at CAT telehandler (lull) and a DD Boxblade roller to site on 8/6/18. BCCO demobilized a CAT D7E bulldozer from site.
- c. Soil Backfill of the BAP is ongoing. Backfilling operations have proceeded without delay since last meeting. According to Rob and others onsite, the contractor demolishing the bridge over the Illinois river has already performed one demo blast, and should be performing another towards the middle of August. These blasts only affect the import operations for about 30 minutes to an hour, and are usually done late afternoon, so the impact to site should be minimal.
- d. Oil Dock Roadway and Turnaround smooth drum and liner prep is complete and ready for visual approval. Anchor trench excavations have begun as of this morning on 8/8/18, and Rob expects to have them completed by the end of the day. Garrett asked the group about removing a section of anchor trench on the top side of the oil dock roadway. Mike W., Anna S., and Dave H., all replied that they had no problem with this. Garrett has attached a markup of this area to the bottom of this document.
- e. The outdoor lights on the Oil Dock are installed.
- f. FAP perimeter ditch grading has continued since the last meeting. BCCO has the perimeter ditch done as far as the major excavation is concerned, but still needs to perform final touch up and smooth drum. The downlets should be done by the end of this week. Rob spoke with Anna on Tuesday about laying the sides of the downlets back to a 3:1 instead of a 2:1. The group discussed again during the meeting Wednesday and everyone was still agreeable with this. Rob expects to have the FAP rough graded by the end of this week. David Mason surveyors are scheduled for the 14th. Anna hopes to have the survey reviewed and approved if possible by the 17th.
- g. GSI arrived onsite on Monday. They have been through the site-specific training and began filling sand bags. The plan as of this point in time is to begin liner deployment on the BAP berm on Thursday. Anna and the Geotechnology team were onsite on Tuesday morning to meet and discuss liner proceedings. Dave H. has provided a panel layout to Anna for review, of which Anna verbally approved during the meeting but requested Garrett still provide in a submittal format. Garrett will provide this asap. Dave H. expects to have the BAP Oil Dock berm blacked out by this Friday, with detail work following throughout next week. Dave H. is tentatively expecting to be deploying on the FAP by the 20th.
- h. Matt V. was onsite last Friday and inspected the FAP perimeter ditch areas and was satisfied with Rob's process and final product.



3. Contractor's Weekly Work Plan

a. Update: Rob F.

- i. Continue pumping effort. BCCO will monitor the pumping at the coal yard run off area and see if it has any effect on the backfill operations at the BAP. BCCO will continue to monitor the river levels and precipitation in the area.
- ii. Continue backfill in the BAP. This is dependent on weather and pumping efforts. BCCO will continue to condition the soil to promote drying placement.
- iii. Grading at the Fly Ash pond will continue. Once the last fill materials are placed, BCCO will begin final grade for survey and smooth drum for liner. Some of the areas have already been final graded and some smooth drum work is ongoing. Compaction tests have been satisfactory.
- iv. The BAP Oil Dock Berm liner deployment will continue as necessary, along with detail work and turf deployment. Begin FAP sometime around the 20th.
- v. Finish excavating the FAP perimeter ditch and downlets in preparation for final survey and liner installation. Once the FAP is surveyed and approved, BCCO will make any final preparations that need to be made prior to liner, including final smooth drum and anchor trenches.

4. Schedule Forecast

a. Two Week Look Ahead.

- i. No Two week look ahead provided at the time this document was composed.

5. New Items/Miscellaneous

- a. BCCO has submitted a 2nd sample of sand from Otter Creek Sand and Gravel after the first sample failed PH. Anna received the PH results prior to the meeting, and said that upon first glance they seem acceptable, but will review after the meeting and send formal reply asap.

6. Action Items

a. BCCO Items:

- i. BCCO to continue submittals. Update: The next upcoming submittals should include HDPE and Turf Closeout submittals, Seeding and Mulching certification of seed mix. BCCO will also need to submit a formal submittal on the BAP and



FAP liner panel layout, as prepared by Dave H. If there are any other upcoming items not listed here, please let Garrett know. {Status- Open}

b. Ameren Items:

- i. Mike W. to finish review of pricing as presented by BCCO for additional fence removal, culvert installation, coal yard run off excavation, coal yard seeding, and AIC roadway, and issue an EWO as necessary. {Status- Open}

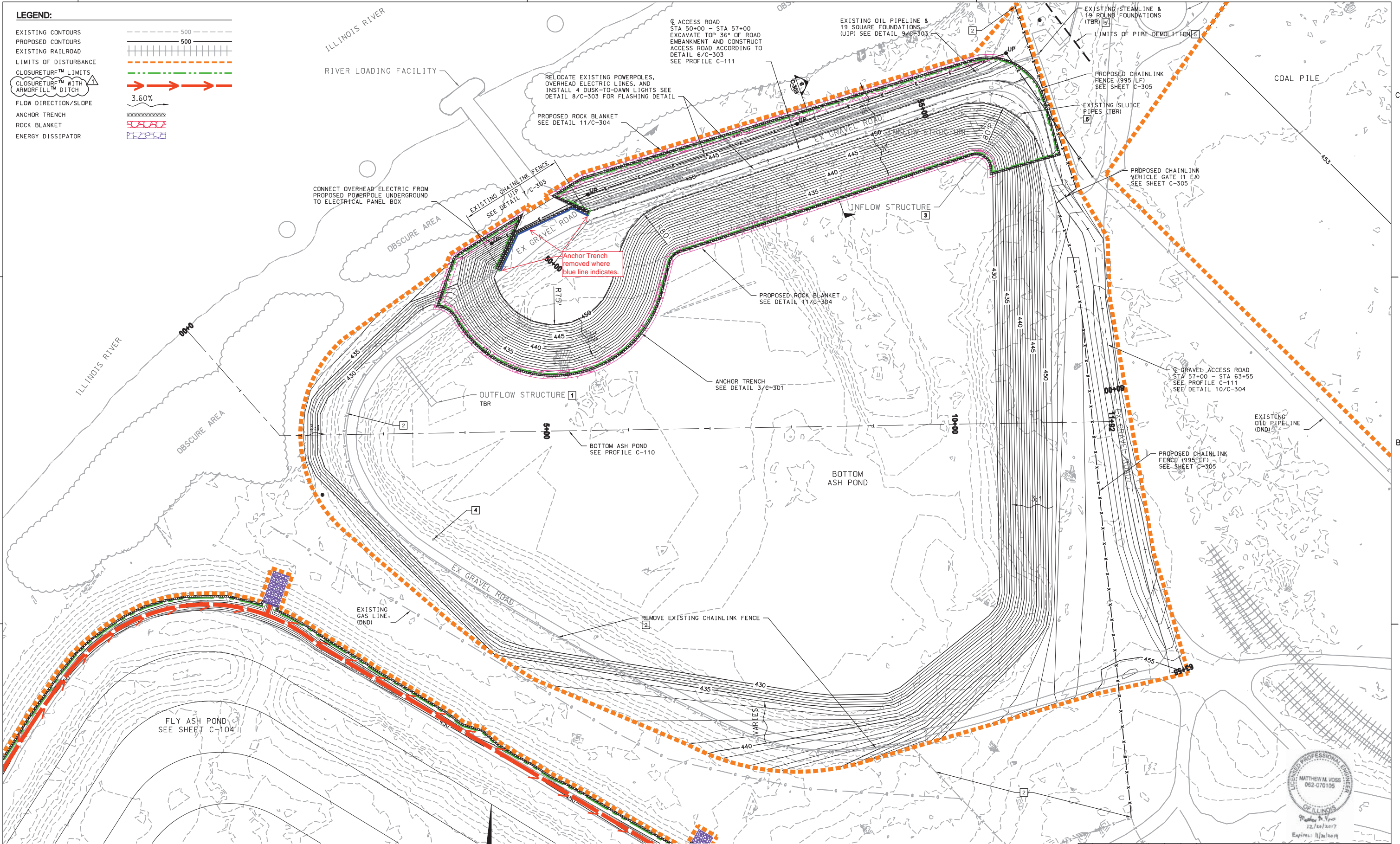
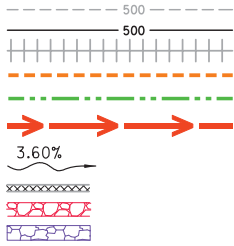
7. Questions, Comments, Open Discussion

a. Update

The next progress meeting for this project will be held on August 15th at 9:00 a.m.

LEGEND:

- EXISTING CONTOURS
PROPOSED CONTOURS
EXISTING RAILROAD
LIMITS OF DISTURBANCE
CLOSURETURF™ LIMITS
CLOSURETURF™ WITH ARMORFILL™ DITCH
FLOW DIRECTION/SLOPE
ANCHOR TRENCH
ROCK BLANKET
ENERGY DISSIPATOR

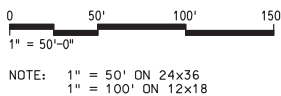


GENERAL NOTES:

- EXISTING CONTOURS ARE SHOWN AT 2' INTERVALS. EXISTING CONTOURS WERE CREATED BY AEROVIEW BY USING ORTHOPHOTOS. PHOTOGRAPHY WAS FLOWN ON 10/12/2015.
- CONTRACTOR TO FIELD LOCATE UNDERGROUND UTILITIES AND GAS LINES PRIOR TO EXCAVATING.
- CHAINLINK FENCING ALONG SHEETPIILING TO REMAIN IN PLACE TO CORNER POSTS. CONTRACTOR TO MINIMIZE DISTURBANCE DURING CONSTRUCTION ACTIVITIES.

DEMOLITION NOTES:

- REMOVE AND DISPOSE OF NPDES OUTFLOW STRUCTURE AND OUTLET PIPE. BACKFILL AND COMPACT ALL VOIDS WITH SOIL.
- REMOVE AND DISPOSE OF APPROXIMATELY 2063 LF OF ALL CHAINLINK FENCE MATERIALS.
- REMOVE AND DISPOSE OF INFLOW STRUCTURE, CONCRETE VAULT STRUCTURE, AND INLET PIPE. BACKFILL AND COMPACT ALL VOIDS WITH SOIL.
- REMOVE AND DISPOSE OF ALL LIGHT POLES (TYP.).
- REMOVE SLUICE PIPES, STEAMLINE PIPES, AND FOUNDATIONS TO LIMITS OF DEMOLITION LINE.



****FOR CONSTRUCTION****

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NONEXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SHALL LOCATE THE UTILITIES IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.

REV	PROJ	ID	DATE	DRWN	RVW	APPD
1	15093	12/20/17	MMV	SGH	MW	
FOR CONSTRUCTION						
REV	PROJ	ID	DATE	DRWN	RVW	APPD
0	15093	8/12/16	MMV	MWB	MW	
SUBMITTAL TO I-EPA						

MEDINA VALLEY COGEN, LLC
ASH POND CLOSURE
GENERAL PLANS
SITE PLAN

MEREDOSIA POWER STATION

C-102

REV 1



SCALE RATIO = 1



DAILY REPORT

DATE: August 9, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO, SWG, & KLH
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1730 Travel: 0.5 Total: 10.75

AM Conditions: Clear AM Temperature: 65 F

PM Conditions: Clear PM Temperature: 85 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Equipment: 2 excavators, 2 bulldozers, 1 skidsteer, 1 tractor with blade box roller, 1 tractor with water wagon, 1 lull, and 1 pump.

Personnel: Blankenship – 11; Ameren – 2; GSI – 12; Geotechnology - 3

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: FA Pond grading & compaction, quarry borrow material, BA Pond liner placed

Deliveries: _____

Testing: Density Testing in Fly Ash Pond

CONSTRUCTION SITE LOCATIONS:

FA Pond drainage grading and compaction, spreading of borrow material on floor of BA Pond, liner placed on BA Pond turnaround


Geotechnology, Inc. Rep.

8-9-18
Date

Geotechnology, Inc. Engineer

Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 330D excavator, one Caterpillar 323 excavator, one Caterpillar 308E mini-excavator, two Caterpillar D6T bulldozers, one Sakai CV 550D 84" smooth drum roller, one Caterpillar 299D skidsteer, one John Deere 9520 tractor with one Double D Grade King box blade with roller, one New Holland TG275 tractor with one Blankenship water wagon, one Caterpillar 1055 lull, and one Godwin pump.

Additional equipment observed on site (not in use): One pull-behind set of offset discs, two Case IH QuadTrak tractors with two Smith Co. side-dump trailers each, and one Holcomb blade box.

Blankenship held the daily safety meeting at 0700. The safety topic was Gas Cylinders.

One bulldozer and one excavator graded the Fly Ash Pond.

One bulldozer graded borrow material on the floor of the Bottom Ash Pond. One excavator and one tractor with blade box roller assisted.

One smooth drum roller compacted the Fly Ash Pond.

One lull moved rolls of liner and then turf to the BA Pond turnaround for GSI.

One tractor with a water wagon maintained dust control around site.

One skidsteer assisted with cleanup around site.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

GSI:

GSI performed geomembrane placement and quality control activities. See CQA field sheets for additional information.

Geotechnology:

Alyssa Okorn attended the morning safety meeting and performed density testing at the Fly Ash Pond. Steve and Kyle performed geomembrane CQA activities.

See the attached location drawing for additional information.

8.9.2018

LEGEND:

- ROCK SITION LINER
SEE SHEET C-304
- GRAVEL 20" SEDIMENT LOSS" OR APPROVED EQUIV
SEE SHEET C-403
- 12" SILT FENCE
SEE SHEET C-403
- ROCK BLANKET
SEE SHEET C-304

August 9, 2018

BA Pond
Borrow Material
Spread Area

Liner Placed

FA Pond
Smooth
Drumming



MEDINA VALLEY COGEN, LLC ASH POND CLOSURE GENERAL PLANS SNPPP PLAN	
MEREDOSIA POWER STATION	C-602
DATE: 8/10/2016 10:10:49 AM	SCALE: 1" = 100'
BY: MATT VOSS	0

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL LOCATION, SIZE, TYPE, NUMBER, OR LOCATION OF THESE OR OTHER UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SHALL EXCAVATE AND REPAIR OR REPLACE ALL UTILITIES IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.



SCALE: 1" = 100'
N
100' 200' 300'





DAILY REPORT

DATE: August 10, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO, SWG, & KLH
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1300 Travel: 2.75 Total: 8.5

AM Conditions: Clear AM Temperature: 65 F

PM Conditions: Clear PM Temperature: 85 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Equipment: 1 excavators, 2 bulldozers, 1 skidsteer, 1 tractor with water wagon, 1 tractor with a side-dump trailer, 1 lull, and 1 pump.

Personnel: Blankenship – 10; Ameren – 2; GSI – 14; Geotechnology - 3

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: FA Pond grading & compaction, quarry borrow material, BA Pond liner placed

Deliveries: Rock trailers

Testing: Density Testing in Fly Ash Pond

CONSTRUCTION SITE LOCATIONS:

FA Pond drainage grading and compaction, grading of material to the east of the BA Pond, liner placed on BA Pond turnaround

Allyse A. Olin
Geotechnology, Inc. Rep.

8/10/18
Date

Geotechnology, Inc. Engineer

Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 330D excavator, two Caterpillar D6T bulldozers, one Sakai CV 550D 84" smooth drum roller, one Caterpillar 299D skidsteer, one John Deere 9520 tractor with one Double D Grade King box blade with roller, one New Holland TG275 tractor with one Blankenship water wagon, one Caterpillar 1055 lull, and one Godwin pump.

Additional equipment observed on site (not in use): One pull-behind set of offset discs, one Caterpillar 323 excavator, one Caterpillar 308E mini-excavator, two Case IH QuadTrak tractors with two Smith Co. side-dump trailers each, and one Holcomb blade box.

Blankenship held the daily safety meeting at 0700. The safety topic was Gas Cylinders.

One bulldozer and one excavator graded the Fly Ash Pond. One tractor with side-dump trailer assisted

One bulldozer graded borrow material to the East of the Bottom Ash Pond.

One smooth drum roller compacted the Fly Ash Pond.

One lull moved rolls of liner to the BA Pond turnaround for GSI.

One tractor with a water wagon maintained dust control around site.

One skidsteer assisted with cleanup around site.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

GSI:

GSI performed geomembrane placement and quality control activities. See CQA field sheets for additional information.

Geotechnology:

Alyssa Okorn attended the morning safety meeting and observed progress onsite. Steve and Kyle performed geomembrane CQA activities.

See the attached location drawing for additional information.



DAILY REPORT

DATE: August 11, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: SWG & KLH
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1330 Travel: 0.5 Total: 6.15
AM Conditions: Clear AM Temperature: 65 F
PM Conditions: Clear PM Temperature: 95 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI
Personnel: Blankenship, GSI, and Geotechnology
Visitors: _____


MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: _____
Deliveries: _____
Testing: _____

CONSTRUCTION SITE LOCATIONS:

NDT and Destructive testing of Liner on pond BA

 8/11/18
Geotechnology, Inc. Rep. Date

 8/14/18
Geotechnology, Inc. Engineer Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

General Contractor

GSI:

GSI performed geomembrane placement and quality control activities. See CQA field sheets for additional information.

Geotechnology:

Performed geomembrane CQA activities.

PHOTOGRAPH LOG



Photograph 1 ▲ - View of Bottom Ash Pond floor fill activities, looking northwest.



Photograph 2 ▲ - View of drainage excavation activities at the Fly Ash Pond, looking southwest.



Photograph 3 ▲ - View of anchor trench excavation activities at the Bottom Ash Berm, looking west.



Photograph 4 ▲ - View of anchor trench at the Bottom Ash Berm, looking west.



Photograph 5 ▲ - Aerial view of geomembrane at the Bottom Ash Berm, looking northwest. Photograph provided by GSI.



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Missouri

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

DATE: August 27, 2018

SUBJECT: Summary Report for August 13, 2018 to August 18, 2018

PROJECT: Fly Ash Pond and Bottom Ash Pond Closures
Meredosia Power Station
Meredosia, Morgan County, Illinois
Geotechnology Project No. J024917.04

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

Weather

The weather was generally clear to overcast. Temperature (°F) lows ranged from 65 to 80°F, and temperature highs ranged from 76 to 95°F. Rain occurred on August 15, 2018.

Construction Activities

Blankenship Construction Company graded borrow material placed in the Bottom Ash Pond floor, excavated the Fly Ash Pond drainage ditches, graded the Fly Ash Pond, and backfilled the anchor trench for the Bottom Ash Berm geomembrane.

GSI placed ClosureTurf at the Bottom Ash Berm on August 13-16, 2018 and at the Fly Ash Pond on August 17-18, 2018.

Equipment and Personnel On-Site

Blankenship Construction Company had the following equipment on site: Two Caterpillar excavators, two Case tractors (tracked), three Smith pull-behind side-dump trailers, two Caterpillar bulldozers, one New Holland tractor with water wagon, one Holcomb scraper box, one Caterpillar skidsteer, one Godwin water pump, one 84-inch Sakai smooth drum roller, one John Deere tractor, One DD Grade King box blade, one set of pull-behind offset discs, and one Caterpillar mini-excavator.

Blankenship Construction Company had 10-11 personnel on site.

GSI had 12-14 personnel on site.

Meetings

A weekly progress meeting was held on Wednesday, August 15, 2018. Refer to the meeting minutes for additional information.

Photographs

A photograph log with selected photographs obtained while Geotechnology was on site is attached.

Materials

Borrow source soil was placed and graded on the floor of the Bottom Ash Pond.

ClosureTurf was placed on the Bottom Ash Berm and the Fly Ash Pond.

Testing/Sampling

Alyssa Okorn of Geotechnology performed ash compaction testing at the Fly Ash Pond.

GSI and Geotechnology performed quality control and construction quality assurance testing, respectively, of ClosureTurf placed on the Bottom Ash Berm and the Fly Ash Pond.

Signature of CQA Officer



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

Attachments: Daily Reports
Photograph Log

DAILY REPORTS



DAILY REPORT

DATE: August 13, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: SWG, KLH
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1700 Travel: 0.5 Total: 10.25

AM Conditions: Clear AM Temperature: 65 F

PM Conditions: Clear PM Temperature: 95 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: _____

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: quarry borrow material, geosynthetics

Deliveries: _____

Testing: ClosureTurf CQA testing

CONSTRUCTION SITE LOCATIONS:

ClosureTurf installation at the Bottom Ash Pond, Bottom Ash Pond floor backfill


Geotechnology, Inc. Rep. 8/13/18
Date


Geotechnology, Inc. Engineer 8/17/18
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Graded borrow material on the Bottom Ash Pond floor.

One smooth drum roller compacted the Fly Ash Pond.

One lull moved rolls of turf at the BA Pond turnaround for GSI. One skidsteer assisted GSI.

One tractor with a water wagon performed dust control.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

GSI:

GSI performed geomembrane placement and quality control activities. See CQA field sheets for additional information.

Geotechnology:

Performed ClosureTurf CQA activities. See CQA field sheets for additional information.

Two destructs collected, field tested and mailed to lab. 13 destructs total for Bottom Ash Pond.

Vacuum box testing of repairs.

Extruding repairs and boots.



DAILY REPORT

DATE: Aug 14, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO, SWG, & KLH
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0900 Depart: 1730 Travel: 2.75 Total: 10.75

AM Conditions: Overcast AM Temperature: 78 F

PM Conditions: Overcast PM Temperature: 76 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Equipment: 2 excavators, 1 bulldozer, 1 skidsteer, 1 tractor with water wagon, 1 tractor with a side-dump trailer, 1 tractor with blade box roller, 1 lull, 1 roller, and 1 pump.

Personnel: Blankenship - 11; Ameren - 2; GSI - 14; Geotechnology - 3

Visitors: Anna Saindon (0900-1100)

MATERIALS USED, DELIVERIES, AND TESTING:


Materials Used: quarry borrow material, geosynthetics

Deliveries: Rock trailers, tire delivery for Blankenship

Testing: ClosureTurf CQA testing, density testing in Fly Ash Pond

CONSTRUCTION SITE LOCATIONS:

FA Pond compaction, grading of material to the east of the BA Pond, ClosureTurf installation at the Bottom Ash Pond


Geotechnology, Inc. Rep.

8/14/18
Date


Geotechnology, Inc. Engineer

8/17/18
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Equipment observed in use: One Caterpillar 330D excavator, one Caterpillar 323 excavator, one Caterpillar D6T bulldozer, one Sakai CV 550D 84" smooth drum roller, one Caterpillar 299D skidsteer, one John Deere 9520 tractor with one Double D Grade King box blade with roller, one New Holland TG275 tractor with one Blankenship water wagon, one Caterpillar 1055 lull, and one Godwin pump.

Additional equipment observed on site (not in use): One pull-behind set of offset discs, one Caterpillar D6T bulldozer, one Caterpillar 308E mini-excavator, two Case IH QuadTrak tractors with two Smith Co. side-dump trailers each, and one Holcomb blade box.

Blankenship held the daily safety meeting at 0700. The safety topic was Cold Medication and Drowsiness.

One excavator placed rip-rap on the outside berm of the Fly Ash Pond. One excavator and one tractor with one side-dump trailer assisted.

One bulldozer graded borrow material on the Bottom Ash Pond floor. One tractor with blade box roller assisted.

One smooth drum roller compacted the Fly Ash Pond.

One lull moved rolls of turf at the BA Pond turnaround for GSI. One skidsteer assisted GSI.

One tractor with a water wagon performed dust control.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

GSI:

Placed engineered turf on the Bottom Ash Pond turnaround.

Geotechnology:

Performed density testing on the Fly Ash Pond.

Performed ClosureTurf CQA activities. See CQA field sheets for additional information.

Observe turf installation on west end of Bottom Ash Pond turnaround. Turf was wedge welded/fused. Observed that turf trial seam test passed "visual criteria" on wedges #BR114 and #JM120 in morning and afternoon.

Observed spark testing on pipeline footings



DAILY REPORT

DATE: August 15, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: SWG, KLH
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1330 Travel: 30 Total: 6.15

AM Conditions: Overcast AM Temperature: 70 F

PM Conditions: Rain PM Temperature: 80 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel:

Visitors:

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: quarry borrow material, geosynthetics

Deliveries:

Testing: ClosureTurf CQA testing

CONSTRUCTION SITE LOCATIONS:

ClosureTurf installation at the Bottom Ash Pond, Bottom Ash Pond floor backfill

Stephen Gunk
Geotechnology, Inc. Rep.

8/15/18
Date

Paul White
Geotechnology, Inc. Engineer

8/17/18
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

One smooth drum roller compacted the Fly Ash Pond.

One lull moved rolls of turf at the BA Pond turnaround for GSI. One skidsteer assisted GSI.

One tractor with a water wagon maintained dust control around site. One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

GSI:

Placed engineered turf on the Bottom Ash Pond turnaround.

Geotechnology:

Performed ClosureTurf CQA activities. See CQA field sheets for additional information.

Observe turf installation on Bottom Ash Pond turnaround. Turf was wedge welded/fused. Observed that turf trial seam test passed "visual criteria" on wedges #BR114 and wedge #JM120.



Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER
STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 08-15-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology Inc., GSI, and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Mike W., Randy B., Steve P., Pat B., (Gail G. ph.)
BCCO- Rob F., Garrett B.
OTHERS- Geotechnology Inc.- Alyssa O. (Anna S., Jessie G. ph.)
OTHERS- Geo-synthetics Systems- Dave Hina

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

1. Safety.
 - a. Safety Minute: Garrett B.
 - i. Garrett did not have a safety minute prepared, so Randy offered him the Ameren handout for Common Causes of Accidents. Garrett read from this list for the group and the team discussed additional risks that the onsite employees may come across, as well as means to avoid them.
 - b. Next week's volunteer: Garrett B.
2. Contractor Progress Report.
 - a. Water pumping of the bottom ash pond has continued, but has been under 6 hours a day for the past couple weeks. The river level has stayed consistently low with the chart showing a small rise earlier this week to 3.69' for 8/12/18, and staying under 3.0' through August 21st. The site has rain in the forecast starting on Tuesday night/Wednesday morning through the end of the week.
 - b. Mobilization; BCCO does not have any mobilization notes at this time.
 - c. Soil Backfill of the BAP is ongoing. Backfilling operations have continued daily since the last meeting.



- d. FAP perimeter ditch and downlet grading has continued since the last meeting. BCCO has all of this work completed, prior to the site survey scheduled for 8/14/18. Anna informed the group that the survey was complete, and that based on her visual check of the site, it appears ready for liner placement.
- e. GSI began liner installation last week on Thursday, the 9th. They have the BAP berm blacked out and began turf installation on 8/13/18. Weather pending, GSI intends to begin on the FAP area by the end of this week. Anna informed the group that all geomembrane destructs up to this date have passed. The turf should be done today or the following, depending on rain events. The geomembrane boots on the pipeline bases are in place, and the batten bars will be done when time allows.
- f. Woolsey Pest control made another visit to site on Monday to spray herbicide on weeds again.

3. Contractor's Weekly Work Plan

- a. Update: Rob F.
 - i. Continue pumping effort. BCCO will monitor the pumping at the coal yard run off area and see if it has any effect on the backfill operations at the BAP. BCCO will continue to monitor the river levels and precipitation in the area.
 - ii. Continue backfill in the BAP. This is dependent on weather and pumping efforts. BCCO will continue to condition the soil to promote drying placement.
 - iii. Liner preparation at the Fly Ash pond will commence as GSI prepares to start deployment in that area.
 - iv. The BAP Oil Dock Berm liner deployment will continue until complete, as weather allows. As previously mentioned, GSI hopes to be making the change over to the FAP area by the end of this week.
 - v. BCCO will proceed with follow up items on the BAP berm after GSI is complete, including anchor trench backfill, anchor trench rip rap armoring, roadway installation, etc.
 - vi. Garrett needs to discuss with the seeding contractor and the fencing contractor and see if they have any preferences in regards to who performs their work first.
 - vii. Matt Sondrol and possibly Dave Clausen will be onsite next week, along with Bob Buzzell of Watershed Geo.



- viii. BCCO will install the 24" dual wall plastic culvert in the next few days. The pipe was delivered early this week.

4. Schedule Forecast

a. Two Week Look Ahead.

- i. Mike provided the group with an updated schedule and two-week look ahead. In general, the schedule and two-week correlate with anticipated work activities. The group discussed making the following changes.
- ii. Adjusting item 1080 completion date back to 8/15/18.
- iii. Moving item 1190 start date up to 10/01/18.
- iv. Mowing item 1210 start date out to approximately 10/01/18.

5. New Items/Miscellaneous

- a. The 2nd sand sample from Otter Creek Sand and Gravel passed the pH testing and is approved for use onsite.
- b. BCCO has a question regarding the sand infill in relation to the BAP rip rap toe protection. This was answered in the meeting; sand under the fabric and rip rap on the BAP berm toe is not required.
- c. Discuss new detail on BAP roadway installation. Confirmed.
- d. AIC PO update? Mike will continue to work with AIC and should have in the coming weeks.
- e. Mike asked Garrett to begin a summation of extra charges and budgets for additional scope items.

6. Action Items

a. BCCO Items:

- i. BCCO to continue submittals. Update: The next upcoming submittals should include HDPE and Turf Closeout submittals, Seeding and Mulching certification of seed mix. If there are any other upcoming items not listed here, please let Garrett know. {Status- Open}

b. Ameren Items:



- i. Mike W. to finish review of pricing as presented by BCCO for culvert installation, road rock surfacing, and AIC roadway, and issue an EWO as necessary. {Status-Open}

7. Questions, Comments, Open Discussion

- a. Update

The next progress meeting for this project will be held on August 22nd at 9:00 a.m.



DAILY REPORT

DATE: August 16, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: SWG, KLH
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1715 Travel: 30 Total: 10.5

AM Conditions: Overcast AM Temperature: 70 F

PM Conditions: Clear PM Temperature: 90 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: _____

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: quarry borrow material, geosynthetics

Deliveries: _____

Testing: ClosureTurf CQA testing

CONSTRUCTION SITE LOCATIONS:

ClosureTurf installation at the Bottom Ash Pond, Bottom Ash Pond floor backfill

Stephan G. Gable 8/16/18
Geotechnology, Inc. Rep. Date

[Signature] 8/20/18
Geotechnology, Inc. Engineer Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

One smooth drum roller compacted the Fly Ash Pond.

One lull moved rolls of turf at the BA Pond turnaround for GSI. One skidsteer assisted GSI.

One tractor with a water wagon maintained dust control around site. One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

GSI:

Install engineered turf on the Bottom Ash Pond turnaround.

Seal HDPE liner to pipeline piers using breaker bar.

Repair Closure Turf deficiencies.

Backfill anchor trench.

Geotechnology:

Performed ClosureTurf CQA activities. See CQA field sheets for additional information.

Observe turf installation on Bottom Ash Pond turnaround. Turf was wedge welded/fused. Observed that turf trial seam test passed "visual criteria" on wedges #BR114 and wedge #JM120.



DAILY REPORT

DATE: August 17, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: SWG, KLH
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1715 Travel: 30 Total: 10.5
AM Conditions: Overcast AM Temperature: 70 F
PM Conditions: Clear PM Temperature: 90 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI
Personnel: _____
Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: quarry borrow material, geosynthetics
Deliveries: _____
Testing: ClosureTurf CQA testing

CONSTRUCTION SITE LOCATIONS:

ClosureTurf installation at the Bottom Ash Pond, Bottom Ash Pond floor backfill.

Stephen G. Goshen 8/17/18
Geotechnology, Inc. Rep. Date

Paul M. Smith 8/20/18
Geotechnology, Inc. Engineer Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

One smooth drum roller compacted the Fly Ash Pond.

One lull moved rolls of turf at the BA Pond turnaround for GSI. One skidsteer assisted GSI.

One tractor with a water wagon maintained dust control around site. One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

GSI:

Install HDPE Liner over SW corner of fly ash impoundment.

Geotechnology:

Performed ClosureTurf CQA activities. See CQA field sheets for additional information.

45 panels of HDPE geomembrane installed on north west side of fly ash impoundment.



DAILY REPORT

DATE: August 18, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: SWG, KLH
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1415 Travel: 30 Total: 8

AM Conditions: Clear AM Temperature: 80 F

PM Conditions: Clear PM Temperature: 90 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: GSI

Personnel: _____

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: geosynthetics

Deliveries: _____

Testing: ClosureTurf CQA testing

CONSTRUCTION SITE LOCATIONS:

ClosureTurf installation at the Bottom Ash Pond

Stephen Graham 8/18/18
Geotechnology, Inc. Rep. Date

David Manta 8/20/18
Geotechnology, Inc. Engineer Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

GSI:

Cut and tested 8 destructs

Lister, hotpatch, and extrusion weld repairs

Air testing

HDPE geomembrane installed over SW corner of Fly Ash Pond.

Geotechnology:

Performed ClosureTurf CQA activities. See CQA field sheets for additional information.

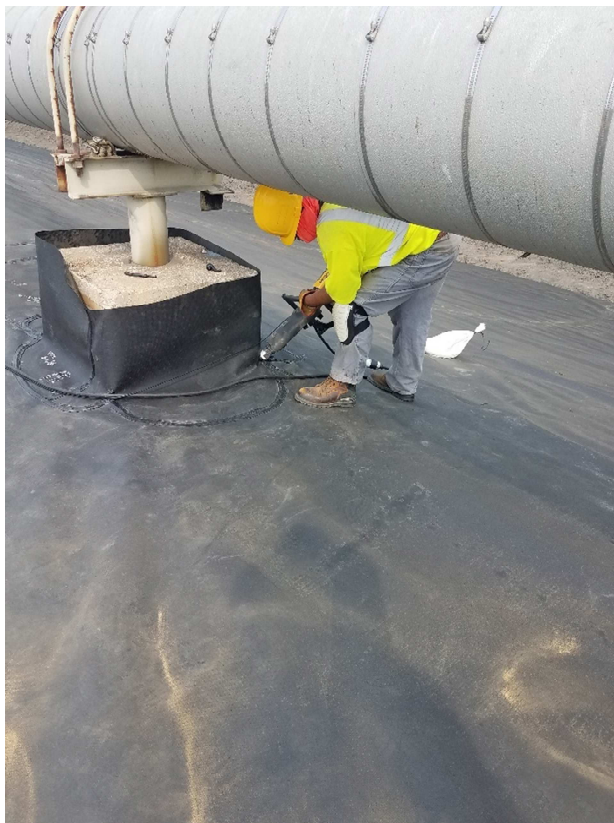
8 destructs obtained and shipped.


See field sheets for details.

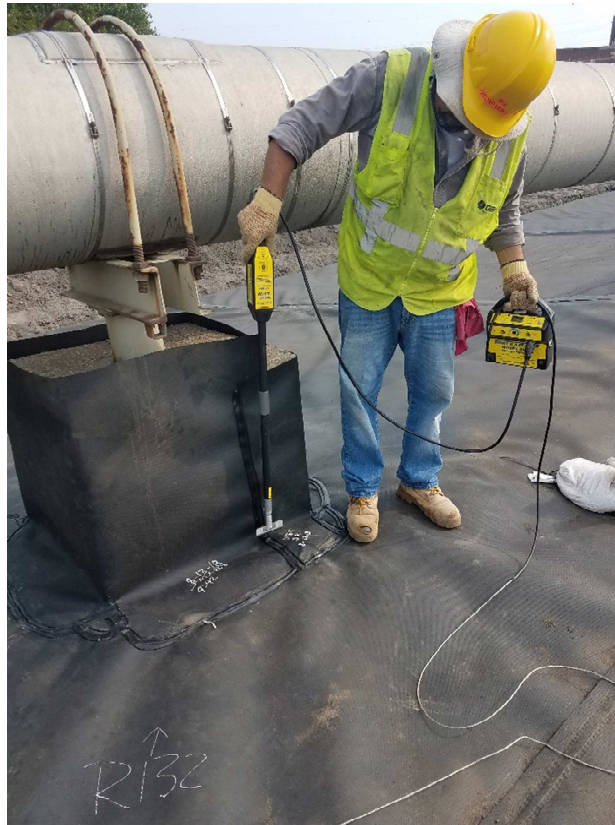
PHOTOGRAPH LOG



Photograph 1  - View of turf seaming at Bottom Ash Berm.



Photograph 2  - View of extrusion seaming at the Bottom Ash Berm, looking southwest.



Photograph 3 ▲ - View of spark testing at the Bottom Ash Berm, looking northwest.



Photograph 4 ▲ - View of anchor trench at the Bottom Ash Berm, looking northwest.



Photograph 5 ▲ - View of pipeline batten at the Bottom Ash Berm, looking southwest.



Photograph 6 ▲ - View of pipeline seal detail at Bottom Ash Berm.



Photograph 7 ▲ - View of turf placement activities at the Bottom Ash Berm, looking northeast.



Photograph 8 ▲ - View of turf repairs at the Bottom Ash Berm, looking northeast.



Photograph 9 ▲ - View of downlet at Fly Ash Pond, looking north.



Photograph 10 ▲ - View of final outside ditch at the Fly Ash Pond, looking south.




Photograph 11 ▲ - View of Fly Ash Pond final grading activities, looking east.



Photograph 12 ▲ - View of geomembrane installation at the Fly Ash Pond, looking northeast.



Photograph 13  - Aerial view of Bottom Ash Pond floor fill activities and final turf placement, looking northwest. Photography provided by a representative of GSI.



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Missouri

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

DATE: August 29, 2018

SUBJECT: Summary Report for August 20, 2018 to August 24, 2018

PROJECT: Fly Ash Pond and Bottom Ash Pond Closures
Meredosia Power Station
Meredosia, Morgan County, Illinois
Geotechnology Project No. J024917.04

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

Weather

The weather was generally clear to rainy. Temperature (°F) lows ranged from 52 to 80°F, and temperature highs ranged from 63 to 90°F. Rain occurred on August 21 and 24, 2018.

Construction Activities

Blankenship Construction Company graded borrow material placed in the Bottom Ash Pond floor, excavated the Fly Ash Pond drainage ditches, graded the Fly Ash Pond, and backfilled the anchor trench for the Fly Ash Pond.

GSI placed ClosureTurf at the Fly Ash Pond.

Equipment and Personnel On-Site

Blankenship Construction Company had the following equipment on site: Two Caterpillar excavators, two Case tractors (tracked), three Smith pull-behind side-dump trailers, two Caterpillar bulldozers, one New Holland tractor with water wagon, one Holcomb scraper box, one Caterpillar skidsteer, one Godwin water pump, one 84-inch Sakai smooth drum roller, one John Deere tractor, One DD Grade King box blade, one set of pull-behind offset discs, and one Caterpillar mini-excavator.

Blankenship Construction Company generally had 5-11 personnel on site.

GSI generally had 12-14 personnel on site.

Meetings

A weekly progress meeting was held on Wednesday, August 22, 2018. Refer to the meeting minutes for additional information.

Photographs

A photograph log with selected photographs obtained while Geotechnology was on site is attached.

Materials

Borrow source soil was placed and graded on the floor of the Bottom Ash Pond.

ClosureTurf was placed on the Fly Ash Pond.

Testing/Sampling

GSI and Geotechnology performed quality control and construction quality assurance testing, respectively, of ClosureTurf placed on the Fly Ash Pond.

Signature of CQA Officer



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

Attachments: Daily Reports
Photograph Log

DAILY REPORTS



DAILY REPORT

DATE: August 20, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: SWG, KLH
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.0) Lunch

Arrive: 0645 Depart: 1215 Travel: 30 Total: 6

AM Conditions: Rain AM Temperature: 80 F

PM Conditions: Clear PM Temperature: 90 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: _____

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: geosynthetics

Deliveries: _____

Testing: ClosureTurf CQA testing

CONSTRUCTION SITE LOCATIONS:

ClosureTurf installation at the Bottom Ash Pond.


Geotechnology, Inc. Rep.

8/20/18
Date


Geotechnology, Inc. Engineer

8/24/18
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

GSI:

Cut and field tested 8 destructs.

Overnight rains delayed start.

Geomembrane installed at southwest corner of Fly Ash Pond.

Geotechnology:

Performed ClosureTurf CQA activities. See CQA field sheets for additional information.

Observe destruct field tests and mailed 8 destructs to laboratory.

Observed geomembrane installation at southwest corner of Fly Ash Pond.



DAILY REPORT

DATE: August 21, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: SWG, KLH
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1715 Travel: 30 Total: 10.5

AM Conditions: Overcast AM Temperature: 70 F

PM Conditions: Clear PM Temperature: 80 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: _____

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: quarry borrow material, geosynthetics

Deliveries: _____

Testing: ClosureTurf CQA testing

CONSTRUCTION SITE LOCATIONS:

ClosureTurf installation at the Fly Ash Pond; Bottom Ash Pond floor backfill.

Stephen Grah 8/21/18
Geotechnology, Inc. Rep. Date

Paul M. Smith 8/24/18
Geotechnology, Inc. Engineer Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

One smooth drum roller compacted the Fly Ash Pond.

One lull moved rolls of turf at the Fly Pond for GSI. One skidsteer assisted GSI.

One tractor with a water wagon maintained dust control around site. One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

GSI:

Vacuum test extrusion welds at repair locations.

Install turf on the southwest side of the fly ash pond.

Repair turf deficiencies.

Geotechnology:

Performed ClosureTurf CQA activities. See CQA field sheets for additional information.

Observe turf installation on southwest end of fly ash pond. Turf was wedge welded/fused. Observed that turf trial seam test passed "visual criteria" on wedges #BR114 and wedge #JM120.



DAILY REPORT

DATE: August 22, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: SWG, KLH, JYG, AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0845 Depart: 1730 Travel: 2.75 Total: 11.0

AM Conditions: Overcast AM Temperature: 70 F

PM Conditions: Clear PM Temperature: 80 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship - ?, GSI - ?, and Geotechnology - 4

Visitors: Garrett Blankenship, Mike Wagstaff, Ken Beckman

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: quarry borrow material, geosynthetics

Deliveries: _____

Testing: ClosureTurf CQA testing

CONSTRUCTION SITE LOCATIONS:

ClosureTurf installation at the Bottom Ash Pond, Bottom Ash Pond floor backfill.


Geotechnology, Inc. Rep.

8/22/18
Date


Geotechnology, Inc. Engineer

8/24/18
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

One lull moved rolls of liner and turf at the Fly Pond for GSI. One skidsteer assisted.

Various equipment worked on backfilling and grading in the Bottom Ash Pond.

One tractor with a water wagon maintained dust control around site.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Blankenship held the weekly coordination meeting at 0900. See meeting minutes for more details.

GSI:

Install geomembrane on the southwest side of the fly ash pond.

Performed air tests on seam welds.

Geotechnology:

Performed ClosureTurf CQA activities. See CQA field sheets for additional information.

Observe turf installation on southwest end of fly ash pond. Turf was wedge welded/fused. Observed that turf trial seam test passed "visual criteria" on wedges #BR114 and wedge #JM120.

Alyssa Okorn attended the weekly coordination meeting at 0900.



Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER
STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 08-22-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology Inc., GSI, and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Mike W., Ken B., Randy B., Steve P., Pat B.,
BCCO- Rob F., Garrett B.
OTHERS- Geotechnology Inc.- Alyssa O. (Anna S. ph.)
OTHERS- Geo-synthetics Systems- Dave Hina, Dave C., Matt S.

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

1. Safety.
 - a. Safety Minute: Garrett B.
 - b. Next week's volunteer: Alyssa O.
2. Contractor Progress Report.
 - a. Water pumping of the bottom ash pond has continued, but has remained a minimal amount, usually only a few hours per day. The river level had stayed below 4' for the past few weeks, but with the rain in the area and areas north of site, the river chart shows a small rise earlier this week to 4.29' for 8/20/18. The forecasted levels show the elevation staying around 4.3' or dropping slightly through August 27th. The site had rain last Wednesday that shut down all work and over Sunday night/Monday morning that shut down all operations on Monday, minus some erosion/SWPPP cleanup from the rain. Rainfall was about 0.8" total on Monday morning.
 - b. Mobilization; BCCO does not have any mobilization notes at this time.
 - c. Soil Backfill of the BAP is ongoing. Backfilling operations continued daily on Thursday and Friday, but were shut down Wednesday afternoon and Monday due to rainfall.



- d. FAP grading is complete. Anna provided formal acceptance of the survey on 8/21/18. BCCO was able to get on the FAP surface on Thursday after the rain Wednesday and perform another smooth drum roll, helping to “seal” and firm up the FAP surface, while also reducing some of the dust. BCCO began digging anchor trench last week for GSI to start placing geomembrane on the FAP.
- e. BCCO installed the dual wall plastic pipe in the East Fly Ash Stockpile area for surface water to drain off to the south. BCCO utilized rip rap for this work as well. Rob mentioned in the meeting that a little more rip rap may be needed on the discharge side of the pipe, he and Mike are to review after the meeting.
- f. GSI has continued liner installation, minus shut-downs on last Wednesday and this Monday. They have the BAP berm completely covered with turf. All field and lab testing have been completed with very satisfactory results. Steve P. asked about the seam samples that Ameren is required to keep, Mike W. asked that they continue to store them onsite until they can arrange to take them to Ameren in St. Louis. GSI began deploying liner on the FAP last Friday. Most of the 40 mil that has been placed prior to this meeting is also covered with turf. Dave H. can provide further updates at this point. GSI lost a ½ a day on last Wednesday and a whole day on Monday. Dave H. hopes to have the nearest downlets covered with turf prior to the next rain event. Rob asked that Dave H. remind the crew to place the synthetics in the trench to the deepest extent possible, in the event that a rain event would cause the sides to cave in.

3. Contractor’s Weekly Work Plan

- a. Update: Rob F.
 - i. Continue pumping effort. BCCO will monitor the pumping at the coal yard run off area and see if it has any effect on the backfill operations at the BAP. BCCO will continue to monitor the river levels and precipitation in the area.
 - ii. Continue backfill in the BAP. This is dependent on weather and pumping efforts. BCCO will continue to condition the soil to promote drying placement.
 - iii. Liner preparation at the Fly Ash pond will continue as GSI needs, including additional anchor trench and repair smooth drumming.
 - iv. The BAP Oil Dock Berm liner deployment still needs to have sand and armor fill placed on it, as well as the soil, rock, and rip rap components by BCCO. The group discussed the need to wait to install the BAP toe rip rap until the sand is placed. The roadway will be installed prior to sand. The BAP sand will be blown on using a high-pressure blower truck, due to the slopes being 3:1 and the



pipeline being a factor. It could be 4-6 weeks before the blower truck is onsite. Mike W. asked Matt S. if the sand work was being done by experienced contractor/s and Matt S. stated that yes, both contractors are experienced and certified by Watershed Geo to install sand.

- v. The FAP liner placement is underway and will continue as possible. Upon finishing placement of sand and armor fill on the BAP, the infill crew will move the FAP and place behind the deployment crew. GSI discussed that they would like to possibly stockpile sand on the liner system, but the group as a whole would discuss after the meeting, along with Watershed Geo, to determine a suitable system for installing the sand. Matt S. will provide a sand installation plan prior to the sand install commencing. Dave H. will provide a schedule update after more progress is made on the FAP.

4. Schedule Forecast

- a. Two Week Look Ahead.
 - i. Schedule appears to generally be in line with onsite activities.

5. New Items/Miscellaneous

- a. Garrett B. brought up a question regarding the eastern anchor trench and if it needs to be rip rap covered or soil with seed. Mike W. clarified that the intent is to rip rap armor to provide a physical barrier between mowing equipment and the liner system. Garrett B. and Rob F. need to follow up with Mike if this will result in extra rip rap.
- b. Rob F. reported that there are enough gates onsite that Collins and Hermann will not need to purchase and install new gates.
- c. Mike W. informed BCCO that there has not been any update on the AIC road surfacing work.
- d. As of right now the next bridge demolition blast is scheduled for the 28th of August, but that could change again.
- e. Yeck/Industrial road may be closed for oil and chip on the 23rd of August for a couple hours.
- f. While talking about the sediment log submittal being approved, Mike W. mentioned that the installation layout would need to be adjusted to the new site grading that has been performed.



6. Action Items

a. BCCO Items:

- i. BCCO to continue submittals. Update: BCCO has submitted cut sheets on two types of Curlex logs for Ameren/Geotechnology approval. Mike W. and Matt V. with CDG returned the sediment log submittals with both options being approved for use. The next upcoming submittals should include HDPE and Turf Closeout submittals, Seeding and Mulching certification of seed mix. If there are any other upcoming items not listed here, please let Garrett know. {Status- Open}

b. Ameren Items:

- i. Mike W. to review additional/extra items pricing as presented by GB in a separate email. {Status- Open}

7. Questions, Comments, Open Discussion

a. Update

b.

The next progress meeting for this project will be held on August 29th at 9:00 a.m.



DAILY REPORT

DATE: August 23, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: JYG, AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

Arrive: 0630 Depart: 1730 Travel: 0.5 Total: 11.0 (-0.5) Lunch
AM Conditions: Clear AM Temperature: 52 F
PM Conditions: Clear PM Temperature: 76 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI
Personnel: Blankenship - 9, GSI - 13, and Geotechnology - 2
Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: quarry borrow material, geosynthetics
Deliveries: _____
Testing: ClosureTurf CQA testing

CONSTRUCTION SITE LOCATIONS:

Geomembrane installation at Fly Ash Pond southwest corner.

Alyssa A. Olin
Geotechnology, Inc. Rep.

8/23/18
Date

[Signature]
Geotechnology, Inc. Engineer

8/27/18
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:**Blankenship:**

One lull moved rolls of liner and turf at the Fly Pond for GSI. One skidsteer assisted.

Various equipment worked on backfilling and grading in the Bottom Ash Pond.

One tractor with a water wagon maintained dust control around site.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

GSI:

Perform repairs on liner and turf in the southwest side of the fly ash pond.

Performed air tests on seam welds.

Geotechnology:

Performed ClosureTurf CQA activities. See CQA field sheets for additional information.

Observed geomembrane installation at southwest corner of Fly Ash Pond including air tests and repairs performed by GSI.



DAILY REPORT

DATE: August 24, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: JYG, AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

Arrive: 0645 Depart: 1045 Travel: 2.75 Total: 6.75 (-0.0) Lunch
AM Conditions: Heavy Rain AM Temperature: 61 F
PM Conditions: Light Rain PM Temperature: 63 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Personnel: Blankenship - 5; Geotechnology - 2

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: _____

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

[Signature]
Geotechnology, Inc. Rep.

8/24/2018
Date

[Signature]
Geotechnology, Inc. Engineer

8/27/18
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Rain-out

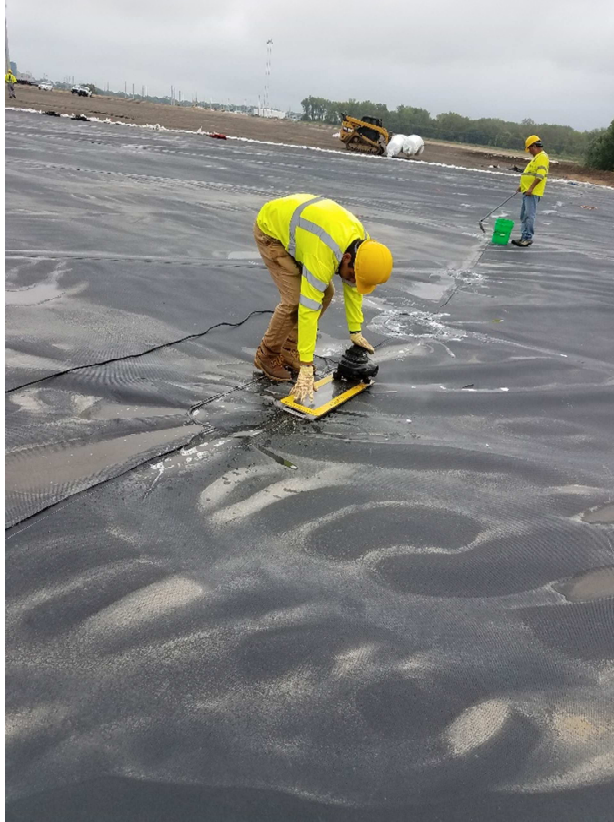
GSI:


Rain-out – not on site

Geotechnology:


Rain-out

PHOTOGRAPH LOG



Photograph 1  - Typical view of vacuum box testing at the Fly Ash Pond.



Photograph 2  - Typical view of turf installation, looking west.



Photograph 3 ▲ - Typical view of air testing at the Fly Ash Pond.



Photograph 4 ▲ - Typical view of geomembrane installation and testing, looking southwest.




Photograph 5 ▲ - View of anchor trench backfill, looking northwest.



Photograph 6 ▲ - Typical view of turf repair at the Fly Ash Pond, looking northwest.



Photograph 7  - Aerial view of Fly Ash Pond Closure Turf installation. Photograph provided by a representative of GSI.



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Missouri

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

DATE: September 6, 2018

SUBJECT: Summary Report for August 27, 2018 to September 1, 2018

PROJECT: Fly Ash Pond and Bottom Ash Pond Closures
Meredosia Power Station
Meredosia, Morgan County, Illinois
Geotechnology Project No. J024917.04

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

Weather

The weather was generally clear to rainy. Temperature (°F) lows ranged from 65 to 74°F, and temperature highs ranged from 69 to 91°F. Rain occurred on August 29 and September 1, 2018.

Construction Activities

Blankenship Construction Company graded borrow material placed in the Bottom Ash Pond floor, repaired the Fly Ash Pond drainage ditches, and backfilled the anchor trench for the Fly Ash Pond.

GSI placed ClosureTurf at the Fly Ash Pond.

Equipment and Personnel On-Site

Blankenship Construction Company had the following equipment on site: Two Caterpillar excavators, two Case tractors (tracked), three Smith pull-behind side-dump trailers, two Caterpillar bulldozers, one New Holland tractor with water wagon, one Holcomb scraper box, one Caterpillar skidsteer, one Godwin water pump, one 84-inch Sakai smooth drum roller, one John Deere tractor, One DD Grade King box blade, one set of pull-behind offset discs, and one Caterpillar mini-excavator.

Blankenship Construction Company generally had 5-11 personnel on site.

GSI generally had 12-14 personnel on site.

Meetings

A weekly progress meeting was held on Wednesday, August 29, 2018. Refer to the meeting minutes for additional information.

Photographs

A photograph log with selected photographs obtained while Geotechnology was on site is attached.

Materials

Borrow source soil was placed and graded on the floor of the Bottom Ash Pond.

ClosureTurf was placed on the Fly Ash Pond.

Testing/Sampling

GSI and Geotechnology performed quality control and construction quality assurance testing, respectively, of ClosureTurf placed on the Fly Ash Pond.

Signature of CQA Officer



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

Attachments: Daily Reports
Photograph Log

DAILY REPORTS



DAILY REPORT

DATE: August 27, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: JYG, AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1600 Travel: 0.5 Total: 9.25

AM Conditions: Clear AM Temperature: 74 F

PM Conditions: Clear PM Temperature: 91 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship, GSI, and Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: _____


Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Engineered turf installation at Fly Ash Pond southwest corner.

 8/27/2018
Geotechnology, Inc. Rep. Date

 9/4/2018
Geotechnology, Inc. Engineer Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

One smooth drum roller compacted the Fly Ash Pond.

One lull moved rolls of turf at the Fly Pond for GSI. One skidsteer assisted GSI.

One tractor with a water wagon maintained dust control around site.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

GSI:

Vacuum test extrusion welds at repairs locations.

Install engineered turf on the southwest side of the fly ash pond.

Repair engineered turf deficiencies.

Geotechnology:

Performed ClosureTurf CQA activities. See CQA field sheets for additional information.

Observe engineered turf installation on southwest end of fly ash pond. Turf was wedge welded/fused. Observed that turf trial seam test passed "visual criteria" on wedges #BR114 and wedge #JM120.



DAILY REPORT

DATE: August 28, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: JYG, AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1600 Travel: 0.5 Total: 9.25

AM Conditions: Clear AM Temperature: 74 F

PM Conditions: Clear PM Temperature: 96 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship, GSI, and Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: _____

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Engineered turf installation at Fly Ash Pond southwest corner.

[Signature] 8/28/2018
Geotechnology, Inc. Rep. Date

[Signature] 9/4/2018
Geotechnology, Inc. Engineer Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

One tractor with a water wagon maintained dust control around site.

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

GSI:

Vacuum test extrusion welds at repairs locations.

Install engineered turf on the southwest side of the fly ash pond.

Repair engineered turf deficiencies.

Geotechnology:

Performed ClosureTurf CQA activities. See CQA field sheets for additional information.

Observe engineered turf installation on southwest end of fly ash pond. Turf was wedge welded/fused. Observed that turf trial seam test passed "visual criteria" on wedges #BR114 and wedge #JM120.



DAILY REPORT

DATE: August 29, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: JYG, AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.0) Lunch

Arrive: 0645 Depart: 1115 Travel: 0.5 Total: 5.0

AM Conditions: Raining AM Temperature: 67 F

PM Conditions: Overcast PM Temperature: 69 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship, GSI, and Geotechnology

Visitors: _____


MATERIALS USED, DELIVERIES, AND TESTING:


Materials Used: _____

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

 8/29/2018
Geotechnology, Inc. Rep. Date

 9/4/2018
Geotechnology, Inc. Engineer Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

One pump moved water from the Bottom Ash Pond to the coal yard runoff area.

Blankenship held the weekly coordination meeting at 0900. See meeting minutes for more details.

GSI:

Attended the weekly coordination meeting.

Rained out onsite.

Geotechnology:

Attended the weekly coordination meeting.

Rained out onsite.



Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 08-22-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology Inc., GSI, and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Mike W., Charles H., Roger Z., Randy B., Steve P., Pat B.,
BCCO- Rob F., Garrett B.
OTHERS- Geotechnology Inc.- Jessie G.
OTHERS- Geo-synthetics Systems- Dave Hina, (Dave C., ph.)

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

1. Safety.
 - a. Safety Minute: Garrett B- Slips, Trips, Falls and Muddy Conditions.
 - b. Next week's volunteer: Rob F.
2. Contractor Progress Report.
 - a. Water pumping of the bottom ash pond has continued, but has continued to be a minimal amount, usually only a few hours per day. As of 8/28/18 the pump was shutdown, disassembled, and removed from the BAP pumping area to allow for final backfill. The river did rise earlier this week to 4.44' for 8/25/18, but dropped quickly back down to 2.55 as of 8/28. The forecasted levels show the elevation rising to 4.8' about the 1st of September. The site had rain last Thursday night/Friday morning that shut down all work on Friday, Saturday, and slowed operations on Monday. Rainfall was about 3.5" total over Thursday/Friday. The site had an additional 2" of rain over night ahead of this meeting, shutting down all operations today, 8/29/18. This rain caused several erosions, specifically in the downlets of the FAP where the berm is sand, and a few on the BAP slopes where soil is present. BCCO will repair these areas as soon as weather allows. BCCO is also setting the pump back up to continue water pumping. From this rain event.



- b. Mobilization; BCCO de-mobilized a set of side dump trailers and a Case Tractor from site.
- c. Soil Backfill of the BAP is ongoing. Backfilling operations continued daily through Thursday but we shut down on Friday the 24th and Saturday the 25th. They resumed Monday after the site had time to dry. They are shut down again today due to rainfall. BCCO will most likely have a couple days of hauling in soil to repair erosions in the BAP. There was one major wash out on the south slope, but once the import soil is complete and that area is graded, Rob F. believes this will alleviate these problems. Welty Trucking has been running 13-14 tandems for import.
- d. FAP grading is complete and the survey has been performed and accepted. The operations for BCCO in the FAP have consisted of continued smooth drum rolling, anchor trench backfill, anchor trench rip rap placement, and erosion repair in the unlined downlets. All anchor trench is excavated and ready for liner except for the eastern limit.
- e. The 3.5" rain did use the outlet pipe in the southern end of the east stockpile area.
- f. BCCO installed the soil protection layer on the BAP roadway surface on top of the geomembrane last Thursday. Work was stopped on this area on Friday and Monday due to rainfall, but rock installation started Tuesday. Progress was again halted today due to rainfall, but with good weather, BCCO expects to have the road completed with 3-4 good weather working days.
- g. GSI has continued liner installation on the FAP, minus shut-downs on last Friday and Saturday. GSI has worked 8-hour days on days when the heat indices were above triple digits. Dave H. stated that the deployed liner is all covered with turf and they are ready to deploy liner again. GSI is also shut down today due to rainfall.

3. Contractor's Weekly Work Plan

- a. Update: Rob F.
 - i. Continue pumping effort only as needed. BCCO will monitor the river levels and precipitation in the area, and pump any areas as needed.
 - ii. Continue backfill in the BAP. This is dependent on weather and pumping efforts. BCCO will continue to condition the soil to promote drying placement. This may possibly be complete in another 4-6 working days.



- iii. Backfill over the East Stockpile Area. This will commence once the soil placement in the BAP is complete. BCCO expects this to take approximately 2 weeks.
- iv. Liner preparation at the Fly Ash pond will continue as GSI needs, including additional anchor trench, anchor trench backfills, rip rap placement, and repair smooth drumming.
- v. The BAP Oil Dock Berm liner has to have sand and armor fill placed on it, as well as the soil, rock, and rip rap components by BCCO. As noted above, BCCO is in process of placing rock on the BAP roadway.
- vi. The FAP liner placement is underway and will continue as possible. Dave C. stated that GSI would like to start sand infill on the week of Sept. 10th. They will begin mobilizing sand equipment prior to that. In the event that GSI needs to increase the sand spreading operation on the FAP, they have been discussing bringing in a second spreader unit. Total sand installation should take 20 working days, which is around 1.5-1.75 acres per day. Dave H. is comfortable with staying ahead of the sand crew at that rate. Dave C. is checking on the scheduling of the sand blower truck and is going to get back to the team ASAP. The sand infill plan from GSI should be ready this week.

4. Schedule Forecast

- a. Two Week Look Ahead.
 - i. Schedule appears to generally be in line with onsite activities.
 - ii. With good weather days, Dave H. is confident in meeting the October 10th completion date.
 - iii. Mike W. is adding a sand installation specific item in the schedule.
 - iv. Mike W. is extending the FAP rip rap installation out to at least the liner completion date.

5. New Items/Miscellaneous

- a. Geotechnology has the new wells installed.
- b. Mike said that he does have the reply on the seed mix back to him, and he will provide it shortly to BCCO.



- c. Mike asked that Garrett get Geotechnology involved regarding the fabric under the CA6 toe on the BAP roadway. Garrett will follow up with an email to the group.
 - d. Garrett to provide a mowing price to Mike when possible.
 - e. The Western Asphalt test results were provided to GSI by BCCO and Geotechnology. It was agreed they were not passing and GSI would proceed with Otter Creek sand and gravel.
6. Action Items
- a. BCCO Items:
 - i. BCCO to continue submittals. Update: Garrett to check on prior fencing submittals. Garrett to follow up with Geotechnology on the CA6 fabric question for the BAP roadway. {Status- Open}
 - b. Ameren Items:
 - i. Mike W. to review additional/extra items pricing as presented by GB in a separate email. {Status- Open}
 - ii. Return reply on the seeding submittal sent on 8/24/18. {Status- Open}
7. Questions, Comments, Open Discussion
- a. Update

The next progress meeting for this project will be held on September 5th at 9:00 a.m.



DAILY REPORT

DATE: August 30, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: JYG, AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.0) Lunch

Arrive: 0645 Depart: 1015 Travel: 0.5 Total: 4.0

AM Conditions: Clear AM Temperature: 67 F

PM Conditions: Clear PM Temperature: 69 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship, GSI, and Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: _____

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:


Geotechnology, Inc. Rep.

8/30/2018
Date


Geotechnology, Inc. Engineer

9/4/2018
Date



SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Called off due to wet conditions.

GSI:

Called off due to wet conditions.

Geotechnology:

Called off due to wet conditions.



DAILY REPORT

DATE: August 31, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: JYG, AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1345 Travel: 0.5 Total: 7.0

AM Conditions: Clear AM Temperature: 65 F

PM Conditions: Clear PM Temperature: 80 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship, GSI, and Geotechnology

Visitors: _____

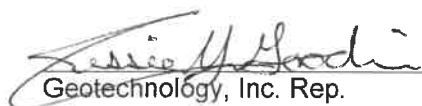
MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: _____

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:


Geotechnology, Inc. Rep.

8/31/2018
Date


Geotechnology, Inc. Engineer

9/4/2018
Date



SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Worked on completing the Bottom Ash Pond.

GSI:

Filled sandbags until canceling work in the afternoon due to forecast weather.

Geotechnology:

Stayed on site at GSI's request until GSI canceled work in the afternoon due forecast weather.



DAILY REPORT

DATE: Sept. 1, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: JYG, AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.0) Lunch

Arrive: 0645 Depart: 1045 Travel: 2.5 Total: 6.5

AM Conditions: Light Rain AM Temperature: 73 F

PM Conditions: Light Rain PM Temperature: 73 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship, GSI, and Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: _____

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:


Geotechnology, Inc. Rep.

9/1/2018
Date


Geotechnology, Inc. Engineer

9/4/2018
Date



SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Called off due to wet conditions.

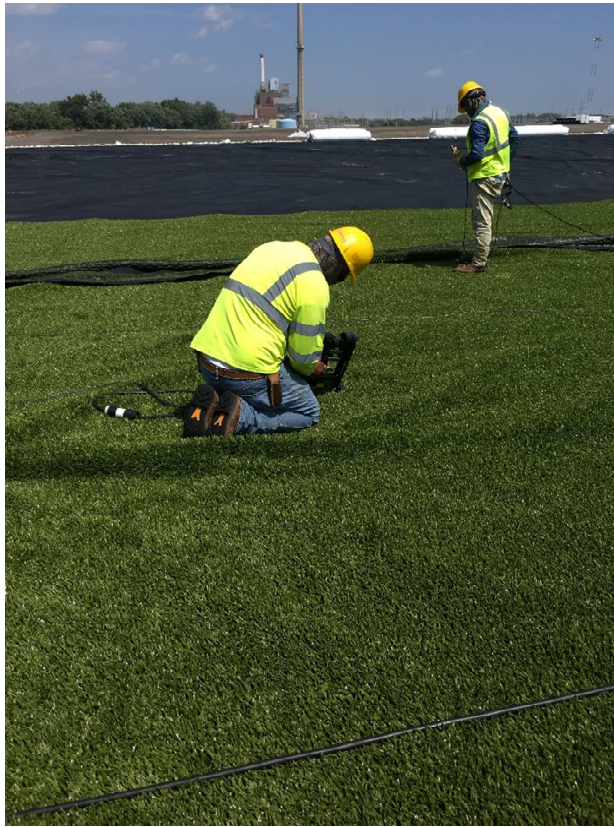
GSI:


Called off due to wet conditions.

Geotechnology:


Called off due to wet conditions.

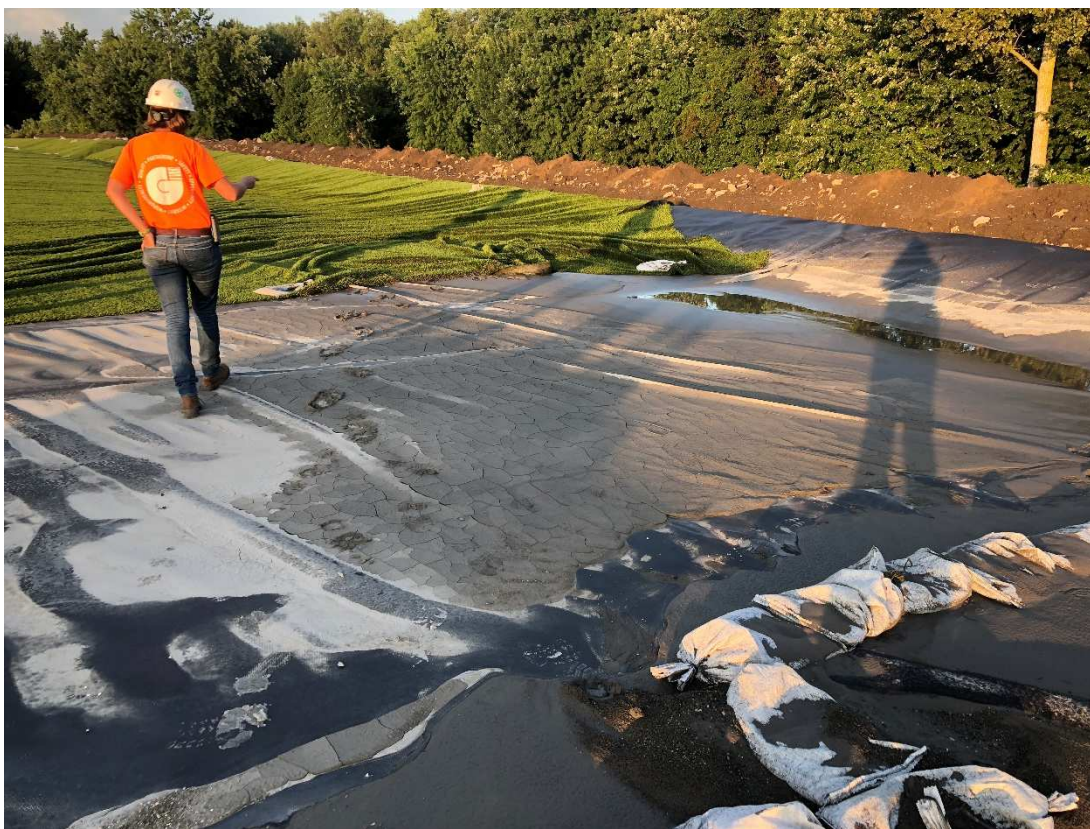
PHOTOGRAPH LOG



Photograph 1  - Typical view of turf component repair at the Fly Ash Pond.



Photograph 2  - Typical view of turf installation, looking west.



Photograph 3 ▲ - Typical view of minor rain damage at the Fly Ash Pond.



Photograph 4 ▲ - Typical view of Bottom Ash Pond after the rains, looking north.

Photographs taken by multiple Geotechnology, Inc. representatives August 27-September 1, 2018.



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Missouri

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

DATE: September 10, 2018

SUBJECT: Summary Report for September 4, 2018 to September 7, 2018

PROJECT: Fly Ash Pond and Bottom Ash Pond Closures
Meredosia Power Station
Meredosia, Morgan County, Illinois
Geotechnology Project No. J024917.04

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

Weather

The weather was generally clear to rainy. Temperature (°F) lows ranged from 58 to 72°F, and temperature highs ranged from 72 to 92°F. Rain occurred on September 6-8, 2018.

Construction Activities

Blankenship Construction Company graded borrow material placed in the Bottom Ash Pond floor and former fly ash stockpile, and repaired the Fly Ash Pond drainage ditches.

GSI placed ClosureTurf at the Fly Ash Pond.

Equipment and Personnel On-Site

Blankenship Construction Company had the following equipment on site: Two Caterpillar excavators, two Case tractors (tracked), three Smith pull-behind side-dump trailers, two Caterpillar bulldozers, one New Holland tractor with water wagon, one Holcomb scraper box, one Caterpillar skidsteer, one Godwin water pump, one 84-inch Sakai smooth drum roller, one John Deere tractor, One DD Grade King box blade, one set of pull-behind offset discs, and one Caterpillar mini-excavator.

Blankenship Construction Company generally had 5-11 personnel on site.

GSI generally had 12-14 personnel on site.

Meetings

A weekly progress meeting was held on Wednesday, September 5, 2018. Refer to the meeting minutes for additional information.

Photographs

A photograph log with selected photographs obtained while Geotechnology was on site is attached.

Materials

Borrow source soil was placed and graded on the floor of the Bottom Ash Pond and on the former fly ash stockpile.

ClosureTurf was placed on the Fly Ash Pond.

Testing/Sampling

GSI and Geotechnology performed quality control and construction quality assurance testing, respectively, of ClosureTurf placed on the Fly Ash Pond.

Signature of CQA Officer



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

Attachments: Daily Reports
Photograph Log

DAILY REPORTS



DAILY REPORT

DATE: September 4, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: JYG
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1715 Travel: 0.5 Total: 10.5
AM Conditions: Clear AM Temperature: 80 F
PM Conditions: Clear PM Temperature: 95 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:


Contractors: Blankenship, GSI
Personnel: _____
Visitors: _____


MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: quarry borrow material, geosynthetics
Deliveries: _____
Testing: ClosureTurf CQA testing

CONSTRUCTION SITE LOCATIONS:

ClosureTurf installation at the F.A. Pond, Bottom Ash Pond floor backfill, F.A. Pond downchute repairs.


Geotechnology, Inc. Rep. 9/4/2018
Date


Geotechnology, Inc. Engineer 9/10/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

One smooth drum roller and one tractor with a scraper box compacted the Fly Ash Pond.

One skidsteer moved rolls of turf at the BA Pond turnaround for GSI and repaired subgrade.

Various equipment including two excavators and one tractor with a side-dump trailer repaired downchutes at the Fly Ash Pond.

Various equipment placed and graded quarry borrow material at the Bottom Ash Pond and the former Fly Ash Stockpile.

One tractor with a water wagon maintained dust control around site.

GSI:

Removed ClosureTurf system to allow Blankenship to repair an eroded downchute that was previously covered with ClosureTurf, and repaired the ClosureTurf system after the downchute repair was completed.

Installed HDPE geomembrane on a portion of the western half of the Fly Ash Pond.

Geotechnology:

Performed ClosureTurf CQA activities. See CQA field sheets for additional information.

Panels 83 through 94 of HDPE geomembrane were installed on western half of the Fly Ash Pond.



DAILY REPORT

DATE: Sept 5, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: SWG, KLH
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 1015 Depart: 1715 Travel: 3.0 Total: 9.5

AM Conditions: Clear AM Temperature: 70 F

PM Conditions: Clear PM Temperature: 90 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship, GSI, and Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: _____

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

HDPE installation over Fly Ash Pond.

Stephen Grib 9/5/18
Geotechnology, Inc. Rep. Date

[Signature] 9/10/2018
Geotechnology, Inc. Engineer Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

One smooth drum roller compacted the Fly Ash Pond.

One lull moved rolls of turf at the Fly Ash Pond for GSI. One skidsteer assisted GSI.

One tractor with a water wagon maintained dust control around site.

GSI:

Installed HDPE geomembrane over southwest corner of the Fly Ash Pond.

Geotechnology:

Performed ClosureTurf CQA activities. See CQA field sheets for additional information.

Ten destructs mailed to TRI for testing by ASTM D 6392.

Developed 3 monitoring wells in preparation for groundwater sampling by others.



Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 09-05-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology Inc., GSI, and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Mike W., Randy B., Steve P., Pat B., Mike L., (Gail G. ph.)
BCCO- Rob F., Garrett B.
OTHERS- Geotechnology Inc.- (Anna S. ph.)
OTHERS- Geo-synthetics Systems- Dave Hina, (Dave C., ph.)

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

1. Safety.
 - a. Safety Minute: Rob F.- Job site safety is Everyone's Responsibility.
 - b. Next week's volunteer: Dave H.
 - c. Mike L. asked the group if any discussion or preparation had been made in the event that Air MedEvac services are needed. At Meredosia all emergency services are routed through 911 local emergency call and they can contact Air MedEvac if needed.
2. Contractor Progress Report.
 - a. Water pumping of the bottom ash pond continued after last week's rain events, but as of 9/4/18 the BAP soil backfill is complete as far as import soil and the pump was disassembled. The river rose earlier this week to 7.81' for 8/30/18, but dropped down to 4.72 as of 9/4. The forecasted levels show the elevation rising to 6.5' about the 9th of September. Increased river levels should play slightly less of a factor now that soil import is complete, but favorable levels are preferred while final grading and seeding is underway. The pump will be removed before the end of today. Garrett B. discussed that BCCO may try to utilize small ditching implements to provide better drainage of the flat BAP, the group will discuss this again next week.



- b. Mobilization; BCCO will most likely be mobilizing a front-end loader early next week, and demobilizing the off-road forklift.
- c. Soil Backfill of the BAP is complete as far as imported soil. Backfilling operations continued daily through this past Tuesday. BCCO lost 2 days last week due to rainfall. The BAP will require a few days of final grading and placement of any available topsoil that BCCO was able to salvage/segregate during the import operations.
- d. Operations for BCCO in the FAP have consisted of continued smooth drum rolling and erosion repair in the unlined downlets. The liner system had to be removed temporarily in an area to repair an area where water caused a major erosion under the liner near a downlet. BCCO has been working with GSI to help liner operations continue as much as possible.
- e. BCCO installed the soil protection layer on the BAP roadway surface on top of the geomembrane a couple weeks ago. Work has been stopped on this area due to rainfall, but rock installation will continue when possible. BCCO coordinated with Geotechnology and Ameren to determine the necessary measures needed for protecting the liner system under the CA6 roadway toe, and at this time plans are to install a double layer of Mirafi 160N.
- f. GSI has attempted continued liner installation on the FAP but has suffered 4 lost days from the last rain event.
- g. Dave C. plans on mobilizing the sand infill crew early to mid-next week. The BAP sand truck is scheduled for the week of the 17th or the 24th. Dave C. is hopeful that once the BAP sand infill is complete the ArmorFill crew can follow closely behind. Dave C. also believes that the sand infill crew will most likely catch the liner deployment crew due to rain delays.

3. Contractor's Weekly Work Plan

- a. Update: Rob F.
 - i. Dis-continue the pumping effort. BCCO will monitor the river levels and precipitation in the area, and pump any areas as needed.
 - ii. Backfill over the East Stockpile Area. This started on 9/4/18 now that the soil placement in the BAP is complete.
 - iii. Liner preparation at the Fly Ash pond will continue as GSI needs, including additional anchor trench, anchor trench backfills, rip rap placement, and repair smooth drumming.



- iv. The BAP Oil Dock Berm liner has to have sand and armor fill placed on it, as well as the soil, rock, and rip rap components by BCCO. As noted above, BCCO is in process of placing rock on the BAP roadway when possible.
- v. The FAP liner placement is underway and will continue as possible. The sand infill crew will follow behind the geomembrane placement. GSI stated that the sand crew should be mobilizing next week, with plans to start the same week.

4. Schedule Forecast

a. Two Week Look Ahead.

- i. Mike W. added BAP Liner Work, BAP sand placement, FAP sand placement, BAP Armor Fill placement, and FAP Armor Fill placement to the schedule.
- ii. BAP sand placement will remain at Sept. 17th.
- iii. FAP sand placement will begin on 9/12, completion of 10/5 will remain for now.
- iv. BAP ArmorFill will move up closer to the backend of the BAP sand, and will shorten by 1-2 days.
- v. FAP ArmorFill duration may be shortened to 4-5 days, assuming the whole area is ready.
- vi. The dewatering system removal will be closed on 9/5/18.
- vii. Liner work on the FAP will be pushed back to 10/17/18.
- viii. Depending on final BAP sand installation, the seeding, Rip Rap, and fencing items may need to be adjusted in the next coming weeks.

5. New Items/Miscellaneous

- a. Jake Williams with Collins and Hermann will be onsite today to review the fencing installation. Mike W., Rob F., Jake W., and Garrett B., will review the fencing layout for final installation.
- b. Mike W. and Garrett B. will have a follow up discussion regarding the sediment log installation and quantity.
- c. Rob mentioned that the BAP rock roadway may need some culverts to drain the flat area on the east side of the BAP to the coal yard run off area.



- d. Mike requested that BCCO install some BMP's at the east stockpile area prior to the coming rain event.
 - e. Mike mentioned that the incoming soil in the East Stockpile area appeared to be mostly clay, and recommended that BCCO use amendments if necessary to help vegetation.
6. Action Items
- a. BCCO Items:
 - i. BCCO to continue submittals. Update: The seed mix as submitted by BCCO has been approved by Ameren. The next upcoming submittals should include HDPE and Turf Closeout submittals, and Fencing if any are still needed. Garrett provided Mike W. the fencing submittal from earlier in the project. If there are any other upcoming items not listed here, please let Garrett know. {Status- Open}
 - b. Ameren Items:
 - i. Mike W. to review additional/extra items pricing as presented by GB in a separate email. {Status- Open}
 - ii. Return reply on the seeding submittal sent on 8/24/18. Mike W. returned this to BCCO as approved. {Status- Closed}
7. Questions, Comments, Open Discussion
- a. Update

The next progress meeting for this project will be held on September 12th at 9:00 a.m.



DAILY REPORT

DATE: Sept 6, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: SWG, KLH
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.0) Lunch

Arrive: 0645 Depart: 0945 Travel: 0.5 Total: 3.5

AM Conditions: Rain AM Temperature: 72 F

PM Conditions: _____ PM Temperature: _____

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship, GSI, and Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: _____

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Rained out. Work was not performed.

Stephen Grieb 9/6/18
Geotechnology, Inc. Rep. Date

David M. Smith 9/10/2018
Geotechnology, Inc. Engineer Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Rained out. Work was not performed.

GSI:

Rained out. Work was not performed.

Geotechnology:

Rained out. Work was not performed.



DAILY REPORT

DATE: Sept 7, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: SWG, KLH
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.0) Lunch

Arrive: _____ Depart: _____ Travel: 2.5 Total: 2.5

AM Conditions: Rain AM Temperature: 70 F

PM Conditions: _____ PM Temperature: _____

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship, GSI, and Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: _____

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Rained out. Work was not performed.

Stephen G. Smith 9/7/18
Geotechnology, Inc. Rep. Date

Samuel Smith 9/10/2018
Geotechnology, Inc. Engineer Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Rained out. Work was not performed.

GSI:

Rained out. Work was not performed.

Geotechnology:

Communicated via phone with GSI and Blankenship regarding site condition and activities. Per communications, work cancelled for the day due to rain. Work was not performed.

PHOTOGRAPH LOG



Photograph 1 ▲ - View of downchute erosion under the ClosureTurf at the Fly Ash Pond, looking north.



Photograph 2 ▲ - View of downchute erosion repair at the Fly Ash Pond, looking northwest.



Photograph 3 ▲ - View of geomembrane repair at the eroded downchute, looking northwest.



Photograph 4 ▲ - Typical view of subgrade repair activities at the Fly Ash Pond, looking southeast.



Photograph 5 ▲ - Typical view of liner cleaning activities prior to additional geomembrane installation, looking northeast.



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Missouri

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

DATE: September 18, 2018

SUBJECT: Summary Report for September 10, 2018 to September 15, 2018

PROJECT: Fly Ash Pond and Bottom Ash Pond Closures
Meredosia Power Station
Meredosia, Morgan County, Illinois
Geotechnology Project No. J024917.04

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

Weather

The weather was generally clear. Temperature (°F) lows ranged from 50 to 65°F, and temperature highs ranged from 78 to 91°F.

Construction Activities

Blankenship Construction Company constructed the Bottom Ash Berm turnaround road and prepared the Fly Ash Pond subgrade for HDPE geomembrane installation.

GSI placed ClosureTurf at the Fly Ash Pond.

Equipment and Personnel On-Site

Blankenship Construction Company had the following equipment on site: One Caterpillar excavator, two Case tractors (tracked), three Smith pull-behind side-dump trailers, two Caterpillar bulldozers, one New Holland tractor with water wagon, one Holcomb scraper box, one Caterpillar skidsteer, one 84-inch Sakai smooth drum roller, one John Deere tractor, One DD Grade King box blade, one set of pull-behind offset discs, and one Caterpillar mini-excavator.

Blankenship Construction Company generally had 9 personnel on site.

GSI generally had 12-14 personnel on site.

Meetings

A weekly progress meeting was held on Wednesday, September 12, 2018. Refer to the meeting minutes for additional information.

Photographs

A photograph log with selected photographs obtained while Geotechnology was on site is attached.

Materials

Sand infill was transported to site for use in the ClosureTurf system.

ClosureTurf was placed on the Fly Ash Pond.

Testing/Sampling

GSI and Geotechnology performed quality control and construction quality assurance testing, respectively, of ClosureTurf placed on the Fly Ash Pond.

Signature of CQA Officer



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

Attachments: Daily Reports
Photograph Log

DAILY REPORTS



DATE: September 10, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: SWG, KLH
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 1000 Depart: 1700 Travel: 3.0 Total: 9.5

AM Conditions: Clear AM Temperature: 60 F

PM Conditions: Clear PM Temperature: 78 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI
Personnel: Blankenship, GSI, and Geotechnology
Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: _____
Deliveries: _____
Testing: _____

CONSTRUCTION SITE LOCATIONS:

HDPE detail over Fly Ash Impoundment.

Stephen W Graham 09/10/2018
Geotechnology, Inc. Rep. Date


Geotechnology, Inc. Engineer 9/18/18
Date



DAILY REPORT

DATE: September 10, 2018

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Partial rainout. Performed site repairs after rain events.

GSI:

Detail work of HDPE at west side of Fly Ash Pond.

Three extrusion welders worked on repairs.

Vacuum box tested repairs.

Geotechnology:

Performed HDPE CQA activities.

Nine destructive samples collected for lab testing.

Three field destructive tests failed and required additional delineation.

See field sheets for details.



DAILY REPORT

DATE: Sept 11, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: SWG, KLH
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0700 Depart: 1700 Travel: 0.5 Total: 10.0

AM Conditions: Clear AM Temperature: 53 F

PM Conditions: Clear PM Temperature: 80 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship, GSI, and Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Engineered turf

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

ClosureTurf installation at Ash Pond.

Stephen W Graham 09/11/2018
Geotechnology, Inc. Rep. Date


Geotechnology, Inc. Engineer 9/18/18
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

One smooth drum roller compacted the Fly Ash Pond.

GSI:

Installed engineered turf on the Fly Ash Pond.

Repaired engineered turf deficiencies.

Geotechnology:

Performed ClosureTurf CQA activities.

Observe ClosureTurf engineered turf installation on the Fly Ash Pond. Engineered turf was wedge welded/fused. Observed that turf trial seam test passed "visual criteria" on wedge #BR2 and wedge #JM1.

Destruct D42-A failed laboratory testing. Send new Destruct D42-AA from a location ten feet south.



DAILY REPORT

DATE: Sept 12, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: SWG, KLH
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0700 Depart: 1700 Travel: 0.5 Total: 10.0

AM Conditions: Clear AM Temperature: 53 F

PM Conditions: Clear PM Temperature: 80 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship, GSI, and Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Engineered turf

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

ClosureTurf installation at Fly Ash Pond.

Stephen W Graham 09/12/2018
Geotechnology, Inc. Rep. Date

 9/18/18
Geotechnology, Inc. Engineer Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

One smooth drum roller compacted the Fly Ash Pond.

The weekly meeting was held on site at 0900. See the meeting minutes for additional information.

GSI:

Installed engineered turf on the Fly Ash Pond.

Repair engineered turf deficiencies.

Placed infill sand in engineered turf.

Geotechnology:

Performed ClosureTurf CQA activities.

Observed engineered turf installation on the Fly Ash Pond. Engineered turf was wedge welded/fused. Observed that turf trial seam test passed "visual criteria" on wedges #BR2 and wedge #JM1.

Destruct D42-AA failed laboratory testing. Send new Destruct D42-AAA ten feet south.

Performed CQA activities for sand infill placement.



Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 09-12-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology Inc., GSI, and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Mike W., Randy B., Steve P., Pat B., (Gail G. ph.)
BCCO- Ross W., Garrett B.
OTHERS- Geotechnology Inc.-
OTHERS- GSI- Dave Hina, Brad C., (Dave C., ph.)

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

1. Safety.
 - a. Safety Minute: Dave H.- Cell Phone Safety: Cell phone use on a jobsite without authorization is never ok. All personnel need to be extremely cautious using a cell phone, especially near moving equipment. Cell phone use while operating any piece of machinery or any vehicle is strictly prohibited.
 - b. Next week's volunteer: Garrett B.
2. Contractor Progress Report.
 - a. The river rose earlier this week to 11.77' for 9/11/18, and will remain there for another day or so. The forecasted levels show the elevation dropping slowly to 6.3' by the 18th of September. The rain event last week totaled up to right at 3" over Thursday, Friday, and Saturday. This caused shutdowns for Blankenship and GSI on Thursday, Friday, and Saturday, and BCCO was also at partial production on Monday the 10th as well.
 - b. Mobilization; BCCO has demobilized some additional pipe from site along with some other minor items such as spare excavator buckets, tires and rims for side dumps, and other spare parts. BCCO also mobilized a CAT 908 front end loader to site and demobilized a four-wheel drive forklift. BCCO de-mobilized a CAT 330 excavator from site this week as well.



- c. Operations for BCCO in the FAP have consisted of continued smooth drum rolling and erosion repair in the unlined downlets. The liner system had to be removed temporarily in an area to make a repair where water caused a major erosion under the liner near a downlet. BCCO has been working with GSI to help liner operations continue as much as possible. GSI helped BCCO place temporary liner in the downlet areas to attempt to limit the amount of erosion and scouring in the downlet area due to rainfall. It appears that this was somewhat helpful.
- d. BCCO continued to import soil to the East Stockpile Area last week, but was shut down from Thursday to Monday due to rainfall. BCCO was able to continue on this work on Tuesday the 11th and estimates that within another 5-7 days that this import could be completed.
- e. The BAP floor has some ponding water present from the last rain event. The river is still elevated, causing drain off to take some time. Garrett B. again discussed ditching this area to help with drainage, but this plan was tabled for discussion again next week.
- f. BCCO continued installing rock on the BAP roadway surface last week with the rock that was currently imported to site. BCCO has not been able to complete this first lift due to last week's additional rainfall, but hopes to be able to complete this work this week with a favorable forecast.
- g. GSI's sand subcontractor mobilized sand spreading equipment to site on 9/10 and was onsite on 9/11. The plan is to begin sand spreading on 9/12. Sand import to site was attempted on 9/11 but was too wet to continue, so attempts will be made to import again on the 12th. Brad C. plans on calibrating the tractor and spreader today, the 12th, and will start spreading sand immediately afterward.
- h. GSI has attempted continued liner installation on the FAP but has suffered 3 lost days from the last rain event (Thursday, Friday, and Saturday). GSI was able to continue with turf on Monday due to having a large amount of 40 mil down and prepared for turf.

3. Contractor's Weekly Work Plan

- a. Update: Rob F.
 - i. Dis-continue the pumping effort. BCCO will monitor the river levels and precipitation in the area, and pump any areas as needed.
 - ii. Backfill over the East Stockpile Area. This was able to continue on 9/11/18 after the site had time to dry after last week's rain event. BCCO also had to dewater the borrow area that was full of water as well. BCCO hopes to have this work



complete in another 5-7 days. BCCO also finish graded the slopes of the BAP that are going to be seeded. These areas may need touched up prior to seeding, depending on rain events and seeding schedule.

- iii. Liner preparation at the Fly Ash pond will continue as GSI needs, including additional anchor trench, anchor trench backfills, rip rap placement, and repair smooth drumming. GSI and Ross W. discussed the need to try and water the ash ahead of the liner deployment. The ash dust caused some seaming issues during the last deployment phase, so BCCO will attempt to water the ash ahead of the 40 mil to create a "crust" or sealed surface.
- iv. The BAP Oil Dock Berm liner has to have sand and armor fill placed on it, as well as the soil, rock, and rip rap components by BCCO. As noted above, BCCO is in process of placing rock on the BAP roadway when possible. The group discussed and agreed that the rip rap placement on the BAP toe could proceed after the sand was in place and did not need to wait for the ArmorFill.
- v. The FAP liner placement is underway and will continue as possible. Dave H. plans on starting to deploy 40 mil again on Friday, and will lay material for 2 days, then detail, then resume turf.
- vi. Sand infill is set to begin on 9/12 and will continue as possible. Brad C. anticipates catching the Turf deployment by Friday, at which point the sand deployment will cease until sufficient liner and turf is placed for sand spreading to start again. Brad C. thinks 2-4 acres per day is possible. Brad C. will run quality control behind the sand spreader, making sure the half inch thickness is achieved, and hand brushing any spots necessary. Dave C. stated that the arrival of sand blower truck for the BAP could possibly be next week, but more than likely the week of the 24th. The sand sweeper should arrive next week. Discussing the sweeping of the sand on the BAP slopes, Brad C. assumes that it will mostly be hand sweeping or possibly gas-powered brooms. The ArmorFill spraying on the BAP slopes will be the first spraying to occur, after the blow truck is done.

4. Schedule Forecast

a. Two Week Look Ahead.

- i. Schedule appears to generally be in line with onsite activities.
- ii. Armor Fill delivery should occur in the next couple weeks. Will arrive in chemical totes with pallet bottoms.



- iii. The completion of the dewatering system removal will move up to the 7th or 8th of September.
- iv. The FAP liner installation lost 3 days due to rain events.
- v. The FAP sand placement start date will be moved to the 12th of September.
- vi. Soil import completion will move to the 28th of September.
- vii. Fencing is currently scheduled for September 24th.

5. New Items/Miscellaneous

- a. Jake Williams with Collins and Hermann was onsite last week to review the fencing installation. Mike W. and Rob F. were able to review the job with Jake to allow him to measure layout and provide updated pricing, which has been done. Garrett B. spoke with Mike W. about the fence pricing earlier this week, and as of now the install is set to proceed on or near September 24th.
- b. The group discussed the ArmorFill applicator truck and plan. The truck is a large on-road truck equipped with 48" flotation tires in the front and 66" flotation tires on the rear. The truck will do most of the spray application from the tower sprayer (cannon) equipped with a nurse hose in the event a remote hose is needed. Brad C. hopes to not use the hose reel, which requires a large amount of wash out. Brad will need the inner limit of the Armor Fill spray area on the FAP delineated prior to starting the spray application. This will help eliminate over/under spray as the ditch area is not as defined now that the site is lower than originally designed. Brad has soft cones to use for alignment once the limit is laid out by survey.

6. Action Items

- a. BCCO Items:
 - i. BCCO to continue submittals. Update: The next upcoming submittals should include HDPE and Turf Closeout submittals, and Fencing if any are still needed. Garrett provided Mike W. the fencing submittal from earlier in the project. If there are any other upcoming items not listed here, please let Garrett know. {Status- Open}
 - ii. Garrett B. needs to prepare and submit mowing prices to Mike W. for the FAP and BAP areas, as well as a recently requested price for some heavier brush on the Old Closed East Ash Pond. {Status- Open}



- b. Ameren Items:
 - i. Mike W. to review additional/extra items pricing as presented by GB in a separate email. {Status- Open}
 - ii. Return reply on the seeding submittal sent on 8/24/18. Mike W. returned this to BCCO as approved. {Status- Closed}
- 7. Questions, Comments, Open Discussion
 - a. Update

The next progress meeting for this project will be held on September 19th at 9:00 a.m.



DAILY REPORT

DATE: Sept 13, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: SWG, KLH
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0700 Depart: 1700 Travel: 0.5 Total: 10.0

AM Conditions: Clear AM Temperature: 60 F

PM Conditions: Clear PM Temperature: 80 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship, GSI, and Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Engineered turf


Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

ClosureTurf installation at the Fly Ash Pond. Rock road Installation at BA turnaround.

Stephen W Graham 09/13/2018
Geotechnology, Inc. Rep. Date

 9/18/18
Geotechnology, Inc. Engineer Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

One smooth drum roller compacted the Ash Pond.

Spread infill sand on engineered turf.

Constructed rock road over BA turnaround.

GSI:

Installed engineered turf on Ash Pond.

Repaired engineered turf deficiencies. (43 areas from previous day repaired).

Infill sand in Closure turf.

Geotechnology:

Performed ClosureTurf CQA activities.

Observe engineered turf installation on the Fly Ash Pond. Engineered turf was wedge welded/fused. Observed that turf trial seam test passed "visual criteria" on wedges #BR2 and wedge #JM1.

Destruct D42-AAA passed laboratory testing.

Performed CQA activities for sand infill placement.



DAILY REPORT

DATE: Sept 14, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: SWG, KLH
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0700 Depart: 1700 Travel: 0.5 Total: 10.0

AM Conditions: Clear AM Temperature: 60 F

PM Conditions: Clear PM Temperature: 90 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship, GSI, and Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: HDPE geomembrane

Deliveries: Sand for engineered turf infill

Testing: _____

CONSTRUCTION SITE LOCATIONS:

ClosureTurf installation at the Fly Ash Pond. Rock road installation at BA turnaround.

Stephen W Graham 09/14/2018
Geotechnology, Inc. Rep. Date

 9/18/18
Geotechnology, Inc. Engineer Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

One smooth drum roller compacted the Fly Ash Pond.

Spread infill sand on ClosureTurf.

Constructed rock road over BA turnaround.

GSI:

HDPE geomembrane installation.

Infill sand placement in engineered turf.

Geotechnology:

Performed ClosureTurf CQA activities.

Mail destructs D49 through D55 for laboratory testing.

Performed CQA activities for sand infill placement.



DAILY REPORT

DATE: Sept 15, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: SWG, KLH
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0700 Depart: 1500 Travel: 0.5 Total: 8.0

AM Conditions: Clear AM Temperature: 60 F

PM Conditions: Clear PM Temperature: 90 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship, GSI, and Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: HDPE geomembrane

Deliveries: Sand for engineered turf infill

Testing: _____

CONSTRUCTION SITE LOCATIONS:

ClosureTurf installation at Fly Ash Pond. Rock road installation at BA turnaround.

Stephen W Graham 09/15/2018
Geotechnology, Inc. Rep. Date

 9/18/18
Geotechnology, Inc. Engineer Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

One smooth drum roller compacted the Ash Pond.

Constructed rock road over BA turnaround.

GSI:

Installed HDPE geomembrane.


Geotechnology:

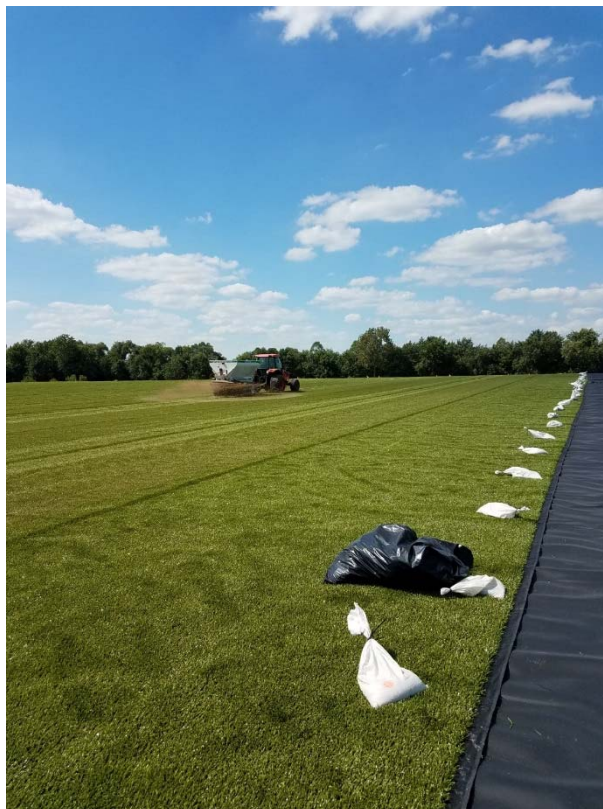
Performed ClosureTurf CQA activities.


See field sheets for additional information.

PHOTOGRAPH LOG




Photograph 1  - View of engineered turf installation activities at the Fly Ash Pond, facing northwest.




Photograph 2  - View of sand infill installation activities at the Fly Ash Pond, facing northwest.




Photograph 3  - View of sand infill removal activities prior to the installation of an engineered turf repair, facing west.



Photograph 4  - View of typical engineered turf patch.



Photograph 5  - View of typical passing trial seam for engineered turf wedge weld.



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Missouri

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

DATE: September 26, 2018

SUBJECT: Summary Report for September 17, 2018 to September 22, 2018

PROJECT: Fly Ash Pond and Bottom Ash Pond Closures
Meredosia Power Station
Meredosia, Morgan County, Illinois
Geotechnology Project No. J024917.04

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

Weather

The weather was generally clear. Temperature (°F) lows ranged from 50 to 70°F, and temperature highs ranged from 73 to 95°F.

Construction Activities

Blankenship Construction Company constructed the Bottom Ash Berm turnaround road and prepared the Fly Ash Pond subgrade for HDPE geomembrane installation.

GSI placed ClosureTurf at the Fly Ash Pond.

Equipment and Personnel On-Site

Blankenship Construction Company had the following equipment on site: One Caterpillar excavator, two Case tractors (tracked), three Smith pull-behind side-dump trailers, two Caterpillar bulldozers, one New Holland tractor with water wagon, one Holcomb scraper box, one Caterpillar skidsteer, one 84-inch Sakai smooth drum roller, one John Deere tractor, One DD Grade King box blade, one set of pull-behind offset discs, and one Caterpillar mini-excavator.

Blankenship Construction Company generally had 9 personnel on site.

GSI generally had 12-14 personnel on site.

Meetings

A weekly progress meeting was held on Wednesday, September 19, 2018. Refer to the meeting minutes for additional information.

Photographs

A photograph log with selected photographs obtained while Geotechnology was on site is attached.

Materials

Rip rap was transported to site for use in the ClosureTurf system.

Rip rap was placed at the Bottom Ash Pond turnaround.

ClosureTurf was placed on the Fly Ash Pond.

Testing/Sampling

GSI and Geotechnology performed quality control and construction quality assurance testing, respectively, of ClosureTurf placed on the Fly Ash Pond.

Signature of CQA Officer



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

Attachments: Daily Reports
Photograph Log

DAILY REPORTS



DAILY REPORT

DATE: Sept 17, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: SWG, KLH
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0700 Depart: 1700 Travel: 0.5 Total: 10.0

AM Conditions: Clear AM Temperature: 70 F

PM Conditions: Clear PM Temperature: 90 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship, GSI, and Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: HDPE


Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

ClosureTurf installation at Fly Ash Pond. Rock road Installation at BA turnaround.

Stephen W Graham 09/17/2018
Geotechnology, Inc. Rep. Date


Geotechnology, Inc. Engineer 9/26/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

One smooth drum roller compacts the Fly Ash Pond.

Constructing rock road over Bottom Ash Pond turnaround.

GSI:

HDPE geomembrane installation and detailing/repairs, air testing, and vacuum box testing at the Fly Ash Pond.

Geotechnology:

Performed ClosureTurf CQA activities. See field sheets for additional information.

Mail destructs D56 through D83, D51A, and D51B for laboratory testing.



DAILY REPORT

DATE: Sept 18, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: SWG, KLH
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0700 Depart: 1700 Travel: .5 Total: 10.0

AM Conditions: Clear AM Temperature: 53 F

PM Conditions: Clear PM Temperature: 80 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship, GSI, and Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Engineered turf geotextile

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Engineered turf geotextile installation at Ash Pond.

Stephen W Graham 09/18/2018
Geotechnology, Inc. Rep. Date


Geotechnology, Inc. Engineer 9/26/18
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

One smooth drum roller compacts the Fly Ash Pond.

Build rock road at Bottom Ash Pond turnaround.

GSI:

Install engineered turf geotextile on Ash Pond.

Repair engineered turf geotextile deficiencies.

Geotechnology:

Performed ClosureTurf CQA activities.

Observe engineered turf geotextile installation on Fly Ash Pond. Engineered turf geotextile was wedge welded/fused. Observed that turf trial seam test passed "visual criteria" on wedges #2 by BR and #1 by JM.



DAILY REPORT

DATE: Sept 19, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: SWG, KLH
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0700 Depart: 1400 Travel: .5 Total: 7.0

AM Conditions: Rain showers AM Temperature: 70 F
PM Conditions: Clear PM Temperature: 90 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI
Personnel: Blankenship, GSI, IEPA, Ameren PM, and Geotechnology
Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Closure Turf
Deliveries: _____
Testing: _____

CONSTRUCTION SITE LOCATIONS:

ClosureTurf installation at Ash Pond.

Stephen W Graham 09/19/2018
Geotechnology, Inc. Rep. Date

 9/26/18
Geotechnology, Inc. Engineer Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

One smooth drum roller compacts the Ash Pond.
Constructing rock road over BA turnaround.

GSI:

HDPE detailing repairs, air testing, and vacuum box testing.
Attempt to install closure turf.

Geotechnology:

Performed HDPE CQA activities.
Air testing and vacuum box testing.
Mail destructs D58A and D58B for Lab testing.
GPS locate new and existing monitoring wells onsite.
Collect two grab samples of sand delivered for closure turf infil.
Observe ClosureTurf attempted installation on Ash Pond. Closure Turf was wedge welded/fused.
Observed that turf trial seam test passed "visual criteria" on wedges #BR114 and wedge #JM120.
Despite trial seams passing, closure turf is to wet to bond. GSI call a rain day.



Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER
STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 09-19-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology Inc., GSI, and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Mike W., Randy B., Steve P., Pat B., (Gail G. ph.)
BCCO- Rob F., Garrett B.
OTHERS- Geotechnology Inc.- Anna S.
OTHERS- GSI- Dave H.

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

1. Safety.
 - a. Safety Minute: Garrett B.- Dressing Appropriately for the Job.
 - b. Next week's volunteer: Pat B.
2. Contractor Progress Report.
 - a. The river as of 9/12/18 was 11.11' and has been steadily and slowly dropping since. The forecasted levels show the elevation dropping slowly to 6.6' by the 19th of September, and continuing to drop to 4.7' by the 23rd. The rain event from the 6/7th still has the bottom of the BAP saturated but BCCO has been making efforts to attempt to drain this area as best as possible without disturbing large areas. BCCO may establish some small ditches leading to a small sump area that can be pumped intermittently as needed to keep surface water off of the BAP. This will be needed to allow for seeding and rip rap deployment.
 - b. Mobilization; BCCO has de-mobilized a New Holland TG275 tractor and a CAT 323 excavator from site this week, and mobilized a CAT 326 to the borrow site. BCCO needed to move the CAT 326 to the borrow to take over for the Komatsu PC490 that was down for a repair. BCCO also has plans to move a CAT D6T dozer from site to the borrow area, move a Komatsu PC490 from the borrow area to the plant, and move a



Komatsu D65PX dozer from the borrow to BCCO's main shop (de-mobilize), all today the 19th of Sept.

- c. Operations for BCCO in the FAP have consisted of continued smooth drum rolling, watering, and any other preparations needed to deploy liner. GSI requested another 650' wide by roll length area to be prepared for deployment on Friday and Saturday, so BCCO made these preparations on Thursday. BCCO has also been backfilling anchor trench as possible.
- d. BCCO continued to import soil to the East Stockpile Area last week. These operations continued most of the week, but some time was lost when the excavator in the borrow area experienced a breakdown. BCCO had another excavator mobilized to site the following morning and soil export continued through Saturday, and resumed again on Monday the 17th. BCCO had this work completed on the 18th.
- e. BCCO continued installing rock on the BAP roadway surface last week through Friday (the quarry is not open on Saturday so work did not continue on Saturday) and also on Monday. The first layer will be complete on Monday the 17th and BCCO will continue to place rock in the second layer. BCCO will not place the rock entirely up to final grade, as the sand install still has yet to occur, and that operation will have some sand spillage. BCCO will be able to clean this spillage up and place the final rock layer once the sand install is complete. BCCO is placing the double layer of Mirafi 160 prior to placing the second layer this week, which allows BCCO to take the CA6 rock material out wider, which is necessary to accommodate the final top finished width and slopes.
- f. BCCO moved forward with spreading a layer of sand on the toe of the BAP berm to allow for fabric and rip rap placement. BCCO made the decision to move forward on this work due to concerns for fall weather and rainfall preventing the work from occurring later. Rob F. hopes to have the RR4 on the BAP toe areas complete this week.
- g. GSI's sand subcontractor started sand spreading on 9/12. Brad C. and the spreading operation made great progress on this work, and ultimately caught the fabric deployment crew by Friday, the 14th. Brad C. has demobilized from site until GSI can get more turf placed and ready for sand installation. Dave H. reported that Brad C. plans on returning to site on the 24th of Sept.
- h. GSI has continued liner installation on the FAP, with 40 mil being installed last Friday and Saturday. GSI continued with turf on Monday of last week, and proceeded forward with that through Thursday. They deployed all of the turf they could based on previously installed 40 mil. The 40-mil liner installation on Friday and Saturday proceeded very well, with the install area being just under 9 acres. GSI lost a day of installation on



September 19th, today, due to a small amount of rainfall that wetted the 40 mil and turf material, preventing wedge welding. GSI will continue with 40 mil installation on 9/20, and should have the remaining NW corner of the FAP covered in 2 days' time.

3. Contractor's Weekly Work Plan

a. Update: Rob F.

- i. Dis-continue the pumping effort. BCCO will monitor the river levels and precipitation in the area, and pump any areas as needed.
- ii. Backfill over the East Stockpile Area. This work was completed this week on the 18th.
- iii. Liner preparation at the Fly Ash pond will continue as GSI needs, including additional anchor trench, anchor trench backfills, rip rap placement, and repair smooth drumming.
- iv. The BAP Oil Dock Berm liner has to have sand and armor fill placed on it, as well as the soil, rock, and rip rap components by BCCO. As noted above, BCCO is in process of placing rock on the BAP roadway when possible. BCCO is also discussing possible alternatives to place sand on the BAP toe area so rip rap placement can proceed.
- v. The FAP liner placement is underway and will continue as possible. Dave H. planned on laying turf on 9/19, but lost that day due to a rain event. GSI will continue with liner in the remaining area between the current liner and the north edge of the FAP. This will close off the NW corner of the FAP and protect the subgrade in this area.
- vi. Sand infill began on 9/12 and continued through 9/14. Brad C. will continue sand placement once GSI has more turf installed. Brad currently plans on coming back to site on the 24th, to either continue with sand spreading, or start brooming sand.

4. Schedule Forecast

a. Two Week Look Ahead.

- i. Schedule appears to generally be in line with onsite activities.
- ii. Anna S. stated that she would be out of the field for surgery starting on Oct. 11th and continuing for 2 weeks.



- iii. Anna S. suggested that the CQA completion date may need to be adjusted back some.
- iv. Dave H. feels as though the current liner completion date is fairly accurate, but may end up needing adjusted to a later date depending on upcoming install and weather.
- v. The fencing will most likely be adjusted from the current shown date of 10/17. BCCO was actually planning on starting fence install on the week on 9/24, but that is going to be moved to 10/1.

5. New Items/Miscellaneous

- a. Rob F. discussed the possibility of having the sand blower truck back off of the BAP roadway so final rocking could commence. Garrett B. pointed out that this could be time consuming, and that it should be discussed further. The group also agreed that as long as BCCO was able to get the rip rap on the toe placed, that it should not affect the schedule much if the blower truck did not arrive until the 1st week of Oct.

6. Action Items

- a. BCCO Items:
 - i. BCCO to continue submittals. Update: The next upcoming submittals should include HDPE and Turf Closeout submittals. If there are any other upcoming items not listed here, please let Garrett know. {Status- Open}
 - ii. Garrett B. prepared and submitted mowing prices to Mike W. for the FAP and BAP areas, as well as a recently requested price for some heavier brush on the Old Closed East Ash Pond. {Status- Closed}
- b. Ameren Items:
 - i. Mike W. to review additional/extra items pricing as presented by GB in a separate email, including mowing and brush mowing pricing. {Status- Open}

7. Questions, Comments, Open Discussion

- a. Update

The next progress meeting for this project will be held on September 26th at 9:00 a.m.



DAILY REPORT

DATE: Sept 20, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: SWG, KLH
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.0) Lunch

Arrive: 0700 Depart: 0930 Travel: .5 Total: 3.0

AM Conditions: Rain showers AM Temperature: 60 F

PM Conditions: Clear PM Temperature: 90 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship, GSI, and Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: _____

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Fly Ash Pond

Stephen W Graham 09/20/2018
Geotechnology, Inc. Rep. Date


Geotechnology, Inc. Engineer

9/26/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Constructing rock road over Bottom Ash Pond turnaround.

Placing rip rap at toe of slope on Bottom Ash Pond turnaround.

Backfill Fly Ash Pond anchor trench on northwest end.

Placing rip rap on top of Fly Ash Pond anchor trench on northwest end.

GSI:

Due to early morning rains, the subgrade was too wet for ClosureTurf installation.

GSI perform maintenance and repairs of HDPE geomembrane.

Geotechnology:

Observe GSI maintenance and repair activities. See field sheets for additional information.

Mail destructs D76A and D76B for laboratory testing.



DAILY REPORT

DATE: Sept 21, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: SWG
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.0) Lunch

Arrive: 0700 Depart: 0730 Travel: 2.5 Total: 3.0
AM Conditions: Rain showers AM Temperature: 60 F
PM Conditions: --- PM Temperature: ---

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI
Personnel: Blankenship, GSI, and Geotechnology
Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: _____
Deliveries: _____
Testing: _____

CONSTRUCTION SITE LOCATIONS:

Stephen W Graham 09/21/2018
Geotechnology, Inc. Rep. Date


Geotechnology, Inc. Engineer 9/26/18
Date



SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Placed rock/rip-rap at the Bottom Ash Pond berm toe.

Backfilled anchor trench at the Fly Ash Pond.

GSI:

Rained out, no work.

Geotechnology:

Rained out, no work.

Mail destruct D58AA for laboratory testing.



DAILY REPORT

DATE: Sept 22, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: JYG

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0700

Depart: 1530

Travel: 0.5

Total: 8.5

AM Conditions: Clear

AM Temperature: 60 F

PM Conditions: Clear

PM Temperature: 75 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: GSI

Personnel: GSI: 14 personnel

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Geosynthetics

Deliveries: _____

Testing: ClosureTurf CQA testing

CONSTRUCTION SITE LOCATIONS:

ClosureTurf system installation at the F.A. Pond

Jessie Y. Goodwin
Geotechnology, Inc. Rep.

09/22/2018
Date


Geotechnology, Inc. Engineer

9/26/18
Date



SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:**Blankenship:**

Saturday - No work performed.

GSI:

Installed synthetic turf geotextile on a portion of the Fly Ash Pond.

One of the two wedges used for welding synthetic turf geotextile broke mid-morning; as a result, GSI worked an 8-hour day rather than the 10-hour day originally planned.

Geotechnology:

Performed ClosureTurf CQA activities.

Observed three synthetic turf geotextile trial seams with passing results: JM W#1 in the morning, BR W#2 in the morning, and BR W#2 in the afternoon. W#1 was not used for seaming in the afternoon.

PHOTOGRAPH LOG



Photograph 1 ▲ - View of anchor trench at the Fly Ash Pond, looking southwest.



Photograph 2 ▲ - View of downlet structure at the Fly Ash Pond, facing north.



Photograph 3 ▲ - View of HDPE geomembrane repair activities at the Fly Ash Pond, facing north.



Photograph 4 ▲ - View of typical engineered turf repair activities, facing southeast.



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Missouri

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

DATE: October 2, 2018

SUBJECT: Summary Report for September 24, 2018 to September 29, 2018

PROJECT: Fly Ash Pond and Bottom Ash Pond Closures
Meredosia Power Station
Meredosia, Morgan County, Illinois
Geotechnology Project No. J024917.04

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

Weather

The weather was generally clear to overcast. Temperature (°F) lows ranged from 40 to 68°F, and temperature highs ranged from 60 to 84°F. September 26, 2018 was a rain out day from the rain the night before.

Construction Activities

Blankenship Construction Company constructed the Bottom Ash Berm turnaround road and prepared the Fly Ash Pond subgrade for HDPE geomembrane installation.

GSI placed ClosureTurf at the Fly Ash Pond.

Equipment and Personnel On-Site

Blankenship Construction Company had the following equipment on site: One Caterpillar excavator, two Case tractors (tracked), three Smith pull-behind side-dump trailers, two Caterpillar bulldozers, one New Holland tractor with water wagon, one Holcomb scraper box, one Caterpillar skidsteer, one 84-inch Sakai smooth drum roller, one John Deere tractor, One DD Grade King box blade, one set of pull-behind offset discs, and one Caterpillar mini-excavator.

Blankenship Construction Company generally had 8-12 personnel on site.

GSI generally had 11-12 personnel on site.

Meetings

A weekly progress meeting was held on Wednesday, September 26, 2018. Refer to the meeting minutes for additional information.

Photographs

A photograph log with selected photographs obtained while Geotechnology was on site is attached.

Materials

Rip rap was transported to site for use in the ClosureTurf system.

Rip rap was placed at the Bottom Ash Pond turnaround.

ClosureTurf was placed on the Fly Ash Pond.

Sand was deployed as ClosureTurf infill on the Fly Ash Pond.

Testing/Sampling

GSI and Geotechnology performed quality control and construction quality assurance testing, respectively, of ClosureTurf placed on the Fly Ash Pond.

Signature of CQA Officer



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

Attachments: Daily Reports
Photograph Log

DAILY REPORTS



DAILY REPORT

DATE: Sept 24, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: JYG & AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0630

Depart: 1745

Travel: 0.5

Total: 11.25

AM Conditions: Clear

AM Temperature: 60 F

PM Conditions: Clear

PM Temperature: 75 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: GSI, Blankenship

Personnel: GSI: 12 personnel; Blankenship: 6

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Geosynthetics

Deliveries: _____

Testing: ClosureTurf CQA testing

CONSTRUCTION SITE LOCATIONS:

ClosureTurf system installation at the F.A. Pond

Alyssa A. Okorn

09/24/2018

Geotechnology, Inc. Rep.

Date

Geotechnology, Inc. Engineer

10/2/2018

Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Assisted GSI with sand spreading and deploying of liner.

Worked on rip-rap on the river-side slopes of the Bottom Ash Pond.

GSI:

Installed synthetic turf geotextile on a portion of the Fly Ash Pond. One welder up and running.

Installed liner on a portion of the Fly Ash Pond. Two welders up and running.

Geotechnology:

Performed ClosureTurf CQA activities.

Observed one synthetic turf geotextile trial seams with passing results: JM W#2 in the morning.



DAILY REPORT

DATE: Sept 25, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: JYG & AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1530 Travel: 0.5 Total: 8.75

AM Conditions: Overcast AM Temperature: 68 F

PM Conditions: Rain Showers PM Temperature: 84 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: GSI, Blankenship

Personnel: GSI: 12 personnel; Blankenship: 8

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Geosynthetics

Deliveries: _____

Testing: ClosureTurf CQA testing

CONSTRUCTION SITE LOCATIONS:

ClosureTurf system installation at the F.A. Pond

Alyssa A. Okorn 09/24/2018
Geotechnology, Inc. Rep. Date

 10/2/2018
Geotechnology, Inc. Engineer Date



SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:**Blankenship:**

Assisted GSI with sand spreading and deploying of engineered turf.

Worked on rip-rap placement around site.

GSI:

Installed synthetic turf geotextile on a portion of the Fly Ash Pond. One welder up and running.

Completed repairs and most vacuum tests on exposed liner before rain shutdown.

Geotechnology:

Performed ClosureTurf CQA activities.

Observed one synthetic turf geotextile trial seams with passing results: JM W#2 in the afternoon.



DAILY REPORT

DATE: Sept 26, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: JYG & AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.0) Lunch

Arrive: 0645

Depart: 1200

Travel: 0.5

Total: 5.75

AM Conditions: Clear

AM Temperature: 46 F

PM Conditions: Partly Cloudy

PM Temperature: 67 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Personnel: Blankenship: 9

Visitors: Garrett Blankenship, Mike Wagstaff, Dave Hina

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: _____

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Alyssa A. Okorn

09/26/2018

Geotechnology, Inc. Rep.

Date



Geotechnology, Inc. Engineer

10/2/2018

Date



SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:**Blankenship:**

Worked on rip-rap placement around site.

Held the Weekly Coordination Meeting at 0900.

GSI:

Called off due to wet conditions.

Attended the Weekly Coordination Meeting at 0900.

Geotechnology:

Called off due to wet conditions after arrival.

Attended the Weekly Coordination Meeting at 0900, followed by a conditions inspection in the Fly Ash Pond.



Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 09-26-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology Inc., GSI, and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Mike W., Randy B., Steve P., Pat B., (Gail G., Megan K. ph.)
BCCO- Rob F., Garrett B.
OTHERS- Geotechnology Inc.- Jessie G., Alyssa O., (Anna S. ph.)
OTHERS- GSI- Dave H., Brad C., (Matt S. ph.)

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

1. Safety.
 - a. Safety Minute: Pat B.- Motor Vehicle Safety: Use seatbelts on all personnel in the vehicle, have proper licensing, back in to your parking spot if possible. All lights must function properly as well as the horn. Reverse Alarms are required for vehicles with visual impairments while backing, and all vehicle defects should be corrected before using.
 - b. Next week's volunteer: Rob F.
2. Contractor Progress Report.
 - a. The river as of 9/20/18 was 6.59' and has been steadily and slowly dropping since. As of 09/25/18 the level was at 2.71'. The forecasted levels show the elevation staying consistent around 2.8-2.9' through the 1st of October.
 - b. Mobilization; BCCO has de-mobilized a CAT D6T bulldozer from site since last meeting. BCCO also mobilized a CAT 326 and a Komatsu PC490 from the borrow area to the plant site. BCCO is planning on de-mobilizing a set of side dump trailers and a Case Quad trac tractor soon. The next machine to de-mobilize may be the Komatsu PC490 excavator.



BCCO is hoping to have a Komatsu PC200 excavator mobilized to site possibly early next week to perform the mowing work.

- c. Operations for BCCO in the FAP have consisted of continued smooth drum rolling, watering, and any other preparations needed to deploy liner. BCCO has also been backfilling anchor trench and completing downlets as possible, in conjunction with liner installation. As of 9/25/18 three of the downlets will be complete
- d. BCCO completed the import of soil to the East Stockpile Area last week. BCCO will final grade this area in preparation for seeding work.
- e. BCCO continued installing rock on the BAP roadway. BCCO will not place the rock entirely up to final grade, as the sand install still has yet to occur, and that operation will have some sand spillage. BCCO will be able to clean this spillage up and place the final rock layer once the sand install is complete. BCCO will have all the CA6 done, except for the final 6" layer and the shoulders, on 9/26/18.
- f. BCCO moved forward with spreading a layer of sand on the toe of the BAP berm to allow for fabric and rip rap placement. BCCO had the placement of fabric, bedding stone, and rip rap completed on the inside of the BAP road and turnaround last week, and had the same work completed on the outside of the BAP road (river side) as of 9/24/18.
- g. BCCO had Midwest Seedling Supply (MSS) onsite to look over the BAP floor early this week. It was agreed upon by MSS and BCCO that the best option at this time is to apply fertilizer and seed via a farm service spreader. This was spread on 9/24/18 in the afternoon. BCCO also had MSS seed and mulch the borrow area now that those operations are complete. This should complete the operations at the Central Stone borrow area. MSS took soil samples on the east stockpile area, to have analyzed in the event that additional fertilizer or soil amendments are needed.
- h. BCCO is importing and stockpiling the rip rap necessary for the east FAP anchor trench and the rock checks in the area on the north east side of the FAP.
- i. Sand spreading started back up on 9/24 and should be caught up to the deployed area again by 9/25 or 9/26. Brad C. created a phasing map for the liner, turf, and sand deployment. This is attached below. This shows that the sand has progress northward into area 3 on the map. Brad C. says another ½ day of spreading should have the sand install caught up. Brad plans on starting brooming next week on Monday, once brooming has been performed Geotechnology will perform their depth checks on the installed sand. Matt S. mentioned to the group that when the sand install begins on the



FAP ditches and BAP berm, it would be appreciated if Geotechnology, GSI, and Brad could work concurrently on these areas so ArmorFill can follow as closely as possible.

- i. Rob asked about the turf being raised off of the liner in the ditch areas and if that would cause a problem for sand or ArmorFill. Brad C. felt that it would not be a problem, and that once the sand was on this would alleviate some of these issues. He did clarify though that some of these areas may need some hand work. Rob mentioned that BCCO has a spreader onsite that uses a skid steer to operate, and that BCCO may be able to help with the sand spreading in the more difficult areas.
- j. GSI has continued liner installation on the FAP, with turf being installed last Saturday, and 40 mil on Monday the 24th. GSI detailed liner on the 25th, and also started turf on the same day. GSI was rained out on the 26th, with the site receiving close to a half of an inch of rain. Sunday was lost due to a broken fusion machine. Dave received the necessary parts for the fusion machine on the 26th. GSI lost last Wednesday, Thursday, and Friday due to rain. Dave H. informed the group that GSI has 22.4 acres of 40 mil installed and 15.5 acres of turf on the FAP. Dave also stated that GSI has had 32 working days and 21 rain days.
 - i. Regarding questions about crew size, Matt S. stated that the project was originally slated for 10 workers from GSI, with some being devoted to sand. With Brad C. onsite, all of GSI workers have been able to be devoted to liner and turf, and that the 2 guys going to Arkansas should not affect production as they are not certified welding operators.
 - ii. Mike W. asked about getting more turf welders onsite, to which Matt S. responded that the welders are too expensive to add more and that the breakdown last week was not a common problem. GSI has provided the crew more geomembrane welders, but does not plan on adding more turf welders. Dave H. did order extra parts for the welders in the event of another problem.
 - iii. Dave H. and Matt S. reported that the liner crew did lose 3 employees for family medical issues. Dave still hopes to have some of the crew from Arkansas back within another week.

3. Contractor's Weekly Work Plan

- a. Update: Rob F.
 - i. BCCO will continue to monitor the river levels and precipitation in the area, and pump any areas as needed.



- ii. Continue any roadway rocking that can be completed. This may include some of the additional road surfacing Mike requested, but not the AIC roadway as that work will be on a separate PO.
- iii. Midwest Seedling Supply should be back onsite next week with their large straw blower to begin seeding the BAP slopes and surrounding areas, the East Stockpile area, and the areas surrounding the FAP toe.
- iv. Collins and Hermann should be onsite to install fence and gates next week, the 1st of Oct.
- v. Mow the BAP, FAP, and Old East Ash Pond areas as possible. This will be dependent on machine availability, but should start next week.
- vi. Liner preparation at the Fly Ash pond will continue as GSI needs, including additional anchor trench, anchor trench backfills, rip rap placement, and repair smooth drumming.
- vii. The BAP Oil Dock Berm sand infill and ArmorFill components are scheduled for the week of Oct. 15th. Matt S. and Brad C. confirmed that this date should be firm, and Brad C. even stated that if the glue truck is not available, he will bring in a different hydro-seeding unit to complete the BAP since it has vehicle rated access on top. Brad C. expects this ArmorFill work on the BAP to only take a day to a day and a half. This should be the only remaining items on the BAP after BCCO completed the rip rap last week, and completes the final rock layer after the sand deployment.
- viii. The FAP liner placement is underway and will continue as possible. Dave H. plans on installation on the NW corner of the FAP continuing until 40 mil is complete and then commencing on turf. After the NW corner is complete, Dave plans to move back down to the SE corner of the FAP, and finish that area moving northward.
- ix. Sand infill on the FAP should be caught up to the deployment by 9/25/18. Brad C. again discussed that the ArmorFill on this area should only take a couple days, and that the sand should only be a couple day item as well. The truck is capable of 5-8 tanks per day, so a 2 acre per day goal should be achievable (5 tanks= 2 acres.) The group discussed the budgeted areas of ArmorFill that GSI had in the job, and Matt S. stated that it was 3.64 acres. Matt and Mike agreed that the group should consider ArmorFilling up the slope a little further, even if it means possibly adding to the budget. BCCO offered to perform a survey on the BAP for



total ArmorFill area, so Matt S. can better budget for the FAP. Mike W. stated that he would work with CDG on analyzing how much area needs to have ArmorFill and delineating this area on the FAP.

4. Schedule Forecast

- a. Two Week Look Ahead.
 - i. Move the BAP sand and ArmorFill install to the week of Oct. 15th.
 - ii. Move the FAP sand install finish date to October 26th.
 - iii. Extend the liner work at the FAP through the week of Oct. 26th.
 - iv. Move Fencing to the week of Oct. 1st.
 - v. Adjust CQA schedule as Anna discussed last week, if needed.

5. New Items/Miscellaneous

- a. Geotechnology is re-sampling the sand infill material for the turf onsite, because some larger pebbles and rock were noticed after the sand material is installed on the turf. Anna hopes to have these results next week on Monday.
- b. Brad C. also addressed some contamination in the trailers from previous loads with the trucking company, so this issue should be resolved.
- c. TechLab was onsite last week and collected all their samples.
- d. GSI expressed to the group that they have not sewn the turf material before, and although it is possible, it is not the preferred method and GSI does not consider it an option on this site as they do not want to affect the integrity or aesthetics of the installation.

6. Action Items

- a. BCCO Items:
 - i. BCCO to continue submittals. Update: The next upcoming submittals should include HDPE and Turf Closeout submittals. If there are any other upcoming items not listed here, please let Garrett know. {Status- Open}
 - ii. BCCO to survey the BAP area that will receive ArmorFill and provide to Matt S. with GSI. {Status- Open}



b. Ameren Items:

- i. Mike W. to review additional/extra items pricing as presented by GB in a separate email, including mowing and brush mowing pricing. Update: Mike has reviewed these items, and has started the process to issue an EWO as necessary. {Status- Open}
- ii. Mike W. to work with CDG to come to a better understanding and plan on the FAP ArmorFill area. {Status- Open}

c. GSI Items:

- i. Use the BCCO provided survey to create a breakdown of the FAP and BAP ArmorFill areas. Provide a breakdown to the group so Ameren and CDG can decide on the desired width of ArmorFill install on the FAP ditches.

7. Questions, Comments, Open Discussion

a. Update

The next progress meeting for this project will be held on October 3rd at 9:00 a.m.

Grid is approximately
100 ft by 100 ft
Scale for this drawing is
+/- 10%

Area 5- Approx
3.0 acres +/-

Area 6- Approx
10.7 acres +/-

Area 4- Approx
3.1 acres +/-

Stockpile locations
9-14-18

Area 3- Approx
3.25 acres +/-

Area 2- Approx
3.0 acres +/-

Turf installed
9-13-18

Sand installed Area 1
5.5 hrs 9-12-18
9 hrs 9-13-18
2 hrs 9-14-18
Sand installed Area 1
6 hrs 9-14-16

Area 1- Approx
9.3 acres +/-

Ditch Area - Approx
2.5 acres +/-





DAILY REPORT

DATE: Sept 27, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: JYG & AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1700 Travel: 0.5 Total: 10.25

AM Conditions: Clear AM Temperature: 40 F

PM Conditions: Clear PM Temperature: 72 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: GSI, Blankenship

Personnel: GSI: 11 personnel; Blankenship: 10

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Geosynthetics

Deliveries: _____

Testing: ClosureTurf CQA testing

CONSTRUCTION SITE LOCATIONS:

ClosureTurf system installation at the F.A. Pond

Alyssa A. Okorn 09/27/2018
Geotechnology, Inc. Rep. Date


Geotechnology, Inc. Engineer

10/2/2018
Date



SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:**Blankenship:**

Assisted GSI with sand spreading and deploying of engineered turf and sand infill.

Worked on placing rock on the Bottom Ash Pond turnaround.

GSI:

Installed synthetic turf geotextile on a portion of the Fly Ash Pond.

One turf welder broke down near the end of the day.

Geotechnology:

Performed ClosureTurf CQA activities.

Observed four synthetic turf geotextile trial seams with passing results: JM W#2 and LH W# in the morning and afternoon.



DAILY REPORT

DATE: Sept 28, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: JYG, AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0700 Depart: 1700 Travel: 0.5 Total: 10.0

AM Conditions: Clear AM Temperature: 60 F

PM Conditions: Clear PM Temperature: 69 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship: 9 personnel; GSI: 12 personnel

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: HDPE Geomembrane

Deliveries: Gravel for roadway

Testing: ClosureTurf system CQA testing

CONSTRUCTION SITE LOCATIONS:

ClosureTurf system installation at the F.A. Pond, gravel road installation between B.A. Pond and F.A. Pond

Jessie Y. Goodwin 09/28/2018
Geotechnology, Inc. Rep. Date


Geotechnology, Inc. Engineer 10/2/2018
Date



SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:**Blankenship:**

One bulldozer placed/graded and one vibratory compaction roller compacted gravel for the gravel road from the Bottom Ash Pond berm turnaround to the Fly Ash Pond.

One excavator with brush cutter attachment cleared brush on the Old Fly Ash Pond.

Assisted GSI with HDPE geomembrane placement using one skidsteer loader.

One tractor with spreader trailer spread sand on portions of the Fly Ash Pond with synthetic turf geotextile in place. One front-end loader loaded sand into the trailer.

GSI:

Installed HDPE geomembrane on a portion of the Fly Ash Pond.

Three wedge welding machines were used to seam the HDPE geomembrane.

Placed Panels P-134 through P-177.

Geotechnology:

Performed ClosureTurf CQA activities.

See field sheets for additional information.



DAILY REPORT

DATE: Sept 29, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: JYG

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0700

Depart: 1500

Travel: 2.25

Total: 9.75

AM Conditions: Clear

AM Temperature: 50 F

PM Conditions: Clear

PM Temperature: 60 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: GSI

Personnel: GSI: 11 personnel

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: HDPE Geomembrane

Deliveries: _____

Testing: ClosureTurf system CQA testing

CONSTRUCTION SITE LOCATIONS:

ClosureTurf system installation at the F.A. Pond

Jessie Y. Goodwin
Geotechnology, Inc. Rep.

09/29/2018
Date


Geotechnology, Inc. Engineer

10/2/2018
Date



SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Saturday – No work performed.

GSI:

Detailed HDPE geomembrane on a portion of the Fly Ash Pond.

Geotechnology:

Performed ClosureTurf CQA activities.

See field sheets for additional information.

PHOTOGRAPH LOG



Photograph 1 ▲ - View of typical turf placement at the Fly Ash Pond, looking southwest.



Photograph 2 ▲ - Typical view of turf welding at the Fly Ash Pond.




Photograph 3 ▲ - View of HDPE geomembrane placement at the Fly Ash Pond, facing west.




Photograph 4 ▲ - View of typical HDPE geomembrane welding activities, facing northwest.



Photograph 5  - View of typical sand placement at the Fly Ash Pond, facing west.



Photograph 6  - View of Bottom Ash Pond riprap placement along toe of the slope and road construction activities facing southwest.



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Missouri

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

DATE: October 9, 2018

SUBJECT: Summary Report for October 1, 2018 to October 5, 2018

PROJECT: Fly Ash Pond and Bottom Ash Pond Closures
Meredosia Power Station
Meredosia, Morgan County, Illinois
Geotechnology Project No. J024917.04

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

Weather

The weather was generally clear to rainy. Temperature (°F) lows ranged from 55 to 71°F, and temperature highs ranged from 82 to 90°F. Work was not performed October 5-6, 2018 due to rain on site.

Construction Activities

Blankenship Construction Company constructed the Bottom Ash Berm turnaround road and prepared the Fly Ash Pond subgrade for HDPE geomembrane installation.

GSI placed ClosureTurf at the Fly Ash Pond.

Equipment and Personnel On-Site

Blankenship Construction Company had the following equipment on site: One Komatsu excavator with mowing head, One Caterpillar excavator with forestry head, one Caterpillar bulldozers, one New Holland tractor with water wagon, one Holcomb scraper box, one Caterpillar skidsteer, one 84-inch Sakai smooth drum roller, one John Deere tractor, one DD Grade King box blade, one set of pull-behind offset discs, and one Caterpillar mini-excavator.

Blankenship Construction Company generally had 8-10 personnel on site.

GSI generally had 10-11 personnel on site.

Meetings

A weekly progress meeting was held on Wednesday, October 3, 2018. Refer to the meeting minutes for additional information.

Photographs

A photograph log with selected photographs obtained while Geotechnology was on site is attached.

Materials

Rip rap was transported to site for stormwater management.

Rip rap was placed at the Bottom Ash Pond turnaround.

ClosureTurf was placed on the Fly Ash Pond.

Sand was transported to site for use in the ClosureTurf system.

Sand was deployed as ClosureTurf infill on the Fly Ash Pond.

Testing/Sampling

GSI and Geotechnology performed quality control and construction quality assurance testing, respectively, of ClosureTurf placed on the Fly Ash Pond.

Signature of CQA Officer



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

Attachments: Daily Reports
Photograph Log

DAILY REPORTS



DAILY REPORT

DATE: Oct. 1, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: JYG & AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1645 Travel: 0.5 Total: 10.00

AM Conditions: Clear AM Temperature: 61 F

PM Conditions: Cloudy PM Temperature: 83 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: GSI, Blankenship

Personnel: GSI: 11 personnel; Blankenship: 8

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Geosynthetics

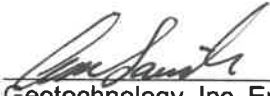
Deliveries: _____

Testing: ClosureTurf CQA testing

CONSTRUCTION SITE LOCATIONS:

ClosureTurf system installation at the F.A. Pond

Alyssa A. Okorn 10/1/2018
Geotechnology, Inc. Rep. Date

 10/9/2018
Geotechnology, Inc. Engineer Date



SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Assisted GSI with sand spreading and deploying of engineered turf.

Worked on site cleanup, grading, and clearing.

GSI:

Installed and repaired engineered turf on a portion of the Fly Ash Pond.

Geotechnology:

Performed ClosureTurf CQA activities.

Observed four engineered turf trial seams with passing results.



DAILY REPORT

DATE: Oct. 2, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: JYG & AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1730 Travel: 0.5 Total: 10.75

AM Conditions: Cloudy AM Temperature: 69 F

PM Conditions: Cloudy PM Temperature: 79 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: GSI, Blankenship

Personnel: GSI: 10 personnel; Blankenship: 9

Visitors: Bob with Agru - 1045-1430

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Geosynthetics

Deliveries:

Testing: ClosureTurf CQA testing

CONSTRUCTION SITE LOCATIONS:

ClosureTurf system installation at the F.A. Pond

Alyssa A. Okorn 10/2/2018
Geotechnology, Inc. Rep. Date


Geotechnology, Inc. Engineer

10/9/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Assisted GSI with sand spreading and deploying of engineered turf.

Worked on site cleanup, grading, and clearing.

GSI:

Installed and repaired engineered turf on a portion of the Fly Ash Pond.

Geotechnology:

Performed ClosureTurf CQA activities.

Observed four engineered turf trial seams with passing results.



DAILY REPORT

DATE: Oct. 3, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: JYG & AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1545 Travel: 0.5 Total: 9.00

AM Conditions: Cloudy AM Temperature: 70 F

PM Conditions: Partly Cloudy PM Temperature: 90 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: GSI, Blankenship

Personnel: GSI: 10 personnel; Blankenship: 10

Visitors: Garrett Blankenship, Mike Wagstaff

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Geosynthetics

Deliveries:

Testing: ClosureTurf CQA testing

CONSTRUCTION SITE LOCATIONS:

ClosureTurf system installation at the F.A. Pond

Alyssa A. Okorn 10/3/2018
Geotechnology, Inc. Rep. Date


Geotechnology, Inc. Engineer

10/9/2018
Date



SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Assisted GSI with sand spreading and deploying of engineered turf.

Worked on site cleanup, grading, and clearing.

GSI:

Installed and repaired engineered turf on a portion of the Fly Ash Pond.

Geotechnology:

Performed ClosureTurf CQA activities.

Observed four engineered turf trial seams with passing results.



Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 10-03-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology Inc., GSI, and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Mike W., Marc L., Randy B., Steve P., Pat B., (Megan K. ph.)
BCCO- Rob F., Garrett B.
OTHERS- Geotechnology Inc.- Jessie G., (Anna S. ph.)
OTHERS- GSI- Brad C., (Dave C. ph.)

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

1. Safety.

- a. Safety Minute: Rob F.- First Day on the Job. Whether a person is a brand-new employee or seasoned regular, there can always be a new situation that is a "First Day." Could be a new task, new employee, new area of the job site, or many other changes. Always assess the need for and wear the proper PPE for the site and task. Good Housekeeping should always be practiced. Only use the proper tool for the task, that has been inspected for damage and has been deemed safe for service. Always use proper ladder safety: keep an eye out for any electrical hazards. Your employer should have MSDS sheets onsite for your use, and if you ever have a question about jobsite safety, never hesitate to ask your superintendent.
- b. Next week's volunteer: Anna S. and then the following week Steve P.

2. Contractor Progress Report.

- a. The river as of 9/30/18 was 4.13' and has been maintaining close to that level. As of 10/02/18 the level was at 3.75'. The forecasted levels show the elevation staying consistent around 3.8-4.0' through the 9th of October.



- b. Mobilization; BCCO mobilized a Komatsu PC200 with mowing head to the plant site, along with the forestry head for the CAT 326 excavator. BCCO de-mobilized a Case 580 quad trac from site since last meeting. BCCO will be mobilizing another skid steer and mower to site to help with the mowing effort. BCCO may de-mobilize the Komatsu PC490 soon also.
- c. Operations for BCCO in the FAP have consisted of liner preparations, anchor trench work, and any downlet and rip rap work that is possible. BCCO prepping subgrade on 10/3/18 for GSI to move to this area on 10/4/18.
- d. BCCO worked with Midwest Seedling Supply to take soil samples on the East Stockpile Area, and should have those results for this meeting. BCCO will also lightly disc the seeding areas prior to MSS' arrival. BCCO has been coordinating with MSS on their arrival to site, and currently MSS believes they will be onsite either Wednesday, as of this meeting, or Thursday.
- e. BCCO continued installing rock on the BAP roadway as well as a few other roadways onsite. BCCO has not proceeded forward with all roadway installation, due to the concern that if all roads are finished, final heavy equipment work and travel could "dirty" the new road surfacing some. BCCO will continue roadway surfacing as possible. BCCO will finish the final lift on the BAP road after BAP sand install, as discussed.
- f. BCCO proceeded with a minor item for FS in which FS purchased some rock and had BCCO place it for them under the oil dock area.
- g. BCCO has the rip rap item on the BAP complete.
- h. BCCO imported and stockpiled the rip rap necessary for the east FAP anchor trench.
- i. BCCO removed the existing site gates for Collins and Hermann to utilize for the new fence installation.
- j. BCCO began mowing on the Old East Ash Pond. Work started with the CAT 326 and forestry head, and has now continued with the Komatsu PC200 with mowing head.
- k. Collins and Hermann were onsite to install fence and gates 10/1. They had a partial production day on Monday by the time they finished drug testing and site orientation.
- l. Sand spreading has continued intermittently as possible, and has been staying caught up with the Turf mostly. Sand import is ongoing as needed, with sand coming onsite on 10/2/18. Sand sweeping started this week, and following the sweeping, depth checks were made on the sand thickness. Geotechnology made the determination on the sand thickness, using a grid pattern. Some spots have been found to be not thick enough, in



some cases as little as 0.02" or as much as 0.05". Brad C. is working with Geotechnology to grid and mark these areas so the sand spreader can make another pass on these areas. Most of these spots are in areas 1, 2, and 3. Brad intends to hit these areas once more with the spreader to meet thickness, and then make 5 passes with the spreader on the continuing sand spreading.

- m. GSI has continued liner installation on the FAP, and has placed liner in the NW corner of the FAP (Area 5 on Brad C.'s map) and has proceeded with turf in the same area. Once GSI completes turf in this area, they will move to the southern end of Area 6 and deploy mowing northward. GSI's superintendent Dave H. reports that they have laid 24.8 acres of 40 mil, and 20.77 acres of turf. He expects to have his three technicians back this Sunday, and there is a possibility that he could have 2 more from other areas join the crew as well, for a possible crew count of 15. Dave did also mention that high winds could affect or stop the installation, as the site was predicted to have 30 mph gusts today.

3. Contractor's Weekly Work Plan

- a. Update: Rob F.
 - i. Dis-continue the pumping effort. BCCO will monitor the river levels and precipitation in the area, and pump any areas as needed.
 - ii. Continue any roadway rocking that can be completed.
 - iii. Begin the major seeding work with MSS. MSS should have their equipment onsite and start seeding on 10/3 or 10/4.
 - iv. Collins and Hermann will continue to install fencing until this work is completed. They are predicting that they can be complete on Monday, the 8th.
 - v. Continue to mow the BAP, FAP, and Old East Ash Pond areas as possible. This work could be complete by the end of the week.
 - vi. Liner preparation at the Fly Ash pond will continue as GSI needs, including additional anchor trench, anchor trench backfills, rip rap placement, and repair smooth drumming.
 - vii. The BAP Oil Dock Berm sand infill and ArmorFill components are scheduled for the week of Oct. 15th. BCCO will follow this with the final lift of roadway rock. This should be the only remaining items on the BAP after BCCO completed the rip rap installation.



- viii. The FAP liner placement is underway and will continue as possible. Installation should be moving down to the SE corner of the Fly Ash Pond and move northward. Dave H. stated that with the return of his additional technicians, he predicts the remaining liner area on the FAP will take 18 days, 9 of 40 mil and 9 of turf.
- ix. Sand infill on the FAP will continue as turf installation allows. Brad C. will also sweep sand as possible.
- x. ArmorFill components should be arriving on 10/8/18. The glue truck and blower truck should both be mobilizing on 10/15/18 with sand infill starting on the 16th. Brad C. mentioned that the blower truck may require a bucket less than 5' wide. Brad C. will try to provide load height and hopper CY capacity on the blower truck. Brad C. stated that he may look at spreading sand and ArmorFill on the western side of the FAP perimeter ditch prior to liner being completed. He brought up the need for a tank washout area, Mike W. asked that this washout please be performed in the old coal yard area and then the resulting glue area be roughed or broken up. BCCO will back drag or disc this area to get this done.

4. Schedule Forecast

- a. Two Week Look Ahead.
 - i. Work correlates with the proposed two-week schedule, assuming the changes last week have been made.
 - ii. Dave H. stated that the liner installation will be another 18 working days to completion.
 - iii. Brad C. stated that the sand spreading will finish 2-3 days behind the liner installation.

5. New Items/Miscellaneous

- a. Mike W. is working on the getting the AIC group to issue the PO for their roadway rocking, he hopes to have some results on this next week.
- b. Mike W. asked Brad about how the ArmorFill install will occur on the BAP, and if the width could be variable. Brad stated that this was possible, and Mike hopes to adjust the install width so the downlet areas are wider ArmorFill area, and the high points area narrower. Right now, the thought is to be 25' wide at the low points/downlets, and 15' wide at the high points. BCCO will send the FAP survey to Mike for CDG to use in laying this work out.



- c. Anna S. emailed the group that the sand sample did pass the granular size test and is in spec.
- 6. Action Items
 - a. BCCO Items:
 - i. BCCO to continue submittals. Update: The next upcoming submittals should include HDPE and Turf Closeout submittals. If there are any other upcoming items not listed here, please let Garrett know. {Status- Open}
 - b. Ameren Items:
 - i. Mike W. to review additional/extra items pricing as presented by GB in a separate email, including mowing and brush mowing pricing. Update: Mike has reviewed these pricing items and is updating the PO amount accordingly. {Status- Open}
- 7. Questions, Comments, Open Discussion
 - a. Update

The next progress meeting for this project will be held on October 10th at 9:00 a.m.

Grid is approximately
100 ft by 100 ft
Scale for this drawing is
+/- 10%

Area 5- Approx
3.0 acres +/-

Area 9- Approx
1.1 acres +/-

Area 8- Approx
2.8 acres +/-

Area 4- Approx
3.1 acres +/-

Area 7- Approx
3.2 acres +/-

Area 3- Approx
3.25 acres +/-

Area 2- Approx
3.0 acres +/-

Area 6- Approx
3.0 acres +/-

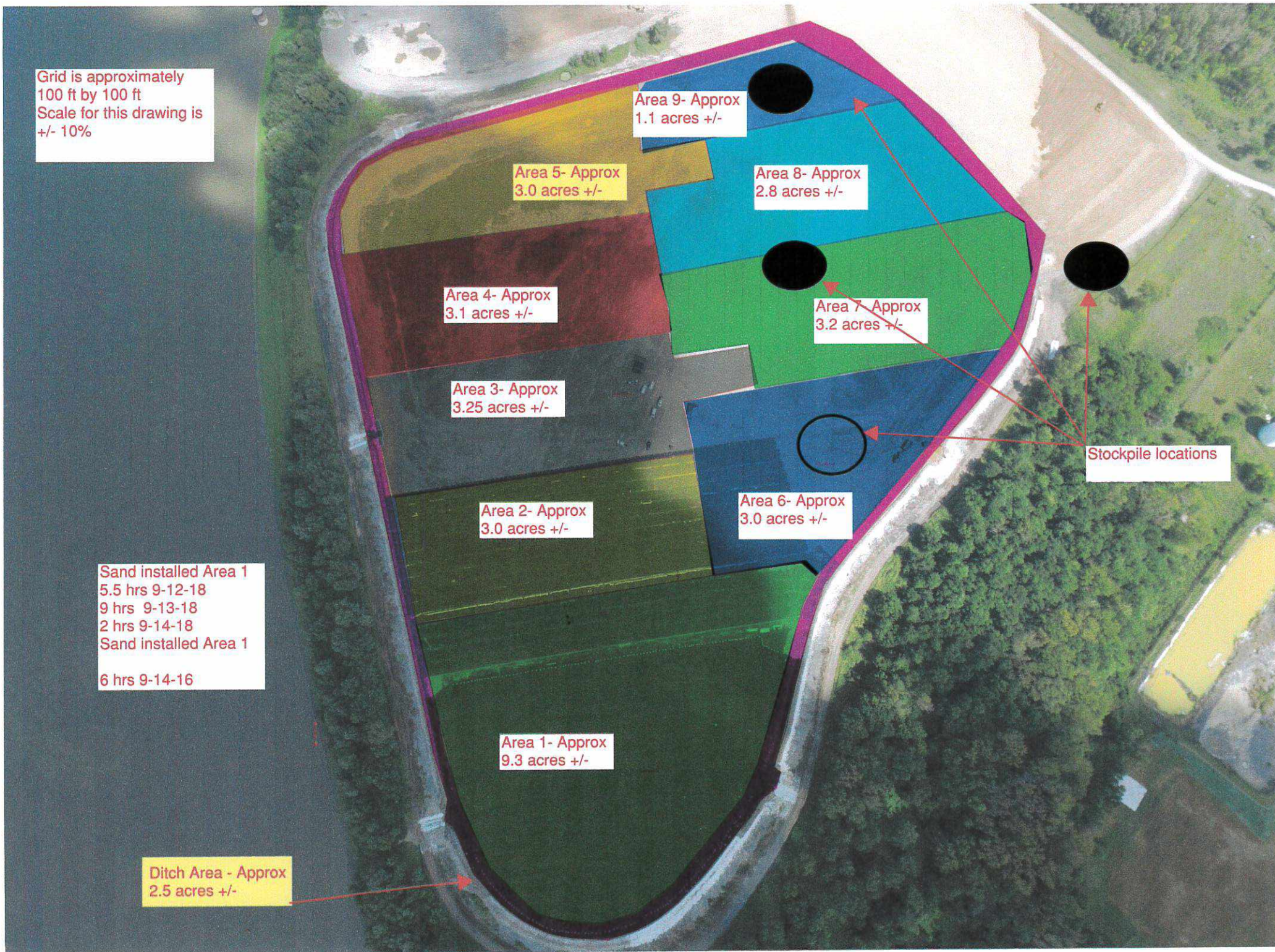
Sand installed Area 1
5.5 hrs 9-12-18
9 hrs 9-13-18
2 hrs 9-14-18
Sand installed Area 1

6 hrs 9-14-16

Area 1- Approx
9.3 acres +/-

Ditch Area - Approx
2.5 acres +/-

Stockpile locations





DAILY REPORT

DATE: Oct. 4, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645

Depart: 1645

Travel: 0.5

Total: 10.00

AM Conditions: Cloudy

AM Temperature: 60 F

PM Conditions: Partly Cloudy

PM Temperature: 65 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship

Personnel: Blankenship: 10

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Sand

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Sand placement at the F.A. Pond

Alyssa A. Okorn
Geotechnology, Inc. Rep.

10/4/2018
Date


Geotechnology, Inc. Engineer

10/9/2018
Date



SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Assisted GSI with sand spreading and sweeping.

Worked on site cleanup, grading, and clearing.

GSI:

Called off for wind.

Geotechnology:

Observed sand placement and sweeping.

PHOTOGRAPH LOG



Photograph 1 ▲ - Typical view of engineered turf welding at the Fly Ash Pond, facing north.



Photograph 2 ▲ - Typical view of engineered turf placement at the Fly Ash Pond, facing north.



Photograph 3 ▲ - Typical view of engineered turf hand welding at the Fly Ash Pond, facing southeast.



Photograph 4 ▲ - View of typical HDPE geomembrane repair activities, facing northwest.



Photograph 5 ▲ - View of typical anchor trench backfill at the Fly Ash Pond, facing west.



Photograph 6 ▲ - View of typical sand placement at the Fly Ash Pond, facing south.



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Missouri

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

DATE: October 23, 2018

SUBJECT: Summary Report for October 8, 2018 to October 20, 2018

PROJECT: Fly Ash Pond and Bottom Ash Pond Closures
Meredosia Power Station
Meredosia, Morgan County, Illinois
Geotechnology Project No. J024917.04

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

Weather

The week of October 8-12, 2018, the weather was generally overcast to rainy. Temperature (°F) lows ranged from 36 to 68°F, and temperature highs ranged from 44 to 85°F. Work was generally not performed October 8-12, 2018 due to rain on site. Geotechnology was not on site.

The week of October 15-19, 2018, the weather was generally clear. Temperature (°F) lows ranged from 30 to 43°F, and temperature highs ranged from 49 to 62°F.

Construction Activities

Work was generally not performed the October 8-12, 2018 due to rain on the site. Geotechnology was not on site.

Work was not performed on October 20, 2018 due to wind on the site. Geotechnology was not on site.

Blankenship Construction Company backfilled the anchor trench at the Fly Ash Pond and prepared the Fly Ash Pond subgrade for HDPE geomembrane installation.

Midwest Seedling Supply placed soil amendments, seed, and straw at the former Fly Ash Stockpile.

Cline Environmental placed sand and ArmorFill at the Bottom Ash Pond berm.

GSI placed ClosureTurf at the Fly Ash Pond.

Equipment and Personnel On-Site

Blankenship Construction Company had the following equipment on site: One Caterpillar excavator, one Caterpillar bulldozer, one New Holland tractor with water wagon, one Holcomb scraper box, one Caterpillar skidsteer, one 84-inch Sakai smooth drum roller, one John Deere tractor, one DD Grade King box blade, one set of pull-behind offset discs, one Caterpillar mini-excavator, and one sand blower truck.

Meetings

Weekly progress meetings were held on Wednesday, October 10, 2018 and Wednesday, October 17, 2018. Refer to the meeting minutes for additional information.

Photographs

A photograph log with selected photographs obtained while Geotechnology was on site is attached.

Materials

ClosureTurf was placed on the Fly Ash Pond.

Sand was transported to site for use in the ClosureTurf system.

Sand was deployed as ClosureTurf infill on the Bottom Ash Pond berm.

Testing/Sampling

GSI and Geotechnology performed quality control and construction quality assurance testing, respectively, of ClosureTurf placed on the Fly Ash Pond.

Signature of CQA Officer



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

Attachments: Daily Reports
Photograph Log

DAILY REPORTS



Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 10-03-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology Inc., GSI, and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Randy B., Steve P., Pat B., (Mike W., Meghan K. ph.)
BCCO- Rob F., (Garrett B. ph.)
OTHERS- Geotechnology Inc.- (Anna S. ph.)
OTHERS- GSI- (Dave H., Dave C. ph.)

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

1. Safety.
 - a. Safety Minute: Anna S.- Preventing Accidental Fires. Safe Fire Practices need to be observed both at the workplace and at home. Housekeeping is extremely critical to preventing accidental fires, and should be kept up at all times. Store flammable materials in approved containers and store containers in fire proof storage areas.
 - b. Next week's volunteer: Steve P.
2. Contractor Progress Report.
 - a. The river as of 10/08/18 was 9.41' and was rising due to rainfall in the area and up north. The forecasted levels did show the elevation rising as high as 14.2' through the 15th of October, which would be around elevation 432.2, but as of the morning of this meeting the projected level was lowered to 12.8' which would be elevation 430.8. This could still possibly put water on the BAP floor, which is already saturated and has pools on it from the rainfall onsite. This will be detrimental to the grass in the BAP floor. The site received right at 3" of rain over the weekend and Monday morning, as well as another 0.25" of rain Wednesday morning, with a slight drizzle ongoing.
 - b. Mobilization; BCCO mobilized a Bobcat brand skid loader and mower to site last week to help with the mowing efforts. BCCO de-mobilized the Komatsu PC490, and the Bobcat



skid with mower, along with some other miscellaneous items. BCCO plans on demobilizing the Komatsu PC200 with mowing head soon now that mowing work is complete.

- c. Operations for BCCO in the FAP have been somewhat minimal due to weather. BCCO has continued to backfill any anchor trench possible, along with downlet work, and subgrade prep when needed.
- d. BCCO coordinated with Midwest Seedling Supply to apply the additional fertilizer to the necessary areas onsite, primarily the east stockpile area, the BAP slopes, and the area in between the BAP and FAP. Midwest Seedling mobilized to site last Thursday, the 11th to start seeding, but is shut down due to the high amounts of rainfall. MSS will proceed with seeding on Monday if the soil is conducive to seed bed preparation. MSS ordered the sediment logs needed for site, and should have them direct shipped with the next week or two.
- e. BCCO continued and completed the mowing on the Old East Ash Pond. Work started on the FAP and BAP mowing areas, and finished up on Friday the 5th.
- f. Collins and Hermann continued their fence installation, and had planned on finishing on Monday, but due to weather were expecting the finish date to be Tuesday instead of Monday. They were onsite working Monday, but were slightly hindered by wet conditions. As of Tuesday, Garrett confirmed with Rob that the fence installation is complete.
- g. Sand spreading has continued intermittently as possible, and is caught up with the Turf deployment. Brad C. needs additional turf area for deployment.
- h. GSI has not been able to continue liner deployment since last Wednesday. The high winds on site on Thursday and Friday prevented deployment, along with rain onsite Saturday, Sunday, and Monday morning. GSI left site to complete a small amount of work on another site, and plans on being back Monday morning, the 15th.

3. Contractor's Weekly Work Plan

- a. Update: Rob F.
 - 1. Dis-continue the pumping effort. BCCO will monitor the river levels and precipitation in the area, and pump any areas as needed.
 - 2. Continue any roadway rocking that can be completed.



3. Begin the major seeding work with MSS. MSS mobilized their equipment to site last week, and will continue with the site seeding as soon as possible.
4. Liner preparation at the Fly Ash pond will continue as GSI needs, including additional anchor trench, anchor trench backfills, rip rap placement, and repair smooth drumming. This is expected to commence Monday morning. Rob F. mentioned to Anna that Geotechnology would not necessarily need to have personnel onsite until noon that day, as the morning would most likely be devoted to sub-grade preparation.
5. The BAP Oil Dock Berm sand infill and ArmorFill components are scheduled for the week of Oct. 15th. BCCO will follow this with the final lift of roadway rock. These should be the only remaining items on the BAP after BCCO completed the rip rap installation.
6. The FAP liner placement should continue upon GSI's return on Monday of next week. There is another chance for rain Sunday night that could affect this. Rob F. asked GSI if there was possibility of any other crews freeing up elsewhere, who could come assist with install. GSI replied that there are no full crews coming available, but did state that they are trying to add technicians wherever they can find them.
7. Sand infill on the FAP will continue as turf installation allows.
8. Armor Fill components should arrive to site this week. Dave C. to follow up with suppliers/shippers.
9. ArmorFill will commence on the week of the 15th, with the BAP berm area being ArmorFilled as soon as the sand is prepared.

4. Schedule Forecast

a. Two Week Look Ahead.

1. Update as needed based on weather delays. Mike W. went through the schedule with the group and is updating the schedule as needed based on lost days due to weather and completed items.

5. New Items/Miscellaneous

- a. BCCO has observed a significant erosion in the Northeast corner of the BAP slope on more than one rain event. Rob and Garrett would like to discuss with the group/Ameren the thought of placing a rip rap ditch in this area to allow this water to convey down the



slope without causing erosion in the future. Basic design would be to core out the ditch area, line with Mirafi 160, and cover with RR4 rip rap. Open for discussion of course. Mike W. agreed with the need to look at planning a more permanent solution, and requested a picture for review so a decision could be made.

- b. Dave C. discussed the ArmorFill mix and application rates. The ArmorFill will be mixed at a rate of 6-parts water to 1-part ArmorFill, and this mix will be applied at a rate of 2,600 gallons per acre. Mike W. asked if there were any concerns with this rate and application, to which Dave C. replied that no there is not, and that he simply wished to discuss this with the group ahead of time to prevent any delays as the installation gets set to start. Anna S. said she would review the mix rates, but at this time thought they sounded appropriate and as expected. She will follow up as necessary.
- c. Mike W. again discussed the ArmorFill install at the FAP, and expressed his direction that the installed area should vary in width, with the widest points being at the downlet areas and narrowest being at the high points. Garrett B. asked if Mike would be willing to have CDG review the available SF and apply to the FAP survey provided by Blankenship, and prepare a 3D bounded area showing the appropriate SF of ArmorFill install. Mike confirmed that he would work with CDG to provide this if possible.
- d. Matt V. with CDG was onsite last Friday and reviewed the site with Rob F. He did not have any major concerns and his only mention was that there was a small area on the top of the BAP that was holding some minor water.
- e. Bob B. with Watershed Geo will return to site next week for another visit and inspection of the turf system.

6. Action Items

a. BCCO Items:

- 1. BCCO to continue submittals. Update: The next upcoming submittals should include HDPE and Turf Closeout submittals. If there are any other upcoming items not listed here, please let Garrett know. {Status- Open}

b. Ameren Items:

- 1. Make a final determination on the FAP perimeter ditch ArmorFill install area/width. {Status- Open}

7. Questions, Comments, Open Discussion

a. Update



The next progress meeting for this project will be held on October 17th at 9:00 a.m.



DAILY REPORT

DATE: Oct 15, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: SWG

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 1200

Depart: 1530

Travel: 3

Total: 6.0

AM Conditions: Clear

AM Temperature: 60 F

PM Conditions: Clear

PM Temperature: 70 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship, GSI, and Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: HDPE

Deliveries: Sand for engineered turf infill

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Sand infill of turf at BA turnaround.

Stephen W Graham
Geotechnology, Inc. Rep.

10/15/2018
Date


Geotechnology, Inc. Engineer

10/17/18
Date



SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

One smooth drum roller compacted the Fly Ash Pond.

GSI:

Not on site

Geotechnology:

Performed engineered turf sand infill CQA observations.



DAILY REPORT

DATE: Oct 16, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: SWG, KLH
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1615 Travel: 0.5 Total: 9.5

AM Conditions: Clear AM Temperature: 32 F

PM Conditions: Clear PM Temperature: 55 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship, GSI, and Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: HDPE geomembrane

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

HDPE installation over Fly Ash Pond.

Stephen W Graham 10/16/2018
Geotechnology, Inc. Rep. Date


Geotechnology, Inc. Engineer 10/17/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

One smooth drum roller compacted the Fly Ash Pond.

One lull moved rolls of turf at the Fly Ash Pond for GSI. One skidsteer assisted GSI.

One tractor with a water wagon maintained dust control around site.

GSI:

Installed HDPE geomembrane at the Fly Ash Pond.

Geotechnology:

Performed HDPE geomembrane installation CQA activities.

See field sheets for details.



DAILY REPORT

DATE: Oct 17, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: SWG, KLH

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645

Depart: 1615

Travel: 0.5

Total: 9.5

AM Conditions: Clear

AM Temperature: 32 F

PM Conditions: Clear

PM Temperature: 55 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship, GSI, and Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: HDPE geomembrane

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

HDPE installation over Fly Ash Pond.

Stephen W Graham
Geotechnology, Inc. Rep.

10/17/2018
Date


Geotechnology, Inc. Engineer

10/22/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

One smooth drum roller compacted the Fly Ash Pond.

One lull moved rolls of engineered turf at the Fly Ash Pond for GSI. One skidsteer assisted GSI.

One tractor with a water wagon maintained dust control around site.

Held the weekly coordination meeting on site. See meeting minutes for additional information.

GSI:

Installed HDPE geomembrane over the Fly Ash Pond.

Geotechnology:

Performed HDPE geomembrane installation CQA activities.

Marked 8 destructive testing locations.

See field sheets for details.



Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER
STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 10-17-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology Inc., GSI, and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Randy B., Steve P., Pat B., (Mike W. ph.)
BCCO- Rob F., (Garrett B. ph.)
OTHERS- Geotechnology Inc.- (Anna S. ph.)
OTHERS- GSI- Dave H., Matt S. (Dave C. ph.)

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

1. Safety.
 - a. Safety Minute: Steve P. – Influenza, a.k.a. the Flu. The Flu is a contagious respiratory illness caused by the influenza virus. Symptoms can include fever, sore throat, runny nose, nausea and vomiting. Timeframe can range from a few days to a couple weeks or longer. Can cause pneumonia and even death, and has a serious risk of worsening any existing health conditions. The CDC recommends getting a Flu shot every year. The Flu shot is effective against 4 strains of the influenza virus. Utilize anti-viral medication from your doctor to combat the symptoms. Do not attempt to use anti-bacterial medications as they are not effective against the Flu. You will need to see your doctor for anti-viral.
 - b. Next week's volunteer: Dave H.
2. Contractor Progress Report.
 - a. The river as of 10/16/18 was 13.21' and was beginning to crest. This level roughly equates to elevation 431.21, which is high enough to cover the entire BAP floor with flood water. The forecasted levels show the river level cresting at 13.3' through the 17th of October. The site received right at 0.5" of rain over the weekend and Monday morning.



- b. Mobilization; GSI's subcontractor mobilized the sand blower truck to site on Monday of this week. Half of the ArmorFill concentrate arrived in a shipment on Friday. The other half of the shipment is scheduled for later this week. Ameren's onsite employees provided a heated shed to store the ArmorFill in (thank you). BCCO de-mobilized the Komatsu PC200 with mower, along with some other miscellaneous items. The pneumatic sand blowing truck departed from site on Tuesday afternoon after the sand was inspected.
- c. Operations for BCCO in the FAP were minimal late last week, but this week BCCO began subgrade prep for GSI to begin 40 mil deployment. BCCO has continued to backfill any anchor trench possible, along with downlet work, and other minor items as needed.
- d. BCCO has been working to get Midwest Seedling Supply started onsite, but MSS has been unable to start due to wet conditions. BCCO was working to get them started last Friday, until rainfall began and prevented operations from continuing. BCCO hopes to start them on 10/17.
- e. Collins and Hermann completed the fence and gate installation last week.
- f. Sand spreading is caught up with the Turf deployment. Brad C. needs additional turf area for deployment.
- g. GSI's subcontractor starting blowing sand on the BAP surfaces on 10/15/18. This progressed very well and was ready for inspection on the following day. Once this area is swept and approved, ArmorFill placement will proceed. Geotechnology inspected sand on BAP, and except for some areas where the sand was overly thick and needed brooming and thinning, the BAP sand install was acceptable. ArmorFill application is expected to start, and finish, on the BAP area today, 10/17. Brad C. will use a 2,800 gallon per acre rate on the BAP to account for the 3:1 slope. Brad C. will use a small pull behind hydro-seeder to apply this material. Assuming he finishes today, he will demobilize this unit, and bring the hydro-seeder flotation truck to site next week for the FAP ArmorFill. Brad C. expects to have the flotation truck onsite next Tuesday.
- h. GSI has returned to site after completing their work at another site. GSI started 40 mil deployment on Tuesday. The plan is to black out the remaining FAP area. They have been working most of the day, but the last couple days the wind has been strong in the afternoon, so deployment stops early afternoon and the crew details what has be previously deployed and welded. GSI got 36,000 SF done on 10/16.

3. Contractor's Weekly Work Plan

- a. Update: Rob F.



1. Dis-continue the pumping effort. BCCO will monitor the river levels and precipitation in the area, and pump any areas as needed.
2. Continue any roadway rocking that can be completed.
3. Continue seeding work. Midwest Seedling Supply should be onsite the rest of this week and part/most of next. The sediment logs are onsite and that install should commence on the back end of the seeding work.
4. Liner preparation at the Fly Ash pond will continue as GSI needs, including additional anchor trench, anchor trench backfills, rip rap placement, and repair smooth drumming.
5. The BAP Oil Dock Berm sand infill and ArmorFill components are underway. Assuming the ArmorFill application of the ClosureTurf on the BAP goes as planned, BCCO will apply the final lift of rock on the roadway and this item will be complete.
6. The FAP liner placement will continue this week. The weather forecast appears to be favorable, besides being somewhat cool. Wind has played a factor onsite this week, so installation could be affected somewhat by wind over the upcoming days.
7. Sand infill on the FAP will continue as turf installation allows.
8. ArmorFill work will proceed as possible, beginning with the BAP ClosureTurf area, followed by the western ditch portion of the FAP. Anna joined the meeting via phone mid-meeting, and updated the group that the 6:1 mix ratio on the ArmorFill is acceptable, but cautioned that the 2,600 gallons per acre is a minimum and that the team should focus on full saturation of the sand layer.

4. Schedule Forecast

a. Two Week Look Ahead.

1. Activity 1140, Liner work at the FAP, needs extended to the 9th of Nov. for completion.
2. Activity 4310, FAP Sand Placement, needs extended to the 16th of Nov. for completion.
3. Activity 4290, BAP Sand Placement, needs a completion date of Oct. 17th 2018.



4. Activity 4300, BAP ArmorFill Placement, needs a completion date of Oct. 18th 2018.

5. Activity 1190, Final Seeding and Mulching, needs extended to the 19th of October for completion.

5. New Items/Miscellaneous

- a. BCCO has observed a significant erosion in the Northwest corner of the BAP slope on more than one rain event. Rob and Mike coordinated on this item, and Mike agreed to proceed as proposed.
- b. As previously mentioned, Anna clarified that the 6:1 mix ratio on the ArmorFill is acceptable for all ArmorFill installation onsite. Full saturation of the sand is necessary for adequate installation, and Brad C. may adjust the gallons per acre to ensure this, with 2,600 gallons per acre being the minimum.

6. Action Items

a. BCCO Items:

- 1. BCCO to continue submittals. Update: The next upcoming submittals should include HDPE and Turf Closeout submittals. If there are any other upcoming items not listed here, please let Garrett know. {Status- Open}

b. Ameren Items:

- 1. Make a final determination on the FAP perimeter ditch ArmorFill install area/width. Update: now that the mix ratio and gallons per acre are decided on, Matt S. stated that they would observe how much concentrate the BAP area uses, and utilize the known remaining gallons of concentrate at that time to estimate the remaining installation area for the FAP, and utilize all the glue onsite to provide the most satisfactory install they can. BCCO and/or Ameren will help determine layout area and SF of installation along with Matt's breakdown post BAP install. {Status- Open}

7. Questions, Comments, Open Discussion

a. Update

The next progress meeting for this project will be held on October 24th at 9:00 a.m.



DAILY REPORT

DATE: Oct 18, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: SWG, KLH
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1745 Travel: 0.5 Total: 11.0

AM Conditions: Clear AM Temperature: 32 F

PM Conditions: Clear PM Temperature: 55 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship, GSI, and Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: HDPE geomembrane

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

HDPE geomembrane installation over Fly Ash Pond.

Stephen W Graham 10/18/2018
Geotechnology, Inc. Rep. Date

 10/22/2018
Geotechnology, Inc. Engineer Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

One smooth drum roller compacted the Fly Ash Pond.

One lull moved rolls of engineered turf at the Fly Ash Pond for GSI. One skidsteer assisted GSI.

One tractor with a water wagon maintained dust control around site.

GSI:

Installed HDPE geomembrane over the Fly Ash Pond.

Geotechnology:

Performed HDPE geomembrane installation CQA activities.

Marked 12 destructive testing locations.

See field sheets for details.



DAILY REPORT

DATE: Oct 19, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: SWG

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645

Depart: 1615

Travel: 0.5

Total: 9.5

AM Conditions: Clear

AM Temperature: 32 F

PM Conditions: Clear

PM Temperature: 55 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship, GSI, and Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: HDPE geomembrane

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

HDPE geomembrane installation over Fly Ash Pond.

Stephen W Graham
Geotechnology, Inc. Rep.

10/19/2018
Date


Geotechnology, Inc. Engineer

10/22/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

One smooth drum roller compacted the Fly Ash Pond.

One lull moved rolls of engineered turf at the Fly Ash Pond for GSI. One skidsteer assisted GSI.

One tractor with a water wagon maintained dust control around site.

GSI:

Installed HDPE geomembrane over the Fly Ash Pond.

Geotechnology:


Performed HDPE geomembrane installation CQA activities.

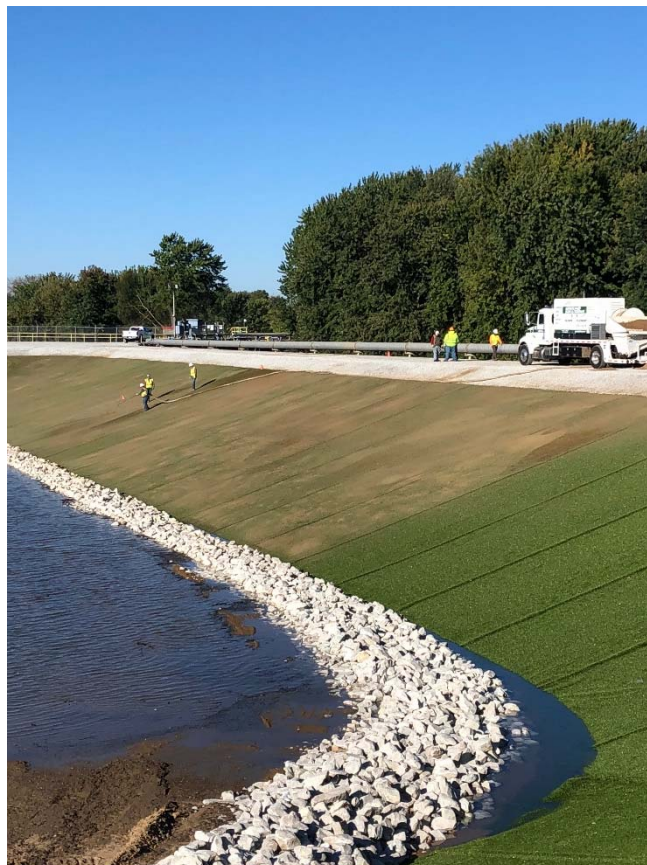
Marked 10 destructive testing locations.


See field sheets for details.

PHOTOGRAPH LOG



Photograph 1  - View of sand placement at the Bottom Ash Pond berm, facing west.



Photograph 2  - View of sand placement at the Bottom Ash Pond berm, facing west.

Photographs taken by representatives of Geotechnology, Inc. October 15-19, 2018.



Photograph 3 ▲ - View of sand brushing at the Bottom Ash Pond berm, facing northeast.



Photograph 4 ▲ - View of ArmorFill placement activities at the Bottom Ash Pond berm, facing west.



Photograph 5 ▲ - View of HDPE geomembrane placement at the Fly Ash Pond, facing southeast.



Photograph 6 ▲ - View of HDPE geomembrane placement at the Fly Ash Pond, facing northwest.



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Missouri

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

DATE: October 31, 2018

SUBJECT: Summary Report for October 22, 2018 to October 27, 2018

PROJECT: Fly Ash Pond and Bottom Ash Pond Closures
Meredosia Power Station
Meredosia, Morgan County, Illinois
Geotechnology Project No. J024917.04

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

Weather

The week of October 22-27, 2018, the weather was generally clear to rainy. Temperature (°F) lows ranged from 29 to 43°F, and temperature highs ranged from 48 to 71°F. Work was not performed October 26, 2018 due to rain on site.

Construction Activities

Work was not performed on October 22, 2018 due to rain on the site. Geotechnology was not on site.

Blankenship Construction Company prepared the Fly Ash Pond subgrade for HDPE geomembrane installation.

GSI placed ClosureTurf at the Fly Ash Pond.

Equipment and Personnel On-Site

Blankenship Construction Company had the following equipment on site: One Caterpillar excavator, one Caterpillar bulldozer, one New Holland tractor with water wagon, one Caterpillar skidsteer, and one 84-inch Sakai smooth drum roller.

Meetings

A weekly progress meeting was held on Wednesday, October 24, 2018. Refer to the meeting minutes for additional information.

Photographs

A photograph log with selected photographs obtained while Geotechnology was on site is attached.

Materials

ClosureTurf was placed on the Fly Ash Pond.

Testing/Sampling

GSI and Geotechnology performed quality control and construction quality assurance testing, respectively, of ClosureTurf placed on the Fly Ash Pond.

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., Ph.D.
Geotechnology, Inc.

Attachments: Daily Reports
Photograph Log

DAILY REPORTS



DAILY REPORT

DATE: Oct 22, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: SWG, KLH
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1745 Travel: 0.5 Total: 11.0

AM Conditions: Clear AM Temperature: 32 F

PM Conditions: Clear PM Temperature: 55 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship, GSI, and Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: _____


Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

HDPE installation over Fly Ash Pond.

Stephen W Graham 10/22/2018
Geotechnology, Inc. Rep. Date


Geotechnology, Inc. Engineer 10/26/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:**Blankenship:**

One lull moved rolls of turf at the Fly Ash Pond for GSI. One skidsteer assisted GSI.

One tractor with a water wagon maintained dust control around site.

GSI:

Installed HDPE Liner over on the Fly Ash Pond.

Geotechnology:

Performed HDPE installation CQA activities.

Marked 15 destructive testing locations.

Mailed 24 destructive test samples from October 18-19, 2018.

See field sheets for details.



DAILY REPORT

DATE: Oct 23, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: SWG, KLH
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1645 Travel: 0.5 Total: 10.0

AM Conditions: Clear AM Temperature: 40 F

PM Conditions: Clear PM Temperature: 55 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship, GSI, and Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: _____

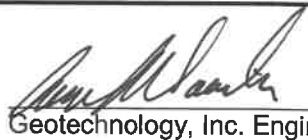
Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

HDPE installation over Fly Ash Pond.

Stephen W Graham 10/23/2018
Geotechnology, Inc. Rep. Date

 10/26/18
Geotechnology, Inc. Engineer Date



SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

One skidsteer assisted GSI.

One tractor with a water wagon maintained dust control around site.

GSI:

Installed HDPE Liner over South center area of fly ash pond.

Geotechnology:

Performed HDPE installation CQA activities.

Marked 6 destructive testing locations.

Mailed 15 destructive testing samples from October 21-22, 2018.

See field sheets for details.



DAILY REPORT

DATE: Oct 24, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: SWG, KLH
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1645 Travel: 0.5 Total: 10.0

AM Conditions: Clear AM Temperature: 40 F

PM Conditions: Clear PM Temperature: 55 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship, GSI, and Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: _____

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

HDPE installation over Fly Ash Pond.

Stephen W Graham 10/24/2018
Geotechnology, Inc. Rep. Date


Geotechnology, Inc. Engineer

10/26/18
Date



SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

One skidsteer assisted GSI.

One tractor with a water wagon maintained dust control around site.

GSI:

Installed HDPE geomembrane over the Fly Ash Pond.

Geotechnology:

Performed HDPE geomembrane installation CQA activities.

Mailed 15 destructive testing samples from October 23, 2018.

See field sheets for details.



Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 10-24-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology Inc., GSI, and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Mike W., Randy B., Steve P., Pat B., (Meghan K. ph.)
BCCO- Rob F., (Garrett B. ph.)
OTHERS- Geotechnology Inc.- (Jessie G. ph.)
OTHERS- GSI- Dave H.

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

1. Safety.
 - a. Safety Minute: Dave H. – Winter Weather and Cold Weather Work and Clothing
 - b. Next week's volunteer: Garrett B.
2. Contractor Progress Report.
 - a. The river crested last week around the 17th of October above 13'. There has been minimal rainfall in the area since last meeting and the river level has been slowly declining. As of 10/23/18 it was at 10.5 and is continuing to fall, and is predicted to fall below 7' by the 29th of October. The site has not received any notable rain since last meeting, but high winds have been a concern.
 - b. Mobilization; BCCO does not have any major mobilization notes at this time. The glue applicator truck is scheduled to arrive onsite today, 10/24.
 - c. Operations for BCCO in the FAP have picked up since last week including subgrade prep for GSI to begin and continue 40 mil deployment. BCCO has excavated the remaining anchor trench, and will continue with anchor trench backfill and downlet finishing as possible.



- d. Midwest Seedling Supply started seeding work last week, and prior to the weekend had all the fertilizer, seed, and straw blown and crimped. High winds were detrimental to some of the straw, and MSS reviewed these areas and added straw to the area between the BAP roadway and the new fence. MSS began their sediment log installation, and Rob is hopeful they will complete this work by the end of the day on 10/25 or 10/26.
- e. Sand spreading is caught up with the Turf deployment in general, but BCCO did proceed with some sand spreading on the FAP ditch areas that have turf currently installed. Additional turf deployment is needed on the FAP east side so sand can continue, and GSI will be proceeding with turf upon completion of the 40 mil. Dave H. expects that it will take 4-5 days to complete the SE corner with turf, to where the point where sand equipment can again access the site and continue sand deployment.
- f. Cline Environmental (Brad C.) proceeded with ArmorFill on the BAP area and was able to complete this work last week. This completes the Closure Turf System on the BAP berm area.
- g. BCCO is in process of rocking all the site roadways, not including the AIC roadway. BCCO plans on having the site roadways rocked by the end of the day on 25th. Garrett B. and Rob F. asked Mike if there was an update on the AIC roadway PO, and despite Mike's efforts, there is not an update at this time. BCCO installed the rip rap slope in the erosion area of the BAP near the northwest corner where the entrance gate is.
- h. GSI started 40 mil deployment last week and has blacked out the remaining FAP area. GSI is predicting to have the FAP 40 mil detailing completed by the end of the day on Friday the 26th if weather allows. They will then begin turf deployment, starting in the SE corner.

3. Contractor's Weekly Work Plan

- a. Update: Rob F.
 - 1. BCCO will monitor the river levels and precipitation in the area, and pump any areas as needed.
 - 2. Continue any roadway rocking that can be completed, BCCO expects to have the roadway rocking for all roads except for the AIC road, completed by the end of the day on 10/25.
 - 3. Continue sediment log installation by Midwest Seedling.
 - 4. Continue anchor trench backfills, rip rap placement, and downlet finishing in the FAP as needed.



5. The FAP liner detailing will continue this week, followed by turf deployment. The weather forecast appears to be favorable until this weekend when there are some slight chances as well as a couple chances next week.

6. Sand infill on the FAP will continue as turf installation allows. Rob F. asked the group if placing some fabric and/or a liner rub sheet would be enough to allow sand spreading equipment to cross the currently installed 40 mil material. Dave H. replied that he did not have a problem with this, and Jessie G. stated that she was unsure if this would be acceptable or not, and that she would follow up with Anna so Anna could in turn reply to the group.

7. Armor Fill components are onsite, all ten totes. The BAP ClosureTurf area ArmorFill is complete, the only remaining ArmorFill is the FAP ditch areas. Rob F. discussed with the group that it would appear there is sufficient ArmorFill concentrate onsite to apply a generous area on the FAP ditches, as well as possibly considering increasing the mix ratio in the downlet areas if possible. He will work with Brad C. to make some additional/final determinations on the installation areas as well as the potential to increase the ratio in downlet areas. He will then report these to the group, as well as possibly survey the proposed layout and provide to the group for a double check to confirm the area is not excessive for quantity.

4. Schedule Forecast

a. Two Week Look Ahead.

1. The schedule as shown is acceptable to all parties, with no requests for modification this week.

5. New Items/Miscellaneous

a. Dave H. reported that GSI is possibly intending to take extra 40 mil liner material with them when the work is completed, but clarified that he needs to formally confirm that with Dave C. or Matt S. Garrett B. asked that Dave H. please follow through with that, as well as clarify the same for the turf, just so the group would be aware what the intent is for remaining materials.

6. Action Items

a. BCCO Items:



1. BCCO to continue submittals. Update: The next upcoming submittals should include HDPE and Turf Closeout submittals. If there are any other upcoming items not listed here, please let Garrett know. {Status- Open}

b. Ameren Items:

1. Make a final determination on the FAP perimeter ditch ArmorFill install area/width. Update: the group as a whole is comfortable with the remaining amount of ArmorFill and is waiting on "final" proposed planning from Rob F. and Brad C. regarding the FAP install area and mix rates. Once Rob and Brad have a plan together, this will be reported to the group for additional discussion. {Status- Closed}

7. Questions, Comments, Open Discussion

a. Update

The next progress meeting for this project will be held on October 31st at 9:00 a.m.



DAILY REPORT

DATE: Oct 25, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: KLH

Project Number: J024917.05

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645

Depart: 1615

Travel: 0.5

Total: 9.5

AM Conditions: Cloudy

AM Temperature: 30 F

PM Conditions: Cloudy

PM Temperature: 50 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship, GSI, and Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: _____

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

HDPE geomembrane repairs and engineered turf installation over the Fly Ash Pond.

Kyle L Henson
Geotechnology, Inc. Rep.

10/25/2018
Date


Geotechnology, Inc. Engineer

10/31/2018
Date



SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

One skid steer moving materials on site.

GSI:

Performed HDPE geomembrane detailing activities.

Installed engineered turf geosynthetics.

Geotechnology:

Performed HDPE geomembrane and engineered turf geosynthetics CQA activities.

Observed engineered turf geosynthetics trial welds in the morning and afternoon.

See field sheets for details.



DAILY REPORT

DATE: Oct 27, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: KLH

Project Number: J024917.05

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.0) Lunch

Arrive: 0700

Depart: 1130

Travel: 2.75

Total: 7.25

AM Conditions: Clear

AM Temperature: 45

PM Conditions: Clear

PM Temperature: 55

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: GSI

Equipment: _____

Personnel: GSI: 8 employees

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: _____

Deliveries: _____


Testing: _____

CONSTRUCTION SITE LOCATIONS:

Fly Ash Pond

Kyle L Henson
Geotechnology, Inc. Rep.

Oct 27, 2018
Date


Geotechnology, Inc. Engineer

10/31/2018
Date



SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

GSI:

Performed HDPE geomembrane detailing activities.

Geotechnology:

Performed HDPE geomembrane CQA activities.

Mailed 5 destructive testing samples.

See field sheets for details.

PHOTOGRAPH LOG



Photograph 1 ▲ - View of typical repair of the engineered turf geosynthetics.



Photograph 2 ▲ - View of the eastern anchor trench at the Fly Ash Pond, facing northeast.



Photograph 3 ▲ - View of the Fly Ash Pond with 40 mil HDPE geomembrane and the seeded former Fly Ash Stockpile, looking north.



Photograph 4 ▲ - View of typical vacuum box testing of the 40-mil HDPE geomembrane.



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Missouri

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

DATE: November 6, 2018

SUBJECT: Summary Report for October 29, 2018 to November 3, 2018

PROJECT: Fly Ash Pond and Bottom Ash Pond Closures
Meredosia Power Station
Meredosia, Morgan County, Illinois
Geotechnology Project No. J024917.04

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

Weather

The week of October 29, 2018 to November 3, 2018, the weather was generally clear to rainy. Temperature (°F) lows ranged from 35 to 50°F, and temperature highs ranged from 51 to 77°F. Work was not performed October 31, 2018, November 1, 2018, and November 3, 2018 due to rain on site.

Construction Activities

Blankenship Construction Company demobilized equipment and maintained the site in response to rains on the site.

On October 29-30, 2018, GSI placed ClosureTurf at the Fly Ash Pond. On November 2, 2018, GSI conducted drying activities at the Fly Ash Pond in response to rain on the site.

Equipment and Personnel On-Site

Blankenship Construction Company had the following equipment on site: One Caterpillar excavator, one New Holland tractor with water wagon, one Caterpillar skidsteer.

Meetings

A weekly progress meeting was held on Wednesday, October 31, 2018. Refer to the meeting minutes for additional information.

Photographs

A photograph log with selected photographs obtained while Geotechnology was on site is attached.

Materials

ClosureTurf was placed on the Fly Ash Pond.

Testing/Sampling

GSI and Geotechnology performed quality control and construction quality assurance testing, respectively, of ClosureTurf placed on the Fly Ash Pond.

Signature of CQA Officer



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

Attachments: Daily Reports
Photograph Log

DAILY REPORTS



DAILY REPORT

DATE: Oct 29, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: JYG

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.0) Lunch

Arrive: 0730

Depart: 1700

Travel: 2.75

Total: 12.25

AM Conditions: Clear

AM Temperature: 52 F

PM Conditions: Clear

PM Temperature: 73 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship, GSI, and Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Engineered turf

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Engineered turf installation at Fly Ash Pond.

Jessie Y Goodwin
Geotechnology, Inc. Rep.

10/29/2018
Date


Geotechnology, Inc. Engineer

11/6/18
Date



SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

GSI:

Installed engineered turf geosynthetics at the Fly Ash Pond. One welding machine (BR#2) was used to weld engineered turf.

Geotechnology:

Performed engineered turf geosynthetics installation CQA activities.

Geotechnology observed a passing trial weld performed by GSI using welding machine BR#2 in the morning and in the afternoon.



DAILY REPORT

DATE: Oct 30, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: JYG & AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645 Depart: 1700 Travel: 2.75 Total: 12.5

AM Conditions: Clear AM Temperature: 53 F

PM Conditions: Overcast PM Temperature: 74 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship, GSI, and Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Engineered turf

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Engineered turf installation at Fly Ash Pond.

Alyssa A. Okorn 10/30/2018
Geotechnology, Inc. Rep. Date


Geotechnology, Inc. Engineer

11/6/2018
Date



SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

GSI:

Installed engineered turf geosynthetics at the Fly Ash Pond. One welding machine (BR#2) was used to weld engineered turf.

Geotechnology:

Performed engineered turf geosynthetics installation CQA activities.

Geotechnology observed a passing trial weld performed by GSI using welding machine BR#2 in the morning and twice in the afternoon.



DAILY REPORT

DATE: Oct 31, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.0) Lunch

Arrive: 0645

Depart: 1030

Travel: 0.5

Total: 4.25

AM Conditions: Overcast

AM Temperature: 49 F

PM Conditions: Overcast

PM Temperature: 51 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship, GSI, and Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: _____


Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Alyssa A. Okorn
Geotechnology, Inc. Rep.

10/31/2018
Date


Geotechnology, Inc. Engineer

11/6/2018
Date



SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

GSI:

Work was not performed due to rain on site overnight.

Geotechnology:

Alyssa Okorn attended the weekly progress meeting held by Blankenship. See the meeting minutes for additional information.



Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER
STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 10-31-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology Inc., GSI, and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Randy B., Steve P., Pat B., (Mike W., Meghan K. ph.)
BCCO- Rob F., Garrett B.
OTHERS- Geotechnology Inc.- Alyssa O. (Anna S. ph.)
OTHERS- GSI- Dave H. (Dave C. ph.)

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

1. Safety.
 - a. Safety Minute: Garrett B.- Halloween Safety Tips for Adults, Children, and Homeowners
 - b. Next week's volunteer: Rob F.
2. Contractor Progress Report.
 - a. The river has been slowly falling since last week, and is right at 7.12' as of 10/30/18. There was 0.4" of rainfall onsite on the 26th and 0.6" of rain overnight on the 30th/31st of October. Rain chances continue through tonight, 10/31. Rain chances over the next ten days are spaced out over multiple days, overall an unfavorable forecast.
 - b. Mobilization; BCCO has de-mobilized a CAT D6T from site. BCCO will continue to de-mobilize anything not necessary to the project and make final cleanup efforts over the next few weeks.
 - c. Operations for BCCO in the FAP have been reduced now that the 40 mil is complete, but BCCO is continuing to stay caught up on any anchor trench backfill or downlet finishing that can be completed.
 - d. Midwest Seedling Supply finished the straw blowing after the wind damage, and also finished the sediment log installation.



- e. BCCO has completed the installation of the roadway surfacing onsite. This includes the 24" and 6" roadways included in the original contract, as well as the additional site roads requested by Mike W. This does not include the AIC roadway.
- f. GSI started turf deployment last week after blacking out the remaining FAP area. GSI is predicting to have the FAP turf installation completed possibly by the end of the week this week. GSI stated that there is about 590,000 SF of turf left. Dave H. anticipates having his full crew back by the end of this week, and feels as though 9 days of good production should get the 590,000 SF completed.

3. Contractor's Weekly Work Plan

a. Update: Rob F.

- 1. BCCO will monitor the river levels and precipitation in the area, and pump any areas as needed.
- 2. Continue anchor trench backfills, rip rap placement, and touch up seeding around the FAP Closure Turf area as needed. GSI wants to wait until the temperatures are under 40 degrees and closer to the thirties to backfill additional anchor trench. BCCO should be able to accomplish this in the coming days by backfilling anchor trench in the mornings when temps are at this level.
- 3. The FAP turf deployment will continue this week and next as weather allows. The weather forecast appears to be unfavorable through today, 10/31, and there are chances for rain on 11/1, 11/4, 11/5, and 11/6.
- 4. Sand infill on the FAP will continue as turf installation allows. Dave H. and Rob F. discussed possibly performing the sand and ArmorFill prior to anchor trench backfill on the areas that are not backfill, but this is not confirmed. BCCO/GSI will utilize ballast in the ditch area while backfilling is being performed, to attempt to eliminate the anchor trench work from taking any slack from the ditch on the remaining backfills. Dave H. thinks with decent weather for deployment, he should have access for sand spreading equipment by the middle of next week.

4. Schedule Forecast

a. Two Week Look Ahead.

- 1. Liner work on the FAP needs the completion date moved to Nov. 14th.
- 2. ArmorFill on the FAP needs the completion date move to Dec. 6th.



3. Roads and Final ditch work needs a completion date of October 25th.

4. Final Seeding and Mulching needs a completion date of October 25th.

5. New Items/Miscellaneous

- a. Dave C. or Matt S.: Update on last week's discussion regarding whether or not GSI will be taking leftover material. Update: Garrett B. informed the group that he and Dave C. discussed GSI taking the leftover material back, but there will be shipping and re-stocking fees associated with this, so doing so is not likely to yield a contract change.
- b. Dave C. or Matt S.: Update on discussions with Watershed Geo regarding lifted turf material in the FAP ditch pathways. Update: Anna S. was able to join this meeting, and informed the group that the discussion held prior between Geotechnology, WatershedGeo, and GSI, resulted in an agreement to cut the liner and turf material at the areas in the ditch where the lifting was worst, and adding material as needed to allow the material to sit on the ash surface. Dave H. stated that he will start on this work when possible and the temps are cool, and once the work is preformed, heavily bag the area for ballast.
- c. Pat B. asked is BCCO would be observing Veteran's Day on Nov. 12th, a Monday, as actual Veteran's Day falls on Sunday. Rob F. responded that BCCO generally follows the local operator's handbook and will follow up on the question.

6. Action Items

- a. BCCO Items:
 - 1. BCCO to continue submittals. Update: The next upcoming submittals should include HDPE and Turf Closeout submittals. If there are any other upcoming items not listed here, please let Garrett know. {Status- Open}
- b. Ameren Items:
 - 1. None at this time.

7. Questions, Comments, Open Discussion

- a. Update

The next progress meeting for this project will be held on November 7th at 9:00 a.m.



DAILY REPORT

DATE: Nov. 1, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.0) Lunch

Arrive: 0645

Depart: 0815

Travel: 2.5

Total: 4.0

AM Conditions: Overcast

AM Temperature: 46 F

PM Conditions: Overcast

PM Temperature: 45 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: GSI

Personnel: Blankenship and Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: _____


Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Alyssa A. Okorn
Geotechnology, Inc. Rep.

11/1/2018
Date


Geotechnology, Inc. Engineer

11/6/2018
Date



SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

GSI:

Work was not performed due to rain on site overnight.

Geotechnology:

Work was not performed due to rain on site overnight.



DAILY REPORT

DATE: Nov 2, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.0) Lunch

Arrive: 0645

Depart: 1115

Travel: 0.5

Total: 5.0

AM Conditions: Foggy

AM Temperature: 33 F

PM Conditions: Overcast

PM Temperature: 47 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: GSI

Personnel: GSI and Geotechnology

Visitors: Nick Gonzalez - Geotechnology

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: _____

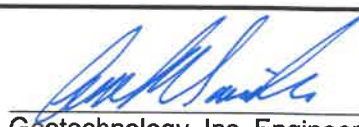
Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Alyssa A. Okorn
Geotechnology, Inc. Rep.

11/2/2018
Date


Geotechnology, Inc. Engineer

11/6/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:**GSI:**

Used brooms and leaf blowers to facilitate drying of the ClosureTurf system.

Geotechnology:

Alyssa observed the work taking place on the ClosureTurf system. Nick Gonzalez demobilized Geotechnology's UTV from the site.



DAILY REPORT

DATE: Nov. 3, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.0) Lunch

Arrive: 0645

Depart: 0815

Travel: 2.5

Total: 4.00

AM Conditions: Overcast

AM Temperature: 33 F

PM Conditions: Overcast

PM Temperature: 35 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Geotechnology

Personnel: Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: _____

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Alyssa A. Okorn
Geotechnology, Inc. Rep.

11/3/18
Date


Geotechnology, Inc. Engineer

11/6/2018
Date



SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

GSI:

Work was not performed due to rain on site overnight.

Geotechnology:

Work was not performed due to rain on site overnight.

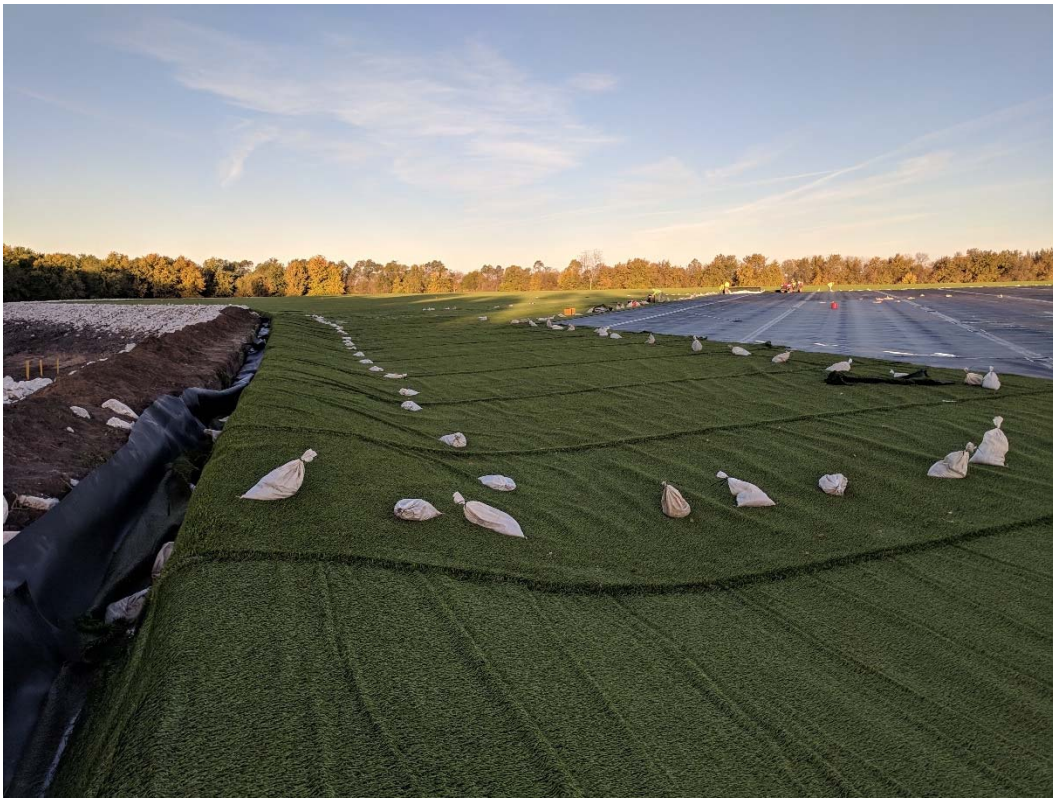
PHOTOGRAPH LOG



Photograph 1 ▲ - View of typical placement of the engineered turf geotextile, facing north.



Photograph 2 ▲ - View of typical welding of the engineered turf geotextile, facing north.



Photograph 3 ▲ - View of sand bags placed in the perimeter ditch after synthetic turf geotextile installation, looking west.



Photograph 4 ▲ - View of ponding on suspended HDPE geomembrane in the perimeter ditch, looking northeast.



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Missouri

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

DATE: November 12, 2018

SUBJECT: Summary Report for November 5, 2018 to November 10, 2018

PROJECT: Fly Ash Pond and Bottom Ash Pond Closures
Meredosia Power Station
Meredosia, Morgan County, Illinois
Geotechnology Project No. J024917.04

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

Weather

The week of November 5, 2018 to November 10, 2018, the weather was generally clear to overcast with rain or snow. Temperature (°F) lows ranged from 15 to 43°F, and temperature highs ranged from 32 to 56°F.

Construction Activities

Work was generally not performed November 6, 9, and 10, 2018 due to wet conditions and snow on site.

On November 5, 2018, GSI conducted drying activities at the Fly Ash Pond in response to rain on the site.

On November 7-8, 2018, GSI conducted ClosureTurf placement activities at the Fly Ash Pond.

Equipment and Personnel On-Site

Blankenship Construction Company had the following equipment on site: One Caterpillar excavator, one water wagon, and one Caterpillar skidsteer.

Meetings

A weekly progress meeting was held on Wednesday, November 7, 2018. Refer to the meeting minutes for additional information.

Photographs

Due to the lack of work performed on site, a photograph log was not prepared for the week of November 5, 2018 to November 10, 2018.

Materials

ClosureTurf was placed on the Fly Ash Pond.

Testing/Sampling

GSI and Geotechnology performed quality control and construction quality assurance testing, respectively, of ClosureTurf placed on the Fly Ash Pond.

Signature of CQA Officer



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

Attachments: Daily Reports

DAILY REPORTS



DAILY REPORT

DATE: Nov 5, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.0) Lunch

Arrive: 0630

Depart: 0730

Travel: 4.0

Total: 5.0

AM Conditions: Clear

AM Temperature: 42 F

PM Conditions: --

PM Temperature: -- F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, GSI

Personnel: Blankenship, GSI, and Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: _____

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Alyssa A. Okorn
Geotechnology, Inc. Rep.

11/5/2018
Date


Geotechnology, Inc. Engineer

11/12/18
Date



SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

GSI:

Performed water clearing activities.

Geotechnology:

Observed water clearing activities before being informed turf would not be placed.



DAILY REPORT

DATE: Nov 6, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.0) Lunch

Arrive: ---

Depart: ---

Travel: 0.00

Total: 0.00

AM Conditions: --

AM Temperature: -- F

PM Conditions: --

PM Temperature: -- F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: _____

Personnel: _____

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: _____

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Alyssa A. Okorn
Geotechnology, Inc. Rep.

11/6/2018
Date


Geotechnology, Inc. Engineer

11/12/2018
Date



SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

GSI:

Called off for wet conditions.

Geotechnology:

Called off for wet conditions.



DAILY REPORT

DATE: Nov 7, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0630

Depart: 1630

Travel: 2.25

Total: 11.75

AM Conditions: Clear

AM Temperature: 32 F

PM Conditions: Clear

PM Temperature: 41 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: GSI

Personnel: GSI and Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Engineered turf

Deliveries: _____


Testing: _____

CONSTRUCTION SITE LOCATIONS:

Engineered turf installation at Fly Ash Pond.

Alyssa A. Okorn
Geotechnology, Inc. Rep.

11/7/2018
Date


Geotechnology, Inc. Engineer

11/12/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

GSI:

Installed engineered turf geosynthetics at the Fly Ash Pond. One welding machine (BR#2) was used to weld engineered turf in the morning and two were used in the afternoon (LH#1 & BR#2).

Geotechnology:

Performed engineered turf geosynthetics installation CQA activities.

Geotechnology observed passing trial welds performed by GSI using welding machine BR#2 in the morning and by LH#1 & BR#2 in the afternoon.

Attended the weekly coordination meeting held on site by Blankenship. See meeting minutes for more details.



Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 11-07-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology Inc., GSI, and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Randy B., Steve P., Pat B., (Mike W., Meghan K. ph.)
BCCO- Rob F., (Garrett B. ph.)
OTHERS- Geotechnology Inc.- Alyssa O. (Anna S. ph.)
OTHERS- GSI- Dave H.

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

1. Safety.
 - a. Safety Minute: Rob F.- Accident Factors
 - b. Next week's volunteer: Pat B.
2. Contractor Progress Report.
 - a. The river fell since last week to under 7', but after rainfall is slowly rising back up and is right at 6.31' as of 11/06/18. The level is projected to hit 7.7' by 11/9 then start to slowly fall again. The site has had intermittent rain since the last meeting, including Oct. 30th and 31st, Nov. 1st, 3rd, 4th, and 5th for a cumulative total of 1.1" not counting the 0.4" on the 26th of October.
 - b. Mobilization; BCCO has de-mobilized a CAT 308 excavator from site. BCCO will continue to de-mobilize anything not necessary to the project and make final cleanup efforts over the next few weeks. BCCO will re-mobilize a mini-ex to site to finish anchor trench when more is available to backfill.
 - c. BCCO completed some basic seeding work in the coal yard run off area, including broadcasted seed and harrow work. Garrett B. did not get this included on the meeting minutes last week, so this is to update everyone on that work being completed. Rob F. and the crew got this work done at the end of the week of Oct. 22nd.



- d. Operations for BCCO in the FAP have been minimal. Anchor trench backfill will proceed when more is available. The temperatures over the next few days should be conducive to backfilling anchor trench. Rob F. plans on using the UTV as ballast to keep the liner from developing tension as the anchor trench is backfilled.
- e. GSI started turf deployment after blacking out the remaining FAP area. GSI was unable to continue turf deployment since last meeting due to ongoing rainfall. GSI made effort the end of last week to dry to the turf out and continue welding work, including purchasing leaf blowers and trying to dry the turf edges for seaming. This was unsuccessful however, and GSI was unable to prevent water from running off the existing turf towards the welding area. GSI spent 2 hours onsite on 11/2 trying to dry the turf, the same on 11/5, and another 4 hours on 11/6 and was not able to prevent the water from advancing toward the welding edge. Dave H. has a 12-man crew onsite and should retain that many until the work is completed.

3. Contractor's Weekly Work Plan

a. Update: Rob F.

1. BCCO will monitor the river levels and precipitation in the area, and pump any areas as needed.
2. Continue anchor trench backfills, rip rap placement, and touch up seeding around the FAP Closure Turf area as needed and possible. As discussed last week, the anchor trench backfills will only continue when the temperatures are below 40 degrees. Rob F. will utilize sand bags and the UTV to provide ballast as needed during backfills.
3. The FAP turf deployment will continue as soon as possible, with the expectation being that the turf deployment can continue on 11/7. Dave H. has purchased lights to add to their onsite equipment, and expects to have them onsite on 11/8. He intends to use these to extend their working timeframe to 12 hours a day. The intent from the 8th on forward is to work every possible day, including Sundays, 12 hours a day until the project is complete. Dave H. stated that the liner schedule needs to be extended 7 days due to the lost rain days and the crew being unable to deploy turf since last Tuesday the 30th of October. Dave expects the remaining install to take 10 more working days, not including the cut-out repair work in the ditch near the downlets. The weather forecast from 11/6/18 on out 10 days, does not show any rain chances (WeatherBug as of 11:00 a.m. on 11/6), and shows conditions from sunny to mostly cloudy. The temperatures will be under 50 degrees for the high starting on 11/7 and lows



will dip down to the high 30's. Dave H. stated that the cannot weld if temperatures remain under freezing. Mike W. asked if GSI could add welding machines, Dave H. stated that this is a decision for Matt S. Dave H. also stated that manning 3 welders would be difficult with the current crew count.

1. Mike W. was concerned about setting a fixed 7-day schedule, and stated he would have to confirm with his peers that this was acceptable. If a day is missed during the week, Sunday is still an acceptable makeup day. Since days had already been missed this week, working this Sunday is acceptable. Anna S. also stated that she would need to confirm with her peers that working every Sunday was acceptable.

4. Sand infill on the FAP will continue as turf installation allows.

4. Schedule Forecast

a. Two Week Look Ahead.

1. Extend the liner completion from the current date of 11/14 to 11/21 to account for the 7 rain days.

2. Mike requested that Garrett get together a total count on lost days.

5. New Items/Miscellaneous

- a. Rob F. asked about temperatures and installing ArmorFill, this information is present in the specifications and Rob, along with Garrett and GSI, will review and plan accordingly when ArmorFill install is to continue.
- b. Rob F. stated that most of the seeded areas have shown good germination so far, except for the recently seeded coal yard runoff area.
- c. Mike W. stated that the AIC group has not given any information on the AIC roadway yet to date.
- d. Anna S. stated that Geotechnology would need 1 destruct out of the repair areas in the ditch lines.

6. Action Items

a. BCCO Items:



1. BCCO to continue submittals. Update: The next upcoming submittals should include HDPE and Turf Closeout submittals. If there are any other upcoming items not listed here, please let Garrett know. {Status- Open}

b. Ameren Items:

1. None at this time.

7. Questions, Comments, Open Discussion

a. Update

The next progress meeting for this project will be held on November 14th at 9:00 a.m.



DAILY REPORT

DATE: Nov 8, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0630

Depart: 1630

Travel: 0.5

Total: 10.0

AM Conditions: Cloudy

AM Temperature: 31 F

PM Conditions: Overcast

PM Temperature: 36 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: GSI

Personnel: GSI and Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Engineered turf

Deliveries: _____


Testing: _____

CONSTRUCTION SITE LOCATIONS:

Engineered turf installation at Fly Ash Pond.

Alyssa A. Okorn
Geotechnology, Inc. Rep.

11/8/2018
Date


Geotechnology, Inc. Engineer

11/12/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

GSI:

Installed engineered turf geosynthetics at the Fly Ash Pond. Two welding machine (LH#1 & BR#2) were used to weld engineered turf.

Geotechnology:

Performed engineered turf geosynthetics installation CQA activities.

Geotechnology observed passing trial welds performed by GSI using welding machines LH#1 & BR#2 in the morning and the afternoon.



DAILY REPORT

DATE: Nov 9, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.0) Lunch

Arrive: 0630

Depart: 0815

Travel: 2.25

Total: 4.0

AM Conditions: Light Snow

AM Temperature: 31 F

PM Conditions: --

PM Temperature: -- F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: _____

Personnel: _____

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: _____

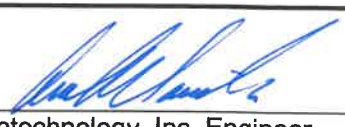
Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Alyssa A. Okorn
Geotechnology, Inc. Rep.

11/9/2018
Date


Geotechnology, Inc. Engineer

11/12/18
Date



SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

GSI:

Called off for snow.

Geotechnology:

Called off for snow.



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Missouri

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

DATE: November 28, 2018

SUBJECT: Summary Report for November 11, 2018 to November 24, 2018

PROJECT: Fly Ash Pond and Bottom Ash Pond Closures
Meredosia Power Station
Meredosia, Morgan County, Illinois
Geotechnology Project No. J024917.04

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

Weather

From November 11, 2018 to November 24, 2018, the weather was generally clear to overcast with rain or snow. Temperature (°F) lows ranged from 15 to 41°F, and temperature highs ranged from 28 to 60°F. Weather conditions permitted work on site on November 19-22, 2018.

Construction Activities

Work was generally not performed November 11-18 and 23-24, 2018 due to wet, cold, and/or snowy conditions on site.

On November 19-22, 2018, GSI conducted ClosureTurf placement activities at the Fly Ash Pond.

In response to communications with GSI and Blankenship, Geotechnology did not mobilize to site on November 12-13, 15-18, and 23-24, 2018. Geotechnology was not on site on November 22, 2018 due to the Thanksgiving holiday.

Geotechnology mobilized to site on November 11 and 14, 2018 in response to an indication that work would be performed. Geotechnology demobilized after notification that work would not be performed.

Geotechnology was on site and observed work on November 19-22, 2018.

Equipment and Personnel On-Site

Blankenship Construction Company had the following equipment on site: One Caterpillar excavator, one water wagon, and one Caterpillar skidsteer.

Meetings

Weekly progress meetings were held on Wednesday, November 14, 2018 and Wednesday, November 21, 2018. Refer to the meeting minutes for additional information.

Photographs

A photograph log was not prepared for November 11, 2018 to November 24, 2018.

Materials

ClosureTurf was placed on the Fly Ash Pond.

Testing/Sampling

GSI and Geotechnology performed quality control and construction quality assurance testing, respectively, of ClosureTurf placed on the Fly Ash Pond.

Signature of CQA Officer



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

Attachments: Daily Reports

DAILY REPORTS



DAILY REPORT

DATE: Nov 11, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.0) Lunch

Arrive: 0630 Depart: 0730 Travel: 4.5 Total: 5.5

AM Conditions: Clear AM Temperature: 27 F

PM Conditions: -- PM Temperature: -- F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: GSI
Personnel: GSI and Geotechnology
Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: _____
Deliveries: _____
Testing: _____

CONSTRUCTION SITE LOCATIONS:

Alyssa A. Okorn
Geotechnology, Inc. Rep.

11/11/2018
Date


Geotechnology, Inc. Engineer

11/16/18
Date



SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

GSI:

Water clearing activities

Geotechnology:

Arrived on site after being told there would be engineered turf deployment performed. Upon arrival, was informed that engineered turf would not be placed.



DAILY REPORT

DATE: Nov 14, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.0) Lunch

Arrive: ---- Depart: ---- Travel: 1.5 Total: 1.5
AM Conditions: -- AM Temperature: -- F
PM Conditions: -- PM Temperature: -- F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: _____

Personnel: _____
Visitors: _____


MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: _____
Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Alyssa A. Okorn 11/14/2018
Geotechnology, Inc. Rep. Date

 11/16/18
Geotechnology, Inc. Engineer Date



SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

GSI:

Called off for below freezing temperatures.

Geotechnology:

Partial travel to site. Called off for below freezing temperatures before arrival at the site.



Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER
STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 11-14-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology Inc., GSI, and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Randy B., Steve P., Pat B., Mike W.
BCCO- Rob F., (Phil W. ph.)
OTHERS- Geotechnology Inc.- (Anna S. ph.)
OTHERS- GSI- Dave H., (Matt S. ph.)

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

1. Safety.
 - a. Safety Minute: Pat B.- Motor Vehicle Safety
 - b. Next week's volunteer: Dave H.
2. Contractor Progress Report.
 - a. The site has had intermittent snowfall and very low temperatures since the last meeting. The immediate forecast calls for some light snow and continued cold temperatures. The extended forecast was discussed and did not look good. As of 11/15 at 8:00 am, Accuweather is showing a somewhat favorable forecast for the next 10 days.
 - b. Mobilization; BCCO has not mobilized any additional equipment to site since last week.
 - c. Operations for BCCO in the FAP have only consisted of anchor trench backfills where possible. This consisted of approximately 300-400 lf as of 11/13. We are prepared to backfill more as progress dictates. BCCO still plans to re-install the Southeast entrance as soon as possible for sand deployment.
 - d. GSI was not able to continue turf deployment. Cold temperatures have stopped production. They deployed approximately 230,000 sf on the two days they worked last week. They have approximately 270,000 sf left to deploy.



3. Contractor's Weekly Work Plan

a. Update: Rob F.

1. BCCO will monitor the river levels and precipitation in the area, and pump any areas as needed.
2. Continue anchor trench backfills, rip rap placement, and touch up seeding around the FAP Closure Turf area as needed and possible. When the SE entrance can be re-installed BCCO will do so, and then BCCO will look to continue sanding effort as possible.
3. The FAP turf deployment will continue as soon as possible. The weather forecast does show a snow chance on Wednesday Nov 14th and Thursday, Nov. 15th, but that is the only precipitation shown on the 10-day forecast (Accuweather as of 8:00 a.m. on 11/15), and shows conditions from sunny to cloudy with only one Sunday that will be extremely cold (36/19). The high temperatures will be between 36-54 degrees with lows between 19-33 degrees starting on 11/16.

4. Schedule Forecast

a. Two Week Look Ahead.

1. Review the liner completion date and adjust for weather as necessary from the current date of 11/27. Since 11/8, there have been four (4) lost week days.

5. New Items/Miscellaneous

- a. Liner bridging repairs were discussed. As of last week, it was decided based on the recommendation from Ming Zu in an email that the areas where major bridging is occurring can be cut and patched. These areas were described as areas where you can stand on the liner and it will **not** touch the sub-grade. The areas where minor bridging is occurring will be sand bagged or otherwise ballasted in order to stretch the liner to conform to the ditch profile. These areas were described as areas where you can stand on the liner and it will touch the sub-grade. It was agreed that Geotechnology will mark the areas where the major bridging is occurring and GSI will make the patch repairs based on recommendations from the system manufacturer. These repairs will in no way affect the system warranty. GSI voiced concerns about wrinkling in warmer weather but the repairs will be done to alleviate the bridging. Applying ballast to the major bridging areas was discussed but this will void the permit design, therefore, it is an unacceptable approach. The expectation is that Anna and Matt S. will be on site the week of 11/26 to mark the areas and schedule the repairs. Matt S. to provide schedule.



- b. Sand and glue application was discussed. There are concerns that the sand and glue may not be applied this year due to cold temperatures and precipitation preventing proper application and curing for the glue (5 days of no precipitation). It was mentioned that the glue could be shipped elsewhere and new glue brought in if the application was held off until spring. It was agreed that we would take a wait-and-see approach before shipping any glue off site and we would continue to watch the weather for a window of opportunity. If we get a window, the expectation is that every effort will be made to complete the sand and glue application at that time. There is a concern regarding UV damage to the turf system if the sand is not applied until spring. Matt S. is going to research this. Please see action items below.

6. Action Items

- a. BCCO Items:

- 1. BCCO to continue submittals. Update: The next upcoming submittals should include HDPE and Turf Closeout submittals. If there are any other upcoming items not listed here, please let Garrett know. {Status- Open}

- b. GSI Items:

- 1. Matt S. to research the UV damage, if any, that would happen if the sand is not spread until spring 2019.
- 2. Matt S. to be on site the week of 11/26 to look at patch repairs with Anna.

- c. Geotechnology Items:

- 1. Anna S. to be on site the week of 11/26 to mark areas for patch repairs.

- d. Ameren Items:

- 1. Provide appropriate notice of property sale in the event we have to move materials from existing buildings.

7. Questions, Comments, Open Discussion

- a. Update - none

The next progress meeting for this project will be held on November 21st at 9:00 a.m.



DAILY REPORT

DATE: Nov 19, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.0) Lunch

Arrive: 1100 Depart: 1730 Travel: 2.5 Total: 8.5
AM Conditions: Cloudy AM Temperature: 35 F
PM Conditions: Cloudy PM Temperature: 39 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: GSI & Blankenship
Personnel: GSI, Blankenship, & Geotechnology
Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Engineered Turf
Deliveries: _____
Testing: _____

CONSTRUCTION SITE LOCATIONS:

Engineered turf installation at Fly Ash Pond.

Alyssa A. Okorn 11/19/2018
Geotechnology, Inc. Rep. Date


Geotechnology, Inc. Engineer 11/27/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

GSI:

Installed engineered turf geosynthetics at the Fly Ash Pond. Three welding machines (BR#001, JN#1, & LH#2) were used to weld engineered turf.

Geotechnology:

Performed engineered turf geosynthetics installation CQA activities.

Geotechnology observed passing trial welds performed by GSI using welding machines BR#001, JN#1, & LH#2 in the morning and the afternoon.



DAILY REPORT

DATE: Nov 20, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0630 Depart: 1615 Travel: 0.5 Total: 9.75

AM Conditions: Cloudy AM Temperature: 28 F

PM Conditions: Clear PM Temperature: 33 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: GSI & Blankenship
Personnel: GSI, Blankenship, & Geotechnology
Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Engineered Turf
Deliveries: _____
Testing: _____

CONSTRUCTION SITE LOCATIONS:

Engineered turf installation at Fly Ash Pond.

Alyssa A. Okorn 11/20/2018
Geotechnology, Inc. Rep. Date


Geotechnology, Inc. Engineer

11/27/2018
Date



SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

GSI:

Installed engineered turf geosynthetics at the Fly Ash Pond. Two welding machines (BR#1 & LH#2) were used to weld engineered turf.

Geotechnology:

Performed engineered turf geosynthetics installation CQA activities.

Geotechnology observed passing trial welds performed by GSI using welding machines BR#1 & LH#2 in the morning and the afternoon.



DAILY REPORT

DATE: Nov 21, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures Representative: AAO
Project Number: J024917.04
Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0630 Depart: 1800 Travel: 2.5 Total: 13.5

AM Conditions: Clear AM Temperature: 31 F

PM Conditions: Clear PM Temperature: 35 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: GSI & Blankenship
Personnel: GSI, Blankenship, & Geotechnology
Visitors: _____


MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Engineered Turf
Deliveries: _____
Testing: _____

CONSTRUCTION SITE LOCATIONS:

Engineered turf installation at Fly Ash Pond.

Alyssa A. Okorn 11/21/2018
Geotechnology, Inc. Rep. Date


Geotechnology, Inc. Engineer 11/27/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

GSI:

Installed engineered turf geosynthetics at the Fly Ash Pond. Two welding machines (BR#1 & LH#2) were used to weld engineered turf.

Geotechnology:

Performed engineered turf geosynthetics installation CQA activities.

Geotechnology observed passing trial welds performed by GSI using welding machines BR#1 & LH#2 in the morning and the afternoon.



Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 11-14-18 Meeting Date was 11-21-2018.
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology Inc., GSI, and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Randy B., Steve P., Pat B., (Mike W. ph.)
BCCO- Ross W., (Garrett B. ph.)
OTHERS- Geotechnology Inc.- Alyssa O. (Anna S. ph.)
OTHERS- GSI- (Dave H., Matt S. ph.)

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

1. Safety.
 - a. Safety Minute: Dave H. – Extension Cord Safety: Extension cords are a widely used item on many jobsites, but cords left loose or uncovered can cause trip hazards or electrical hazards. Cords should be inspected daily for damage and taken out of service if any damage is discovered. GFCI's should be utilized on all extension cords. Do not use damaged cords, Romex boxes, or electrical wires meant for permanent installation as extension cords.
 - b. Next week's volunteer: Garrett B.
2. Contractor Progress Report.
 - a. The river fell since last week to 5.3', and is projected to fall slowly through November 27th. The site has had some rainfall, including 0.3" on the 15th, and low temperatures since the last meeting.
 - b. Mobilization; BCCO has not mobilized any additional equipment to site since last week.
 - c. Operations for BCCO in the FAP have consisted of anchor trench backfills where possible. Mike W. asked if there were any additional CQA tests or approvals prior to backfilling, and if sufficient ballast was being used prior to anchor trench backfills. Dave H. responded that he was comfortable with the backfills continuing to proceed as they



have been since they do have additional ballast on the liner and the liner itself was installed in cooler conditions. BCCO has also finished installing the SE entrance to allow access for sand deployment. BCCO began sand deployment work on 11/20 at about 10:30 a.m. Ross and Alyssa plan on performing some sand infill thickness checks after lunch. BCCO also imported some additional rock to site to improve some of the site roads as well as a couple loads to use later in the jobsite trailer area.

- d. GSI was able to continue turf deployment on Monday after some substantial effort to dry the liner area prior to welding. GSI deployed for approx. half a day on Monday and got 65,000 SF down. GSI deployed all day on Tuesday starting at 6:30 a.m. on the 20th and deployed until 5:00 p.m. GSI placed 118,000 SF on Tuesday. This leaves less than 100,000 SF to finish on 11/21/18.

3. Contractor's Weekly Work Plan

a. Update: Rob F.

1. BCCO will monitor the river levels and precipitation in the area, and pump any areas as needed.
2. Continue anchor trench backfills, rip rap placement, and touch up seeding around the FAP Closure Turf area as needed and possible. BCCO will continue the sanding effort, and based on sand deployment on 11/20, BCCO hopes to have the sand deployed in another 3-5 days. BCCO will start brooming on 11/21 and will continue this work as possible. Brad C. is slated to be onsite next Monday afternoon to review the sanding work. Alyssa O. will be onsite next Wednesday to continue sand depth thickness checks.
3. Along with reviewing the sanding work, Brad C. will also evaluate the conditions onsite for possible Armor Filling. That being said, Mike W. and Matt S. had concerns that Armor Filling next week may be too soon, as the ArmorFill would definitely complicate any repairs that may be needed next spring. With the unknown condition of the liner after sand bag loading, it may be beneficial to wait until early next spring to evaluate these areas. With the cooler temperatures, the ArmorFill requires a longer timeframe to cure, 5-6 days.
4. The FAP turf deployment will continue, with the goal being that the turf deployment may be complete by the end of the day on 11/21. If deployment is not complete on 11/21, GSI plans to work Thanksgiving to complete any remaining deployment or detailing. The weather forecast does show a 90% chance of rain Friday, Nov. 23rd, with another chance shown Sunday at 50%



(WeatherBug as of 4:10 p.m. on 11/20). The forecast does show sunny weather with lows above 33 degrees for Wednesday and Thursday. Starting next week, the temperatures will fall to the low 30's/mid 20's.

5. Anna S. stated that she will not have anyone onsite on Thursday, and that GSI/BCCO needs to take photos of each area where hand welding is to occur as well as an overall site picture once work is completed for the day.

4. Schedule Forecast

a. Two Week Look Ahead.

1. Mike W. will get a revised schedule out when possible to reflect changes discussed.

2. The rip rap work at the FAP will extend into next week, as will the anchor trench backfill, and final touch up work to the last downlet/energy dissipater.

5. New Items/Miscellaneous

a. Mike W. should know next week if the sale on the plant is going to be finalized. Based upon that answer and further discussions regarding the ArmorFill work proceeding now or next spring, GSI will need to make accommodations for ArmorFill material to be moved offsite and stored appropriately.

b. Anna S. brought up the point that the sand bags should be removed prior to warm weather next spring (if ArmorFill is pushed off until then) to help make a determination if the underlying liner has actually relaxed enough to eliminate bridging issues, or if the currently proposed liner additions will still be needed. Matt S. was agreeable with this, and was going to reach out to WatershedGeo to try and gain additional support and information on this subject.

6. Action Items

a. BCCO Items:

1. BCCO to continue submittals. Update: The next upcoming submittals should include HDPE and Turf Closeout submittals. If there are any other upcoming items not listed here, please let Garrett know. {Status- Open}

b. GSI Items:

1. Matt S. to research the UV damage, if any, that would happen if the sand is not spread until spring 2019. Update: Matt S. provided Garrett and Rob and email



from Bob B. with Watershed Geo stating that UV degradation over the winter months is not a concern. Bob stated that the geotextile backing can support UV exposure for up to 5 years without sand, and that winter UV intensity in this region is low. That being said, with sand infill be placed on all the turf possible, UV damage should not be an issue for this site. {Status- Closed}

2. Matt S. to be on site the week of 11/26 to look at patch repairs with Anna.
Update: With the unknown possibility of the ArmorFill work being pushed in to next spring, the walk-through meeting for GSI, BCCO, and Geotechnology has been postponed until further discussion is had on the subject. Upon Brad C.'s arrival to site next week, GSI and Blankenship Const. will re-convene on the issue and propose a solution to Ameren. {Status- Open}

c. Geotechnology Items:

1. Anna S. to be on site the week of 11/26 to mark areas for patch repairs. This is temporarily postponed. {Status- Closed}

d. Ameren Items:

1. Provide appropriate notice of property sale in the event we have to move materials from existing buildings. Update: Mike W. thinks he should have information on this subject next week. {Status- Open}

7. Questions, Comments, Open Discussion

- a. Update- none

The next progress meeting for this project will be held on November 28th at 9:00 a.m.



MEMORANDUM

TO: Mike Wagstaff, P.E.
Ameren Missouri

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

DATE: December 6, 2018

SUBJECT: Summary Report for November 25, 2018 to November 30, 2018

PROJECT: Fly Ash Pond and Bottom Ash Pond Closures
Meredosia Power Station
Meredosia, Morgan County, Illinois
Geotechnology Project No. J024917.04

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

Weather

From November 28, 2018 to November 30, 2018, the weather was generally overcast. Temperature (°F) lows ranged from 14 to 27°F, and temperature highs ranged from 31 to 47°F.

Weather conditions did not permit work on site on November 26-27, 2018.

Construction Activities

Work was generally not performed November 26-27, 2018 due to wet, cold, and/or snowy conditions on site.

Sand and rip-rap placement took place on November 28-30, 2018. Seeding and straw blanket placement took place on November 29-30, 2018.

A drone site survey was performed by David Mason & Associates on November 30, 2018 and survey completion was performed the following week on December 5, 2018.

Further activities on site are not planned until after the conclusion of winter weather.

Equipment and Personnel On-Site

Blankenship Construction Company demobilized equipment from the site.

Meetings

A weekly progress meeting was held on Wednesday, November 28, 2018. Refer to the meeting minutes for additional information.

Weekly progress meetings are not scheduled until work continues after winter weather.

Photographs

A photograph log with selected photographs obtained while Geotechnology was on site is attached.

Materials

Sand and rip-rap were placed at the Fly Ash Pond. Seed and straw blankets were placed on the site as needed to further winterize the site.

Testing/Sampling

Geotechnology performed observation and cursory depth testing of sand infill placed on the Fly Ash Pond.

Signature of CQA Officer



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

Attachments: Daily Reports
Photograph Log

DAILY REPORTS



DAILY REPORT

DATE: Nov 28, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645

Depart: 1545

Travel: 2.5

Total: 11.0

AM Conditions: Partly Cloudy

AM Temperature: 16 F

PM Conditions: Cloudy

PM Temperature: 28 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, Cline Environmental, Geotechnology

Personnel: Blankenship, Cline Environmental, Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Sand, rip-rap

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Fly Ash Pond sand infill and rip-rap placement

Alyssa A. Okorn

Geotechnology, Inc. Rep.

11/28/2018

Date


Geotechnology, Inc. Engineer

12/5/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Assisted Cline Environmental with sand placement.

Worked on final rip-rap placement around the Fly Ash Pond and general site cleanup.

Held the Weekly Coordination Meeting.

Geotechnology:

Observed sand infill placement and performed cursory depth checks.

Attended the Weekly Coordination Meeting. See minutes for more details.



Meeting Minutes

PROJECT: MEDINA VALLEY COGEN, LLC- MEREDOSIA POWER
STATION ASH POND CLOSURES
PROJECT NO.: 15093
DATE: 11-28-18
LOCATION: Ameren Meredosia Power Station
DISTRIBUTION: Ameren, Geotechnology Inc., GSI, and Blankenship participants
BY: GAB
PARTICIPANTS: AMEREN- Randy B., Steve P., Pat B., (Mike W., Charlie H., ph.)
BCCO- Ross W., (Garrett B. ph.)
OTHERS- Geotechnology Inc.- Alyssa O. (Anna S. ph.)
OTHERS- GSI- Brad C., (Dave C., Matt S. ph.)

The following minutes express Blankenship Construction Company's representative understanding of the items discussed. Please respond in writing with any requested changes or corrections to: garrett@blankenshipconstructionco.com

1. Safety.
 - a. Safety Minute: Garrett B. – Cold Stress or Hypothermia
 - b. Next week's volunteer: No further meeting scheduled at this time.
2. Contractor Progress Report.
 - a. The river climbed in level since last week to 7.55', and is projected to rise slowly through December 3rd to 9.1'. The site had precipitation on 11/23 (0.4") and 11/25 (0.9") in the form of ice, snow, or rainfall since the last meeting. Temperatures ranged from 59 degrees to 24 degrees for the highs, and the lows varied from 39 to 17 degrees.
 - b. Mobilization; BCCO has de-mobilized the Sakai smooth drum roller, skid steer attachments, and other miscellaneous items from site since last week. BCCO has the Houle water tank, CAT 326 excavator, CAT 308 excavator, JD 9520 with box blade, Conex boxes, job trailer, and some other miscellaneous items yet to de-mobilize.
 - c. Operations for BCCO in the FAP have consisted of anchor trench backfills in the remaining anchor trench now that synthetics deployment is complete. BCCO is also working on making some repairs to the sub grade at the bottom of the last downlet, where some minor erosion has occurred. This will be done prior to backfilling anchor trench and finishing the rip rap portion of the downlet. BCCO began sand deployment



work on 11/20 last week and are continuing sand deployment as weather allows. Brad C. arrived onsite today and will oversee the sand installation over the next couple days. He reported that sand installation is progressing, minus some time spent fighting frozen material. He intends to have the sand installation done by this Friday, with the flat areas being completed first and the ditch areas following. Brad stated that he intends to get the sand thickness as close to the 0.75" maximum as possible in the ditch line areas. Once this work is completed, Brad will demobilize his equipment for the year. Alyssa O. is onsite and ready to start checking sand thicknesses at any time. Prior to ArmorFill next year, the sand bags will need to be removed so the sand can be touched up in these areas.

- d. GSI was able to continue turf deployment through Thursday of last week and finish the synthetic turf deployment. GSI demobilized from site upon completion of this deployment.

3. Contractor's Weekly Work Plan

a. Update: Rob F.

1. BCCO will monitor the river levels and precipitation in the area.
2. BCCO will demobilize all equipment from site and perform any minor final cleanup work to leave the site in good condition. BCCO anticipates having this work completed by the middle of next week.
3. Complete the final remaining anchor trench backfills, rip rap placement, and touch up seeding around the FAP Closure Turf area as needed. BCCO expects to have this work completed by the end of this week. BCCO will continue the sanding effort, and based on sand deployment this week, BCCO hopes to have the sand deployed by the end of this week. BCCO has been brooming sand since last week, when possible, and will continue this work as necessary until substantial completion. Brad C. is overseeing and spot-checking sand deployment, in effort to catch any deficient areas prior to Geotechnology performing their final observations.
4. GSI will need to return in the later winter/early spring of 2019 to review the bridging areas, make repairs where needed, and apply the ArmorFill component to the ditch lines. It is mutually agreed upon by Blankenship Construction and GSI that waiting to perform this work until warmer conditions in the spring is the best option at this point. Mike W. and Garrett B. will continue to



communicate in the coming months about this work and will work together with GSI to select a weather window in the spring to attempt to complete this work.

5. GSI will de-mobilize their glue material from site. Upon reviewing the ArmorFill tote tags, it would appear that the ArmorFill material currently onsite was produced in three batches, one of which was made in August and expires late February, the other 2 were in early October and expire early April. Matt S. stated that he wants to review the expiration labels with Watershed Geo and clarify if the material does in fact expire or if it needs re-mixed. Matt S. will update BCCO and Ameren when they organize transport for the ArmorFill material.
6. The leftover turf and liner material will need to be de-mobilized. GSI brought up the point that material may be needed next spring to make any repair necessary for bridging material, and asked if the remaining material could stay onsite until then. Mike W. has no issue with that, so at this time that is the current plan of action.
7. Matt S. asked if there was some sort of storage shed that was not included in the Ameren property sale that could be used for equipment storage for Cline Environmental's equipment. Mike W. replied that there was not, and if this equipment needed to be stored in a building, it would have to be de-mobilized.
8. Mike W. asked if BCCO would be able to come up and continue to perform the SWPPP inspections and submit to Ameren and Geotechnology. Garrett B. will coordinate this effort and may possibly utilize Midwest Seedling Supply for this work if they are willing to. This will need to be performed until springtime when the seed is mostly germinated and established, and SWPPP controls are removed. Mike W. is fine with having the Ameren representatives onsite perform these inspections, but they are only anticipated to be onsite for another 2-3 weeks at most.
9. There is not a meeting scheduled for next week currently. Mike W. and Garrett B. will communicate going forward for scheduling any meetings that may be needed.

4. Schedule Forecast

a. Two Week Look Ahead.

1. Change ArmorFill date to spring of 2019.



2. Move completion of rip rap hauling and placement at FAP to 11/30/18.
3. Move liner work at Fly Ash Pond to a completion date of 11/22/18. This does not include any possible repairs in 2019 for bridging material.
4. Move Fly Ash Pond Sand Placement to completion date of 11/30/18. This does not include any minor touch up work possible needed prior to ArmorFill in 2019.
5. Move Install Energy Dissipators completion to 11/30/18.
6. Move Final Site Cleanup and De-mobilize to 12/7/18.

5. New Items/Miscellaneous

- a. Rob F., Steve P., or Garrett B. will coordinate with Greer porta-potty to leave the Ameren site representatives a portable toilet onsite for a few weeks, in the event that they need to remain onsite but have to shut the water off.
- b. Anna S. is waiting on some additional submittal/CQA documents from GSI, Matt S. replied that she should have them by the end of this week. Anna S. stated that she also needs the sub grade acceptance forms. Matt S. did also clarify that they generally submit a final complete close out submittal with warranties at the end of the project, and still plan to do so.
- c. Anna S. asked about when she needs to perform her final site survey, the group discussed that it should be attempted to schedule this work over the next week to two weeks, while Ameren still has representatives onsite.

6. Action Items

a. BCCO Items:

1. BCCO to continue submittals. Update: The next upcoming submittals should include HDPE and Turf Closeout submittals. Once these are prepared and available, GSI/BCCO will provide them. {Status- Open}

b. GSI Items:

1. Update on schedule to de-mobilize ArmorFill concentrate. GSI will coordinate with BCCO to arrange removing this material from site. {Status- Open}
2. Update whether or not GSI will take remaining 40 mil and turf material and schedule for doing so. Update: this material will eventually be removed by GSI,



but will remain onsite until the final inspection of the ditch areas and ArmorFill is applied. {Status- Closed}

c. Geotechnology Items:

1. Verify sand installation depth on FAP when possible. {Status- Open}

d. Ameren Items:

1. Update as necessary.

7. Questions, Comments, Open Discussion

a. Update

There is currently not a progress meeting for this project scheduled. Mike W. or Garrett B. will inform the necessary parties of upcoming meetings when scheduled.



DAILY REPORT

DATE: Nov 29, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645

Depart: 1545

Travel: 0.5

Total: 9.0

AM Conditions: Cloudy

AM Temperature: 25 F

PM Conditions: Cloudy

PM Temperature: 34 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, Cline Environmental, Geotechnology

Personnel: Blankenship, Cline Environmental, Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Sand, rip-rap, seeding & straw blankets

Deliveries: _____

Testing: _____

CONSTRUCTION SITE LOCATIONS:

Fly Ash Pond sand infill. Seeding and placing straw blankets.

Alyssa A. Okorn
Geotechnology, Inc. Rep.

11/29/2018
Date


Geotechnology, Inc. Engineer

12/15/2018
Date

SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Assisted Cline Environmental with sand placement.

Worked on final rip-rap placement around the Fly Ash Pond, seeding and straw blanket placement, and general site cleanup.

Geotechnology:

Observed sand infill placement and performed depth checks.



DAILY REPORT

DATE: Nov 30, 2018

GENERAL INFORMATION:

Project Name: Meredosia Ash Pond Closures

Representative: AAO

Project Number: J024917.04

Project Client: Ameren

TIME AND WEATHER CONDITIONS:

(-0.5) Lunch

Arrive: 0645

Depart: 1545

Travel: 2.5

Total: 11.0

AM Conditions: Cloudy

AM Temperature: 26 F

PM Conditions: Cloudy

PM Temperature: 34 F

CONTRACTORS, EQUIPMENT, AND PERSONNEL:

Contractors: Blankenship, Cline Environmental, David Mason and Associates, Geotechnology

Personnel: Blankenship, Cline Environmental, David Mason and Associates, Geotechnology

Visitors: _____

MATERIALS USED, DELIVERIES, AND TESTING:

Materials Used: Sand, rip-rap, seeding & straw blankets

Deliveries: _____


Testing: _____

CONSTRUCTION SITE LOCATIONS:

Fly Ash Pond sand infill. Seeding and placing straw blankets.

Alyssa A. Okorn
Geotechnology, Inc. Rep.

11/30/2018
Date


Geotechnology, Inc. Engineer

12/5/2018
Date



SITE ACTIVITIES, OBSERVATIONS, CONTACTS, AND ADDITIONAL NOTES:

Blankenship:

Assisted Cline Environmental with sand placement.

Worked on final rip-rap placement around the Fly Ash Pond, seeding and straw blanket placement, and general site cleanup.

Geotechnology:

Observed sand infill placement and performed depth checks.

PHOTOGRAPH LOG



Photograph 1 ▲ - View of seeded Fly Ash Stockpile area, looking west.



Photograph 2 ▲ - View of straw blanket placement near the Fly Ash Pond, facing northeast.



Photograph 3 ▲ - View of seeding and straw at the Bottom Ash Pond and adjacent areas, looking north.



Photograph 4 ▲ - View of sand spreading activities, looking northwest.



APPENDIX B – CQA CERTIFICATIONS

Meredosia Power Station- Closure of Fly Ash and Bottom Ash Ponds

CQA CERTIFICATION

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 next 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 Bottom Ash (BA) Pond floor (see attached)

The coal ash residuals were removed from the BA Pond, and the floor of the excavation was cleaned. The BA Pond floor area (not including the roadways that require excavation or the area within 10' of the outfall structure) is approved for the clean closure of this area.

2. CONTRACTOR COMPLETING THE SUBJECT WORK:

Blankenship Construction Company

3. NEXT SEQUENTIAL WORK TO BEGIN:

Backfill the BA Pond with soils from the approved borrow area, remove the BA Pond roadways, and build the roadway turnaround area for the dock.

By CQA Officer-in-Absentia:
(if applicable)

NA
(Signature)

Date: NA

By CQA Officer:

[Signature]
(Signature)

Date: 5/16/2018

Distribution: Original To: Document Controller Copies To: _____

LEGEND:

- BOX DITCH LINE
SEE SHEET C-504
- CHARLTON DITCH SEDIMENT LOGS (TYP) OR APPROVED EQUAL
SEE SHEET C-403
- SILT FENCE
SEE SHEET C-403
- ROCK BLANKET
SEE SHEET C-504

Approved clean
closure area
5-16-2018
AMS



MEDINA VALLEY COGEN, LLC	
ASH POND CLOSURE	
GENERAL PLANS	
SWPPP PLAN	
MEREDOSIA POWER STATION	
PROJECT NO.	C-602
SCALE	AS SHOWN
DATE	0

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REPRESENT THE ACTUAL EXISTENCE, NON-EXISTENCE, SIZE, TYPE, NUMBER OR LOCATION OF ANY UTILITIES. THE GENERAL CONTRACTOR OF ALL UNDERGROUND UTILITIES SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.



NOTES:
1" = 120'-0"
1" = 240'-0" OR 240'-6"

Working\1593 - Geotechnical - Meredosia Ash Pond\Working\1593.dwg
08/08/16-1610

FILE: Working\1593 - Geotechnical - Meredosia Ash Pond\Working\1593.dwg
PRINTED BY: MATT VOSS
TIME: 8/10/2016 10:40:49 AM



Meredosia Power Station- Closure of Fly Ash and Bottom Ash Ponds

CQA CERTIFICATION

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 next 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 Bottom Ash (BA) Pond east road slope (see attached)

The coal ash residuals were removed from the BA Pond. The BA Pond east road and slope is approved for the clean closure of this area.

2. CONTRACTOR COMPLETING THE SUBJECT WORK:

Blankenship Construction Company

3. NEXT SEQUENTIAL WORK TO BEGIN:

Place backfill in the BA Pond with soils from the approved borrow area, remove the south and west BA Pond roadways, and build the roadway turnaround area for the dock.

By CQA Officer-in-Absentia:
(if applicable)

(Signature)

Date: _____

By CQA Officer:

(Signature)

Date: 5/24/2018

Distribution: Original To: Document Controller

Copies To: Mike Wagstaff (Ameren), Garrett Blankenship (Blankenship)



year

Meredosia Power Station- Closure of Fly Ash and Bottom Ash Ponds

CQA CERTIFICATION

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 next 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 Coal Yard and Coal Yard Run-Off Area

Coal was removed from the Coal Yard and Coal Yard Run-Off Area. The clean closure of the Coal Yard and Coal Yard Run-Off Area is approved.

2. CONTRACTOR COMPLETING THE SUBJECT WORK:

Blankenship Construction Company

3. NEXT SEQUENTIAL WORK TO BEGIN:

Assess seeding options.

By CQA Officer-in-Absentia:
(if applicable)

(Signature)

Date: _____

By CQA Officer:

(Signature)

Date: 6/13/2018

Distribution: Original To: Document Controller

Copies To: Mike Wagstaff (Ameren), Garrett Blankenship (Blankenship)

Meredosia Power Station- Closure of Fly Ash and Bottom Ash Ponds

CQA CERTIFICATION

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 next 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 Fly Ash Stockpile

The coal ash residuals were removed from the Fly Ash Stockpile, and the floor of the excavation was cleaned. The clean closure of the Fly Ash Stockpile is approved.

2. CONTRACTOR COMPLETING THE SUBJECT WORK:

Blankenship Construction Company

3. NEXT SEQUENTIAL WORK TO BEGIN:

Grade the area for storm water drainage.

By CQA Officer-in-Absentia:
(if applicable)

(Signature)

Date: _____

By CQA Officer:


(Signature)

Date: 7/25/2018

Distribution: Original To: Document Controller

Copies To: Blankenship, Ameren

Meredosia Power Station- Closure of Fly Ash and Bottom Ash Ponds

CQA CERTIFICATION

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 next 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 Bottom Ash (BA) Pond berm subgrade

The BA Pond berm subgrade was placed and compacted in 1-foot lifts. The compaction was tested in accordance with the CQA Plan and was surveyed. The CQA Officer reviewed the subgrade compaction data and the survey and found the results acceptable.

2. CONTRACTOR COMPLETING THE SUBJECT WORK:

Blankenship Construction Company

3. NEXT SEQUENTIAL WORK TO BEGIN:

Placement of 40-mil MicroSpike HDPE geomembrane.

By CQA Officer-in-Absentia:
(if applicable)

(Signature)

Date: _____

By CQA Officer:

(Signature)

Date: 8/6/2018

Distribution: Original To: Document Controller Copies To: _____

Meredosia Power Station- Closure of Fly Ash and Bottom Ash Ponds

CQA CERTIFICATION

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 next 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 Bottom Ash (BA) Pond berm 40-mil MicroSpike HDPE geomembrane.
The BA Pond 40-mil HDPE geomembrane was placed and Quality Control and Construction Quality Assurance testing was performed. The CQA Officer reviewed the destructive and non-destructive testing data and found the results acceptable.

2. CONTRACTOR COMPLETING THE SUBJECT WORK:

GSI Geo-Synthetics Systems

3. NEXT SEQUENTIAL WORK TO BEGIN:

Placement of synthetic turf geotextile.

By CQA Officer-in-Absentia:
(if applicable)

(Signature)

Date: _____

By CQA Officer:

(Signature)

Date: 8/14/2018

Distribution: Original To: Document Controller Copies To: _____

Meredosia Power Station- Closure of Fly Ash and Bottom Ash Ponds

CQA CERTIFICATION

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 next 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 Fly Ash (FA) Pond subgrade

The FA Pond subgrade was placed and compacted. The compaction was tested in accordance with the CQA Plan and was surveyed. The CQA Officer reviewed the subgrade compaction data and the survey and found the results acceptable.

2. CONTRACTOR COMPLETING THE SUBJECT WORK:

Blankenship Construction Company

3. NEXT SEQUENTIAL WORK TO BEGIN:

Placement of 40-mil MicroSpike HDPE geomembrane.

By CQA Officer-in-Absentia:
(if applicable)

(Signature)

Date: _____

By CQA Officer:

(Signature)

Date: 8/17/18

Distribution: Original To: Document Controller Copies To: _____

Meredosia Power Station- Closure of Fly Ash and Bottom Ash Ponds

CQA CERTIFICATION

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 next 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 Fly Ash (FA) Pond 40-mil MicroSpike HDPE geomembrane.

The FA Pond 40-mil HDPE geomembrane was placed and Quality Control and Construction Quality Assurance testing was performed. The CQA Officer reviewed the destructive and non-destructive testing data and found the results acceptable.

2. CONTRACTOR COMPLETING THE SUBJECT WORK:

GSI Geo-Synthetics Systems

3. NEXT SEQUENTIAL WORK TO BEGIN:

Placement of synthetic turf geotextile.

By CQA Officer-in-Absentia:
(if applicable)

(Signature)

Date: _____

By CQA Officer:

(Signature)

Date: 8/21/18 (First date)
multiple approvals through
10/31/2018

Distribution: Original To: Document Controller Copies To: _____



APPENDIX C – MATERIALS TESTING

ENVIRONMENTAL ANALYSIS RESULTS SUMMARY
MEREDOSIA POWER STATION
MORGAN COUNTY, ILLINOIS

J024917.04

Constituent	Units	Class I GW Standards	BF-1 PreQual	BF-2 PreQual	Backfill 1	Backfill 2	Backfill 3	Backfill 4 ²	Sand-1 PreQual	Sand 1
			3/14/2018	6/22/2018	5/25/2018	6/20/2018	8/2/2018	9/5/2018	7/20/2018	10/25/2018
pH	S.U.	6.5 - 9.0	7.87 H	8.50 H	8.06 H	8.21 H	7.68	7.68	9.05	8.79
Chloride, TCLP	mg/L	200	< 5	< 5	< 5	2 J	< 5	1 J	< 5	< 5
Sulfate, TCLP	mg/L	400	< 10	7 J	5 J	8 J	5 J	6 J	< 10	< 10
Mercury TCLP	mg/L	0.002	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.0002
Arsenic, TCLP	mg/L	0.01	< 0.250	< 0.250	< 0.250	< 0.250	< 0.250	< 0.250	< 0.250	< 0.250
Barium, TCLP	mg/L	2	0.40 J	0.644	0.36 J	0.471	0.622	0.681	0.16 J	0.17 J
Boron, TCLP	mg/L	2	< 20.0	< 0.500	< 0.500	< 0.500	0.16 BJ	0.18 J	< 0.200	< 10.0
Cadmium, TCLP	mg/L	0.005	< 0.0200	< 0.0200	< 0.0200	< 0.0200	< 0.0200	< 0.0200	< 0.0200	< 0.0200
Chromium, TCLP	mg/L	0.1	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100 B	< 0.100	< 0.100 B	< 0.100
Lead, TCLP	mg/L	0.075	< 0.400	< 0.400	< 0.400	< 0.400	< 0.400	< 0.400	< 0.400	< 0.400
Selenium, TCLP	mg/L	0.05	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500
Silver, TCLP	mg/L	0.05	< 0.100	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700
Benzene, TCLP	mg/L	0.005	< 0.200	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.0500
Ethylbenzene, TCLP	mg/L	0.7	< 0.500	< 0.200	0.010 J	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
Toluene, TCLP	mg/L	1	< 0.500	< 0.200	< 0.200	< 0.200	0.013 J	< 0.200	< 0.200	< 0.200
Xylenes, Total	mg/L	10	< 0.500	< 0.200 B	0.024 J	< 0.200	< 0.200	< 0.200	< 0.200 B	< 0.200

¹ 35 IAC 620.410 Groundwater Standards for Class I Potable Resource Groundwater

² Backfill 4 is listed as BF-5 in the laboratory report.

**SUMMARY OF FIELD DENSITY TESTING
BOTTOM ASH BERM
MEREDOSIA POWER STATION
MORGAN COUNTY, ILLINOIS**

J024917.04

TEST DATE	TEST NUMBER	FEET BELOW GRADE	Compaction					Pass (P)/ Fail (F)	Notes/ Passing Test Reference	Material Description
			Max. Dry Density (pcf)	Optimum Moisture (%)	Field Dry Density (pcf)	Field Moisture Content (%)	Compaction (%)			
06/14/18	1	10	95.9	20.2	108.5	8.9	113.0%	P		Bottom Ash
06/14/18	2	10	95.9	20.2	114.4	8.3	119.0%	P		Bottom Ash
06/14/18	3	10	95.9	20.2	124.9	7.2	130.0%	P		Bottom Ash
06/14/18	4	10	95.9	20.2	121.0	6.8	126.0%	P		Bottom Ash
06/14/18	5	10	95.9	20.2	98.2	12.9	102.0%	P		Bottom Ash
06/19/18	6	9	95.9	20.2	103.8	7.8	86.0%	F		Bottom Ash
06/19/18	7	9	95.9	20.2	118.5	8.8	98.0%	P		Bottom Ash
06/19/18	8	9	95.9	20.2	117.3	7.7	97.0%	P		Bottom Ash
06/19/18	9	9	95.9	20.2	116.1	11.0	96.0%	P		Bottom Ash
06/19/18	10	9	95.9	20.2	115.3	9.7	96.0%	P		Bottom Ash
06/19/18	11	9	95.9	20.2	114.8	8.3	94.0%	P	Retest of Test 6	Bottom Ash
06/19/18	12	8	95.9	20.2	108.6	10.1	90.0%	P		Bottom Ash
06/19/18	13	8	95.9	20.2	109.8	7.8	91.0%	P		Bottom Ash
06/19/18	14	8	95.9	20.2	115.0	10.1	95.0%	P		Bottom Ash
06/19/18	15	8	95.9	20.2	109.6	15.6	91.0%	P		Bottom Ash
06/19/18	16	8	95.9	20.2	113.4	11.2	94.0%	P		Bottom Ash
06/19/18	17	8	95.9	20.2	115.8	13.4	96.0%	P		Bottom Ash
06/25/18	18	7	120.8	7.5	111.6	15.1	93.0%	P		Clayey Sand
06/25/18	19	7	120.8	7.5	111.8	10.7	93.0%	P		Clayey Sand
06/25/18	20	7	95.9	20.2	95.8	20.0	100.0%	P		Bottom Ash
06/25/18	21	7	120.8	7.5	110.3	15.6	91.0%	P		Clayey Sand
06/25/18	22	7	120.8	7.5	111.3	16.0	92.0%	P		Clayey Sand
06/25/18	23	7	120.8	7.5	102.5	17.3	107.0%	P		Clayey Sand
06/25/18	24	6	120.8	7.5	117.6	10.1	97.0%	P		Clayey Sand
06/25/18	25	6	120.8	7.5	113.9	9.6	94.0%	P		Clayey Sand
06/25/18	26	6	120.8	7.5	109.6	13.4	90.0%	P		Clayey Sand
06/25/18	27	6	120.8	7.5	108.8	10.7	90.0%	P		Clayey Sand
06/25/18	28	6	102.8	7.5	110.6	11.1	92.0%	P		Clayey Sand
06/25/18	29	6	120.8	7.5	113.9	11.3	94.0%	P		Clayey Sand
06/26/18	30	5	120.8	7.5	115.5	8.4	96.0%	P		Clayey Sand
06/26/18	31	5	120.8	7.5	108.7	12.7	90.0%	P		Clayey Sand
06/26/18	32	5	120.8	7.5	116.4	10.0	96.0%	P		Clayey Sand
06/26/18	33	5	120.8	7.5	114.8	7.7	95.0%	P		Clayey Sand
06/26/18	34	5	120.8	7.5	113.9	9.7	94.0%	P		Clayey Sand
06/26/18	35	5	120.8	7.5	109.2	11.2	90.0%	P		Clayey Sand

**SUMMARY OF FIELD DENSITY TESTING
BOTTOM ASH BERM
MEREDOSIA POWER STATION
MORGAN COUNTY, ILLINOIS**

J024917.04

TEST DATE	TEST NUMBER	FEET BELOW GRADE	Compaction					Pass (P)/ Fail (F)	Notes/ Passing Test Reference	Material Description
			Max. Dry Density (pcf)	Optimum Moisture (%)	Field Dry Density (pcf)	Field Moisture Content (%)	Compaction (%)			
06/28/18	36	3.5	120.8	7.5	115.6	5.2	96.0%	P		Clayey Sand
06/28/18	37	3.5	120.8	7.5	111.8	8.2	93.0%	P		Clayey Sand
06/28/18	38	3.5	95.9	20.2	104.1	8.2	109.0%	P		Bottom Ash
06/28/18	39	3.5	120.8	7.5	119.5	6.1	99.0%	P		Clayey Sand
06/28/18	40	3.5	120.8	7.5	114.0	4.3	94.0%	P		Clayey Sand
06/28/18	41	3.5	95.9	20.2	104.2	8.7	109.0%	P		Bottom Ash
06/28/18	42	3.5	95.9	20.2	98.2	9.9	102.0%	P		Bottom Ash
06/28/18	43	2	120.8	7.5	114.4	5.9	95.0%	P		Clayey Sand
06/28/18	44	2	95.9	20.2	106.6	7.2	111.0%	P		Bottom Ash
06/28/18	45	2	120.8	7.5	114.0	9.9	94.0%	P		Clayey Sand
06/28/18	46	2	95.9	20.2	106.9	8.3	111.0%	P		Bottom Ash
06/28/18	47	2	120.8	7.5	114.4	5.8	95.0%	P		Clayey Sand
06/28/18	48	2	120.8	7.5	114.1	7.8	94.0%	P		Clayey Sand
06/28/18	49	2	95.9	20.2	97.2	8.5	101.0%	P		Bottom Ash
07/02/18	50	0	120.8	7.5	118.6	6.5	98.0%	P		Clayey Sand
07/02/18	51	0	95.9	20.2	105.6	11.7	110.0%	P		Bottom Ash
07/02/18	52	0	120.8	7.5	110.9	13.2	92.0%	P		Clayey Sand
07/02/18	53	0	95.9	20.2	97.0	16.6	101.0%	P		Bottom Ash
07/02/18	54	0	120.8	7.5	119.1	11.3	99.0%	P		Clayey Sand
07/02/18	55	0	120.8	7.5	110.3	6.1	91.0%	P		Clayey Sand
07/02/18	56	0	120.8	7.5	111.6	11.3	92.0%	P		Clayey Sand
07/25/18	57	Out. Slope	95.9	20.2	106.9	11.1	111.0%	P		Bottom Ash
07/25/18	58	Out. Slope	95.9	20.2	98.2	8.7	102.0%	P		Bottom Ash
07/25/18	59	Out. Slope	95.9	20.2	104.3	9.2	109.0%	P		Bottom Ash
07/25/18	60	Out. Slope	95.9	20.2	92.1	14.4	96.0%	P		Bottom Ash
07/25/18	61	Out. Slope	95.9	20.2	108.2	7.6	113.0%	P		Bottom Ash
07/25/18	62	Out. Slope	95.9	20.2	93.6	16.8	98.0%	P		Bottom Ash

**SUMMARY OF FIELD DENSITY TESTING
FLY ASH POND
MEREDOSIA POWER STATION
MORGAN COUNTY, ILLINOIS**

J024917.04

Location		TEST DATE	TEST NUMBER	LIFT NUMBER (1-lower, 2-upper)	Compaction					Pass (P)/ Fail (F)	Notes/ Passing Test Reference	Material Description
Latitude (°N)	Longitude (°W)				Max. Dry Density (pcf)	Optimum Moisture (%)	Field Dry Density (pcf)	Field Moisture Content (%)	Compaction (%)			
39.819331	-90.573351	07/26/18	1	6"	72.1	39.4	89.1	9.4	123.6%	P		Fly Ash (Stockpile)
39.819042	-90.573535	07/26/18	2	6"	72.1	39.4	89.9	5.0	124.7%	P		Fly Ash (Stockpile)
39.818951	-90.573801	07/26/18	3	6"	72.1	39.4	87.5	6.7	121.4%	P		Fly Ash (Stockpile)
39.818599	-90.573886	07/26/18	4	6"	72.1	39.4	89.5	8.0	124.1%	P		Fly Ash (Stockpile)
39.818391	-90.574000	07/26/18	5	6"	72.1	39.4	72.7	21.7	100.8%	P		Fly Ash (Stockpile)
39.818142	-90.574366	07/26/18	6	6"	72.1	39.4	98.2	7.8	136.2%	P		Fly Ash (Stockpile)
39.817900	-90.574490	07/26/18	7	6"	72.1	39.4	88.8	6.3	123.2%	P		Fly Ash (Stockpile)
39.817607	-90.574560	07/26/18	8	6"	72.1	39.4	90.5	10.9	125.5%	P		Fly Ash (Stockpile)
39.817464	-90.574867	07/26/18	9	6"	72.1	39.4	93.1	12.1	129.1%	P		Fly Ash (Stockpile)
39.817161	-90.575028	07/26/18	10	6"	72.1	39.4	86.8	15.7	120.4%	P		Fly Ash (Stockpile)
39.816986	-90.575249	07/26/18	11	6"	72.1	39.4	90.9	12.8	126.1%	P		Fly Ash (Stockpile)
39.816689	-90.575346	07/26/18	12	6"	72.1	39.4	91.0	8.9	126.2%	P		Fly Ash (Stockpile)
39.816468	-90.575547	07/26/18	13	6"	72.1	39.4	93.9	12.1	130.2%	P		Fly Ash (Stockpile)
		07/26/18	14	12"	72.1	39.4	94.8	12.6	131.5%	P		Fly Ash (Stockpile)
39.816234	-90.575750	08/01/18	15	6"	72.1	39.4	120.1	11.5	166.6%	P		Fly Ash (Stockpile)
		08/01/18	16	12"	72.1	39.4	104.2	11.2	144.5%	P		Fly Ash (Stockpile)
39.815773	-90.575185	08/01/18	17	6"	72.1	39.4	93.3	12.7	129.4%	P		Fly Ash (Stockpile)
		08/01/18	18	12"	72.1	39.4	96.3	13.2	133.6%	P		Fly Ash (Stockpile)
39.816140	-90.575121	08/01/18	19	6"	72.1	39.4	100.1	9.8	138.8%	P		Fly Ash (Stockpile)
		08/01/18	20	12"	72.1	39.4	97.7	10.6	135.5%	P		Fly Ash (Stockpile)
39.816363	-90.574724	08/02/18	21	6"	72.1	39.4	87.3	15.2	121.1%	P		Fly Ash (Stockpile)
		08/02/18	22	12"	72.1	39.4	92.7	12.8	128.6%	P		Fly Ash (Stockpile)
39.816543	-90.574677	08/02/18	23	6"	72.1	39.4	92.0	12.3	127.6%	P		Fly Ash (Stockpile)
		08/02/18	24	12"	72.1	39.4	98.1	11.1	136.1%	P		Fly Ash (Stockpile)
39.816791	-90.574457	08/02/18	25	6"	72.1	39.4	81.5	13.5	113.0%	P		Fly Ash (Stockpile)
		08/02/18	26	12"	72.1	39.4	89.4	12.4	124.0%	P		Fly Ash (Stockpile)
39.817058	-90.574232	08/02/18	27	6"	72.1	39.4	87.2	13.1	120.9%	P		Fly Ash (Stockpile)
		08/02/18	28	12"	72.1	39.4	85.3	12.7	118.3%	P		Fly Ash (Stockpile)
39.817261	-90.574035	08/07/18	29	6"	72.1	39.4	71.7	13.0	99.4%	P		Fly Ash (Stockpile)
		08/07/18	30	12"	72.1	39.4	78.2	11.1	108.5%	P		Fly Ash (Stockpile)
39.832223	-90.561316	08/07/18	31	6"	72.1	39.4	77.9	13.7	108.1%	P		Fly Ash (Stockpile)
		08/07/18	32	12"	72.1	39.4	77.9	13.5	108.0%	P		Fly Ash (Stockpile)
39.817811	-90.573684	08/07/18	33	6"	72.1	39.4	83.9	12.0	116.4%	P		Fly Ash (Stockpile)
		08/07/18	34	12"	72.1	39.4	89.9	11.5	124.7%	P		Fly Ash (Stockpile)
39.817948	-90.573271	08/07/18	35	6"	72.1	39.4	76.6	14.4	106.2%	P		Fly Ash (Stockpile)
		08/07/18	36	12"	72.1	39.4	78.8	13.8	109.3%	P		Fly Ash (Stockpile)

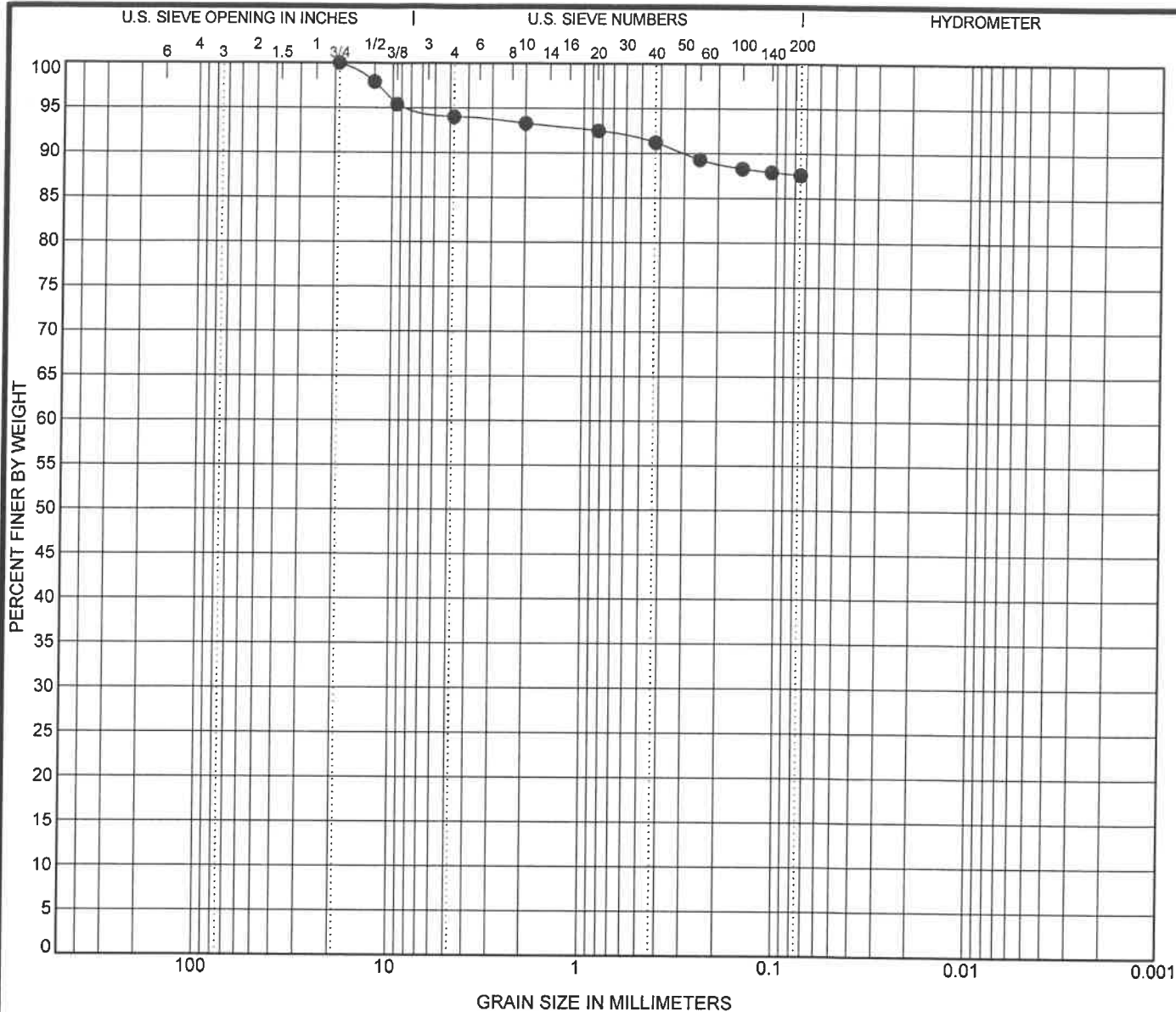
**SUMMARY OF FIELD DENSITY TESTING
FLY ASH POND
MEREDOSIA POWER STATION
MORGAN COUNTY, ILLINOIS**

J024917.04

Location		TEST DATE	TEST NUMBER	LIFT NUMBER (1-lower, 2-upper)	Compaction					Pass (P)/ Fail (F)	Notes/ Passing Test Reference	Material Description
Latitude (°N)	Longitude (°W)				Max. Dry Density (pcf)	Optimum Moisture (%)	Field Dry Density (pcf)	Field Moisture Content (%)	Compaction (%)			
39.818129	-90.573060	08/07/18	37	6"	72.1	39.4	70.2	11.5	97.4%	P		Fly Ash (Stockpile)
		08/07/18	38	12"	72.1	39.4	87.3	10.0	121.1%	P		Fly Ash (Stockpile)
39.818379	-90.572804	08/07/18	39	6"	72.1	39.4	65.7	29.4	91.1%	P		Fly Ash (Stockpile)
		08/07/18	40	12"	72.1	39.4	70.0	27.8	97.1%	P		Fly Ash (Stockpile)
39.818612	-90.572748	08/07/18	41	6"	72.1	39.4	85.6	6.6	118.7%	P		Fly Ash (Stockpile)
		08/07/18	42	12"	72.1	39.4	88.6	6.7	122.9%	P		Fly Ash (Stockpile)
39.818827	-90.572261	08/09/18	43	6"	72.1	39.4	86.0	6.7	119.3%	P		Fly Ash (Stockpile)
		08/09/18	44	12"	72.1	39.4	84.0	6.8	116.5%	P		Fly Ash (Stockpile)
39.818648	-90.572473	08/09/18	45	6"	72.1	39.4	84.8	6.0	117.6%	P		Fly Ash (Stockpile)
		08/09/18	46	12"	72.1	39.4	86.6	6.0	120.1%	P		Fly Ash (Stockpile)
39.818397	-90.572579	08/09/18	47	6"	72.1	39.4	84.6	7.5	117.3%	P		Fly Ash (Stockpile)
		08/09/18	48	12"	72.1	39.4	87.4	6.5	121.2%	P		Fly Ash (Stockpile)
39.818172	-90.572708	08/09/18	49	6"	72.1	39.4	87.8	10.3	121.8%	P		Fly Ash (Stockpile)
		08/09/18	50	12"	72.1	39.4	94.9	9.1	131.6%	P		Fly Ash (Stockpile)
39.817864	-90.572866	08/09/18	51	6"	72.1	39.4	92.6	8.9	128.4%	P		Fly Ash (Stockpile)
		08/09/18	52	12"	72.1	39.4	93.8	8.3	130.1%	P		Fly Ash (Stockpile)
39.817653	-90.573036	08/09/18	53	6"	72.1	39.4	85.6	10.1	118.7%	P		Fly Ash (Stockpile)
		08/09/18	54	12"	72.1	39.4	87.4	9.5	121.2%	P		Fly Ash (Stockpile)
39.817406	-90.573153	08/09/18	55	6"	72.1	39.4	80.8	9.5	112.1%	P		Fly Ash (Stockpile)
		08/09/18	56	12"	72.1	39.4	76.0	9.4	105.4%	P		Fly Ash (Stockpile)
39.817086	-90.573258	08/09/18	57	6"	105.9	17.2	110.3	7.4	104.2%	P	sand mixed in	Fly Ash (Stockpile)
		08/09/18	58	12"	105.9	17.2	107.7	6.9	101.7%	P	sand mixed in	Fly Ash (Stockpile)
39.816791	-90.573366	08/09/18	59	6"	105.9	17.2	109.7	5.8	103.6%	P	sand mixed in	Fly Ash (Stockpile)
		08/09/18	60	12"	105.9	17.2	105.4	5.9	99.5%	P	sand mixed in	Fly Ash (Stockpile)
39.816441	-90.573602	08/09/18	61	6"	105.9	17.2	109.0	7.3	102.9%	P	sand mixed in	Fly Ash (Stockpile)
		08/09/18	62	12"	105.9	17.2	111.1	7.3	104.9%	P	sand mixed in	Fly Ash (Stockpile)



● BF-1 pre-qual	0.0	48	21	27	88	LEAN CLAY(CL)
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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Sample Identification		Sample Description				LL	PL	PI	Cc	Cu
● BF-1 pre-qual	0.0	LEAN CLAY(CL)				48	21	27		
Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt		%Clay
● BF-1 pre-qual	0.0	19				6.0	6.4	87.6		

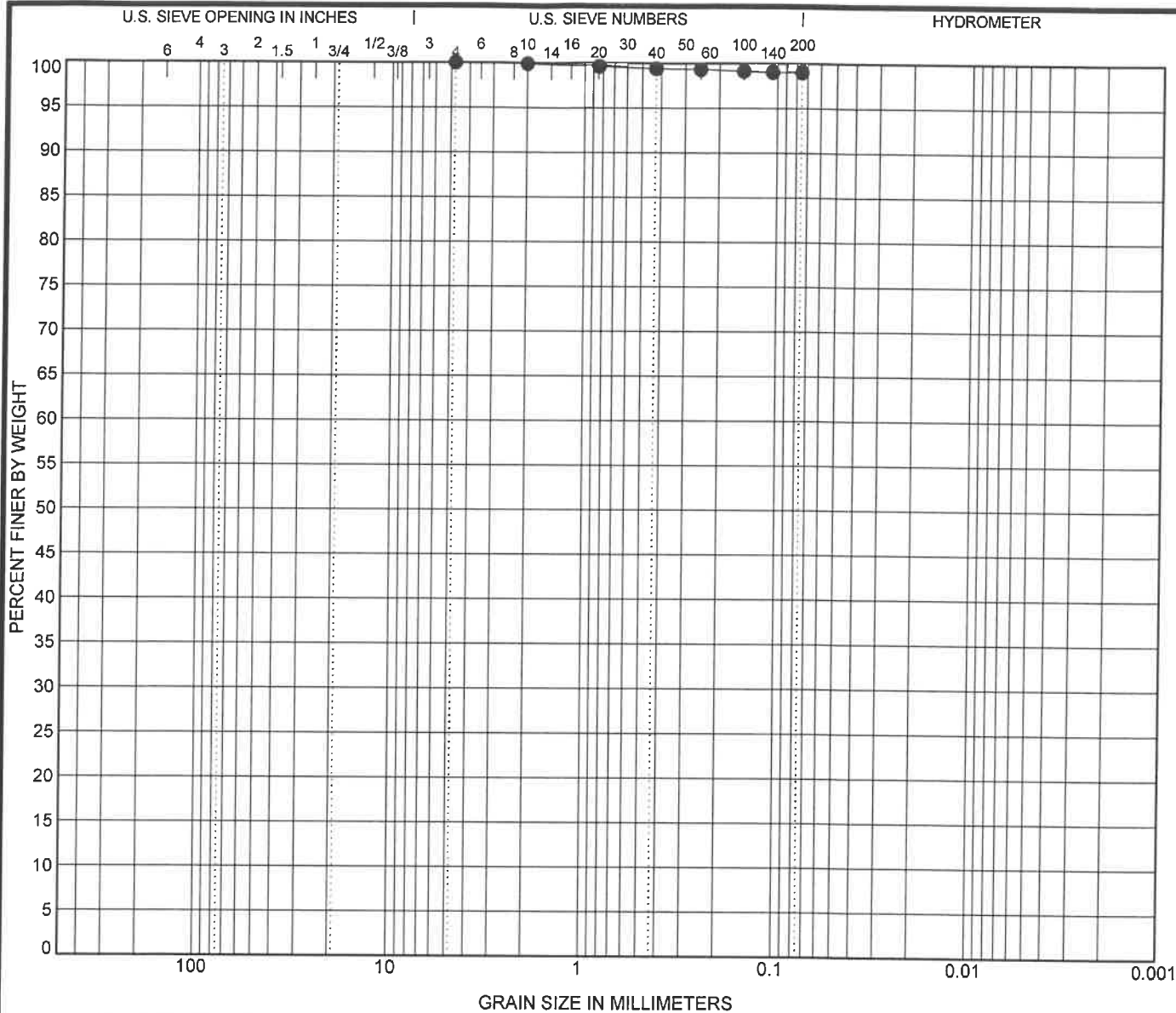


GRAIN SIZE DISTRIBUTION

Meredosia
J024917.04



Meredosia
J024917.04



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Sample Identification			Sample Description				LL	PL	PI	Cc	Cu
●	BF-2 pre-qual	0.0	LEAN CLAY(CL)				49	20	29		
Specimen Identification			D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay	
●	BF-2 pre-qual	0.0	4.75				0.0	1.0	99.0		

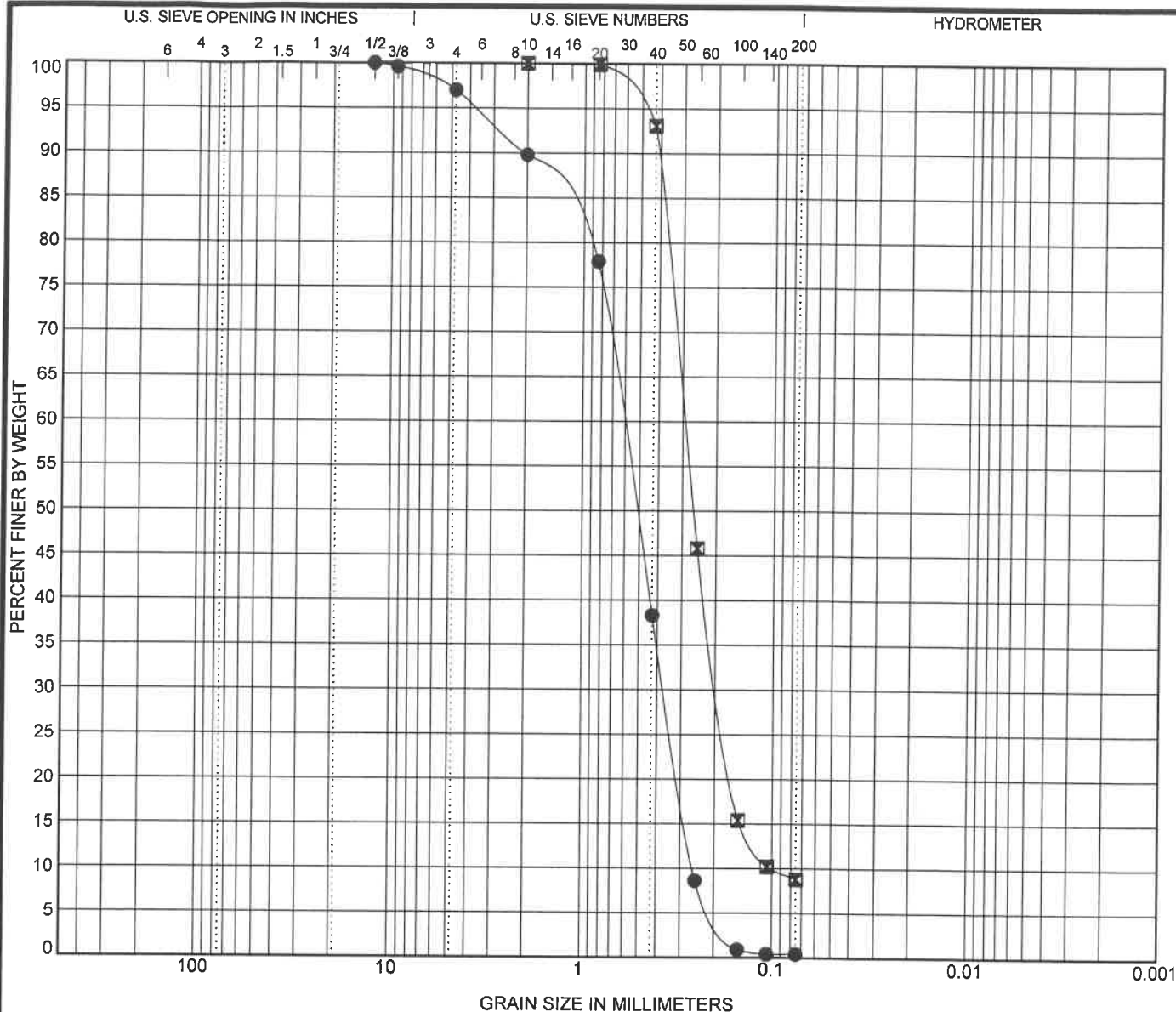


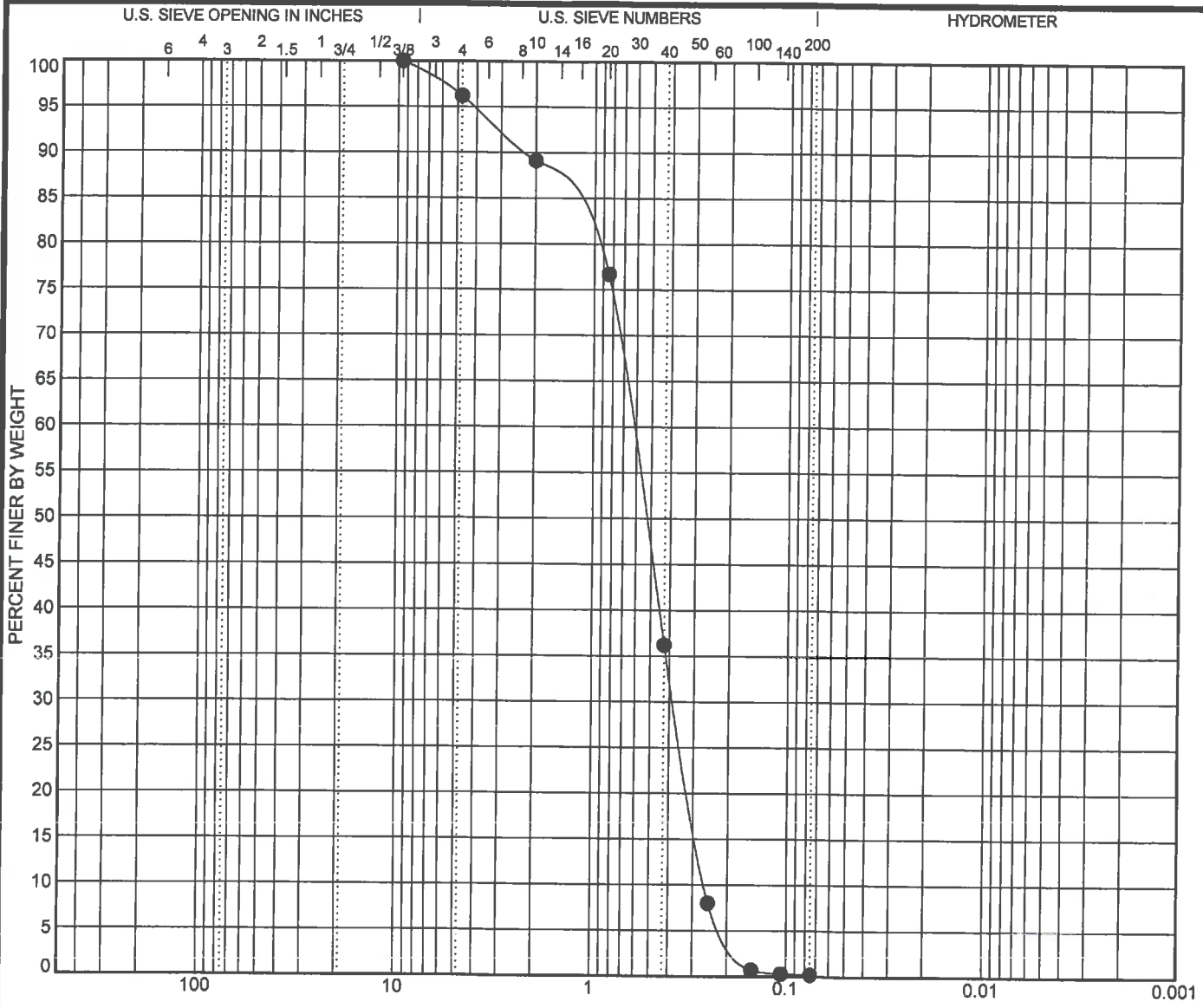
GRAIN SIZE DISTRIBUTION

Meredosia
J024917.04



●	Backfill-1	0.0	31	21	10	78	LEAN CLAY with SAND(CL)
---	------------	-----	----	----	----	----	-------------------------





COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Sample Identification		Sample Description				LL	PL	PI	Cc	Cu
● Sand-3	0.0	POORLY GRADED SAND(SP)							0.87	2.44
Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay	
● Sand-3	0.0	9.5	0.63	0.38	0.26	3.8	96.0	0.2		

GRAIN SIZE DISTRIBUTION

Meredosia
J024917.04

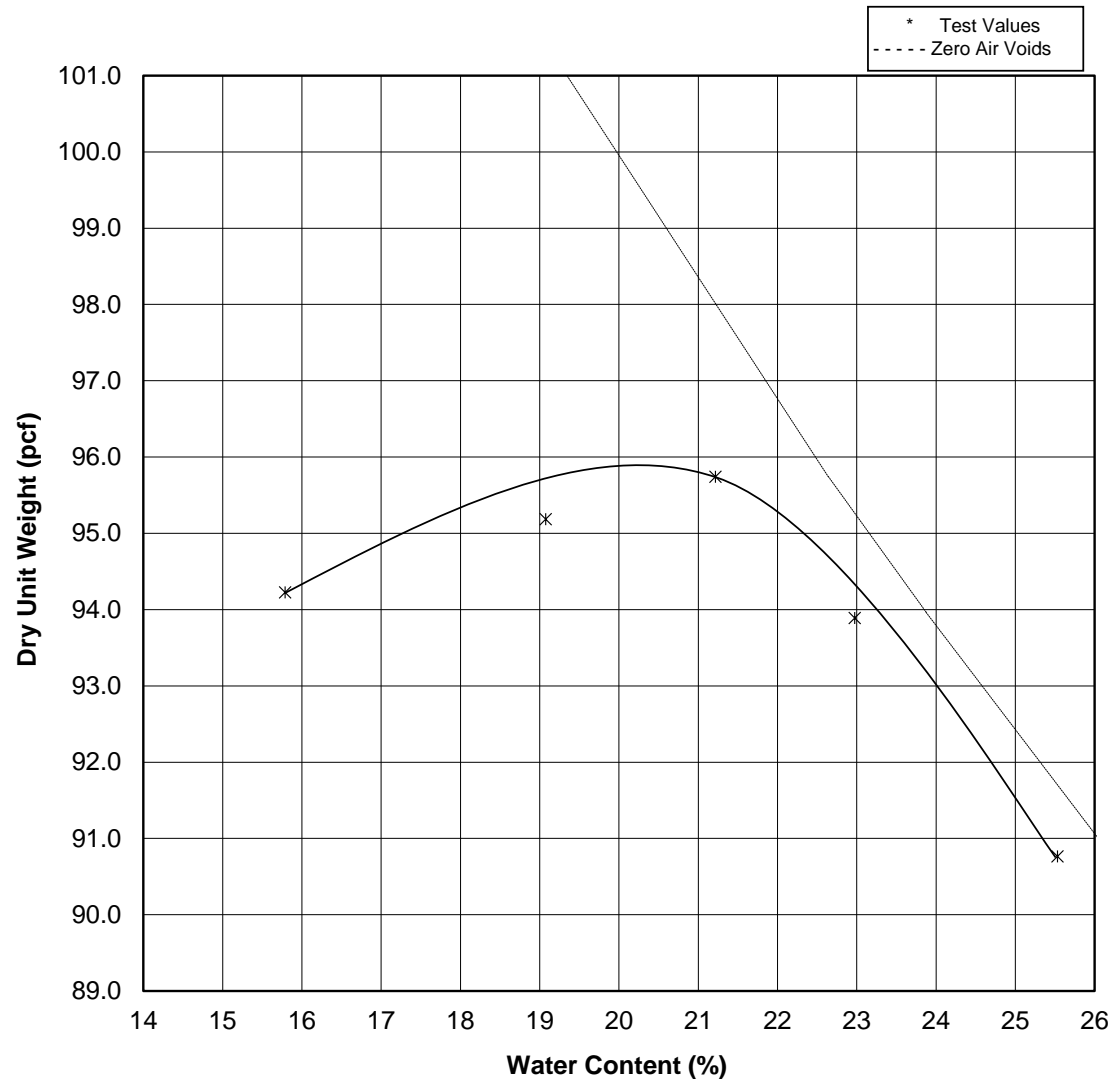
U.S. GRAIN SIZE J024917.04 - MEREDOSIA.GPJ DO CLONE ME.GPJ 10/3/18

11816 Lackland Road, Suite 150
St. Louis, MO 63146
Ph: 314-997-7740
Fax: 314-997-2067



Project: Meredosia Ash Ponds CQA 2018
Client: Ameren Missouri
Sample Source: BA-1
Supplier: N/A

LABORATORY COMPACTION TEST



Test Information

Project No.: J024917.04
Test Date: 03/20/18
Proctor No.: P-9122-1

Test Method: ASTM D 698 Method B
Rammer Type: Mechanical
Prep. Method: Dry

Sample Description

Bottom Ash

Sample Properties

Moisture Content
Liquid Limit
Plastic Limit
Plasticity Index
Specific Gravity: 2.350 Estimated
Classification

Test Results:

Maximum Dry Unit Weight (pcf): 95.9
Optimum Water Content (%): 20.2

Override Correction Values:

Maximum Dry Unit Weight (pcf): --
Optimum Water Content (%): --

Tested By: MWW Input By: ZRB
Date: 03/20/18 Date: 03/21/18

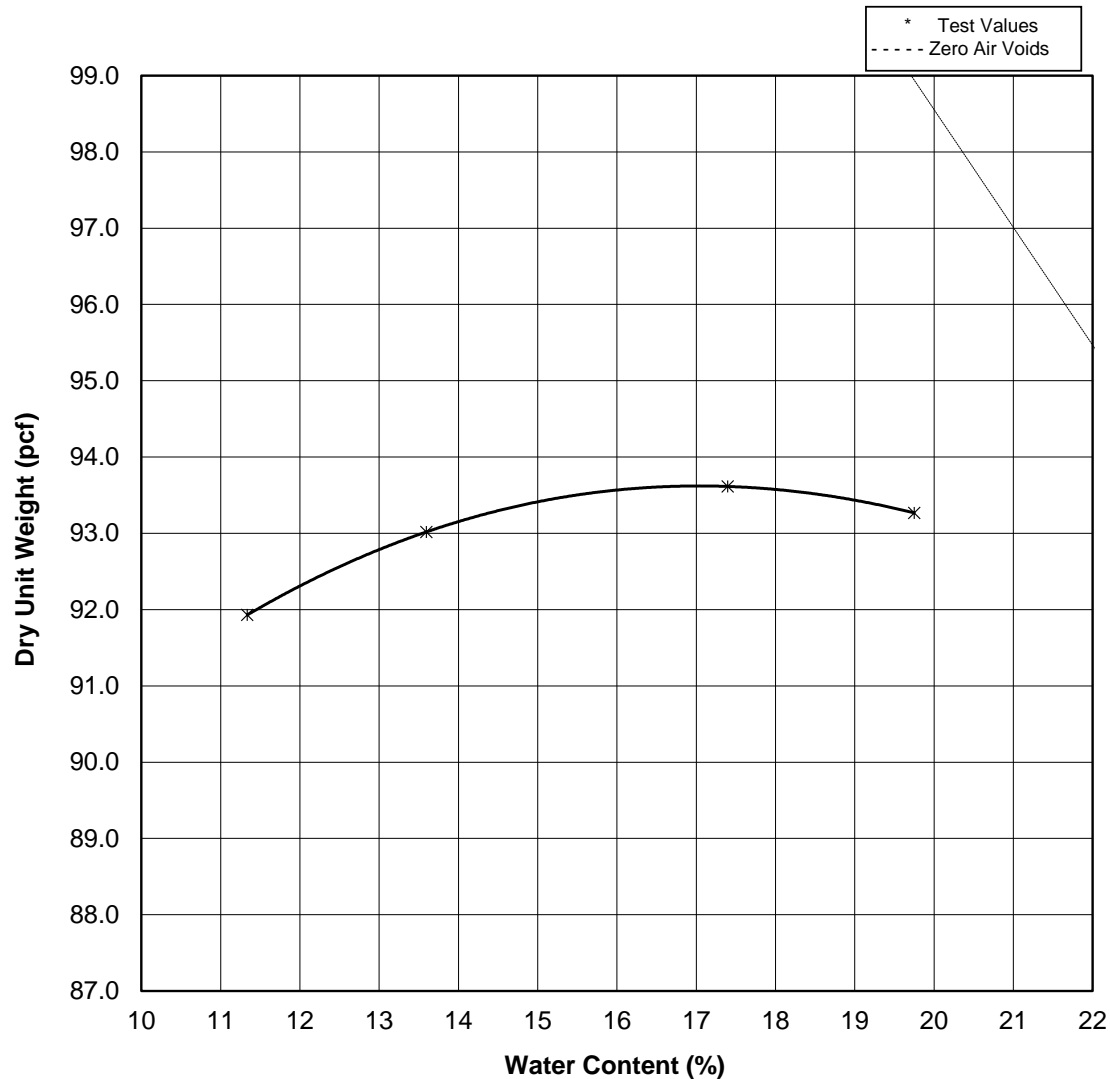
Checked By: AMS
Date: 03/21/18

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Fax: 314-997-2067



Project: Meredosia Ash Ponds CQA 2018
Client: Ameren Missouri
Sample Source: BA-2
Supplier: N/A

LABORATORY COMPACTION TEST



Test Information

Project No.: J024917.04
Test Date: 03/20/18
Proctor No.: P-9122-2

Test Method: ASTM D 698 Method B
Rammer Type: Mechanical
Prep. Method: Dry

Sample Description

Bottom Ash

Sample Properties

Moisture Content
Liquid Limit
Plastic Limit
Plasticity Index
Specific Gravity: 2.300 Estimated
Classification

Test Results:

Maximum Dry Unit Weight (pcf): 93.6
Optimum Water Content (%): 16.8

Override Correction Values:

Maximum Dry Unit Weight (pcf): --
Optimum Water Content (%): --

Tested By: MWW Input By: ZRB
Date: 03/20/18 Date: 03/21/18

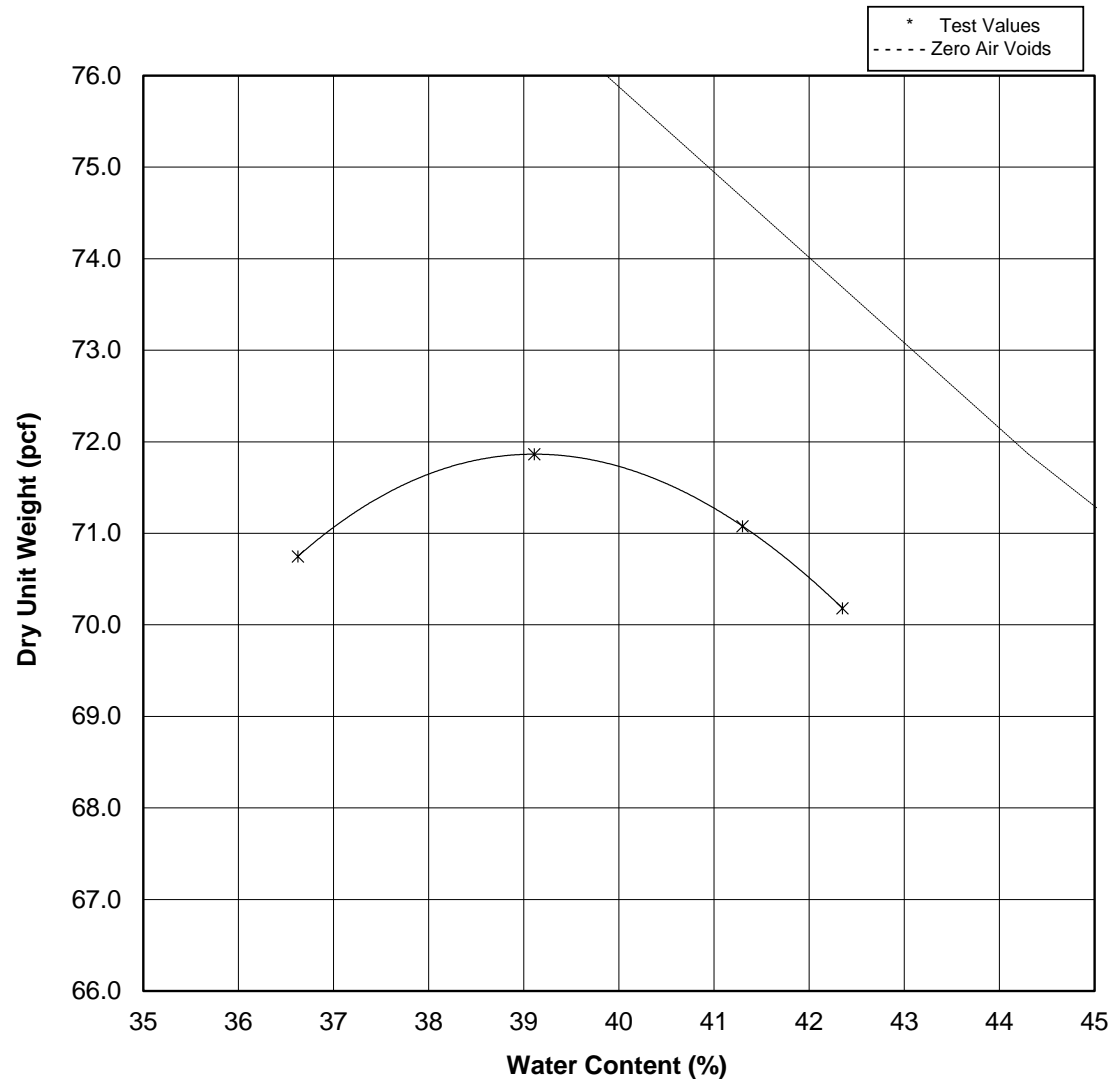
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Date: 03/21/18

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Project: Meredosia Ash Ponds CQA 2018
Client: Ameren Missouri
Sample Source: FA-1
Supplier: N/A

LABORATORY COMPACTION TEST



Test Information

Project No.: J024917.04
Test Date: 03/20/18
Proctor No.: P-9122-3
Test Method: ASTM D 698 Method B
Rammer Type: Mechanical
Prep. Method: Dry

Sample Description

Fly Ash

Sample Properties

Moisture Content
Liquid Limit
Plastic Limit
Plasticity Index
Specific Gravity: 2.350 Estimated
Classification

Test Results:

Maximum Dry Unit Weight (pcf): 71.8
Optimum Water Content (%): 39.2

Override Correction Values:

Maximum Dry Unit Weight (pcf): --
Optimum Water Content (%): --

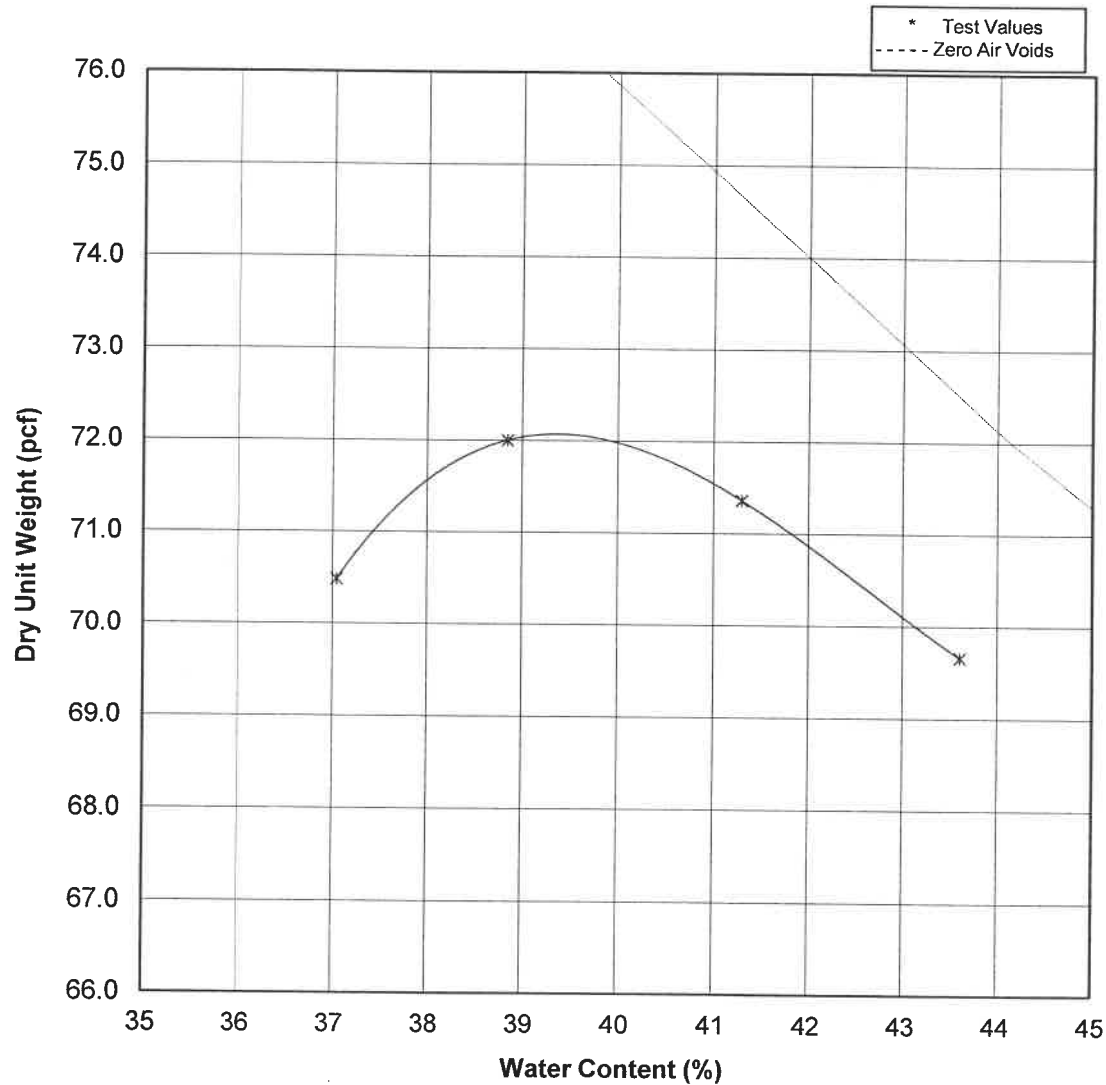
Tested By: MWW Input By: ZRB
Date: 03/20/18 Date: 03/21/18
Checked By: AMS
Date: 03/21/18

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Project: Meredosias Ash Ponds CQA 2018
Client: Ameren Missouri
Sample Source: FA-2
Supplier: N/A

LABORATORY COMPACTION TEST



Test Information

Project No.: J024917.04
Test Date: 03/20/18
Proctor No.: P-9122-4
Test Method: ASTM D 698 Method B
Rammer Type: Mechanical
Prep. Method: Dry

Sample Description

Fly Ash

Sample Properties

Moisture Content _____
Liquid Limit _____
Plastic Limit _____
Plasticity Index _____
Specific Gravity: 2.350 Estimated
Classification _____

Test Results:

Maximum Dry Unit Weight (pcf): 72.1
Optimum Water Content (%): 39.4

Oversize Correction Values:

Maximum Dry Unit Weight (pcf): --
Optimum Water Content (%): --

Tested By: MWW
Date: 03/20/18
Checked By: AMS
Date: 03/21/18

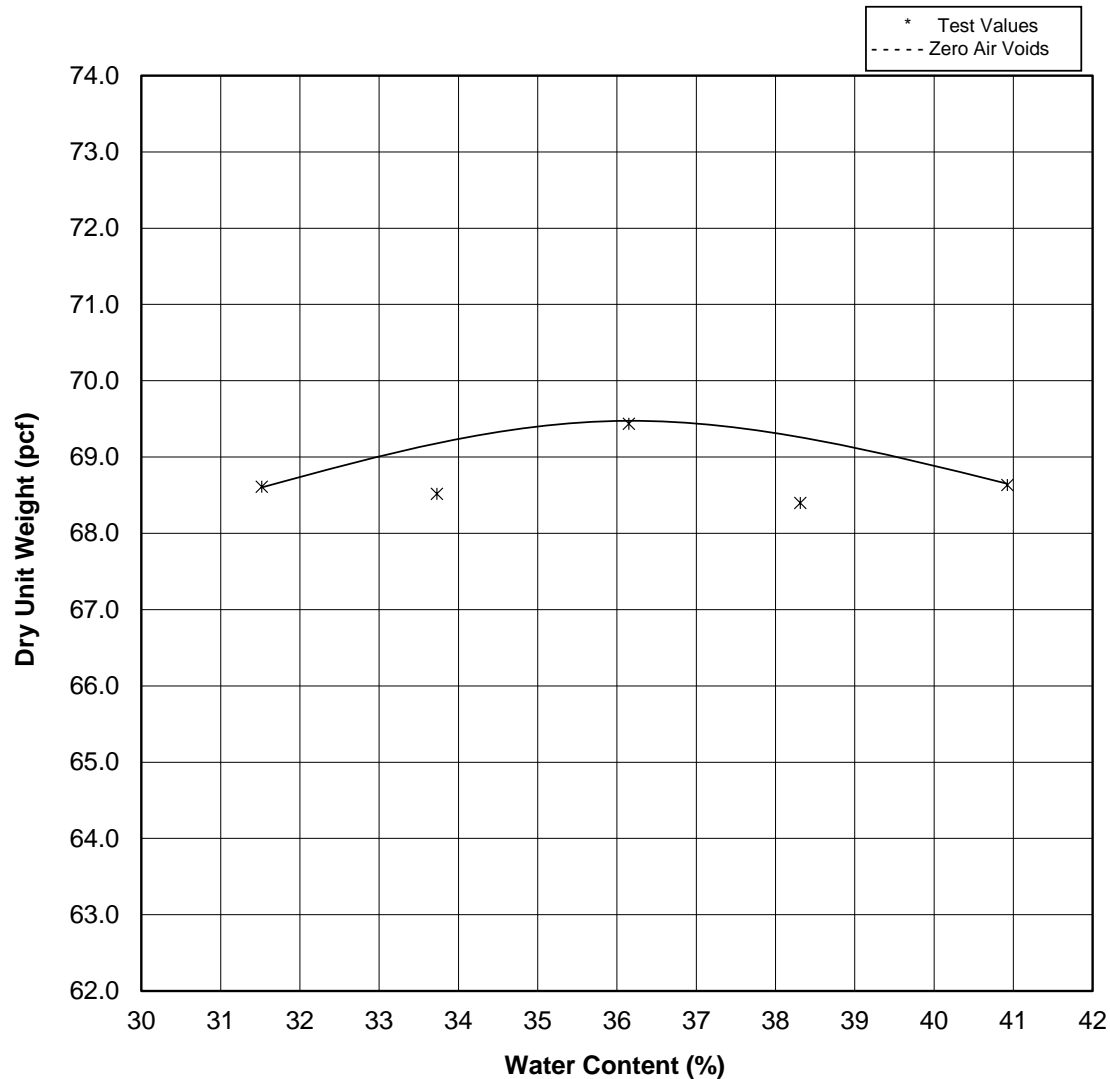
Input By: ZRB
Date: 03/21/18

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 Fax: 314-997-2067



Project: Meredosia Ash Ponds CQA 2018
Client: Ameren Missouri
Sample Source: FA-3
Supplier: N/A

LABORATORY COMPACTION TEST



Test Information

Project No.: J024917.04
Test Date: 03/20/18
Proctor No.: P-9122-5
Test Method: ASTM D 698 Method B
Rammer Type: Mechanical
Prep. Method: Dry

Sample Description

Fly Ash

Sample Properties

Moisture Content _____
Liquid Limit _____
Plastic Limit _____
Plasticity Index _____
Specific Gravity: 2.350 Estimated
Classification _____

Test Results:

Maximum Dry Unit Weight (pcf): 69.4
Optimum Water Content (%): 36.2

Override Correction Values:

Maximum Dry Unit Weight (pcf): --
Optimum Water Content (%): --

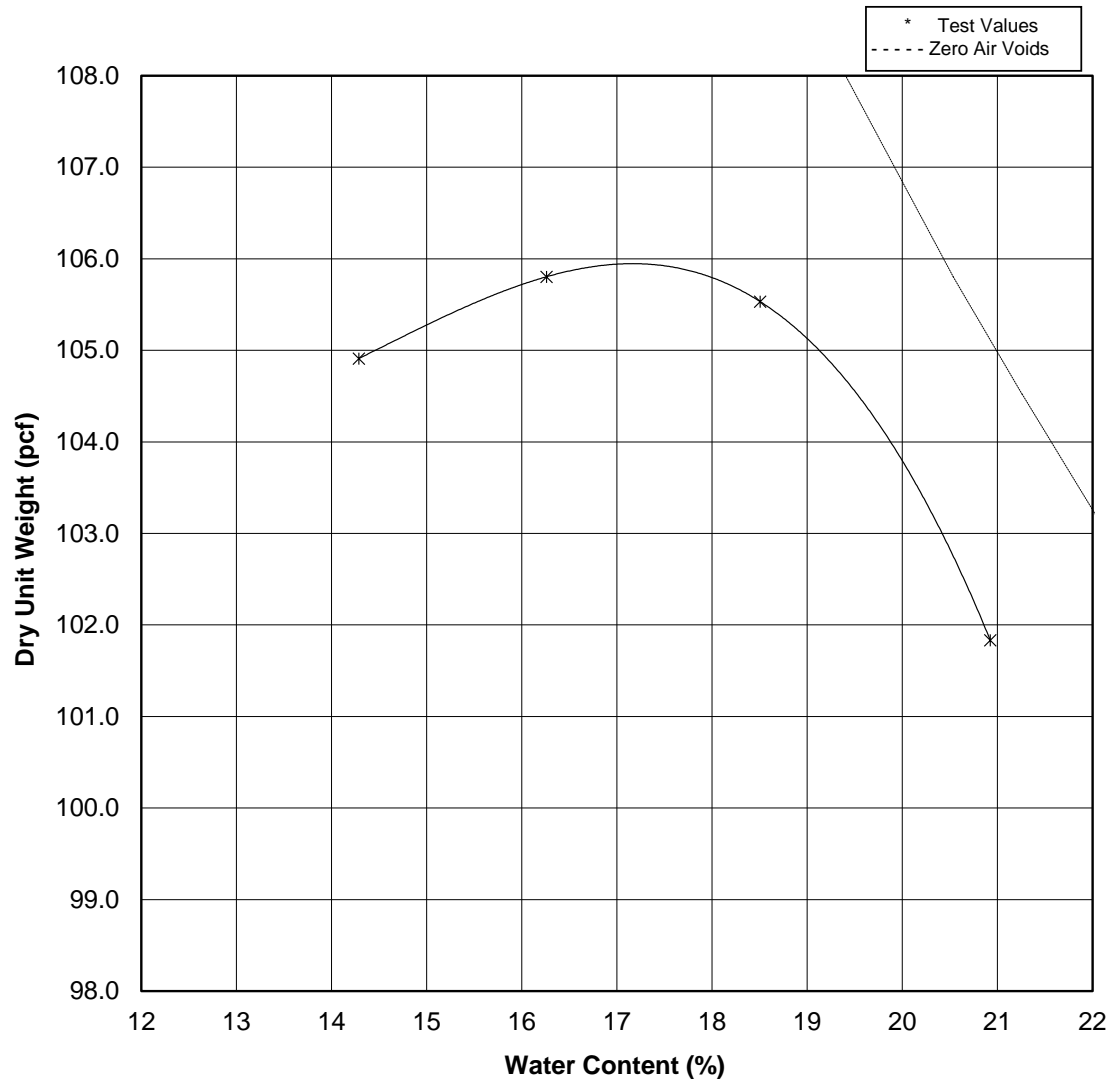
Tested By: MWW **Input By:** ZRB
Date: 03/20/18 **Date:** 03/21/18
Checked By: AMS
Date: 03/21/18

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Project: Meredosias Ash Ponds CQA 2018
Client: Ameren Missouri
Sample Source: On site stockpile
Supplier: N/A

LABORATORY COMPACTION TEST



Test Information

Project No.: J024917.04
Test Date: 08/28/18
Proctor No.: FA-4
Test Method: ASTM D 698 Method A
Rammer Type: Mechanical
Prep. Method: Dry

Sample Description

Fly Ash

Sample Properties

Moisture Content --
Liquid Limit --
Plastic Limit --
Plasticity Index --
Specific Gravity: 2.600 Estimated
Classification --

Test Results:

Maximum Dry Unit Weight (pcf): 105.9
Optimum Water Content (%): 17.2

Override Correction Values:

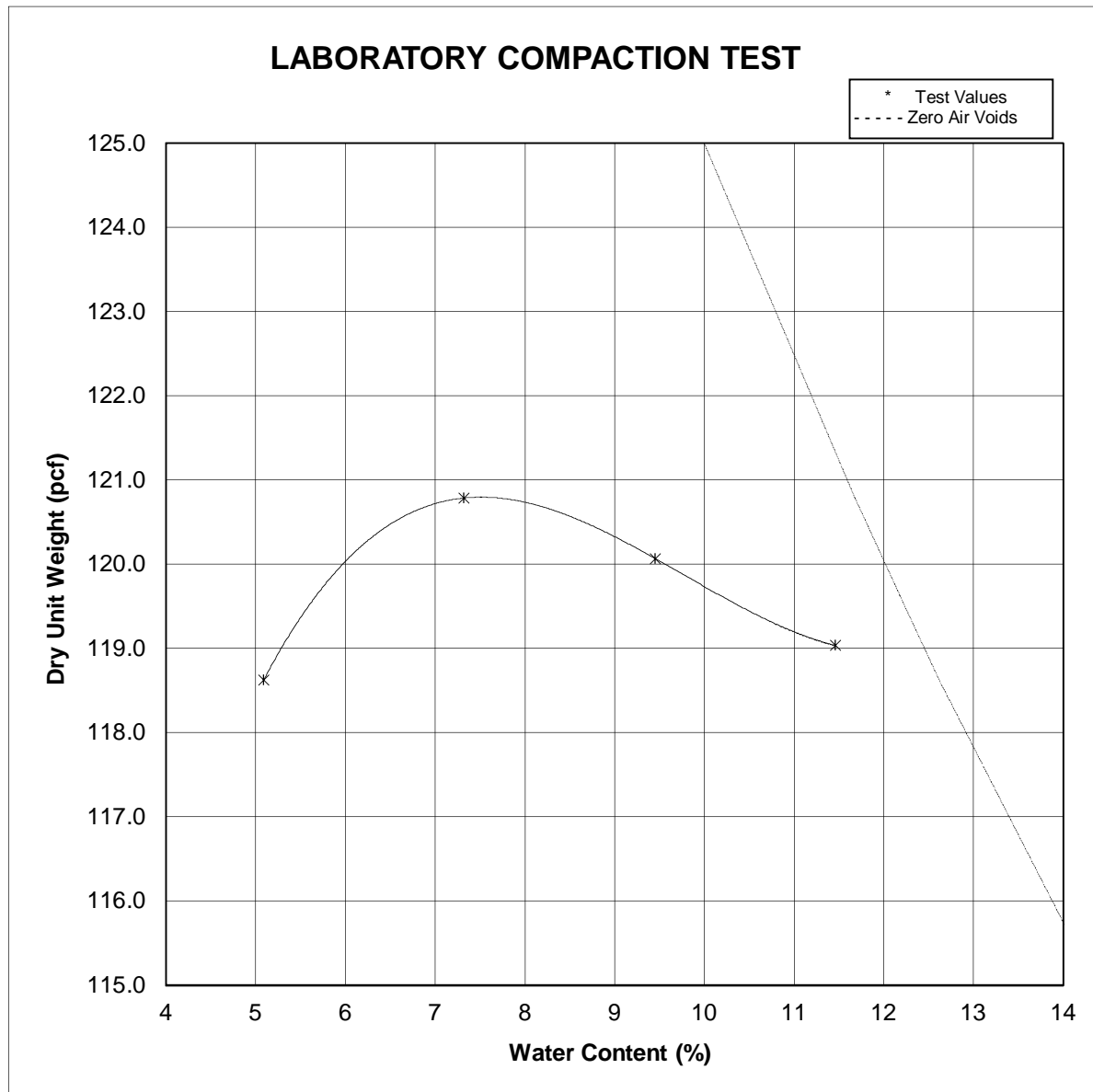
Maximum Dry Unit Weight (pcf): --
Optimum Water Content (%): --

Tested By: MWW
Date: 08/28/18
Input By: AGB
Date: 09/01/18
Checked By: AMS
Date: 09/04/18

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St. Louis, MO 63146
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Fax: 314-997-2067



Project: Meredosias Ash Ponds CQA 2018
Client: Ameren Missouri
Sample Source: Bottom Ash Pond Berm
Supplier: N/A



Test Information	
Project No.:	J024917.04
Test Date:	04/05/18
Proctor No.:	P-9132
Test Method:	ASTM D 698 Method A
Rammer Type:	Mechanical
Prep. Method:	Dry

Sample Description
Clayey Sand

Sample Properties
Moisture Content _____
Liquid Limit _____
Plastic Limit _____
Plasticity Index _____
Specific Gravity: <u>2.500</u> Estimated
Classification _____

Test Results:
Maximum Dry Unit Weight (pcf): <u>120.8</u>
Optimum Water Content (%): <u>7.5</u>
Override Correction Values:
Maximum Dry Unit Weight (pcf): <u>--</u>
Optimum Water Content (%): <u>--</u>

Tested By: MWW Input By: ZRB
Date: 04/05/18 Date: 04/06/18
Checked By: AMS
Date: 04/09/18

pH TESTS (ASTM D 4972 or AASHTO T-289)



DATE August 7, 2018 PROJECT NAME Meredosia PROJECT NO. J024917.04

General Test Information: pH Meter: Accumet 13-620-109 or _____
 Distilled Water: required pH=5.5 to 7.5 Measured value: 7.74
 Soil/Water Ratio: 1:1

Boring No.	Sample No.	Depth (ft)	Visual Identification (Color, Group Name & Symbol)	Soil : Water Ratio (g/g) or (g/mL)	pH of Solution (Meter/ Paper) ¹	Tare No. Air Drying	Jar Number	Type
Sand-2	Pre-qual			1:01	9.05	27	7	<input checked="" type="checkbox"/> Water
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March 26, 2018

Jessie Goodwin
Geotechnology, Inc.
11816 Lackland Road
St. Louis, MO 63146
TEL: (573) 270-1313
FAX: (314) 997-2067



RE: J024917.04 Meredosia

WorkOrder: 18031051

Dear Jessie Goodwin:

TEKLAB, INC received 1 sample on 3/15/2018 4:30:00 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,



Emily Pohlman
Project Manager
(618)344-1004 ex 44
epohlman@teklabinc.com

Client: Geotechnology, Inc.

Work Order: 18031051

Client Project: J024917.04 Meredosia

Report Date: 26-Mar-18

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	4
Accreditations	5
Laboratory Results	6
Quality Control Results	7
Receiving Check List	15
Chain of Custody	Appended

Client: Geotechnology, Inc.**Work Order:** 18031051**Client Project:** J024917.04 Meredosia**Report Date:** 26-Mar-18**Abbr Definition**

- * Analytes on report marked with an asterisk are not NELAP accredited
- 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).
- MBLK 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.
- 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.
- TIC Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
- 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 |
| I - Associated internal standard was outside method criteria | 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 |
| T - TIC(Tentatively identified compound) | X - Value exceeds Maximum Contaminant Level |



Case Narrative

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 18031051

Client Project: J024917.04 Meredosia

Report Date: 26-Mar-18

Cooler Receipt Temp: 3.82 °C

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email jhriley@teklabinc.com

Collinsville Air

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email EHurley@teklabinc.com

Springfield

Address 3920 Pintail Dr
Springfield, IL 62711-9415
Phone (217) 698-1004
Fax (217) 698-1005
Email KKlostermann@teklabinc.com

Chicago

Address 1319 Butterfield Rd.
Downers Grove, IL 60515
Phone (630) 324-6855
Fax
Email arenner@teklabinc.com

Kansas City

Address 8421 Nieman Road
Lenexa, KS 66214
Phone (913) 541-1998
Fax (913) 541-1998
Email jhriley@teklabinc.com

Client: Geotechnology, Inc.**Work Order:** 18031051**Client Project:** J024917.04 Meredosia**Report Date:** 26-Mar-18

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2019	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2018	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2018	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2018	Collinsville
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2018	Collinsville
Arkansas	ADEQ	88-0966		3/14/2019	Collinsville
Illinois	IDPH	17584		5/31/2019	Collinsville
Indiana	ISDH	C-IL-06		1/31/2019	Collinsville
Kentucky	KDEP	98006		12/31/2018	Collinsville
Kentucky	UST	0073		1/31/2019	Collinsville
Louisiana	LDPH	LA170027		12/31/2018	Collinsville
Missouri	MDNR	930		1/31/2019	Collinsville
Missouri	MDNR	00930		5/31/2019	Collinsville
Oklahoma	ODEQ	9978		8/31/2018	Collinsville
Tennessee	TDEC	04905		1/31/2019	Collinsville

Client: Geotechnology, Inc.
 Client Project: J024917.04 Meredosia
 Lab ID: 18031051-001
 Matrix: SOLID

Work Order: 18031051
 Report Date: 26-Mar-18
 Client Sample ID: BF-1 Pre-Qual
 Collection Date: 03/14/2018 12:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 1311, 9036, IN TCLP EXTRACT								
Sulfate	*	10		< 10	mg/L	1	03/22/2018 18:55	R244994
SW-846 1311, 9040 B, IN TCLP EXTRACT								
pH	*	1.00	H	7.87		1	03/20/2018 12:18	R244841
<i>Sample analysis did not meet hold time requirements.</i>								
SW-846 1311, 9251, IN TCLP EXTRACT								
Chloride	NELAP	5		< 5	mg/L	1	03/22/2018 18:51	R245032
SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP								
Arsenic	NELAP	0.250		< 0.250	mg/L	1	03/21/2018 10:16	140099
Barium	NELAP	0.50	J	0.40	mg/L	1	03/21/2018 10:16	140099
Boron	NELAP	20.0		< 20.0	mg/L	1	03/21/2018 10:16	140099
Cadmium	NELAP	0.0200		< 0.0200	mg/L	1	03/21/2018 10:16	140099
Chromium	NELAP	0.100		< 0.100	mg/L	1	03/21/2018 10:16	140099
Lead	NELAP	0.400		< 0.400	mg/L	1	03/21/2018 10:16	140099
Selenium	NELAP	0.500		< 0.500	mg/L	1	03/21/2018 10:16	140099
Silver	NELAP	0.100		< 0.100	mg/L	1	03/21/2018 10:16	140099
SW-846 1311, 7470A IN TCLP EXTRACT								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	03/21/2018 10:57	140100
SW-846 1311, 5030, 8260B, VOLATILE ORGANIC COMPOUNDS IN TCLP EXTRACT BY GC/MS								
Benzene	NELAP	0.200		ND	mg/L	100	03/21/2018 13:46	140166
Ethylbenzene	NELAP	0.500		ND	mg/L	100	03/21/2018 13:46	140166
Toluene	NELAP	0.500		ND	mg/L	100	03/21/2018 13:46	140166
Xylenes, Total	NELAP	0.500		ND	mg/L	100	03/21/2018 13:46	140166
Surr: 1,2-Dichloroethane-d4	*	79.6-118		104.3	%REC	100	03/21/2018 13:46	140166
Surr: 4-Bromofluorobenzene	*	83.9-115		104.7	%REC	100	03/21/2018 13:46	140166
Surr: Dibromofluoromethane	*	84.9-113		92.9	%REC	100	03/21/2018 13:46	140166
Surr: Toluene-d8	*	86.7-112		107.2	%REC	100	03/21/2018 13:46	140166

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18031051
Report Date: 26-Mar-18

SW-846 1311, 9036, IN TCLP EXTRACT

Batch R244947 SampType: MBLK		Units mg/L								Date Analyzed
SampID: ICB/MBLK										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	10		< 10	5.000	0	0	-100	100	03/21/2018	

Batch R244947 SampType: MBLK		Units mg/L								Date Analyzed
SampID: MBLK-140061										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	10		< 10	5.000	0	0	-100	100	03/21/2018	

Batch R244947 SampType: LCS		Units mg/L								Date Analyzed
SampID: ICB/LCS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	10		19	20.00	0	95.7	90	110	03/21/2018	

Batch R244947 SampType: MS		Units mg/L								Date Analyzed
SampID: 18031264-001BMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	100	S	259	100.0	170.4	88.2	90	110	03/21/2018	

Batch R244947 SampType: MSD		Units mg/L								Date Analyzed
SampID: 18031264-001BMDS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Sulfate	100	S	257	100.0	170.4	86.7	258.6	0.60	03/21/2018	

Batch R244994 SampType: MBLK		Units mg/L								Date Analyzed
SampID: ICB/MBLK										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	10		< 10	5.000	0	0	-100	100	03/22/2018	

Batch R244994 SampType: LCS		Units mg/L								Date Analyzed
SampID: ICB/LCS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	10		18	20.00	0	90.1	90	110	03/22/2018	

Batch R244994 SampType: MS		Units mg/L								Date Analyzed
SampID: 18030281-005BMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	50		129	50.00	77.89	103.2	85	115	03/22/2018	

Batch R244994 SampType: MSD		Units mg/L								Date Analyzed
SampID: 18030281-005BMDS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Sulfate	50		132	50.00	77.89	108.2	129.5	1.94	03/22/2018	

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18031051
Report Date: 26-Mar-18

SW-846 1311, 9036, IN TCLP EXTRACT

Batch R244994		SampType: MS		Units mg/L						
SampID: 18030284-001AMS										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Sulfate	50		237	50.00	185.2	104.6	85	115	03/23/2018	

Batch R244994		SampType: MSD	Units mg/L				RPD Limit 10			
SampID: 18030284-001AMSD										Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Sulfate		50		239	50.00	185.2	108.2	237.5	0.76	03/23/2018

Batch R244994		SampType: MS		Units mg/L						
SampID: 18031051-001AMS										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10	J	9	10.00	0	94.8	85	115	03/22/2018

Batch R244994		SampType: MSD	Units mg/L					RPD Limit 10		
SampID: 18031051-001AMSD										Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Sulfate	10		10	10.00	0	100.7	9.480	6.04	03/22/2018	

SW-846 1311, 9040 B, IN TCLP EXTRACT

Batch R244841		SampType: LCS		Units						
SampID: LCS-R244841		Date Analyzed								
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
pH		1.00		6.99	7.000	0	99.9	99.1	100.9	03/20/2018

Batch R244841		SampType: DUP	Units				RPD Limit 10			
SampID: 18031051-001ADUP										Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
pH		1.00	H	7.98				7.870	1.39	03/20/2018

SW-846 1311, 9251, IN TCLP EXTRACT

Batch R244965		SampType: MBLK		Units mg/L							
SampID: ICB/MBLK											Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride		5		< 5	0.3300	0	0	-100	100	03/21/2018	

Batch R244965		SampType: MBLK		Units mg/L							
SampID: MBLK-140061											Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride		5		< 5	0.3300	0	0	-100	100	03/21/2018	

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18031051
Report Date: 26-Mar-18

SW-846 1311, 9251, IN TCLP EXTRACT

Batch R244965		SampType: LCS		Units mg/L							Date Analyzed
SampID: ICV/LCS											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit			
Chloride	5		20	20.00	0	101.1	90	110			
											03/21/2018

Batch R244965		SampType: MS		Units mg/L							Date Analyzed
SampID: 18031264-001BMS											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit			
Chloride	5		32	20.00	13.71	90.0	85	115			
											03/21/2018

Batch R244965		SampType: MSD		Units mg/L							Date Analyzed
SampID: 18031264-001BMSD						RPD Limit 15					
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD			
Chloride	5		32	20.00	13.71	92.0	31.70	1.25			
											03/21/2018

Batch R245032		SampType: MBLK		Units mg/L							Date Analyzed
SampID: ICB/MBLK											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit			
Chloride	5		< 5	0.3300	0	0	-100	100			
											03/22/2018

Batch R245032		SampType: LCS		Units mg/L							Date Analyzed
SampID: ICV/LCS											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit			
Chloride	5		20	20.00	0	101.2	90	110			
											03/22/2018

Batch R245032		SampType: MS		Units mg/L							Date Analyzed
SampID: 18030281-005BMS											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit			
Chloride	10		58	40.00	21.78	91.5	85	115			
											03/22/2018

Batch R245032		SampType: MSD		Units mg/L							Date Analyzed
SampID: 18030281-005BMSD						RPD Limit 15					
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD			
Chloride	10		58	40.00	21.78	90.5	58.37	0.69			
											03/22/2018

Batch R245032		SampType: MS		Units mg/L							Date Analyzed
SampID: 18030284-001AMS											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit			
Chloride	25		241	100.0	149.4	91.7	85	115			
											03/23/2018

Batch R245032		SampType: MSD		Units mg/L							Date Analyzed
SampID: 18030284-001AMSD						RPD Limit 15					
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD			
Chloride	25		243	100.0	149.4	93.7	241.1	0.81			
											03/23/2018

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18031051
Report Date: 26-Mar-18

SW-846 1311, 9251, IN TCLP EXTRACT

Batch R245032		SampType: MS		Units mg/L						
SampID: 18031051-001AMS										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Chloride	5		20	20.00	0	99.8	85	115	03/22/2018	

Batch R245032		SampType: MSD		Units mg/L				RPD Limit 15		
SampID: 18031051-001AMSD										Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Chloride		5		20	20.00	0	101.4	19.96	1.59	03/22/2018

SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 140099		SampType: MBLK		Units mg/L						
SampID: MBLK-140099										Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Arsenic	0.250		< 0.250	0.2500	0	0	-100	100	03/21/2018	
Barium	0.500		< 0.500	0.5000	0	0	-100	100	03/21/2018	
Boron	20.0		< 20.0	0.2000	0	0	-100	100	03/21/2018	
Cadmium	0.0200		< 0.0200	0.02000	0	0	-100	100	03/21/2018	
Chromium	0.100		< 0.100	0.1000	0	0	-100	100	03/21/2018	
Lead	0.400		< 0.400	0.4000	0	0	-100	100	03/21/2018	
Selenium	0.500		< 0.500	0.5000	0	0	-100	100	03/21/2018	
Silver	0.100		< 0.100	0.1000	0	0	-100	100	03/21/2018	

Batch 140099		SampType: LCS		Units mg/L						
SampID: LCS-140099										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Arsenic	0.250		4.92	5.000	0	98.4	85	115	03/21/2018	
Barium	0.500		19.3	20.00	0	96.6	85	115	03/21/2018	
Boron	20.0		95.2	100.0	0	95.2	85	115	03/21/2018	
Cadmium	0.0200		0.471	0.5000	0	94.2	85	115	03/21/2018	
Chromium	0.100		2.00	2.000	0	100.1	85	115	03/21/2018	
Lead	0.400		4.90	5.000	0	97.9	85	115	03/21/2018	
Selenium	0.500		4.84	5.000	0	96.8	85	115	03/21/2018	
Silver	0.100		0.482	0.5000	0	96.4	85	115	03/21/2018	

Batch 140099		SampType: MS		Units mg/L						
SampID: 18030918-001AMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Arsenic	0.250		4.93	5.000	0	98.5	75	125	03/21/2018	
Barium	0.500		20.5	20.00	1.238	96.1	75	125	03/21/2018	
Cadmium	0.0200		0.467	0.5000	0	93.4	75	125	03/21/2018	
Chromium	0.100		1.98	2.000	0	99.2	75	125	03/21/2018	
Lead	0.400		4.85	5.000	0	97.1	75	125	03/21/2018	
Selenium	0.500		4.78	5.000	0	95.7	75	125	03/21/2018	
Silver	0.100		0.480	0.5000	0	96.0	75	125	03/21/2018	

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18031051
Report Date: 26-Mar-18

SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 140099		SampType: MS		Units mg/L					
SampID: 18031051-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		4.99	5.000	0	99.8	75	125	03/21/2018
Barium	0.500		19.7	20.00	0.3970	96.4	75	125	03/21/2018
Boron	20.0		96.0	100.0	0	96.0	75	125	03/21/2018
Cadmium	0.0200		0.473	0.5000	0	94.6	75	125	03/21/2018
Chromium	0.100		2.00	2.000	0	100.1	75	125	03/21/2018
Lead	0.400		4.90	5.000	0	98.1	75	125	03/21/2018
Selenium	0.500		4.74	5.000	0	94.7	75	125	03/21/2018
Silver	0.100		0.482	0.5000	0	96.4	75	125	03/21/2018

Batch 140099		SampType: MSD		Units mg/L				RPD Limit 20		
SampID: 18031051-001AMSD										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Arsenic		0.250		4.94	5.000	0	98.9	4.988	0.87	03/21/2018
Barium		0.500		19.6	20.00	0.3970	96.1	19.68	0.36	03/21/2018
Boron		20.0		95.7	100.0	0	95.7	95.95	0.24	03/21/2018
Cadmium		0.0200		0.471	0.5000	0	94.2	0.4730	0.42	03/21/2018
Chromium		0.100		1.99	2.000	0	99.6	2.002	0.55	03/21/2018
Lead		0.400		4.88	5.000	0	97.6	4.904	0.51	03/21/2018
Selenium		0.500		4.74	5.000	0	94.8	4.736	0.06	03/21/2018
Silver		0.100		0.480	0.5000	0	96.0	0.4820	0.42	03/21/2018

Batch 140099		SampType: MS		Units mg/L					
SampID: 18031143-001AMS									Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Lead	0.400		4.84	5.000	0	96.9	75	125	03/21/2018

Batch 140099		SampType: MS		Units mg/L						
SampID: 18031192-001AMS										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Arsenic	0.250		4.84	5.000	0	96.9	75	125	03/21/2018	
Barium	0.500		19.2	20.00	0.4430	93.7	75	125	03/21/2018	
Cadmium	0.0200		0.454	0.5000	0	90.8	75	125	03/21/2018	
Chromium	0.100		1.94	2.000	0	97.1	75	125	03/21/2018	
Lead	0.400		4.74	5.000	0	94.8	75	125	03/21/2018	
Selenium	0.500		4.62	5.000	0	92.3	75	125	03/21/2018	
Silver	0.100		0.468	0.5000	0	93.6	75	125	03/21/2018	

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18031051
Report Date: 26-Mar-18

SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 140099		SampType: MS		Units mg/L					
SampID: 18031236-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		5.00	5.000	0	99.9	75	125	03/21/2018
Barium	0.500		19.7	20.00	0.2710	97.3	75	125	03/21/2018
Cadmium	0.0200		0.473	0.5000	0	94.6	75	125	03/21/2018
Chromium	0.100		2.06	2.000	0.06400	99.8	75	125	03/21/2018
Lead	0.400		4.93	5.000	0	98.7	75	125	03/21/2018
Selenium	0.500		4.79	5.000	0	95.8	75	125	03/21/2018
Silver	0.100		0.488	0.5000	0	97.6	75	125	03/21/2018

SW-846 1311, 7470A IN TCLP EXTRACT

Batch 140100		SampType: MBLK		Units mg/L						
SampID: MBLK-140100										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Mercury	0.00020		< 0.00020	0.000200	0	0	-100	100	03/21/2018	

Batch 140100		SampType: LCS		Units mg/L					
SampID: LCS-140100									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00480	0.005000	0	95.9	85	115	03/21/2018

Batch 140100		SampType: MS		Units mg/L					
SampID: 18030918-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00506	0.005000	0	101.1	75	125	03/21/2018

Batch 140100		SampType: MS		Units mg/L					
SampID: 18031051-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00513	0.005000	0	102.7	75	125	03/21/2018

Batch 140100		SampType: MS		Units mg/L					
SampID: 18031192-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00490	0.005000	0	97.9	75	125	03/21/2018

Batch 140100		SampType: MSD		Units mg/L				RPD Limit		
SampID: 18031192-001AMSD										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury		0.00020		0.00479	0.005000	0	95.9	75	125	03/21/2018

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18031051
Report Date: 26-Mar-18

SW-846 1311, 7470A IN TCLP EXTRACT

Batch 140100		SampType: MS		Units mg/L						
SampID: 18031236-001AMS										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Mercury	0.00020		0.00505	0.00500	0	101.0	75	125	03/21/2018	

SW-846 1311, 5030, 8260B, VOLATILE ORGANIC COMPOUNDS IN TCLP EXTRACT BY GC/MS

Batch 140166		SampType: MBLK		Units µg/L						
SampID: MBLK-T180321A-1										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Benzene	2.0		ND						03/21/2018	
Ethylbenzene	5.0		ND						03/21/2018	
Toluene	5.0		ND						03/21/2018	
Xylenes, Total	5.0		ND						03/21/2018	
Surr: 1,2-Dichloroethane-d4			51.6	50.00		103.2	79.6	118	03/21/2018	
Surr: 4-Bromofluorobenzene			52.7	50.00		105.4	83.9	115	03/21/2018	
Surr: Dibromofluoromethane			47.6	50.00		95.1	84.9	113	03/21/2018	
Surr: Toluene-d8			53.6	50.00		107.2	86.7	112	03/21/2018	

Batch 140166		SampType: LCSD		Units µg/L				RPD Limit 40		
SampID: LCSD-T180321A-1										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Benzene	2.0		41.7	50.00	0	83.5	42.47	1.76	03/21/2018	
Ethylbenzene	5.0		46.5	50.00	0	93.0	47.33	1.79	03/21/2018	
Toluene	5.0		45.8	50.00	0	91.6	47.41	3.41	03/21/2018	
Xylenes, Total	5.0		141	150.0	0	94.3	145.8	3.06	03/21/2018	
Surr: 1,2-Dichloroethane-d4			51.0	50.00		101.9			03/21/2018	
Surr: 4-Bromofluorobenzene			50.0	50.00		99.9			03/21/2018	
Surr: Dibromofluoromethane			48.6	50.00		97.2			03/21/2018	
Surr: Toluene-d8			52.4	50.00		104.8			03/21/2018	

Batch 140166		SampType: LCS		Units µg/L						
SampID: LCS-T180321A-1										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Benzene	2.0		42.5	50.00	0	84.9	77.8	120	03/21/2018	
Ethylbenzene	5.0		47.3	50.00	0	94.7	81.8	117	03/21/2018	
Toluene	5.0		47.4	50.00	0	94.8	82.2	113	03/21/2018	
Xylenes, Total	5.0		146	150.0	0	97.2	82.7	118	03/21/2018	
Surr: 1,2-Dichloroethane-d4			51.2	50.00		102.4	79.6	118	03/21/2018	
Surr: 4-Bromofluorobenzene			51.2	50.00		102.5	83.9	115	03/21/2018	
Surr: Dibromofluoromethane			48.0	50.00		96.0	84.9	113	03/21/2018	
Surr: Toluene-d8			53.6	50.00		107.1	86.7	112	03/21/2018	

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18031051
Report Date: 26-Mar-18

SW-846 1311, 5030, 8260B, VOLATILE ORGANIC COMPOUNDS IN TCLP EXTRACT BY GC/MS

Batch 140166		SampType: MS		Units mg/L						
SampID: 18031051-001AMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Benzene	0.200		3.90	5.000	0	77.9	66.8	122	03/21/2018	
Ethylbenzene	0.500		4.56	5.000	0	91.2	77.7	115	03/21/2018	
Toluene	0.500		4.27	5.000	0	85.4	69.8	112	03/21/2018	
Xylenes, Total	0.500		9.13	10.00	0	91.3	77.6	113	03/21/2018	
Surr: 1,2-Dichloroethane-d4			5.35	5.000		107.0	74.7	129	03/21/2018	
Surr: 4-Bromofluorobenzene			5.20	5.000		104.0	86	119	03/21/2018	
Surr: Dibromofluoromethane			4.71	5.000		94.1	81.7	123	03/21/2018	
Surr: Toluene-d8			5.19	5.000		103.7	84.3	114	03/21/2018	

Batch 140166		SampType: MS		Units µg/L						
SampID: 18031127-001AMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Benzene	20.0		410	500.0	0	82.0	62.5	121	03/21/2018	
Ethylbenzene	50.0		485	500.0	0	97.0	74.4	130	03/21/2018	
Toluene	50.0		453	500.0	0	90.6	69.5	118	03/21/2018	
Xylenes, Total	50.0		962	1000	0	96.2	71.1	125	03/21/2018	
Surr: 1,2-Dichloroethane-d4			517	500.0		103.4	74.7	129	03/21/2018	
Surr: 4-Bromofluorobenzene			516	500.0		103.3	86	119	03/21/2018	
Surr: Dibromofluoromethane			460	500.0		92.0	81.7	123	03/21/2018	
Surr: Toluene-d8			525	500.0		105.0	84.3	114	03/21/2018	

Batch 140166		SampType: MSD		Units µg/L				RPD Limit 20		
SampID: 18031127-001AMSD										Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Benzene		20.0		414	500.0	0	82.7	410.0	0.87	03/21/2018
Ethylbenzene		50.0		473	500.0	0	94.5	485.2	2.63	03/21/2018
Toluene		50.0		453	500.0	0	90.6	453.1	0.02	03/21/2018
Xylenes, Total		50.0		956	1000	0	95.6	961.5	0.54	03/21/2018
Surr: 1,2-Dichloroethane-d4				531	500.0		106.2			03/21/2018
Surr: 4-Bromofluorobenzene				525	500.0		105.0			03/21/2018
Surr: Dibromofluoromethane				469	500.0		93.9			03/21/2018
Surr: Toluene-d8				512	500.0		102.5			03/21/2018



Receiving Check List

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 18031051

Client Project: J024917.04 Meredosia

Report Date: 26-Mar-18

Carrier: Nick Reed

Received By: EEP

Completed by:

On:

15-Mar-18

Amber M. Dilallo

Reviewed by:

On:

15-Mar-18

Michael L. Austin

Pages to follow:

Chain of custody

1

Extra pages included

0

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Temp °C 3.82

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 ☐

NA ☒

NPDES/CWA TCN interferences checked/treated in the field?

Yes ☐

No ☐

NA ☒

Any No responses must be detailed below or on the COC.

Samples requiring pH should be analyzed as soon as possible after collection. Samples submitted for pH analysis are analyzed as soon as practicable upon arrival at the laboratory. - adilallo - 3/15/2018 5:44:42 PM

pg. 1 of 1 Work order # 18031057

TEKLAB, INC. 5445 Horseshoe Lake Road - Collinsville, IL 62234 - Phone: (618) 344-1004 - Fax: (618) 344-1005

Client: <u>Geotechnology, Inc.</u>		Samples on: <input checked="" type="checkbox"/> ICE <input type="checkbox"/> BLUE ICE <input type="checkbox"/> NO ICE <u>382</u> °C	
Address: <u>11816 Lackland Road</u>		Preserved in: <input type="checkbox"/> LAB <input type="checkbox"/> FIELD <u>FOR LAB USE ONLY</u>	
City / State / Zip <u>St. Louis, MO 63146</u>		Lab Notes <u>* 47228 per Jessie Goodwin</u>	
Contact: <u>Jessie Goodwin</u>	Phone: <u>(314) 997-7440</u>		
E-Mail: <u>jgoodwin@geotechnology.com</u>	Fax: <u>(314) 997-2067</u>	Client Comments:	

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 the comment section. ☐ Yes ☒ No

Client Comments:

*8 RCRA+Boron

Teklab, Inc.
CommerPickUp

[illegible]

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions.

BottleOrder: 42788



3/15/18

July 02, 2018

Jessie Goodwin
Geotechnology, Inc.
11816 Lackland Road
St. Louis, MO 63146
TEL: (573) 270-1313
FAX: (314) 997-2067



RE: J024917.04 Meredosia

WorkOrder: 18061539

Dear Jessie Goodwin:

TEKLAB, INC received 1 sample on 6/22/2018 2:27:00 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,



Emily Pohlman
Project Manager
(618)344-1004 ex 44
epohlman@teklabinc.com

Client: Geotechnology, Inc.

Work Order: 18061539

Client Project: J024917.04 Meredosia

Report Date: 02-Jul-18

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	4
Accreditations	5
Laboratory Results	6
Quality Control Results	7
Receiving Check List	15
Chain of Custody	Appended

Client: Geotechnology, Inc.**Work Order:** 18061539**Client Project:** J024917.04 Meredosia**Report Date:** 02-Jul-18**Abbr Definition**

- * Analytes on report marked with an asterisk are not NELAP accredited
- CCV Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
- CRQL A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
- 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 dilution factors.
- DNI Did not ignite
- DUP Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
- 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 is a sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes and 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.
- 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).
- MBLK 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 "The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
- 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.
- 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.
- TIC Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
- TNTC Too numerous to count (> 200 CFU)

Qualifiers

- | | |
|---|--|
| # - Unknown hydrocarbon | B - Analyte detected in associated Method Blank |
| C - RL shown is a Client Requested Quantitation Limit | E - Value above quantitation range |
| H - Holding times exceeded | I - Associated internal standard was outside method criteria |
| 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 | T - TIC(Tentatively identified compound) |
| X - Value exceeds Maximum Contaminant Level | |



Case Narrative

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 18061539

Client Project: J024917.04 Meredosia

Report Date: 02-Jul-18

Cooler Receipt Temp: 12.82 °C

Locations

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Client: Geotechnology, Inc.**Work Order:** 18061539**Client Project:** J024917.04 Meredosia**Report Date:** 02-Jul-18

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2019	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2019	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2019	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2019	Collinsville
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2018	Collinsville
Arkansas	ADEQ	88-0966		3/14/2019	Collinsville
Illinois	IDPH	17584		5/31/2019	Collinsville
Indiana	ISDH	C-IL-06		1/31/2019	Collinsville
Kentucky	KDEP	98006		12/31/2018	Collinsville
Kentucky	UST	0073		1/31/2019	Collinsville
Louisiana	LDPH	LA170027		12/31/2018	Collinsville
Missouri	MDNR	930		1/31/2019	Collinsville
Missouri	MDNR	00930		5/31/2019	Collinsville
Oklahoma	ODEQ	9978		8/31/2018	Collinsville
Tennessee	TDEC	04905		1/31/2019	Collinsville

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia
Lab ID: 18061539-001
Matrix: SOLID

Work Order: 18061539
Report Date: 02-Jul-18
Client Sample ID: Pre-Qual BF-2
Collection Date: 06/22/2018 8:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 1311, 9036, IN TCLP EXTRACT								
Sulfate	*	10	J	7	mg/L	1	06/28/2018 19:57	R249024
SW-846 1311, 9040 B, IN TCLP EXTRACT								
pH	*	1.00	H	8.50		1	06/26/2018 17:22	R248870
<i>Sample analysis did not meet hold time requirements.</i>								
SW-846 1311, 9251, IN TCLP EXTRACT								
Chloride	NELAP	5		< 5	mg/L	1	06/28/2018 19:54	R249036
SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP								
Arsenic	NELAP	0.250		< 0.250	mg/L	1	06/26/2018 15:47	143280
Barium	NELAP	0.450		0.644	mg/L	1	06/26/2018 15:47	143280
Boron	NELAP	0.500		< 0.500	mg/L	1	06/26/2018 15:47	143280
Cadmium	NELAP	0.0200		< 0.0200	mg/L	1	06/26/2018 15:47	143280
Chromium	NELAP	0.100		< 0.100	mg/L	1	06/26/2018 15:47	143280
Lead	NELAP	0.400		< 0.400	mg/L	1	06/26/2018 15:47	143280
Selenium	NELAP	0.500		< 0.500	mg/L	1	06/26/2018 15:47	143280
Silver	NELAP	0.0700		< 0.0700	mg/L	1	06/26/2018 15:47	143280
SW-846 1311, 7470A IN TCLP EXTRACT								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	06/26/2018 9:50	143283
SW-846 1311, 5030, 8260B, VOLATILE ORGANIC COMPOUNDS IN TCLP EXTRACT BY GC/MS								
Benzene	NELAP	0.050		ND	mg/L	100	06/26/2018 14:34	143306
Ethylbenzene	NELAP	0.200		ND	mg/L	100	06/26/2018 14:34	143306
Toluene	NELAP	0.200		ND	mg/L	100	06/26/2018 14:34	143306
Xylenes, Total	NELAP	0.200	B	ND	mg/L	100	06/26/2018 14:34	143306
Surr: 1,2-Dichloroethane-d4	*	79.6-118		103.1	%REC	100	06/26/2018 14:34	143306
Surr: 4-Bromofluorobenzene	*	83.9-115		104.4	%REC	100	06/26/2018 14:34	143306
Surr: Dibromofluoromethane	*	84.9-113		104.5	%REC	100	06/26/2018 14:34	143306
Surr: Toluene-d8	*	86.7-112		90.5	%REC	100	06/26/2018 14:34	143306

MBLK has detectable levels between the MDL and the RL for total xylenes. If sample results show a low level, they may be biased high by the detectable levels in the MBLK. Sample results less than the RL are reportable.

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18061539
Report Date: 02-Jul-18

SW-846 1311, 9036, IN TCLP EXTRACT

Batch R249024		SampType: MBLK		Units mg/L						
SampID: ICB/MBLK										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate	10		< 10	5.000	0	0	-100	100	06/28/2018	

Batch R249024		SampType: LCS		Units mg/L						
SampID: ICV/LCS										Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	10		19	20.00	0	96.8	90	110	06/28/2018	

Batch R249024		SampType: MS		Units mg/L						
SampID: 18061278-001AMS										Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	10	E	56	10.00	46.22	97.4	85	115	06/28/2018	

Batch R249024		SampType: MSD		Units mg/L				RPD Limit 10			
SampID: 18061278-001AMSD										Date Analyzed	
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Sulfate		10	E	56	10.00	46.22	102.1	55.96	0.84	06/28/2018	

Batch R249024		SampType: MS		Units mg/L						
SampID: 18061737-003BMS									Date Analyzed	
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	200		465	200.0	253.1	105.9	85	115	06/28/2018	

Batch R249024		SampType: MSD		Units mg/L				RPD Limit 10			
SampID: 18061737-003BMSD										Date Analyzed	
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Sulfate		200		426	200.0	253.1	86.5	464.8	8.71	06/28/2018	

SW-846 1311, 9040 B, IN TCLP EXTRACT

Batch R248870		SampType: LCS		Units							
SampID: LCS-R248870											Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
pH		1.00		7.00	7.000	0	100.0	99.1	100.9	06/26/2018	

Batch R248870		SampType: DUP		Units				RPD Limit 10			
SampID: 18061539-001ADUP										Date Analyzed	
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
pH		1.00	H	8.72				8.500	2.56	06/26/2018	

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18061539
Report Date: 02-Jul-18

SW-846 1311, 9251, IN TCLP EXTRACT

Batch R249036		SampType: MBLK		Units mg/L						Date Analyzed
SampID: ICB/MBLK										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride	5		< 5	0.5000	0	0	-100	100	06/28/2018	

Batch R249036		SampType: LCS		Units mg/L						Date Analyzed
SampID: ICB/LCS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride	5		21	20.00	0	103.6	90	110	06/28/2018	

Batch R249036		SampType: MS		Units mg/L						Date Analyzed
SampID: 18061278-001AMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride	5		49	20.00	30.71	92.1	85	115	06/28/2018	

Batch R249036		SampType: MSD		Units mg/L				RPD Limit 15		
SampID: 18061278-001AMSD										Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Chloride		5		49	20.00	30.71	91.7	49.12	0.16	06/28/2018

Batch R249036		SampType: MS		Units mg/L						Date Analyzed
SampID: 18061737-003BMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride	25		196	100.0	104.7	91.6	85	115	06/28/2018	

Batch R249036		SampType: MSD		Units mg/L				RPD Limit 15		
SampID: 18061737-003BMSD										Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Chloride		25		195	100.0	104.7	90.4	196.3	0.63	06/28/2018

Batch R249036		SampType: MS		Units mg/L						Date Analyzed
SampID: 18061777-001AMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride	250		2380	1000	1461	91.7	85	115	06/29/2018	

Batch R249036		SampType: MSD		Units mg/L				RPD Limit 15		
SampID: 18061777-001AMSD										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride		250		2380	1000	1461	91.7	2378	0.02	06/29/2018

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18061539
Report Date: 02-Jul-18

SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 143280		SampType: MBLK		Units mg/L						
SampID: MBLK-143280										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Arsenic	0.250		< 0.250	0.08700	0	0	-100	100	06/26/2018	
Barium	0.450		< 0.450	0.1500	0	0	-100	100	06/26/2018	
Boron	0.500		< 0.500	0.5000	0	0	-100	100	06/26/2018	
Cadmium	0.0200		< 0.0200	0.005000	0	0	-100	100	06/26/2018	
Chromium	0.100		< 0.100	0.01500	0	0	-100	100	06/26/2018	
Lead	0.400		< 0.400	0.04000	0	0	-100	100	06/26/2018	
Selenium	0.500		< 0.500	0.1700	0	0	-100	100	06/26/2018	
Silver	0.0700		< 0.0700	0.02700	0	0	-100	100	06/26/2018	

Batch 143280		SampType: LCS		Units mg/L						
SampID: LCS-143280		Date Analyzed								
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Arsenic	0.250		5.03	5.000	0	100.6	85	115	06/26/2018	
Barium	0.450		19.5	20.00	0	97.7	85	115	06/26/2018	
Boron	0.500		4.99	5.000	0	99.8	85	115	06/26/2018	
Cadmium	0.0200		0.481	0.5000	0	96.2	85	115	06/26/2018	
Chromium	0.100		1.96	2.000	0	97.8	85	115	06/26/2018	
Lead	0.400		4.96	5.000	0	99.2	85	115	06/26/2018	
Selenium	0.500		4.84	5.000	0	96.7	85	115	06/26/2018	
Silver	0.0700		0.481	0.5000	0	96.2	85	115	06/26/2018	

Batch 143280		SampType: MS		Units mg/L					
SampID: 18061496-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		4.91	5.000	0	98.2	75	125	06/26/2018
Barium	0.450		19.4	20.00	0	97.2	75	125	06/26/2018
Cadmium	0.0200		0.470	0.5000	0	94.0	75	125	06/26/2018
Chromium	0.100		1.94	2.000	0	97.2	75	125	06/26/2018
Lead	0.400		4.87	5.000	0	97.4	75	125	06/26/2018
Selenium	0.500		4.73	5.000	0	94.7	75	125	06/26/2018
Silver	0.0700		0.476	0.5000	0	95.2	75	125	06/26/2018

Batch 143280		SampType: MSD		Units mg/L				RPD Limit 20		
SampID: 18061496-001AMSD										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Arsenic	0.250		4.95	5.000	0	99.1	4.910	0.87	06/26/2018	
Barium	0.450		19.4	20.00	0	97.0	19.43	0.21	06/26/2018	
Cadmium	0.0200		0.471	0.5000	0	94.2	0.4700	0.21	06/26/2018	
Chromium	0.100		1.92	2.000	0	96.2	1.945	1.09	06/26/2018	
Lead	0.400		4.86	5.000	0	97.2	4.872	0.25	06/26/2018	
Selenium	0.500		4.73	5.000	0	94.6	4.733	0.08	06/26/2018	
Silver	0.0700		0.479	0.5000	0	95.8	0.4760	0.63	06/26/2018	

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18061539
Report Date: 02-Jul-18

SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 143280		SampType: MS		Units mg/L					
SampID: 18061539-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		4.92	5.000	0	98.5	75	125	06/26/2018
Barium	0.450		19.7	20.00	0.6440	95.1	75	125	06/26/2018
Boron	0.500		4.86	5.000	0	97.2	75	125	06/26/2018
Cadmium	0.0200		0.464	0.5000	0	92.8	75	125	06/26/2018
Chromium	0.100		1.90	2.000	0	95.2	75	125	06/26/2018
Lead	0.400		4.84	5.000	0	96.7	75	125	06/26/2018
Selenium	0.500		4.75	5.000	0	95.0	75	125	06/26/2018
Silver	0.0700		0.470	0.5000	0	94.0	75	125	06/26/2018

Batch 143280		SampType: MS		Units mg/L					
SampID: 18061564-004AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		5.05	5.000	0	101.0	75	125	06/26/2018
Barium	0.450		20.4	20.00	0.7190	98.5	75	125	06/26/2018
Cadmium	0.0200		0.482	0.5000	0.005000	95.4	75	125	06/26/2018
Chromium	0.100		1.96	2.000	0	97.8	75	125	06/26/2018
Lead	0.400		4.99	5.000	0	99.9	75	125	06/26/2018
Selenium	0.500		4.84	5.000	0	96.9	75	125	06/26/2018
Silver	0.0700		0.484	0.5000	0	96.8	75	125	06/26/2018

Batch 143280		SampType: MSD		Units mg/L				RPD Limit 20		
SampID: 18061564-004AMSD										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Arsenic	0.250		5.01	5.000	0	100.2	5.050	0.82	06/26/2018	
Barium	0.450		20.3	20.00	0.7190	97.9	20.41	0.59	06/26/2018	
Cadmium	0.0200		0.484	0.5000	0.005000	95.8	0.4820	0.41	06/26/2018	
Chromium	0.100		1.94	2.000	0	97.2	1.957	0.62	06/26/2018	
Lead	0.400		4.94	5.000	0	98.8	4.994	1.13	06/26/2018	
Selenium	0.500		4.75	5.000	0	94.9	4.844	2.04	06/26/2018	
Silver	0.0700		0.483	0.5000	0	96.6	0.4840	0.21	06/26/2018	

Batch 143280		SampType: MS		Units mg/L					
SampID: 18061565-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		5.04	5.000	0	100.8	75	125	06/26/2018
Barium	0.450		20.6	20.00	0.8840	98.4	75	125	06/26/2018
Cadmium	0.0200		0.481	0.5000	0	96.2	75	125	06/26/2018
Chromium	0.100		1.97	2.000	0	98.6	75	125	06/26/2018
Lead	0.400		4.99	5.000	0	99.8	75	125	06/26/2018
Selenium	0.500		4.84	5.000	0	96.8	75	125	06/26/2018
Silver	0.0700		0.484	0.5000	0	96.8	75	125	06/26/2018

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18061539
Report Date: 02-Jul-18

SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 143280		SampType: MS		Units mg/L					
SampID: 18061566-003AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		5.00	5.000	0	100.1	75	125	06/26/2018
Barium	0.450		20.2	20.00	0.6920	97.6	75	125	06/26/2018
Cadmium	0.0200		0.475	0.5000	0	95.0	75	125	06/26/2018
Chromium	0.100		1.96	2.000	0	98.1	75	125	06/26/2018
Lead	0.400		4.93	5.000	0	98.6	75	125	06/26/2018
Selenium	0.500		4.70	5.000	0	93.9	75	125	06/26/2018
Silver	0.0700		0.478	0.5000	0	95.6	75	125	06/26/2018

SW-846 1311, 7470A IN TCLP EXTRACT

Batch 143283		SampType: MBLK		Units mg/L					
SampID: MBLK-143283									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		< 0.00020	000055C	0	0	-100	100	06/26/2018

Batch 143283		SampType: LCS		Units mg/L					
SampID: LCS-143283									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00513	0.00500C	0	102.5	85	115	06/26/2018

Batch 143283		SampType: MS		Units mg/L					
SampID: 18061496-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00501	0.00500C	0	100.1	75	125	06/26/2018

Batch 143283		SampType: MS		Units mg/L					
SampID: 18061539-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00514	0.00500C	0	102.7	75	125	06/26/2018

Batch 143283		SampType: MSD		Units mg/L				RPD Limit 15		Date Analyzed
SampID: 18061539-001AMSD										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Mercury		0.00020		0.00507	0.00500C	0	101.4	0.005137	1.27	06/26/2018

Batch 143283		SampType: MS		Units mg/L						
SampID: 18061564-002AMS										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Mercury	0.00020		0.00520	0.00500C	0	104.0	75	125	06/26/2018	

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18061539
Report Date: 02-Jul-18

SW-846 1311, 7470A IN TCLP EXTRACT

Batch 143283		SampType: MS		Units mg/L					
SampID: 18061565-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00520	0.00500C	0	104.1	75	125	06/26/2018

Batch 143283		SampType: MS		Units mg/L					
SampID: 18061566-009AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00496	0.00500C	0	99.3	75	125	06/26/2018

Batch 143283		SampType: MSD		Units mg/L			RPD Limit 15		
SampID: 18061566-009AMSD									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury	0.00020		0.00510	0.00500C	0	101.9	0.004965	2.60	06/26/2018

SW-846 1311, 5030, 8260B, VOLATILE ORGANIC COMPOUNDS IN TCLP EXTRACT BY GC/MS

Batch 143306		SampType: MBLK		Units µg/L						
SampID: MBLK-T180626A-1										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Benzene	0.5		ND						06/26/2018	
Ethylbenzene	2.0		ND						06/26/2018	
Toluene	2.0		ND						06/26/2018	
Xylenes, Total	2.0	J	0.1						06/26/2018	
Surr: 1,2-Dichloroethane-d4			48.8	50.00		97.6	79.6	118	06/26/2018	
Surr: 4-Bromofluorobenzene			52.4	50.00		104.9	83.9	115	06/26/2018	
Surr: Dibromofluoromethane			51.3	50.00		102.7	84.9	113	06/26/2018	
Surr: Toluene-d8			45.9	50.00		91.8	86.7	112	06/26/2018	

Batch 143306		SampType: LCSD		Units µg/L				RPD Limit 40		
SampID: LCSD-T180626A-1										Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Benzene	0.5		56.0	50.00	0	112.0	54.45	2.84		06/26/2018
Ethylbenzene	2.0		48.4	50.00	0	96.9	46.54	3.98		06/26/2018
Toluene	2.0		47.0	50.00	0	93.9	44.85	4.60		06/26/2018
Xylenes, Total	2.0	B	139	150.0	0	92.7	134.6	3.27		06/26/2018
Surr: 1,2-Dichloroethane-d4			48.2	50.00		96.4				06/26/2018
Surr: 4-Bromofluorobenzene			49.2	50.00		98.4				06/26/2018
Surr: Dibromofluoromethane			53.7	50.00		107.4				06/26/2018
Surr: Toluene-d8			44.5	50.00		89.1				06/26/2018

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18061539
Report Date: 02-Jul-18

SW-846 1311, 5030, 8260B, VOLATILE ORGANIC COMPOUNDS IN TCLP EXTRACT BY GC/MS

Batch 143306		SampType: LCS		Units µg/L						
SampID: LCS-T180626A-1										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Benzene	0.5		54.4	50.00	0	108.9	77.8	120	06/26/2018	
Ethylbenzene	2.0		46.5	50.00	0	93.1	81.8	117	06/26/2018	
Toluene	2.0		44.8	50.00	0	89.7	82.2	113	06/26/2018	
Xylenes, Total	2.0	B	135	150.0	0	89.7	82.7	118	06/26/2018	
Surr: 1,2-Dichloroethane-d4			47.7	50.00		95.3	79.6	118	06/26/2018	
Surr: 4-Bromofluorobenzene			48.0	50.00		95.9	83.9	115	06/26/2018	
Surr: Dibromofluoromethane			52.2	50.00		104.5	84.9	113	06/26/2018	
Surr: Toluene-d8			44.7	50.00		89.4	86.7	112	06/26/2018	

Batch 143306		SampType: MS		Units mg/L						
SampID: 18061539-001AMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Benzene	0.050		5.45	5.000	0	109.0	66.8	122	06/26/2018	
Ethylbenzene	0.200		4.76	5.000	0	95.1	77.7	115	06/26/2018	
Toluene	0.200		4.49	5.000	0	89.8	69.8	112	06/26/2018	
Xylenes, Total	0.200	B	9.31	10.00	0	93.1	77.6	113	06/26/2018	
Surr: 1,2-Dichloroethane-d4			5.23	5.000		104.7	74.7	129	06/26/2018	
Surr: 4-Bromofluorobenzene			5.16	5.000		103.1	86	119	06/26/2018	
Surr: Dibromofluoromethane			5.24	5.000		104.7	81.7	123	06/26/2018	
Surr: Toluene-d8			4.47	5.000		89.4	84.3	114	06/26/2018	

Batch 143306		SampType: MS		Units mg/L						
SampID: 18061564-006AMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Benzene	0.050	S	5.76	5.000	0	115.3	81.5	113	06/26/2018	
Surr: 1,2-Dichloroethane-d4			5.05	5.000		101.0	74.7	129	06/26/2018	
Surr: 4-Bromofluorobenzene			5.07	5.000		101.4	86	119	06/26/2018	
Surr: Dibromofluoromethane			5.15	5.000		103.0	81.7	123	06/26/2018	
Surr: Toluene-d8			4.50	5.000		90.1	84.3	114	06/26/2018	

Batch 143306		SampType: MS		Units mg/L						
SampID: 18061566-001AMS										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Benzene		0.050	S	5.76	5.000	0	115.1	81.5	113	06/26/2018
Surr: 1,2-Dichloroethane-d4				5.04	5.000		100.8	74.7	129	06/26/2018
Surr: 4-Bromofluorobenzene				5.00	5.000		100.0	86	119	06/26/2018
Surr: Dibromofluoromethane				5.18	5.000		103.6	81.7	123	06/26/2018
Surr: Toluene-d8				4.50	5.000		89.9	84.3	114	06/26/2018

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18061539
Report Date: 02-Jul-18

SW-846 1311, 5030, 8260B, VOLATILE ORGANIC COMPOUNDS IN TCLP EXTRACT BY GC/MS

Batch 143306		SampType: MS		Units mg/L					
SampID: 18061566-004AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Benzene	0.050	S	5.91	5.000	0	118.2	81.5	113	06/26/2018
Surr: 1,2-Dichloroethane-d4			5.10	5.000		102.0	74.7	129	06/26/2018
Surr: 4-Bromofluorobenzene			5.06	5.000		101.2	86	119	06/26/2018
Surr: Dibromofluoromethane			5.10	5.000		102.0	81.7	123	06/26/2018
Surr: Toluene-d8			4.57	5.000		91.4	84.3	114	06/26/2018



Receiving Check List

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 18061539

Client Project: J024917.04 Meredosia

Report Date: 02-Jul-18

Carrier: Alyssa Okorn

Received By: NH

Completed by:

On:

22-Jun-18

Amber M. Dilallo

Reviewed by:

On:

22-Jun-18

Elizabeth A. Hurley

Pages to follow:

Chain of custody

1

Extra pages included

0

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Temp °C 12.82

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 ☐

NA ☒

NPDES/CWA TCN interferences checked/treated in the field?

Yes ☐

No ☐

NA ☒

Any No responses must be detailed below or on the COC.

Samples requiring pH should be analyzed as soon as possible after collection. Samples submitted for pH analysis are analyzed as soon as practicable upon arrival at the laboratory.

pg. 1 of 1 Work order # 18041534

TEKLAB, INC. 5445 Horseshoe Lake Road - Collinsville, IL 62234 - Phone: (618) 344-1004 - Fax: (618) 344-1005

Client:

Geotechnology, Inc.

Address:

11816 Lackland Road

City / State / Zip

St. Louis, MO 63146

Contact:

Jessie Goodwin

Phone:

(314) 997-7440

E-Mail:

jgoodwin@geotechnology.com

Fax:

(314) 997-2067

Samples on:

☒ ICE ☐ BLUE ICE ☐ NO ICE

Preserved in:

☐ LAB ☐ FIELD

FOR LAB USE ONLY

Lab Notes

Client Comments:

*8 RCRA+Boron

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 the comment section. ☐ Yes ☒ No

Project Name/Number

J024917.04 Meredosia

Sample Collector's Name

Alyssa Okorn

Results Requested

☒ Standard ☐ 1-2 Day (100% Surcharge)

☐ Other ☐ 3 Day (50% Surcharge)

Billing Instructions

and Type of Containers

UNPRES

HNO3

NaOH

H2SO4

HCL

MeOH

NaHSO4

OTHER

Lab Use Only

Sample Identification

Date/Time Sampled

18061535-001

Pre-Qual BF-2

6/22/18 0800

MATRIX

Aqueous

Drinking Water

Soil

Sludge

Special Waste

Groundwater

INDICATE ANALYSIS REQUESTED

TCLP BTEX

TCLP Chloride

TCLP Metals*

TCLP pH

TCLP Sulfate

Relinquished By

Alyssa A. Okorn

Date/Time

6/22/18 1427

Received By

[Signature]

Date/Time

6/22/18 1427

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions.

BottleOrder: 42788



Wet of 18

June 04, 2018

Jessie Goodwin
Geotechnology, Inc.
11816 Lackland Road
St. Louis, MO 63146
TEL: (573) 270-1313
FAX: (314) 997-2067



RE: J024917.04 Meredosia

WorkOrder: 18051739

Dear Jessie Goodwin:

TEKLAB, INC received 1 sample on 5/25/2018 3:03:00 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,



Emily Pohlman
Project Manager
(618)344-1004 ex 44
epohlman@teklabinc.com

Client: Geotechnology, Inc.

Work Order: 18051739

Client Project: J024917.04 Meredosia

Report Date: 04-Jun-18

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	4
Accreditations	5
Laboratory Results	6
Quality Control Results	7
Receiving Check List	13
Chain of Custody	Appended

Client: Geotechnology, Inc.**Work Order:** 18051739**Client Project:** J024917.04 Meredosia**Report Date:** 04-Jun-18**Abbr Definition**

* Analytes on report marked with an asterisk are not NELAP accredited

CCV Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.

CRQL A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.

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 dilution factors.

DNI Did not ignite

DUP Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.

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 is a sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes and 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.

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).

MBLK 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 "The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."

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.

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.

TIC Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"

TNTC Too numerous to count (> 200 CFU)

Qualifiers

- Unknown hydrocarbon

C - RL shown is a Client Requested Quantitation Limit

H - Holding times exceeded

J - Analyte detected below quantitation limits

ND - Not Detected at the Reporting Limit

S - Spike Recovery outside recovery limits

X - Value exceeds Maximum Contaminant Level

B - Analyte detected in associated Method Blank

E - Value above quantitation range

I - Associated internal standard was outside method criteria

M - Manual Integration used to determine area response

R - RPD outside accepted recovery limits

T - TIC(Tentatively identified compound)



Case Narrative

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 18051739

Client Project: J024917.04 Meredosia

Report Date: 04-Jun-18

Cooler Receipt Temp: 24.20 °C

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email jhriley@teklabinc.com

Collinsville Air

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email EHurley@teklabinc.com

Springfield

Address 3920 Pintail Dr
Springfield, IL 62711-9415
Phone (217) 698-1004
Fax (217) 698-1005
Email KKlostermann@teklabinc.com

Chicago

Address 1319 Butterfield Rd.
Downers Grove, IL 60515
Phone (630) 324-6855
Fax
Email arenner@teklabinc.com

Kansas City

Address 8421 Nieman Road
Lenexa, KS 66214
Phone (913) 541-1998
Fax (913) 541-1998
Email jhriley@teklabinc.com

Client: Geotechnology, Inc.**Work Order:** 18051739**Client Project:** J024917.04 Meredosia**Report Date:** 04-Jun-18

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2019	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2019	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2018	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2018	Collinsville
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2018	Collinsville
Arkansas	ADEQ	88-0966		3/14/2019	Collinsville
Illinois	IDPH	17584		5/31/2019	Collinsville
Indiana	ISDH	C-IL-06		1/31/2019	Collinsville
Kentucky	KDEP	98006		12/31/2018	Collinsville
Kentucky	UST	0073		1/31/2019	Collinsville
Louisiana	LDPH	LA170027		12/31/2018	Collinsville
Missouri	MDNR	930		1/31/2019	Collinsville
Missouri	MDNR	00930		5/31/2019	Collinsville
Oklahoma	ODEQ	9978		8/31/2018	Collinsville
Tennessee	TDEC	04905		1/31/2019	Collinsville

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia
Lab ID: 18051739-001
Matrix: SOLID

Work Order: 18051739
Report Date: 04-Jun-18

Client Sample ID: Backfill 1

Collection Date: 05/25/2018 7:15

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 1311, 9036, IN TCLP EXTRACT								
Sulfate	*	10	J	5	mg/L	1	05/31/2018 21:55	R247850
SW-846 1311, 9040 B, IN TCLP EXTRACT								
pH	*	1.00	H	8.06		1	05/30/2018 13:58	R247738
<i>Sample analysis did not meet hold time requirements.</i>								
SW-846 1311, 9251, IN TCLP EXTRACT								
Chloride	NELAP	5		< 5	mg/L	1	05/31/2018 21:52	R247879
SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP								
Arsenic	NELAP	0.250		< 0.250	mg/L	1	05/31/2018 13:11	142370
Barium	NELAP	0.45	J	0.36	mg/L	1	05/31/2018 13:11	142370
Boron	NELAP	0.500		< 0.500	mg/L	1	05/31/2018 13:11	142370
Cadmium	NELAP	0.0200		< 0.0200	mg/L	1	05/31/2018 13:11	142370
Chromium	NELAP	0.100		< 0.100	mg/L	1	05/31/2018 13:11	142370
Lead	NELAP	0.400		< 0.400	mg/L	1	05/31/2018 13:11	142370
Selenium	NELAP	0.500		< 0.500	mg/L	1	05/31/2018 13:11	142370
Silver	NELAP	0.0700		< 0.0700	mg/L	1	05/31/2018 13:11	142370
SW-846 1311, 7470A IN TCLP EXTRACT								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	05/31/2018 14:28	142371
SW-846 1311, 5030, 8260B, VOLATILE ORGANIC COMPOUNDS IN TCLP EXTRACT BY GC/MS								
Benzene	NELAP	0.050		ND	mg/L	100	05/31/2018 22:46	142453
Ethylbenzene	NELAP	0.20	J	0.010	mg/L	100	05/31/2018 22:46	142453
Toluene	NELAP	0.200		ND	mg/L	100	05/31/2018 22:46	142453
Xylenes, Total	NELAP	0.20	J	0.024	mg/L	100	05/31/2018 22:46	142453
Surr: 1,2-Dichloroethane-d4	*	79.6-118		99.0	%REC	100	05/31/2018 22:46	142453
Surr: 4-Bromofluorobenzene	*	83.9-115		102.6	%REC	100	05/31/2018 22:46	142453
Surr: Dibromofluoromethane	*	84.9-113		95.3	%REC	100	05/31/2018 22:46	142453
Surr: Toluene-d8	*	86.7-112		101.2	%REC	100	05/31/2018 22:46	142453

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18051739
Report Date: 04-Jun-18

SW-846 1311, 9036, IN TCLP EXTRACT

Batch R247850		SampType: MBLK		Units mg/L							Date Analyzed
SampID: ICB/MBLK											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit			
Sulfate	10		< 10	5.000	0	0	-100	100			

Batch R247850		SampType: MBLK		Units mg/L							Date Analyzed
SampID: MBLK-142327											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit			
Sulfate	10		< 10	5.000	0	0	-100	100			

Batch R247850		SampType: LCS		Units mg/L							Date Analyzed
SampID: ICB/LCS											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit			
Sulfate	10		20	20.00	0	98.8	90	110			

Batch R247850		SampType: MS		Units mg/L							Date Analyzed
SampID: 18051732-035AMS											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit			
Sulfate	10		43	10.00	33.47	96.4	85	115			

Batch R247850		SampType: MSD		Units mg/L		RPD Limit 10					Date Analyzed
SampID: 18051732-035AMSD											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD			
Sulfate	10		43	10.00	33.47	99.6	43.11	0.74			

Batch R247850		SampType: MS		Units mg/L							Date Analyzed
SampID: 18051733-001AMS											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit			
Sulfate	10		37	10.00	27.59	94.3	85	115			

Batch R247850		SampType: MSD		Units mg/L		RPD Limit 10					Date Analyzed
SampID: 18051733-001AMSD											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD			
Sulfate	10		37	10.00	27.59	92.7	37.02	0.43			

Batch R247850		SampType: MS		Units mg/L							Date Analyzed
SampID: 18051764-001BMS											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit			
Sulfate	10	S	12	10.00	6.030	58.7	90	110			

Batch R247850		SampType: MSD		Units mg/L		RPD Limit 10					Date Analyzed
SampID: 18051764-001BMDS											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD			
Sulfate	10	S	11	10.00	6.030	53.7	11.90	4.29			

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18051739
Report Date: 04-Jun-18

SW-846 1311, 9036, IN TCLP EXTRACT

Batch R247850		SampType: MS		Units mg/L					
SampID: 18051857-002BMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate	50		126	50.00	80.93	90.1	90	110	06/01/2018

Batch R247850		SampType: MSD		Units mg/L				RPD Limit 10		
SampID: 18051857-002BMSD										Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Sulfate		50		127	50.00	80.93	91.4	126.0	0.50	
										06/01/2018

Batch R247850		SampType: MS		Units mg/L						
SampID: 18051868-003AMS										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Sulfate	500		2170	500.0	1658	101.5	85	115	06/01/2018	

Batch R247850		SampType: MSD	Units mg/L				RPD Limit 10		
SampID: 18051868-003AMSD									Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Sulfate	500		2190	500.0	1658	107.1	2166	1.29	06/01/2018

SW-846 1311, 9040 B, IN TCLP EXTRACT

Batch R247738		SampType: LCS		Units						
SampID: LCS-R247738										Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
pH	1.00		6.99	7.000	0	99.9	99.1	100.9	05/30/2018	

Batch R247738		SampType: DUP	Units				RPD Limit 10			Date Analyzed
SampID: 18051739-001ADUP										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
pH	1.00	H	8.05				8.060	0.12	05/30/2018	

SW-846 1311, 9251, IN TCLP EXTRACT

Batch R247879		SampType: MBLK		Units mg/L							
SampID: ICB/MBLK											Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit			
Chloride	5		< 5	0.5000	0	0	-100	100	05/31/2018		

Batch R247879		SampType: MBLK	Units mg/L							Date Analyzed
SampID: MBLK-142327										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride	5		< 5	0.5000	0	0	-100	100	05/31/2018	

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18051739
Report Date: 04-Jun-18

SW-846 1311, 9251, IN TCLP EXTRACT

Batch R247879		SampType: LCS		Units mg/L						
SampID: ICV/LCS										Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride	5		20	20.00	0	101.8	90	110	05/31/2018	

SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 142370		SampType: MBLK		Units mg/L						
SampID: MBLK-142370										Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Arsenic	0.250		< 0.250	0.08700	0	0	-100	100	05/31/2018	
Barium	0.450		< 0.450	0.1500	0	0	-100	100	05/31/2018	
Boron	0.500		< 0.500	0.09000	0	0	-100	100	05/31/2018	
Cadmium	0.0200		< 0.0200	0.005000	0	0	-100	100	05/31/2018	
Chromium	0.100		< 0.100	0.01500	0	0	-100	100	05/31/2018	
Lead	0.400		< 0.400	0.04000	0	0	-100	100	05/31/2018	
Selenium	0.500		< 0.500	0.1700	0	0	-100	100	05/31/2018	
Silver	0.0700		< 0.0700	0.02700	0	0	-100	100	05/31/2018	

Batch 142370		SampType: LCS		Units mg/L						
SampID: LCS-142370										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Arsenic	0.250		4.99	5.000	0	99.8	85	115	05/31/2018	
Barium	0.450		19.2	20.00	0	96.2	85	115	05/31/2018	
Boron	0.500		5.11	5.000	0	102.1	85	115	05/31/2018	
Cadmium	0.0200		0.479	0.5000	0	95.8	85	115	05/31/2018	
Chromium	0.100		1.98	2.000	0	99.1	85	115	05/31/2018	
Lead	0.400		4.97	5.000	0	99.3	85	115	05/31/2018	
Selenium	0.500		4.87	5.000	0	97.4	85	115	05/31/2018	
Silver	0.0700		0.489	0.5000	0	97.8	85	115	05/31/2018	

Batch 142370		SampType: MS		Units mg/L						
SampID: 18051107-001AMS										Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Arsenic	0.250		5.03	5.000	0	100.5	75	125	05/31/2018	
Barium	0.450		19.7	20.00	0.1710	97.7	75	125	05/31/2018	
Cadmium	0.0200		0.485	0.5000	0	97.0	75	125	05/31/2018	
Chromium	0.100		2.01	2.000	0	100.4	75	125	05/31/2018	
Lead	0.400		5.01	5.000	0	100.1	75	125	05/31/2018	
Selenium	0.500		4.99	5.000	0	99.8	75	125	05/31/2018	
Silver	0.0700		0.499	0.5000	0	99.8	75	125	05/31/2018	

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18051739
Report Date: 04-Jun-18

SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 142370		SampType: MS		Units mg/L						Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Arsenic		0.250		4.90	5.000	0	97.9	75	125	05/31/2018
Barium		0.450		19.3	20.00	0.3590	94.9	75	125	05/31/2018
Boron		0.500		4.95	5.000	0	99.0	75	125	05/31/2018
Cadmium		0.0200		0.473	0.5000	0	94.6	75	125	05/31/2018
Chromium		0.100		1.96	2.000	0	98.0	75	125	05/31/2018
Lead		0.400		4.93	5.000	0	98.6	75	125	05/31/2018
Selenium		0.500		4.87	5.000	0	97.5	75	125	05/31/2018
Silver		0.0700		0.483	0.5000	0	96.6	75	125	05/31/2018

Batch 142370		SampType: MSD		Units mg/L						Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Arsenic		0.250		4.86	5.000	0	97.3	4.896	0.68	05/31/2018
Barium		0.450		19.4	20.00	0.3590	95.2	19.33	0.36	05/31/2018
Boron		0.500		5.01	5.000	0	100.1	4.948	1.15	05/31/2018
Cadmium		0.0200		0.475	0.5000	0	95.0	0.4730	0.42	05/31/2018
Chromium		0.100		1.97	2.000	0	98.6	1.961	0.61	05/31/2018
Lead		0.400		4.94	5.000	0	98.8	4.928	0.24	05/31/2018
Selenium		0.500		4.88	5.000	0	97.6	4.874	0.10	05/31/2018
Silver		0.0700		0.488	0.5000	0	97.6	0.4830	1.03	05/31/2018

Batch 142370		SampType: MS		Units mg/L						Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Lead		0.400		5.38	5.000	0.3550	100.6	75	125	05/31/2018

SW-846 1311, 7470A IN TCLP EXTRACT

Batch 142371		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	0.00080C	0	0	-100	100	05/31/2018

Batch 142371		SampType: LCS		Units mg/L						Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Mercury		0.00020		0.00505	0.00500C	0	101.1	85	115	05/31/2018

Batch 142371		SampType: MS		Units mg/L						Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Mercury		0.00020		0.00493	0.00500C	0	98.6	75	125	05/31/2018

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18051739
Report Date: 04-Jun-18

SW-846 1311, 7470A IN TCLP EXTRACT

Batch 142371		SampType: MSD		Units mg/L			RPD Limit 15			
SampID: 18051107-001AMSD										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury		0.00020		0.00501	0.00500C	0	100.2	0.004929	1.63	05/31/2018

Batch 142371		SampType: MS		Units mg/L					
SampID: 18051739-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00491	0.00500C	0	98.3	75	125	05/31/2018

SW-846 1311, 5030, 8260B, VOLATILE ORGANIC COMPOUNDS IN TCLP EXTRACT BY GC/MS

Batch 142453		SampType: MBLK	Units µg/L							
SampID: MBLK-T180531A-1										Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Benzene	0.50		ND						05/31/2018	
Ethylbenzene	2.0		ND						05/31/2018	
Toluene	2.0		ND						05/31/2018	
Xylenes, Total	2.0		ND						05/31/2018	
Surr: 1,2-Dichloroethane-d4			50	50.00		100.6	79.6	118	05/31/2018	
Surr: 4-Bromofluorobenzene			51	50.00		101.6	83.9	115	05/31/2018	
Surr: Dibromofluoromethane			49	50.00		98.6	84.9	113	05/31/2018	
Surr: Toluene-d8			50	50.00		99.6	86.7	112	05/31/2018	

Batch 142453		SampType: LCSD	Units µg/L				RPD Limit 40			
SampID: LCSD-T180531A-1										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Benzene	0.50		51	50.00	0	101.6	50.85	0.14	05/31/2018	
Ethylbenzene	2.0		50	50.00	0	101.0	51.29	1.55	05/31/2018	
Toluene	2.0		49	50.00	0	98.4	49.19	0.02	05/31/2018	
Xylenes, Total	2.0		150	150.0	0	100.1	148.7	0.94	05/31/2018	
Surr: 1,2-Dichloroethane-d4			49	50.00		98.7			05/31/2018	
Surr: 4-Bromofluorobenzene			49	50.00		98.5			05/31/2018	
Surr: Dibromofluoromethane			51	50.00		102.6			05/31/2018	
Surr: Toluene-d8			49	50.00		98.8			05/31/2018	

Batch 142453		SampType: LCS	Units µg/L							
SampID: LCS-T180531A-1										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Benzene	0.50		51	50.00	0	101.7	77.8	120	05/31/2018	
Ethylbenzene	2.0		51	50.00	0	102.6	81.8	117	05/31/2018	
Toluene	2.0		49	50.00	0	98.4	82.2	113	05/31/2018	
Xylenes, Total	2.0		150	150.0	0	99.2	82.7	118	05/31/2018	
Surr: 1,2-Dichloroethane-d4			50	50.00		99.7	79.6	118	05/31/2018	
Surr: 4-Bromofluorobenzene			48	50.00		96.6	83.9	115	05/31/2018	
Surr: Dibromofluoromethane			52	50.00		103.4	84.9	113	05/31/2018	
Surr: Toluene-d8			49	50.00		97.6	86.7	112	05/31/2018	

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18051739
Report Date: 04-Jun-18

SW-846 1311, 5030, 8260B, VOLATILE ORGANIC COMPOUNDS IN TCLP EXTRACT BY GC/MS

Batch 142453		SampType: MS		Units mg/L						
SampID: 18051739-001AMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Benzene	0.050		4.72	5.000	0	94.4	66.8	122	05/31/2018	
Ethylbenzene	0.200		4.84	5.000	0.01000	96.6	77.7	115	05/31/2018	
Toluene	0.200		4.67	5.000	0	93.4	69.8	112	05/31/2018	
Xylenes, Total	0.200		9.46	10.00	0.02400	94.4	77.6	113	05/31/2018	
Surr: 1,2-Dichloroethane-d4			5.13	5.000		102.6	74.7	129	05/31/2018	
Surr: 4-Bromofluorobenzene			5.24	5.000		104.7	86	119	05/31/2018	
Surr: Dibromofluoromethane			4.86	5.000		97.3	81.7	123	05/31/2018	
Surr: Toluene-d8			4.91	5.000		98.2	84.3	114	05/31/2018	



Receiving Check List

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 18051739

Client Project: J024917.04 Meredosia

Report Date: 04-Jun-18

Carrier: Alyssa Okorn

Received By: EEP

Completed by:

On:

25-May-18

Amber M. Dilallo

Reviewed by:

On:

25-May-18

Emily Pohlman

Pages to follow:

Chain of custody

1

Extra pages included

0

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Temp °C 24.20

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 ☐

NA ☒

NPDES/CWA TCN interferences checked/treated in the field?

Yes ☐

No ☐

NA ☒

Any No responses must be detailed below or on the COC.

The samples were out of temperature compliance upon receipt. Per Alyssa Okorn, proceed with analysis. - adilallo/epohlman - 5/25/2018 4:17:43 PM

pg. _____ of _____ Work order # 18051739

Client:	Geotechnology, Inc.		
Address:	11816 Lackland Road		
City / State / Zip	St. Louis, MO 63146		
Contact:	Jessie Goodwin	Phone:	(314) 997-7440
E-Mail:	jgoodwin@geotechnology.com	Fax:	(314) 997-2067

Samples on: ☐ ICE ☐ BLUE ICE ☒ NO ICE 24.2 °C
Preserved in: ☐ LAB ☐ FIELD **FOR LAB USE ONLY**

Lab Notes

OK out of temp per Alyssa EBP 5/25/18

Client Comments:

*8 RCRA+Boron

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 the comment section. ☐ Yes ☐ No

[illegible]

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions.

BottleOrder: 42788



7/5/25/18

June 27, 2018

Jessie Goodwin
Geotechnology, Inc.
11816 Lackland Road
St. Louis, MO 63146
TEL: (573) 270-1313
FAX: (314) 997-2067



RE: J024917.04 Meredosia

WorkOrder: 18061471

Dear Jessie Goodwin:

TEKLAB, INC received 1 sample on 6/21/2018 2:55:00 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: 18061471

Client Project: J024917.04 Meredosia

Report Date: 27-Jun-18

This reporting package includes the following:

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Report Contents	2
Definitions	3
Case Narrative	4
Accreditations	5
Laboratory Results	6
Quality Control Results	7
Receiving Check List	15
Chain of Custody	Appended

Client: Geotechnology, Inc.

Work Order: 18061471

Client Project: J024917.04 Meredosia

Report Date: 27-Jun-18

Abbr Definition

- * Analytes on report marked with an asterisk are not NELAP accredited
- CCV Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
- CRQL A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
- 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 dilution factors.
- DNI Did not ignite
- DUP Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
- 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 is a sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes and 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.
- 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).
- MBLK 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 "The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
- 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.
- 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.
- TIC Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
- TNTC Too numerous to count (> 200 CFU)

Qualifiers

- | | |
|---|--|
| # - Unknown hydrocarbon | B - Analyte detected in associated Method Blank |
| C - RL shown is a Client Requested Quantitation Limit | E - Value above quantitation range |
| H - Holding times exceeded | I - Associated internal standard was outside method criteria |
| 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 | T - TIC(Tentatively identified compound) |
| X - Value exceeds Maximum Contaminant Level | |



Case Narrative

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 18061471

Client Project: J024917.04 Meredosia

Report Date: 27-Jun-18

Cooler Receipt Temp: 2.22 °C

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email jhriley@teklabinc.com

Collinsville Air

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email EHurley@teklabinc.com

Springfield

Address 3920 Pintail Dr
Springfield, IL 62711-9415
Phone (217) 698-1004
Fax (217) 698-1005
Email KKlostermann@teklabinc.com

Chicago

Address 1319 Butterfield Rd.
Downers Grove, IL 60515
Phone (630) 324-6855
Fax
Email arenner@teklabinc.com

Kansas City

Address 8421 Nieman Road
Lenexa, KS 66214
Phone (913) 541-1998
Fax (913) 541-1998
Email jhriley@teklabinc.com

Client: Geotechnology, Inc.**Work Order:** 18061471**Client Project:** J024917.04 Meredosia**Report Date:** 27-Jun-18

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2019	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2019	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2019	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2019	Collinsville
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2018	Collinsville
Arkansas	ADEQ	88-0966		3/14/2019	Collinsville
Illinois	IDPH	17584		5/31/2019	Collinsville
Indiana	ISDH	C-IL-06		1/31/2019	Collinsville
Kentucky	KDEP	98006		12/31/2018	Collinsville
Kentucky	UST	0073		1/31/2019	Collinsville
Louisiana	LDPH	LA170027		12/31/2018	Collinsville
Missouri	MDNR	930		1/31/2019	Collinsville
Missouri	MDNR	00930		5/31/2019	Collinsville
Oklahoma	ODEQ	9978		8/31/2018	Collinsville
Tennessee	TDEC	04905		1/31/2019	Collinsville

Client: Geotechnology, Inc.
 Client Project: J024917.04 Meredosia
 Lab ID: 18061471-001
 Matrix: SOLID

Work Order: 18061471
 Report Date: 27-Jun-18
 Client Sample ID: Backfill 2
 Collection Date: 06/20/2018 8:45

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 1311, 9036, IN TCLP EXTRACT								
Sulfate	*	10	J	8	mg/L	1	06/25/2018 14:15	R248865
SW-846 1311, 9040 B, IN TCLP EXTRACT								
pH	*	1.00	H	8.21		1	06/22/2018 21:59	R248773
<i>Sample analysis did not meet hold time requirements.</i>								
SW-846 1311, 9251, IN TCLP EXTRACT								
Chloride	NELAP	5	J	2	mg/L	1	06/25/2018 12:37	R248869
SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP								
Arsenic	NELAP	0.250		< 0.250	mg/L	1	06/25/2018 16:36	143202
Barium	NELAP	0.450		0.471	mg/L	1	06/25/2018 16:36	143202
Boron	NELAP	0.500		< 0.500	mg/L	1	06/26/2018 12:53	143202
Cadmium	NELAP	0.0200		< 0.0200	mg/L	1	06/25/2018 16:36	143202
Chromium	NELAP	0.100		< 0.100	mg/L	1	06/25/2018 16:36	143202
Lead	NELAP	0.400		< 0.400	mg/L	1	06/25/2018 16:36	143202
Selenium	NELAP	0.500		< 0.500	mg/L	1	06/25/2018 16:36	143202
Silver	NELAP	0.0700		< 0.0700	mg/L	1	06/25/2018 16:36	143202
SW-846 1311, 7470A IN TCLP EXTRACT								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	06/25/2018 9:46	143203
SW-846 1311, 5030, 8260B, VOLATILE ORGANIC COMPOUNDS IN TCLP EXTRACT BY GC/MS								
Benzene	NELAP	0.050		ND	mg/L	100	06/27/2018 12:33	143343
Ethylbenzene	NELAP	0.200		ND	mg/L	100	06/27/2018 12:33	143343
Toluene	NELAP	0.200		ND	mg/L	100	06/27/2018 12:33	143343
Xylenes, Total	NELAP	0.200		ND	mg/L	100	06/27/2018 12:33	143343
Surr: 1,2-Dichloroethane-d4	*	79.6-118		103.3	%REC	100	06/27/2018 12:33	143343
Surr: 4-Bromofluorobenzene	*	83.9-115		100.9	%REC	100	06/27/2018 12:33	143343
Surr: Dibromofluoromethane	*	84.9-113		105.3	%REC	100	06/27/2018 12:33	143343
Surr: Toluene-d8	*	86.7-112		91.4	%REC	100	06/27/2018 12:33	143343

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

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SW-846 1311, 9036, IN TCLP EXTRACT

Batch R248865		SampType: MBLK		Units mg/L						Date Analyzed
SampID: ICB/MBLK										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	10		< 10	5.000	0	0	-100	100	06/25/2018	

Batch R248865		SampType: MBLK		Units mg/L						Date Analyzed
SampID: MBLK										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	10		< 10	5.000	0	0	-100	100	06/25/2018	

Batch R248865		SampType: LCS		Units mg/L						Date Analyzed
SampID: ICB/LCS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	10		19	20.00	0	95.6	90	110	06/25/2018	

Batch R248865		SampType: MS		Units mg/L						Date Analyzed
SampID: 18060465-002AMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	10	S	26	10.00	17.36	84.3	85	115	06/25/2018	

Batch R248865		SampType: MSD		Units mg/L				RPD Limit 10		
SampID: 18060465-002AMSD										Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Sulfate		10		26	10.00	17.36	88.2	25.79	1.50	06/25/2018

Batch R248865		SampType: MS		Units mg/L						Date Analyzed
SampID: 18060467-002AMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	20		70	20.00	49.98	99.7	85	115	06/25/2018	

Batch R248865		SampType: MSD		Units mg/L				RPD Limit 10		
SampID: 18060467-002AMSD										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate		20		70	20.00	49.98	100.7	69.92	0.29	06/25/2018

Batch R248865		SampType: MS		Units mg/L						Date Analyzed
SampID: 18061199-009AMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	2000	SH	7420	2000	5193	111.5	90	110	06/25/2018	

Batch R248865		SampType: MSD		Units mg/L				RPD Limit 10		
SampID: 18061199-009AMSD										Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Sulfate		2000	SH	7410	2000	5193	111.0	7422	0.14	06/25/2018

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18061471
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SW-846 1311, 9036, IN TCLP EXTRACT

Batch R248865 SampType: MS		Units mg/L								Date Analyzed
SampID: 18061377-001CMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	200		790	200.0	578.9	105.6	90	110	06/25/2018	

Batch R248865 SampType: MSD		Units mg/L								RPD Limit 10	Date Analyzed
SampID: 18061377-001CMSD											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD			
Sulfate	200		785	200.0	578.9	103.1	790.2	0.65	06/25/2018		

Batch R248865 SampType: MS		Units mg/L								Date Analyzed
SampID: 18061426-001AMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	200		744	200.0	526.1	108.8	90	110	06/25/2018	

Batch R248865 SampType: MSD		Units mg/L								RPD Limit 10	Date Analyzed
SampID: 18061426-001AMSD											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD			
Sulfate	200		738	200.0	526.1	105.9	743.8	0.78	06/25/2018		

Batch R248865 SampType: MS		Units mg/L								Date Analyzed
SampID: 18061542-004CMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	1000		2890	1000	1967	91.8	85	115	06/25/2018	

Batch R248865 SampType: MSD		Units mg/L								RPD Limit 10	Date Analyzed
SampID: 18061542-004CMSD											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD			
Sulfate	1000		2890	1000	1967	92.2	2885	0.12	06/25/2018		

Batch R248865 SampType: MS		Units mg/L								Date Analyzed
SampID: 18061544-001EMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	20	E	110	20.00	90.07	97.2	85	115	06/25/2018	

Batch R248865 SampType: MSD		Units mg/L								RPD Limit 10	Date Analyzed
SampID: 18061544-001EMSD											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD			
Sulfate	20	E	111	20.00	90.07	106.7	109.5	1.72	06/25/2018		

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18061471
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SW-846 1311, 9040 B, IN TCLP EXTRACT

Batch R248773 SampType: LCS		Units								Date Analyzed
SampID: LCS-R248773										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
pH	1.00		6.99	7.000	0	99.9	99.1	100.9	06/22/2018	

Batch R248773 SampType: DUP		Units								RPD Limit 10	Date Analyzed
SampID: 18061471-001ADUP											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD			
pH	1.00	H	8.21				8.210	0.00	06/22/2018		

SW-846 1311, 9251, IN TCLP EXTRACT

Batch R248869 SampType: MBLK		Units mg/L								Date Analyzed
SampID: ICB/MBLK										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride	5		< 5	0.5000	0	0	-100	100	06/25/2018	

Batch R248869 SampType: MBLK		Units mg/L								Date Analyzed
SampID: MBLK										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride	5		< 5	0.5000	0	0	-100	100	06/25/2018	

Batch R248869 SampType: LCS		Units mg/L								Date Analyzed
SampID: ICB/LCS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride	5		21	20.00	0	103.8	90	110	06/25/2018	

Batch R248869 SampType: MS		Units mg/L								Date Analyzed
SampID: 18060465-002AMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride	5		41	20.00	23.35	89.4	85	115	06/25/2018	

Batch R248869 SampType: MSD		Units mg/L								RPD Limit 15	Date Analyzed
SampID: 18060465-002AMSD											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD			
Chloride	5		41	20.00	23.35	88.4	41.24	0.51	06/25/2018		

Batch R248869 SampType: MS		Units mg/L								Date Analyzed
SampID: 18060467-002AMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride	5		27	20.00	8.600	93.9	85	115	06/25/2018	

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

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SW-846 1311, 9251, IN TCLP EXTRACT

Batch R248869		SampType: MSD		Units mg/L				RPD Limit 15			
SampID: 18060467-002AMSD										Date Analyzed	
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Chloride		5		27	20.00	8.600	94.4	27.38	0.33	06/25/2018	

Batch R248869		SampType: MS		Units mg/L						
SampID: 18061544-001EMS										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Chloride	25		167	100.0	75.23	91.6	85	115	06/25/2018	

Batch R248869		SampType: MSD		Units mg/L				RPD Limit 15			
SampID: 18061544-001EMSD										Date Analyzed	
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Chloride		25		165	100.0	75.23	90.1	166.8	0.87	06/25/2018	

SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 143202		SampType: MBLK		Units mg/L						
SampID: MBLK-143202										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Arsenic	0.250		< 0.250	0.08700	0	0	-100	100	06/25/2018	
Barium	0.450		< 0.450	0.1500	0	0	-100	100	06/25/2018	
Boron	0.500		< 0.500	0.09000	0	0	-100	100	06/26/2018	
Cadmium	0.0200		< 0.0200	0.005000	0	0	-100	100	06/25/2018	
Chromium	0.100		< 0.100	0.01500	0	0	-100	100	06/25/2018	
Lead	0.400		< 0.400	0.04000	0	0	-100	100	06/25/2018	
Selenium	0.500		< 0.500	0.1700	0	0	-100	100	06/25/2018	
Silver	0.0700		< 0.0700	0.02700	0	0	-100	100	06/25/2018	

Batch 143202		SampType: LCS		Units mg/L						
SampID: LCS-143202										Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Arsenic	0.250		5.02	5.000	0	100.3	85	115	06/25/2018	
Barium	0.450		19.4	20.00	0	97.2	85	115	06/25/2018	
Boron	0.500		4.98	5.000	0	99.5	85	115	06/26/2018	
Cadmium	0.0200		0.486	0.5000	0	97.2	85	115	06/25/2018	
Chromium	0.100		1.96	2.000	0	98.0	85	115	06/25/2018	
Lead	0.400		4.98	5.000	0	99.7	85	115	06/25/2018	
Selenium	0.500		4.85	5.000	0	97.0	85	115	06/25/2018	
Silver	0.0700		0.483	0.5000	0	96.6	85	115	06/25/2018	

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

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SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 143202		SampType: MS		Units mg/L					
SampID: 18061220-002AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		4.93	5.000	0	98.6	75	125	06/25/2018
Barium	0.450		19.4	20.00	0	97.0	75	125	06/25/2018
Cadmium	0.0200		0.481	0.5000	0	96.2	75	125	06/25/2018
Chromium	0.100		1.96	2.000	0	98.0	75	125	06/25/2018
Lead	0.400		4.97	5.000	0.04000	98.6	75	125	06/25/2018
Selenium	0.500		4.75	5.000	0	95.0	75	125	06/25/2018
Silver	0.0700		0.475	0.5000	0	95.0	75	125	06/25/2018

Batch 143202		SampType: MS		Units mg/L					
SampID: 18061220-005AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		5.00	5.000	0	99.9	75	125	06/25/2018
Barium	0.450		19.3	20.00	0	96.6	75	125	06/25/2018
Cadmium	0.0200		0.476	0.5000	0	95.2	75	125	06/25/2018
Chromium	0.100		1.95	2.000	0	97.4	75	125	06/25/2018
Lead	0.400		4.96	5.000	0	99.3	75	125	06/25/2018
Selenium	0.500		4.86	5.000	0	97.2	75	125	06/25/2018
Silver	0.0700		0.476	0.5000	0	95.2	75	125	06/25/2018

Batch 143202		SampType: MS		Units mg/L					
SampID: 18061466-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		4.99	5.000	0	99.8	75	125	06/25/2018
Barium	0.450		20.1	20.00	0.7640	96.5	75	125	06/25/2018
Cadmium	0.0200		0.477	0.5000	0	95.4	75	125	06/25/2018
Chromium	0.100		1.93	2.000	0	96.4	75	125	06/25/2018
Lead	0.400		4.94	5.000	0	98.7	75	125	06/25/2018
Selenium	0.500		4.84	5.000	0	96.9	75	125	06/25/2018
Silver	0.0700		0.473	0.5000	0	94.6	75	125	06/25/2018

Batch 143202		SampType: MSD		Units mg/L				RPD Limit 20		
SampID: 18061466-001AMSD										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Arsenic	0.250		5.04	5.000	0	100.8	4.988	1.06	06/25/2018	
Barium	0.450		20.2	20.00	0.7640	96.9	20.07	0.40	06/25/2018	
Cadmium	0.0200		0.478	0.5000	0	95.6	0.4770	0.21	06/25/2018	
Chromium	0.100		1.94	2.000	0	97.0	1.928	0.67	06/25/2018	
Lead	0.400		4.94	5.000	0	98.8	4.935	0.08	06/25/2018	
Selenium	0.500		4.86	5.000	0	97.1	4.844	0.27	06/25/2018	
Silver	0.0700		0.476	0.5000	0	95.2	0.4730	0.63	06/25/2018	

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

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SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 143202 SampType: MS Units mg/L									
SampleID: 18061471-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		5.01	5.000	0	100.2	75	125	06/25/2018
Barium	0.450		20.0	20.00	0.4710	97.6	75	125	06/25/2018
Boron	0.500		4.99	5.000	0	99.8	75	125	06/26/2018
Cadmium	0.0200		0.484	0.5000	0	96.8	75	125	06/25/2018
Chromium	0.100		1.96	2.000	0	98.0	75	125	06/25/2018
Lead	0.400		4.98	5.000	0	99.6	75	125	06/25/2018
Selenium	0.500		4.87	5.000	0	97.3	75	125	06/25/2018
Silver	0.0700		0.480	0.5000	0	96.0	75	125	06/25/2018

SW-846 1311, 7470A IN TCLP EXTRACT

Batch 143203 SampType: MBLK Units mg/L									
SampleID: MBLK-143203									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		< 0.00020	0.000550C	0	0	-100	100	06/25/2018

Batch 143203 SampType: LCS Units mg/L									
SampleID: LCS-143203									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00534	0.00500C	0	106.7	85	115	06/25/2018

Batch 143203 SampType: MS Units mg/L									
SampleID: 18061466-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00539	0.00500C	0	107.9	75	125	06/25/2018

Batch 143203 SampType: MSD Units mg/L									
SampleID: 18061466-001AMSD									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury	0.00020		0.00535	0.00500C	0	107.0	0.005394	0.82	06/25/2018

Batch 143203 SampType: MS Units mg/L									
SampleID: 18061471-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00542	0.00500C	0	108.3	75	125	06/25/2018

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18061471
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SW-846 1311, 5030, 8260B, VOLATILE ORGANIC COMPOUNDS IN TCLP EXTRACT BY GC/MS

Batch 143343		SampType: MBLK		Units µg/L						
SampID: MBLK-T180627A-1										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Benzene	0.5		ND						06/27/2018	
Ethylbenzene	2.0		ND						06/27/2018	
Toluene	2.0		ND						06/27/2018	
Xylenes, Total	2.0		ND						06/27/2018	
Surr: 1,2-Dichloroethane-d4			49.4	50.00		98.8	79.6	118	06/27/2018	
Surr: 4-Bromofluorobenzene			51.0	50.00		102.0	83.9	115	06/27/2018	
Surr: Dibromofluoromethane			51.5	50.00		103.0	84.9	113	06/27/2018	
Surr: Toluene-d8			45.4	50.00		90.9	86.7	112	06/27/2018	

Batch 143343		SampType: LCSD		Units µg/L				RPD Limit 40		
SampID: LCSD-T180627A-1										Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Benzene	0.5		56.9	50.00	0	113.8	56.25	1.17	06/27/2018	
Ethylbenzene	2.0		50.0	50.00	0	100.0	49.59	0.82	06/27/2018	
Toluene	2.0		48.5	50.00	0	97.0	48.06	0.95	06/27/2018	
Xylenes, Total	2.0		145	150.0	0	97.0	143.4	1.38	06/27/2018	
Surr: 1,2-Dichloroethane-d4			48.3	50.00		96.7			06/27/2018	
Surr: 4-Bromofluorobenzene			49.4	50.00		98.9			06/27/2018	
Surr: Dibromofluoromethane			52.6	50.00		105.1			06/27/2018	
Surr: Toluene-d8			45.3	50.00		90.6			06/27/2018	

Batch 143343		SampType: LCS		Units µg/L						
SampID: LCS-T180627A-1										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Benzene	0.5		56.2	50.00	0	112.5	77.8	120	06/27/2018	
Ethylbenzene	2.0		49.6	50.00	0	99.2	81.8	117	06/27/2018	
Toluene	2.0		48.1	50.00	0	96.1	82.2	113	06/27/2018	
Xylenes, Total	2.0		143	150.0	0	95.6	82.7	118	06/27/2018	
Surr: 1,2-Dichloroethane-d4			48.3	50.00		96.6	79.6	118	06/27/2018	
Surr: 4-Bromofluorobenzene			49.5	50.00		99.0	83.9	115	06/27/2018	
Surr: Dibromofluoromethane			52.2	50.00		104.4	84.9	113	06/27/2018	
Surr: Toluene-d8			45.2	50.00		90.5	86.7	112	06/27/2018	

Batch 143343		SampType: MS		Units mg/L						
SampID: 18061471-001AMS										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Benzene	0.050		5.42	5.000	0	108.3	66.8	122	06/27/2018	
Ethylbenzene	0.200		4.73	5.000	0	94.6	77.7	115	06/27/2018	
Toluene	0.200		4.50	5.000	0	90.0	69.8	112	06/27/2018	
Xylenes, Total	0.200		9.33	10.00	0	93.3	77.6	113	06/27/2018	
Surr: 1,2-Dichloroethane-d4			5.13	5.000		102.6	74.7	129	06/27/2018	
Surr: 4-Bromofluorobenzene			5.09	5.000		101.8	86	119	06/27/2018	
Surr: Dibromofluoromethane			5.15	5.000		103.0	81.7	123	06/27/2018	
Surr: Toluene-d8			4.48	5.000		89.7	84.3	114	06/27/2018	

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18061471
Report Date: 27-Jun-18

SW-846 1311, 5030, 8260B, VOLATILE ORGANIC COMPOUNDS IN TCLP EXTRACT BY GC/MS

Batch 143343		SampType: MS		Units mg/L					
SampID: 18061565-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Benzene	0.050	S	5.67	5.000	0	113.3	81.5	113	06/27/2018
Surr: 1,2-Dichloroethane-d4			5.16	5.000		103.1	74.7	129	06/27/2018
Surr: 4-Bromofluorobenzene			4.96	5.000		99.3	86	119	06/27/2018
Surr: Dibromofluoromethane			5.22	5.000		104.3	81.7	123	06/27/2018
Surr: Toluene-d8			4.53	5.000		90.7	84.3	114	06/27/2018



Receiving Check List

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 18061471

Client Project: J024917.04 Meredosia

Report Date: 27-Jun-18

Carrier: Nick Reed

Received By: AMD

Completed by:

On:

21-Jun-18

Amber M. Dilallo

Reviewed by:

On:

21-Jun-18

Elizabeth A. Hurley

Pages to follow:

Chain of custody

1

Extra pages included

0

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Temp °C 2.22

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 ☐

NA ☒

NPDES/CWA TCN interferences checked/treated in the field?

Yes ☐

No ☐

NA ☒

Any No responses must be detailed below or on the COC.

Samples requiring pH should be analyzed as soon as possible after collection. Samples submitted for pH analysis are analyzed as soon as practicable upon arrival at the laboratory. - adilallo - 6/21/2018 4:13:05 PM

CHAIN OF CUSTODY pg. 1 of 1 Work order # 18061471

TEKLAB, INC. 5445 Horseshoe Lake Road - Collinsville, IL 62234 - Phone: (618) 344-1004 - Fax: (618) 344-1005

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions.

BottleOrder: 42788



3/1/18

August 03, 2018

Jessie Goodwin
Geotechnology, Inc.
11816 Lackland Road
St. Louis, MO 63146
TEL: (573) 270-1313
FAX: (314) 997-2067



RE: J024917.04 Meredosia

WorkOrder: 18080212

Dear Jessie Goodwin:

TEKLAB, INC received 1 sample on 8/2/2018 3:08:00 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,



Emily Pohlman
Project Manager
(618)344-1004 ex 44
epohlman@teklabinc.com

Client: Geotechnology, Inc.

Work Order: 18080212

Client Project: J024917.04 Meredosia

Report Date: 03-Aug-18

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	4
Accreditations	5
Laboratory Results	6
Quality Control Results	7
Receiving Check List	8
Chain of Custody	Appended

Client: Geotechnology, Inc.**Work Order:** 18080212**Client Project:** J024917.04 Meredosia**Report Date:** 03-Aug-18**Abbr Definition**

* Analytes on report marked with an asterisk are not NELAP accredited

CCV Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.

CRQL A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.

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 dilution factors.

DNI Did not ignite

DUP Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.

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 is a sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes and 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.

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).

MBLK 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 "The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."

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.

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.

TIC Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"

TNTC Too numerous to count (> 200 CFU)

Qualifiers

- Unknown hydrocarbon

C - RL shown is a Client Requested Quantitation Limit

H - Holding times exceeded

J - Analyte detected below quantitation limits

ND - Not Detected at the Reporting Limit

S - Spike Recovery outside recovery limits

X - Value exceeds Maximum Contaminant Level

B - Analyte detected in associated Method Blank

E - Value above quantitation range

I - Associated internal standard was outside method criteria

M - Manual Integration used to determine area response

R - RPD outside accepted recovery limits

T - TIC(Tentatively identified compound)



Case Narrative

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 18080212

Client Project: J024917.04 Meredosia

Report Date: 03-Aug-18

Cooler Receipt Temp: 9.40 °C

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425

Phone (618) 344-1004

Fax (618) 344-1005

Email jhriley@teklabinc.com

Collinsville Air

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Downers Grove, IL 60515

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Fax

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Address 8421 Nieman Road
Lenexa, KS 66214

Phone (913) 541-1998

Fax (913) 541-1998

Email jhriley@teklabinc.com

Client: Geotechnology, Inc.**Work Order:** 18080212**Client Project:** J024917.04 Meredosia**Report Date:** 03-Aug-18

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2019	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2019	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2019	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2019	Collinsville
Arkansas	ADEQ	88-0966		3/14/2019	Collinsville
Illinois	IDPH	17584		5/31/2019	Collinsville
Indiana	ISDH	C-IL-06		1/31/2019	Collinsville
Kentucky	KDEP	98006		12/31/2018	Collinsville
Kentucky	UST	0073		1/31/2019	Collinsville
Louisiana	LDPH	LA170027		12/31/2018	Collinsville
Missouri	MDNR	930		1/31/2019	Collinsville
Missouri	MDNR	00930		5/31/2019	Collinsville
Oklahoma	ODEQ	9978		8/31/2018	Collinsville
Tennessee	TDEC	04905		1/31/2019	Collinsville



Laboratory Results

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia
Lab ID: 18080212-001
Matrix: SOLID

Work Order: 18080212
Report Date: 03-Aug-18
Client Sample ID: BF-3
Collection Date: 08/02/2018 11:48

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 9045C								
pH (1:1)	NELAP	1.00		7.68		1	08/03/2018 11:48	R250424

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18080212
Report Date: 03-Aug-18

SW-846 9045C

Batch R250424 SampType: LCS		Units								Date Analyzed
SampID: LCS-R250424										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
pH (1:1)	1.00		6.99	7.000	0	99.9	99.1	100.8	08/02/2018	

Batch R250424		SampType: DUP		Units				RPD Limit 10			
SampID: 18080212-001ADUP										Date Analyzed	
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
pH (1:1)		1.00		7.66				7.680	0.26	08/03/2018	

Batch R250424		SampType: DUP	Units					RPD Limit 10		Date Analyzed
SampID: 18080038-001ADUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
pH (1:1)		1.00		8.26				8.160	1.22	08/02/2018

Batch R250424		SampType: DUP	Units				RPD Limit 10				
SampID: 18080062-001ADUP											Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
pH (1:1)		1.00		8.13				8.000	1.61	08/02/2018	

Batch R250424		SampType: DUP	Units				RPD Limit 10			Date Analyzed
SampID: 18080062-002ADUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
pH (1:1)		1.00		8.43				8.390	0.48	08/02/2018

Batch R250424		SampType: DUP	Units				RPD Limit 10			Date Analyzed
SampID: 18080062-003ADUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
pH (1:1)		1.00		7.86				8.030	2.14	08/02/2018

Batch R250424		SampType:	DUP	Units					RPD Limit 10		Date Analyzed
SampID: 18080149-001ADUP											
Analyses			RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
pH (1:1)			1.00		7.80				7.830	0.38	08/03/2018



Receiving Check List

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 18080212

Client Project: J024917.04 Meredosia

Report Date: 03-Aug-18

Carrier: Alyssa Okorn

Received By: AMD

Completed by:

On:

02-Aug-18

Amber M. Dilallo

Reviewed by:

On:

02-Aug-18

Elizabeth A. Hurley

Pages to follow:

Chain of custody

1

Extra pages included

0

Shipping container/cooler in good condition?

Yes ☐

No ☐

Not Present ☒

Temp °C 9.40

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 ☐

NA ☒

NPDES/CWA TCN interferences checked/treated in the field?

Yes ☐

No ☐

NA ☒

Any No responses must be detailed below or on the COC.

Samples requiring pH should be analyzed as soon as possible after collection. Samples submitted for pH analysis are analyzed as soon as practicable upon arrival at the laboratory. - adilallo - 8/2/2018 4:22:11 PM

pg. _____ of _____ Work order # 18080212

TEKLAB, INC. 5445 Horseshoe Lake Road - Collinsville, IL 62234 - Phone: (618) 344-1004 - Fax: (618) 344-1005

Client:	Geotechnology, Inc.		
Address:	11816 Lackland Road		
City / State / Zip	St. Louis, MO 63146		
Contact:	Jessie Goodwin	Phone:	(314) 997-7440
E-Mail:	jgoodwin@geotechnology.com	Fax:	(314) 997-2067

Samples on: ☐ ICE ☐ BLUE ICE ☒ NO ICE 9.40 °C
Preserved in: ☐ LAB ☐ FIELD **FOR LAB USE ONLY**
Lab Notes

Client Comments:

*8 RCRA+Boron

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 the comment section. ☐ Yes ☐ No

[illegible]

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions.

BottleOrder: 42788



5/2/14

August 15, 2018

Jessie Goodwin
Geotechnology, Inc.
11816 Lackland Road
St. Louis, MO 63146
TEL: (573) 270-1313
FAX: (314) 997-2067



RE: J024917.04 Meredosia

WorkOrder: 18080316

Dear Jessie Goodwin:

TEKLAB, INC received 1 sample on 8/2/2018 3:08:00 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,



Emily Pohlman
Project Manager
(618)344-1004 ex 44
epohlman@teklabinc.com

Client: Geotechnology, Inc.

Work Order: 18080316

Client Project: J024917.04 Meredosia

Report Date: 15-Aug-18

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	4
Accreditations	5
Laboratory Results	6
Quality Control Results	7
Chain of Custody	Appended

Client: Geotechnology, Inc.**Work Order:** 18080316**Client Project:** J024917.04 Meredosia**Report Date:** 15-Aug-18**Abbr Definition**

- * Analytes on report marked with an asterisk are not NELAP accredited
- CCV Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
- CRQL A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
- 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 dilution factors.
- DNI Did not ignite
- DUP Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
- 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 is a sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes and 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.
- 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).
- MBLK 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 "The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
- 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.
- 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.
- TIC Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
- TNTC Too numerous to count (> 200 CFU)

Qualifiers

- | | |
|---|--|
| # - Unknown hydrocarbon | B - Analyte detected in associated Method Blank |
| C - RL shown is a Client Requested Quantitation Limit | E - Value above quantitation range |
| H - Holding times exceeded | I - Associated internal standard was outside method criteria |
| 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 | T - TIC(Tentatively identified compound) |
| X - Value exceeds Maximum Contaminant Level | |

Client: Geotechnology, Inc.**Work Order:** 18080316**Client Project:** J024917.04 Meredosia**Report Date:** 15-Aug-18**Cooler Receipt Temp:** N/A °C

Additional analyses to WO# 18080212.

This report was revised on 8/15/18 per Jessie Goodwin's request. The reason for the revision is to report TCLP Boron. Please replace report dated 8/13/18 with this report. EEP 8/15/18

Locations

Collinsville

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Collinsville, IL 62234-7425

Phone (618) 344-1004

Fax (618) 344-1005

Email jhriley@teklabinc.com

Collinsville Air

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425

Phone (618) 344-1004

Fax (618) 344-1005

Email EHurley@teklabinc.com

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Fax (217) 698-1005

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Client: Geotechnology, Inc.**Work Order:** 18080316**Client Project:** J024917.04 Meredosia**Report Date:** 15-Aug-18

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2019	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2019	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2019	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2019	Collinsville
Arkansas	ADEQ	88-0966		3/14/2019	Collinsville
Illinois	IDPH	17584		5/31/2019	Collinsville
Indiana	ISDH	C-IL-06		1/31/2019	Collinsville
Kentucky	KDEP	98006		12/31/2018	Collinsville
Kentucky	UST	0073		1/31/2019	Collinsville
Louisiana	LDPH	LA170027		12/31/2018	Collinsville
Missouri	MDNR	930		1/31/2019	Collinsville
Missouri	MDNR	00930		5/31/2019	Collinsville
Oklahoma	ODEQ	9978		8/31/2018	Collinsville
Tennessee	TDEC	04905		1/31/2019	Collinsville

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia
Lab ID: 18080316-001
Matrix: SOLID

Work Order: 18080316
Report Date: 15-Aug-18

Client Sample ID: BF-3

Collection Date: 08/02/2018 11:48

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 1311, 9036, IN TCLP EXTRACT								
Sulfate	*	10	J	5	mg/L	1	08/09/2018 15:43	R250787
SW-846 1311, 9251, IN TCLP EXTRACT								
Chloride	NELAP	5		< 5	mg/L	1	08/09/2018 15:40	R250815
SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP								
Arsenic	NELAP	0.250		< 0.250	mg/L	1	08/07/2018 21:41	144568
Barium	NELAP	0.450		0.622	mg/L	1	08/07/2018 21:41	144568
Boron	NELAP	0.20	BJ	0.16	mg/L	1	08/07/2018 21:41	144568
Cadmium	NELAP	0.0200		< 0.0200	mg/L	1	08/07/2018 21:41	144568
Chromium	NELAP	0.100	B	< 0.100	mg/L	1	08/07/2018 21:41	144568
Lead	NELAP	0.400		< 0.400	mg/L	1	08/07/2018 21:41	144568
Selenium	NELAP	0.500		< 0.500	mg/L	1	08/07/2018 21:41	144568
Silver	NELAP	0.0700		< 0.0700	mg/L	1	08/07/2018 21:41	144568
<i>Contamination present in the MBLK for B & Cr. Sample results below the reporting limit are reportable per the TNI Standard.</i>								
SW-846 1311, 7470A IN TCLP EXTRACT								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	08/07/2018 13:36	144569
SW-846 1311, 5030, 8260B, VOLATILE ORGANIC COMPOUNDS IN TCLP EXTRACT BY GC/MS								
Benzene	NELAP	0.050		ND	mg/L	100	08/09/2018 19:15	144709
Ethylbenzene	NELAP	0.200		ND	mg/L	100	08/09/2018 19:15	144709
Toluene	NELAP	0.20	J	0.013	mg/L	100	08/09/2018 19:15	144709
Xylenes, Total	NELAP	0.200		ND	mg/L	100	08/09/2018 19:15	144709
Surr: 1,2-Dichloroethane-d4	*	79.6-118		97.2	%REC	100	08/09/2018 19:15	144709
Surr: 4-Bromofluorobenzene	*	83.9-115		97.8	%REC	100	08/09/2018 19:15	144709
Surr: Dibromofluoromethane	*	84.9-113		99.8	%REC	100	08/09/2018 19:15	144709
Surr: Toluene-d8	*	86.7-112		95.7	%REC	100	08/09/2018 19:15	144709

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SW-846 1311, 9036, IN TCLP EXTRACT

Batch R250787 SampType: MBLK		Units mg/L								Date Analyzed
SampID: ICB/MBLK										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	10		< 10	5.000	0	0	-100	100	08/09/2018	

Batch R250787 SampType: MBLK		Units mg/L								Date Analyzed
SampID: MBLK-144512										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	10		< 10	5.000	0	0	-100	100	08/09/2018	

Batch R250787 SampType: MBLK		Units mg/L								Date Analyzed
SampID: MBLK-144535										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	10		< 10	5.000	0	0	-100	100	08/09/2018	

Batch R250787 SampType: LCS		Units mg/L								Date Analyzed
SampID: ICV/LCS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	10		20	20.00	0	98.7	90	110	08/09/2018	

Batch R250787 SampType: MS		Units mg/L								Date Analyzed
SampID: 18080396-002BMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	500		1420	500.0	985.5	86.9	85	115	08/09/2018	

Batch R250787 SampType: MSD		Units mg/L								Date Analyzed
SampID: 18080396-002BMDS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Sulfate	500		1450	500.0	985.5	92.1	1420	1.80	08/09/2018	

Batch R250787 SampType: MS		Units mg/L								Date Analyzed
SampID: 18080404-001AMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	100		349	100.0	253.2	95.5	90	110	08/09/2018	

Batch R250787 SampType: MSD		Units mg/L								Date Analyzed
SampID: 18080404-001AMSD										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Sulfate	100		352	100.0	253.2	98.8	348.7	0.93	08/09/2018	

Batch R250787 SampType: MS		Units mg/L								Date Analyzed
SampID: 18080517-006BMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	50	S	130	50.00	93.27	74.2	85	115	08/09/2018	

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SW-846 1311, 9036, IN TCLP EXTRACT

Batch R250787 SampType: MSD		Units mg/L		RPD Limit 10						Date Analyzed
SampID: 18080517-006BMSD										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Sulfate	50		136	50.00	93.27	86.4	130.4	4.56		08/09/2018

SW-846 1311, 9251, IN TCLP EXTRACT

Batch R250815 SampType: MBLK		Units mg/L								Date Analyzed
SampID: ICB/MBLK										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride	5		< 5	0.5000	0	0	-100	100		08/09/2018

Batch R250815 SampType: MBLK		Units mg/L								Date Analyzed
SampID: MBLK-144512										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride	5		< 5	0.5000	0	0	-100	100		08/09/2018

Batch R250815 SampType: MBLK		Units mg/L								Date Analyzed
SampID: MBLK-144535										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride	5		< 5	0.5000	0	0	-100	100		08/09/2018

Batch R250815 SampType: LCS		Units mg/L								Date Analyzed
SampID: ICV/LCS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride	5		21	20.00	0	103.5	90	110		08/09/2018

Batch R250815 SampType: MS		Units mg/L								Date Analyzed
SampID: 18080396-002BMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride	250		1290	1000	344.4	94.1	85	115		08/09/2018

Batch R250815 SampType: MSD		Units mg/L		RPD Limit 15						Date Analyzed
SampID: 18080396-002BMSD										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Chloride	250		1290	1000	344.4	94.6	1285	0.39		08/09/2018

Batch R250815 SampType: MS		Units mg/L								Date Analyzed
SampID: 18080404-001AMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride	10		85	40.00	50.10	88.4	85	115		08/09/2018

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SW-846 1311, 9251, IN TCLP EXTRACT

Batch R250815 SampType: MSD		Units mg/L		RPD Limit 15						Date Analyzed
SampID: 18080404-001AMSD										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Chloride	10		85	40.00	50.10	87.7	85.44	0.30		08/09/2018

Batch R250815 SampType: MS		Units mg/L		RPD Limit 15						Date Analyzed
SampID: 18080517-006BMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride	25		197	100.0	110.2	86.8	85	115		08/09/2018

Batch R250815 SampType: MSD		Units mg/L		RPD Limit 15						Date Analyzed
SampID: 18080517-006BMSD										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Chloride	25		201	100.0	110.2	90.7	197.1	1.95		08/09/2018

Batch R250815 SampType: MS		Units mg/L		RPD Limit 15						Date Analyzed
SampID: 18080652-004BMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride	5		40	20.00	22.28	90.9	85	115		08/09/2018

Batch R250815 SampType: MSD		Units mg/L		RPD Limit 15						Date Analyzed
SampID: 18080652-004BMSD										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Chloride	5		40	20.00	22.28	87.2	40.46	1.87		08/09/2018

SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 144568 SampType: MBLK		Units mg/L		RPD Limit 15						Date Analyzed
SampID: MBLK-144568										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Arsenic	0.250		< 0.250	0.08700	0	0	-100	100		08/07/2018
Barium	0.450		< 0.450	0.1500	0	0	-100	100		08/07/2018
Boron	0.200	JS	0.092	0.09000	0	102.2	-100	100		08/07/2018
Cadmium	0.0200		< 0.0200	0.005000	0	0	-100	100		08/07/2018
Chromium	0.100	JS	0.016	0.01500	0	106.7	-100	100		08/07/2018
Lead	0.400		< 0.400	0.04000	0	0	-100	100		08/07/2018
Selenium	0.500		< 0.500	0.1700	0	0	-100	100		08/07/2018
Silver	0.0700		< 0.0700	0.02700	0	0	-100	100		08/07/2018

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SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 144568		SampType: LCS		Units mg/L						
SampID: LCS-144568										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Arsenic	0.250		5.17	5.000	0	103.5	85	115	08/07/2018	
Barium	0.450		19.8	20.00	0	99.1	85	115	08/07/2018	
Boron	0.200	B	4.94	5.000	0	98.8	85	115	08/07/2018	
Cadmium	0.0200		0.503	0.5000	0	100.6	85	115	08/07/2018	
Chromium	0.100	B	1.98	2.000	0	98.9	85	115	08/07/2018	
Lead	0.400		5.11	5.000	0	102.1	85	115	08/07/2018	
Selenium	0.500		4.96	5.000	0	99.2	85	115	08/07/2018	
Silver	0.0700		0.484	0.5000	0	96.8	85	115	08/07/2018	

Batch 144568		SampType: MS		Units mg/L					
SampID: 18080237-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		5.18	5.000	0	103.6	75	125	08/07/2018
Barium	0.450		21.2	20.00	0.8350	101.9	75	125	08/07/2018
Cadmium	0.0200		0.500	0.5000	0	100.0	75	125	08/07/2018
Chromium	0.100	B	2.01	2.000	0	100.7	75	125	08/08/2018
Lead	0.400		5.08	5.000	0	101.6	75	125	08/07/2018
Selenium	0.500		4.85	5.000	0	97.1	75	125	08/07/2018
Silver	0.0700		0.496	0.5000	0	99.2	75	125	08/07/2018

Batch 144568		SampType: MS		Units mg/L					
SampID: 18080316-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250	B	5.02	5.000	0	100.5	75	125	08/07/2018
Barium	0.450		20.4	20.00	0.6220	98.8	75	125	08/07/2018
Boron	0.200		4.98	5.000	0.1630	96.3	75	125	08/07/2018
Cadmium	0.0200	B	0.488	0.5000	0	97.6	75	125	08/07/2018
Chromium	0.100		1.98	2.000	0	98.8	75	125	08/07/2018
Lead	0.400		4.99	5.000	0	99.7	75	125	08/07/2018
Selenium	0.500		4.79	5.000	0	95.8	75	125	08/07/2018
Silver	0.0700		0.483	0.5000	0	96.6	75	125	08/07/2018

Batch 144568		SampType: MSD		Units mg/L				RPD Limit 20		
SampID: 18080316-001AMSD										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Arsenic	0.250	B	5.00	5.000	0	99.9	5.024	0.58	08/07/2018	
Barium	0.450		20.5	20.00	0.6220	99.4	20.38	0.59	08/07/2018	
Boron	0.200		5.02	5.000	0.1630	97.2	4.976	0.94	08/07/2018	
Cadmium	0.0200	B	0.477	0.5000	0	95.4	0.4880	2.28	08/07/2018	
Chromium	0.100		1.96	2.000	0	98.1	1.976	0.71	08/07/2018	
Lead	0.400		4.92	5.000	0	98.4	4.986	1.37	08/07/2018	
Selenium	0.500		4.72	5.000	0	94.4	4.791	1.49	08/07/2018	
Silver	0.0700		0.484	0.5000	0	96.8	0.4830	0.21	08/07/2018	

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SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 144568		SampType: MS		Units mg/L						
SampID: 18080317-001AMS										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Lead		0.400		5.03	5.000	0.09100	98.8	75	125	08/07/2018

Batch 144568		SampType: MS		Units mg/L					
SampID: 18080373-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250	B	5.23	5.000	0	104.6	75	125	08/07/2018
Barium	0.450		20.4	20.00	0.4830	99.3	75	125	08/07/2018
Cadmium	0.0200		0.503	0.5000	0	100.6	75	125	08/07/2018
Chromium	0.100		2.00	2.000	0.01900	99.2	75	125	08/07/2018
Lead	0.400		5.12	5.000	0	102.5	75	125	08/07/2018
Selenium	0.500		5.03	5.000	0	100.7	75	125	08/07/2018
Silver	0.0700		0.489	0.5000	0	97.8	75	125	08/07/2018

SW-846 1311, 7470A IN TCLP EXTRACT

Batch 144569		SampType: MBLK		Units mg/L						
SampID: MBLK-144569										Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Mercury	0.00020		< 0.00020	000055C	0	0	-100	100	08/07/2018	

Batch 144569		SampType: LCS		Units mg/L						
SampID: LCS-144569										Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Mercury	0.00020		0.00468	0.00500C	0	93.6	85	115	08/07/2018	

Batch 144569		SampType: MS		Units mg/L						
SampID: 18080237-001AMS										Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Mercury		0.00020		0.00457	0.00500C	0	91.3	75	125	08/07/2018

Batch 144569		SampType: MS		Units mg/L						
SampID: 18080316-001AMS										Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Mercury		0.00020		0.00444	0.00500C	0	88.9	75	125	08/07/2018

Batch 144569		SampType: MSD	Units mg/L				RPD Limit 15		
SampID: 18080316-001AMSD									Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Mercury	0.00020		0.00462	0.00500C	0	92.3	0.004444	3.82	08/07/2018

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SW-846 1311, 7470A IN TCLP EXTRACT

Batch 144569		SampType: MS		Units mg/L						
SampID: 18080373-001AMS										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.00020		0.00472	0.00500C	0	94.4	75	125	08/07/2018

SW-846 1311, 5030, 8260B, VOLATILE ORGANIC COMPOUNDS IN TCLP EXTRACT BY GC/MS

Batch 144709		SampType: MBLK		Units µg/L						
SampID: MBLK-T180809A-1										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Benzene	0.5		ND						08/09/2018	
Ethylbenzene	2.0		ND						08/09/2018	
Toluene	2.0		ND						08/09/2018	
Xylenes, Total	2.0		ND						08/09/2018	
Surr: 1,2-Dichloroethane-d4			47.4	50.00		94.8	79.6	118	08/09/2018	
Surr: 4-Bromofluorobenzene			48.8	50.00		97.6	83.9	115	08/09/2018	
Surr: Dibromofluoromethane			50.0	50.00		100.0	84.9	113	08/09/2018	
Surr: Toluene-d8			48.2	50.00		96.3	86.7	112	08/09/2018	

Batch 144709		SampType: LCSD		Units µg/L				RPD Limit 40		
SampID: LCSD-T180809A-1										Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Benzene	0.5		49.0	50.00	0	97.9	48.86	0.18	08/09/2018	
Ethylbenzene	2.0		47.4	50.00	0	94.8	47.76	0.74	08/09/2018	
Toluene	2.0		46.4	50.00	0	92.7	46.37	0.00	08/09/2018	
Xylenes, Total	2.0		141	150.0	0	93.9	141.8	0.71	08/09/2018	
Surr: 1,2-Dichloroethane-d4			46.6	50.00		93.2			08/09/2018	
Surr: 4-Bromofluorobenzene			47.3	50.00		94.6			08/09/2018	
Surr: Dibromofluoromethane			52.1	50.00		104.1			08/09/2018	
Surr: Toluene-d8			48.3	50.00		96.6			08/09/2018	

Batch 144709		SampType: LCS		Units µg/L						
SampID: LCS-T180809A-1										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Benzene	0.5		48.9	50.00	0	97.7	77.8	120	08/09/2018	
Ethylbenzene	2.0		47.8	50.00	0	95.5	81.8	117	08/09/2018	
Toluene	2.0		46.4	50.00	0	92.7	82.2	113	08/09/2018	
Xylenes, Total	2.0		142	150.0	0	94.5	82.7	118	08/09/2018	
Surr: 1,2-Dichloroethane-d4			46.2	50.00		92.4	79.6	118	08/09/2018	
Surr: 4-Bromofluorobenzene			47.1	50.00		94.1	83.9	115	08/09/2018	
Surr: Dibromofluoromethane			51.4	50.00		102.8	84.9	113	08/09/2018	
Surr: Toluene-d8			47.8	50.00		95.7	86.7	112	08/09/2018	

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Work Order: 18080316
Report Date: 15-Aug-18

SW-846 1311, 5030, 8260B, VOLATILE ORGANIC COMPOUNDS IN TCLP EXTRACT BY GC/MS

Batch 144709		SampType: MS		Units mg/L					
SampID: 18080316-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Benzene	0.050		4.62	5.000	0	92.5	66.8	122	08/09/2018
Ethylbenzene	0.200		4.64	5.000	0	92.9	77.7	115	08/09/2018
Toluene	0.200		4.39	5.000	0.01300	87.5	69.8	112	08/09/2018
Xylenes, Total	0.200		9.10	10.00	0	91.0	77.6	113	08/09/2018
Surr: 1,2-Dichloroethane-d4			4.84	5.000		96.8	74.7	129	08/09/2018
Surr: 4-Bromofluorobenzene			4.86	5.000		97.2	86	119	08/09/2018
Surr: Dibromofluoromethane			4.96	5.000		99.1	81.7	123	08/09/2018
Surr: Toluene-d8			4.77	5.000		95.4	84.3	114	08/09/2018

Batch 144709		SampType: MSD		Units mg/L				RPD Limit 20		
SampID: 18080316-001AMSD										Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Benzene		0.050		4.51	5.000	0	90.2	4.624	2.50	08/09/2018
Ethylbenzene		0.200		4.49	5.000	0	89.7	4.643	3.44	08/09/2018
Toluene		0.200		4.20	5.000	0.01300	83.7	4.387	4.40	08/09/2018
Xylenes, Total		0.200		8.70	10.00	0	87.0	9.099	4.46	08/09/2018
Surr: 1,2-Dichloroethane-d4				4.90	5.000		98.0			08/09/2018
Surr: 4-Bromofluorobenzene				4.92	5.000		98.5			08/09/2018
Surr: Dibromofluoromethane				4.96	5.000		99.1			08/09/2018
Surr: Toluene-d8				4.70	5.000		94.0			08/09/2018

Batch 144709		SampType: MS		Units µg/L						
SampID: 18080563-003FMS										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Benzene	0.5		48.5	50.00	0	97.1	62.5	121	08/09/2018	
Ethylbenzene	2.0		47.8	50.00	0	95.6	74.4	130	08/09/2018	
Toluene	2.0		45.1	50.00	0	90.2	69.5	118	08/09/2018	
Xylenes, Total	2.0		92.9	100.0	0	92.9	71.1	125	08/09/2018	
Surr: 1,2-Dichloroethane-d4			49.4	50.00		98.8	74.7	129	08/09/2018	
Surr: 4-Bromofluorobenzene			50.0	50.00		99.9	86	119	08/09/2018	
Surr: Dibromofluoromethane			50.8	50.00		101.5	81.7	123	08/09/2018	
Surr: Toluene-d8			47.7	50.00		95.5	84.3	114	08/09/2018	

Batch 144709		SampType: MSD		Units µg/L				RPD Limit 20		
SampID: 18080563-003FMMSD										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Analyzed	
Benzene	0.5		45.9	50.00	0	91.7	48.53	5.66	08/09/2018	
Ethylbenzene	2.0		44.5	50.00	0	89.0	47.82	7.15	08/09/2018	
Toluene	2.0		42.5	50.00	0	85.0	45.12	6.03	08/09/2018	
Xylenes, Total	2.0		87.6	100.0	0	87.6	92.87	5.85	08/09/2018	
Surr: 1,2-Dichloroethane-d4			49.2	50.00		98.4			08/09/2018	
Surr: 4-Bromofluorobenzene			50.2	50.00		100.4			08/09/2018	
Surr: Dibromofluoromethane			49.8	50.00		99.7			08/09/2018	
Surr: Toluene-d8			48.5	50.00		97.1			08/09/2018	

TEKLAB, INC
5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
TEL: (618) 344-1004
FAX: (618) 344-1005

CHAIN-OF-CUSTODY RECORD

18080316
Page 1 of 1

WorkOrder: 18080316

Client:

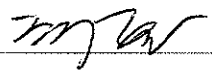
Geotechnology, Inc.
11816 Lackland Road
St. Louis, MO 63146

TEL: (314) 997-7440
FAX: (314) 997-2067
Project: J024917.04 Meredosia

06-Aug-18

Sample ID	ClientSampleID	Matrix	Date Collected	Bottle	Requested Tests				
					A_TCLP_CL_S_AT	A_TCLP_SO4_S_AT	M_HG_TCLP	M_TCLP_ICP	V_BTEXTCLP
18080316-001	BF-3	Solid	8/2/2018 11:48:00 AM		A	A	A	A	A

Comments: turn off J flags for Kenny. EEP 6/22/18
All reports for Jessie Goodwin: standard EDD. All reports for Jon Truesdale: Terracon EDD. EEP 4/25/17
Per Jessie Goodwin, additional analyses are requested for WO# 18080212. EEP 8/6/18

Date/Time		Date/Time	
Relinquished by:		Received by: 	8/6/18 MJW
Relinquished by:		Received by:	
Relinquished by:		Received 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

September 11, 2018

Jessie Goodwin
Geotechnology, Inc.
11816 Lackland Road
St. Louis, MO 63146
TEL: (573) 270-1313
FAX: (314) 997-2067



RE: J024917.04 Meredosia

WorkOrder: 18090219

Dear Jessie Goodwin:

TEKLAB, INC received 1 sample on 9/5/2018 3:00:00 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,



Emily Pohlman
Project Manager
(618)344-1004 ex 44
epohlman@teklabinc.com



Report Contents

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 18090219

Client Project: J024917.04 Meredosia

Report Date: 11-Sep-18

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	4
Accreditations	5
Laboratory Results	6
Quality Control Results	7
Receiving Check List	17
Chain of Custody	Appended

Client: Geotechnology, Inc.**Work Order:** 18090219**Client Project:** J024917.04 Meredosia**Report Date:** 11-Sep-18**Abbr Definition**

* Analytes on report marked with an asterisk are not NELAP accredited

CCV Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.

CRQL A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.

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 dilution factors.

DNI Did not ignite

DUP Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.

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 is a sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes and 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.

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).

MBLK 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 "The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."

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.

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.

TIC Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"

TNTC Too numerous to count (> 200 CFU)

Qualifiers

- Unknown hydrocarbon

C - RL shown is a Client Requested Quantitation Limit

H - Holding times exceeded

J - Analyte detected below quantitation limits

ND - Not Detected at the Reporting Limit

S - Spike Recovery outside recovery limits

X - Value exceeds Maximum Contaminant Level

B - Analyte detected in associated Method Blank

E - Value above quantitation range

I - Associated internal standard was outside method criteria

M - Manual Integration used to determine area response

R - RPD outside accepted recovery limits

T - TIC(Tentatively identified compound)



Case Narrative

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 18090219

Client Project: J024917.04 Meredosia

Report Date: 11-Sep-18

Cooler Receipt Temp: 22.82 °C

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425

Phone (618) 344-1004

Fax (618) 344-1005

Email jhriley@teklabinc.com

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Phone (913) 541-1998

Fax (913) 541-1998

Email jhriley@teklabinc.com

Client: Geotechnology, Inc.**Work Order:** 18090219**Client Project:** J024917.04 Meredosia**Report Date:** 11-Sep-18

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2019	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2019	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2019	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2019	Collinsville
Arkansas	ADEQ	88-0966		3/14/2019	Collinsville
Illinois	IDPH	17584		5/31/2019	Collinsville
Indiana	ISDH	C-IL-06		1/31/2019	Collinsville
Kentucky	KDEP	98006		12/31/2018	Collinsville
Kentucky	UST	0073		1/31/2019	Collinsville
Louisiana	LDPH	LA170027		12/31/2018	Collinsville
Missouri	MDNR	930		1/31/2019	Collinsville
Missouri	MDNR	00930		5/31/2019	Collinsville
Oklahoma	ODEQ	9978		8/31/2019	Collinsville
Tennessee	TDEC	04905		1/31/2019	Collinsville

Client: Geotechnology, Inc.
 Client Project: J024917.04 Meredosia
 Lab ID: 18090219-001
 Matrix: SOLID

Work Order: 18090219
 Report Date: 11-Sep-18

Client Sample ID: BF-5

Collection Date: 09/05/2018 13:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 1311, 9036, IN TCLP EXTRACT								
Sulfate	*	10	J	6	mg/L	1	09/07/2018 19:18	R251897
SW-846 1311, 9251, IN TCLP EXTRACT								
Chloride	NELAP	5	J	1	mg/L	1	09/07/2018 19:15	R251906
SW-846 9045C								
pH (1:1)	NELAP	1.00		7.68		1	09/06/2018 13:56	R251767
SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP								
Arsenic	NELAP	0.250		< 0.250	mg/L	1	09/07/2018 16:07	145530
Barium	NELAP	0.450		0.681	mg/L	1	09/07/2018 16:07	145530
Boron	NELAP	0.20	J	0.18	mg/L	1	09/07/2018 16:07	145530
Cadmium	NELAP	0.0200		< 0.0200	mg/L	1	09/07/2018 16:07	145530
Chromium	NELAP	0.100		< 0.100	mg/L	1	09/07/2018 16:07	145530
Lead	NELAP	0.400		< 0.400	mg/L	1	09/07/2018 16:07	145530
Selenium	NELAP	0.500		< 0.500	mg/L	1	09/07/2018 16:07	145530
Silver	NELAP	0.0700		< 0.0700	mg/L	1	09/07/2018 16:07	145530
SW-846 1311, 7470A IN TCLP EXTRACT								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	09/07/2018 9:58	145536
SW-846 1311, 5030, 8260B, VOLATILE ORGANIC COMPOUNDS IN TCLP EXTRACT BY GC/MS								
Benzene	NELAP	0.050		ND	mg/L	100	09/10/2018 18:02	145601
Ethylbenzene	NELAP	0.200		ND	mg/L	100	09/10/2018 18:02	145601
Toluene	NELAP	0.200		ND	mg/L	100	09/10/2018 18:02	145601
Xylenes, Total	NELAP	0.200		ND	mg/L	100	09/10/2018 18:02	145601
Surr: 1,2-Dichloroethane-d4	*	79.6-118		94.0	%REC	100	09/10/2018 18:02	145601
Surr: 4-Bromofluorobenzene	*	83.9-115		97.7	%REC	100	09/10/2018 18:02	145601
Surr: Dibromofluoromethane	*	84.9-113		102.2	%REC	100	09/10/2018 18:02	145601
Surr: Toluene-d8	*	86.7-112		97.4	%REC	100	09/10/2018 18:02	145601

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18090219
Report Date: 11-Sep-18

SW-846 1311, 9036, IN TCLP EXTRACT

Batch R251897 SampType: MBLK		Units mg/L								Date Analyzed
SampID: ICB/MBLK										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	10		< 10	6.000	0	0	-100	100	09/07/2018	

Batch R251897 SampType: MBLK		Units mg/L								Date Analyzed
SampID: MBLK-145493										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	10		< 10	6.000	0	0	-100	100	09/07/2018	

Batch R251897 SampType: LCS		Units mg/L								Date Analyzed
SampID: ICB/LCS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	10		19	20.00	0	94.4	90	110	09/07/2018	

Batch R251897 SampType: MS		Units mg/L								Date Analyzed
SampID: 18081737-002AMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	10		28	10.00	19.03	93.9	85	115	09/07/2018	

Batch R251897 SampType: MSD		Units mg/L								RPD Limit 10	Date Analyzed
SampID: 18081737-002AMSD											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD			
Sulfate	10		29	10.00	19.03	100.8	28.42	2.40	09/07/2018		

Batch R251897 SampType: MS		Units mg/L								Date Analyzed
SampID: 18081739-005AMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	20		96	20.00	76.59	95.8	85	115	09/07/2018	

Batch R251897 SampType: MSD		Units mg/L								RPD Limit 10	Date Analyzed
SampID: 18081739-005AMSD											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD			
Sulfate	20		97	20.00	76.59	102.7	95.75	1.43	09/07/2018		

Batch R251897 SampType: MS		Units mg/L								Date Analyzed
SampID: 18090155-001AMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	20		65	20.00	46.32	91.8	90	110	09/07/2018	

Batch R251897 SampType: MSD		Units mg/L								RPD Limit 10	Date Analyzed
SampID: 18090155-001AMSD											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD			
Sulfate	20		67	20.00	46.32	103.5	64.68	3.55	09/07/2018		

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18090219
Report Date: 11-Sep-18

SW-846 1311, 9251, IN TCLP EXTRACT

Batch R251906 SampType: MBLK		Units mg/L								Date Analyzed
SampID: ICB/MBLK										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride	5		< 5	0.5000	0	0	-100	100	09/07/2018	

Batch R251906 SampType: MBLK		Units mg/L								Date Analyzed
SampID: MBLK-145493										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride	5		< 5	0.5000	0	0	-100	100	09/07/2018	

Batch R251906 SampType: LCS		Units mg/L								Date Analyzed
SampID: ICB/LCS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride	5		20	20.00	0	101.2	90	110	09/07/2018	

Batch R251906 SampType: MS		Units mg/L								Date Analyzed
SampID: 18081737-002AMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride	5		41	20.00	23.06	87.5	85	115	09/07/2018	

Batch R251906 SampType: MSD		Units mg/L								RPD Limit 15	Date Analyzed
SampID: 18081737-002AMSD											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD			
Chloride	5		41	20.00	23.06	88.9	40.55	0.71	09/07/2018		

Batch R251906 SampType: MS		Units mg/L								Date Analyzed
SampID: 18081739-005AMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride	5		39	20.00	21.17	88.7	85	115	09/07/2018	

Batch R251906 SampType: MSD		Units mg/L								RPD Limit 15	Date Analyzed
SampID: 18081739-005AMSD											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD			
Chloride	5		39	20.00	21.17	87.6	38.90	0.57	09/07/2018		

Batch R251906 SampType: MS		Units mg/L								Date Analyzed
SampID: 18090155-001AMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride	5		23	20.00	3.420	98.2	85	115	09/07/2018	

Batch R251906 SampType: MSD		Units mg/L								RPD Limit 15	Date Analyzed
SampID: 18090155-001AMSD											
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD			
Chloride	5		23	20.00	3.420	97.6	23.07	0.57	09/07/2018		

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18090219
Report Date: 11-Sep-18

SW-846 9045C

Batch R251767 SampType: LCS		Units								Date Analyzed
SampID: LCS-R251767										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
pH (1:1)	1.00		6.98	7.000	0	99.7	99.1	100.8	09/05/2018	

Batch R251767		SampType: DUP	Units					RPD Limit 10		
SampID: 18090219-001ADUP										Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
pH (1:1)		1.00		7.72				7.680	0.52	
										09/06/2018

Batch R251767		SampType: DUP	Units					RPD Limit 10		
SampID: 18090118-001ADUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)		1.00		8.46				8.310	1.79	09/05/2018

Batch R251767		SampType: DUP	Units				RPD Limit 10			
SampID: 18090119-001ADUP										Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
pH (1:1)		1.00		8.16				8.090	0.86	
										09/05/2018

Batch R251767		SampType: DUP	Units				RPD Limit 10			
SampID: 18090120-001ADUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)		1.00		8.10				8.180	0.98	09/05/2018

Batch R251767		SampType: DUP	Units				RPD Limit 10			
SampID: 18090121-001ADUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)		1.00		7.52				7.530	0.13	09/05/2018

Batch R251767		SampType: DUP	Units				RPD Limit 10			
SampID: 18090121-002ADUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)		1.00		8.30				8.220	0.97	09/05/2018

Batch R251767		SampType: DUP	Units				RPD Limit 10			
SampID: 18090121-003ADUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)		1.00		7.74				7.830	1.16	09/05/2018

Batch R251767		SampType: DUP	Units					RPD Limit 10		Date Analyzed
SampID: 18090121-004ADUP										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
pH (1:1)	1.00		8.25				8.200	0.61	09/05/2018	

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

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SW-846 9045C

Batch R251767		SampType: DUP	Units				RPD Limit 10			
SampID: 18090121-005ADUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)		1.00		7.67				7.670	0.00	09/05/2018

Batch R251767		SampType: DUP	Units				RPD Limit 10			
SampID: 18090121-006ADUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)		1.00		7.85				7.880	0.38	09/05/2018

Batch R251767		SampType: DUP	Units				RPD Limit 10			
SampID: 18090136-001ADUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)		1.00		7.78				7.930	1.91	09/06/2018

Batch R251767		SampType: DUP	Units					RPD Limit 10		
SampID: 18090214-001ADUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)		1.00		7.45				7.450	0.00	09/06/2018

SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 145530		SampType: MBLK		Units mg/L						
SampID: MBLK-145530										Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Arsenic	0.250		< 0.250	0.08700	0	0	-100	100	09/07/2018	
Barium	0.450		< 0.450	0.1500	0	0	-100	100	09/07/2018	
Boron	10.0		< 10.0	0.2300	0	0	-100	100	09/07/2018	
Cadmium	0.0200		< 0.0200	0.005000	0	0	-100	100	09/07/2018	
Chromium	0.100		< 0.100	0.03400	0	0	-100	100	09/07/2018	
Lead	0.400		< 0.400	0.04000	0	0	-100	100	09/07/2018	
Selenium	0.500		< 0.500	0.1700	0	0	-100	100	09/07/2018	
Silver	0.0700		< 0.0700	0.02700	0	0	-100	100	09/07/2018	

Batch 145530		SampType: LCS		Units mg/L						
SampID: LCS-145530										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Arsenic	0.250		5.18	5.000	0	103.5	85	115	09/07/2018	
Barium	0.450		20.5	20.00	0	102.4	85	115	09/07/2018	
Boron	10.0		102	100.0	0	101.9	85	115	09/07/2018	
Cadmium	0.0200		0.506	0.5000	0	101.2	85	115	09/07/2018	
Chromium	0.100		2.12	2.000	0	105.9	85	115	09/07/2018	
Lead	0.400		5.24	5.000	0	104.7	85	115	09/07/2018	
Selenium	0.500		5.09	5.000	0	101.9	85	115	09/07/2018	
Silver	0.0700		0.515	0.5000	0	103.0	85	115	09/07/2018	

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

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SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 145530		SampType: MS		Units mg/L					
SampID: 18090118-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		5.18	5.000	0	103.5	75	125	09/07/2018
Barium	0.450		20.8	20.00	0.4830	101.3	75	125	09/07/2018
Cadmium	0.0200		0.505	0.5000	0	101.0	75	125	09/07/2018
Chromium	0.100		2.10	2.000	0	105.2	75	125	09/07/2018
Lead	0.400		5.20	5.000	0	104.0	75	125	09/07/2018
Selenium	0.500		4.91	5.000	0	98.3	75	125	09/07/2018
Silver	0.0700		0.513	0.5000	0	102.6	75	125	09/07/2018

Batch 145530		SampType: MS		Units mg/L					
SampID: 18090120-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		5.25	5.000	0	104.9	75	125	09/07/2018
Barium	0.450		20.8	20.00	0.4050	102.0	75	125	09/07/2018
Cadmium	0.0200		0.504	0.5000	0	100.8	75	125	09/07/2018
Chromium	0.100		2.12	2.000	0	106.0	75	125	09/07/2018
Lead	0.400		5.22	5.000	0	104.5	75	125	09/07/2018
Selenium	0.500		5.02	5.000	0	100.4	75	125	09/07/2018
Silver	0.0700		0.512	0.5000	0	102.4	75	125	09/07/2018

Batch 145530		SampType: MS		Units mg/L					
SampID: 18090121-002AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		5.14	5.000	0	102.9	75	125	09/07/2018
Barium	0.450		20.6	20.00	0.3510	101.3	75	125	09/07/2018
Cadmium	0.0200		0.501	0.5000	0	100.2	75	125	09/07/2018
Chromium	0.100		2.10	2.000	0	104.8	75	125	09/07/2018
Lead	0.400		5.20	5.000	0	104.0	75	125	09/07/2018
Selenium	0.500		5.04	5.000	0	100.9	75	125	09/07/2018
Silver	0.0700		0.509	0.5000	0	101.8	75	125	09/07/2018

Batch 145530		SampType: MSD		Units mg/L				RPD Limit 20		
SampID: 18090121-002AMSD										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Arsenic	0.250		5.22	5.000	0	104.5	5.144	1.56	09/07/2018	
Barium	0.450		20.8	20.00	0.3510	102.2	20.61	0.87	09/07/2018	
Cadmium	0.0200		0.506	0.5000	0	101.2	0.5010	0.99	09/07/2018	
Chromium	0.100		2.12	2.000	0	106.0	2.095	1.19	09/07/2018	
Lead	0.400		5.28	5.000	0	105.5	5.198	1.47	09/07/2018	
Selenium	0.500		5.22	5.000	0	104.4	5.043	3.43	09/07/2018	
Silver	0.0700		0.516	0.5000	0	103.2	0.5090	1.37	09/07/2018	

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

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SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 145530		SampType: MS		Units mg/L					
SampID: 18090214-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chromium	0.100	S	956	2.000	937.1	935.0	75	125	09/07/2018

Batch 145530		SampType: MS		Units mg/L					
SampID: 18090219-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		5.24	5.000	0	104.7	75	125	09/07/2018
Barium	0.450		21.3	20.00	0.6810	103.0	75	125	09/07/2018
Boron	10.0		103	100.0	0.1810	102.7	75	125	09/07/2018
Cadmium	0.0200		0.507	0.5000	0	101.4	75	125	09/07/2018
Chromium	0.100		2.12	2.000	0	106.1	75	125	09/07/2018
Lead	0.400		5.24	5.000	0	104.8	75	125	09/07/2018
Selenium	0.500		5.05	5.000	0	101.0	75	125	09/07/2018
Silver	0.0700		0.515	0.5000	0	103.0	75	125	09/07/2018

Batch 145530		SampType: MSD		Units mg/L				RPD Limit 20		
SampID: 18090219-001AMSD										Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Arsenic	0.250		5.24	5.000	0	104.8	5.236	0.11	09/07/2018	
Barium	0.450		21.2	20.00	0.6810	102.4	21.28	0.52	09/07/2018	
Boron	10.0		104	100.0	0.1810	103.3	102.9	0.58	09/07/2018	
Cadmium	0.0200		0.500	0.5000	0	100.0	0.5070	1.39	09/07/2018	
Chromium	0.100		2.12	2.000	0	106.2	2.122	0.05	09/07/2018	
Lead	0.400		5.22	5.000	0	104.4	5.240	0.34	09/07/2018	
Selenium	0.500		5.03	5.000	0	100.6	5.049	0.36	09/07/2018	
Silver	0.0700		0.513	0.5000	0	102.6	0.5150	0.39	09/07/2018	

Batch 145530		SampType: MS		Units mg/L						
SampID: 18090238-001AMS										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Arsenic	0.250		5.20	5.000	0	103.9	75	125	09/07/2018	
Barium	0.450		20.8	20.00	0.2820	102.6	75	125	09/07/2018	
Cadmium	0.0200		0.505	0.5000	0	101.0	75	125	09/07/2018	
Chromium	0.100		2.02	2.000	0	101.2	75	125	09/10/2018	
Lead	0.400		5.28	5.000	0	105.5	75	125	09/07/2018	
Selenium	0.500		5.04	5.000	0	100.9	75	125	09/07/2018	
Silver	0.0700		0.513	0.5000	0	102.6	75	125	09/07/2018	

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18090219
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SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 145530 SampType: MS Units mg/L									
SampID: 18090250-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		5.21	5.000	0	104.1	75	125	09/07/2018
Barium	0.450		20.8	20.00	0	103.8	75	125	09/07/2018
Cadmium	0.0200		0.507	0.5000	0	101.4	75	125	09/07/2018
Chromium	0.100		2.13	2.000	0	106.6	75	125	09/07/2018
Lead	0.400		5.80	5.000	0.5190	105.7	75	125	09/07/2018
Selenium	0.500		5.03	5.000	0	100.5	75	125	09/07/2018
Silver	0.0700		0.512	0.5000	0	102.4	75	125	09/07/2018

SW-846 1311, 7470A IN TCLP EXTRACT

Batch 145536 SampType: MBLK Units mg/L									
SampID: MBLK-145536									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		< 0.00020	0.000500C	0	0	-100	100	09/07/2018

Batch 145536 SampType: LCS Units mg/L									
SampID: LCS-145536									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00516	0.00500C	0	103.2	85	115	09/07/2018

Batch 145536 SampType: MS Units mg/L									
SampID: 18090111-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00509	0.00500C	0	101.8	75	125	09/07/2018

Batch 145536 SampType: MS Units mg/L									
SampID: 18090118-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00506	0.00500C	0	101.3	75	125	09/07/2018

Batch 145536 SampType: MS Units mg/L									
SampID: 18090120-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00506	0.00500C	0	101.1	75	125	09/07/2018

Batch 145536 SampType: MS Units mg/L									
SampID: 18090121-002AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00535	0.00500C	0	107.0	75	125	09/07/2018

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18090219
Report Date: 11-Sep-18

SW-846 1311, 7470A IN TCLP EXTRACT

Batch 145536		SampType: MSD		Units mg/L			RPD Limit 15			
SampID: 18090121-002AMSD										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury		0.00020		0.00516	0.00500C	0	103.2	0.005348	3.58	09/07/2018

Batch 145536		SampType: MS		Units mg/L						
SampID: 18090219-001AMS										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Mercury	0.00020		0.00515	0.00500C	0	103.0	75	125	09/07/2018	

Batch 145536		SampType: MSD		Units mg/L			RPD Limit 15			
SampID: 18090219-001AMSD										Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Mercury		0.00020		0.00509	0.00500C	0	101.9	0.005150	1.10	09/07/2018

Batch 145536		SampType: MS		Units mg/L						
SampID: 18090238-001AMS										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Mercury	0.00020		0.00530	0.00500C	0	106.0	75	125	09/07/2018	

Batch 145536		SampType: MS		Units mg/L						
SampID: 18090250-001AMS										Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Mercury		0.00020		0.00515	0.00500C	0	103.0	75	125	
										09/07/2018

SW-846 1311, 5030, 8260B, VOLATILE ORGANIC COMPOUNDS IN TCLP EXTRACT BY GC/MS

Batch 145601		SampType: MBLK		Units µg/L						
SampID: MBLK-T180910A-1										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Benzene		0.5		ND						09/10/2018
Ethylbenzene		2.0		ND						09/10/2018
Toluene		2.0		ND						09/10/2018
Xylenes, Total		2.0		ND						09/10/2018
Surr: 1,2-Dichloroethane-d4				46.7	50.00		93.5	79.6	118	09/10/2018
Surr: 4-Bromofluorobenzene				48.6	50.00		97.3	83.9	115	09/10/2018
Surr: Dibromofluoromethane				51.2	50.00		102.4	84.9	113	09/10/2018
Surr: Toluene-d8				49.6	50.00		99.2	86.7	112	09/10/2018

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18090219
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SW-846 1311, 5030, 8260B, VOLATILE ORGANIC COMPOUNDS IN TCLP EXTRACT BY GC/MS

Batch 145601		SampType: LCSD		Units µg/L				RPD Limit 40		
SampID: LCSD-T180910A-1										Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Benzene	0.5		47.1	50.00	0	94.3	45.70	3.08	09/10/2018	
Ethylbenzene	2.0		47.6	50.00	0	95.1	46.11	3.12	09/10/2018	
Toluene	2.0		46.6	50.00	0	93.2	46.04	1.19	09/10/2018	
Xylenes, Total	2.0		141	150.0	0	94.1	140.0	0.85	09/10/2018	
Surr: 1,2-Dichloroethane-d4			46.6	50.00		93.3			09/10/2018	
Surr: 4-Bromofluorobenzene			46.9	50.00		93.8			09/10/2018	
Surr: Dibromofluoromethane			51.2	50.00		102.5			09/10/2018	
Surr: Toluene-d8			49.7	50.00		99.4			09/10/2018	

Batch 145601		SampType: LCS		Units µg/L						
SampID: LCS-T180910A-1										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Benzene	0.5		45.7	50.00	0	91.4	77.8	120	09/10/2018	
Ethylbenzene	2.0		46.1	50.00	0	92.2	81.8	117	09/10/2018	
Toluene	2.0		46.0	50.00	0	92.1	82.2	113	09/10/2018	
Xylenes, Total	2.0		140	150.0	0	93.3	82.7	118	09/10/2018	
Surr: 1,2-Dichloroethane-d4			45.7	50.00		91.5	79.6	118	09/10/2018	
Surr: 4-Bromofluorobenzene			47.4	50.00		94.9	83.9	115	09/10/2018	
Surr: Dibromofluoromethane			51.4	50.00		102.8	84.9	113	09/10/2018	
Surr: Toluene-d8			49.7	50.00		99.4	86.7	112	09/10/2018	

Batch 145601		SampType: MS		Units mg/L						
SampID: 18090219-001AMS										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Benzene	0.050		4.95	5.000	0	99.0	66.8	122	09/10/2018	
Ethylbenzene	0.200		4.91	5.000	0	98.1	77.7	115	09/10/2018	
Toluene	0.200		4.75	5.000	0	94.9	69.8	112	09/10/2018	
Xylenes, Total	0.200		9.61	10.00	0	96.1	77.6	113	09/10/2018	
Surr: 1,2-Dichloroethane-d4			4.78	5.000		95.7	74.7	129	09/10/2018	
Surr: 4-Bromofluorobenzene			4.86	5.000		97.3	86	119	09/10/2018	
Surr: Dibromofluoromethane			5.14	5.000		102.9	81.7	123	09/10/2018	
Surr: Toluene-d8			4.86	5.000		97.1	84.3	114	09/10/2018	

Batch 145601		SampType: MS		Units mg/L					
SampID: 18090250-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Benzene	0.050		5.50	5.000	0.6510	96.9	81.5	113	09/10/2018
Surr: 1,2-Dichloroethane-d4			4.71	5.000		94.1	74.7	129	09/10/2018
Surr: 4-Bromofluorobenzene			4.74	5.000		94.8	86	119	09/10/2018
Surr: Dibromofluoromethane			5.20	5.000		103.9	81.7	123	09/10/2018
Surr: Toluene-d8			4.88	5.000		97.7	84.3	114	09/10/2018

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18090219
Report Date: 11-Sep-18

SW-846 1311, 5030, 8260B, VOLATILE ORGANIC COMPOUNDS IN TCLP EXTRACT BY GC/MS

Batch 145601		SampType: MS		Units mg/L						Date Analyzed
SampID: 18090391-001AMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Benzene	0.050		4.72	5.000	0	94.4	81.5	113	09/10/2018	
Surr: 1,2-Dichloroethane-d4			4.75	5.000		95.0	74.7	129	09/10/2018	
Surr: 4-Bromofluorobenzene			4.79	5.000		95.7	86	119	09/10/2018	
Surr: Dibromofluoromethane			5.15	5.000		103.0	81.7	123	09/10/2018	
Surr: Toluene-d8			4.82	5.000		96.3	84.3	114	09/10/2018	

Batch 145601		SampType: MSD		Units mg/L				RPD Limit 20		
SampID: 18090391-001AMSD										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Benzene		0.050		4.80	5.000	0	96.0	4.719	1.72	09/10/2018
Surr: 1,2-Dichloroethane-d4				4.71	5.000		94.2			09/10/2018
Surr: 4-Bromofluorobenzene				4.78	5.000		95.7			09/10/2018
Surr: Dibromofluoromethane				5.20	5.000		104.0			09/10/2018
Surr: Toluene-d8				4.96	5.000		99.1			09/10/2018



Receiving Check List

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 18090219

Client Project: J024917.04 Meredosia

Report Date: 11-Sep-18

Carrier: Jessie Goodwin

Received By: NH

Completed by:

On:

05-Sep-18

Nathan Harer

Reviewed by:

On:

05-Sep-18

Emily Pohlman

Pages to follow: Chain of custody

1

Extra pages included

0

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Temp °C 22.82

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 ☐

NA ☒

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 # 18090219

TEKLAB, INC. 5445 Horseshoe Lake Road - Collinsville, IL 62234 - Phone: (618) 344-1004 - Fax: (618) 344-1005

Client:

Geotechnology, Inc.

Address:

11816 Lackland Road

City / State / Zip

St. Louis, MO 63146

Contact:

Jessie Goodwin

Phone:

(314) 997-7440

E-Mail:

jgoodwin@geotechnology.com

Fax:

(314) 997-2067

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 the comment section.

☐ Yes
☒ No

Project Name/Number

J024917.04 Meredosia

Sample Collector's Name

Jessie Goodwin

Results Requested

☒ Standard
☐ 1-2 Day (100% Surcharge)

Other

☐ 3 Day (50% Surcharge)

Billing Instructions

and Type of Containers

UNPRES

HNO3

NaOH

H2SO4

HCL

MeOH

NaHSO4

OTHER

Lab Use Only

Sample Identification

Date/Time Sampled

1809021001

BF-5

9/5/2018 1300

MATRIX

Aqueous

Drinking Water

Soil

Sludge

Special Waste

Groundwater

INDICATE ANALYSIS REQUESTED

TCLP BTEX

TCLP Chloride

TCLP Metals+

~~TCLP pH~~

TCLP Sulfate

pH

X

X

X

X

X

X

Relinquished By

Jessie Goodwin

Date/Time

9/5/2018 1500

Received By

M. W.

Date/Time

9/5/18 1500

Samples on:

☐ ICE
☒ BLUE ICE
☐ NO ICE

2280°C

Preserved in:

☐ LAB
☐ FIELD

FOR LAB USE ONLY

Lab Notes

Client Comments:

*8 RCRA+Boron

JYG will send PO number.

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions.

BottleOrder: 42788



9/5/14 AA

July 26, 2018

Jessie Goodwin
Geotechnology, Inc.
11816 Lackland Road
St. Louis, MO 63146
TEL: (573) 270-1313
FAX: (314) 997-2067



RE: J024917.04 Meredosia

WorkOrder: 18071283

Dear Jessie Goodwin:

TEKLAB, INC received 1 sample on 7/20/2018 4:38:00 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,



Emily Pohlman
Project Manager
(618)344-1004 ex 44
epohlman@teklabinc.com

Client: Geotechnology, Inc.

Work Order: 18071283

Client Project: J024917.04 Meredosia

Report Date: 26-Jul-18

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	4
Accreditations	5
Laboratory Results	6
Quality Control Results	7
Receiving Check List	12
Chain of Custody	Appended

Client: Geotechnology, Inc.**Work Order:** 18071283**Client Project:** J024917.04 Meredosia**Report Date:** 26-Jul-18**Abbr Definition**

* Analytes on report marked with an asterisk are not NELAP accredited

CCV Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.

CRQL A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.

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 dilution factors.

DNI Did not ignite

DUP Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.

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 is a sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes and 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.

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).

MBLK 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 "The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."

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.

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.

TIC Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"

TNTC Too numerous to count (> 200 CFU)

Qualifiers

- Unknown hydrocarbon

C - RL shown is a Client Requested Quantitation Limit

H - Holding times exceeded

J - Analyte detected below quantitation limits

ND - Not Detected at the Reporting Limit

S - Spike Recovery outside recovery limits

X - Value exceeds Maximum Contaminant Level

B - Analyte detected in associated Method Blank

E - Value above quantitation range

I - Associated internal standard was outside method criteria

M - Manual Integration used to determine area response

R - RPD outside accepted recovery limits

T - TIC(Tentatively identified compound)



Case Narrative

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 18071283

Client Project: J024917.04 Meredosia

Report Date: 26-Jul-18

Cooler Receipt Temp: 27.80 °C

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email jhriley@teklabinc.com

Collinsville Air

Address 5445 Horseshoe Lake Road
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Kansas City

Address 8421 Nieman Road
Lenexa, KS 66214
Phone (913) 541-1998
Fax (913) 541-1998
Email jhriley@teklabinc.com

Client: Geotechnology, Inc.**Work Order:** 18071283**Client Project:** J024917.04 Meredosia**Report Date:** 26-Jul-18

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2019	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2019	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2019	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2019	Collinsville
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2018	Collinsville
Arkansas	ADEQ	88-0966		3/14/2019	Collinsville
Illinois	IDPH	17584		5/31/2019	Collinsville
Indiana	ISDH	C-IL-06		1/31/2019	Collinsville
Kentucky	KDEP	98006		12/31/2018	Collinsville
Kentucky	UST	0073		1/31/2019	Collinsville
Louisiana	LDPH	LA170027		12/31/2018	Collinsville
Missouri	MDNR	930		1/31/2019	Collinsville
Missouri	MDNR	00930		5/31/2019	Collinsville
Oklahoma	ODEQ	9978		8/31/2018	Collinsville
Tennessee	TDEC	04905		1/31/2019	Collinsville

Client: Geotechnology, Inc.
 Client Project: J024917.04 Meredosia
 Lab ID: 18071283-001
 Matrix: SOLID

Work Order: 18071283
 Report Date: 26-Jul-18
 Client Sample ID: Sand-1 Pre-Qual
 Collection Date: 07/20/2018 0:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 1311, 9036, IN TCLP EXTRACT								
Sulfate	*	10		< 10	mg/L	1	07/24/2018 17:20	R249991
SW-846 1311, 9040 B, IN TCLP EXTRACT								
pH	*	1.00	H	9.81		1	07/23/2018 15:15	R249941
Sample analysis did not meet hold time requirements.								
SW-846 1311, 9251, IN TCLP EXTRACT								
Chloride	NELAP	5		< 5	mg/L	1	07/24/2018 15:34	R250046
SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP								
Arsenic	NELAP	0.250		< 0.250	mg/L	1	07/23/2018 15:35	144058
Barium	NELAP	0.45	J	0.16	mg/L	1	07/23/2018 15:35	144058
Boron	NELAP	0.200		< 0.200	mg/L	1	07/23/2018 15:35	144058
Cadmium	NELAP	0.0200		< 0.0200	mg/L	1	07/23/2018 15:35	144058
Chromium	NELAP	0.100	B	< 0.100	mg/L	1	07/23/2018 15:35	144058
Lead	NELAP	0.400		< 0.400	mg/L	1	07/23/2018 15:35	144058
Selenium	NELAP	0.500		< 0.500	mg/L	1	07/23/2018 15:35	144058
Silver	NELAP	0.0700		< 0.0700	mg/L	1	07/23/2018 15:35	144058
Contamination present in the MBLK for Cr. Sample results below the reporting limit are reportable per the TNI Standard.								
SW-846 1311, 7470A IN TCLP EXTRACT								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	07/23/2018 11:59	144059
SW-846 1311, 5030, 8260B, VOLATILE ORGANIC COMPOUNDS IN TCLP EXTRACT BY GC/MS								
Benzene	NELAP	0.050		ND	mg/L	100	07/26/2018 13:47	144220
Ethylbenzene	NELAP	0.200		ND	mg/L	100	07/26/2018 13:47	144220
Toluene	NELAP	0.200		ND	mg/L	100	07/26/2018 13:47	144220
Xylenes, Total	NELAP	0.200	B	ND	mg/L	100	07/26/2018 13:47	144220
Surr: 1,2-Dichloroethane-d4	*	79.6-118		102.0	%REC	100	07/26/2018 13:47	144220
Surr: 4-Bromofluorobenzene	*	83.9-115		97.4	%REC	100	07/26/2018 13:47	144220
Surr: Dibromofluoromethane	*	84.9-113		100.9	%REC	100	07/26/2018 13:47	144220
Surr: Toluene-d8	*	86.7-112		100.8	%REC	100	07/26/2018 13:47	144220
MBLK has detectable levels between the MDL and the RL for total xylenes. If sample results show a low level, they may be biased high by the detectable levels in the MBLK. Sample results less than the RL are reportable.								

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18071283
Report Date: 26-Jul-18

SW-846 1311, 9036, IN TCLP EXTRACT

Batch R249991 SampType: MBLK		Units mg/L								Date Analyzed
SampID: ICB/MBLK										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	10		< 10	5.000	0	0	-100	100	07/24/2018	

Batch R249991 SampType: MBLK		Units mg/L								Date Analyzed
SampID: MBLK-144056										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	10		< 10	5.000	0	0	-100	100	07/24/2018	

Batch R249991 SampType: LCS		Units mg/L								Date Analyzed
SampID: ICB/LCS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	10		19	20.00	0	95.6	90	110	07/24/2018	

Batch R249991 SampType: MS		Units mg/L								Date Analyzed
SampID: 18071264-002BMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	10	S	48	10.00	33.31	142.5	90	110	07/24/2018	

Batch R249991 SampType: MSD		Units mg/L								Date Analyzed
SampID: 18071264-002BMDS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Sulfate	10	S	50	10.00	33.31	166.7	47.56	4.96	07/24/2018	

Batch R249991 SampType: MS		Units mg/L								Date Analyzed
SampID: 18071283-001AMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate	10	J	10	10.00	0	98.4	85	115	07/24/2018	

Batch R249991 SampType: MSD		Units mg/L								Date Analyzed
SampID: 18071283-001AMSD										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Sulfate	10		10	10.00	0	101.7	9.840	3.30	07/24/2018	

SW-846 1311, 9040 B, IN TCLP EXTRACT

Batch R249941 SampType: LCS		Units								Date Analyzed
SampID: LCS-R249941										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
pH	1.00		7.00	7.000	0	100.0	99.1	100.9	07/23/2018	

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18071283
Report Date: 26-Jul-18

SW-846 1311, 9040 B, IN TCLP EXTRACT

Batch R249941		SampType: DUP	Units				RPD Limit 10			
SampID: 18071283-001ADUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH		1.00	H	9.89				9.810	0.81	07/23/2018

SW-846 1311, 9251, IN TCLP EXTRACT

Batch R250046		SampType: MBLK		Units mg/L						
SampID: ICB/MBLK										Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride	5		< 5	0.5000	0	0	-100	100	07/24/2018	

Batch R250046		SampType: MBLK	Units mg/L							
SampID: MBLK-144056										Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride	5		< 5	0.5000	0	0	-100	100	07/24/2018	

Batch R250046		SampType: LCS		Units mg/L						
SampID: ICV/LCS										Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Chloride		5		20	20.00	0	101.0	90	110	07/24/2018

Batch R250046		SampType: MS		Units mg/L						
SampID: 18071283-001AMS										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		5		19	20.00	0	94.8	85	115	07/24/2018

Batch R250046		SampType: MSD	Units mg/L				RPD Limit 15			Date Analyzed
SampID: 18071283-001AMSD										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Chloride	5		19	20.00	0	93.8	18.96	1.11	07/24/2018	

SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 144058		SampType: MBLK		Units mg/L						
SampID: MBLK-144058										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Arsenic	0.250		< 0.250	0.08700	0	0	-100	100	07/23/2018	
Barium	0.450		< 0.450	0.1500	0	0	-100	100	07/23/2018	
Boron	0.200		< 0.200	0.09000	0	0	-100	100	07/23/2018	
Cadmium	0.0200		< 0.0200	0.005000	0	0	-100	100	07/23/2018	
Chromium	0.100	JS	0.062	0.01500	0	413.3	-100	100	07/23/2018	
Lead	0.400		< 0.400	0.04000	0	0	-100	100	07/23/2018	
Selenium	0.500		< 0.500	0.1700	0	0	-100	100	07/23/2018	
Silver	0.0700		< 0.0700	0.02700	0	0	-100	100	07/23/2018	

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18071283
Report Date: 26-Jul-18

SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 144058		SampType: LCS		Units mg/L						
SampID: LCS-144058										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Arsenic	0.250	B	5.13	5.000	0	102.6	85	115	07/23/2018	
Barium	0.450		19.5	20.00	0	97.7	85	115	07/23/2018	
Boron	0.200		4.86	5.000	0	97.1	85	115	07/23/2018	
Cadmium	0.0200		0.497	0.5000	0	99.4	85	115	07/23/2018	
Chromium	0.100		1.96	2.000	0	97.9	85	115	07/23/2018	
Lead	0.400		5.07	5.000	0	101.4	85	115	07/23/2018	
Selenium	0.500		4.91	5.000	0	98.1	85	115	07/23/2018	
Silver	0.0700		0.479	0.5000	0	95.8	85	115	07/23/2018	

Batch 144058		SampType: MS		Units mg/L						
SampID: 18071270-001AMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Arsenic	0.250		5.02	5.000	0	100.4	75	125	07/23/2018	
Barium	0.450		19.1	20.00	0	95.4	75	125	07/23/2018	
Cadmium	0.0200		0.488	0.5000	0	97.6	75	125	07/23/2018	
Chromium	0.100	B	1.92	2.000	0	96.0	75	125	07/23/2018	
Lead	0.400		4.91	5.000	0	98.2	75	125	07/23/2018	
Selenium	0.500		4.80	5.000	0	96.1	75	125	07/23/2018	
Silver	0.0700		0.470	0.5000	0	94.0	75	125	07/23/2018	

Batch 144058		SampType: MS		Units mg/L						
SampID: 18071283-001AMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Arsenic	0.250	B	5.00	5.000	0	100.0	75	125	07/23/2018	
Barium	0.450		19.1	20.00	0.1640	94.8	75	125	07/23/2018	
Boron	0.200		4.70	5.000	0	94.1	75	125	07/23/2018	
Cadmium	0.0200		0.482	0.5000	0	96.4	75	125	07/23/2018	
Chromium	0.100		1.90	2.000	0	95.0	75	125	07/23/2018	
Lead	0.400		4.91	5.000	0	98.2	75	125	07/23/2018	
Selenium	0.500		4.75	5.000	0	95.1	75	125	07/23/2018	
Silver	0.0700		0.468	0.5000	0	93.6	75	125	07/23/2018	

Batch 144058		SampType: MSD		Units mg/L				RPD Limit 20		
SampID: 18071283-001AMSD										Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Arsenic		0.250		4.96	5.000	0	99.1	5.000	0.86	07/23/2018
Barium		0.450		18.9	20.00	0.1640	93.9	19.13	1.00	07/23/2018
Boron		0.200		4.72	5.000	0	94.3	4.705	0.23	07/23/2018
Cadmium		0.0200		0.475	0.5000	0	95.0	0.4820	1.46	07/23/2018
Chromium		0.100	B	1.87	2.000	0	93.5	1.899	1.54	07/23/2018
Lead		0.400		4.86	5.000	0	97.1	4.910	1.13	07/23/2018
Selenium		0.500		4.82	5.000	0	96.3	4.754	1.30	07/23/2018
Silver		0.0700		0.467	0.5000	0	93.4	0.4680	0.21	07/23/2018

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18071283
Report Date: 26-Jul-18

SW-846 1311, 7470A IN TCLP EXTRACT

Batch 144059		SampType: MBLK		Units mg/L					
SampID: MBLK-144059									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		< 0.00020	000055C	0	0	-100	100	07/23/2018

Batch 144059		SampType: LCS		Units mg/L					
SampID: LCS-144059		Date Analyzed							
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Mercury	0.00020		0.00547	0.00500C	0	109.4	85	115	07/23/2018

Batch 144059		SampType: MS		Units mg/L					
SampID: 18071270-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00529	0.00500C	0	105.9	75	125	07/23/2018

Batch 144059		SampType: MSD		Units mg/L				RPD Limit 15		
SampID: 18071270-001AMSD										Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Mercury		0.00020		0.00523	0.00500C	0	104.7	0.005293	1.12	
										07/23/2018

Batch 144059		SampType: MS		Units mg/L					
SampID: 18071283-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00532	0.00500C	0	106.3	75	125	07/23/2018

SW-846 1311, 5030, 8260B, VOLATILE ORGANIC COMPOUNDS IN TCLP EXTRACT BY GC/MS

Batch 144220		SampType: MBLK		Units µg/L						
SampID: MBLK-R180726A-1										Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Benzene	0.5		ND						07/26/2018	
Ethylbenzene	2.0		ND						07/26/2018	
Toluene	2.0		ND						07/26/2018	
Xylenes, Total	2.0	J	0.1						07/26/2018	
Surr: 1,2-Dichloroethane-d4			50.7	50.00		101.3	79.6	118	07/26/2018	
Surr: 4-Bromofluorobenzene			50.1	50.00		100.2	83.9	115	07/26/2018	
Surr: Dibromofluoromethane			51.2	50.00		102.4	84.9	113	07/26/2018	
Surr: Toluene-d8			50.2	50.00		100.5	86.7	112	07/26/2018	

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18071283
Report Date: 26-Jul-18

SW-846 1311, 5030, 8260B, VOLATILE ORGANIC COMPOUNDS IN TCLP EXTRACT BY GC/MS

Batch 144220		SampType: LCSD		Units µg/L				RPD Limit 40			
SampID: LCSD-R180726A-1											Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Analyzed		
Benzene	0.5		43.8	50.00	0	87.7	45.02	2.66	07/26/2018		
Ethylbenzene	2.0		43.4	50.00	0	86.7	44.19	1.87	07/26/2018		
Toluene	2.0		43.9	50.00	0	87.9	44.64	1.60	07/26/2018		
Xylenes, Total	2.0	B	132	150.0	0	87.8	133.9	1.63	07/26/2018		
Surr: 1,2-Dichloroethane-d4			48.6	50.00		97.1			07/26/2018		
Surr: 4-Bromofluorobenzene			51.7	50.00		103.3			07/26/2018		
Surr: Dibromofluoromethane			50.3	50.00		100.5			07/26/2018		
Surr: Toluene-d8			50.4	50.00		100.8			07/26/2018		

Batch 144220		SampType: LCS		Units µg/L						
SampID: LCS-R180726A-1										Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Benzene	0.5		45.0	50.00	0	90.0	77.8	120	07/26/2018	
Ethylbenzene	2.0		44.2	50.00	0	88.4	81.8	117	07/26/2018	
Toluene	2.0		44.6	50.00	0	89.3	82.2	113	07/26/2018	
Xylenes, Total	2.0	B	134	150.0	0	89.3	82.7	118	07/26/2018	
Surr: 1,2-Dichloroethane-d4			48.4	50.00		96.9	79.6	118	07/26/2018	
Surr: 4-Bromofluorobenzene			49.8	50.00		99.7	83.9	115	07/26/2018	
Surr: Dibromofluoromethane			50.7	50.00		101.3	84.9	113	07/26/2018	
Surr: Toluene-d8			50.2	50.00		100.3	86.7	112	07/26/2018	

Batch 144220		SampType: MS		Units mg/L					
SampID: 18071283-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Benzene	0.050		9.76	10.00	0	97.6	66.8	122	07/26/2018
Ethylbenzene	0.200		10.5	10.00	0	104.9	77.7	115	07/26/2018
Toluene	0.200		10.0	10.00	0	100.0	69.8	112	07/26/2018
Xylenes, Total	0.200	B	21.3	20.00	0	106.7	77.6	113	07/26/2018
Surr: 1,2-Dichloroethane-d4			5.34	5.000		106.9	74.7	129	07/26/2018
Surr: 4-Bromofluorobenzene			5.33	5.000		106.6	86	119	07/26/2018
Surr: Dibromofluoromethane			5.08	5.000		101.6	81.7	123	07/26/2018
Surr: Toluene-d8			4.96	5.000		99.2	84.3	114	07/26/2018



Receiving Check List

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 18071283

Client Project: J024917.04 Meredosia

Report Date: 26-Jul-18

Carrier: Alyssa Okorn

Received By: BV

Completed by:

On:

20-Jul-18

Nathan Harer

Reviewed by:

On:

23-Jul-18

Elizabeth A. Hurley

Pages to follow:

Chain of custody

1

Extra pages included

0

Shipping container/cooler in good condition?

Yes ☐

No ☐

Not Present ☒

Temp °C 27.80

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 ☐

NA ☒

NPDES/CWA TCN interferences checked/treated in the field?

Yes ☐

No ☐

NA ☒

Any No responses must be detailed below or on the COC.

The sample was out of temperature compliance upon receipt. Jessie Goodwin was notified of this error via work order summary. - ehurley - 7/23/2018 8:31:40 AM

Samples requiring pH should be analyzed as soon as possible after collection. Samples submitted for pH analysis are analyzed as soon as practicable upon arrival at the laboratory. - ehurley - 7/23/2018 8:31:57 AM

CHAIN OF CUSTODY

pg. 1 of 1

Work order # GE
Fax: (618) 344-1005

TEKLAB, INC. 5445 Horseshoe Lake Road - Collinsville, IL 62234 - Phone: (618) 344-1004 - Fax: (618) 344-1005

Client:	Geotechnology, Inc.	
Address:	11816 Lackland Road	
City / State / Zip	St. Louis, MO 63146	
Contact:	Jessie Goodwin	Phone: (314) 997-7440
E-Mail:	jgoodwin@geotechnology.com	Fax: (314) 997-2067

Samples on: ☐ ICE ☐ BLUE ICE ☒ NO ICE 2780°C
Preserved in: ☐ LAB ☐ FIELD **FOR LAB USE ONLY**
Lab Notes

Client Comments:

*8 RCRA+Boron

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 the comment section. ☐ Yes ☐ No

[illegible]

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions.

BottleOrder: 42788



7130113

October 31, 2018

Jessie Goodwin
Geotechnology, Inc.
11816 Lackland Road
St. Louis, MO 63146
TEL: (573) 270-1313
FAX: (314) 997-2067



RE: J024917.04 Meredosia

WorkOrder: 18101744

Dear Jessie Goodwin:

TEKLAB, INC received 1 sample on 10/25/2018 12:11:00 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,



Emily Pohlman
Project Manager
(618)344-1004 ex 44
epohlman@teklabinc.com

Client: Geotechnology, Inc.

Work Order: 18101744

Client Project: J024917.04 Meredosia

Report Date: 31-Oct-2018

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	4
Accreditations	5
Laboratory Results	6
Quality Control Results	7
Receiving Check List	17
Chain of Custody	Appended

Client: Geotechnology, Inc.

Work Order: 18101744

Client Project: J024917.04 Meredosia

Report Date: 31-Oct-2018

Abbr Definition

- * Analytes on report marked with an asterisk are not NELAP accredited
- CCV Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
- CRQL A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
- 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 dilution factors.
- DNI Did not ignite
- DUP Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
- 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 is a sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes and 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.
- 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).
- MBLK 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 "The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
- 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.
- 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.
- TIC Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
- TNTC Too numerous to count (> 200 CFU)

Qualifiers

- | | |
|---|--|
| # - Unknown hydrocarbon | B - Analyte detected in associated Method Blank |
| C - RL shown is a Client Requested Quantitation Limit | E - Value above quantitation range |
| H - Holding times exceeded | I - Associated internal standard was outside method criteria |
| 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 | T - TIC(Tentatively identified compound) |
| X - Value exceeds Maximum Contaminant Level | |

Client: Geotechnology, Inc.**Work Order:** 18101744**Client Project:** J024917.04 Meredosia**Report Date:** 31-Oct-2018**Cooler Receipt Temp:** 20.40 °C

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425

Phone (618) 344-1004

Fax (618) 344-1005

Email jhriley@teklabinc.com

Collinsville Air

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425

Phone (618) 344-1004

Fax (618) 344-1005

Email EHurley@teklabinc.com

Springfield

Address 3920 Pintail Dr
Springfield, IL 62711-9415

Phone (217) 698-1004

Fax (217) 698-1005

Email KKlostermann@teklabinc.com

Chicago

Address 1319 Butterfield Rd.
Downers Grove, IL 60515

Phone (630) 324-6855

Fax

Email arenner@teklabinc.com

Kansas City

Address 8421 Nieman Road
Lenexa, KS 66214

Phone (913) 541-1998

Fax (913) 541-1998

Email jhriley@teklabinc.com

Client: Geotechnology, Inc.**Work Order:** 18101744**Client Project:** J024917.04 Meredosia**Report Date:** 31-Oct-2018

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2019	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2019	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2019	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2019	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2019	Collinsville
Arkansas	ADEQ	88-0966		3/14/2019	Collinsville
Illinois	IDPH	17584		5/31/2019	Collinsville
Indiana	ISDH	C-IL-06		1/31/2019	Collinsville
Kentucky	KDEP	98006		12/31/2018	Collinsville
Kentucky	UST	0073		1/31/2019	Collinsville
Louisiana	LDPH	LA170027		12/31/2018	Collinsville
Missouri	MDNR	930		1/31/2019	Collinsville
Missouri	MDNR	00930		5/31/2019	Collinsville
Tennessee	TDEC	04905		1/31/2019	Collinsville

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia
Lab ID: 18101744-001
Matrix: SOLID

Work Order: 18101744
Report Date: 31-Oct-2018

Client Sample ID: Sand-1

Collection Date: 10/25/2018 10:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 1311, 9036, IN TCLP EXTRACT								
Sulfate	*	10		< 10	mg/L	1	10/29/2018 13:59	R253994
SW-846 1311, 9251, IN TCLP EXTRACT								
Chloride	NELAP	5		< 5	mg/L	1	10/29/2018 13:57	R253998
SW-846 9045C								
pH (1:1)	NELAP	1.00		8.79		1	10/26/2018 14:24	R253919
SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP								
Arsenic	NELAP	0.250		< 0.250	mg/L	1	10/29/2018 18:03	147152
Barium	NELAP	0.45	J	0.17	mg/L	1	10/29/2018 18:03	147152
Boron	NELAP	10.0		< 10.0	mg/L	1	10/29/2018 18:03	147152
Cadmium	NELAP	0.0200		< 0.0200	mg/L	1	10/29/2018 18:03	147152
Chromium	NELAP	0.100		< 0.100	mg/L	1	10/29/2018 18:03	147152
Lead	NELAP	0.400		< 0.400	mg/L	1	10/29/2018 18:03	147152
Selenium	NELAP	0.500		< 0.500	mg/L	1	10/29/2018 18:03	147152
Silver	NELAP	0.0700		< 0.0700	mg/L	1	10/29/2018 18:03	147152
SW-846 1311, 7470A IN TCLP EXTRACT								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	10/29/2018 9:01	147156
SW-846 1311, 5030, 8260B, VOLATILE ORGANIC COMPOUNDS IN TCLP EXTRACT BY GC/MS								
Benzene	NELAP	0.050		ND	mg/L	100	10/29/2018 14:05	147192
Ethylbenzene	NELAP	0.200		ND	mg/L	100	10/29/2018 14:05	147192
Toluene	NELAP	0.200		ND	mg/L	100	10/29/2018 14:05	147192
Xylenes, Total	NELAP	0.200		ND	mg/L	100	10/29/2018 14:05	147192
Surr: 1,2-Dichloroethane-d4	*	79.6-118		93.5	%REC	100	10/29/2018 14:05	147192
Surr: 4-Bromofluorobenzene	*	83.9-115		99.0	%REC	100	10/29/2018 14:05	147192
Surr: Dibromofluoromethane	*	84.9-113		98.2	%REC	100	10/29/2018 14:05	147192
Surr: Toluene-d8	*	86.7-112		93.9	%REC	100	10/29/2018 14:05	147192

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18101744
Report Date: 31-Oct-2018

SW-846 1311, 9036, IN TCLP EXTRACT

Batch R253994		SampType: MBLK		Units mg/L						
SampID: ICB/MBLK										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Sulfate	10		< 10	6.000	0	0	-100	100	10/29/2018	
Sulfate	10		< 10	6.000	0	0	-100	100	10/29/2018	

Batch R253994		SampType: MBLK		Units mg/L						
SampID: MBLK-147125										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Sulfate	10		< 10	6.000	0	0	-100	100	10/29/2018	

Batch R253994		SampType: LCS		Units mg/L						
SampID: ICV/LCS										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Sulfate	10		19	20.00	0	94.6	90	110	10/29/2018	
Sulfate	10		19	20.00	0	94.4	90	110	10/29/2018	

Batch R253994		SampType: MS		Units mg/L					
SampID: 18101823-001CMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate	100	S	398	100.0	309.3	88.5	90	110	10/29/2018

Batch R253994		SampType: MSD	Units mg/L					RPD Limit 10		
SampID: 18101823-001CMSD										Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Sulfate		100	S	394	100.0	309.3	84.7	397.8	0.95	10/29/2018

Batch R253994		SampType: MS		Units mg/L						
SampID: 18101869-003BMS										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		50	S	166	50.00	105.6	120.9	90	110	10/29/2018

Batch R253994		SampType: MSD	Units mg/L					RPD Limit 10		
SampID: 18101869-003BMSD										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate		50	S	163	50.00	105.6	114.0	166.0	2.09	10/29/2018

SW-846 1311, 9251, IN TCLP EXTRACT

Batch R253998		SampType: MBLK		Units mg/L						
SampID: ICB/MBLK										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Chloride	5		< 5	0.5000	0	0	-100	100	10/29/2018	
Chloride	5		< 5	0.5000	0	0	-100	100	10/29/2018	

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18101744
Report Date: 31-Oct-2018

SW-846 1311, 9251, IN TCLP EXTRACT

Batch R253998		SampType: MBLK		Units mg/L						
SampID: MBLK-147125										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Chloride	5		< 5	0.5000	0	0	-100	100	10/29/2018	

Batch R253998		SampType: LCS		Units mg/L						
SampID: ICV/LCS										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Chloride	5		20	20.00	0	102.4	90	110	10/29/2018	
Chloride	5		21	20.00	0	104.7	90	110	10/29/2018	

Batch R253998		SampType: MS		Units mg/L					
SampID: 18101823-001CMS									Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Chloride	5		32	20.00	13.84	89.5	85	115	10/29/2018

Batch R253998		SampType: MSD		Units mg/L				RPD Limit 15		
SampID: 18101823-001CMSD										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride		5		31	20.00	13.84	87.0	31.74	1.59	10/29/2018

Batch R253998		SampType: MS		Units mg/L						
SampID: 18101869-003BMS										Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride	25		219	100.0	127.2	92.1	85	115	10/29/2018	

Batch R253998		SampType: MSD		Units mg/L				RPD Limit 15		Date Analyzed
SampID: 18101869-003BMSD										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Chloride	25		218	100.0	127.2	90.4	219.4	0.78	10/29/2018	

SW-846 9045C

Batch R253919		SampType: LCS		Units						
SampID: LCS-R253919										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
pH (1:1)		1.00		7.03	7.000	0	100.4	99.1	100.8	10/26/2018

Batch R253919		SampType: DUP		Units				RPD Limit 10			
SampID: 18101744-001ADUP										Date Analyzed	
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
pH (1:1)		1.00		9.04				8.790	2.80	10/26/2018	

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

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Batch R253919		SampType: DUP	Units				RPD Limit 10			
SampID: 18101751-001BDUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)		1.00		8.14				8.050	1.11	10/26/2018
Batch R253919		SampType: DUP	Units				RPD Limit 10			
SampID: 18101751-002BDUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)		1.00		7.53				7.760	3.01	10/26/2018
Batch R253919		SampType: DUP	Units				RPD Limit 10			
SampID: 18101751-003BDUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)		1.00		8.29				8.240	0.60	10/26/2018
Batch R253919		SampType: DUP	Units				RPD Limit 10			
SampID: 18101751-004BDUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)		1.00		8.79				8.830	0.45	10/26/2018
Batch R253919		SampType: DUP	Units				RPD Limit 10			
SampID: 18101751-005BDUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)		1.00		6.69				6.870	2.65	10/26/2018
Batch R253919		SampType: DUP	Units				RPD Limit 10			
SampID: 18101751-006BDUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)		1.00		5.91				6.080	2.84	10/26/2018
Batch R253919		SampType: DUP	Units				RPD Limit 10			
SampID: 18101751-007BDUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)		1.00		8.14				8.050	1.11	10/26/2018
Batch R253919		SampType: DUP	Units				RPD Limit 10			
SampID: 18101751-008BDUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)		1.00		8.63				8.600	0.35	10/26/2018
Batch R253919		SampType: DUP	Units				RPD Limit 10			
SampID: 18101751-010BDUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)		1.00		8.35				8.250	1.20	10/26/2018

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Client Project: J024917.04 Meredosia

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Batch R253919		SampType: DUP	Units		RPD Limit 10					
SampID: 18101753-001BDUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)		1.00		7.67				7.530	1.84	10/26/2018
Batch R253919		SampType: DUP	Units		RPD Limit 10					
SampID: 18101753-002BDUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)		1.00		8.41				8.390	0.24	10/26/2018
Batch R253919		SampType: DUP	Units		RPD Limit 10					
SampID: 18101753-003BDUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)		1.00		8.07				8.170	1.23	10/26/2018
Batch R253919		SampType: DUP	Units		RPD Limit 10					
SampID: 18101753-004BDUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)		1.00		8.60				8.570	0.35	10/26/2018
Batch R253919		SampType: DUP	Units		RPD Limit 10					
SampID: 18101753-005BDUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)		1.00		8.57				8.580	0.12	10/26/2018
Batch R253919		SampType: DUP	Units		RPD Limit 10					
SampID: 18101798-001ADUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)		1.00		8.68				8.740	0.69	10/26/2018
Batch R253919		SampType: DUP	Units		RPD Limit 10					
SampID: 18101798-002ADUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)		1.00		8.18				8.240	0.73	10/26/2018
Batch R253919		SampType: DUP	Units		RPD Limit 10					
SampID: 18101798-003ADUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)		1.00		7.68				7.830	1.93	10/26/2018
Batch R253919		SampType: DUP	Units		RPD Limit 10					
SampID: 18101798-004ADUP										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)		1.00		8.09				8.070	0.25	10/26/2018

Client: Geotechnology, Inc.

Work Order: 18101744

Client Project: J024917.04 Meredosia

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SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 147152		SampType: MBLK		Units mg/L						
SampID: MBLK-147152										Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Arsenic	0.250		< 0.250	0.08700	0	0	-100	100	10/29/2018	
Arsenic	0.250		< 0.250	0.08700	0	0	-100	100	10/31/2018	
Barium	0.450		< 0.450	0.1500	0	0	-100	100	10/31/2018	
Barium	0.450		< 0.450	0.1500	0	0	-100	100	10/29/2018	
Boron	10.0		< 10.0	0.2300	0	0	-100	100	10/31/2018	
Boron	10.0		< 10.0	0.2300	0	0	-100	100	10/29/2018	
Cadmium	0.0200		< 0.0200	0.005000	0	0	-100	100	10/31/2018	
Cadmium	0.0200		< 0.0200	0.005000	0	0	-100	100	10/29/2018	
Chromium	0.100		< 0.100	0.03400	0	0	-100	100	10/31/2018	
Chromium	0.100		< 0.100	0.03400	0	0	-100	100	10/29/2018	
Lead	0.400		< 0.400	0.04000	0	0	-100	100	10/31/2018	
Lead	0.400		< 0.400	0.04000	0	0	-100	100	10/29/2018	
Selenium	0.500		< 0.500	0.1700	0	0	-100	100	10/29/2018	
Selenium	0.500		< 0.500	0.1700	0	0	-100	100	10/31/2018	
Silver	0.0700		< 0.0700	0.02700	0	0	-100	100	10/29/2018	
Silver	0.0700		< 0.0700	0.02700	0	0	-100	100	10/31/2018	

Batch 147152		SampType: LCS		Units mg/L						
SampID: LCS-147152										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Arsenic	0.250		5.00	5.000	0	100.0	85	115	10/31/2018	
Arsenic	0.250		4.79	5.000	0	95.8	85	115	10/29/2018	
Barium	0.450		19.7	20.00	0	98.6	85	115	10/29/2018	
Barium	0.450		19.6	20.00	0	98.2	85	115	10/31/2018	
Boron	10.0	J	4.9	5.000	0	98.4	85	115	10/31/2018	
Boron	10.0	J	4.8	5.000	0	97.0	85	115	10/29/2018	
Cadmium	0.0200		0.463	0.5000	0	92.6	85	115	10/29/2018	
Cadmium	0.0200		0.483	0.5000	0	96.6	85	115	10/31/2018	
Chromium	0.100		2.03	2.000	0	101.7	85	115	10/31/2018	
Chromium	0.100		2.00	2.000	0	99.8	85	115	10/29/2018	
Lead	0.400		5.04	5.000	0	100.7	85	115	10/31/2018	
Lead	0.400		4.87	5.000	0	97.3	85	115	10/29/2018	
Selenium	0.500		4.68	5.000	0	93.6	85	115	10/29/2018	
Selenium	0.500		4.98	5.000	0	99.5	85	115	10/31/2018	
Silver	0.0700		0.471	0.5000	0	94.2	85	115	10/29/2018	
Silver	0.0700		0.491	0.5000	0	98.2	85	115	10/31/2018	

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18101744
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SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 147152		SampType: MS		Units mg/L					
SampID: 18101700-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		4.71	5.000	0	94.2	75	125	10/29/2018
Barium	0.450		19.8	20.00	0.3610	97.1	75	125	10/29/2018
Cadmium	0.0200		0.459	0.5000	0	91.8	75	125	10/29/2018
Chromium	0.100		1.97	2.000	0	98.3	75	125	10/29/2018
Lead	0.400		4.80	5.000	0	96.0	75	125	10/29/2018
Selenium	0.500		4.53	5.000	0	90.5	75	125	10/29/2018
Silver	0.0700		0.463	0.5000	0	92.6	75	125	10/29/2018

Batch 147152		SampType: MS		Units mg/L						
SampID: 18101744-001AMS										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Arsenic	0.250		4.96	5.000	0	99.1	75	125	10/29/2018	
Barium	0.450		20.0	20.00	0.1700	99.1	75	125	10/29/2018	
Boron	10.0	J	4.9	5.000	0	98.7	75	125	10/29/2018	
Cadmium	0.0200		0.471	0.5000	0	94.2	75	125	10/29/2018	
Chromium	0.100		2.01	2.000	0	100.5	75	125	10/29/2018	
Lead	0.400		4.96	5.000	0	99.3	75	125	10/29/2018	
Selenium	0.500		4.78	5.000	0	95.6	75	125	10/29/2018	
Silver	0.0700		0.476	0.5000	0	95.2	75	125	10/29/2018	

Batch 147152		SampType: MSD		Units mg/L				RPD Limit 20		
SampID: 18101744-001AMSD										Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Arsenic		0.250		4.82	5.000	0	96.5	4.957	2.72	10/29/2018
Barium		0.450		19.4	20.00	0.1700	95.9	19.99	3.25	10/29/2018
Boron		10.0	J	4.9	5.000	0	98.0	4.935	0.00	10/29/2018
Cadmium		0.0200		0.464	0.5000	0	92.8	0.4710	1.50	10/29/2018
Chromium		0.100		2.00	2.000	0	99.8	2.010	0.70	10/29/2018
Lead		0.400		4.89	5.000	0	97.7	4.964	1.56	10/29/2018
Selenium		0.500		4.81	5.000	0	96.3	4.780	0.69	10/29/2018
Silver		0.0700		0.478	0.5000	0	95.6	0.4760	0.42	10/29/2018

Batch 147152		SampType: MS		Units mg/L					
SampID: 18101751-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		4.90	5.000	0	98.1	75	125	10/29/2018
Barium	0.450		20.6	20.00	0.9170	98.5	75	125	10/29/2018
Lead	0.400		5.32	5.000	0.4190	98.0	75	125	10/29/2018
Selenium	0.500		4.61	5.000	0	92.2	75	125	10/29/2018

Client: Geotechnology, Inc.

Work Order: 18101744

Client Project: J024917.04 Meredosia

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SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 147152		SampType: MS		Units mg/L					
SampID: 18101751-004AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		4.85	5.000	0	97.0	75	125	10/29/2018
Barium	0.450		21.6	20.00	1.810	98.8	75	125	10/29/2018
Lead	0.400		4.90	5.000	0	97.9	75	125	10/29/2018
Selenium	0.500		4.67	5.000	0	93.4	75	125	10/29/2018

Batch 147152		SampType: MSD		Units mg/L				RPD Limit 20		
SampID: 18101751-004AMSD										Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Arsenic		0.250		4.79	5.000	0	95.8	4.848	1.16	10/29/2018
Barium		0.450		21.3	20.00	1.810	97.5	21.58	1.26	10/29/2018
Lead		0.400		4.86	5.000	0	97.3	4.897	0.68	10/29/2018
Selenium		0.500		4.74	5.000	0	94.8	4.671	1.51	10/29/2018

Batch 147152		SampType: MS		Units mg/L						
SampID: 18101751-005AMS										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Arsenic	0.250		4.76	5.000	0	95.2	75	125	10/29/2018	
Barium	0.450		20.4	20.00	0.7560	98.1	75	125	10/29/2018	
Lead	0.400		4.92	5.000	0	98.3	75	125	10/29/2018	
Selenium	0.500		4.66	5.000	0	93.1	75	125	10/29/2018	

Batch 147152		SampType: MS		Units mg/L						
SampID: 18101753-003AMS										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Arsenic	0.250		4.76	5.000	0	95.2	75	125	10/29/2018	
Barium	0.450		20.5	20.00	0.6510	99.0	75	125	10/29/2018	
Lead	0.400		4.82	5.000	0	96.4	75	125	10/29/2018	
Selenium	0.500		4.66	5.000	0	93.1	75	125	10/29/2018	

Batch 147152		SampType: MS		Units mg/L						
SampID: 18101753-004AMS										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Arsenic	0.250		5.00	5.000	0	100.1	75	125	10/31/2018	
Barium	0.450		19.8	20.00	0.3100	97.2	75	125	10/31/2018	
Lead	0.400		5.01	5.000	0	100.1	75	125	10/31/2018	
Selenium	0.500		4.96	5.000	0	99.2	75	125	10/31/2018	

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

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SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 147152		SampType: MSD		Units mg/L		RPD Limit 20				Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Arsenic		0.250		4.97	5.000	0	99.4	5.004	0.64	10/31/2018
Barium		0.450		19.7	20.00	0.3100	97.0	19.75	0.15	10/31/2018
Lead		0.400		4.97	5.000	0	99.4	5.006	0.68	10/31/2018
Selenium		0.500		4.89	5.000	0	97.8	4.959	1.40	10/31/2018

SW-846 1311, 7470A IN TCLP EXTRACT

Batch 147156		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	0.000550C	0	0	-100	100	10/29/2018

Batch 147156		SampType: LCS		Units mg/L						Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Mercury		0.00020		0.00524	0.00500C	0	104.8	85	115	10/29/2018

Batch 147156		SampType: MS		Units mg/L						Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Mercury		0.00020		0.00461	0.00500C	0	92.2	75	125	10/29/2018

Batch 147156		SampType: MS		Units mg/L						Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Mercury		0.00020		0.00555	0.00500C	0	110.9	75	125	10/29/2018

Batch 147156		SampType: MS		Units mg/L						Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Mercury		0.00020		0.00545	0.00500C	0	108.9	75	125	10/29/2018

Batch 147156		SampType: MS		Units mg/L						Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Mercury		0.00020		0.00546	0.00500C	0	109.2	75	125	10/29/2018

Batch 147156		SampType: MSD		Units mg/L		RPD Limit 15				Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Mercury		0.00020		0.00537	0.00500C	0	107.4	0.005462	1.72	10/29/2018

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18101744
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SW-846 1311, 7470A IN TCLP EXTRACT

Batch 147156		SampType: MS		Units mg/L					
SampID: 18101798-001AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00523	0.00500C	0	104.7	75	125	10/29/2018

Batch 147156		SampType: MS		Units mg/L					
SampID: 18101798-002AMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		0.00434	0.00500C	0	86.7	75	125	10/29/2018

Batch 147156		SampType: MS		Units mg/L						
SampID: 18101798-004AMS										Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Mercury	0.00020		0.00525	0.00500C	0	105.0	75	125	10/29/2018	

Batch 147156		SampType: MSD		Units mg/L				RPD Limit 15		
SampID: 18101798-004AMSD										Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Mercury		0.00020		0.00526	0.00500C	0	105.2	0.005252	0.18	
										10/29/2018

SW-846 1311, 5030, 8260B, VOLATILE ORGANIC COMPOUNDS IN TCLP EXTRACT BY GC/MS

Batch 147192		SampType: MBLK		Units µg/L						
SampID: MBLK-R181029A-1										Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Benzene	0.5		ND						10/29/2018	
Ethylbenzene	2.0		ND						10/29/2018	
Toluene	2.0		ND						10/29/2018	
Xylenes, Total	4.0		ND						10/29/2018	
Surr: 1,2-Dichloroethane-d4			45.8	50.00		91.6	79.6	118	10/29/2018	
Surr: 4-Bromofluorobenzene			50.3	50.00		100.6	83.9	115	10/29/2018	
Surr: Dibromofluoromethane			48.6	50.00		97.2	84.9	113	10/29/2018	
Surr: Toluene-d8			48.1	50.00		96.1	86.7	112	10/29/2018	

Batch 147192		SampType: LCSD		Units µg/L				RPD Limit 40		
SampID: LCSD-R181029A-1										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Benzene	0.5		55.6	50.00	0	111.3	57.18	2.71	10/29/2018	
Ethylbenzene	2.0		50.2	50.00	0	100.3	52.13	3.83	10/29/2018	
Toluene	2.0		49.9	50.00	0	99.8	51.85	3.85	10/29/2018	
Xylenes, Total	4.0		151	150.0	0	100.4	156.2	3.63	10/29/2018	
Surr: 1,2-Dichloroethane-d4			46.5	50.00		93.0			10/29/2018	
Surr: 4-Bromofluorobenzene			49.9	50.00		99.9			10/29/2018	
Surr: Dibromofluoromethane			49.1	50.00		98.2			10/29/2018	
Surr: Toluene-d8			47.9	50.00		95.7			10/29/2018	

Client: Geotechnology, Inc.
Client Project: J024917.04 Meredosia

Work Order: 18101744
Report Date: 31-Oct-2018

SW-846 1311, 5030, 8260B, VOLATILE ORGANIC COMPOUNDS IN TCLP EXTRACT BY GC/MS

Batch 147192		SampType: LCS		Units µg/L						
SampID: LCS-R181029A-1										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Benzene	0.5		57.2	50.00	0	114.4	75.8	121	10/29/2018	
Ethylbenzene	2.0		52.1	50.00	0	104.3	80.7	114	10/29/2018	
Toluene	2.0		51.8	50.00	0	103.7	78.3	112	10/29/2018	
Xylenes, Total	4.0		156	150.0	0	104.2	80.2	113	10/29/2018	
Surr: 1,2-Dichloroethane-d4			46.2	50.00		92.4	79.6	118	10/29/2018	
Surr: 4-Bromofluorobenzene			50.3	50.00		100.6	83.9	115	10/29/2018	
Surr: Dibromofluoromethane			49.4	50.00		98.9	84.9	113	10/29/2018	
Surr: Toluene-d8			48.2	50.00		96.4	86.7	112	10/29/2018	

Batch 147192		SampType: MS		Units mg/L						
SampID: 18101744-001AMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Benzene	0.050		5.55	5.000	0	111.0	66.8	122	10/29/2018	
Ethylbenzene	0.200		5.03	5.000	0	100.6	77.7	115	10/29/2018	
Toluene	0.200		4.80	5.000	0	96.1	69.8	112	10/29/2018	
Xylenes, Total	0.400		9.80	10.00	0	98.0	77.6	113	10/29/2018	
Surr: 1,2-Dichloroethane-d4			4.69	5.000		93.7	74.7	129	10/29/2018	
Surr: 4-Bromofluorobenzene			4.99	5.000		99.8	86	119	10/29/2018	
Surr: Dibromofluoromethane			4.96	5.000		99.1	81.7	123	10/29/2018	
Surr: Toluene-d8			4.73	5.000		94.6	84.3	114	10/29/2018	

Batch 147192		SampType: MSD		Units mg/L				RPD Limit 20		
SampID: 18101744-001AMSD										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Benzene	0.050		5.72	5.000	0	114.5	5.549	3.12	10/29/2018	
Ethylbenzene	0.200		5.21	5.000	0	104.3	5.031	3.57	10/29/2018	
Toluene	0.200		4.97	5.000	0	99.3	4.804	3.34	10/29/2018	
Xylenes, Total	0.400		10.2	10.00	0	101.8	9.798	3.78	10/29/2018	
Surr: 1,2-Dichloroethane-d4			4.65	5.000		92.9			10/29/2018	
Surr: 4-Bromofluorobenzene			4.99	5.000		99.8			10/29/2018	
Surr: Dibromofluoromethane			5.00	5.000		100.0			10/29/2018	
Surr: Toluene-d8			4.76	5.000		95.2			10/29/2018	



Receiving Check List

<http://www.teklabinc.com/>

Client: Geotechnology, Inc.

Work Order: 18101744

Client Project: J024917.04 Meredosia

Report Date: 31-Oct-2018

Carrier: Steve Graham

Received By: AMD

Completed by:

On:

25-Oct-2018

Becca Vetter

Reviewed by:

On:

25-Oct-2018

Elizabeth A. Hurley

Pages to follow:

Chain of custody

1

Extra pages included

0

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Temp °C 20.40

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 ☐

NA ☒

NPDES/CWA TCN interferences checked/treated in the field?

Yes ☐

No ☐

NA ☒

Any No responses must be detailed below or on the COC.

Samples requiring pH should be analyzed as soon as possible after collection. Samples submitted for pH analysis are analyzed as soon as practicable upon arrival at the laboratory. - ehurley - 10/25/2018 1:51:03 PM

The sample was out of temperature compliance upon receipt. Jessie Goodwin was notified of this error via work order summary. - ehurley - 10/25/2018 1:51:06 PM

pg. of Work order # 18101744

Client:	Geotechnology, Inc.	
Address:	11816 Lackland Road	
City / State / Zip	St. Louis, MO 63146	
Contact:	Jessie Goodwin	Phone: (314) 997-7440
E-Mail:	jgoodwin@geotechnology.com	Fax: (314) 997-2067

Samples on:	<input type="checkbox"/> ICE	<input type="checkbox"/> BLUE ICE	<input checked="" type="checkbox"/> NO ICE	20.40 °C
Preserved in:	<input type="checkbox"/> LAB	<input type="checkbox"/> FIELD	<u>FOR LAB USE ONLY</u>	
Lab Notes				
Client Comments:				

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 the comment section. ☐ Yes ☒ No

Client Comments:

*8 RCRA+Boron

[illegible]

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions.

BottleOrder: 42788



3/5/18



APPENDIX D – 40-MIL MICROSPIKE HDPE GEOMEMBRANE

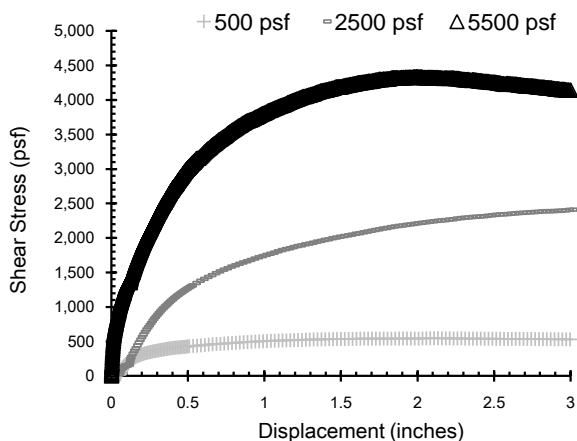
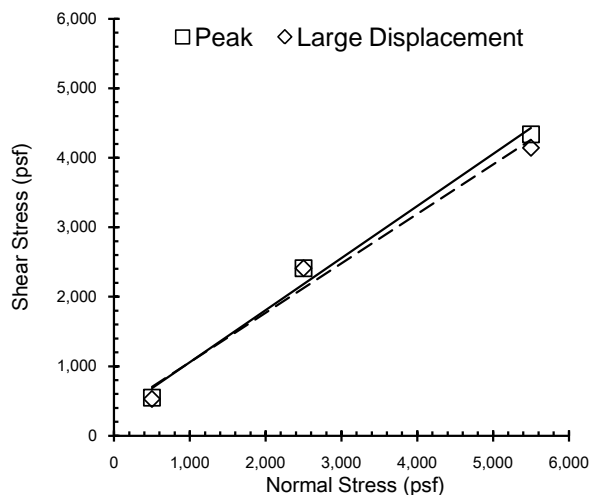


Shear Strength of Soil-Geosynthetic Interface by Direct Shear (ASTM D5321)

Client: Geotechnology
Project: Meredosia Power Station

TRI Log #: 36638-1
Richard S. Lacey, P.E. 4/17/2018
Analysis & Quality Review/Date

Fly Ash (FA-1) vs. Agu 40 mil HDPE MSGM (G18C000604) - dull side up



Test Results, Linear Regression

Mohr-Coulomb Parameters		Peak	Large Displacement
Friction Angle	Degrees	36.8	35.4
Y-intercept or Adhesion	psf	311	346
Minimum Secant Angle	Degrees	38.3	37.0

Note - Large Displacement Values Reported for 3.0 inches of Displacement

Test Conditions

Upper Box	Fly Ash (FA-1)	
	$\omega =$	42.2 % $\gamma_d =$ 64.6 pcf
Lower Box	Agu 40 mil HDPE MSGM (G18C000604) - dull side up	
Conditioning	As Placed (Dry) - Loading applied for a minimum of 18 hours prior to shear.	
Shearing Rate	inches/minute	0.04

Test Notes

Shearing occurred at the interface at all stresses.

Specimen No.		-	1	2	3
Normal Stress		psf	500	2,500	5,500
Box Edge Dimension		in	12	12	12
Equivalent Bearing Slide Resist. Correction		psf	13	32	60
Peak	Shear Stress	psf	548	2,410	4,337
	Secant Angle	deg.	47.6	44.0	38.3
Large Displacement	Shear Stress	psf	529	2,410	4,143
	Secant Angle	deg.	46.6	44.0	37.0
Asperity Height, Avg. of 5 Meas.		mils	36	37	35



TESTING, RESEARCH, CONSULTING AND FIELD SERVICES

Austin, TX - USA | Anaheim, CA - USA | Anderson, SC - USA | Gold Coast - Australia | Suzhou - China

May 30, 2018

Mail To:

Anna Saindon
Geotechnology
11816 Lackland Road
St Louis MS 63146

email: asaindon@geotechnology.com
ccemail: jgoodwin@geotechnology.com

Bill To:

<= Same (P.O. # J024917.04.2370)

Dear Ms. Saindon:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report of the laboratory testing for the sample(s) listed below.

Project:	Meredosia Power Station - Fly Ash & Bottom Ash Ponds
TRI Job Reference Number:	37651
Material(s) Tested:	Two, Agru 40 mil Microspike HDPE Geomembrane(s)
Test(s) Requested:	Thickness (ASTM D 5994) Density/Specific Gravity (ASTM D 792, Method A) Carbon Black Content (ASTM D 4218) Carbon Dispersion (ASTM D 5596) Tensile Properties (ASTM D 6693)

If you have any questions or require any additional information, please call us at 1-800-880-8378

Sincerely,

Mansukh Patel
Laboratory Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com

*Signature is on file

GEOMEMBRANE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Agru 40 mil Microspike HDPE Geomembrane

Sample Identification: G18D001566

TRI Log #: 37651

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	41	42	42	40	42	42	47	45	45	43	<div>43</div> <div>40</div>	2 << min	38 min. ave 36, 8 of 10 34 min ind
Density/Speciflc Gravity (ASTM D 792, Method A)													
Density (g/cm3)	0.947	0.947	0.946								<div>0.947</div>	0.001	0.940 min
Carbon Black Content (ASTM D 4218)													
% Carbon Black	2.66	2.62									<div>2.64</div>	0.03	2.0 - 3.0
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1 or 2
Rating - 2nd field view	1	1	1	1	1								1 Cat 3
Tensile Properties (ASTM D 6693, 2 lpm strain rate)													
MD Yield Strength (ppi)	96	106	97	92	95						<div>97</div> <div>103</div>	5 9	84 min 84 min
TD Yield Strength (ppi)	94	102	104	118	99								
MD Break Strength (ppi)	118	167	126	111	123						<div>129</div> <div>125</div>	22 14	60 min 60 min
TD Break Strength (ppi)	115	111	123	146	131								
MD Yield Elongation (%)	20	19	21	24	20						<div>21</div> <div>16</div>	2 2	12 min 12 min
TD Yield Elongation (%)	17	15	15	16	19								
MD Break Elongation (%)	436	390	411	394	425						<div>411</div> <div>536</div>	20 46	100 min 100 min
TD Break Elongation (%)	517	473	529	590	572								
MD Machine Direction	TD Transverse Direction												

GEOMEMBRANE TEST RESULTS
TRI Client: Geotechnology
Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Agru 40 mil Microspike HDPE Geomembrane
Sample Identification: G18D001579
TRI Log #: 37651

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	48	40	43	42	41	40	46	47	44	41	<div>43</div> <div>40</div>	3 << min	38 min. ave 36, 8 of 10 34 min ind
Density/Specific Gravity (ASTM D 792, Method A)													
Density (g/cm3)	0.947	0.947	0.946								<div>0.947</div>	0.001	0.940 min
Carbon Black Content (ASTM D 4218)													
% Carbon Black	2.53	2.57									<div>2.55</div>	0.03	2.0 - 3.0
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1 or 2
Rating - 2nd field view	1	1	1	1	1								1 Cat 3
Tensile Properties (ASTM D 6693, 2 lpm strain rate)													
MD Yield Strength (ppi)	84	97	104	101	96						<div>96</div>	8	84 min
TD Yield Strength (ppi)	109	107	104	102	93						<div>103</div>	6	84 min
MD Break Strength (ppi)	112	135	113	134	129						<div>125</div>	11	60 min
TD Break Strength (ppi)	125	106	129	117	114						<div>118</div>	9	60 min
MD Yield Elongation (%)	20	23	22	24	22						<div>22</div>	1	12 min
TD Yield Elongation (%)	16	14	15	17	15						<div>15</div>	1	12 min
MD Break Elongation (%)	415	449	369	401	414						<div>410</div>	29	100 min
TD Break Elongation (%)	505	452	562	524	544						<div>517</div>	42	100 min
MD Machine Direction	TD Transverse Direction												



TESTING, RESEARCH, CONSULTING AND FIELD SERVICES

Austin, TX - USA | Anaheim, CA - USA | Anderson, SC - USA | Gold Coast - Australia | Suzhou - China

May 31, 2018

Mail To:

Anna Saindon
Geotechnology
11816 Lackland Road
St Louis MS 63146

email: asaindon@geotechnology.com
ccemail: jgoodwin@geotechnology.com

Bill To:

<= Same (P.O. # J024917.04.2370)

Dear Ms. Saindon:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report of the laboratory testing for the sample(s) listed below.

Project:	Meredosia Power Station - Fly Ash & Bottom Ash Ponds
TRI Job Reference Number:	37674
Material(s) Tested:	Three, Agru 40 mil Microspike HDPE Geomembrane(s)
Test(s) Requested:	Thickness (ASTM D 5994) Density/Specific Gravity (ASTM D 792, Method A) Carbon Black Content (ASTM D 4218) Carbon Dispersion (ASTM D 5596) Tensile Properties (ASTM D 6693)

If you have any questions or require any additional information, please call us at 1-800-880-8378

Sincerely,

Mansukh Patel
Laboratory Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com

*Signature is on file

GEOMEMBRANE TEST RESULTS
TRI Client: Geotechnology
Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Agru 40 mil Microspike HDPE Geomembrane
Sample Identification: G18D001584
TRI Log #: 37674

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	47	41	41	43	43	42	43	41	42	40	<div><div>42</div><div>40</div></div>	2 << min	38 min. ave 36, 8 of 10 34 min
Density/Specific Gravity (ASTM D 792, Method A)													
Density (g/cm3)	0.942	0.943	0.942								<div>0.942</div>	0.001	0.940
Carbon Black Content (ASTM D 4218)													
% Carbon Black	2.63	2.69									<div>2.66</div>	0.04	2.0 - 3.0
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1 or 2 1 Cat 3
Rating - 2nd field view	1	1	1	1	1								
Tensile Properties (ASTM D 6693, 2 lpm strain rate)													
MD Yield Strength (ppi)	85	97	91	99	97						<div><div>94</div><div>100</div></div>	6 9	84 min 84 min
TD Yield Strength (ppi)	105	110	101	88	94								
MD Break Strength (ppi)	115	121	125	129	127						<div><div>123</div><div>116</div></div>	6 22	60 min 60 min
TD Break Strength (ppi)	120	138	127	80	115								
MD Yield Elongation (%)	20	20	22	22	20						<div><div>21</div><div>15</div></div>	1 1	12 min 12 min
TD Yield Elongation (%)	15	15	14	16	15								
MD Break Elongation (%)	469	427	448	444	419						<div><div>441</div><div>507</div></div>	20 84	100 min 100 min
TD Break Elongation (%)	516	572	547	362	538								
MD Machine Direction	TD Transverse Direction												

GEOMEMBRANE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Agru 40 mil Microspike HDPE Geomembrane

Sample Identification: G18D001589

TRI Log #: 37674

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	50	47	41	46	41	41	46	43	47	45	<div>45</div> <div>41</div>	3 << min	38 min. ave 36, 8 of 10 34 min
Density/Speciflc Gravity (ASTM D 792, Method A)													
Density (g/cm3)	0.944	0.944	0.945								<div>0.944</div>	0.001	0.940
Carbon Black Content (ASTM D 4218)													
% Carbon Black	2.51	2.47									<div>2.49</div>	0.03	2.0 - 3.0
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1 or 2
Rating - 2nd field view	1	1	1	1	1								1 Cat 3
Tensile Properties (ASTM D 6693, 2 lpm strain rate)													
MD Yield Strength (ppi)	88	93	89	105	96						<div>94</div>	7	84 min
TD Yield Strength (ppi)	113	93	94	100	102						<div>100</div>	8	84 min
MD Break Strength (ppi)	96	112	105	139	117						<div>114</div>	16	60 min
TD Break Strength (ppi)	142	99	87	129	139						<div>119</div>	25	60 min
MD Yield Elongation (%)	19	17	18	23	17						<div>19</div>	2	12 min
TD Yield Elongation (%)	13	14	15	16	14						<div>14</div>	1	12 min
MD Break Elongation (%)	377	397	415	432	403						<div>405</div>	20	100 min
TD Break Elongation (%)	596	461	393	564	621						<div>527</div>	97	100 min
MD Machine Direction	TD Transverse Direction												

GEOMEMBRANE TEST RESULTS
TRI Client: Geotechnology
Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Agru 40 mil Microspike HDPE Geomembrane
Sample Identification: G18D001594
TRI Log #: 37674

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	41	39	42	40	42	42	43	45	42	44	<div>42</div> <div>39</div>	2 << min	38 min. ave 36, 8 of 10 34 min
Density/Specific Gravity (ASTM D 792, Method A)													
Density (g/cm3)	0.943	0.944	0.943								<div>0.943</div>	0.001	0.940
Carbon Black Content (ASTM D 4218)													
% Carbon Black	2.57	2.51									<div>2.54</div>	0.04	2.0 - 3.0
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1 or 2 1 Cat 3
Rating - 2nd field view	1	1	1	1	1								
Tensile Properties (ASTM D 6693, 2 lpm strain rate)													
MD Yield Strength (ppi)	108	87	94	93	95						<div>95</div>	8	84 min
TD Yield Strength (ppi)	95	97	97	87	115						<div>98</div>	10	84 min
MD Break Strength (ppi)	154	88	113	109	104						<div>114</div>	25	60 min
TD Break Strength (ppi)	82	122	125	105	136						<div>114</div>	21	60 min
MD Yield Elongation (%)	29	18	23	20	18						<div>22</div>	5	12 min
TD Yield Elongation (%)	15	14	13	15	14						<div>14</div>	1	12 min
MD Break Elongation (%)	417	383	374	347	417						<div>388</div>	30	100 min
TD Break Elongation (%)	352	569	580	501	542						<div>509</div>	93	100 min
MD Machine Direction	TD Transverse Direction												



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May 31, 2018
June 13, 2018

Updated - Corrected Sample ID

Mail To:

Anna Saindon
Geotechnology
11816 Lackland Road
St Louis MS 63146

email: asaindon@geotechnology.com
ccemail: jgoodwin@geotechnology.com

Dear Ms. Saindon:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report of the laboratory testing for the sample(s) listed below.

Project: Meredosia Power Station - Fly Ash & Bottom Ash Ponds

TRI Job Reference Number: 37752

Material(s) Tested: Two, Agru 40 mil Microspike HDPE Geomembrane(s)

Test(s) Requested: Thickness (ASTM D 5994)
Density/Specific Gravity (ASTM D 792, Method A)
Carbon Black Content (ASTM D 4218)
Carbon Dispersion (ASTM D 5596)
Tensile Properties (ASTM D 6693)

If you have any questions or require any additional information, please call us at 1-800-880-8378

Sincerely,

Mansukh Patel
Laboratory Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com

*Signature is on file

GEOMEMBRANE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosia Power Station - Fly Ash & Bottom Ash Ponds

Material: Agru 40 mil Microspike HDPE Geomembrane

Sample Identification: G18D001599

TRI Log #: 37752

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	49	46	47	42	42	45	41	41	41	40	<div>43</div> <div>40</div>	3 36, 8 of 10 34 min	38 min. ave
Density/Specific Gravity (ASTM D 792, Method A)													
Density (g/cm3)	0.944	0.945	0.945								<div>0.945</div>	0.001	0.940
Carbon Black Content (ASTM D 4218)													
% Carbon Black	2.60	2.61									<div>2.61</div>	0.01	2.0 - 3.0
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1 or 2
Rating - 2nd field view	1	1	1	1	1								1 Cat 3
Tensile Properties (ASTM D 6693, 2 ipm strain rate)													
MD Yield Strength (ppi)	92	107	95	95	92						<div>96</div> <div>100</div>	6 8	84 min 84 min
TD Yield Strength (ppi)	90	101	98	112	99								
MD Break Strength (ppi)	126	139	114	125	95						<div>120</div> <div>123</div>	16 10	60 min 60 min
TD Break Strength (ppi)	114	115	119	138	129								
MD Yield Elongation (%)	22	25	20	26	20						<div>23</div> <div>15</div>	3 2	12 min 12 min
TD Yield Elongation (%)	14	14	17	17	15								
MD Break Elongation (%)	442	397	411	389	351						<div>398</div> <div>539</div>	33 31	100 min 100 min
TD Break Elongation (%)	537	517	504	558	581								
MD Machine Direction	TD Transverse Direction												

GEOMEMBRANE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosia Power Station - Fly Ash & Bottom Ash Ponds

Material: Agru 40 mil Microspike HDPE Geomembrane

Sample Identification: G18D001604

TRI Log #: 37752

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	45	42	40	41	43	44	41	42	41	46	<div>42</div> <div>40</div>	2 << min	38 min. ave 36, 8 of 10 34 min
Density/Specific Gravity (ASTM D 792, Method A)													
Density (g/cm3)	0.943	0.942	0.943								<div>0.943</div>	0.001	0.940
Carbon Black Content (ASTM D 4218)													
% Carbon Black	2.46	2.51									<div>2.49</div>	0.04	2.0 - 3.0
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1 or 2
Rating - 2nd field view	1	1	1	1	1								1 Cat 3
Tensile Properties (ASTM D 6693, 2 ipm strain rate)													
MD Yield Strength (ppi)	98	104	102	90	92						<div>97</div> <div>101</div>	6 9	84 min 84 min
TD Yield Strength (ppi)	105	109	108	97	88								
MD Break Strength (ppi)	132	119	134	113	105						<div>121</div> <div>107</div>	12 17	60 min 60 min
TD Break Strength (ppi)	123	87	125	109	92								
MD Yield Elongation (%)	23	19	20	19	19						<div>20</div> <div>16</div>	2 2	12 min 12 min
TD Yield Elongation (%)	17	15	15	19	14								
MD Break Elongation (%)	417	341	432	415	437						<div>408</div> <div>454</div>	39 103	100 min 100 min
TD Break Elongation (%)	533	287	527	498	424								
MD Machine Direction	TD Transverse Direction												



TESTING, RESEARCH, CONSULTING AND FIELD SERVICES

Austin, TX - USA | Anaheim, CA - USA | Anderson, SC - USA | Gold Coast - Australia | Suzhou - China

May 31, 2018

Mail To:

Anna Saindon
Geotechnology
11816 Lackland Road
St Louis MS 63146

email: asaindon@geotechnology.com
ccemail: jgoodwin@geotechnology.com

Bill To:

<= Same (P.O. # J024917.04.2370)

Dear Ms. Saindon:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report of the laboratory testing for the sample(s) listed below.

Project:	Meredosia Power Station - Fly Ash & Bottom Ash Ponds
TRI Job Reference Number:	37778
Material(s) Tested:	One, Agru 40 mil Microspike HDPE Geomembrane(s)
Test(s) Requested:	Thickness (ASTM D 5994) Density/Specific Gravity (ASTM D 792, Method A) Carbon Black Content (ASTM D 4218) Carbon Dispersion (ASTM D 5596) Tensile Properties (ASTM D 6693)

If you have any questions or require any additional information, please call us at 1-800-880-8378

Sincerely,

Mansukh Patel
Laboratory Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com

*Signature is on file

GEOMEMBRANE TEST RESULTS
TRI Client: Geotechnology
Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Agru 40 mil Microspike HDPE Geomembrane
Sample Identification: G18D001574
TRI Log #: 37778

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	45	41	49	50	50	44	45	45	41	41	<div>45</div> <div>41</div>	3 << min	38 min. ave 36, 8 of 10 34 min
Density/Specific Gravity (ASTM D 792, Method A)													
Density (g/cm3)	0.943	0.944	0.944								<div>0.944</div>	0.001	0.940
Carbon Black Content (ASTM D 4218)													
% Carbon Black	2.62	2.62									<div>2.62</div>	0.00	2.0 - 3.0
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1 or 2
Rating - 2nd field view	1	1	1	1	1								1 Cat 3
Tensile Properties (ASTM D 6693, 2 lpm strain rate)													
MD Yield Strength (ppi)	91	91	105	101	103						<div>98</div> <div>103</div>	7 11	84 min 84 min
TD Yield Strength (ppi)	93	119	100	111	93								
MD Break Strength (ppi)	115	114	178	110	127						<div>129</div> <div>130</div>	28 16	60 min 60 min
TD Break Strength (ppi)	112	155	134	125	123								
MD Yield Elongation (%)	19	20	21	23	19						<div>20</div> <div>15</div>	2 1	12 min 12 min
TD Yield Elongation (%)	15	14	17	15	16								
MD Break Elongation (%)	458	419	412	416	419						<div>425</div> <div>547</div>	19 54	100 min 100 min
MD Break Elongation (%)	492	634	547	515	546								
MD Machine Direction	TD Transverse Direction												



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June 4, 2018

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email: asaindon@geotechnology.com
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Bill To:

<= Same (P.O. # J024917.04.2370)

Dear Ms. Saindon:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report of the laboratory testing for the sample(s) listed below.

Project:	Meredosia Power Station - Fly Ash & Bottom Ash Ponds
TRI Job Reference Number:	37845
Material(s) Tested:	Seven, Agru 40 mil Microspike HDPE Geomembrane(s)
Test(s) Requested:	Thickness (ASTM D 5994) Density/Specific Gravity (ASTM D 792, Method A) Carbon Black Content (ASTM D 4218) Carbon Dispersion (ASTM D 5596) Tensile Properties (ASTM D 6693)

If you have any questions or require any additional information, please call us at 1-800-880-8378

Sincerely,

Mansukh Patel
Laboratory Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com

*Signature is on file

GEOMEMBRANE TEST RESULTS
 TRI Client: Geotechnology
 Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Agru 40 mil Microspike HDPE Geomembrane
 Sample Identification: G18B001462
 TRI Log #: 37845

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	46	41	45	46	43	43	41	41	40	40	<div>42</div> <div>40</div>	2 << min	38 min. ave 36, 8 of 10 34 min ind
Density/Specific Gravity (ASTM D 792, Method A)													
Density (g/cm3)	0.944	0.943	0.944								<div>0.944</div>	0.001	0.940 min
Carbon Black Content (ASTM D 4218)													
% Carbon Black	2.48	2.47									<div>2.48</div>	0.01	2.0 - 3.0
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1 or 2 1 Cat 3
Rating - 2nd field view	1	1	1	1	1								
Tensile Properties (ASTM D 6693, 2 lpm strain rate)													
MD Yield Strength (ppi)	100	119	114	94	94						<div>104</div>	12	84 min
TD Yield Strength (ppi)	102	120	109	124	105						<div>112</div>	10	84 min
MD Break Strength (ppi)	137	148	145	130	130						<div>138</div>	8	60 min
TD Break Strength (ppi)	113	117	84	144	129						<div>117</div>	22	60 min
MD Yield Elongation (%)	18	19	19	23	18						<div>19</div>	2	12 min
TD Yield Elongation (%)	15	14	14	18	15						<div>15</div>	2	12 min
MD Break Elongation (%)	473	485	447	429	416						<div>450</div>	29	100 min
TD Break Elongation (%)	531	451	268	564	618						<div>486</div>	136	100 min
MD Machine Direction	TD Transverse Direction												

GEOMEMBRANE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Agru 40 mil Microspike HDPE Geomembrane

Sample Identification: G18B001472

TRI Log #: 37845

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	42	42	48	44	42	43	40	41	42	40	<div>42</div> <div>40</div>	2 << min	38 min. ave 36, 8 of 10 34 min ind
Density/Specific Gravity (ASTM D 792, Method A)													
Density (g/cm3)	0.943	0.943	0.944								<div>0.943</div>	0.001	0.940 min
Carbon Black Content (ASTM D 4218)													
% Carbon Black	2.55	2.55									<div>2.55</div>	0.00	2.0 - 3.0
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1 or 2 1 Cat 3
Rating - 2nd field view	1	1	1	1	1								
Tensile Properties (ASTM D 6693, 2 lpm strain rate)													
MD Yield Strength (ppi)	94	105	112	85	93						<div>98</div> <div>107</div>	11 12	84 min 84 min
MD Break Strength (ppi)	138	139	136	144	115						<div>134</div> <div>113</div>	11 29	60 min 60 min
MD Yield Elongation (%)	22	21	19	19	20						<div>20</div> <div>14</div>	1 1	12 min 12 min
MD Break Elongation (%)	501	418	447	404	465						<div>447</div> <div>466</div>	39 159	100 min 100 min
MD Machine Direction	TD Transverse Direction												

GEOMEMBRANE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Agru 40 mil Microspike HDPE Geomembrane

Sample Identification: G18B001485

TRI Log #: 37845

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	41	40	42	41	47	47	43	46	45	43	<div>44</div> <div>40</div>	3 << min	38 min. ave 36, 8 of 10 34 min ind
Density/Speciflc Gravity (ASTM D 792, Method A)													
Density (g/cm3)	0.942	0.942	0.943								<div>0.942</div>	0.001	0.940 min
Carbon Black Content (ASTM D 4218)													
% Carbon Black	2.58	2.61									<div>2.60</div>	0.02	2.0 - 3.0
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1 or 2 1 Cat 3
Rating - 2nd field view	1	1	1	1	1								
Tensile Properties (ASTM D 6693, 2 lpm strain rate)													
MD Yield Strength (ppi)	87	93	116	107	93						<div>99</div> <div>105</div>	12 14	84 min 84 min
TD Yield Strength (ppi)	100	116	122	94	92								
MD Break Strength (ppi)	132	133	153	137	141						<div>139</div> <div>84</div>	8 17	60 min 60 min
TD Break Strength (ppi)	58	80	83	95	102								
MD Yield Elongation (%)	25	17	17	19	21						<div>20</div> <div>14</div>	3 1	12 min 12 min
TD Yield Elongation (%)	15	14	15	14	13								
MD Break Elongation (%)	432	500	491	491	467						<div>476</div> <div>537</div>	28 41	100 min 100 min
TD Break Elongation (%)	551	489	564	500	583								
MD Machine Direction	TD Transverse Direction												

GEOMEMBRANE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Agru 40 mil Microspike HDPE Geomembrane

Sample Identification: G18B001490

TRI Log #: 37845

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	43	46	50	46	42	45	43	40	41	40	<div>44</div> <div>40</div>	3 << min	38 min. ave 36, 8 of 10 34 min ind
Density/Specific Gravity (ASTM D 792, Method A)													
Density (g/cm3)	0.943	0.942	0.942								<div>0.942</div>	0.001	0.940 min
Carbon Black Content (ASTM D 4218)													
% Carbon Black	2.43	2.44									<div>2.44</div>	0.01	2.0 - 3.0
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1 or 2
Rating - 2nd field view	1	1	1	1	1								1 Cat 3
Tensile Properties (ASTM D 6693, 2 lpm strain rate)													
MD Yield Strength (ppi)	118	90	105	90	90						<div>99</div>	13	84 min
TD Yield Strength (ppi)	99	127	119	100	102						<div>109</div>	13	84 min
MD Break Strength (ppi)	140	119	155	145	127						<div>137</div>	14	60 min
TD Break Strength (ppi)	130	149	154	116	137						<div>137</div>	15	60 min
MD Yield Elongation (%)	19	19	18	23	22						<div>20</div>	2	12 min
TD Yield Elongation (%)	13	17	15	17	16						<div>16</div>	2	12 min
MD Break Elongation (%)	462	424	448	464	449						<div>449</div>	16	100 min
TD Break Elongation (%)	624	546	637	543	641						<div>598</div>	49	100 min
MD Machine Direction	TD Transverse Direction												

GEOMEMBRANE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Agru 40 mil Microspike HDPE Geomembrane

Sample Identification: G18B001496

TRI Log #: 37845

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	42	42	44	40	46	46	45	42	43	42	<div>43</div> <div>40</div>	2 << min	38 min. ave 36, 8 of 10 34 min ind
Density/Speciflc Gravity (ASTM D 792, Method A)													
Density (g/cm3)	0.944	0.943	0.943								<div>0.943</div>	0.001	0.940 min
Carbon Black Content (ASTM D 4218)													
% Carbon Black	2.52	2.52									<div>2.52</div>	0.00	2.0 - 3.0
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1 or 2
Rating - 2nd field view	1	1	1	1	1								1 Cat 3
Tensile Properties (ASTM D 6693, 2 lpm strain rate)													
MD Yield Strength (ppi)	90	94	117	100	91						<div>98</div> <div>101</div>	11	84 min
TD Yield Strength (ppi)	96	118	107	89	96							11	84 min
MD Break Strength (ppi)	120	148	185	129	139						<div>144</div> <div>129</div>	25	60 min
TD Break Strength (ppi)	100	161	140	111	133							24	60 min
MD Yield Elongation (%)	13	12	14	14	14						<div>13</div> <div>13</div>	1	12 min
TD Yield Elongation (%)	13	12	12	13	13							1	12 min
MD Break Elongation (%)	471	477	453	451	420						<div>454</div> <div>559</div>	22	100 min
TD Break Elongation (%)	446	607	592	536	614							70	100 min
MD Machine Direction	TD Transverse Direction												

GEOMEMBRANE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Agru 40 mil Microspike HDPE Geomembrane

Sample Identification: G18B001501

TRI Log #: 37845

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	41	48	45	42	46	49	41	43	41	44	<div>44</div> <div>41</div>	3 << min	38 min. ave 36, 8 of 10 34 min ind
Density/Specific Gravity (ASTM D 792, Method A)													
Density (g/cm3)	0.943	0.943	0.944								<div>0.943</div>	0.001	0.940 min
Carbon Black Content (ASTM D 4218)													
% Carbon Black	2.50	2.50									<div>2.50</div>	0.00	2.0 - 3.0
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1 or 2 1 Cat 3
Rating - 2nd field view	1	1	1	1	1								
Tensile Properties (ASTM D 6693, 2 lpm strain rate)													
MD Yield Strength (ppi)	101	119	97	89	89						<div>99</div> <div>106</div>	12	84 min
TD Yield Strength (ppi)	101	125	110	93	99							12	84 min
MD Break Strength (ppi)	152	182	146	125	128						<div>147</div> <div>129</div>	23	60 min
TD Break Strength (ppi)	119	160	135	103	129							21	60 min
MD Yield Elongation (%)	21	21	20	21	28						<div>22</div> <div>16</div>	3	12 min
TD Yield Elongation (%)	15	16	17	15	15							1	12 min
MD Break Elongation (%)	471	457	488	473	391						<div>456</div> <div>559</div>	38	100 min
TD Break Elongation (%)	560	580	566	489	599							42	100 min
MD Machine Direction	TD Transverse Direction												

GEOMEMBRANE TEST RESULTS
TRI Client: Geotechnology
Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Agru 40 mil Microspike HDPE Geomembrane
Sample Identification: G18B001506
TRI Log #: 37845

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	40	41	41	40	44	46	47	46	42	41	<div>43</div> <div>40</div>	3 << min	38 min. ave 36, 8 of 10 34 min ind
Density/Specific Gravity (ASTM D 792, Method A)													
Density (g/cm3)	0.943	0.943	0.943								<div>0.943</div>	0.000	0.940 min
Carbon Black Content (ASTM D 4218)													
% Carbon Black	2.53	2.51									<div>2.52</div>	0.01	2.0 - 3.0
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1 or 2 1 Cat 3
Rating - 2nd field view	1	1	1	1	1								
Tensile Properties (ASTM D 6693, 2 lpm strain rate)													
MD Yield Strength (ppi)	100	78	82	108	89						<div>91</div>	12	84 min
TD Yield Strength (ppi)	96	84	106	114	91						<div>98</div>	12	84 min
MD Break Strength (ppi)	149	113	148	133	118						<div>132</div>	17	60 min
TD Break Strength (ppi)	126	106	135	151	115						<div>127</div>	18	60 min
MD Yield Elongation (%)	14	13	14	16	15						<div>14</div>	1	12 min
TD Yield Elongation (%)	13	15	15	16	16						<div>15</div>	1	12 min
MD Break Elongation (%)	465	427	397	439	456						<div>437</div>	27	100 min
TD Break Elongation (%)	619	548	551	565	509						<div>558</div>	40	100 min
MD Machine Direction	TD Transverse Direction												



TESTING, RESEARCH, CONSULTING AND FIELD SERVICES

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June 4, 2018

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St Louis MS 63146

email: asaindon@geotechnology.com
ccemail: jgoodwin@geotechnology.com

Bill To:

<= Same (P.O. # J024917.04.2370)

Dear Ms. Saindon:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report of the laboratory testing for the sample(s) listed below.

Project:	Meredosia Power Station - Fly Ash & Bottom Ash Ponds
TRI Job Reference Number:	37924
Material(s) Tested:	Three, Agru 40 mil Microspike HDPE Geomembrane(s)
Test(s) Requested:	Thickness (ASTM D 5994) Density/Specific Gravity (ASTM D 792, Method A) Carbon Black Content (ASTM D 4218) Carbon Dispersion (ASTM D 5596) Tensile Properties (ASTM D 6693)

If you have any questions or require any additional information, please call us at 1-800-880-8378

Sincerely,

Mansukh Patel
Laboratory Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com

*Signature is on file

GEOMEMBRANE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Agru 40 mil Microspike HDPE Geomembrane

Sample Identification: G18B001467

TRI Log #: 37924

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	34	36	40	42	46	51	43	44	40	38	<div>41</div> <div>34</div>	5 << min	38 min. ave 36, 8 of 10 34 min ind
Density/Specific Gravity (ASTM D 792, Method A)													
Density (g/cm3)	0.943	0.943	0.942								<div>0.943</div>	0.001	0.940 min
Carbon Black Content (ASTM D 4218)													
% Carbon Black	2.49	2.49									<div>2.49</div>	0.00	2.0 - 3.0
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1 or 2 1 Cat 3
Rating - 2nd field view	1	1	1	1	1								
Tensile Properties (ASTM D 6693, 2 lpm strain rate)													
MD Yield Strength (ppi)	99	98	91	103	96						<div>97</div>	4	84 min
TD Yield Strength (ppi)	103	101	108	109	94						<div>103</div>	6	84 min
MD Break Strength (ppi)	133	138	171	141	121						<div>141</div>	19	60 min
TD Break Strength (ppi)	134	120	144	153	105						<div>131</div>	19	60 min
MD Yield Elongation (%)	19	21	16	21	19						<div>19</div>	2	12 min
TD Yield Elongation (%)	15	12	15	21	15						<div>16</div>	3	12 min
MD Break Elongation (%)	475	485	420	452	434						<div>453</div>	27	100 min
TD Break Elongation (%)	611	571	607	619	475						<div>577</div>	60	100 min
MD Machine Direction	TD Transverse Direction												

GEOMEMBRANE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Agru 40 mil Microspike HDPE Geomembrane

Sample Identification: G18B001480

TRI Log #: 37924

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	39	38	38	37	38	37	41	50	45	46	<div>41</div> <div>37</div>	5 << min	38 min. ave 36, 8 of 10 34 min ind
Density/Specific Gravity (ASTM D 792, Method A)													
Density (g/cm3)	0.943	0.943	0.944								<div>0.943</div>	0.001	0.940 min
Carbon Black Content (ASTM D 4218)													
% Carbon Black	2.59	2.56									<div>2.58</div>	0.02	2.0 - 3.0
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1 or 2
Rating - 2nd field view	1	1	1	1	1								1 Cat 3
Tensile Properties (ASTM D 6693, 2 lpm strain rate)													
MD Yield Strength (ppi)	97	90	105	125	103						<div>104</div>	13	84 min
TD Yield Strength (ppi)	103	131	106	93	99						<div>106</div>	15	84 min
MD Break Strength (ppi)	145	120	154	167	138						<div>145</div>	18	60 min
TD Break Strength (ppi)	136	163	139	131	131						<div>140</div>	13	60 min
MD Yield Elongation (%)	26	26	24	23	20						<div>24</div>	2	12 min
TD Yield Elongation (%)	15	15	16	18	15						<div>16</div>	1	12 min
MD Break Elongation (%)	446	407	485	422	450						<div>442</div>	30	100 min
TD Break Elongation (%)	592	588	580	607	611						<div>596</div>	13	100 min
MD Machine Direction	TD Transverse Direction												

GEOMEMBRANE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Agru 40 mil Microspike HDPE Geomembrane

Sample Identification: G18B001513

TRI Log #: 37924

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	39	42	44	47	48	44	48	41	36	43	<div>43</div> <div>36</div>	4 << min	38 min. ave 36, 8 of 10 34 min ind
Density/Specific Gravity (ASTM D 792, Method A)													
Density (g/cm3)	0.943	0.944	0.944								<div>0.944</div>	0.001	0.940 min
Carbon Black Content (ASTM D 4218)													
% Carbon Black	2.50	2.44									<div>2.47</div>	0.04	2.0 - 3.0
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1 or 2 1 Cat 3
Rating - 2nd field view	1	1	1	1	1								
Tensile Properties (ASTM D 6693, 2 lpm strain rate)													
MD Yield Strength (ppi)	95	102	112	116	84						<div>102</div>	13	84 min
TD Yield Strength (ppi)	120	108	92	104	117						<div>108</div>	11	84 min
MD Break Strength (ppi)	139	135	145	149	146						<div>143</div>	6	60 min
TD Break Strength (ppi)	138	129	117	123	158						<div>133</div>	16	60 min
MD Yield Elongation (%)	22	21	21	22	16						<div>20</div>	3	12 min
TD Yield Elongation (%)	18	16	13	18	22						<div>17</div>	3	12 min
MD Break Elongation (%)	484	436	478	462	413						<div>455</div>	30	100 min
TD Break Elongation (%)	514	534	582	534	588						<div>550</div>	33	100 min
MD Machine Direction	TD Transverse Direction												



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June 1, 2018

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Bill To:

<= Same (P.O. # J024917.04.2370)

Dear Ms. Saindon:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report of the laboratory testing for the sample(s) listed below.

Project:	Meredosia Power Station - Fly Ash & Bottom Ash Ponds
TRI Job Reference Number:	38007
Material(s) Tested:	One, Agru 40 mil Microspike HDPE Geomembrane(s)
Test(s) Requested:	Thickness (ASTM D 5994) Density/Specific Gravity (ASTM D 792, Method A) Carbon Black Content (ASTM D 4218) Carbon Dispersion (ASTM D 5596) Tensile Properties (ASTM D 6693)

If you have any questions or require any additional information, please call us at 1-800-880-8378

Sincerely,

Mansukh Patel
Laboratory Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com

*Signature is on file

GEOMEMBRANE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Agru 40 mil Microspike HDPE Geomembrane

Sample Identification: G18C001778

TRI Log #: 38007

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	42	43	44	42	47	44	45	43	44	43	<div>44</div> <div>42</div>	1 << min	38 min. ave 36, 8 of 10 34 min ind
Density/Specific Gravity (ASTM D 792, Method A)													
Density (g/cm3)	0.944	0.943	0.944								<div>0.944</div>	0.001	0.940 min
Carbon Black Content (ASTM D 4218)													
% Carbon Black	2.50	2.57									<div>2.54</div>	0.05	2.0 - 3.0
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1 or 2
Rating - 2nd field view	1	1	1	1	1								1 Cat 3
Tensile Properties (ASTM D 6693, 2 lpm strain rate)													
MD Yield Strength (ppi)	108	103	109	109	104						<div>107</div> <div>112</div>	3	84 min
TD Yield Strength (ppi)	115	108	115	112	110							3	84 min
MD Break Strength (ppi)	125	143	149	127	121						<div>133</div> <div>119</div>	12	60 min
TD Break Strength (ppi)	130	110	120	118	119							7	60 min
MD Yield Elongation (%)	22	23	22	19	20						<div>21</div> <div>17</div>	2	12 min
TD Yield Elongation (%)	15	17	17	18	17							1	12 min
MD Break Elongation (%)	400	453	376	442	344						<div>403</div> <div>486</div>	45	100 min
TD Break Elongation (%)	525	464	463	469	511							29	100 min
MD Machine Direction	TD Transverse Direction												



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June 19, 2018

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Bill To:

<= Same (P.O. # J024917.04.2370)

Dear Ms. Saindon:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report of the laboratory testing for the sample(s) listed below.

Project:	Meredosia Power Station - Fly Ash & Bottom Ash Ponds
TRI Job Reference Number:	38034
Material(s) Tested:	Four, Agru 40 mil Microspike HDPE Geomembrane(s)
Test(s) Requested:	Thickness (ASTM D 5994) Density/Specific Gravity (ASTM D 792, Method A) Carbon Black Content (ASTM D 4218) Carbon Dispersion (ASTM D 5596) Tensile Properties (ASTM D 6693)

If you have any questions or require any additional information, please call us at 1-800-880-8378

Sincerely,

Mansukh Patel
Laboratory Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com

*Signature is on file

GEOMEMBRANE TEST RESULTS
TRI Client: Geotechnology
Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Agru 40 mil Microspike HDPE Geomembrane
Sample Identification: G18C001783
TRI Log #: 38034

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	43	41	39	42	34	40	43	43	47	44	<div>42</div> <div>34</div>	3 << min	38 min. ave 36, 8 of 10 34 min ind
Density/Specific Gravity (ASTM D 792, Method A)													
Density (g/cm3)	0.944	0.944	0.945								<div>0.944</div>	0.001	0.940 min
Carbon Black Content (ASTM D 4218)													
% Carbon Black	2.61	2.55									<div>2.58</div>	0.04	2.0 - 3.0
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1 or 2 1 Cat 3
Rating - 2nd field view	1	1	1	1	1								
Tensile Properties (ASTM D 6693, 2 lpm strain rate)													
MD Yield Strength (ppi)	102	101	99	105	111						<div>104</div>	5	84 min
TD Yield Strength (ppi)	118	108	109	121	109						<div>113</div>	6	84 min
MD Break Strength (ppi)	113	125	135	125	161						<div>132</div>	18	60 min
TD Break Strength (ppi)	131	108	111	130	112						<div>118</div>	11	60 min
MD Yield Elongation (%)	19	16	19	18	19						<div>18</div>	1	12 min
TD Yield Elongation (%)	17	15	15	14	15						<div>15</div>	1	12 min
MD Break Elongation (%)	424	403	459	399	462						<div>429</div>	30	100 min
TD Break Elongation (%)	546	426	472	530	466						<div>488</div>	49	100 min
MD Machine Direction	TD Transverse Direction												

GEOMEMBRANE TEST RESULTS
TRI Client: Geotechnology
Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Agru 40 mil Microspike HDPE Geomembrane
Sample Identification: G18C001789
TRI Log #: 38034

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	43	41	46	45	44	44	46	43	43	41	<div>44</div> <div>41</div>	2 << min	38 min. ave 36, 8 of 10 34 min ind
Density/Specific Gravity (ASTM D 792, Method A)													
Density (g/cm3)	0.943	0.944	0.943								<div>0.943</div>	0.001	0.940 min
Carbon Black Content (ASTM D 4218)													
% Carbon Black	2.54	2.54									<div>2.54</div>	0.00	2.0 - 3.0
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1 or 2 1 Cat 3
Rating - 2nd field view	1	1	1	1	1								
Tensile Properties (ASTM D 6693, 2 lpm strain rate)													
MD Yield Strength (ppi)	104	103	103	108	106						<div>105</div>	2	84 min
TD Yield Strength (ppi)	107	110	118	116	106						<div>111</div>	5	84 min
MD Break Strength (ppi)	89	126	114	153	138						<div>124</div>	24	60 min
TD Break Strength (ppi)	111	104	123	118	125						<div>116</div>	9	60 min
MD Yield Elongation (%)	19	20	19	21	22						<div>20</div>	1	12 min
TD Yield Elongation (%)	16	15	14	15	16						<div>15</div>	1	12 min
MD Break Elongation (%)	140	408	397	442	430						<div>363</div>	126	100 min
TD Break Elongation (%)	466	452	511	500	544						<div>495</div>	37	100 min
MD Machine Direction	TD Transverse Direction												

GEOMEMBRANE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Agru 40 mil Microspike HDPE Geomembrane

Sample Identification: G18C001799

TRI Log #: 38034

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	41	42	45	44	43	44	42	43	43	38	<div>43</div> <div>38</div>	2 << min	38 min. ave 36, 8 of 10 34 min ind
Density/Specific Gravity (ASTM D 792, Method A)													
Density (g/cm3)	0.943	0.943	0.943								<div>0.943</div>	0.000	0.940 min
Carbon Black Content (ASTM D 4218)													
% Carbon Black	2.57	2.57									<div>2.57</div>	0.00	2.0 - 3.0
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1 or 2 1 Cat 3
Rating - 2nd field view	1	1	1	1	1								
Tensile Properties (ASTM D 6693, 2 lpm strain rate)													
MD Yield Strength (ppi)	104	109	106	98	98						<div>103</div> <div>111</div>	5 6	84 min 84 min
TD Yield Strength (ppi)	111	117	115	108	102								
MD Break Strength (ppi)	140	129	141	117	119						<div>129</div> <div>126</div>	11 6	60 min 60 min
TD Break Strength (ppi)	122	128	122	135	122								
MD Yield Elongation (%)	20	20	20	23	21						<div>21</div> <div>15</div>	1 1	12 min 12 min
TD Yield Elongation (%)	16	14	14	14	15								
MD Break Elongation (%)	445	438	450	405	395						<div>427</div> <div>549</div>	25 39	100 min 100 min
TD Break Elongation (%)	547	526	503	607	563								
MD Machine Direction	TD Transverse Direction												

GEOMEMBRANE TEST RESULTS
TRI Client: Geotechnology
Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Agru 40 mil Microspike HDPE Geomembrane
Sample Identification: G18C001804
TRI Log #: 38034

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	43	44	40	42	40	42	40	42	42	42	42	1	38 min. ave
											40	<< min	36, 8 of 10
													34 min ind
Density/Specific Gravity (ASTM D 792, Method A)													
Density (g/cm3)	0.946	0.947	0.947								0.947	0.001	0.940 min
Carbon Black Content (ASTM D 4218)													
% Carbon Black	2.55	2.47									2.51	0.06	2.0 - 3.0
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1 or 2
Rating - 2nd field view	1	1	1	1	1								1 Cat 3
Tensile Properties (ASTM D 6693, 2 lpm strain rate)													
MD Yield Strength (ppi)	106	101	104	104	104						104	2	84 min
TD Yield Strength (ppi)	110	114	117	111	102						111	6	84 min
MD Break Strength (ppi)	134	128	143	125	107						127	13	60 min
TD Break Strength (ppi)	136	131	133	112	114						125	11	60 min
MD Yield Elongation (%)	21	19	24	21	18						21	2	12 min
TD Yield Elongation (%)	16	15	15	17	18						16	1	12 min
MD Break Elongation (%)	437	410	463	422	415						429	21	100 min
TD Break Elongation (%)	577	551	527	457	475						517	51	100 min
MD Machine Direction	TD Transverse Direction												



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June 5, 2018

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<= Same (P.O. # J024917.04.2370)

Dear Ms. Saindon:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report of the laboratory testing for the sample(s) listed below.

Project:	Meredosia Power Station - Fly Ash & Bottom Ash Ponds
TRI Job Reference Number:	38272
Material(s) Tested:	Two, Agru 40 mil Microspike HDPE Geomembrane(s)
Test(s) Requested:	Thickness (ASTM D 5994) Density/Specific Gravity (ASTM D 792, Method A) Carbon Black Content (ASTM D 4218) Carbon Dispersion (ASTM D 5596) Tensile Properties (ASTM D 6693)

If you have any questions or require any additional information, please call us at 1-800-880-8378

Sincerely,

Mansukh Patel
Laboratory Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com

*Signature is on file

GEOMEMBRANE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Agru 40 mil Microspike HDPE Geomembrane

Sample Identification: G18C001794

TRI Log #: 38272

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	42	43	42	41	46	43	43	49	41	42	<div>43</div> <div>41</div>	2 << min	38 min. ave 36, 8 of 10 34 min ind
Density/Speciflc Gravity (ASTM D 792, Method A)													
Density (g/cm3)	0.943	0.944	0.944								<div>0.944</div>	0.001	0.940 min
Carbon Black Content (ASTM D 4218)													
% Carbon Black	2.32	2.35									<div>2.34</div>	0.02	2.0 - 3.0
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1 or 2
Rating - 2nd field view	1	1	1	1	1								1 Cat 3
Tensile Properties (ASTM D 6693, 2 lpm strain rate)													
MD Yield Strength (ppi)	102	95	104	112	108						<div>104</div> <div>109</div>	6 9	84 min 84 min
TD Yield Strength (ppi)	107	96	110	119	114								
MD Break Strength (ppi)	146	99	169	125	158						<div>139</div> <div>119</div>	28 15	60 min 60 min
TD Break Strength (ppi)	115	95	127	126	134								
MD Yield Elongation (%)	19	16	21	21	21						<div>20</div> <div>15</div>	2 1	12 min 12 min
TD Yield Elongation (%)	14	16	14	15	15								
MD Break Elongation (%)	432	365	413	380	397						<div>397</div> <div>531</div>	26 62	100 min 100 min
TD Break Elongation (%)	547	434	583	511	582								
MD Machine Direction	TD Transverse Direction												

GEOMEMBRANE TEST RESULTS
 TRI Client: Geotechnology
 Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Agru 40 mil Microspike HDPE Geomembrane
 Sample Identification: G18C001809
 TRI Log #: 38272

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	42	43	41	44	41	42	42	41	43	41	<div>42</div> <div>41</div>	1 << min	38 min. ave 36, 8 of 10 34 min ind
Density/Specfic Gravity (ASTM D 792, Method A)													
Density (g/cm3)	0.943	0.943	0.944								<div>0.943</div>	0.001	0.940 min
Carbon Black Content (ASTM D 4218)													
% Carbon Black	2.37	2.28									<div>2.33</div>	0.06	2.0 - 3.0
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1 or 2
Rating - 2nd field view	1	1	1	1	1								1 Cat 3
Tensile Properties (ASTM D 6693, 2 lpm strain rate)													
MD Yield Strength (ppi)	100	95	98	109	104						<div>101</div> <div>109</div>	5 6	84 min 84 min
TD Yield Strength (ppi)	109	100	107	116	111								
MD Break Strength (ppi)	144	105	139	157	123						<div>134</div> <div>113</div>	20 10	60 min 60 min
TD Break Strength (ppi)	112	97	118	121	118								
MD Yield Elongation (%)	20	19	19	19	24						<div>20</div> <div>15</div>	2 0	12 min 12 min
TD Yield Elongation (%)	15	15	15	15	14								
MD Break Elongation (%)	476	402	460	500	390						<div>446</div> <div>508</div>	48 41	100 min 100 min
TD Break Elongation (%)	535	438	539	504	522								
MD Machine Direction	TD Transverse Direction												



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June 19, 2018

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Dear Ms. Saindon:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs. TRI is pleased to submit this final report of the laboratory testing for the sample(s) listed below.

Project:	Meredosia Power Station - Fly Ash & Bottom Ash Ponds
TRI Job Reference Number:	38500
Material(s) Tested:	One, Agru 40 mil Microspike HDPE Geomembrane(s)
Test(s) Requested:	Thickness (ASTM D 5994) Density/Specific Gravity (ASTM D 792, Method A) Carbon Black Content (ASTM D 4218) Carbon Dispersion (ASTM D 5596) Tensile Properties (ASTM D 6693)

If you have any questions or require any additional information, please call us at 1-800-880-8378

Sincerely,

Mansukh Patel
Laboratory Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com

*Signature is on file

GEOMEMBRANE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Agru 40 mil Microspike HDPE Geomembrane

Sample Identification: G18C001778

TRI Log #: 38500

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
Thickness (ASTM D 5994)													
Thickness (mils)	41	43	41	42	44	43	42	42	42	43	<div>42</div> <div>41</div>	1 << min	38 min. ave 36, 8 of 10 34 min
Density/Specific Gravity (ASTM D 792, Method A)													
Density (g/cm3)	0.945	0.945	0.945								<div>0.945</div>	0.000	0.940
Carbon Black Content (ASTM D 4218)													
% Carbon Black	2.56	2.61									<div>2.59</div>	0.04	2.0 - 3.0
Carbon Black Dispersion (ASTM D 5596)													
Rating - 1st field view	1	1	1	1	1								9 Cat 1 or 2
Rating - 2nd field view	1	1	1	1	1								1 Cat 3
Tensile Properties (ASTM D 6693, 2 lpm strain rate)													
MD Yield Strength (ppi)	104	101	106	100	106						<div>103</div>	3	84 min
TD Yield Strength (ppi)	119	108	114	108	103						<div>110</div>	6	84 min
MD Break Strength (ppi)	97	126	133	110	162						<div>126</div>	25	60 min
TD Break Strength (ppi)	120	117	96	110	97						<div>108</div>	11	60 min
MD Yield Elongation (%)	19	22	21	21	27						<div>22</div>	3	12 min
TD Yield Elongation (%)	15	19	15	15	26						<div>18</div>	5	12 min
MD Break Elongation (%)	354	384	412	385	439						<div>395</div>	32	100 min
TD Break Elongation (%)	475	474	369	446	399						<div>433</div>	47	100 min
MD Machine Direction	TD Transverse Direction												



PANEL PLACEMENT FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
1	1808	08/09/18	87	22.5	
2	1808	08/09/18	46	22.5	
3	1808	08/09/18	30.5	22.5	
4	1808	08/09/18	10	8	
5	1808	08/09/18	89	22.5	
6	1808	08/09/18	73.5	22.5	
7	1808	08/09/18	63	22.5	
8	1808	08/09/18	24	22.5	
9	1808	08/09/18	35	22.5	
10	1808	08/09/18	100	22.5	
11	1808	08/09/18	69	22.5	
12	1809	08/09/18	15.5	22.5	
13	1809	08/09/18	80	22.5	
14	1809	08/09/18	61.5	22.5	
15	1809	08/09/18	41	22.5	
16	1809	08/09/18	23	22.5	
17	1809	08/09/18	88	22.5	
18	1809	08/09/18	92.5	22.5	
19	1809	08/09/18	72.5	22.5	



PANEL PLACEMENT FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
20	1809	08/09/18	48.5	22.5	
21	1809	08/09/18	29	22.5	
22	1807	08/09/18	86.5	22.5	
23	1807	08/09/18	89.5	22.5	
24	1807	08/09/18	92	22.5	
25	1807	08/09/18	97	22.5	
26	1807	08/09/18	98.5	22.5	
27	1807	08/09/18	110	22.5	
28	1807	08/09/18	106	22.5	
29	1807	08/09/18	99.5	22.5	
30	1807	08/09/18	39	22.5	
31	1807	08/09/18	22	8	
32	1807	08/09/18	38	22.5	
33	1807	08/09/18	12	7	
34	1807	08/09/18	66	22.5	
35	1803	08/09/18	55	22.5	
36	1803	08/09/18	55	22.5	
37	1803	08/09/18	55	22.5	
38	1803	08/09/18	55	22.5	



PANEL PLACEMENT FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
39	1803	08/09/18	56	22.5	
40	1803	08/09/18	57	22.5	
41	1803	08/09/18	58	22.5	
42	1803	08/09/18	57	22.5	
43	1803	08/09/18	54	22.5	
44	1803	08/09/18	50	22.5	
45	1803	08/09/18	46.5	22.5	
46	1803	08/09/18	44.5	22.5	
47	1803	08/09/18	44	22.5	
48	1804	08/09/18	44	22.5	
49	1804	08/09/18	43.5	22.5	
50	1804	08/10/18	41	22.5	
51	1804	08/10/18	39	22.5	
52	1804	08/10/18	39	22.5	
53	1804	08/10/18	39	22.5	
54	1804	08/10/18	38	22.5	
55	1804	08/10/18	36	22.5	
56	1804	08/10/18	35	22.5	
57	1804	08/10/18	37	22.5	



PANEL PLACEMENT FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
58	1804	08/10/18	36.5	17.5	
59	1804	08/10/18	86	22.5	
60	1804	08/10/18	74.5	22.5	
61	1804	08/10/18	48	22.5	
62	1804	08/10/18	21	22.5	
63	1578	08/10/18	88	22.5	
64	1578	08/10/18	90	22.5	
65	1578	08/10/18	91	22.5	
66	1578	08/10/18	91	22.5	
67	1578	08/10/18	91.5	22.5	
68	1578	08/10/18	92.5	22.5	
69	1578	08/10/18	93.5	22.5	
70	1578	08/10/18	65.5	22.5	
71	1805	08/10/18	28	22.5	
72	1805	08/10/18	93	22.5	
73	1805	08/10/18	92.5	22.5	
74	1805	08/10/18	91.5	22.5	
75	1805	08/10/18	91	22.5	
76	1805	08/10/18	91.5	22.5	



PANEL PLACEMENT FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
77	1805	08/10/18	93.5	22.5	
78	1805	08/10/18	95	22.5	
79	1593	08/10/18	93	22.5	
80	1593	08/10/18	89	22.5	
81	1593	08/10/18	86.5	22.5	
82	1593	08/10/18	86	22.5	
83	1593	08/10/18	37	22.5	
84	1593	08/10/18	34	22.5	
85	1593	08/10/18	33	22.5	
86	1593	08/10/18	36	10	
87	1593	08/10/18	95	22.5	
88	1593	08/10/18	80	22.5	



TRIAL WELD FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM ASH POND	Test Criteria	Fusion	Extrusion
PROJECT NO.:	18009	Time	As Noted	As Noted
MATERIAL TYPE:	40MIL HD MICRO SPIKE	Number	2	2
MATERIAL LAYER:	PRIMARY	Peel - ppi	65	52
QC NAME:	CHERYL HINA	Shear - ppi	81	81

Trial No.	Date	Sample Time	Air Temp	Mater Type	Tech Initials	Machn No.	Wedge Barrel	Speed Preheat	Peel (ppi)										Shear (ppi)					Pass Fail
									1		2		3		4		5		1	2	3	4	5	
1	08/09/18	0750	69	SS	BR	W114	750	7.5	76	78	72	76							98	93				P
2	08/09/18	0755	69	TS	BR	W114	750	7.5	69	86	67	70							98	94				P
3	08/09/18	0758	69	TT	BR	W114	750	7	81	89	69	72							101	96				P
4	08/09/18	0750	69	SS	JM	W120	750	8.5	81	81	85	74							103	97				P
5	08/09/18	0755	69	TS	JM	W120	750	8	86	86	76	71							106	96				P
6	08/09/18	0758	69	TT	JM	W120	750	7.5	105	91	87	74							106	100				P
7	08/09/18	0755	69	SS	LH	W118	750	7.5	82	80	75	74							103	94				P
8	08/09/18	1256	93	SS	BR	W114	750	7.5	69	72	74	68							89	81				P
9	08/09/18	1258	93	TS	BR	W114	750	7.5	65	75	73	68							88	81				P
10	08/09/18	1259	93	TT	BR	W114	750	7.5	85	79	71	76							86	81				P
11	08/09/18	1250	93	SS	JM	W120	750	9	67	68	75	76							84	81				P



TRIAL WELD FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM ASH POND	Test Criteria	Fusion	Extrusion
PROJECT NO.:	18009	Time	As Noted	As Noted
MATERIAL TYPE:	40MIL HD MICRO SPIKE	Number	2	2
MATERIAL LAYER:	PRIMARY	Peel - ppi	65	52
QC NAME:	CHERYL HINA	Shear - ppi	81	81

Trial No.	Date	Sample Time	Air Temp	Mater Type	Tech Initials	Machn No.	Wedge Barrel	Speed Preheat	Peel (ppi)										Shear (ppi)					Pass Fail
									1		2		3		4		5		1	2	3	4	5	
12	08/09/18	1255	93	TT	JM	W120	750	8.5	84	76	72	71							87	80				P
13	08/09/18	1250	93	SS	LH	W118	750	9.5	80	78	73	74							88	82				P
14	08/10/18	0720	71	SS	BR	W114	750	7.5	78	74	76	77							100	94				P
15	08/10/18	0722	71	TS	BR	W114	750	7.5	89	79	78	69							98	95				P
16	08/10/18	0724	71	TT	BR	W114	750	6	94	83	74	84							103	95				P
17	08/10/18	0725	71	SS	JM	W120	750	9	78	87	74	73							99	93				P
18	08/10/18	0730	71	TS	JM	W120	750	8.5	89	74	83	65							102	93				P
19	08/10/18	0734	71	TT	JM	W120	750	8	92	85	85	82							103	98				P
20	08/10/18	0735	71	SS	LH	W118	750	7.5	83	85	76	79							97	88				P
21	08/10/18	0736	71	TT	FR	X89	500	500	81		85								91	85				P
22	08/10/18	1250	93	SS	LH	W118	750	9	83	86	76	76							81	87				P



TRIAL WELD FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM ASH POND	Test Criteria	Fusion	Extrusion
PROJECT NO.:	18009	Time	As Noted	As Noted
MATERIAL TYPE:	40MIL HD MICRO SPIKE	Number	2	2
MATERIAL LAYER:	PRIMARY	Peel - ppi	65	52
QC NAME:	CHERYL HINA	Shear - ppi	81	81

Trial No.	Date	Sample Time	Air Temp	Mater Type	Tech Initials	Machn No.	Wedge Barrel	Speed Preheat	Peel (ppi)										Shear (ppi)					Pass Fail
									1		2		3		4		5		1	2	3	4	5	
23	08/10/18	1255	93	SS	JM	W120	750	9	79	69	70	75							83	87				P
24	08/10/18	1300	93	TT	JM	W120	750	8.5	76	78	72	72							89	84				P
25	08/10/18	1326	93	TT	JM	X83	500	300	70		76								85	87				P
26	08/10/18	1249	93	TT	FR	X89	500	500	74		71								88	82				P
27	08/10/18	1250	93	TT	BR	W114	750	8	77	80	70	79							83	86				P
28	08/10/18	1400	93	TS	JM	W120	750	8.5	77	74	72	77							81	81				P
29	08/11/18	0731	69	TT	BR	X50	250	250	91		85								93	87				P
30	08/11/18	0733	69	TT	JM	X83	550	300	80		77								91	85				P
31	08/11/18	0730	69	TT	FR	X89	500	500	87		84								96	93				P
32	08/13/18	0720	68	TT	JM	X83	50	300	102		88								101	97				P
33	08/13/18	0730	68	TT	BR	X50	250	250	97		85								107	101				P



TRIAL WELD FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM ASH POND	Test Criteria	Fusion	Extrusion
PROJECT NO.:	18009	Time	As Noted	As Noted
MATERIAL TYPE:	40MIL HD MICRO SPIKE	Number	2	2
MATERIAL LAYER:	PRIMARY	Peel - ppi	65	52
QC NAME:	CHERYL HINA	Shear - ppi	81	81

Trial No.	Date	Sample Time	Air Temp	Mater Type	Tech Initials	Machn No.	Wedge Barrel	Speed Preheat	Peel (ppi)					Shear (ppi)					Pass Fail
									1	2	3	4	5	1	2	3	4	5	
34	08/13/18	0725	68	TT	FR	X89	500	500	84		99				101	94			P



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
3-4	08/09/18	0857	21.5	BR	W114	750	7.5	1		
2-3	08/09/18	0848	39.5	BR	W114	750	7.5	1		
1-2	08/09/18	0828	51.5	BR	W114	750	7.5	1		
1-8	08/09/18	0845	35	JM	W120	750	8.5	4		
7-8	08/09/18	0904	23	JM	W120	750	8	5		
7-9	08/09/18	0908	33.5	JM	W120	750	8	5		
8-9	08/09/18	0853	24.5	JM	W120	750	8.5	4		
6-7	08/09/18	0844	69.5	LH	W118	750	7.5	7		
5-6	08/09/18	0859	78	LH	W118	750	7.5	7		
1-7	08/09/18	0933	23.5	JM	W120	750	8	5		
1-6	08/09/18	0930	23.5	JM	W120	750	8	5		
1-5	08/09/18	0939	20	JM	W120	750	8	5		
5-10	08/09/18	0927	100	LH	W118	750	7.5	7		
10-11	08/09/18	0955	73	JM	W120	750	8.5	4		
10-12	08/09/18	0953	27	JM	W120	750	8.5	4		
11-16	08/09/18	1033	29	JM	W120	750	8	5		
11-15	08/09/18	1030	26	JM	W120	750	8	5		
11-14	08/09/18	1029	9	JM	W120	750	8	5		
12-14	08/09/18	1027	16.5	JM	W120	750	8	5		
15-16	08/09/18	1012	29	LH	W118	750	7.5	7		



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
14-15	08/09/18	1002	52.5	LH	W118	750	7.5	7		
13-14	08/09/18	0924	70	BR	W114	750	7.5	1		
11-12	08/09/18	0911	22.5	BR	W114	750	7	3		
13-17	08/09/18	0936	90	BR	W114	750	7.5	1		
12-13	08/09/18	1040	19	JM	W120	750	7.5	6		
17-18	08/09/18	0959	86	BR	W114	750	7.5	1		
18-21	08/09/18	1106	36	BR	W114	750	7.5	2		
18-20	08/09/18	1103	30	BR	W114	750	7.5	2		
18-19	08/09/18	1059	30	BR	W114	750	7.5	2		
20-21	08/09/18	1027	36	BR	W114	750	7.5	1		
19-20	08/09/18	1014	61	BR	W114	750	7.5	1		
19-22	08/09/18	1030	84	LH	W118	750	7.5	7		
22-23	08/09/18	1049	88.5	LH	W118	750	7.5	7		
23-24	08/09/18	1101	90	LH	W118	750	7.5	7		
1-25	08/09/18	1113	32	JM	W120	750	8	5		
12-25	08/09/18	1108	8	JM	W120	750	8	5		
10-25	08/09/18	1109	23	JM	W120	750	8	5		
5-25	08/09/18	1111	22.5	JM	W120	750	8	5		
25-26	08/09/18	1120	87	BR	W114	750	7.5	1		
26-27	08/09/18	1122	110.5	LH	W118	750	7.5	7		



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
27-28	08/09/18	1132	109	JM	W120	750	8.5	4		
28-29	08/09/18	1139	103	BR	W114	750	7.5	1		
29-31	08/09/18	1311	22	BR	W114	750	7.5	9		
30-31	08/09/18	1309	8	BR	W114	750	7.5	10		
29-30	08/09/18	1140	39	LH	W118	750	7.5	7		
13-25	08/09/18	1320	12	JM	W120	750	8.5	12		
17-26	08/09/18	1319	12	JM	W120	750	8.5	12		
18-26	08/09/18	1318	13.5	JM	W120	750	8.5	12		
18-27	08/09/18	1317	13	JM	W120	750	8.5	12		
22-27	08/09/18	1316	12	JM	W120	750	8.5	12		
22-28	08/09/18	1315	11.5	JM	W120	750	8.5	12		
23-28	08/09/18	1314	12	JM	W120	750	8.5	12		
23-29	08/09/18	1313	10.5	JM	W120	750	8.5	12		
24-29	08/09/18	1311	13.25	JM	W120	750	8.5	12		
24-30	08/09/18	1310	9.75	JM	W120	750	8.5	12		
30-34	08/09/18	1300	13.5	BR	W114	750	7.5	9		
30-32	08/09/18	1304	16	BR	W114	750	7.5	9		
32-33	08/09/18	1318	24	BR	W114	750	7.5	8		
32-34	08/09/18	1324	52	LH	W118	750	9.5	13		
34-35	08/09/18	1334	54.5	BR	W114	750	7.5	8		



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
35-36	08/09/18	1342	55	JM	W120	750	9	11		
36-37	08/09/18	1350	55	LH	W118	750	9.5	13		
37-38	08/09/18	1359	55	JM	W120	750	9	11		
38-39	08/09/18	1409	56	LH	W118	750	9.5	13		
39-40	08/09/18	1414	56	BR	W114	750	7.5	8		
40-41	08/09/18	1422	58	JM	W120	750	9	11		
41-42	08/09/18	1429	58	BR	W114	750	7.5	8		
42-43	08/09/18	1434	56	LH	W118	750	9.5	13		
43-44	08/09/18	1441	52	JM	W120	750	9	11		
44-45	08/09/18	1447	48	BR	W114	750	7.5	8		
45-46	08/09/18	1450	45	BR	W114	750	7.5	8		
46-47	08/09/18	1452	44	JM	W120	750	9	11		
47-48	08/09/18	1507	44	JM	W120	750	9	11		
48-49	08/09/18	1504	43.5	LH	W118	750	9.5	13		
49-50	08/10/18	0816	42	LH	W118	750	7.5	20		
50-51	08/10/18	0820	40	LH	W118	750	7.5	20		
51-52	08/10/18	0839	39	LH	W118	750	7.5	20		
52-53	08/10/18	0822	39	JM	W120	750	9	17		
53-54	08/10/18	0831	38.5	JM	W120	750	9	17		
54-55	08/10/18	0837	37.5	JM	W120	750	9	17		



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
55-56	08/10/18	0845	35	JM	W120	750	9	17		
56-57	08/10/18	0839	34.5	BR	W114	750	7.5	14		
57-58	08/10/18	0829	37	BR	W114	750	7.5	14		
24-62	08/10/18	0957	32.5	BR	W114	750	7.5	15		
61-62	08/10/18	0913	32	BR	W114	750	7.5	14		
24-61	08/10/18	1000	32	BR	W114	750	7.5	15		
24-60	08/10/18	1004	31.5	BR	W114	750	7.5	15		
24-59	08/10/18	1008	6	BR	W114	750	7.5	15		
59-60	08/10/18	0900	85	JM	W120	750	9	17		
60-61	08/10/18	0924	64	LH	W118	750	7.5	20		
59-63	08/10/18	0936	87	JM	W120	750	9	17		
63-64	08/10/18	0937	89	LH	W118	750	7.5	20		
64-65	08/10/18	1001	91	LH	W118	750	7.5	20		
65-66	08/10/18	1002	91	JM	W120	750	9	17		
66-67	08/10/18	1018	91	JM	W120	750	9	17		
67-68	08/10/18	1027	92	LH	W118	750	7.5	20		
68-69	08/10/18	1027	93	BR	W114	750	7.5	14		
69-71	08/10/18	1103	29	JM	W120	750	9	17		
70-71	08/10/18	1044	22.5	JM	W120	750	8	19		
69-70	08/10/18	1105	65	JM	W120	750	9	17		



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
70-72	08/10/18	1057	66	BR	W114	750	7.5	14		
71-72	08/10/18	1054	27.5	BR	W114	750	7.5	14		
72-73	08/10/18	1100	93	LH	W118	750	7.5	20		
73-74	08/10/18	1118	92	BR	W114	750	7.5	14		
74-75	08/10/18	1115	91	LH	W118	750	7.5	20		
75-76	08/10/18	1127	91	JM	W120	750	9	17		
76-77	08/10/18	1133	92	LH	W118	750	7.5	20		
77-78	08/10/18	1140	95	BR	W114	750	7.5	14		
78-79	08/10/18	1147	95	JM	W120	750	9	17		
79-80	08/10/18	1150	90	LH	W118	750	7.5	20		
80-81	08/10/18	1317	88	LH	W118	750	9	22		
81-82	08/10/18	1336	85	LH	W118	750	9	22		
57-83	08/10/18	1454	21.5	JM	W120	750	8.5	28		
58-83	08/10/18	1458	16	JM	W120	750	8.5	28		
83-84	08/10/18	1346	35	JM	W120	750	9	23		
84-85	08/10/18	1336	33	JM	W120	750	9	23		
85-86	08/10/18	1416	32	JM	W120	750	8.5	28		
86-87	08/10/18	1554	39.5	LH	W118	750	9	22		
87-88	08/10/18	1412	96	LH	W118	750	9	22		
79-87	08/10/18	1528	20.5	JM	W120	750	8.5	28		



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
80-87	08/10/18	1524	22.5	JM	W120	750	8.5	28		
81-87	08/10/18	1522	22.5	JM	W120	750	8.5	28		
82-87	08/10/18	1520	23	JM	W120	750	8.5	28		
82-86	08/10/18	1441	10	JM	W120	750	8.5	28		
82-85	08/10/18	1442	22.5	JM	W120	750	8.5	28		
82-84	08/10/18	1444	22.5	JM	W120	750	8.5	28		
82-83	08/10/18	1446	22.5	JM	W120	750	8.5	28		
30-62	08/10/18	1650	13.5	BR	W114	750	8	27		
34-62	08/10/18	1652	15	BR	W114	750	8	27		
34-61	08/10/18	1658	11	BR	W114	750	8	27	N TO S	
34-61	08/10/18	-	1	BR	W114	750	8	27	W TO E	
35-61	08/10/18	1403	21.5	BR	W114	750	8	27		
35-60	08/10/18	-	1	BR	W114	750	8	27		
36-60	08/10/18	1410	22	BR	W114	750	8	27		
36-59	08/10/18	-	1.5	BR	W114	750	8	27		
37-59	08/10/18	1415	21.5	BR	W114	750	8	27		
37-63	08/10/18	-	1	BR	W114	750	8	27		
38-63	08/10/18	1421	21.5	BR	W114	750	8	27		
38-64	08/10/18	-	1	BR	W114	750	8	27		
39-64	08/10/18	1435	21.5	BR	W114	750	8	27		



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
39-65	08/10/18	-	1	BR	W114	750	8	27		
40-65	08/10/18	1442	22	BR	W114	750	8	27		
40-66	08/10/18	-	0.5	BR	W114	750	8	27		
41-66	08/10/18	1512	22	BR	W114	750	8	27		
41-67	08/10/18	-	0.5	BR	W114	750	8	27		
42-67	08/10/18	1514	22	BR	W114	750	8	27		
42-68	08/10/18	-	0.5	BR	W114	750	8	27		
43-68	08/10/18	1516	22	BR	W114	750	8	27		
43-69	08/10/18	-	0.5	BR	W114	750	8	27		
44-69	08/10/18	1518	22	BR	W114	750	8	27		
44-71	08/10/18	-	0.5	BR	W114	750	8	27		
45-71	08/10/18	1519	22	BR	W114	750	8	27		
45-72	08/10/18	-	0.5	BR	W114	750	8	27		
46-72	08/10/18	1538	22.5	BR	W114	750	8	27		
47-73	08/10/18	1540	22.5	BR	W114	750	8	27		
48-74	08/10/18	1542	22.5	BR	W114	750	8	27		
49-75	08/10/18	1543	22.5	BR	W114	750	8	27		
50-76	08/10/18	1545	22.5	BR	W114	750	8	27		
51-77	08/10/18	1548	22.5	BR	W114	750	8	27		
52-78	08/10/18	1549	22.5	BR	W114	750	8	27		



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
53-79	08/10/18	1556	22.5	BR	W114	750	8	27		
54-80	08/10/18	1557	22	BR	W114	750	8	27		
55-80	08/10/18	-	0.5	BR	W114	750	8	27		
55-81	08/10/18	1600	22	BR	W114	750	8	27		
56-81	08/10/18	-	0.5	BR	W114	750	8	27		
56-82	08/10/18	1604	21.5	BR	W114	750	8	27		
57-82	-	PATCH	6	-	-	-	-	-	N TO S	
57-82	08/10/18	-	1	BR	W114	750	8	27	E TO W	



NON-DESTRUCTIVE TESTING FORM

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PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM AS	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40 MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	3 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
3-4	08/09/18	PG	A	30	30	1342	1347	P	ENTIRE LENGTH OF SEAM
2-3	08/09/18	PG	A	30	30	1345	1350	P	ENTIRE LENGTH OF SEAM
1-2	08/09/18	PG	A	30	30	1347	1352	P	ENTIRE LENGTH OF SEAM
1-8	08/09/18	PG	A	30	30	1348	1353	P	ENTIRE LENGTH OF SEAM
7-8	08/09/18	PG	A	30	30	1357	1402	P	ENTIRE LENGTH OF SEAM
7-9	08/09/18	PG	A	30	30	1401	1406	P	ENTIRE LENGTH OF SEAM
8-9	08/09/18	PG	A	30	30	1400	1405	P	ENTIRE LENGTH OF SEAM
6-7	08/09/18	PG	A	30	30	1412	1417	P	ENTIRE LENGTH OF SEAM
5-6	08/09/18	PG	A	30	30	1414	1419	P	ENTIRE LENGTH OF SEAM
1-7	08/09/18	PG	A	30	30	1356	1401	P	ENTIRE LENGTH OF SEAM
1-6	08/09/18	PG	A	30	30	1413	1418	P	ENTIRE LENGTH OF SEAM
1-5	08/09/18	PG	A	30	30	1417	1422	P	ENTIRE LENGTH OF SEAM
5-10	08/09/18	PG	A	30	30	1422	1427	P	ENTIRE LENGTH OF SEAM
10-11	08/09/18	PG	A	30	30	1430	1435	P	ENTIRE LENGTH OF SEAM
10-12	08/09/18	PG	A	30	30	1443	1448	P	ENTIRE LENGTH OF SEAM
11-16	08/09/18	PG	A	30	30	1507	1512	P	ENTIRE LENGTH OF SEAM
11-15	08/09/18	PG	A	30	30	1501	1506	P	ENTIRE LENGTH OF SEAM
11-14	08/09/18	PG	A	30	30	1454	1459	P	ENTIRE LENGTH OF SEAM
12-14	08/09/18	PG	A	30	30	1453	1458	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM AS	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40 MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	3 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
15-16	08/09/18	PG	A	30	30	1511	1516	P	NEOS TO8'
15-16	08/09/18	PG	A	30	30	1513	1518	P	8' TO SEOS
14-15	08/09/18	PG	A	30	30	1455	1500	P	ENTIRE LENGTH OF SEAM
13-14	08/09/18	PG	A	30	30	1544	1549	P	SEOS TO 21'
13-14	08/09/18	PG	A	30	30	1537	1542	P	21' TO NEOS
11-12	08/09/18	PG	A	30	30	1444	1449	P	ENTIRE LENGTH OF SEAM
13-17	08/09/18	PG	A	30	30	1540	1545	P	ENTIRE LENGTH OF SEAM
12-13	08/09/18	PG	A	30	30	1528	1533	P	ENTIRE LENGTH OF SEAM
17-18	08/09/18	PG	A	30	30	1548	1553	P	ENTIRE LENGTH OF SEAM
18-21	08/09/18	PG	A	30	30	1602	1607	P	ENTIRE LENGTH OF SEAM
18-20	08/09/18	PG	A	30	30	1603	1608	P	ENTIRE LENGTH OF SEAM
18-19	08/09/18	PG	A	30	30	1612	1617	P	ENTIRE LENGTH OF SEAM
20-21	08/09/18	PG	A	30	30	1604	1609	P	ENTIRE LENGTH OF SEAM
19-20	08/09/18	PG	A	30	30	1610	1615	P	ENTIRE LENGTH OF SEAM
19-22	08/09/18	PG	A	30	30	1615	1620	P	ENTIRE LENGTH OF SEAM
22-23	08/09/18	PG	A	30	30	1617	1622	P	ENTIRE LENGTH OF SEAM
23-24	08/09/18	PG	A	30	30	1619	1624	P	ENTIRE LENGTH OF SEAM
1-25	08/09/18	PG	A	30	30	1426	1431	P	ENTIRE LENGTH OF SEAM
12-25	08/09/18	PG	A	30	30	1435	1440	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

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PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM AS	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40 MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	3 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
10-25	08/09/18	PG	A	30	30	1438	1438	P	ENTIRE LENGTH OF SEAM
5-25	08/09/18	PG	A	30	30	1432	1432	P	ENTIRE LENGTH OF SEAM
25-26	08/09/18	PG	A	30	30	1623	1628	P	SEOS TO 76'
25-26	08/10/18	PG	A	30	30	749	754	P	76' TO NEOS
26-27	08/10/18	PG	A	30	30	753	758	P	NEOS TO 11'
26-27	08/10/18	PG	A	30	30	752	757	P	11' TO 19'
26-27	08/10/18	PG	A	30	30	747	752	P	19' TO 27'
26-27	08/10/18	PG	A	30	30	745	750	P	27' TO 93'
26-27	08/10/18	PG	A	30	30	736	741	P	93' TO 100'
26-27	08/10/18	PG	A	30	30	735	740	P	100' TO SEOS
27-28	08/10/18	PG	A	30	30	756	801	P	ENTIRE LENGTH OF SEAM
28-29	-	-	PATCH	-	-	-	-	-	NEOS TO 5'
28-29	08/10/18	PG	A	30	30	809	814	P	5' TO 34'
28-29	08/10/18	PG	A	30	30	804	809	P	34' TO SEOS
29-31	08/10/18	PG	A	30	30	835	840	P	ENTIRE LENGTH OF SEAM
30-31	08/10/18	PG	A	30	30	833	838	P	ENTIRE LENGTH OF SEAM
29-30	08/10/18	PG	A	30	30	826	831	P	ENTIRE LENGTH OF SEAM
13-25	08/09/18	PG	A	30	30	1529	1534	P	ENTIRE LENGTH OF SEAM
17-26	08/09/18	PG	A	30	30	1550	1555	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM AS	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40 MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	3 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
18-26	08/09/18	PG	A	30	30	1558	1603	P	ENTIRE LENGTH OF SEAM
18-27	08/09/18	PG	A	30	30	1559	1604	P	ENTIRE LENGTH OF SEAM
22-27	08/10/18	PG	A	30	30	813	818	P	ENTIRE LENGTH OF SEAM
22-28	08/10/18	PG	A	30	30	814	819	P	ENTIRE LENGTH OF SEAM
23-28	08/10/18	PG	A	30	30	818	823	P	ENTIRE LENGTH OF SEAM
23-29	08/10/18	PG	A	30	30	819	824	P	ENTIRE LENGTH OF SEAM
24-29	08/10/18	PG	A	30	30	825	830	P	ENTIRE LENGTH OF SEAM
24-30	08/10/18	PG	A	30	30	827	832	P	ENTIRE LENGTH OF SEAM
30-34	08/10/18	PG	A	30	30	841	846	P	ENTIRE LENGTH OF SEAM
30-32	08/10/18	PG	A	30	30	842	847	P	ENTIRE LENGTH OF SEAM
32-33	08/10/18	PG	A	30	30	850	855	P	ENTIRE LENGTH OF SEAM
32-34	-	-	PATCH	-	-	-	-	-	SEOS TO 11'
32-34	08/10/18	PG	A	30	30	851	856	P	11' TO NEOS
34-35	08/10/18	PG	A	30	30	854	859	P	SEOS TO 9'
34-35	08/10/18	PG	A	30	30	857	902	P	9' TO NEOS
35-36	08/10/18	PG	A	30	30	905	910	P	ENTIRE LENGTH OF SEAM
36-37	08/10/18	PG	A	30	30	909	914	P	SEOS TO 11'
36-37	08/10/18	PG	A	30	30	910	915	P	11' TO NEOS
37-38	08/10/18	PG	A	30	30	918	923	P	NEOS TO 47'



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM AS	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40 MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	3 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
37-38	08/10/18	PG	A	30	30	921	927	P	47' TO SEOS
38-39	08/10/18	PG	A	30	30	927	932	P	SEOS TO 9'
38-39	08/10/18	PG	A	30	30	930	935	P	9' TO NEOS
39-40	08/10/18	PG	A	30	30	931	936	P	ENTIRE LENGTH OF SEAM
40-41	-	-	PATCH	-	-	-	-	-	SEOS TO 8'
40-41	08/10/18	PG	A	30	30	936	941	P	8' TO NEOS
41-42	08/10/18	PG	A	30	30	952	957	P	SEOS TO 8'
41-42	08/10/18	PG	A	30	30	940	945	P	8' TO NEOS
42-43	08/10/18	PG	A	30	30	954	959	P	SEOS TO 7'
42-43	08/10/18	PG	A	30	30	956	1001	P	7' TO NEOS
43-44	08/10/18	PG	A	30	30	1000	1005	P	ENTIRE LENGTH OF SEAM
44-45	08/10/18	PG	A	30	30	1002	1007	P	SEOS TO 8'
44-45	08/10/18	PG	A	30	30	1003	1008	P	8' TO NEOS
45-46	08/10/18	PG	A	30	30	1023	1028	P	SEOS TO 8'
45-46	08/10/18	PG	A	30	30	1009	1014	P	8' TO NEOS
46-47	08/10/18	PG	A	30	30	1025	1030	P	SEOS TO 7'
46-47	08/10/18	PG	A	30	30	1027	1032	P	7' TO NEOS
47-48	08/10/18	PG	A	30	30	1030	1035	P	ENTIRE LENGTH OF SEAM
48-49	08/10/18	PG	A	30	30	1032	1037	P	SEOS TO 10'



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM AS	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40 MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	3 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
48-49	08/10/18	PG	A	30	30	1034	1039	P	10' TO NEOS
49-50	08/10/18	PG	A	30	30	1037	1042	P	SEOS TO 9'
49-50	08/10/18	PG	A	30	30	1042	1047	P	9' TO NEOS
50-51	08/10/18	PG	A	30	30	1045	1050	P	SEOS TO 9'
50-51	08/10/18	PG	A	30	30	1048	1053	P	9' TO NEOS
51-52	08/10/18	PG	A	30	30	1052	1057	P	ENTIRE LENGTH OF SEAM
52-53	08/10/18	PG	A	30	30	1054	1059	P	SEOS TO 7'
52-53	08/10/18	PG	A	30	30	1056	1101	P	7' TO NEOS
53-54	08/10/18	PG	A	30	30	1105	1110	P	SEOS TO 7'
53-54	08/10/18	PG	A	30	30	1106	1111	P	7' TO NEOS
54-55	08/10/18	PG	A	30	30	1109	1114	P	SEOS TO 7'
54-55	08/10/18	PG	A	30	30	1108	1113	P	7' TO NEOS
55-56	08/10/18	PG	A	30	30	1113	1118	P	ENTIRE LENGTH OF SEAM
56-57	08/10/18	PG	A	30	30	1116	1121	P	SEOS TO 5'
56-57	08/10/18	PG	A	30	30	1117	1122	P	5' TO NEOS
57-58	08/10/18	PG	A	30	30	1120	1125	P	SEOS TO 8'
57-58	08/10/18	PG	A	30	30	1119	1124	P	8' TO NEOS
24-62	08/10/18	PG	A	30	30	1138	1143	P	ENTIRE LENGTH OF SEAM
61-62	08/10/18	PG	A	30	30	1144	1139	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM AS	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40 MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	3 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
24-61	08/10/18	PG	A	30	30	1140	1145	P	ENTIRE LENGTH OF SEAM
24-60	08/10/18	PG	A	30	30	1251	1256	P	ENTIRE LENGTH OF SEAM
24-59	08/10/18	PG	A	30	30	1256	1301	P	ENTIRE LENGTH OF SEAM
59-60	08/10/18	PG	A	30	30	1254	1259	P	SEOS TO 24'
59-60	08/10/18	PG	A	30	30	1259	1304	P	24' TO NEOS
60-61	08/10/18	PG	A	30	30	1250	1255	P	ENTIRE LENGTH OF SEAM
59-63	08/10/18	PG	A	30	30	1306	1311	P	ENTIRE LENGTH OF SEAM
63-64	08/10/18	PG	A	30	30	1313	1318	P	ENTIRE LENGTH OF SEAM
64-65	08/10/18	PG	A	30	30	1310	1321	P	ENTIRE LENGTH OF SEAM
65-66	08/10/18	PG	A	30	30	1347	1352	P	ENTIRE LENGTH OF SEAM
66-67	08/10/18	PG	A	30	30	1349	1354	P	ENTIRE LENGTH OF SEAM
67-68	08/10/18	PG	A	30	30	1350	1355	P	ENTIRE LENGTH OF SEAM
68-69	08/10/18	PG	A	30	30	1400	1405	P	ENTIRE LENGTH OF SEAM
69-71	08/10/18	PG	A	30	30	1415	1420	P	ENTIRE LENGTH OF SEAM
70-71	08/10/18	PG	A	30	30	1405	1410	P	ENTIRE LENGTH OF SEAM
69-70	08/10/18	PG	A	30	30	1401	1406	P	ENTIRE LENGTH OF SEAM
70-72	08/10/18	PG	A	30	30	1403	1408	P	ENTIRE LENGTH OF SEAM
71-72	08/10/18	PG	A	30	30	1417	1422	P	ENTIRE LENGTH OF SEAM
72-73	08/10/18	PG	A	30	30	1419	1424	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM AS	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40 MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	3 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
73-74	08/10/18	PG	A	30	30	1424	1429	P	NEOS TO 55'
73-74	08/10/18	PG	A	30	30	1426	1431	P	55' TO SEOS
74-75	08/10/18	PG	A	30	30	1432	1437	P	ENTIRE LENGTH OF SEAM
75-76	08/10/18	PG	A	30	30	1433	1438	P	ENTIRE LENGTH OF SEAM
76-77	08/10/18	PG	A	30	30	1557	1602	P	NEOS TO 54'
76-77	08/10/18	PG	A	30	30	1556	1601	P	54' TO SEOS
77-78	08/10/18	PG	A	30	30	1512	1517	P	NEOS TO 64'
77-78	08/10/18	PG	A	30	30	1500	1505	P	64' TO SEOS
78-79	08/10/18	PG	A	30	30	1516	1521	P	SEOS TO 42'
78-79	08/10/18	PG	A	30	30	1522	1527	P	42' TO NEOS
79-80	08/10/18	PG	A	30	30	1530	1535	P	ENTIRE LENGTH OF SEAM
80-81	08/10/18	PG	A	30	30	1540	1545	P	NEOS TO 9'
80-81	08/10/18	PG	A	30	30	1536	1541	P	9' TO SEOS
81-82	08/10/18	PG	A	30	30	1546	1551	P	ENTIRE LENGTH OF SEAM
57-83	08/10/18	PG	A	30	30	1554	1559	P	WEOS TO 15'
57-83	08/10/18	PG	A	30	30	1555	1600	P	15' TO EEOS
58-83	08/10/18	PG	A	30	30	1557	1602	P	WEOS TO 14'
58-83	-	-	PATCH	-	-	-	-	-	14' TO EEOS
83-84	-	-	PATCH	-	-	-	-	-	EEOS TO 4'



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM AS	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40 MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	3 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
83-84	08/10/18	PG	A	30	30	1602	1607	P	4' TO 18'
83-84	08/10/18	PG	A	30	30	1603	168	P	18' TO WEOS
84-85	08/10/18	PG	A	30	30	1607	1612	P	ENTIRE LENGTH OF SEAM
85-86	08/10/18	PG	A	30	30	1615	1620	P	ENTIRE LENGTH OF SEAM
86-87	08/10/18	PG	A	30	30	1616	1621	P	ENTIRE LENGTH OF SEAM
87-88	08/10/18	PG	A	30	30	-		P	EEOS TO 7'
87-88	08/10/18	PG	A	30	30	1618	1623	P	7' TO 88'
87-88	-	-	PATCH	-	-	-	-	-	88' TO WEOS
79-87	08/10/18	PG	A	30	30	1532	1537	P	6' TO NEOS
80-87	08/10/18	PG	A	30	30	1527	1532	P	ENTIRE LENGTH OF SEAM
81-87	08/10/18	PG	A	30	30	1538	1543	P	ENTIRE LENGTH OF SEAM
82-87	08/10/18	PG	A	30	30	1545	1550	P	ENTIRE LENGTH OF SEAM
82-86	08/10/18	PG	A	30	30	1614	1619	P	ENTIRE LENGTH OF SEAM
82-85	08/10/18	PG	A	30	30	1609	1614	P	ENTIRE LENGTH OF SEAM
82-84	08/10/18	PG	A	30	30	1608	1613	P	ENTIRE LENGTH OF SEAM
82-83	08/10/18	PG	A	30	30	1553	1558	P	ENTIRE LENGTH OF SEAM
30-62	08/11/18	PG	A	30	30	702	707	P	ENTIRE LENGTH OF SEAM
34-62	08/11/18	PG	A	30	30	703	708	P	ENTIRE LENGTH OF SEAM
34-61	08/11/18	PG	A	30	30	706	711	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM AS	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40 MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	3 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
35-61	08/11/18	PG	A	30	30	709	714	P	ENTIRE LENGTH OF SEAM
35-60	-	-	PATCH	-	-	-	-	-	ENTIRE LENGTH OF SEAM
36-60	08/11/18	PG	A	30	30	712	717	P	ENTIRE LENGTH OF SEAM
36-59	-	-	PATCH	-	-	-	-	-	ENTIRE LENGTH OF SEAM
37-59	08/11/18	PG	A	30	30	713	718	P	ENTIRE LENGTH OF SEAM
37-63	-	-	PATCH	-	-	-	-	-	ENTIRE LENGTH OF SEAM
38-63	08/11/18	PG	A	30	30	720	725	P	ENTIRE LENGTH OF SEAM
38-64	-	-	PATCH	-	-	-	-	-	ENTIRE LENGTH OF SEAM
39-64	08/11/18	PG	A	30	30	721	726	P	ENTIRE LENGTH OF SEAM
39-65	-	-	PATCH	-	-	-	-	-	ENTIRE LENGTH OF SEAM
40-65	08/11/18	PG	A	30	30	729	734	P	ENTIRE LENGTH OF SEAM
40-66	-	-	PATCH	-	-	-	-	-	ENTIRE LENGTH OF SEAM
41-66	08/11/18	PG	A	30	30	730	735	P	ENTIRE LENGTH OF SEAM
41-67	-	-	PATCH	-	-	-	-	-	ENTIRE LENGTH OF SEAM
42-67	08/11/18	PG	A	30	30	735	740	P	ENTIRE LENGTH OF SEAM
42-68	-	-	PATCH	-	-	-	-	-	ENTIRE LENGTH OF SEAM
43-68	08/11/18	PG	A	30	30	736	741	P	ENTIRE LENGTH OF SEAM
43-69	-	-	PATCH	-	-	-	-	-	ENTIRE LENGTH OF SEAM
44-69	08/11/18	PG	A	30	30	745	750	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM AS	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40 MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	3 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
44-71	-	-	PATCH	-	-	-	-	-	ENTIRE LENGTH OF SEAM
45-71	08/11/18	PG	A	30	30	746	751	P	ENTIRE LENGTH OF SEAM
45-72	-	-	PATCH	-	-	-	-	-	ENTIRE LENGTH OF SEAM
46-72	08/11/18	PG	A	30	30	749	754	P	ENTIRE LENGTH OF SEAM
47-73	08/11/18	PG	A	30	30	750	755	P	ENTIRE LENGTH OF SEAM
48-74	08/11/18	PG	A	30	30	755	800	P	ENTIRE LENGTH OF SEAM
49-75	08/11/18	PG	A	30	30	801	806	P	ENTIRE LENGTH OF SEAM
50-76	08/11/18	PG	A	30	30	805	810	P	ENTIRE LENGTH OF SEAM
51-77	08/11/18	PG	A	30	30	806	811	P	ENTIRE LENGTH OF SEAM
52-78	08/11/18	PG	A	30	30	809	814	P	ENTIRE LENGTH OF SEAM
53-79	08/11/18	PG	A	30	30	810	815	P	ENTIRE LENGTH OF SEAM
54-80	08/11/18	PG	A	30	30	817	822	P	ENTIRE LENGTH OF SEAM
55-80	-	-	PATCH	-	-	-	-	-	ENTIRE LENGTH OF SEAM
55-81	08/11/18	PG	A	30	30	818	823	P	ENTIRE LENGTH OF SEAM
56-82	08/11/18	PG	A	30	30	820	825	P	ENTIRE LENGTH OF SEAM
57-82	N TO S	-	PATCH	-	-	-	-	-	ENTIRE LENGTH OF SEAM
57-82	E TO W	-	PATCH	-	-	-	-	-	ENTIRE LENGTH OF SEAM



DESTRUCTIVE TEST FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM ASH POND	Test Criteria	2P/2S	2P/2S
PROJECT NO.:	18009	Fusion Peel	65	65
MATERIAL TYPE:	40MIL HD MICRO SPIKE	Extrus Peel	52	52
MATERIAL LAYER:	PRIMARY	Peel Sep.	25%	25%
QC NAME:	CHERYL HINA	Shear	81	81

Sample I.D.	Seam NO.	Tech Initials	Machn No.	Peel (ppi)										Shear (ppi)					Pass Fail	SAMPLE LOCATION
				1	2	3	4	5	1	2	3	4	5							
1	P45-P46	BR	W114	81	68	69	70							85	86				Pass	24' NEOS
2	P40-P41	JM	W120	69	72	67	68							82	84				Pass	29' NEOS
3	P36-P37	LH	W118	75	78	70	68							86	81				Pass	32' SEOS
4	P18-P20	BR	W114	74	69	77	70							83	85				Pass	19' NEOS
5	P5-P6	LH	W118	71	73	76	74							81	88				Pass	22' EEOS
6	P12-P13	JM	W120	87	84	76	77							82	85				Pass	8' SEOS
7	R25-P26	FR	X89	83		71								87	89				Pass	7' SEOS
8	P24-P61	BR	W114	82	73	74	69							83	87				Pass	11' NEOS
9	P64-P65	LH	W118	69	81	71	70							83	86				Pass	50' NEOS
10	P69-P71	JM	W120	70	75	69	71							81	84				Pass	23' NEOS
11	P55-P56	JM	W120	74	69	70	71							85	83				Pass	23' SEOS
12	75-76	JM	W120	89	93	93	94							109	98				Pass	40' NEOS



DESTRUCTIVE TEST FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM ASH POND	Test Criteria	2P/2S	2P/2S
PROJECT NO.:	18009	Fusion Peel	65	65
MATERIAL TYPE:	40MIL HD MICRO SPIKE	Extrus Peel	52	52
MATERIAL LAYER:	PRIMARY	Peel Sep.	25%	25%
QC NAME:	CHERYL HINA	Shear	81	81

Sample I.D.	Seam NO.	Tech Initials	Machn No.	Peel (ppi)					Shear (ppi)					Pass Fail	SAMPLE LOCATION
				1	2	3	4	5	1	2	3	4	5		
13	82-84	JM	W120	82	87	72	85		106	101				Pass	10' NEOS



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
1	7-8-9	-	08/10/18	FR	P	0822	2X2	08/13/18	SR	P
2	1-7-8	-	08/10/18	FR	P	0819	2X3	08/13/18	SR	P
3	1-2	SEOS	08/10/18	FR	P	0809	2X3	08/13/18	SR	P
4	1-6-7	-	08/10/18	FR	P	0805	2X2	08/13/18	SR	P
5	1-5-6	-	08/10/18	FR	P	0759	2X6	08/13/18	SR	P
6	10-11-12	-	08/10/18	FR	P	0825	2X2	08/13/18	SR	P
7	11-16	WEOS	08/10/18	FR	P	0940	3X4	08/13/18	SR	P
8	11-15-16	-	08/10/18	FR	P	0950	2X2	08/13/18	SR	P
9	11-14-15	-	08/10/18	FR	P	0910	2X3	08/13/18	SR	P
10	11-12-14	-	08/10/18	FR	P	0906	2X2	08/13/18	SR	P
11	12-13-14	-	08/10/18	FR	P	0845	2X3	08/13/18	SR	P
12	1-5-25	-	08/10/18	FR	P	0758	2X2	08/13/18	SR	P
13	5-10-25	-	08/10/18	FR	P	0830	2X2	08/13/18	SR	P
14	10-12-25	-	08/10/18	FR	P	0835	2X2	08/13/18	SR	P
15	12-13-25	-	08/10/18	FR	P	0840	2X5	08/13/18	SR	P
16	18-21	SEOS	08/10/18	FR	P	1008	3X6	08/13/18	SR	P
17	18-20-21		08/10/18	FR	P	1016	2X2	08/13/18	SR	P
18	18-19-20		08/10/18	FR	P	1021	2X4	08/13/18	SR	P
19	25-26	76' SEOS	08/10/18	FR	P	1107	2X3	08/13/18	SR	P
20	26-27	11' NEOS	08/10/18	FR	P	1109	2X2	08/13/18	SR	P
21	26-27	19' NEOS	08/10/18	FR	P	1112	2X2	08/13/18	SR	P

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
22	26-27	27' NEOS	08/10/18	FR	P	1120	2X2	08/13/18	SR	P
23	26-27	100' NEOS	08/10/18	FR	P	1035	2X2	08/13/18	SR	P
24	29-30-31	-	08/10/18	FR	P	1305	2X6	08/13/18	SR	P
25	13-17-25-26	-	08/10/18	FR	P	0850	11X12	08/13/18	SR	P
26	17-18-26	-	08/10/18	FR	P	1029	2X2	08/13/18	SR	P
27	18-26-27	-	08/10/18	FR	P	1032	2X2	08/13/18	SR	P
28	18-19-22-27	-	08/10/18	FR	P	1042	2X4	08/13/18	SR	P
29	22-27-28	-	08/10/18	FR	P	1045	2X2	08/13/18	SR	P
30	22-23-28	-	08/10/18	FR	P	1050	2X2	08/13/18	SR	P
31	23-28-29	-	08/10/18	FR	P	1055	2X2	08/13/18	SR	P
32	23-24-29	-	08/10/18	FR	P	1340	2X2	08/13/18	SR	P
33	24-29-30	-	08/10/18	FR	P	1342	2X2	08/13/18	SR	P
34	29-31	NEOS	08/10/18	FR	P	1315	4X13	08/13/18	SR	P
35	30-32	NEOS	08/10/18	FR	P	1345	3X4	08/13/18	SR	P
36	13-14	21' SEOS	08/10/18	FR	P	0955	2X2	08/13/18	SR	P
37	45-46	24' NEOS	08/11/18	BR	DT1	1014	2X4	08/13/18	SR	P
38	40-41	29' NEOS	08/11/18	FR	DT2	0858	2X5	08/13/18	SR	P
39	36-37	32' SEOS	08/11/18	FR	DT3	1159	2X5	08/13/18	SR	P
40	18-20	19' NEOS	08/10/18	FR	DT4	1019	2X5	08/13/18	SR	P
41	5-6	22' EEOS	08/10/18	FR	DT5	0931	2X5	08/13/18	SR	P

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
42	12-13	8' SEOS	08/10/18	FR	DT6	0859	2X5	08/13/18	SR	P
43	24-30-62	-	08/11/18	FR	P	0706	2X3	08/13/18	SR	P
44	28-29	NEOS TO 5'	08/10/18	FR	P	1130	2X2	08/13/18	SR	P
45	28-29	34' NEOS	08/10/18	FR	P	1135	2X2	08/13/18	SR	P
46	24-59-60	-	08/10/18	FR	P	1512	2X2	08/13/18	SR	P
47	24-60-61	-	08/10/18	FR	P	1514	2X2	08/13/18	SR	P
48	24-61-62	-	08/10/18	FR	P	1519	2X2	08/13/18	SR	P
49	R25-P26	7' SEOS	08/10/18	FR	DT7	1025	2X5	08/13/18	SR	P
50	30-32-34	-	08/10/18	FR	P	1350	2X2	08/13/18	SR	P
51	19-22	SEOS	08/10/18	FR	P	1509	3X4	08/13/18	SR	P
52	32-34	SEOS TO 13'	08/10/18	FR	P	1355	3X15	08/13/18	SR	P
53	32-33	SEOS	08/10/18	FR	P	1416	2X3	08/13/18	SR	P
54	15-16	8' NEOS	08/10/18	FR	P	0944	2X5	08/13/18	SR	P
55	26-27	93' NEOS	08/10/18	FR	P	1039	2X2	08/13/18	SR	P
56	3-4	SEOS	08/10/18	FR	P	0814	2X2	08/13/18	SR	P
57	2-3	SEOS	08/10/18	FR	P	0810	2X2	08/13/18	SR	P
58	59-60	24' SEOS	08/10/18	FR	P	1521	2X2	08/13/18	SR	P
59	64-65	50' NEOS	08/10/18	FR	DT9	1545	2X4	08/13/18	SR	P
60	69-71	23' NEOS	08/11/18	BR	DT10	0843	2X4	08/13/18	SR	P
61	69-70-71	-	08/11/18	BR	P	0840	2X3	08/13/18	SR	P

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
62	70-71-72	-	08/11/18	FR	P	0829	2X2	08/13/18	SR	P
63	55-56	23' NEOS	08/11/18	JM	DT11	1058	2X4	08/13/18	SR	P
64	24-61	11' NEOS	08/10/18	FR	DT8	1516	2X4	08/13/18	SR	P
65	30-34-62	-	08/11/18	FR	P	0709	2X3	08/13/18	SR	P
66	34-61-62	-	08/11/18	FR	P	0714	2X2	08/13/18	SR	P
67	34-35-61	-	08/11/18	FR	P	0719	2X3	08/13/18	SR	P
68	35-36-60-61	-	08/11/18	FR	P	0721	2X3	08/13/18	SR	P
69	36-37-59-60	-	08/11/18	FR	P	0740	2X3	08/13/18	SR	P
70	37-38-59-63	-	08/11/18	FR	P	0810	2X3	08/13/18	SR	P
71	38-39-63-64	-	08/11/18	FR	P	0815	2X3	08/13/18	SR	P
72	39-40-64-65	-	08/11/18	FR	P	0820	2X3	08/13/18	SR	P
73	40-41-65-66	-	08/11/18	FR	P	0825	2X3	08/13/18	SR	P
74	41-42-66-67	-	08/11/18	FR	P	0830	2X3	08/13/18	SR	P
75	42-43-67-68	-	08/11/18	FR	P	0835	2X3	08/13/18	SR	P
76	43-44-68-69	-	08/11/18	FR	P	0840	2X3	08/13/18	SR	P
77	44-45-69-71	-	08/11/18	BR	P	0854	2X3	08/13/18	SR	P
78	45-46-71-72	-	08/11/18	BR	P	0859	2X3	08/13/18	SR	P
79	46-47-72-73	-	08/11/18	BR	P	0907	2X3	08/13/18	SR	P
80	47-48-73-74	-	08/11/18	BR	P	0914	2X2	08/13/18	SR	P
81	48-49-74-75	-	08/11/18	BR	P	0921	2X2	08/13/18	SR	P

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
82	49-50-75-76	-	08/11/18	BR	P	0929	2X2	08/13/18	SR	P
83	50-51-76-77	-	08/11/18	BR	P	0935	2X2	08/13/18	SR	P
84	51-52-77-78	-	08/11/18	BR	P	0944	3X3	08/13/18	SR	P
85	52-53-78-79	-	08/11/18	BR	P	0950	3X3	08/13/18	SR	P
86	53-54-79-80	-	08/11/18	JM	P	0926	2X2	08/13/18	SR	P
87	54-55-80-81	-	08/11/18	JM	P	0935	2X2	08/13/18	SR	P
88	80-81	9' NEOS	08/11/18	JM	P	0929	2X2	08/13/18	SR	P
89	64-65	SEOS	08/10/18	FR	P	1540	2X3	08/13/18	SR	P
90	73-74	55' NEOS	08/11/18	BR	P	0818	2X2	08/13/18	SR	P
91	76-77	54' NEOS	08/11/18	BR	P	0747	2X2	08/13/18	SR	P
92	77-78	64' NEOS	08/11/18	BR	P	0754	2X2	08/13/18	SR	P
93	78-79	42' SEOS	08/11/18	BR	P	0811	2X7	08/13/18	SR	P
94	55-81	17' WEOS	08/11/18	JM	P	1003	2X2	08/13/18	SR	P
95	55-56-81-82	-	08/11/18	JM	P	1006	2X3	08/13/18	SR	P
96	56-57-82	-	08/11/18	JM	P	1012	2X2	08/13/18	SR	P
97	57-82	ENTIRE SEAM	08/11/18	JM	P	1013	2X6	08/13/18	SR	P
98	57-82-83	-	08/11/18	JM	P	1015	2X2	08/13/18	SR	P
99	57	14' WEOS & 2' N ON 57	08/11/18	JM	P	1030	2X2	08/13/18	SR	P
100	57-83	14' WEOS & 2' N ON 57	08/11/18	JM	GUIDE WIRE	1034	3X3	08/13/18	SR	P
101	57-58-83	-	08/11/18	JM	P	1039	2X2	08/13/18	SR	P

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
102	58-83	EEOS	08/11/18	JM	P	1044	2X4	08/13/18	SR	P
103	83-84	18' EEOS & 8' N ON 83	08/11/18	JM	TELA POLE	1158	2X10	08/13/18	SR	P
104	83-84	EEOS	08/11/18	JM	P	1049	2X4	08/13/18	SR	P
105	82-83-84	-	08/11/18	JM	P	0805	2X2	08/13/18	SR	P
106	82-84-85	-	08/11/18	JM	P	0808	2X2	08/13/18	SR	P
107	82-85-86	-	08/11/18	JM	P	0814	2X8	08/13/18	SR	P
108	85-86	EEOS	08/11/18	JM	P	0826	3X7	08/13/18	SR	P
109	82-86-87	-	08/11/18	JM	P	0819	2X2	08/13/18	SR	P
110	87-88	EEOS	08/11/18	JM	P	0843	2X6	08/13/18	SR	P
111	81-82-87	-	08/11/18	JM	P	0849	2X2	08/13/18	SR	P
112	80-81-87	-	08/11/18	JM	P	0859	2X3	08/13/18	SR	P
113	79-80-87	-	08/11/18	JM	P	0904	2X2	08/13/18	SR	P
114	79-87	SEOS	08/11/18	JM	P	0911	2X4	08/13/18	SR	P
115	87-88	WEOS	08/11/18	JM	P	0916	2X7	08/13/18	SR	P
116	32-34	9' SEOS	08/11/18	FR	STRUCTURE	1051	2X12	08/13/18	SR	P
117	34-35	9' SEOS & 7' E ON 35	08/11/18	FR	STRUCTURE	1119	2X12	08/13/18	SR	P
118	36-37	11' SEOS & 7' W ON 36	08/11/18	FR	STRUCTURE	1151	2X12	08/13/18	SR	P
119	37-38	10' SEOS	08/13/18	FR	STRUCTURE	0845	2X12	08/13/18	SR	P
120	38-39	9' SEOS & 7' E ON 39	08/13/18	FR	STRUCTURE	0855	2X12	08/13/18	SR	P
121	40-41	8' SEOS & 7' W ON 40	08/13/18	FR	STRUCTURE	0958	2X12	08/13/18	SR	P

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-BOTTOM ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
122	41-42	8; SEOS	08/13/18	BR	STRUCTURE	0845	2X12	08/13/18	SR	P
123	42-43	7' SEOS & 6' E ON 43	08/13/18	BR	STRUCTURE	0818	2X12	08/13/18	SR	P
124	44-45	8' SEOS & 8' W ON 44	08/11/18	BR	STRUCTURE	1135	2X12	08/13/18	SR	P
125	45-46	7' SEOS	08/11/18	BR	STRUCTURE	1103	2X12	08/13/18	SR	P
126	46-47	7' SEOS & 7' E ON 47	08/13/18	BR	STRUCTURE	0939	2X12	08/13/18	SR	P
127	48-49	10' SEOS & 8' W ON 48	08/13/18	BR	STRUCTURE	1038	2X12	08/13/18	SR	P
128	49-50	9' SEOS	08/13/18	BR	STRUCTURE	1050	2X12	08/13/18	SR	P
129	50-51	9' SEOS & 6' E ON 51	08/13/18	BR	STRUCTURE	1105	2X12	08/13/18	SR	P
130	52-53	7' SEOS & 8' W ON 52	08/13/18	JM	STRUCTURE	1032	2X12	08/13/18	SR	P
131	53-54	7' SEOS	08/13/18	JM	STRUCTURE	1002	2X12	08/13/18	SR	P
132	54-55	7' SEOS & 6' E ON 55	08/13/18	JM	STRUCTURE	0942	2X12	08/13/18	SR	P
133	56-57	3' SEOS & 7' W ON 56	08/13/18	JM	BOOT	0840	3X9	08/13/18	SR	P
134	57-58	8' SEOS	08/13/18	JM	BOOT	0853	3X4	08/13/18	SR	P
135	75-76	40' NEOS	08/13/18	JM	DT12	1100	2X4	08/13/18	SR	P
136	82-84	10' NEOS	08/13/18	JM	DT13	0811	2X4	08/13/18	SR	P

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



Date: 2018-08-11

Mail To:

**Anna Saindon
Geotechnology Inc
11816 Lackland Road
St. Louis , MO , 63146**

Bill To:

Geotechnology Inc

e-mail:asaindon@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: Meredosia Ash Pond Closure

TRI Job Reference Number: **40164**

Material(s) Tested: (10) Heat Fusion Weld Seam(s)
(1) 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,

Patricia Zabaleta
Project Manager
Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc
Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40164

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-1 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	90	96	88	89	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)	85	91	83	91	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	
Shear						Shear
Shear Strength (ppi)	111	112	113	111	111	112
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-2 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	95	97	95	95	99	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)	88	87	89	100	92	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)	108	111	106	108	107	108
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

The testing herein 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.

TRI ENVIRONMENTAL, INC.

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40164

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DT-3 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	91	89	97	92	99	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)	80	83	84	83	83	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)	111	115	111	112	112	112
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-4 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	85	105	91	103	98	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)	99	99	97	99	104	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)	108	110	107	109	108	108
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40164

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DT-5 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	82	88	80	84	86	84
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	87	86	91	85	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)	116	116	116	112	115	115
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-6 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	97	99	102	105	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	
Side: B						Peel B
Peel Strength (ppi)	94	101	97	103	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	
Shear						Shear
Shear Strength (ppi)	113	111	111	111	111	111
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40164

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DT-8 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	102	98	96	96	103	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)	78	76	81	72	88	79
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)	108	110	110	110	109	109
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-9 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	94	95	95	96	98	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)	94	92	75	90	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	
Shear						Shear
Shear Strength (ppi)	107	106	108	105	106	106
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40164

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DT-10 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	94	92	92	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	
Side: B						Peel B
Peel Strength (ppi)	93	88	87	90	88	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)	109	111	109	108	107	109
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-11 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	96	95	96	94	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)	94	89	89	91	92	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)	115	114	113	114	113	114
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

The testing herein 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.



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS - SINGLE TRACK

TRI Client: Geotechnology Inc
Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40164

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DT-7 Weld: Single Extrusion						
Side: Peel						Peel
Peel Strength (ppi)	84	84	79	74	66	77
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	112	114	110	110	112
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

The testing herein 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.

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PANEL PLACEMENT FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
1	1794	08/17/18	38	22.5	
2	1794	08/17/18	42	22.5	
3	1794	08/17/18	42	22.5	
4	1794	08/17/18	42	22.5	
5	1794	08/17/18	42	22.5	
6	1794	08/17/18	43	22.5	
7	1794	08/17/18	42	22.5	
8	1794	08/17/18	42	22.5	
9	1794	08/17/18	9.5	2	
10	1794	08/17/18	41	22.5	
11	1794	08/17/18	41	22.5	
12	1794	08/17/18	40	22.5	
13	1794	08/17/18	39	22.5	
14	1794	08/17/18	8.5	2	
15	1794	08/17/18	39	22.5	
16	1794	08/17/18	39	22.5	
17	1794	08/17/18	39	22.5	
18	1780	08/17/18	38	22.5	
19	1780	08/17/18	14	3	
20	1780	08/17/18	37	22.5	



PANEL PLACEMENT FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
21	1780	08/17/18	38	22.5	
22	1780	08/17/18	39	22.5	
23	1780	08/17/18	40	22.5	
24	1780	08/17/18	40	22.5	
25	1780	08/17/18	7	3	
26	1780	08/17/18	40	22.5	
27	1780	08/17/18	40	22.5	
28	1780	08/17/18	41	22.5	
29	1785	08/17/18	436	22.5	
30	1785	08/17/18	281	22.5	
31	1778	08/17/18	116	22.5	
32	1778	08/17/18	358	22.5	
33	1778	08/17/18	223	22.5	
34	1780	08/17/18	94	22.5	
35	1780	08/17/18	178	22.5	
36	1470	08/17/18	90	22.5	
37	1470	08/17/18	209	22.5	
38	1470	08/17/18	131	22.5	
39	1470	08/17/18	42	22.5	

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
40	1470	08/17/18	42	22.5	
41	1470	08/17/18	46	22.5	
42	1470	08/17/18	37	22.5	
43	1787	08/17/18	30	22.5	
44	1787	08/22/18	25	15	
45	1787	08/22/18	50	21.5	
46	1787	08/22/18	39.5	22.5	
47	1787	08/22/18	19	15	
48	1787	08/22/18	484	22.5	
49	1783	08/22/18	528	22.5	
50	1783	08/22/18	196	22.5	
51	1784	08/22/18	342.5	22.5	
52	1784	08/22/18	389	22.5	
53	1782	08/22/18	162.5	22.5	
54	1782	08/22/18	38	22.5	
55	1782	08/22/18	38.5	22.5	
56	1782	08/22/18	477	22.5	
57	1779	08/22/18	85	22.5	
58	1779	08/22/18	40	22.5	



PANEL PLACEMENT FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
59	1779	08/22/18	42.5	22.5	
60	1779	08/22/18	39	22.5	
61	1779	08/22/18	503.5	22.5	
62	1585	08/22/18	73	22.5	
63	1585	08/22/18	592.5	22.5	
64	1585	08/22/18	39.5	22.5	
65	1806	08/22/18	611.5	22.5	
66	1806	08/22/18	35	22.5	
67	1806	08/22/18	33.5	22.5	
68	1806	08/22/18	32	22.5	
69	1497	08/22/18	626	22.5	
70	1497	08/22/18	99.5	22.5	
71	1480	08/22/18	539	22.5	
72	1480	08/22/18	33	22.5	
73	1480	08/22/18	157.5	22.5	
74	1488	08/22/18	494	22.5	
75	1488	08/22/18	35	22.5	
76	1488	08/22/18	203	22.5	
77	1802	08/22/18	461	22.5	

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
78	1802	08/23/18	94	2	cap seam
79	1802	08/23/18	95	2	cap seam
80	1802	08/23/18	97	2	cap seam
81	1802	08/23/18	96	2	cap seam
82	1802	08/23/18	77	2	cap seam
83	1802	09/04/18	167.5	22.5	
84	1485	09/04/18	510	22.5	
85	1504	09/04/18	690	22.5	
86	1495	09/04/18	707	22.5	
87	1495	09/04/18	34.5	22.5	
88	1788	09/04/18	720	22.5	
89	1796	09/04/18	739	22.5	
90	1485	09/04/18	36.5	22.5	
91	1485	09/04/18	39.5	22.5	
92	1485	09/04/18	43	22.5	
93	1485	09/04/18	43.5	22.5	
94	1485	09/04/18	38	18	
95	1483	09/05/18	737.5	22.5	
96	1502	09/05/18	739.5	22.5	



PANEL PLACEMENT FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
97	1498	09/05/18	741.5	22.5	
98	1800	09/05/18	741.5	22.5	
99	1795	09/05/18	741.5	22.5	
100	1791	09/05/18	741.5	22.5	
101	1486	09/05/18	742	22.5	
102	1512	09/05/18	743	22.5	
103	1793	09/05/18	743	22.5	
104	1797	09/05/18	744	22.5	
105	1499	09/14/18	741	22.5	
106	1492	09/14/18	740	22.5	
107	1491	09/14/18	739.5	22.5	
108	1490	09/14/18	735	22.5	
109	1799	09/14/18	733.5	22.5	
110	1496	09/14/18	739	22.5	
111	1478	09/14/18	740	22.5	
112	1798	09/14/18	741	22.5	
113	1487	09/14/18	742.5	22.5	
114	1479	09/14/18	744	22.5	
115	1801	09/14/18	745	22.5	

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
116	1500	09/14/18	742	22.5	
117	1792	09/14/18	743	22.5	
118	1514	09/15/18	735	22.5	
119	1503	09/15/18	736	22.5	
120	1513	09/15/18	704	22.5	
121	1501	09/15/18	736	22.5	
122	1790	09/15/18	735	22.5	
123	1781	09/15/18	739	22.5	
124	1510	09/15/18	738	22.5	
125	1789	09/15/18	740	22.5	
126	1484	09/15/18	741	22.5	
127	1463	09/15/18	742	22.5	
128	1599	09/24/18	740	22.5	
129	1604	09/24/18	737	22.5	
130	1567	09/24/18	736	22.5	
131	1588	09/24/18	736.5	22.5	
132	1586	09/24/18	740	22.5	
133	1596	09/24/18	695	22.5	
134	1598	09/28/18	38	22.5	



PANEL PLACEMENT FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
135	1598	09/28/18	657	22.5	
136	1506	09/28/18	25	22.5	
137	1506	09/28/18	660	22.5	
138	1508	09/28/18	13	9.5	
139	1508	09/28/18	28	22.5	
140	1508	09/28/18	30	22.5	
141	1508	09/28/18	35.5	22.5	
142	1508	09/28/18	33	22.5	
143	1481	09/28/18	608	22.5	
144	1598	09/28/18	6.5	4	
145	1481	09/28/18	36	22.5	
146	1494	09/28/18	614	22.5	
147	1494	09/28/18	28	22.5	
148	1494	09/28/18	31	22.5	
149	1494	09/28/18	28.5	22.5	
150	1505	09/28/18	31.5	22.5	
151	1505	09/28/18	36.5	22.5	
152	1505	09/28/18	40.5	17.5	
153	1505	09/28/18	42	22.5	

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
154	1505	09/28/18	34	22.5	
155	1505	09/28/18	448	22.5	
156	1505	09/28/18	26	22.5	
157	1505	09/28/18	28	22.5	
158	1511	09/28/18	31	22.5	
159	1511	09/28/18	34	22.5	
160	1511	09/28/18	35	22.5	
161	1511	09/28/18	38	22.5	
162	1511	09/28/18	34	22.5	
163	1511	09/28/18	292	22.5	
164	1511	09/28/18	27.5	22.5	
165	1511	09/28/18	31	22.5	
166	1511	09/28/18	35	22.5	
167	1511	09/28/18	35	22.5	
168	1605	09/28/18	36	22.5	
169	1605	09/28/18	183	22.5	
170	1605	09/28/18	19	22.5	
171	1605	09/28/18	20.5	22.5	
172	1605	09/28/18	24.5	22.5	

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
173	1605	09/28/18	30	22.5	
174	1605	09/28/18	34	22.5	
175	1605	09/28/18	38	22.5	
176	1605	09/28/18	42	22.5	
177	1605	09/28/18	52	22.5	
178	1605	10/16/18	40.5	22.5	
179	1605	10/16/18	39.5	22.5	
180	1605	10/16/18	39	22.5	
181	1605	10/16/18	39	22.5	
182	1601	10/16/18	39	22.5	
183	1601	10/16/18	39.5	22.5	
184	1601	10/16/18	40	22.5	
185	1601	10/16/18	40	22.5	
186	1601	10/16/18	40.5	22.5	
187	1601	10/16/18	40.5	22.5	
188	1601	10/16/18	39.5	22.5	
189	1601	10/16/18	40	22.5	
190	1601	10/16/18	50.5	22.5	
191	1601	10/16/18	50.5	22.5	

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
192	1601	10/16/18	39.5	22.5	
193	1601	10/16/18	38.5	22.5	
194	1601	10/16/18	39	22.5	
195	1601	10/16/18	39	22.5	
196	1601	10/16/18	40	22.5	
197	1601	10/16/18	40.5	22.5	
198	1489	10/16/18	40	22.5	
199	1489	10/16/18	42.5	22.5	
200	1489	10/16/18	69	22.5	
201	1489	10/16/18	99.5	22.5	
202	1489	10/16/18	129.5	22.5	
203	1489	10/16/18	147	22.5	
204	1489	10/16/18	20	22.5	
205	1489	10/16/18	107.5	22.5	
206	1482	10/16/18	82	22.5	
207	1482	10/17/18	219.75	22.5	
208	1482	10/17/18	230.5	22.5	
209	1482	10/17/18	18.75	22.5	
210	1482	10/17/18	146.5	22.5	

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
211	1477	10/17/18	134	22.5	
212	1477	10/17/18	288	22.5	
213	1477	10/17/18	23.5	22.5	
214	1477	10/17/18	279.5	22.5	
215	1580	10/17/18	59	22.5	
216	1580	10/17/18	351.5	22.5	
217	1580	10/17/18	15.5	22.5	
218	1580	10/17/18	294	22.5	
219	1582	10/17/18	100.25	22.5	
220	1582	10/17/18	399.5	22.5	
221	1582	10/17/18	22.75	22.5	
222	1582	10/17/18	40	22.5	
223	1582	10/17/18	39.5	22.5	
224	1582	10/17/18	39	22.5	
225	1582	10/17/18	18.5	22.5	
226	1475	10/17/18	436	22.5	
227	1475	10/17/18	281	22.5	
228	1603	10/17/18	201	22.5	
229	1603	10/18/18	39	22.5	

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
230	1603	10/18/18	39	22.5	
231	1603	10/18/18	40	22.5	
232	1603	10/18/18	40	22.5	
233	1603	10/18/18	40	22.5	
234	1603	10/18/18	247.5	22.5	
235	1466	10/18/18	228.5	22.5	
236	1466	10/18/18	478.75	22.5	
237	1579	10/18/18	42.5	22.5	
238	1603	10/18/18	16	22.5	
239	1579	10/18/18	523.5	22.5	
240	1579	10/18/18	139	22.5	
241	1467	10/18/18	419	22.5	
242	1467	10/18/18	303.5	22.5	
243	1473	10/18/18	287	22.5	
244	1473	10/18/18	24	22.5	
245	1473	10/18/18	342.75	22.5	
246	1581	10/18/18	247.5	22.5	
247	1581	10/18/18	489	22.5	
248	1472	10/18/18	144.25	22.5	

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
249	1472	10/18/18	587	22.5	
250	1587	10/18/18	60.5	22.5	
251	1587	10/18/18	655	22.5	
252	1575	10/18/18	686.5	22.5	
253	1602	10/19/18	650.5	22.5	
254	1568	10/19/18	647	22.5	
255	1469	10/19/18	639.5	22.5	
256	1476	10/19/18	632	22.5	
257	1577	10/19/18	624.5	22.5	
258	1471	10/19/18	617	22.5	
259	1584	10/19/18	611.5	22.5	
260	1589	10/22/18	606.5	22.5	
261	1589	10/22/18	119	22.5	
262	1574	10/22/18	481	22.5	
263	1574	10/22/18	242	22.5	
264	1566	10/22/18	344.5	22.5	
265	1566	10/22/18	386.25	22.5	
266	1595	10/22/18	185	22.5	
267	1595	10/22/18	557.5	22.5	

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
268	1465	10/22/18	23.5	22.5	
269	1465	10/22/18	546.5	22.5	
270	1465	10/22/18	146	22.5	
271	1600	10/22/18	388	22.5	
272	1600	10/22/18	340	22.5	
273	1462	10/22/18	181.5	22.5	
274	1462	10/22/18	509.5	22.5	
275	1573	10/22/18	495	22.5	
276	1573	10/22/18	236	22.5	
277	1576	10/22/18	242.5	22.5	
278	1576	10/22/18	459.5	22.5	
279	1577	10/23/18	442.5	22.5	
280	1577	10/23/18	46	22.5	
281	1577	10/23/18	48.5	22.5	
282	1568	10/23/18	49.25	22.5	
283	1584	10/23/18	50.25	22.5	
284	1584	10/23/18	51.75	22.5	
285	1575	10/23/18	39.75	22.5	
286	1602	10/23/18	13.5	22.5	

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
287	1471	10/23/18	54.75	22.5	
288	1594	10/23/18	166	22.5	
289	1597	10/23/18	255.5	22.5	
290	1597	10/23/18	246	22.5	
291	1475	10/23/18	199.75	22.5	
292	1476	10/23/18	91	22.5	
293	1475	10/23/18	52	13	
294	1475	10/23/18	12	6.5	



TRIAL WELD FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	Fusion	Extrusion
PROJECT NO.:	18009	Time	As Noted	As Noted
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Number	2P/2S	2P/2S
MATERIAL LAYER:	PRIMARY	Peel - ppi	60	52
QC NAME:	CHERYL HINA	Shear - ppi	80	80

Trial No.	Date	Sample Time	Air Temp	Mater Type	Tech Initials	Machn No.	Wedge Barrel	Speed Preheat	Peel (ppi)										Shear (ppi)					Pass Fail
									1		2		3		4		5		1	2	3	4	5	
1	08/17/18	0855	72	SS	BR	W114	750	7.5	75	79	77	76							105	100				Pass
2	08/17/18	0850	72	TS	BR	W114	750	7.5	84	82	83	71							108	102				Pass
3	08/17/18	0854	72	TT	BR	W114	750	7.5	98	92	85	83							106	101				Pass
4	08/17/18	0856	72	SS	JM	W120	750	8.5	84	86	76	79							100	97				Pass
5	08/17/18	0853	72	TS	JM	W120	750	8	94	78	80	73							104	101				Pass
6	08/17/18	0850	72	TT	JM	W120	750	7.5	91	97	86	75							104	99				Pass
7	08/17/18	0845	72	SS	LH	W118	750	6	89	77	76	81							101	107				Pass
8	08/17/18	0850	85	TS	LH	W118	750	6	89	87	90	83							103	94				Pass
9	08/17/18	1413	85	SS	BR	W114	750	7	86	74	72	74							97	94				Pass
10	08/17/18	1410	85	TS	BR	W114	750	7	69	70	74	71							84	87				Pass
11	08/17/18	1405	85	TT	BR	W114	750	7	77	78	78	70							88	84				Pass
12	08/17/18	1410	85	TT	JM	W120	750	9.5	71	83	77	76							88	87				Pass



TRIAL WELD FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	Fusion	Extrusion
PROJECT NO.:	18009	Time	As Noted	As Noted
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Number	2P/2S	2P/2S
MATERIAL LAYER:	PRIMARY	Peel - ppi	60	52
QC NAME:	CHERYL HINA	Shear - ppi	80	80

Trial No.	Date	Sample Time	Air Temp	Mater Type	Tech Initials	Machn No.	Wedge Barrel	Speed Preheat	Peel (ppi)										Shear (ppi)					Pass Fail
									1		2		3		4		5		1	2	3	4	5	
13	08/17/18	1411	85	TS	JM	W120	750	9	84	79	78	77							95	84				Pass
14	08/18/18	0731	69	TT	JM	X83	500	450	93		73								102	91				Pass
15	08/18/18	0735	69	TT	FR	X89	500	500	79		81								97	89				Pass
16	08/18/18	0726	69	TT	BR	X50	250	250	97		91								103	94				Pass
17	08/22/18	0804	62	TT	JM	W120	750	8.5	78	69	80	66							99	90				Pass
18	08/22/18	0722	62	SS	JM	W120	750	9	67	69	64	67							85	82				Pass
19	08/22/18	0730	62	TS	BR	W114	750	5.5	79	77	88	73							100	108				Pass
20	08/22/18	0729	62	SS	BR	W114	750	7.5	92	78	77	75							98	102				Pass
21	08/22/18	0800	62	SS	LH	W118	750	7.5	91	789	87	69							104	101				Pass
22	08/22/18	1051	68	TT	BR	W114	750	8.5	94	87	82	87							97	90				Pass
23	08/22/18	1050	68	TT	LH	W118	750	8.5	100	96	85	80							95	87				Pass
24	08/22/18	1310	82	TT	LH	W118	750	9.5	90	95	85	82							94	88				Pass



TRIAL WELD FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	Fusion	Extrusion
PROJECT NO.:	18009	Time	As Noted	As Noted
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Number	2P/2S	2P/2S
MATERIAL LAYER:	PRIMARY	Peel - ppi	60	52
QC NAME:	CHERYL HINA	Shear - ppi	80	80

Trial No.	Date	Sample Time	Air Temp	Mater Type	Tech Initials	Machn No.	Wedge Barrel	Speed Preheat	Peel (ppi)										Shear (ppi)					Pass Fail
									1		2		3		4		5		1	2	3	4	5	
25	08/22/18	1305	82	SS	BR	W114	750	5.5	94	89	89	84							93	85				Pass
26	08/22/18	1306	82	TT	BR	W114	750	7.5	83	89	80	73							100	93				Pass
27	08/22/18	1320	82	SS	JM	W120	750	9	80	79	72	74							99	89				Pass
28	08/22/18	1315	82	TT	JM	W120	750	8.5	96	99	91	84							99	89				Pass
29	08/23/18	0751	60	TT	FR	X89	500	500	95		90								99	92				Pass
30	08/23/18	0738	60	TT	JM	X83	500	450	87		82								103	97				Pass
31	08/23/18	0944	72	TT	BR	X50	250	250	92		84								98	93				Pass
32	08/23/18	1306	80	TT	BR	W114	750	7.5	86	73	67	76							92	85				Pass
33	08/23/18	1259	80	TT	JM	X83	500	400	101		97								118	113				Pass
34	08/23/18	1309	80	TT	FR	X89	500	500	97		84								98	91				Pass
35	09/04/18	1030	84	SS	LH	W118	750	9	87	71	80	69							88	82				Pass
36	09/04/18	1032	84	TS	LH	W118	750	8.5	79	78	76	71							85	81				Pass



TRIAL WELD FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	Fusion	Extrusion
PROJECT NO.:	18009	Time	As Noted	As Noted
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Number	2P/2S	2P/2S
MATERIAL LAYER:	PRIMARY	Peel - ppi	60	52
QC NAME:	CHERYL HINA	Shear - ppi	80	80

Trial No.	Date	Sample Time	Air Temp	Mater Type	Tech Initials	Machn No.	Wedge Barrel	Speed Preheat	Peel (ppi)										Shear (ppi)					Pass Fail
									1		2		3		4		5		1	2	3	4	5	
37	09/04/18	1034	84	TT	LH	W118	750	8	75	75	72	70							82	83				Pass
38	09/04/18	1030	84	SS	JM	W120	750	9	81	74	71	72							87	86				Pass
39	09/04/18	1032	84	TS	JM	W120	750	8.5	76	67	70	67							92	86				Pass
40	09/04/18	1034	84	TT	JM	W120	750	8	90	85	78	76							87	84				Pass
41	09/04/18	1032	84	SS	BR	W114	750	5.5	76	71	76	70							83	85				Pass
42	09/04/18	1034	84	TS	BR	W114	750	7.5	70	69	68	65							84	82				Pass
43	09/04/18	1036	84	TT	BR	W114	750	8	74	71	70	69							85	86				Pass
44	09/04/18	1030	84	TT	FR	X89	500	500	80		78								85	82				Pass
45	09/04/18	1507	95	TT	JM	W120	750	8.5	69	66	66	65							82	80				Pass
46	09/05/18	0732	76	SS	JM	W120	750	8.5	91	75	75	73							96	90				Pass
47	09/05/18	0732	76	SS	BR	W114	750	7.5	76	70	71	74							91	92				Pass
48	09/05/18	0738	76	SS	LH	W118	750	8.5	74	80	70	75							93	86				Pass



TRIAL WELD FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	Fusion	Extrusion
PROJECT NO.:	18009	Time	As Noted	As Noted
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Number	2P/2S	2P/2S
MATERIAL LAYER:	PRIMARY	Peel - ppi	60	52
QC NAME:	CHERYL HINA	Shear - ppi	80	80

Trial No.	Date	Sample Time	Air Temp	Mater Type	Tech Initials	Machn No.	Wedge Barrel	Speed Preheat	Peel (ppi)										Shear (ppi)					Pass Fail
									1	2	3	4	5	1	2	3	4	5						
49	09/05/18	1230	94	SS	BR	W114	750	7.5	70	69	72	67							83	84				Pass
50	09/05/18	1326	94	TT	JM	X83	500	300	78		70								82	82				Pass
51	09/05/18	1319	94	TT	FR	X89	500	500	81		74								82	83				Pass
52	09/10/18	0726	53	TT	FR	X89	500	500	90		106								108	100				Pass
53	09/10/18	0730	53	TT	JM	X83	550	500	117		96								116	110				Pass
54	09/10/18	0741	53	TT	BR	X50	250	250	95		81								100	92				Pass
55	09/10/18	1248	80	TT	BR	X50	250	250	92		85								93	87				Pass
56	09/10/18	1250	80	TT	FR	X89	500	500	76		78								84	87				Pass
57	09/10/18	1259	80	TT	JM	X83	550	400	80		82								86	85				Pass
58	09/11/18	1340	84	TT	FR	X83	500	500	98		93								101	94				Pass
59	09/12/18	1357	80	TT	JM	X83	550	350	92		94								97	98				Pass
60	09/14/18	0830	69	SS	BR	W114	750	9	77	72	66	74							84	81				Pass



TRIAL WELD FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	Fusion	Extrusion
PROJECT NO.:	18009	Time	As Noted	As Noted
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Number	2P/2S	2P/2S
MATERIAL LAYER:	PRIMARY	Peel - ppi	60	52
QC NAME:	CHERYL HINA	Shear - ppi	80	80

Trial No.	Date	Sample Time	Air Temp	Mater Type	Tech Initials	Machn No.	Wedge Barrel	Speed Preheat	Peel (ppi)										Shear (ppi)					Pass Fail
									1		2		3		4		5		1	2	3	4	5	
61	09/14/18	0845	69	SS	JM	W120	700	9	68	72	69	69							84	82				Pass
62	09/14/18	0849	69	SS	LH	W118	750	8.5	82	74	82	67							84	84				Pass
63	09/14/18	1300	92	SS	BR	W114	750	8.5	72	68	76	76							85	85				Pass
64	09/14/18	1246	92	SS	JM	W120	700	9.5	60	67	70	71							80	80				Pass
65	09/14/18	1245	92	SS	LH	W118	750	8.5	60	63	63	65							81	84				Pass
66	09/15/18	0815	66	SS	JM	W120	700	9.5	77	74	86	78							100	106				Pass
67	09/15/18	0818	66	SS	LH	W118	750	8.5	63	69	68	77							87	89				Pass
68	09/15/18	0818	66	SS	BR	W114	750	7.5	78	69	83	71							93	96				Pass
69	09/17/18	0740	76	TT	FR	X89	500	500	90		96								91	96				Pass
70	09/17/18	0730	76	TT	BR	X50	250	250	85		86								108	108				Pass
71	09/17/18	1244	97	TT	FR	X89	500	500	70		70								83	80				Pass
72	09/17/18	1250	97	TT	BR	X50	250	250	82		90								92	99				Pass



TRIAL WELD FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	Fusion	Extrusion
PROJECT NO.:	18009	Time	As Noted	As Noted
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Number	2P/2S	2P/2S
MATERIAL LAYER:	PRIMARY	Peel - ppi	60	52
QC NAME:	CHERYL HINA	Shear - ppi	80	80

Trial No.	Date	Sample Time	Air Temp	Mater Type	Tech Initials	Machn No.	Wedge Barrel	Speed Preheat	Peel (ppi)					Shear (ppi)					Pass Fail
									1	2	3	4	5	1	2	3	4	5	
73	09/19/18	0749	69	TT	FR	X89	500	500	78		80				84	87			Pass
74	09/20/18	0740	70	TT	FR	X89	500	500	90		92				91	98			Pass
75	09/22/18	0746	69	TT	FR	X89	500	500	87		80				89	91			Pass
76	09/24/18	0946	64	SS	LH	W118	750	8.5	82	74	93	72			103	108			Pass
77	09/24/18	0945	64	TS	LH	W118	700	8.5	74	76	94	74			95	100			Pass
78	09/24/18	0944	64	TT	LH	W118	700	8.5	78	75	81	80			92	98			Pass
79	09/24/18	1027	64	SS	JM	W120	750	8.5	73	77	83	82			105	107			Pass
80	09/24/18	1028	64	TS	JM	W120	750	8	84	74	85	75			93	94			Pass
81	09/24/18	1029	64	TT	JM	W120	750	7.5	88	80	92	99			92	91			Pass
82	09/24/18	1250	78	SS	LH	W121	750	8.5	73	74	78	75			94	99			Pass
83	09/24/18	1405	80	SS	LH	W121	750	8.5	71	69	70	64			84	91			Pass
84	09/25/18	0750	68	TT	LH	X83	500	450	72		80				88	94			Pass



TRIAL WELD FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	Fusion	Extrusion
PROJECT NO.:	18009	Time	As Noted	As Noted
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Number	2P/2S	2P/2S
MATERIAL LAYER:	PRIMARY	Peel - ppi	60	52
QC NAME:	CHERYL HINA	Shear - ppi	80	80

Trial No.	Date	Sample Time	Air Temp	Mater Type	Tech Initials	Machn No.	Wedge Barrel	Speed Preheat	Peel (ppi)										Shear (ppi)					Pass Fail
									1		2		3		4		5		1	2	3	4	5	
85	09/25/18	0741	68	TT	PG	X89	500	500	82		83							81	87				Pass	
86	09/28/18	0917	55	SS	JM	W132	750	8.5	77	65	80	72						106	110				Pass	
87	09/28/18	0840	55	SS	LH	W118	750	8	70	62	78	68						90	93				Pass	
88	09/28/18	0828	55	SS	JH	W120	750	8	76	65	79	73						104	110				Pass	
89	09/28/18	1002	55	TS	JM	W132	750	8	74	80	83	77						95	105				Pass	
90	09/28/18	0835	55	TS	LH	W118	750	8.5	62	71	69	85						93	98				Pass	
91	09/28/18	0828	55	TS	JH	W120	750	8	68	68	82	67						97	106				Pass	
92	09/28/18	0830	55	TT	LH	W118	750	8	81	78	78	95						94	101				Pass	
93	09/28/18	0938	55	TT	JH	W120	750	8	96	89	99	96						94	106				Pass	
94	09/28/18	1306	74	TT	JM	W132	750	7.5	80	78	78	82						87	85				Pass	
95	09/28/18	1340	74	SS	JM	W132	750	8.5	62	64	67	76						84	89				Pass	
96	09/28/18	1348	74	SS	JH	W120	750	8.5	70	70	74	77						84	91				Pass	

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	Fusion	Extrusion
PROJECT NO.:	18009	Time	As Noted	As Noted
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Number	2P/2S	2P/2S
MATERIAL LAYER:	PRIMARY	Peel - ppi	60	52
QC NAME:	CHERYL HINA	Shear - ppi	80	80

Trial No.	Date	Sample Time	Air Temp	Mater Type	Tech Initials	Machn No.	Wedge Barrel	Speed Preheat	Peel (ppi)										Shear (ppi)					Pass Fail
									1	2	3	4	5	1	2	3	4	5						
97	09/28/18	1353	74	TS	JH	W120	750	8.5	74	63	86	73							83	85				Pass
98	09/28/18	1405	74	SS	LH	W118	750	8.5	73	67	73	70							84	91				Pass
99	09/28/18	1410	74	TS	LH	W118	750	8.5	72	68	73	72							82	83				Pass
100	09/29/18	0800	50	TT	PG	X83	550	500	100		104								113	103				Pass
101	09/29/18	0800	50	TT	JH	X89	550	500	98		100								100	107				Pass
102	10/03/18	0742	68	TT	JM	X89	550	400	79		89								86	100				Pass
103	10/16/18	0945	44	SS	LH	W118	700	6	81	87	90	107							106	118				Pass
104	10/16/18	0946	44	SS	JH	W120	700	6.5	97	94	105	94							122	125				Pass
105	10/16/18	1126	46	TS	JH	W120	700	7	78	74	82	88							97	97				Pass
106	10/16/18	1255	59	TT	JH	W120	750	6.5	79	78	81	71							89	94				Pass
107	10/16/18	1256	59	SS	JH	W120	750	7	71	80	91	86							110	115				Pass
108	10/16/18	1255	59	SS	LH	W118	750	6.5	78	91	80	89							97	110				Pass

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	Fusion	Extrusion
PROJECT NO.:	18009	Time	As Noted	As Noted
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Number	2P/2S	2P/2S
MATERIAL LAYER:	PRIMARY	Peel - ppi	60	52
QC NAME:	CHERYL HINA	Shear - ppi	80	80

Trial No.	Date	Sample Time	Air Temp	Mater Type	Tech Initials	Machn No.	Wedge Barrel	Speed Preheat	Peel (ppi)										Shear (ppi)					Pass Fail
									1	2	3	4	5	1	2	3	4	5						
109	10/16/18	1256	59	TT	LH	W118	750	7	85	78	98	82							109	109				Pass
110	10/16/18	1310	59	SS	RN	W132	750	7	77	79	89	91							105	103				Pass
111	10/16/18	1310	59	TT	RN	W132	750	6.5	81	83	83	81							102	105				Pass
112	10/17/18	0749	39	SS	LH	W118	750	6	87	92	80	97							123	125				Pass
113	10/17/18	0752	39	TT	LH	W118	750	6	83	81	87	85							107	112				Pass
114	10/17/18	0748	39	SS	JH	W120	750	6	74	85	76	102							117	126				Pass
115	10/17/18	0750	39	TT	JH	W120	750	6	97	71	90	93							101	111				Pass
116	10/17/18	1253	58	TT	JH	W120	750	6.5	96	91	103	102							98	99				Pass
117	10/17/18	1250	58	SS	LH	W118	750	6.5	70	74	75	78							88	92				Pass
118	10/17/18	1252	58	TT	LH	W118	750	6.5	95	93	112	99							103	110				Pass
119	10/18/18	0755	32	SS	JH	W120	800	5.5	91	87	83	90							126	131				Pass
120	10/18/18	0756	32	TT	JH	W120	800	5.5	92	98	113	99							116	115				Pass

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	Fusion	Extrusion
PROJECT NO.:	18009	Time	As Noted	As Noted
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Number	2P/2S	2P/2S
MATERIAL LAYER:	PRIMARY	Peel - ppi	60	52
QC NAME:	CHERYL HINA	Shear - ppi	80	80

Trial No.	Date	Sample Time	Air Temp	Mater Type	Tech Initials	Machn No.	Wedge Barrel	Speed Preheat	Peel (ppi)										Shear (ppi)					Pass Fail
									1	2	3	4	5	1	2	3	4	5						
121	10/18/18	0759	32	SS	LH	W118	850	5.5	77	91	96	93							123	129				Pass
122	10/18/18	0802	32	TT	LH	W118	850	5.5	90	89	94	87							121	117				Pass
123	10/18/18	1242	62	SS	JH	W120	750	7.5	72	86	89	89							107	107				Pass
124	10/18/18	1243	62	TT	JH	W120	750	7.5	74	83	89	80							90	105				Pass
125	10/18/18	1249	62	SS	LH	W118	750	7	70	77	79	87							103	107				Pass
126	10/18/18	1247	62	TT	LH	W118	750	7	80	77	82	78							91	98				Pass
127	10/18/18	1320	62	SS	RN	W132	850	6.5	70	83	70	84							99	92				Pass
128	10/18/18	1314	62	TT	RN	W132	850	6.5	78	84	80	91							90	98				Pass
129	10/19/18	0800	47	SS	JH	W120	800	5.5	85	77	92	99							112	120				Pass
130	10/19/18	0800	47	SS	LH	W118	800	5.5	75	88	88	88							110	113				Pass
131	10/19/18	1040	48	TT	LH	W118	800	6	92	100	103	101							106	117				Pass
132	10/22/18	0830	42	SS	LH	W118	750	6	81	78	84	89							120	127				Pass

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	Fusion	Extrusion
PROJECT NO.:	18009	Time	As Noted	As Noted
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Number	2P/2S	2P/2S
MATERIAL LAYER:	PRIMARY	Peel - ppi	60	52
QC NAME:	CHERYL HINA	Shear - ppi	80	80

Trial No.	Date	Sample Time	Air Temp	Mater Type	Tech Initials	Machn No.	Wedge Barrel	Speed Preheat	Peel (ppi)										Shear (ppi)					Pass/Fail
									1		2		3		4		5		1	2	3	4	5	
133	10/22/18	0831	42	TT	LH	W118	750	5.5	98	100	101	98						108	113				Pass	
134	10/22/18	0845	42	SS	JH	W120	750	6	92	79	98	77						119	125				Pass	
135	10/22/18	0846	42	TT	JH	W120	750	5.5	91	92	102	98						103	107				Pass	
136	10/22/18	0850	42	SS	BR	W133	800	5.5	89	79	79	75						109	117				Pass	
137	10/22/18	0851	42	TT	BR	W133	800	5	107	89	104	107						104	110				Pass	
138	10/22/18	1300	68	SS	BR	W133	700	8	70	75	88	82						100	103				Pass	
139	10/22/18	1303	68	TT	BR	W133	700	7	87	82	85	82						87	89				Pass	
140	10/22/18	1300	68	SS	LH	W118	750	6.5	65	84	74	89						101	107				Pass	
141	10/22/18	1305	68	TT	LH	W118	750	7	87	83	89	87						90	95				Pass	
142	10/22/18	1306	68	SS	JH	W120	750	8	79	69	81	72						99	106				Pass	
143	10/22/18	1310	68	TT	JH	W120	750	8	84	81	69	80						90	91				Pass	
144	10/23/18	0800	40	SS	BR	W133	750	6	94	73	95	85						126	135				Pass	

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	Fusion	Extrusion
PROJECT NO.:	18009	Time	As Noted	As Noted
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Number	2P/2S	2P/2S
MATERIAL LAYER:	PRIMARY	Peel - ppi	60	52
QC NAME:	CHERYL HINA	Shear - ppi	80	80

Trial No.	Date	Sample Time	Air Temp	Mater Type	Tech Initials	Machn No.	Wedge Barrel	Speed Preheat	Peel (ppi)										Shear (ppi)					Pass Fail
									1	2	3	4	5	1	2	3	4	5						
145	10/23/18	0801	40	TT	BR	W133	750	6.5	100	105	116	100							106	120				Pass
146	10/23/18	0810	40	SS	LH	W118	800	6	88	85	113	83							115	126				Pass
147	10/23/18	0811	40	TT	LH	W118	800	6	82	96	102	106							113	118				Pass
148	10/23/18	0804	40	SS	JH	W120	800	5.5	81	81	100	89							120	124				Pass
149	10/23/18	0805	40	TT	JH	W120	800	5.5	85	80	74	89							109	116				Pass
150	10/23/18	1048	56	TS	BR	W133	750	7.5	74	71	72	74							98	100				Pass
151	10/23/18	1244	60	TT	BR	X83	500	500	76		82								86	88				Pass
152	10/23/18	1248	60	TT	LH	X89	500	500	95		87								94	97				Pass
153	10/24/18	0740	39	TT	JV	X50	250	250	96		96								106	110				Pass
154	10/24/18	0745	39	TT	LH	X89	500	500	93		97								133	141				Pass
155	10/24/18	0805	40	TT	BR	X71	280	280	87		88								105	109				Pass
156	10/24/18	1240	58	TT	BR	X83	500	500	95		87								96	101				Pass

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	Fusion	Extrusion
PROJECT NO.:	18009	Time	As Noted	As Noted
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Number	2P/2S	2P/2S
MATERIAL LAYER:	PRIMARY	Peel - ppi	60	52
QC NAME:	CHERYL HINA	Shear - ppi	80	80

Trial No.	Date	Sample Time	Air Temp	Mater Type	Tech Initials	Machn No.	Wedge Barrel	Speed Preheat	Peel (ppi)					Shear (ppi)					Pass Fail
									1	2	3	4	5	1	2	3	4	5	
157	10/24/18	1303	58	TT	LH	X89	500	500	78	82				101	107				Pass
158	10/24/18	1255	58	TT	JV	X50	250	250	90	89				118	121				Pass
159	10/25/18	0746	40	TT	BR	X83	500	500	90	88				89	88				Pass
160	10/25/18	0745	40	TT	JV	X50	250	250	93	94				120	120				Pass
161	10/25/18	0745	40	TT	LH	X89	500	500	109	97				117	124				Pass
162	10/27/18	0813	40	TT	PG	X83	500	500	84	73				101	108				Pass
163	10/27/18	0807	40	TT	LH	X89	500	500	77	83				117	107				Pass
164	10/30/18	0715	50	TT	BR	X89	500	500	81	83				106	109				Pass



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
1-2	08/17/18	0914	42	BR	W114	750	7.5	1		8/17/2018
2-3	08/17/18	0925	43	BR	W114	750	7.5	1		8/17/2018
3-4	08/17/18	0936	42	BR	W114	750	7.5	1		8/17/2018
4-5	08/17/18	0919	42	LH	W118	750	6	7		8/17/2018
5-6	08/17/18	0930	42	LH	W118	750	6	7		8/17/2018
6-7	08/17/18	0850	43	JM	W120	750	8.5	4		8/17/2018
7-8	08/17/18	0935	41	JM	W120	750	8.5	4		8/17/2018
8-9	08/17/18	958	19	JM	W120	750	8	5		8/17/2018
8-10	08/17/18	0956	23	JM	W120	750	8	5		8/17/2018
9-10	08/17/18	0944	19	JM	W120	750	8.5	4		8/17/2018
10-11	08/17/18	1005	41	JM	W120	750	8.5	4		8/17/2018
11-12	08/17/18	1017	40	JM	W120	750	8.5	4		8/17/2018
12-13	08/17/18	0956	39	BR	W114	750	7.5	1		8/17/2018
13-14	08/17/18	1020	17.5	BR	W114	750	7.5	2		8/17/2018
14-15	08/17/18	1007	16.5	BR	W114	750	7.5	1		8/17/2018
13-15	08/17/18	1020	62	BR	W114	750	7.5	2		8/17/2018
15-16	08/17/18	1030	39.5	BR	W114	750	7.5	1		8/17/2018
16-17	08/17/18	0959	39	LH	W118	750	6	7		8/17/2018
17-18	08/17/18	1009	39.5	LH	W118	750	6	7		8/17/2018
18-19	08/17/18	1038	15	LH	W118	750	6	8		8/17/2018
19-20	08/17/18	1020	14	LH	W118	750	6	8		8/17/2018



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
18-20	08/17/18	1033	25.5	LH	W118	750	6	8		8/17/2018
20-21	08/17/18	1046	37	LH	W118	750	6	7		8/17/2018
21-22	08/17/18	1100	39	LH	W118	750	6	7		8/17/2018
22-23	08/17/18	1036	40	JM	W120	750	8.5	4		8/17/2018
23-24	08/17/18	1047	40	JM	W120	750	8.5	4		8/17/2018
24-25	08/17/18	1112	15.5	JM	W120	750	8	5		8/17/2018
25-26	08/17/18	1057	13.5	JM	W120	750	8	5		8/17/2018
24-26	08/17/18	1114	26.5	JM	W120	750	8	5		8/17/2018
26-27	08/17/18	1052	40	BR	W114	750	7.5	1		8/17/2018
27-28	08/17/18	1108	41.5	BR	W114	750	7.5	1		8/17/2018
29-30	08/17/18	1124	294	LH	W118	750	6	7		8/17/2018
29-31	08/17/18	1253	120	LH	W118	750	6	7		8/17/2018
30-31	08/17/18	1132	22.5	JM	W120	750	7.5	6		8/17/2018
30-32	08/17/18	1250	268	JM	W120	750	8.5	4		8/17/2018
31-32	08/17/18	1314	111	JM	W120	750	8.5	4		8/17/2018
32-33	08/17/18	1247	233	BR	W114	750	7.5	1		8/17/2018
32-34	08/17/18	1309	103	BR	W114	750	7.5	1		8/17/2018
33-34	08/17/18	1139	22.5	BR	W114	750	7.5	3		8/17/2018
33-35	08/17/18	1332	194	BR	W114	750	7.5	1		8/17/2018
33-36	08/17/18	1350	18	BR	W114	750	7.5	1		8/17/2018
34-36	08/17/18	1353	85	BR	W114	750	7.5	1		8/17/2018



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
35-37	08/17/18	1338	162	JM	W120	750	8.5	4		8/17/2018
36-37	08/17/18	1352	77	JM	W120	750	8.5	4		8/17/2018
37-38	08/17/18	1400	178	JM	W120	750	8.5	4		8/17/2018
35-36	08/17/18	1145	22.5	JM	W120	750	7.5	6		8/17/2018
28-39	08/17/18	1322	42	LH	W118	750	6	7		8/17/2018
39-40	08/17/18	1328	42	LH	W118	750	6	7		8/17/2018
40-41	08/17/18	1441	42	BR	W114	750	7.5	9		8/17/2018
41-43	08/17/18	1446	33.5	BR	W114	750	7.5	10		8/17/2018
42-43	08/17/18	1454	32	BR	W114	750	7.5	10		8/17/2018
1-29	08/17/18	1508	6	JM	W120	750	9.5	12		8/17/2018
2-29	08/17/18	1509	22.75	JM	W120	750	9.5	12		8/17/2018
3-29	-	-	0.5	-	PATCH	-	-	-		-
3-30	08/17/18	1513	21.5	JM	W120	750	9.5	12		8/17/2018
4-30	08/17/18	1515	14.5	JM	W120	750	9.5	12		8/17/2018
4-32	08/17/18	1516	9	JM	W120	750	9.5	12		8/17/2018
5-32	08/17/18	1517	22.5	JM	W120	750	9.5	12		8/17/2018
6-32	08/17/18	1518	8.75	JM	W120	750	9.5	12		8/17/2018
6-33	08/17/18	1519	16.5	JM	W120	750	9.5	12		8/17/2018
7-33	08/17/18	1520	13	JM	W120	750	9.5	12		8/17/2018
7-35	08/17/18	1521	9.5	JM	W120	750	9.5	12		8/17/2018
8-35	08/17/18	1522	23	JM	W120	750	9.5	12		8/17/2018



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
10-35	08/17/18	1524	5.75	JM	W120	750	9.5	12		8/17/2018
10-37	08/17/18	1525	10.5	JM	W120	750	9.5	12		8/17/2018
11-37	08/17/18	1526	22.5	JM	W120	750	9.5	12		8/17/2018
12-37	08/17/18	1527	7	JM	W120	750	9.5	12		8/17/2018
12-38	08/17/18	1528	16	JM	W120	750	9.5	12		8/17/2018
13-38	08/17/18	1529	23	JM	W120	750	9.5	12		8/17/2018
15-38	08/17/18	1541	16.25	JM	W120	750	9.5	12		8/17/2018
16-38	08/17/18	1543	22.75	JM	W120	750	9.5	12		8/17/2018
17-38	08/17/18	1545	23	JM	W120	750	9.5	12		8/18/2018
18-38	08/17/18	1522	24	BR	W114	750	7	11		8/18/2018
20-38	08/17/18	1526	9	BR	W114	750	7	11		8/18/2018
21-38	08/17/18	1527	22.5	BR	W114	750	7	11		8/18/2018
22-38	08/17/18	1529	22.75	BR	W114	750	7	11		8/18/2018
23-38	08/17/18	1531	12.75	BR	W114	750	7	11		8/18/2018
23-37	08/17/18	1532	10.25	BR	W114	750	7	11		8/18/2018
24-37	08/17/18	1533	24	BR	W114	750	7	11		8/18/2018
26-37	08/17/18	1534	5	BR	W114	750	7	11		8/18/2018
26-36	08/17/18	1534	4.5	BR	W114	750	7	11		8/18/2018
27-36	08/17/18	1544	22.5	BR	W114	750	7	11		8/18/2018
28-36	-	-	4	-	PATCH	-	-	-		-
28-34	08/17/18	1545	18.75	BR	W114	750	7	11		8/18/2018



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
34-39	08/17/18	1550	10.75	BR	W114	750	7	11		8/18/2018
32-39	08/17/18	1551	12	BR	W114	750	7	11		8/18/2018
32-40	08/17/18	1551	14.5	BR	W114	750	7	11		8/18/2018
31-40	08/17/18	1552	9.5	BR	W114	750	7	11		8/18/2018
31-41	08/17/18	1553	15	BR	W114	750	7	11		8/18/2018
29-41	08/17/18	1556	11.5	BR	W114	750	7	11		8/18/2018
29-42	08/17/18	1557	20.25	BR	W114	750	7	11		8/18/2018
44-47	08/22/18	0840	16	JM	W120	750	9	17		8/22/2018
29-48	08/22/18	0856	446.5	JM	W120	750	8.5	18		8/22/2018
42-48	08/22/18	0931	38	JM	W120	750	8.5	18		8/22/2018
45-46	08/22/18	0912	41	BR	W114	750	5.5	19		8/22/2018
45-47	08/22/18	0985	22	BR	W114	750	5.5	19		8/22/2018
44-45	08/22/18	0851	24	BR	W114	750	5.5	19		8/22/2018
48-49	08/22/18	0919	522	BR	W114	750	7.5	20		8/22/2018
49-51	08/22/18	0940	336	LH	W121	750	7.5	21		8/22/2018
49-50	08/22/18	1006	198	LH	W121	750	7.5	21		8/22/2018
50-51	08/22/18	0952	22.5	JM	W120	750	8.5	17		8/22/2018
50-52	08/22/18	1051	194	JM	W120	750	9	18		8/22/2018
51-52	08/22/18	1037	193	JM	W120	750	9	18		8/22/2018
51-53	08/22/18	1021	156	JM	W120	750	9	18		8/22/2018
52-53	08/22/18	1014	22.5	JM	W120	750	8.5	17		8/22/2018



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
52-56	08/22/18	1115	391	BR	W114	750	7.5	20		8/22/2018
53-56	08/22/18	1108	85	BR	W114	750	7.5	20		8/22/2018
53-57	08/22/18	1058	84	BR	W114	750	7.5	20		8/22/2018
56-57	08/22/18	1056	22.5	LH	W121	750	8.5	23		8/22/2018
56-61	08/22/18	1150	479	JM	W120	750	8.5	18		8/22/2018
61-62	08/22/18	1122	22.5	JM	W120	750	9	17		8/22/2018
57-61	08/22/18	1147	23	JM	W120	750	8.5	18		8/22/2018
57-62	08/22/18	1140	69	JM	W120	750	8.5	18		8/22/2018
62-63	08/22/18	1315	77	LH	W121	750	-	CAP	ENTIRE	8/22/2018
61-63	08/22/18	1320	379	LH	W121	750	-	CAP	SEOS TO 379	8/22/2018
61-63	08/22/18	1504	126	JM	W120	750	9	27	SEOS 379 TO NEOS	8/22/2018
63-65	08/22/18	1322	603	BR	W114	750	5.5	25		8/22/2018
46-54	08/22/18	1033	38	BR	W114	750	7.5	20		8/22/2018
54-55	08/22/18	1038	38	LH	W121	750	7.5	21		8/22/2018
55-58	08/22/18	1116	39	LH	W121	750	7.5	21		8/22/2018
58-59	08/22/18	1127	41	LH	W121	750	7.5	21		8/22/2018
59-60	08/22/18	1136	44	LH	W121	750	7.5	21		8/22/2018
60-64	08/22/18	1145	34	LH	W121	750	7.5	21		8/22/2018
64-66	08/22/18	1624	35	JM	W120	750	9	27		8/23/2018
66-67	08/22/18	1631	34.5	JM	W120	750	9	27		8/23/2018
67-68	08/22/18	1638	32.5	JM	W120	750	9	27		8/23/2018



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
65-69	08/22/18	1407	620	JM	W120	750	9	27		8/22/2018
69-70	08/22/18	1435	95	BR	W114	750	5.5	25		8/22/2018
69-71	08/22/18	1439	537	BR	W114	750	5.5	25		8/22/2018
70-71	08/22/18	1429	22.5	BR	W114	750	5.5	26		8/22/2018
70-73	08/22/18	1524	104.5	JM	W120	750	9	27		8/22/2018
71-73	08/22/18	1532	48	JM	W120	750	9	27		8/22/2018
71-74	08/22/18	1536	493	JM	W120	750	9	27		8/22/2018
73-74	08/22/18	1437	22.5	LH	W121	750	9.5	24		8/22/2018
73-76	08/22/18	1535	163	BR	W114	750	5.5	25		8/22/2018
74-76	08/22/18	1549	35	BR	W114	750	5.5	25		8/22/2018
74-77	08/22/18	1552	460	BR	W114	750	5.5	25		8/23/2018
76-77	08/22/18	1451	22.5	LH	W121	750	9.5	24		8/22/2018
68-72	08/22/18	1639	32	BR	W114	750	5.5	25		8/23/2018
72-75	08/22/18	1633	33	BR	W114	750	5.5	25		8/23/2018
1-48	08/22/18	1617	14.5	LH	W121	750	9.5	24		8/22/2018
47-48	08/22/18	1616	13.25	LH	W121	750	9.5	24		8/22/2018
45-48	08/22/18	1615	4.5	LH	W121	750	9.5	24		8/22/2018
45-49	08/22/18	1614	16.25	LH	W121	750	9.5	24		8/22/2018
46-49	08/22/18	1613	9.5	LH	W121	750	9.5	24		8/22/2018
46-51	08/22/18	1612	13.25	LH	W121	750	9.5	24		8/22/2018
51-54	08/22/18	1611	12	LH	W121	750	9.5	24		8/22/2018



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
53-54	08/22/18	1610	11.25	LH	W121	750	9.5	24		8/22/2018
53-55	08/22/18	1609	15.25	LH	W121	750	9.5	24		8/23/2018
55-57	08/22/18	1608	7	LH	W121	750	9.5	24		8/23/2018
57-58	08/22/18	1607	16.75	LH	W121	750	9.5	24		8/23/2018
58-62	08/22/18	1606	6.25	LH	W121	750	9.5	24		8/23/2018
59-62	08/22/18	1605	18.75	LH	W121	750	9.5	24		8/23/2018
59-63	08/22/18	1604	5	LH	W121	750	9.5	24		8/23/2018
60-63	08/22/18	1602	22.5	LH	W121	750	9.5	24		8/23/2018
64-65	08/22/18	1600	21.5	LH	W121	750	9.5	24		8/23/2018
65-66	08/22/18	1653	5.25	LH	W121	750	9.5	24		8/23/2018
66-69	08/22/18	1652	17.25	LH	W121	750	9.5	24		8/23/2018
67-69	08/22/18	1651	8	LH	W121	750	9.5	24		8/23/2018
67-70	08/22/18	1650	13.75	LH	W121	750	9.5	24		8/23/2018
68-70	08/22/18	1649	11	LH	W121	750	9.5	24		8/23/2018
68-73	08/22/18	1648	11.75	LH	W121	750	9.5	24		8/23/2018
72-73	08/22/18	1647	13	LH	W121	750	9.5	24		8/23/2018
72-76	08/22/18	1646	9.5	LH	W121	750	9.5	24		8/23/2018
75-76	08/22/18	1645	15.75	LH	W121	750	9.5	24		8/23/2018
1-44	08/22/18	1539	22	LH	W121	750	9.5	24		8/22/2018
1-47	08/22/18	1541	20	LH	W121	750	9.5	24		8/22/2018
62-78	08/23/18	1434	77.5	BR	W114	750	7.5	32		8/23/2018



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
63-78	08/23/18	1349	94	BR	W114	750	7.5	32		8/23/2018
61-78	08/23/18	1443	16.5	BR	W114	750	7.5	32		8/23/2018
61-79	08/23/18	1444	95	BR	W114	750	7.5	32		8/23/2018
63-79	08/23/18	1410	95	BR	W114	750	7.5	32		8/23/2018
61-80	08/23/18	1510	97	BR	W114	750	7.5	32		8/23/2018
63-80	08/23/18	1458	97	BR	W114	750	7.5	32		8/23/2018
61-81	08/23/18	1529	96	BR	W114	750	7.5	32		8/23/2018
63-81	08/23/18	1519	96	BR	W114	750	7.5	32		8/23/2018
61-82	08/23/18	1555	77	BR	W114	750	7.5	32		8/23/2018
63-82	08/23/18	1542	77	BR	W114	750	7.5	32		8/23/2018
77-83	09/04/18	1104	167	BR	W114	750	5.5	41		9/4/2018
77-84	09/04/18	1122	297	BR	W114	750	5.5	41		9/4/2018
76-84	09/04/18	1145	210	BR	W114	750	5.5	41		9/4/2018
83-84	09/04/18	1109	22.5	JM	W120	750	8	40		9/4/2018
84-85	09/04/18	1248	513	JM	W120	750	9	38		9/4/2018
83-85	09/04/18	1330	168	JM	W120	750	9	38		9/4/2018
85-86	09/04/18	1255	700	LH	W118	750	9	35		9/4/2018
86-88	09/04/18	1325	713	BR	W114	750	5.5	41		9/4/2018
88-89	09/04/18	1355	727	JM	W120	750	9	38		9/4/2018
75-87	09/04/18	1445	34	LH	W118	750	9	35		9/4/2018
87-90	09/04/18	1449	35	LH	W118	750	9	35		9/4/2018



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
90-91	09/04/18	1455	38	LH	W118	750	9	35		9/4/2018
91-92	09/04/18	1459	41	BR	W114	750	5.5	41		9/4/2018
92-93	09/04/18	1452	45	BR	W114	750	5.5	41		9/4/2018
93-94	09/04/18	1447	42	BR	W114	750	5.5	41		9/4/2018
75-84	09/04/18	1540	6.5	JM	W120	750	8.5	45		9/4/2018
84-87	09/04/18	1539	19.5	JM	W120	750	8.5	45		9/4/2018
85-87	-	-	3	-	PATCH	-	-	-		-
85-90	09/04/18	1537	22.5	JM	W120	750	8.5	45		9/4/2018
86-91	09/04/18	1534	23	JM	W120	750	8.5	45		9/4/2018
86-92	-	-	2	-	PATCH	-	-	-		-
88-92	09/04/18	1527	20.5	JM	W120	750	8.5	45		9/4/2018
88-93	-	-	5.5	-	PATCH	-	-	-		-
89-93	09/04/18	1522	22	JM	W120	750	8.5	45		9/4/2018
89-95	09/05/18	0752	735	JM	W120	750	8.5	46		9/5/2018
95-96	09/05/18	0756	740	BR	W114	750	7.5	47		9/5/2018
96-97	09/05/18	0817	739	LH	W118	750	8.5	48		9/5/2018
97-98	09/05/18	0850	741	JM	W120	750	8.5	46		9/5/2018
98-99	09/05/18	0908	742	BR	W114	750	7.5	47		9/5/2018
99-100	09/05/18	1000	741	LH	W118	750	8.5	48		9/5/2018
100-101	09/05/18	1033	742	JM	W120	750	8.5	46		9/5/2018
101-102	09/05/18	1048	742	BR	W114	750	7.5	47		9/5/2018



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
102-103	09/05/18	1120	744	LH	W118	750	8.5	48		9/5/2018
103-104	09/05/18	1315	743	BR	W114	750	8.5	49		9/5/2018
104-105	09/14/18	0841	742	BR	W114	750	9	60		9/14/2018
105-106	09/14/18	0915	739	JM	W120	700	9	61		9/14/2018
106-107	09/14/18	0918	741	LH	W118	750	8.5	62		9/14/2018
107-108	09/14/18	1005	740	BR	W114	750	9	60		9/14/2018
108-109	09/14/18	1031	729	JM	W120	700	9	61		9/14/2018
109-110	09/14/18	1039	738	LH	W118	750	8.5	62		9/14/2018
110-111	09/14/18	1111	740	BR	W114	750	9	60		9/14/2018
111-112	09/14/18	1248	741	JM	W120	700	9.5	64		9/14/2018
112-113	09/14/18	1248	741	LH	W118	750	8.5	65		9/14/2018
113-114	09/14/18	1306	744	BR	W114	750	8.5	63		9/14/2018
114-115	09/14/18	1355	744	JM	W120	700	9.5	64		9/14/2018
115-116	09/14/18	1408	746	LH	W118	750	8.5	65		9/14/2018
116-117	09/14/18	1424	743	BR	W114	750	8.5	63		9/14/2018
117-118	09/15/18	0820	735	JM	W120	700	9.5	66		9/17/2018
118-119	09/15/18	0826	736	BR	W114	750	7.5	68		9/17/2018
119-120	09/15/18	0826	703	LH	W118	750	8.5	67		9/17/2018
120-121	09/15/18	0935	705	JM	W120	700	9.5	66		9/17/2018
121-122	09/15/18	0931	736	BR	W114	750	7.5	68		9/17/2018
122-123	09/15/18	0937	735	LH	W118	750	8.5	67		9/17/2018



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
123-124	09/15/18	1036	738	JM	W120	700	9.5	66		9/17/2018
124-125	09/15/18	1038	739	BR	W114	750	7.5	68		9/17/2018
125-126	09/15/18	1040	741	LH	W118	750	8.5	67		9/17/2018
126-127	09/15/18	1150	740	JM	W120	700	9.5	66		9/17/2018
127-128	09/24/18	1023	435	LH	W118	750	8.5	76		9/24/2018
127-128	09/24/18	1415	308	LH	W121	750	8.5	83		9/24/2018
128-129	09/24/18	1041	737	JM	W120	750	8.5	79		9/24/2018
129-130	09/24/18	1236	737	JM	W120	750	8.5	79		9/24/2018
130-131	09/24/18	1347	735	JM	W120	750	8.5	79		9/24/2018
131-132	09/24/18	1459	738	JM	W120	750	8.5	79		9/24/2018
132-133	09/24/18	1457	699	JM	W120	750	8.5	79		9/24/2018
132-134	09/28/18	0939	38	LH	W118	750	8	87		9/29/2018
133-134	09/28/18	0925	22.5	LH	W118	750	8	92		9/29/2018
133-135	09/28/18	0955	655	LH	W118	750	8	87		9/29/2018
134-135	09/28/18	0952	38	LH	W118	750	8	87		9/29/2018
135-137	09/28/18	0952	679	JH	W120	750	8	88		9/29/2018
137-143	09/28/18	1006	659	JM	W132	750	8.5	86		9/29/2018
143-146	09/28/18	1112	610	JH	W120	750	8	88		9/29/2018
133-138	09/28/18	1116	28.5	LH	W118	750	8.5	90		9/29/2018
136-138	09/28/18	1105	26.5	LH	W118	750	8.5	90		9/29/2018
133-136	09/28/18	1115	6	LH	W118	750	8.5	90		9/29/2018



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
136-139	09/28/18	1127	24.5	LH	W118	750	8	87		9/29/2018
139-140	09/28/18	1132	25.5	LH	W118	750	8	87		9/29/2018
140-141	09/28/18	1124	34.5	JM	W132	750	8.5	86		9/29/2018
141-142	09/28/18	1133	36.5	JM	W132	750	8.5	86		9/29/2018
142-144	09/28/18	1144	14	LH	W118	750	8.5	90		9/29/2018
144-145	09/28/18	1248	12.5	LH	W118	750	8.5	90		9/29/2018
145-147	09/28/18	1143	21	JM	W132	750	8.5	86		9/29/2018
142-145	09/28/18	1246	21.5	LH	W118	750	8.5	90		9/29/2018
147-148	09/28/18	1253	35	LH	W118	750	8	87		9/29/2018
146-155	09/28/18	1247	445	JH	W120	750	8	88		9/29/2018
148-149	09/28/18	1310	27	JM	W132	750	8.5	86		9/29/2018
149-150	09/28/18	1317	30	JM	W132	750	8.5	86		9/29/2018
150-151	09/28/18	1322	33	JM	W132	750	8.5	86		9/29/2018
151-152	09/28/18	1304	40	LH	W118	750	8	87		9/29/2018
155-163	09/28/18	1357	294	JH	W120	750	8.5	96		9/29/2018
152-153	09/28/18	1315	41	LH	W118	750	8.5	87		9/29/2018
153-154	09/28/18	1407	43	JM	W132	750	8.5	95		9/29/2018
154-156	09/28/18	1402	24.5	JM	W132	750	8.5	95		9/29/2018
156-157	09/28/18	1355	27	JM	W132	750	8.5	95		9/29/2018
157-158	09/28/18	1420	29	JM	W132	750	8.5	95		9/29/2018
158-159	09/28/18	1427	32.5	JM	W132	750	8.5	95		9/29/2018



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
159-160	09/28/18	1433	35	JM	W132	750	8.5	95		9/29/2018
160-161	09/28/18	1418	38	LH	W118	750	8.5	98		9/29/2018
161-162	09/28/18	1424	41.5	LH	W118	750	8.5	98		9/29/2018
162-164	09/28/18	1432	22.5	LH	W118	750	8.5	98		9/29/2018
164-165	09/28/18	1440	26	LH	W118	750	8.5	98		9/29/2018
165-166	09/28/18	1447	29	LH	W118	750	8.5	98		9/29/2018
166-167	09/28/18	1453	33	LH	W118	750	8.5	98		9/29/2018
167-168	09/28/18	1459	36.5	LH	W118	750	8.5	98		9/29/2018
168-170	09/28/18	1514	17.5	JH	W120	750	8.5	96		9/29/2018
170-171	09/28/18	1516	20.5	JH	W120	750	8.5	96		9/29/2018
171-172	09/28/18	1524	20.5	JH	W120	750	8.5	96		9/29/2018
172-173	09/28/18	1514	28.5	LH	W118	750	8.5	98		9/29/2018
173-174	09/28/18	1530	32	JH	W120	750	8.5	96		9/29/2018
174-175	09/28/18	1527	36	JH	W120	750	8.5	96		9/29/2018
175-176	09/28/18	1538	40	JH	W120	750	8.5	96		9/29/2018
176-177	09/28/18	1537	44.5	LH	W118	750	8.5	98		9/29/2018
135-136	09/28/18	1513	21	JM	W132	750	7.5	94		9/29/2018
135-139	09/28/18	1516	14	JM	W132	750	7.5	94		9/29/2018
137-139	09/28/18	1517	15	JM	W132	750	7.5	94		9/29/2018
137-140	09/28/18	1519	22.25	JM	W132	750	7.5	94		9/29/2018
140-143	09/28/18	1521	2.5	JM	W132	750	7.5	94		9/29/2018



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
141-143	09/28/18	1521	23	JM	W132	750	7.5	94		9/29/2018
142-143	09/28/18	1523	10	JM	W132	750	7.5	94		9/29/2018
143-145	09/28/18	1524	20.75	JM	W132	750	7.5	94		9/29/2018
145-146	09/28/18	1526	17	JM	W132	750	7.5	94		9/29/2018
146-147	09/28/18	1528	20.5	JM	W132	750	7.5	94		9/29/2018
146-148	09/28/18	1530	22.5	JM	W132	750	7.5	94		9/29/2018
146-149	09/28/18	1532	23	JM	W132	750	7.5	94		9/29/2018
146-150	09/28/18	1534	23	JM	W132	750	7.5	94		9/29/2018
146-151	09/28/18	1536	23.5	JM	W132	750	7.5	94		9/29/2018
146-152	09/28/18	1538	16	JM	W132	750	7.5	94		9/29/2018
146-153	09/28/18	1540	22.5	JM	W132	750	7.5	94		9/29/2018
146-154	09/28/18	1542	22.5	JM	W132	750	7.5	94		9/29/2018
154-155	09/28/18	1544	10.75	JM	W132	750	7.5	94		9/29/2018
155-156	09/28/18	1557	22.5	JM	W132	750	7.5	94		9/29/2018
155-157	09/28/18	1601	22.5	JM	W132	750	7.5	94		9/29/2018
155-158	09/28/18	1604	22.5	JM	W132	750	7.5	94		9/29/2018
155-159	09/28/18	1607	22.5	JM	W132	750	7.5	94		9/29/2018
155-160	09/28/18	1609	22.5	JM	W132	750	7.5	94		9/29/2018
155-161	09/28/18	1611	22.5	JM	W132	750	7.5	94		9/29/2018
155-162	09/28/18	1614	22.5	JM	W132	750	7.5	94		9/29/2018
162-163	09/28/18	1625	22.5	JM	W132	750	7.5	94		9/29/2018



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
163-164	09/28/18	1626	22.5	JH	W120	750	8.5	97		9/29/2018
163-165	09/28/18	1629	22.5	JH	W120	750	8.5	97		9/29/2018
163-166	09/28/18	1631	22.5	JH	W120	750	8.5	97		9/29/2018
163-167	09/28/18	1633	22.5	JH	W120	750	8.5	97		9/29/2018
163-168	09/28/18	1634	22.5	JH	W120	750	8.5	97		9/29/2018
168-169	09/28/18	1636	22.5	JH	W120	750	8.5	97		9/29/2018
169-170	09/28/18	1612	22.5	LH	W118	750	8.5	99		9/29/2018
169-171	09/28/18	1613	22.5	LH	W118	750	8.5	99		9/29/2018
169-172	09/28/18	1615	22.5	LH	W118	750	8.5	99		9/29/2018
169-173	09/28/18	1616	22.5	LH	W118	750	8.5	99		9/29/2018
169-174	09/28/18	1619	22.5	LH	W118	750	8.5	99		9/29/2018
169-175	09/28/18	1620	22.5	LH	W118	750	8.5	99		9/29/2018
169-176	09/28/18	1622	22.5	LH	W118	750	8.5	99		9/29/2018
169-177	09/28/18	1624	22.5	LH	W118	750	8.5	99		9/29/2018
163-169	09/28/18	1437	183	JH	W120	750	8.5	96		9/29/2018
94-178	10/16/18	1012	41	LH	W118	700	6	103		10/16/18
178-179	10/16/18	1012	40	JH	W120	700	6.5	104		10/16/18
179-180	10/16/18	1024	39	JH	W120	700	6.5	104		10/16/18
180-181.	10/16/18	1031	39	JH	W120	700	6.5	104		10/16/18
181-182	10/16/18	1040	39	JH	W120	700	6.5	104		10/16/18
182-183	10/16/18	1026	39	LH	W118	700	6	103		10/16/18



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
183-184	10/16/18	1035	40	LH	W118	700	6	103		10/16/18
184-185	10/16/18	1044	40	LH	W118	700	6	103		10/16/18
185-186	10/16/18	1055	40.5	LH	W118	700	6	103		10/16/18
186-187	10/16/18	1105	41	LH	W118	700	6	103		10/16/18
187-188	10/16/18	1113	40	LH	W118	700	6	103		10/16/18
188-189	10/16/18	1100	39	JH	W120	700	6.5	104		10/16/18
189-190	10/16/18	1111	41	JH	W120	700	6.5	104		10/16/18
190-191	10/16/18	1134	60	JH	W120	700	7	105		10/16/18
191-192	10/16/18	1148	41	JH	W120	700	6.5	104		10/16/18
192-193	10/16/18	1129	38	LH	W118	700	6	103		10/16/18
193-194	10/16/18	1135	39	LH	W118	700	6	103		10/16/18
194-195	10/16/18	1145	39	LH	W118	700	6	103		10/16/18
195-196	10/16/18	1153	39	LH	W118	700	6	103		10/16/18
196-197	10/16/18	1202	41	LH	W118	700	6	103		10/16/18
197-198	10/16/18	1200	40	JH	W120	700	7	104		10/16/18
94-199	10/16/18	1355	19	JH	W120	700	7	105		10/16/18
89-199	10/16/18	1353	12	JH	W120	700	7	105		10/16/18
199-200	10/16/18	1300	54	LH	W118	750	6.5	108		10/16/18
200-201	10/16/18	1303	84	JH	W120	750	7	107		10/16/18
201-202	10/16/18	1312	115	LH	W118	750	6.5	108		10/16/18
202-203	10/16/18	1321	144	JH	W120	750	6.5	107		10/16/18



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
203-205	10/16/18	1327	105	RN	W132	750	7	110		10/16/18
205-206	10/16/18	1315	22.5	RN	W132	750	6.5	111		10/16/18
203-206	10/16/18	1305	45	RN	W132	750	7	110		10/16/18
203-204	10/16/18	1340	20.5	JH	W120	750	6.5	106		10/16/18
204-206	10/16/18	1349	25	RN	W132	750	7	110		10/16/18
178-199	10/16/18	1429	23	LH	W118	750	7	109		10/16/18
179-199	10/16/18	1428	9	LH	W118	750	750	109		10/16/18
179-200	10/16/18	1426	14	LH	W118	750	750	109		10/16/18
180-200	10/16/18	1423	22.5	LH	W118	750	750	109		10/16/18
181-201	10/16/18	1421	22.5	LH	W118	750	750	109		10/16/18
182-201	10/16/18	1420	13.5	LH	W118	750	750	109		10/16/18
182-202	10/16/18	1419	9.25	LH	W118	750	750	109		10/16/18
183-202	10/16/18	1415	22.75	LH	W118	750	750	109		10/16/18
184-202	-	-	4	-	PATCH	-	-	-		-
184-203	-	-	1.75	-	PATCH	-	-	-		-
184-204	10/16/18	1413	17.25	LH	W118	750	750	109		10/16/18
185-204	10/16/18	1412	16.5	LH	W118	750	750	109		10/16/18
185-206	10/16/18	1411	6	LH	W118	750	750	109		10/16/18
186-206	10/16/18	1409	22.75	LH	W118	750	750	109		10/16/18
95-199	10/16/18	1416	22.5	RN	W132	750	6.5	111		10/16/18
96-200	10/16/18	1419	22.5	RN	W132	750	6.5	111		10/16/18



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
97-201	10/16/18	1434	22.5	RN	W132	750	6.5	111		10/16/18
98-202	10/16/18	1427	22.5	RN	W132	750	6.5	111		10/16/18
99-203	10/16/18	1429	22.5	RN	W132	750	6.5	111		10/16/18
100-205	10/16/18	1431	22.5	RN	W132	750	6.5	111		10/16/18
205-207	10/17/18	0805	110.5	LH	W118	750	6	112		10/17/18
206-207	10/17/18	0816	95	LH	W118	750	6	112		10/17/18
207-208	10/17/18	0801	229	JH	W120	750	6	114		10/17/18
207-209	10/17/18	0841	5.5	JH	W120	750	6	114		10/17/18
208-209	10/17/18	0838	22.5	JH	W120	750	6	115		10/17/18
208-210	10/17/18	0846	145	JH	W120	750	6	114		10/17/18
208-211	10/17/18	0903	87	JH	W120	750	6	114		10/17/18
210-211	10/17/18	0841	22.5	LH	W118	750	6	113		10/17/18
209-211	10/17/18	0913	32	JH	W120	750	6	114		10/17/18
211-213	10/17/18	0936	11	LH	W118	750	6	112		10/17/18
211-212	10/17/18	0922	138	LH	W118	750	6	112		10/17/18
210-212	10/17/18	0902	148	LH	W118	750	6	112		10/17/18
212-214	10/17/18	0930	278	JH	W120	750	6	114		10/17/18
212-215	10/17/18	0929	12	JH	W120	750	6	114		10/17/18
213-215	10/17/18	0924	36	JH	W120	750	6	114		10/17/18
214-215	10/17/18	0853	22.5	LH	W118	750	6	113		10/17/18
212-213	10/17/18	0847	22.5	LH	W118	750	6	113		10/17/18



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
216-217	10/17/18	0953	22.5	LH	W118	750	6	113		10/17/18
215-217	10/17/18	1046	4	JH	W120	750	6	114		10/17/18
215-216	10/17/18	1041	66	JH	W120	750	6	114		10/17/18
214-216	10/17/18	1008	281	JH	W120	750	6	114		10/17/18
216-218	10/17/18	1015	292	LH	W118	750	6	112		10/17/18
216-219	10/17/18	1008	60	LH	W118	750	6	112		10/17/18
217-219	10/17/18	1005	27	LH	W118	750	6	112		10/17/18
218-219	10/17/18	0943	22.5	LH	W118	750	6	113		10/17/18
220-221	10/17/18	1000	22.5	LH	W118	750	6	113		10/17/18
219-221	10/17/18	1148	11.5	LH	W118	750	6	112		10/17/18
219-220	10/17/18	1137	102	LH	W118	750	6	112		10/17/18
218-220	10/17/18	1108	296	LH	W118	750	6	112		10/17/18
220-226	10/17/18	1130	401	JH	W120	750	6	114		10/17/18
198-222	10/17/18	1052	40	JH	W120	750	6	114		10/17/18
222-223	10/17/18	1104	40	JH	W120	750	6	114		10/17/18
223-224	10/17/18	1111	39	JH	W120	750	6	114		10/17/18
225-226	10/17/18	1121	22.5	JH	W120	750	6	115		10/17/18
221-226	10/17/18	1127	30	JH	W120	750	6	114		10/17/18
221-225	10/17/18	1126	4	JH	W120	750	6	114		10/17/18
225-227	10/17/18	1305	33	LH	W118	750	6.5	117		10/17/18
226-227	10/17/18	1308	240	LH	W118	750	6.5	117		10/17/18



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
226-228	10/17/18	1325	201	LH	W118	750	6.5	117		10/17/18
227-228	10/17/18	1258	22.5	JH	W120	750	6.5	116		10/17/18
187-206	10/17/18	1449	4	JH	W120	750	6.5	116		10/17/18
187-207	10/17/18	1447	16	JH	W120	750	6.5	116		10/17/18
188-207	10/17/18	1445	15	JH	W120	750	6.5	116		10/17/18
188-209	10/17/18	1444	4	JH	W120	750	6.5	116		10/17/18
189-209	10/17/18	1442	22.5	JH	W120	750	6.5	116		10/17/18
190-209	10/17/18	1441	7	JH	W120	750	6.5	116		10/17/18
190-211	10/17/18	1440	11	JH	W120	750	6.5	116		10/17/18
191-211	10/17/18	1437	22.5	JH	W120	750	6.5	116		10/17/18
101-207	10/17/18	1402	22.5	JH	W120	750	6.5	116		10/17/18
102-208	10/17/18	1356	22.5	JH	W120	750	6.5	116		10/17/18
103-210	10/17/18	1354	22.5	JH	W120	750	6.5	116		10/17/18
104-212	10/17/18	1350	22.5	JH	W120	750	6.5	116		10/17/18
104-214	-	-	0.5	-	PATCH	-	-	-		-
105-214	10/17/18	1348	22	JH	W120	750	6.5	116		10/17/18
105-216	-	-	0.5	-	PATCH	-	-	-		-
106-216	10/17/18	1345	22	JH	W120	750	6.5	116		10/17/18
106-218	-	-	0.5	-	PATCH	-	-	-		-
107-218	10/17/18	1335	22	JH	W120	750	6.5	116		10/17/18
107-220	-	-	0.5	-	PATCH	-	-	-		-



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
108-220	10/17/18	1338	21.5	JH	W120	750	6.5	116		10/17/18
108-226	-	-	1	-	PATCH	-	-	-	N TO S	-
108-226	-	-	5	-	PATCH	-	-	-	E TO W	-
109-226	10/17/18	1343	21.5	JH	W120	750	6.5	116		10/17/18
109-228	-	-	1	-	PATCH	-	-	-		-
110-228	10/17/18	1329	21.5	JH	W120	750	6.5	116		10/17/18
192-213	10/17/18	1435	22.5	LH	W118	750	6.5	118		10/17/18
193-213	10/17/18	1433	8	LH	W118	750	6.5	118		10/17/18
193-215	10/17/18	1432	11	LH	W118	750	6.5	118		10/17/18
194-215	10/17/18	1429	21.5	LH	W118	750	6.5	118		10/17/18
194-217	-	-	1	-	PATCH	-	-	-		-
195-217	10/17/18	1427	24	LH	W118	750	6.5	118		10/17/18
196-217	10/17/18	1426	7	LH	W118	750	6.5	118		10/17/18
196-219	10/17/18	1424	12	LH	W118	750	6.5	118		10/17/18
197-219	10/17/18	1422	22.5	LH	W118	750	6.5	118		10/17/18
198-221	10/17/18	1420	22.5	LH	W118	750	6.5	118		10/17/18
221-222	10/17/18	1419	9	LH	W118	750	6.5	118		10/17/18
222-225	10/17/18	1418	10	LH	W118	750	6.5	118		10/17/18
223-225	10/17/18	1417	13	LH	W118	750	6.5	118		10/17/18
228-235	10/18/18	0855	200.5	JH	W120	800	5.5	119		10/18/18
227-235	10/18/18	0921	54.5	JH	W120	800	5.5	119		10/18/18



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
227-234	10/18/18	0927	238	JH	W120	800	5.5	119		10/18/18
234-235	10/18/18	0844	22.5	JH	W120	800	5.5	120		10/18/18
224-229	10/18/18	0825	39.5	LH	W118	850	5.5	121		10/18/18
229-230	10/18/18	0834	39	LH	W118	850	5.5	121		10/18/18
230-231	10/18/18	0844	40	LH	W118	850	5.5	121		10/18/18
231-232	10/18/18	0858	40	LH	W118	850	5.5	121		10/18/18
232-233	10/18/18	0910	40	LH	W118	850	5.5	121		10/18/18
238-239	10/18/18	0920	22.5	LH	W118	850	5.5	122		10/18/18
236-237	10/18/18	0923	22.5	LH	W118	850	5.5	122		10/18/18
234-237	10/18/18	0940	35	LH	W118	850	5.5	121		10/18/18
234-236	10/18/18	0944	221.5	LH	W118	850	5.5	121		10/18/18
235-236	10/18/18	1008	256	LH	W118	850	5.5	121		10/18/18
236-239	10/18/18	1004	480	JH	W120	800	5.5	119		10/18/18
237-239	10/18/18	1000	42	JH	W120	800	5.5	119		10/18/18
237-238	10/18/18	0957	8	JH	W120	800	5.5	119		10/18/18
238-241	10/18/18	1146	24	JH	W120	800	5.5	119		10/18/18
239-241	10/18/18	1110	387	JH	W120	800	5.5	119		10/18/18
239-240	10/18/18	1057	138	JH	W120	800	5.5	119		10/18/18
240-242	10/18/18	1100	140	LH	W118	850	5.5	121		10/18/18
241-242	10/18/18	1113	162	LH	W118	850	5.5	121		10/18/18
241-243	10/18/18	1130	265	LH	W118	850	5.5	121		10/18/18



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
240-241	10/18/18	1035	22.5	LH	W118	850	5.5	122		10/18/18
242-243	10/18/18	1042	22.5	LH	W118	850	5.5	122		10/18/18
233-244	10/18/18	1306	39.5	LH	W118	750	7	125		10/18/18
243-244	10/18/18	1320	27	LH	W118	750	7	126		10/18/18
243-245	10/18/18	1530	309	LH	W118	750	7	125		10/18/18
242-245	10/18/18	1530	59	JH	W120	750	7.5	123		10/18/18
242-246	10/18/18	1551	246	JH	W120	750	7.5	123		10/18/18
245-246	10/18/18	1047	22.5	LH	W118	750	7	126		10/18/18
246-247	10/18/18	1430	249	LH	W118	750	7	125		10/18/18
245-247	10/18/18	1408	237	LH	W118	750	7	125		10/18/18
245-248	10/18/18	1345	139.5	LH	W118	750	7	125		10/18/18
248-249	10/18/18	1450	149	JH	W120	750	7.5	123		10/18/18
247-249	10/18/18	1414	436	JH	W120	750	7.5	123		10/18/18
247-248	10/18/18	1334	22.5	LH	W118	750	7	126		10/18/18
249-250	10/18/18	1330	22.5	RN	W132	850	6.5	128		10/18/18
247-250	10/18/18	1338	56	RN	W132	850	6.5	127		10/18/18
250-251	10/18/18	1440	65	RN	W132	850	6.5	127		10/18/18
249-251	10/18/18	1445	589	RN	W132	850	6.5	127		10/18/18
251-252	10/18/18	1507	656	JH	W120	750	7.5	123		10/18/18
119-252	10/18/18	1625	32	JH	W120	750	5.5	123		10/18/18
121-252	10/18/18	-	34	-	PATCH	-	-	-	-	-



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
110-235	-	-	1	-	PATCH	-	-	-		-
111-235	10/18/18	1520	21.5	LH	W118	750	7	126		10/19/18
111-236	-	-	1	-	PATCH	-	-	-		-
112-236	10/18/18	1524	21.5	LH	W118	750	7	126		10/19/18
112-239	-	-	1	-	PATCH	-	-	-		-
113-239	10/18/18	1526	21.5	LH	W118	750	7	126		10/19/18
113-240	-	-	1	-	PATCH	-	-	-		-
114-240	10/18/18	1529	21.5	LH	W118	750	7	126		10/19/18
114-242	-	-	1	-	PATCH	-	-	-		-
115-242	10/18/18	1532	21.5	LH	W118	750	7	126		10/19/18
115-246	-	-	1	-	PATCH	-	-	-		-
116-246	10/18/18	1535	21.5	LH	W118	750	7	126		10/19/18
116-247	-	-	1	-	PATCH	-	-	-		-
117-247	10/18/18	1538	21.5	LH	W118	750	7	126		10/19/18
117-250	-	-	6	-	PATCH	-	-	-		-
118-250	10/18/18	1544	21.5	LH	W118	750	7	126		10/19/18
118-251	-	-	0.5	-	PATCH	-	-	-		-
119-251	10/18/18	1548	22	LH	W118	750	7	126		10/19/18
120-252	10/18/18	1615	22.5	LH	W118	750	7	126		10/19/18
233-241	10/18/18	1618	26	RN	W132	850	6.5	128		10/19/18
232-238	10/18/18	1622	23	RN	W132	850	6.5	128		10/19/18



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
231-238	10/18/18	1621	4	RN	W132	850	6.5	128		10/19/18
231-237	10/18/18	1625	19	RN	W132	850	6.5	128		10/19/18
230-237	10/18/18	1628	9	RN	W132	850	6.5	128		10/19/18
230-234	10/18/18	1631	15	RN	W132	850	6.5	128		10/19/18
229-234	10/18/18	1632	13	RN	W132	850	6.5	128		10/19/18
227-229	10/18/18	1640	10	RN	W132	850	6.5	128		-
224-227	10/18/18	1641	23	RN	W132	850	6.5	128		10/19/18
252-253	10/19/18	0808	651	JH	W120	800	5.5	129		10/19/18
253-254	10/19/18	0806	650	LH	W118	800	5.5	130		10/19/18
254-255	10/19/18	0926	644	JH	W120	800	5.5	129		10/19/18
255-256	10/19/18	0934	635	LH	W118	800	5.5	130		10/19/18
256-257	10/19/18	1024	629	JH	W120	800	5.5	129		10/19/18
257-258	10/19/18	1052	620	LH	W118	800	5.5	130		10/19/18
258-259	10/19/18	1121	614	JH	W120	800	5.5	129		10/19/18
121-253	10/19/18	1300	21	LH	W118	800	6	131		10/19/18
121-254	-	-	1	-	PATCH	-	-	-		-
122-254	10/19/18	1304	21.5	LH	W118	800	6	131		10/19/18
122-255	-	-	1	-	PATCH	-	-	-		-
123-255	10/19/18	1307	21.5	LH	W118	800	6	131		10/19/18
123-256	-	-	1	-	PATCH	-	-	-		-
124-256	10/19/18	1310	21.5	LH	W118	800	6	131		10/19/18



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
124-257	-	-	0.5	-	PATCH	-	-	-		-
125-257	10/19/18	1313	22	LH	W118	800	6	131		10/19/18
125-258	-	-	0.5	-	PATCH	-	-	-		-
126-258	10/19/18	1318	22	LH	W118	800	6	131		10/19/18
126-259	-	-	0.5	-	PATCH	-	-	-		-
127-259	10/19/18	1321	22	LH	W118	800	6	131		10/19/18
259-260	10/22/18	0845	609	LH	W118	750	6	132		10/22/18
260-261	10/22/18	0901	118	JH	W120	750	6	134		10/22/18
260-262	10/22/18	0915	486	JH	W120	750	6	134		10/22/18
261-262	10/22/18	0854	22.5	JH	W120	750	5.5	135		10/22/18
261-263	10/22/18	0923	120	BR	W133	800	5.5	136		10/22/18
262-263	10/22/18	0936	126	BR	W133	800	5.5	136		10/22/18
262-264	10/22/18	0951	350	BR	W133	800	5.5	136		10/22/18
263-264	10/22/18	0914	22.5	BR	W133	800	5	137		10/22/18
263-265	10/22/18	1022	238	LH	W118	750	6	132		10/22/18
264-265	10/22/18	1046	149.5	LH	W118	750	6	132		10/22/18
264-266	10/22/18	1102	190	LH	W118	750	6	132		10/22/18
265-266	10/22/18	0957	22.5	LH	W118	750	5.5	133		10/22/18
265-268	10/22/18	1027	25	JH	W120	750	6	134		10/22/18
265-267	10/22/18	1035	360	JH	W120	750	6	134		10/22/18
266-267	10/22/18	1112	179.5	JH	W120	750	6	134		10/22/18



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
267-268	10/22/18	1025	22.5	JH	W120	750	5.5	135		10/22/18
268-269	10/22/18	1037	22	BR	W133	800	5.5	136		10/22/18
267-269	10/22/18	1044	529	BR	W133	800	5.5	136		10/22/18
269-270	10/22/18	1139	149	JH	W120	750	6	134		10/22/18
269-271	10/22/18	1153	393	JH	W120	750	6	134		10/22/18
270-271	10/22/18	1134	22.5	LH	W118	750	5.5	133		10/22/18
270-272	10/22/18	1139	143	LH	W118	750	6	132		10/22/18
271-272	10/22/18	1153	197	LH	W118	750	6	132		10/22/18
271-273	10/22/18	1149	186	BR	W133	800	5.5	136		10/22/18
272-273	10/22/18	1128	22.5	LH	W118	750	5.5	133		10/22/18
272-274	10/22/18	1309	340	BR	W133	700	8	138		10/22/18
273-274	10/22/18	1338	177	BR	W133	700	8	138		10/22/18
274-275	10/22/18	1319	502	JH	W120	750	8	142		10/22/18
275-276	10/22/18	1342	239	LH	W118	750	6.5	140		10/22/18
275-277	10/22/18	1334	249	LH	W118	750	6.5	140		10/22/18
276-277	10/22/18	1404	22.5	LH	W118	750	7	141		10/22/18
276-278	10/22/18	1404	233	BR	W133	700	8	138		10/22/18
277-278	10/22/18	1426	236	BR	W133	700	8	138		10/22/18
127-260	10/22/18	-	0.5	-	PATCH	-	-	-		-
128-260	10/22/18	1449	22	LH	W118	750	7	141		10/22/18
128-261	10/22/18	-	0.5	-	PATCH	-	-	-		-



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
129-261	10/22/18	1451	22.5	LH	W118	750	7	141		10/22/18
130-263	10/22/18	1454	22.5	LH	W118	750	7	141		10/22/18
131-263	10/22/18	-	9	-	PATCH	-	-	-		-
131-265	10/22/18	1501	22	LH	W118	750	7	141		10/22/18
131-268	10/22/18	-	0.5	-	PATCH	-	-	-		-
132-268	10/22/18	1505	22	LH	W118	750	7	141		10/22/18
132-269	10/22/18	-	0.5	-	PATCH	-	-	-		-
134-269	10/22/18	1508	22	LH	W118	750	7	141		10/22/18
134-270	10/22/18	-	0.5	-	PATCH	-	-	-		-
135-270	10/22/18	1510	22	LH	W118	750	7	141		10/22/18
137-270	-	-	3.5	-	PATCH	-	-	-		-
137-272	10/22/18	1514	22.5	LH	W118	750	7	141		10/22/18
143-274	10/22/18	1518	22.5	LH	W118	750	7	141		10/22/18
146-274	-	-	5.5	-	PATCH	-	-	-		-
146-275	10/22/18	1522	22.5	LH	W118	750	7	141		10/22/18
155-276	10/22/18	1526	22.5	LH	W118	750	7	141		10/22/18
163-276	-	-	0.5	-	PATCH	-	-	-		-
163-278	10/22/18	1530	22.5	LH	W118	750	7	141		10/22/18
278-279	10/23/18	0844	450	BR	W133	750	6	144		10/23/18
279-288	10/23/18	0943	166	JH	W120	800	5.5	148		10/23/18
288-289	10/23/18	0936	22.5	LH	W118	800	6	147		10/23/18



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
279-289	10/23/18	1002	269	JH	W120	800	5.5	148		10/23/18
289-290	10/23/18	0955	242	LH	W118	800	6	146		10/23/18
288-290	10/23/18	0951	20	LH	W118	800	6	146		10/23/18
280-281	10/23/18	0854	48	JH	W120	800	5.5	148		10/23/18
281-282	10/23/18	0859	49	LH	W118	800	6	146		10/23/18
282-283	10/23/18	0909	49.5	LH	W118	800	6	146		10/23/18
283-284	10/23/18	0906	51	JH	W120	800	5.5	148		10/23/18
284-286	10/23/18	0924	12	LH	W118	800	6	146		10/23/18
284-285	10/23/18	0926	40.5	LH	W118	800	6	146		10/23/18
285-286	10/23/18	0918	22.5	JH	W120	800	5.5	149		10/23/18
286-287	10/23/18	0926	15	JH	W120	800	5.5	148		10/23/18
285-287	10/23/18	0929	39	JH	W120	800	5.5	148		10/23/18
290-291	10/23/18	1000	230	BR	W133	750	6	144		10/23/18
291-294	10/23/18	1059	22.5	LH	W118	800	6	147		10/23/18
293-294	10/23/18	1039	8.5	LH	W118	800	6	147		10/23/18
291-293	10/23/18	1054	57	LH	W118	800	6	146		10/23/18
292-293	10/23/18	1028	16	LH	W118	800	6	147		10/23/18
291-292	10/23/18	1045	90	LH	W118	800	6	146		10/23/18
287-292	10/23/18	1136	10.5	BR	W133	750	7.5	150		10/23/18
287-291	10/23/18	1134	22.5	BR	W133	750	7.5	150		10/23/18
287-290	10/23/18	1132	22.5	BR	W133	750	7.5	150		10/23/18



PANEL SEAMING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HDPE MICROSPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Seam Number	Date	Time	Seam Length (FT)	Seamer Initials	Machine Number	Wedge / Barrel	Speed / Preheat	Trial Seam No.	Comments	Non Destructive Testing Completion Date
287-288	10/23/18	1128	22.5	BR	W133	750	7.5	150		10/23/18
286-288	10/23/18	1126	22.5	BR	W133	750	7.5	150		10/23/18
284-288	10/23/18	1124	22.5	BR	W133	750	7.5	150		10/23/18
283-288	10/23/18	1121	22.5	BR	W133	750	7.5	150		10/23/18
282-288	10/23/18	1119	22.5	BR	W133	750	7.5	150		10/23/18
281-288	10/23/18	1118	22.5	BR	W133	750	7.5	150		10/23/18
280-288	10/23/18	1113	15.5	BR	W133	750	7.5	150		10/23/18
177-280	10/23/18	1100	44	BR	W133	750	7.5	150		10/23/18
169-279	10/23/18	1052	22.5	BR	W133	750	7.5	150		10/23/18
177-288	10/23/18	1055	22.5	BR	W133	750	7.5	150		10/23/18



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
1-2	08/17/18	PG	A	30	30	1045	1050	P	ENTIRE LENGTH OF SEAM
2-3	08/17/18	PG	A	30	30	1047	1052	P	ENTIRE LENGTH OF SEAM
3-4	08/17/18	PG	A	30	30	1050	1055	P	ENTIRE LENGTH OF SEAM
4-5	08/17/18	PG	A	30	30	1057	1102	P	ENTIRE LENGTH OF SEAM
5-6	08/17/18	PG	A	30	30	1059	1104	P	ENTIRE LENGTH OF SEAM
6-7	08/17/18	PG	A	30	30	1101	1106	P	ENTIRE LENGTH OF SEAM
7-8	08/17/18	PG	A	30	30	1112	1117	P	ENTIRE LENGTH OF SEAM
8-9	08/17/18	PG	A	30	30	1111	1116	P	ENTIRE LENGTH OF SEAM
8-10	08/17/18	PG	A	30	30	1109	1114	P	ENTIRE LENGTH OF SEAM
9-10	08/17/18	PG	A	30	30	1110	1115	P	ENTIRE LENGTH OF SEAM
10-11	08/17/18	PG	A	30	30	1118	1123	P	ENTIRE LENGTH OF SEAM
11-12	08/17/18	PG	A	30	30	1120	1125	P	ENTIRE LENGTH OF SEAM
12-13	08/17/18	PG	A	30	30	1123	1128	P	ENTIRE LENGTH OF SEAM
13-14	08/17/18	PG	A	30	30	1128	1133	P	ENTIRE LENGTH OF SEAM
14-15	08/17/18	PG	A	30	30	1131	1136	P	ENTIRE LENGTH OF SEAM
13-15	08/17/18	PG	A	30	30	1129	1134	P	ENTIRE LENGTH OF SEAM
15-16	08/17/18	PG	A	30	30	1135	1140	P	ENTIRE LENGTH OF SEAM
16-17	08/17/18	PG	A	30	30	1138	1143	P	ENTIRE LENGTH OF SEAM
17-18	08/17/18	PG	A	30	30	1150	1155	P	ENTIRE LENGTH OF SEAM
18-19	08/17/18	PG	A	30	30	1241	1246	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
19-20	08/17/18	PG	A	30	30	1242	1247	P	ENTIRE LENGTH OF SEAM
18-20	08/17/18	PG	A	30	30	1245	1250	P	ENTIRE LENGTH OF SEAM
20-21	08/17/18	PG	A	30	30	1248	1253	P	ENTIRE LENGTH OF SEAM
21-22	08/17/18	PG	A	30	30	1249	1254	P	ENTIRE LENGTH OF SEAM
22-23	08/17/18	PG	A	30	30	1252	1257	P	ENTIRE LENGTH OF SEAM
23-24	08/17/18	PG	A	30	30	1254	1259	P	ENTIRE LENGTH OF SEAM
24-25	08/17/18	PG	A	30	30	1306	1311	P	ENTIRE LENGTH OF SEAM
25-26	08/17/18	PG	A	30	30	1305	1310	P	ENTIRE LENGTH OF SEAM
24-26	08/17/18	PG	A	30	30	1304	1309	P	ENTIRE LENGTH OF SEAM
26-27	08/17/18	PG	A	30	30	1310	1315	P	ENTIRE LENGTH OF SEAM
27-28	08/17/18	PG	A	30	30	1314	1319	P	ENTIRE LENGTH OF SEAM
29-30	08/17/18	PG	A	30	30	1327	1332	P	ENTIRE LENGTH OF SEAM
29-31	08/17/18	PG	A	30	30	1346	1351	P	SEOS TO 40'
29-31	08/17/18	PG	A	30	30	1352	1357	P	40' TO NEOS
30-31	08/17/18	PG	A	30	30	1328	1333	P	ENTIRE LENGTH OF SEAM
30-32	08/17/18	PG	A	30	30	1330	1335	P	ENTIRE LENGTH OF SEAM
31-32	08/17/18	PG	A	30	30	1331	1336	P	ENTIRE LENGTH OF SEAM
32-33	08/17/18	PG	A	30	30	1334	1339	P	ENTIRE LENGTH OF SEAM
32-34	08/17/18	PG	A	30	30	1400	1405	P	ENTIRE LENGTH OF SEAM
33-34	08/17/18	PG	A	30	30	1413	1418	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
33-35	08/17/18	PG	A	30	30	1402	1407	P	ENTIRE LENGTH OF SEAM
33-36	08/17/18	PG	A	30	30	1414	1419	P	ENTIRE LENGTH OF SEAM
34-36	08/17/18	PG	A	30	30	1423	1428	P	ENTIRE LENGTH OF SEAM
35-37	08/17/18	PG	A	30	30	1404	1409	P	ENTIRE LENGTH OF SEAM
36-37	08/17/18	PG	A	30	30	1426	1431	P	ENTIRE LENGTH OF SEAM
37-38	08/17/18	PG	A	30	30	1438	1443	P	ENTIRE LENGTH OF SEAM
35-36	08/17/18	PG	A	30	30	1425	1430	P	ENTIRE LENGTH OF SEAM
28-39	08/17/18	PG	A	30	30	1444	1449	P	ENTIRE LENGTH OF SEAM
39-40	08/17/18	PG	A	30	30	1446	1451	P	ENTIRE LENGTH OF SEAM
40-41	08/17/18	PG	A	30	30	1450	1455	P	ENTIRE LENGTH OF SEAM
41-43	08/17/18	PG	A	30	30	1512	1517	P	SEOS TO 17'
41-43	08/17/18	PG	A	30	30	1507	1512	P	17' TO 26'
41-43	-	-	PATCH	-	-	-	-	-	26' TO NEOS
42-43	08/17/18	PG	A	30	30	1500	1505	P	ENTIRE LENGTH OF SEAM
1-29	08/17/18	PG	A	30	30	1528	1533	P	ENTIRE LENGTH OF SEAM
2-29	08/17/18	PG	A	30	30	1529	1534	P	ENTIRE LENGTH OF SEAM
3-29	-	-	PATCH	-	-	-	-	-	ENTIRE LENGTH OF SEAM
3-30	08/17/18	PG	A	30	30	1530	1535	P	ENTIRE LENGTH OF SEAM
4-30	08/17/18	PG	A	30	30	1532	1537	P	ENTIRE LENGTH OF SEAM
4-32	08/17/18	PG	A	30	30	1535	1540	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
5-32	08/17/18	PG	A	30	30	1536	1541	P	SEOS TO 9'
5-32	08/17/18	PG	A	30	30	1540	1545	P	9' TO NEOS
6-32	08/17/18	PG	A	30	30	1539	1544	P	ENTIRE LENGTH OF SEAM
6-33	08/17/18	PG	A	30	30	1547	1552	P	ENTIRE LENGTH OF SEAM
7-33	08/17/18	PG	A	30	30	1548	1553	P	ENTIRE LENGTH OF SEAM
7-35	08/17/18	PG	A	30	30	1551	1556	P	ENTIRE LENGTH OF SEAM
8-35	08/17/18	PG	A	30	30	1552	1557	P	ENTIRE LENGTH OF SEAM
10-35	08/17/18	PG	A	30	30	1555	1600	P	ENTIRE LENGTH OF SEAM
10-37	08/17/18	PG	A	30	30	1556	1601	P	ENTIRE LENGTH OF SEAM
11-37	08/17/18	PG	A	30	30	1602	1607	P	ENTIRE LENGTH OF SEAM
12-37	08/17/18	PG	A	30	30	1603	1608	P	ENTIRE LENGTH OF SEAM
12-38	08/17/18	PG	A	30	30	1604	1609	P	ENTIRE LENGTH OF SEAM
13-38	08/17/18	PG	A	30	30	1605	1610	P	ENTIRE LENGTH OF SEAM
15-38	08/17/18	PG	A	30	30	1606	1611	P	ENTIRE LENGTH OF SEAM
16-38	08/17/18	PG	A	30	30	1607	1612	P	SEOS TO 7'
16-38	08/18/18	PG	A	30	30	712	717	P	7' TO NEOS
17-38	-	-	PATCH	-	-	-	-	-	NEOS TO 9'
17-38	08/18/18	PG	A	30	30	713	718	P	9' TO SEOS
18-38	08/18/18	PG	A	30	30	714	719	P	ENTIRE LENGTH OF SEAM
20-38	08/18/18	PG	A	30	30	720	725	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
21-38	08/18/18	PG	A	30	30	721	726	P	ENTIRE LENGTH OF SEAM
22-38	08/18/18	PG	A	30	30	725	730	P	ENTIRE LENGTH OF SEAM
23-38	08/18/18	PG	A	30	30	726	731	P	ENTIRE LENGTH OF SEAM
23-37	08/18/18	PG	A	30	30	728	733	P	ENTIRE LENGTH OF SEAM
24-37	08/18/18	PG	A	30	30	729	734	P	ENTIRE LENGTH OF SEAM
26-37	08/18/18	PG	A	30	30	730	735	P	ENTIRE LENGTH OF SEAM
26-36	08/18/18	PG	A	30	30	735	740	P	ENTIRE LENGTH OF SEAM
27-36	08/18/18	PG	A	30	30	736	741	P	ENTIRE LENGTH OF SEAM
28-36	-	-	PATCH	-	-	-	-	-	ENTIRE LENGTH OF SEAM
28-34	08/18/18	PG	A	30	30	740	745	P	ENTIRE LENGTH OF SEAM
34-39	08/18/18	PG	A	30	30	744	749	P	ENTIRE LENGTH OF SEAM
32-39	08/18/18	PG	A	30	30	745	750	P	ENTIRE LENGTH OF SEAM
32-40	08/18/18	PG	A	30	30	747	752	P	ENTIRE LENGTH OF SEAM
31-40	08/18/18	PG	A	30	30	748	753	P	ENTIRE LENGTH OF SEAM
31-41	08/18/18	PG	A	30	30	752	757	P	ENTIRE LENGTH OF SEAM
29-41	08/18/18	PG	A	30	30	804	809	P	ENTIRE LENGTH OF SEAM
29-42	08/18/18	PG	A	30	30	805	810	P	ENTIRE LENGTH OF SEAM
44-47	08/22/18	PG	A	30	30	1058	1103	P	ENTIRE LENGTH OF SEAM
29-48	08/22/18	PG	A	30	30	1137	1142	P	ENTIRE LENGTH OF SEAM
42-48	-	-	PATCH	-	-	-	-	-	NEOS TO 12'



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
42-48	08/22/18	PG	A	30	30	1313	1318	P	12' TO SEOS
45-46	08/22/18	PG	A	30	30	1102	1107	P	ENTIRE LENGTH OF SEAM
45-47	08/22/18	PG	A	30	30	1057	1102	P	ENTIRE LENGTH OF SEAM
44-45	08/22/18	PG	A	30	30	1056	1101	P	ENTIRE LENGTH OF SEAM
48-49	08/22/18	PG	A	30	30	1317	1322	P	NEOS TO 22'
48-49	08/22/18	PG	A	30	30	1150	1155	P	22' TO SEOS
49-51	08/22/18	PG	A	30	30	1152	1157	P	ENTIRE LENGTH OF SEAM
49-50	08/22/18	PG	A	30	30	1305	1310	P	ENTIRE LENGTH OF SEAM
50-51	08/22/18	PG	A	30	30	1308	1313	P	ENTIRE LENGTH OF SEAM
50-52	08/22/18	PG	A	30	30	1307	1312	P	ENTIRE LENGTH OF SEAM
51-52	08/22/18	PG	A	30	30	1325	1330	P	ENTIRE LENGTH OF SEAM
51-53	08/22/18	PG	A	30	30	1331	1336	P	ENTIRE LENGTH OF SEAM
52-53	08/22/18	PG	A	30	30	1329	1334	P	ENTIRE LENGTH OF SEAM
52-56	08/22/18	PG	A	30	30	1443	1448	P	ENTIRE LENGTH OF SEAM
53-56	08/22/18	PG	A	30	30	1346	1351	P	ENTIRE LENGTH OF SEAM
53-57	08/22/18	PG	A	30	30	1350	1355	P	NEOS TO 23'
53-57	08/22/18	PG	A	30	30	1353	1358	P	23' TO SEOS
56-57	08/22/18	PG	A	30	30	1355	1400	P	ENTIRE LENGTH OF SEAM
56-61	08/22/18	PG	A	30	30	1445	1450	P	ENTIRE LENGTH OF SEAM
61-62	08/22/18	PG	A	30	30	1403	1408	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
57-61	08/22/18	PG	A	30	30	1401	1406	P	ENTIRE LENGTH OF SEAM
57-62	08/22/18	PG	A	30	30	1358	1403	P	ENTIRE LENGTH OF SEAM
62-63	-	-	CAP	-	-	1359	1404	-	ENTIRE LENGTH OF SEAM
61-63	-	-	CAP	-	-	1452	1457	-	SEOS TO 379'
61-63	08/22/18	PG	A	30	30	1603	1608	P	379' TO NEOS
63-65	08/22/18	PG	A	30	30	1503	1508	P	ENTIRE LENGTH OF SEAM
46-54	08/22/18	PG	A	30	30	1106	1111	P	ENTIRE LENGTH OF SEAM
54-55	08/22/18	PG	A	30	30	1108	1113	P	ENTIRE LENGTH OF SEAM
55-58	08/22/18	PG	A	30	30	1514	1519	P	ENTIRE LENGTH OF SEAM
58-59	08/22/18	PG	A	30	30	1518	1523	P	ENTIRE LENGTH OF SEAM
59-60	08/22/18	PG	A	30	30	1520	1525	P	ENTIRE LENGTH OF SEAM
60-64	08/22/18	PG	A	30	30	1525	1530	P	NEOS TO 6'
60-64	08/22/18	PG	A	30	30	1526	1531	P	6' TO SEOS
64-66	08/23/18	PG	A	30	30	736	741	P	ENTIRE LENGTH OF SEAM
66-67	08/23/18	PG	A	30	30	745	750	P	ENTIRE LENGTH OF SEAM
67-68	08/23/18	PG	A	30	30	749	754	P	ENTIRE LENGTH OF SEAM
65-69	08/22/18	PG	A	30	30	1506	1511	P	ENTIRE LENGTH OF SEAM
69-70	08/22/18	PG	A	30	30	1530	1535	P	SEOS TO 5'
69-70	08/22/18	PG	A	30	30	1533	1538	P	5' TO NEOS
69-71	08/22/18	PG	A	30	30	1600	1605	P	SEOS TO 374'



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
69-71	08/22/18	PG	A	30	30	1543	1548	P	374' TO 477'
69-71	08/22/18	PG	A	30	30	1540	1545	P	477' TO NEOS
70-71	08/22/18	PG	A	30	30	1537	1542	P	ENTIRE LENGTH OF SEAM
70-73	08/22/18	PG	A	30	30	1536	1541	P	ENTIRE LENGTH OF SEAM
71-73	08/22/18	PG	A	30	30	1612	1617	P	ENTIRE LENGTH OF SEAM
71-74	08/22/18	PG	A	30	30	1624	1629	P	ENTIRE LENGTH OF SEAM
73-74	08/22/18	PG	A	30	30	1618	1623	P	ENTIRE LENGTH OF SEAM
73-76	08/22/18	PG	A	30	30	1615	1620	P	ENTIRE LENGTH OF SEAM
74-76	08/22/18	PG	A	30	30	1629	1634	P	ENTIRE LENGTH OF SEAM
74-77	08/23/18	PG	A	30	30	825	830	P	ENTIRE LENGTH OF SEAM
76-77	08/22/18	PG	A	30	30	1635	1640	P	ENTIRE LENGTH OF SEAM
68-72	08/23/18	PG	A	30	30	810	815	P	ENTIRE LENGTH OF SEAM
72-75	08/23/18	PG	A	30	30	807	812	P	ENTIRE LENGTH OF SEAM
1-48	08/22/18	PG	A	30	30	1644	1649	P	ENTIRE LENGTH OF SEAM
47-48	08/22/18	PG	A	30	30	1643	1648	P	ENTIRE LENGTH OF SEAM
45-48	08/22/18	PG	A	30	30	1645	1650	P	ENTIRE LENGTH OF SEAM
45-49	08/22/18	PG	A	30	30	1646	1651	P	ENTIRE LENGTH OF SEAM
46-49	08/22/18	PG	A	30	30	1650	1655	P	ENTIRE LENGTH OF SEAM
46-51	08/22/18	PG	A	30	30	1651	1656	P	ENTIRE LENGTH OF SEAM
51-54	08/22/18	PG	A	30	30	1652	1657	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
53-54	08/22/18	PG	A	30	30	1654	1659	P	ENTIRE LENGTH OF SEAM
53-55	08/22/18	PG	A	30	30	713	718	P	ENTIRE LENGTH OF SEAM
55-57	08/22/18	PG	A	30	30	714	719	P	ENTIRE LENGTH OF SEAM
57-58	08/22/18	PG	A	30	30	715	720	P	ENTIRE LENGTH OF SEAM
58-62	08/22/18	PG	A	30	30	724	729	P	ENTIRE LENGTH OF SEAM
59-62	08/22/18	PG	A	30	30	725	730	P	ENTIRE LENGTH OF SEAM
59-63	08/22/18	PG	A	30	30	726	731	P	ENTIRE LENGTH OF SEAM
60-63	08/22/18	PG	A	30	30	727	732	P	ENTIRE LENGTH OF SEAM
64-65	08/22/18	PG	A	30	30	737	742	P	ENTIRE LENGTH OF SEAM
65-66	08/22/18	PG	A	30	30	738	743	P	ENTIRE LENGTH OF SEAM
66-69	08/22/18	PG	A	30	30	739	744	P	ENTIRE LENGTH OF SEAM
67-69	08/22/18	PG	A	30	30	747	752	P	ENTIRE LENGTH OF SEAM
67-70	08/22/18	PG	A	30	30	748	753	P	ENTIRE LENGTH OF SEAM
68-70	08/22/18	PG	A	30	30	754	759	P	ENTIRE LENGTH OF SEAM
68-73	08/22/18	PG	A	30	30	800	805	P	ENTIRE LENGTH OF SEAM
72-73	08/22/18	PG	A	30	30	802	807	P	ENTIRE LENGTH OF SEAM
72-76	08/22/18	PG	A	30	30	803	808	P	ENTIRE LENGTH OF SEAM
75-76	-	-	PATCH	-	-	-	-	-	WEOS TO 4'
75-76	08/22/18	PG	A	30	30	708	713	P	4' TO EEOS
1-44	08/22/18	PG	A	30	30	1055	1100	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
1-47	08/22/18	PG	A	30	30	1054	1059	P	ENTIRE LENGTH OF SEAM
62-78	08/23/18	PG	A	30	30	1450	1455	P	SEOS TO 23'
62-78	08/23/18	PG	A	30	30	1454	1459	P	23' TO NEOS
63-78	08/23/18	PG	A	30	30	1414	1419	P	ENTIRE LENGTH OF SEAM
61-78	08/23/18	PG	A	30	30	1457	1502	P	ENTIRE LENGTH OF SEAM
61-79	08/23/18	PG	A	30	30	1500	1505	P	ENTIRE LENGTH OF SEAM
63-79	08/23/18	PG	A	30	30	1430	1435	P	ENTIRE LENGTH OF SEAM
61-80	08/23/18	PG	A	30	30	1522	1527	P	ENTIRE LENGTH OF SEAM
63-80	08/23/18	PG	A	30	30	1513	1518	P	ENTIRE LENGTH OF SEAM
61-81	08/23/18	PG	A	30	30	1540	1545	P	ENTIRE LENGTH OF SEAM
63-81	08/23/18	PG	A	30	30	1533	1538	P	ENTIRE LENGTH OF SEAM
61-82	08/23/18	PG	A	30	30	1605	1610	P	SEOS TO 24'
61-82	08/23/18	PG	A	30	30	1607	1612	P	24' TO 40'
61-82	08/23/18	PG	A	30	30	1608	1613	P	40' TO NEOS
63-82	08/23/18	PG	A	30	30	1554	1559	P	ENTIRE LENGTH OF SEAM
77-83	09/04/18	PG	A	30	30	1645	1650	P	ENTIRE LENGTH OF SEAM
77-84	09/04/18	PG	A	30	30	1510	1515	P	ENTIRE LENGTH OF SEAM
76-84	09/04/18	PG	A	30	30	1511	1516	P	ENTIRE LENGTH OF SEAM
83-84	09/04/18	PG	A	30	30	1642	1647	P	ENTIRE LENGTH OF SEAM
84-85	09/04/18	PG	A	30	30	1515	1520	P	SEOS TO 494'



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
84-85	09/04/18	PG	A	30	30	1640	1645	P	494' TO NEOS
83-85	09/04/18	PG	A	30	30	1641	1646	P	ENTIRE LENGTH OF SEAM
85-86	-	-	PATCH	-	-	-	-	-	NEOS TO 11'
85-86	09/04/18	PG	A	30	30	1649	1654	P	11' TO 23'
85-86	09/04/18	PG	A	30	30	1648	1653	P	23' TO 41'
85-86	09/04/18	PG	A	30	30	1633	1638	P	41' TO 505'
85-86	09/04/18	PG	A	30	30	1627	1632	P	505' TO 556'
85-86	09/04/18	PG	A	30	30	1606	1611	P	556' TO 662'
85-86	09/04/18	PG	A	30	30	1605	1610	P	662' TO 678'
85-86	09/04/18	PG	A	30	30	1548	1553	P	678' TO SEOS
86-88	-	-	PATCH	-	-	-	-	-	SEOS TO 25'
86-88	09/04/18	PG	A	30	30	1630	1635	P	25' TO 37'
86-88	09/04/18	PG	A	30	30	1610	1615	P	37' TO NEOS
88-89	09/04/18	PG	A	30	30	1618	1623	P	NEOS TO 709'
88-89	09/04/18	PG	A	30	30	1528	1533	P	709' TO SEOS
75-87	09/04/18	PG	A	30	30	1556	1601	P	ENTIRE LENGTH OF SEAM
87-90	09/04/18	PG	A	30	30	1552	1557	P	NEOS TO 17'
87-90	09/04/18	PG	A	30	30	1553	1558	P	17' TO SEOS
90-91	09/04/18	PG	A	30	30	1545	1550	P	ENTIRE LENGTH OF SEAM
91-92	09/04/18	PG	A	30	30	1541	1546	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

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PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
92-93	09/04/18	PG	A	30	30	1538	1543	P	ENTIRE LENGTH OF SEAM
93-94	09/04/18	PG	A	30	30	1536	1541	P	ENTIRE LENGTH OF SEAM
75-84	09/04/18	PG	A	30	30	1558	1603	P	ENTIRE LENGTH OF SEAM
84-87	09/04/18	PG	A	30	30	1555	1600	P	ENTIRE LENGTH OF SEAM
85-87	-	-	PATCH	-	-	-	-	-	ENTIRE LENGTH OF SEAM
85-90	09/04/18	PG	A	30	30	1549	1554	P	ENTIRE LENGTH OF SEAM
86-91	09/04/18	PG	A	30	30	1548	1553	P	ENTIRE LENGTH OF SEAM
86-92	-	-	PATCH	-	-	-	-	-	ENTIRE LENGTH OF SEAM
88-92	09/04/18	PG	A	30	30	1540	1545	P	ENTIRE LENGTH OF SEAM
88-93	-	-	PATCH	-	-	-	-	-	ENTIRE LENGTH OF SEAM
89-93	09/04/18	PG	A	30	30	1535	1540	P	ENTIRE LENGTH OF SEAM
89-95	09/04/18	PG	A	30	30	910	915	P	ENTIRE LENGTH OF SEAM
95-96	09/04/18	PG	A	30	30	917	922	P	SEOS TO 31'
95-96	09/04/18	PG	A	30	30	904	909	P	31' TO NEOS
96-97	09/04/18	PG	A	30	30	953	958	P	NEOS TO 550'
96-97	-	-	PATCH	-	-	-	-	-	550' TO 570'
96-97	09/04/18	PG	A	30	30	939	944	P	570' TO 577'
96-97	09/04/18	PG	A	30	30	935	940	P	577' TO 631'
96-97	-	-	PATCH	-	-	-	-	-	631' TO 643'
96-97	09/04/18	PG	A	30	30	928	933	P	643' TO 659'



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
96-97	-	-	PATCH	-	-	-	-	-	659' TO 670'
96-97	09/04/18	PG	A	30	30	924	929	P	670' TO SEOS
97-98	09/04/18	PG	A	30	30	1139	1144	P	SEOS TO 175'
97-98	09/04/18	PG	A	30	30	1031	1036	P	175' TO 728'
97-98	09/04/18	PG	A	30	30	956	1001	P	728' TO NEOS
98-99	09/04/18	PG	A	30	30	1020	1025	P	NEOS TO 127'
98-99	09/04/18	PG	A	30	30	1035	1040	P	127' TO 154'
98-99	09/04/18	PG	A	30	30	1044	1049	P	154' TO 234'
98-99	09/04/18	PG	A	30	30	1052	1057	P	234' TO 261'
98-99	09/04/18	PG	A	30	30	1054	1059	P	261' TO 314'
98-99	09/04/18	PG	A	30	30	1102	1107	P	314' TO 428'
98-99	09/04/18	PG	A	30	30	1103	1108	P	428' TO 470'
98-99	09/04/18	PG	A	30	30	1114	1119	P	470' TO 502'
98-99	-	-	PATCH	-	-	-	-	-	502' TO 511'
98-99	09/04/18	PG	A	30	30	1123	1128	P	511' TO SEOS
99-100	09/04/18	PG	A	30	30	1153	1158	P	SEOS TO 131'
99-100	09/04/18	PG	A	30	30	1151	1156	P	131' TO 155'
99-100	-	-	PATCH	-	-	-	-	-	155' TO 164'
99-100	09/04/18	PG	A	30	30	1149	1154	P	164' TO 185'
99-100	09/04/18	PG	A	30	30	1146	1151	P	185' TO 214'



NON-DESTRUCTIVE TESTING FORM

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PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
99-100	09/04/18	PG	A	30	30	1145	1150	P	214' TO 230'
99-100	09/04/18	PG	A	30	30	1132	1137	P	230' TO 284'
99-100	-	-	PATCH	-	-	-	-	-	284' TO 294'
99-100	09/04/18	PG	A	30	30	1109	1114	P	294' TO 306'
99-100	09/04/18	PG	A	30	30	1110	1115	P	306' TO SEOS
100-101	09/04/18	PG	A	30	30	1255	1300	P	SEOS TO 164'
100-101	09/04/18	PG	A	30	30	1254	1259	P	164' TO 223'
100-101	09/04/18	PG	A	30	30	1253	1258	P	223' TO 264'
100-101	09/04/18	PG	A	30	30	1325	1330	P	264' TO 296'
100-101	09/04/18	PG	A	30	30	1328	1333	P	296' TO 452'
100-101	09/04/18	PG	A	30	30	1406	1411	P	452' TO NEOS
101-102	09/04/18	PG	A	30	30	1413	1418	P	NEOS TO 194'
101-102	09/04/18	PG	A	30	30	1412	1417	P	194' TO 211'
101-102	09/04/18	PG	A	30	30	1405	1410	P	211' TO 320'
101-102	09/04/18	PG	A	30	30	1354	1359	P	320' TO 344'
101-102	09/04/18	PG	A	30	30	1341	1346	P	344' TO 386'
101-102	09/04/18	PG	A	30	30	1338	1343	P	386' TO 446'
101-102	09/04/18	PG	A	30	30	1335	1340	P	446' TO 462'
101-102	09/04/18	PG	A	30	30	1311	1316	P	462' TO 488'
101-102	09/04/18	PG	A	30	30	1305	1310	P	488' TO 499'



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
101-102	09/04/18	PG	A	30	30	1301	1306	P	499' TO 592'
101-102	09/04/18	PG	A	30	30	1257	1302	P	592' TO SEOS
103-104	09/04/18	PG	A	30	30	1432	1437	P	SEOS TO 497'
103-104	09/04/18	PG	A	30	30	1424	1429	P	497' TO NEOS
102-103	09/04/18	PG	A	30	30	1426	1431	P	NEOS TO 514'
102-103	09/04/18	PG	A	30	30	1436	1441	P	514' TO 666'
102-103	09/04/18	PG	A	30	30	1442	1447	P	666' TO SEOS
104-105	09/14/18	PG	A	30	30	1302	1307	P	ENTIRE LENGTH OF SEAM
105-106	09/14/18	PG	A	30	30	1304	1309	P	ENTIRE LENGTH OF SEAM
106-107	09/14/18	PG	A	30	30	1305	1310	P	NEOS TO 380'
106-107	09/14/18	PG	A	30	30	1327	1332	P	380' TO SEOS
107-108	09/14/18	PG	A	30	30	1318	1323	P	NEOS TO 574'
107-108	09/14/18	PG	A	30	30	1336	1341	P	574' TO SEOS
108-109	09/14/18	PG	A	30	30	1340	1345	P	ENTIRE LENGTH OF SEAM
109-110	09/14/18	PG	A	30	30	1407	1412	P	SEOS TO 269'
109-110	09/14/18	PG	A	30	30	1420	1425	P	269' TO 600'
109-110	09/14/18	PG	A	30	30	1425	1430	P	600' TO 722'
109-110	-	-	PATCH	-	-	-	-	-	722' TO NEOS
110-111	-	-	PATCH	-	-	-	-	-	NEOS TO 17'
110-111	09/14/18	PG	A	30	30	1453	1458	P	17' TO 23'



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
110-111	-	-	PATCH	-	-	-	-	-	23' TO 28'
110-111	09/14/18	PG	A	30	30	1445	1450	P	28' TO SEOS
111-112	09/14/18	PG	A	30	30	1447	1452	P	ENTIRE LENGTH OF SEAM
112-113	09/14/18	PG	A	30	30	1450	1455	P	ENTIRE LENGTH OF SEAM
113-114	09/14/18	PG	A	30	30	1452	1457	P	ENTIRE LENGTH OF SEAM
114-115	09/14/18	PG	A	30	30	1456	1501	P	ENTIRE LENGTH OF SEAM
115-116	09/14/18	PG	A	30	30	1541	1546	P	SEOS TO 32'
115-116	09/14/18	PG	A	30	30	1522	1527	P	32' TO NEOS
116-117	09/14/18	PG	A	30	30	1524	1529	P	NEOS TO 167'
116-117	09/14/18	PG	A	30	30	1526	1531	P	167' TO 298'
116-117	09/14/18	PG	A	30	30	1533	1538	P	298' TO SEOS
117-118	09/17/18	PG	A	30	30	735	740	P	ENTIRE LENGTH OF SEAM
118-119	09/17/18	PG	A	30	30	732	737	P	NEOS TO 550'
118-119	09/17/18	PG	A	30	30	731	736	P	550' TO SEOS
119-120	09/17/18	PG	A	30	30	742	747	P	SEOS TO 487'
119-120	09/17/18	PG	A	30	30	743	748	P	487' TO NEOS
120-121	09/17/18	PG	A	30	30	750	755	P	NEOS TO 17'
120-121	09/17/18	PG	A	30	30	749	754	P	17' TO SEOS
121-122	09/17/18	PG	A	30	30	753	758	P	ENTIRE LENGTH OF SEAM
122-123	09/17/18	PG	A	30	30	801	806	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
123-124	09/17/18	PG	A	30	30	803	808	P	ENTIRE LENGTH OF SEAM
124-125	09/17/18	PG	A	30	30	806	811	P	ENTIRE LENGTH OF SEAM
125-126	09/17/18	PG	A	30	30	808	813	P	ENTIRE LENGTH OF SEAM
126-127	09/17/18	PG	A	30	30	812	817	P	ENTIRE LENGTH OF SEAM
127-128	09/24/18	PG	A	30	30	1545	1550	P	NEOS TO 157'
127-128	09/24/18	PG	A	30	30	1445	1450	P	157' TO 361'
127-128	09/24/18	PG	A	30	30	1500	1505	P	361' TO 400'
127-128	09/24/18	PG	A	30	30	1504	1509	P	40' TO 433'
127-128	09/24/18	PG	A	30	30	1508	1513	P	433' TO 500'
127-128	09/24/18	PG	A	30	30	1515	1520	P	500' TO SEOS
128-129	09/24/18	PG	A	30	30	1345	1350	P	ENTIRE LENGTH OF SEAM
129-130	09/24/18	PG	A	30	30	1347	1352	P	ENTIRE LENGTH OF SEAM
130-131	09/24/18	PG	A	30	30	1553	1558	P	ENTIRE LENGTH OF SEAM
131-132	09/24/18	PG	A	30	30	1605	1610	P	ENTIRE LENGTH OF SEAM
132-133	09/24/18	PG	A	30	30	1610	1615	P	ENTIRE LENGTH OF SEAM
132-134	09/29/18	LH	A	30	30	1143	1148	P	ENTIRE LENGTH OF SEAM
133-134	09/29/18	LH	A	30	30	1141	1146	P	ENTIRE LENGTH OF SEAM
133-135	09/29/18	LH	A	30	30	744	749	P	ENTIRE LENGTH OF SEAM
134-135	09/29/18	LH	A	30	30	1140	1145	P	ENTIRE LENGTH OF SEAM
135-137	09/29/18	LH	A	30	30	743	748	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
137-143	09/29/18	LH	A	30	30	803	808	P	ENTIRE LENGTH OF SEAM
143-146	09/29/18	LH	A	30	30	828	833	P	ENTIRE LENGTH OF SEAM
133-138	09/29/18	LH	A	30	30	749	754	P	ENTIRE LENGTH OF SEAM
136-138	09/29/18	LH	A	30	30	750	755	P	ENTIRE LENGTH OF SEAM
133-136	09/29/18	LH	A	30	30	746	751	P	ENTIRE LENGTH OF SEAM
136-139	09/29/18	LH	A	30	30	753	758	P	ENTIRE LENGTH OF SEAM
139-140	09/29/18	LH	A	30	30	800	805	P	ENTIRE LENGTH OF SEAM
140-141	09/29/18	LH	A	30	30	806	811	P	ENTIRE LENGTH OF SEAM
141-142	09/29/18	LH	A	30	30	812	817	P	ENTIRE LENGTH OF SEAM
142-144	09/29/18	LH	A	30	30	825	830	P	ENTIRE LENGTH OF SEAM
144-145	09/29/18	LH	A	30	30	824	829	P	ENTIRE LENGTH OF SEAM
145-147	09/29/18	LH	A	30	30	831	836	P	ENTIRE LENGTH OF SEAM
142-145	09/29/18	LH	A	30	30	818	823	P	ENTIRE LENGTH OF SEAM
147-148	09/29/18	LH	A	30	30	737	742	P	WEOS TO 13'
147-148	09/29/18	LH	A	30	30	735	740	P	13' TO EEOS
146-155	09/29/18	LH	A	30	30	916	921	P	ENTIRE LENGTH OF SEAM
148-149	09/29/18	LH	A	30	30	837	842	P	ENTIRE LENGTH OF SEAM
149-150	09/29/18	LH	A	30	30	841	846	P	ENTIRE LENGTH OF SEAM
150-151	09/29/18	LH	A	30	30	847	852	P	ENTIRE LENGTH OF SEAM
151-152	09/29/18	LH	A	30	30	849	854	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
155-163	09/29/18	LH	A	30	30	1008	1013	P	ENTIRE LENGTH OF SEAM
152-153	09/29/18	LH	A	30	30	900	905	P	ENTIRE LENGTH OF SEAM
153-154	09/29/18	LH	A	30	30	907	912	P	ENTIRE LENGTH OF SEAM
154-156	09/29/18	LH	A	30	30	918	923	P	ENTIRE LENGTH OF SEAM
156-157	09/29/18	LH	A	30	30	825	830	P	ENTIRE LENGTH OF SEAM
157-158	09/29/18	LH	A	30	30	930	935	P	ENTIRE LENGTH OF SEAM
158-159	09/29/18	LH	A	30	30	936	941	P	ENTIRE LENGTH OF SEAM
159-160	09/29/18	LH	A	30	30	937	942	P	ENTIRE LENGTH OF SEAM
160-161	09/29/18	LH	A	30	30	949	954	P	ENTIRE LENGTH OF SEAM
161-162	09/29/18	LH	A	30	30	951	956	P	ENTIRE LENGTH OF SEAM
162-164	09/29/18	LH	A	30	30	1014	1019	P	ENTIRE LENGTH OF SEAM
164-165	09/29/18	LH	A	30	30	1018	1023	P	ENTIRE LENGTH OF SEAM
165-166	09/29/18	LH	A	30	30	1024	1029	P	ENTIRE LENGTH OF SEAM
166-167	09/29/18	LH	A	30	30	1031	1036	P	ENTIRE LENGTH OF SEAM
167-168	09/29/18	LH	A	30	30	1038	1043	P	ENTIRE LENGTH OF SEAM
168-170	09/29/18	LH	A	30	30	1054	1059	P	ENTIRE LENGTH OF SEAM
170-171	09/29/18	LH	A	30	30	1056	1101	P	ENTIRE LENGTH OF SEAM
171-172	09/29/18	LH	A	30	30	1102	1107	P	ENTIRE LENGTH OF SEAM
172-173	09/29/18	LH	A	30	30	1108	1113	P	ENTIRE LENGTH OF SEAM
173-174	09/29/18	LH	A	30	30	1111	1116	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

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PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
174-175	09/29/18	LH	A	30	30	1117	1122	P	ENTIRE LENGTH OF SEAM
175-176	09/29/18	LH	A	30	30	1120	1125	P	ENTIRE LENGTH OF SEAM
176-177	09/29/18	LH	A	30	30	1130	1135	P	WEOS TO 25'
176-177	09/29/18	LH	A	30	30	1132	1137	P	25' TO EEOS
135-136	09/29/18	LH	A	30	30	751	756	P	ENTIRE LENGTH OF SEAM
135-139	09/29/18	LH	A	30	30	754	759	P	ENTIRE LENGTH OF SEAM
137-139	09/29/18	LH	A	30	30	756	801	P	ENTIRE LENGTH OF SEAM
137-140	09/29/18	LH	A	30	30	801	806	P	ENTIRE LENGTH OF SEAM
140-143	-	-	PATCH	-	-	-	-	-	ENTIRE LENGTH OF SEAM
141-143	09/29/18	LH	A	30	30	810	815	P	ENTIRE LENGTH OF SEAM
142-143	09/29/18	LH	A	30	30	815	820	P	ENTIRE LENGTH OF SEAM
143-145	09/29/18	LH	A	30	30	819	824	P	ENTIRE LENGTH OF SEAM
145-146	09/29/18	LH	A	30	30	830	835	P	ENTIRE LENGTH OF SEAM
146-147	09/29/18	LH	A	30	30	833	838	P	ENTIRE LENGTH OF SEAM
146-148	09/29/18	LH	A	30	30	836	841	P	ENTIRE LENGTH OF SEAM
146-149	09/29/18	LH	A	30	30	839	844	P	ENTIRE LENGTH OF SEAM
146-150	09/29/18	LH	A	30	30	843	848	P	ENTIRE LENGTH OF SEAM
146-151	09/29/18	LH	A	30	30	848	853	P	ENTIRE LENGTH OF SEAM
146-152	09/29/18	LH	A	30	30	859	904	P	ENTIRE LENGTH OF SEAM
146-153	09/29/18	LH	A	30	30	916	921	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
146-154	09/29/18	LH	A	30	30	912	917	P	ENTIRE LENGTH OF SEAM
154-155	09/29/18	LH	A	30	30	917	922	P	ENTIRE LENGTH OF SEAM
155-156	09/29/18	LH	A	30	30	924	929	P	ENTIRE LENGTH OF SEAM
155-157	09/29/18	LH	A	30	30	929	934	P	ENTIRE LENGTH OF SEAM
155-158	09/29/18	LH	A	30	30	935	940	P	ENTIRE LENGTH OF SEAM
155-159	09/29/18	LH	A	30	30	937	942	P	ENTIRE LENGTH OF SEAM
155-160	09/29/18	LH	A	30	30	943	948	P	ENTIRE LENGTH OF SEAM
155-161	09/29/18	LH	A	30	30	950	955	P	ENTIRE LENGTH OF SEAM
155-162	09/29/18	LH	A	30	30	1007	1012	P	ENTIRE LENGTH OF SEAM
162-163	09/29/18	LH	A	30	30	1013	1018	P	ENTIRE LENGTH OF SEAM
163-164	09/29/18	LH	A	30	30	1017	1022	P	ENTIRE LENGTH OF SEAM
163-165	09/29/18	LH	A	30	30	1025	1030	P	ENTIRE LENGTH OF SEAM
163-166	09/29/18	LH	A	30	30	1032	1037	P	ENTIRE LENGTH OF SEAM
163-167	09/29/18	LH	A	30	30	1037	1042	P	ENTIRE LENGTH OF SEAM
163-168	09/29/18	LH	A	30	30	1044	1049	P	ENTIRE LENGTH OF SEAM
168-169	09/29/18	LH	A	30	30	1047	1052	P	ENTIRE LENGTH OF SEAM
169-170	09/29/18	LH	A	30	30	1055	1100	P	ENTIRE LENGTH OF SEAM
169-171	09/29/18	LH	A	30	30	1110	1115	P	ENTIRE LENGTH OF SEAM
169-172	09/29/18	LH	A	30	30	1104	1109	P	ENTIRE LENGTH OF SEAM
169-173	09/29/18	LH	A	30	30	1110	1115	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

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PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
169-174	09/29/18	LH	A	30	30	1114	1119	P	ENTIRE LENGTH OF SEAM
169-175	09/29/18	LH	A	30	30	1118	1123	P	ENTIRE LENGTH OF SEAM
169-176	09/29/18	LH	A	30	30	1124	1129	P	ENTIRE LENGTH OF SEAM
169-177	09/29/18	LH	A	30	30	1127	1132	P	ENTIRE LENGTH OF SEAM
163-169	09/29/18	LH	A	30	30	1046	1051	P	ENTIRE LENGTH OF SEAM
94-178	10/16/18	PG	A	30	30	1056	1101	P	ENTIRE LENGTH OF SEAM
178-179	10/16/18	PG	A	30	30	1058	1103	P	ENTIRE LENGTH OF SEAM
179-180	10/16/18	PG	A	30	30	1101	1106	P	ENTIRE LENGTH OF SEAM
180-181.	10/16/18	PG	A	30	30	1105	1110	P	ENTIRE LENGTH OF SEAM
181-182	10/16/18	PG	A	30	30	1108	1113	P	ENTIRE LENGTH OF SEAM
182-183	10/16/18	PG	A	30	30	1112	1117	P	ENTIRE LENGTH OF SEAM
183-184	10/16/18	PG	A	30	30	1114	1119	P	ENTIRE LENGTH OF SEAM
184-185	10/16/18	PG	A	30	30	1117	1122	P	ENTIRE LENGTH OF SEAM
185-186	10/16/18	PG	A	30	30	1123	1128	P	ENTIRE LENGTH OF SEAM
186-187	10/16/18	PG	A	30	30	1125	1130	P	ENTIRE LENGTH OF SEAM
187-188	10/16/18	PG	A	30	30	1130	1135	P	ENTIRE LENGTH OF SEAM
188-189	10/16/18	PG	A	30	30	1134	1139	P	SEOS TO 6'
188-189	10/16/18	PG	A	30	30	1131	1136	P	6' TO NEOS
189-190	10/16/18	PG	A	30	30	1140	1145	P	SEOS TO 25'
189-190	10/16/18	PG	A	30	30	1139	1144	P	25' TO NEOS



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
190-191	10/16/18	PG	A	30	30	1153	1158	P	SEOS TO 9'
190-191	10/16/18	PG	A	30	30	1151	1156	P	9' TO 29'
190-191	10/16/18	PG	A	30	30	1147	1152	P	29' TO NEOS
191-192	10/16/18	PG	A	30	30	1245	1250	P	ENTIRE LENGTH OF SEAM
192-193	10/16/18	PG	A	30	30	1247	1252	P	ENTIRE LENGTH OF SEAM
193-194	10/16/18	PG	A	30	30	1248	1253	P	ENTIRE LENGTH OF SEAM
194-195	10/16/18	PG	A	30	30	1252	1257	P	ENTIRE LENGTH OF SEAM
195-196	10/16/18	PG	A	30	30	1255	1300	P	ENTIRE LENGTH OF SEAM
196-197	10/16/18	PG	A	30	30	1258	1303	P	ENTIRE LENGTH OF SEAM
197-198	10/16/18	PG	A	30	30	1301	1306	P	ENTIRE LENGTH OF SEAM
94-199	10/16/18	PG	A	30	30	1452	1457	P	ENTIRE LENGTH OF SEAM
89-199	10/16/18	PG	A	30	30	1451	1456	P	ENTIRE LENGTH OF SEAM
199-200	10/16/18	PG	A	30	30	1317	1322	P	ENTIRE LENGTH OF SEAM
200-201	10/16/18	PG	A	30	30	1319	1324	P	SEOS TO 75'
200-201	10/16/18	PG	A	30	30	1320	1325	P	75' TO NEOS
201-202	10/16/18	PG	A	30	30	1332	1337	P	ENTIRE LENGTH OF SEAM
202-203	10/16/18	PG	A	30	30	1340	1345	P	ENTIRE LENGTH OF SEAM
203-205	10/16/18	PG	A	30	30	1349	1354	P	NEOS TO 75'
203-205	10/16/18	PG	A	30	30	1347	1352	P	75' TO SEOS
205-206	10/16/18	PG	A	30	30	1350	1355	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
203-206	10/16/18	PG	A	30	30	1356	1401	P	NEOS TO 16'
203-206	10/16/18	PG	A	30	30	1355	1400	P	16' TO SEOS
203-204	10/16/18	PG	A	30	30	1359	1404	P	ENTIRE LENGTH OF SEAM
204-206	10/16/18	PG	A	30	30	1402	1407	P	NEOS TO 6'
204-206	10/16/18	PG	A	30	30	1404	1409	P	6' TO SEOS
178-199	10/16/18	PG	A	30	30	1446	1451	P	ENTIRE LENGTH OF SEAM
179-199	10/16/18	PG	A	30	30	1443	1448	P	ENTIRE LENGTH OF SEAM
179-200	10/16/18	PG	A	30	30	1432	1437	P	ENTIRE LENGTH OF SEAM
180-200	10/16/18	PG	A	30	30	1431	1436	P	ENTIRE LENGTH OF SEAM
181-201	10/16/18	PG	A	30	30	1430	1435	P	ENTIRE LENGTH OF SEAM
182-201	10/16/18	PG	A	30	30	1429	1434	P	ENTIRE LENGTH OF SEAM
182-202	10/16/18	PG	A	30	30	1425	1430	P	ENTIRE LENGTH OF SEAM
183-202	10/16/18	PG	A	30	30	1426	1431	P	ENTIRE LENGTH OF SEAM
184-202	-	-	PATCH	-	-	-	-	-	ENTIRE LENGTH OF SEAM
184-203	-	-	PATCH	-	-	-	-	-	ENTIRE LENGTH OF SEAM
184-204	10/16/18	PG	A	30	30	1421	1426	P	ENTIRE LENGTH OF SEAM
185-204	10/16/18	PG	A	30	30	1420	1425	P	ENTIRE LENGTH OF SEAM
185-206	10/16/18	PG	A	30	30	1418	1423	P	ENTIRE LENGTH OF SEAM
186-206	10/16/18	PG	A	30	30	1417	1422	P	ENTIRE LENGTH OF SEAM
95-199	-	-	PATCH	-	-	-	-	-	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

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PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
96-200	-	-	PATCH	-	-	-	-	-	WEOS TO 7'
96-200	10/16/18	PG	A	30	30	1458	1503	P	7' TO EEOS
97-201	10/16/18	PG	A	30	30	1459	1504	P	ENTIRE LENGTH OF SEAM
98-202	10/16/18	PG	A	30	30	1501	1506	P	ENTIRE LENGTH OF SEAM
99-203	10/16/18	PG	A	30	30	1502	1507	P	ENTIRE LENGTH OF SEAM
100-205	10/16/18	PG	A	30	30	1505	1510	P	ENTIRE LENGTH OF SEAM
205-207	10/17/18	PG	A	30	30	912	917	P	ENTIRE LENGTH OF SEAM
206-207	10/17/18	PG	A	30	30	913	918	P	ENTIRE LENGTH OF SEAM
207-208	10/17/18	PG	A	30	30	920	925	P	SEOS TO 114'
207-208	10/17/18	PG	A	30	30	915	920	P	114' TO 131'
207-208	10/17/18	PG	A	30	30	914	919	P	131' TO NEOS
207-209	10/17/18	PG	A	30	30	926	931	P	ENTIRE LENGTH OF SEAM
208-209	10/17/18	PG	A	30	30	925	930	P	ENTIRE LENGTH OF SEAM
208-210	10/17/18	PG	A	30	30	935	940	P	ENTIRE LENGTH OF SEAM
208-211	10/17/18	PG	A	30	30	932	937	P	ENTIRE LENGTH OF SEAM
210-211	10/17/18	PG	A	30	30	937	942	P	ENTIRE LENGTH OF SEAM
209-211	10/17/18	PG	A	30	30	931	936	P	ENTIRE LENGTH OF SEAM
211-213	10/17/18	PG	A	30	30	955	1000	P	ENTIRE LENGTH OF SEAM
211-212	10/17/18	PG	A	30	30	941	946	P	ENTIRE LENGTH OF SEAM
210-212	10/17/18	PG	A	30	30	946	951	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
212-214	10/17/18	PG	A	30	30	1010	1015	P	ENTIRE LENGTH OF SEAM
212-215	10/17/18	PG	A	30	30	959	1004	P	ENTIRE LENGTH OF SEAM
213-215	10/17/18	PG	A	30	30	958	1003	P	ENTIRE LENGTH OF SEAM
214-215	10/17/18	PG	A	30	30	1002	1007	P	ENTIRE LENGTH OF SEAM
212-213	10/17/18	PG	A	30	30	956	1001	P	ENTIRE LENGTH OF SEAM
216-217	10/17/18	PG	A	30	30	1025	1030	P	ENTIRE LENGTH OF SEAM
215-217	10/17/18	PG	A	30	30	1053	1058	P	ENTIRE LENGTH OF SEAM
215-216	10/17/18	PG	A	30	30	1047	1052	P	SEOS TO 13'
215-216	10/17/18	PG	A	30	30	1045	1050	P	13' TO NEOS
214-216	10/17/18	PG	A	30	30	1042	1047	P	ENTIRE LENGTH OF SEAM
216-218	10/17/18	PG	A	30	30	1055	1100	P	ENTIRE LENGTH OF SEAM
216-219	10/17/18	PG	A	30	30	1022	1027	P	ENTIRE LENGTH OF SEAM
217-219	10/17/18	PG	A	30	30	1027	1032	P	ENTIRE LENGTH OF SEAM
218-219	10/17/18	PG	A	30	30	1023	1028	P	ENTIRE LENGTH OF SEAM
220-221	10/17/18	PG	A	30	30	1136	1141	P	ENTIRE LENGTH OF SEAM
219-221	10/17/18	PG	A	30	30	1151	1156	P	ENTIRE LENGTH OF SEAM
219-220	10/17/18	PG	A	30	30	1152	1157	P	ENTIRE LENGTH OF SEAM
218-220	10/17/18	PG	A	30	30	1146	1151	P	ENTIRE LENGTH OF SEAM
220-226	10/17/18	PG	A	30	30	1238	1243	P	ENTIRE LENGTH OF SEAM
198-222	10/17/18	PG	A	30	30	1112	1117	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
222-223	10/17/18	PG	A	30	30	1115	1120	P	ENTIRE LENGTH OF SEAM
223-224	10/17/18	PG	A	30	30	1118	1123	P	ENTIRE LENGTH OF SEAM
225-226	10/17/18	PG	A	30	30	1142	1147	P	ENTIRE LENGTH OF SEAM
221-226	10/17/18	PG	A	30	30	1137	1142	P	ENTIRE LENGTH OF SEAM
221-225	10/17/18	PG	A	30	30	1139	1144	P	ENTIRE LENGTH OF SEAM
225-227	10/17/18	PG	A	30	30	1315	1320	P	ENTIRE LENGTH OF SEAM
226-227	10/17/18	PG	A	30	30	1330	1335	P	ENTIRE LENGTH OF SEAM
226-228	10/17/18	PG	A	30	30	1350	1355	P	ENTIRE LENGTH OF SEAM
227-228	10/17/18	PG	A	30	30	1327	1332	P	ENTIRE LENGTH OF SEAM
187-206	10/17/18	PG	A	30	30	1544	1549	P	ENTIRE LENGTH OF SEAM
187-207	10/17/18	PG	A	30	30	1543	1548	P	ENTIRE LENGTH OF SEAM
188-207	10/17/18	PG	A	30	30	1536	1541	P	ENTIRE LENGTH OF SEAM
188-209	10/17/18	PG	A	30	30	1535	1540	P	ENTIRE LENGTH OF SEAM
189-209	10/17/18	PG	A	30	30	1527	1532	P	ENTIRE LENGTH OF SEAM
190-209	10/17/18	PG	A	30	30	1526	1531	P	ENTIRE LENGTH OF SEAM
190-211	10/17/18	PG	A	30	30	1521	1526	P	ENTIRE LENGTH OF SEAM
191-211	10/17/18	PG	A	30	30	1520	1525	P	ENTIRE LENGTH OF SEAM
101-207	10/17/18	PG	A	30	30	1430	1435	P	ENTIRE LENGTH OF SEAM
102-208	10/17/18	PG	A	30	30	1428	1433	P	ENTIRE LENGTH OF SEAM
103-210	10/17/18	PG	A	30	30	1426	1431	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
104-212	10/17/18	PG	A	30	30	1425	1430	P	ENTIRE LENGTH OF SEAM
104-214	-	-	PATCH	-	-	-	-	-	-
105-214	10/17/18	PG	A	30	30	1419	1424	P	ENTIRE LENGTH OF SEAM
105-216	-	-	PATCH	-	-	-	-	-	-
106-216	10/17/18	PG	A	30	30	1417	1422	P	ENTIRE LENGTH OF SEAM
106-218	-	-	PATCH	-	-	-	-	-	-
107-218	10/17/18	PG	A	30	30	1414	1419	P	ENTIRE LENGTH OF SEAM
107-220	-	-	PATCH	-	-	-	-	-	-
108-220	10/17/18	PG	A	30	30	1410	1415	P	ENTIRE LENGTH OF SEAM
108-226	-	-	PATCH	-	-	-	-	-	ENTIRE LENGTH OF SEAM
109-226	10/17/18	PG	A	30	30	1351	1356	P	ENTIRE LENGTH OF SEAM
109-228	-	-	PATCH	-	-	-	-	-	-
110-228	10/17/18	PG	A	30	30	1349	1354	P	ENTIRE LENGTH OF SEAM
192-213	10/17/18	PG	A	30	30	1517	1522	P	ENTIRE LENGTH OF SEAM
193-213	10/17/18	PG	A	30	30	1516	1521	P	ENTIRE LENGTH OF SEAM
193-215	10/17/18	PG	A	30	30	1509	1514	P	ENTIRE LENGTH OF SEAM
194-215	10/17/18	PG	A	30	30	1508	1513	P	ENTIRE LENGTH OF SEAM
194-217	-	-	PATCH	-	-	-	-	-	-
195-217	10/17/18	PG	A	30	30	1504	1509	P	ENTIRE LENGTH OF SEAM
196-217	10/17/18	PG	A	30	30	1503	1508	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
196-219	10/17/18	PG	A	30	30	1458	1503	P	ENTIRE LENGTH OF SEAM
197-219	10/17/18	PG	A	30	30	1457	1502	P	ENTIRE LENGTH OF SEAM
198-221	10/17/18	PG	A	30	30	1450	1455	P	ENTIRE LENGTH OF SEAM
221-222	10/17/18	PG	A	30	30	1451	1456	P	ENTIRE LENGTH OF SEAM
222-225	10/17/18	PG	A	30	30	1449	1454	P	ENTIRE LENGTH OF SEAM
223-225	10/17/18	PG	A	30	30	1448	1453	P	ENTIRE LENGTH OF SEAM
233-241	10/19/18	PG	A	30	30	1036	1041	P	ENTIRE LENGTH OF SEAM
232-238	10/19/18	PG	A	30	30	1035	1040	P	ENTIRE LENGTH OF SEAM
231-238	-	-	PATCH	-	-	-	-	-	-
231-237	10/19/18	PG	A	30	30	1033	1038	P	ENTIRE LENGTH OF SEAM
230-237	10/19/18	PG	A	30	30	1032	1037	P	ENTIRE LENGTH OF SEAM
230-234	10/19/18	PG	A	30	30	1026	1031	P	ENTIRE LENGTH OF SEAM
229-234	10/19/18	PG	A	30	30	1025	1030	P	ENTIRE LENGTH OF SEAM
227-229	-	-	PATCH	-	-	-	-	-	-
224-227	10/19/18	PG	A	30	30	1023	1028	P	ENTIRE LENGTH OF SEAM
252-253	10/19/18	PG	A	30	30	1055	1100	P	NEOS TO 245'
252-253	10/19/18	PG	A	30	30	1059	1104	P	245' TO SEOS
253-254	10/19/18	PG	A	30	30	1126	1131	P	ENTIRE LENGTH OF SEAM
254-255	10/19/18	PG	A	30	30	1122	1127	P	SEOS TO 362'
254-255	10/19/18	PG	A	30	30	1123	1128	P	362' TO 469'



NON-DESTRUCTIVE TESTING FORM

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PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
254-255	10/19/18	PG	A	30	30	1131	1136	P	469' TO 490'
254-255	10/19/18	PG	A	30	30	1135	1140	P	490' TO 497'
254-255	10/19/18	PG	A	30	30	1143	1148	P	497' TO 587'
254-255	10/19/18	PG	A	30	30	1147	1152	P	587' TO 603'
254-255	10/19/18	PG	A	30	30	1150	1155	P	603' TO 614'
254-255	10/19/18	PG	A	30	30	1153	1158	P	614' TO NEOS
255-256	10/19/18	PG	A	30	30	1245	1250	P	ENTIRE LENGTH OF SEAM
256-257	10/19/18	PG	A	30	30	1247	1252	P	ENTIRE LENGTH OF SEAM
257-258	10/19/18	PG	A	30	30	1314	1319	P	ENTIRE LENGTH OF SEAM
258-259	10/19/18	PG	A	30	30	1305	1310	P	ENTIRE LENGTH OF SEAM
121-253	10/19/18	PG	A	30	30	1415	1420	P	ENTIRE LENGTH OF SEAM
121-254	-	-	PATCH	-	-	-	-	-	-
122-254	10/19/18	PG	A	30	30	1416	1421	P	ENTIRE LENGTH OF SEAM
122-255	-	-	PATCH	-	-	-	-	-	-
123-255	10/19/18	PG	A	30	30	1417	1422	P	ENTIRE LENGTH OF SEAM
123-256	-	-	PATCH	-	-	-	-	-	-
124-256	10/19/18	PG	A	30	30	1418	1423	P	ENTIRE LENGTH OF SEAM
124-257	-	-	PATCH	-	-	-	-	-	-
125-257	10/19/18	PG	A	30	30	1422	1427	P	ENTIRE LENGTH OF SEAM
125-258	-	-	PATCH	-	-	-	-	-	-



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
126-258	10/19/18	PG	A	30	30	1423	1428	P	ENTIRE LENGTH OF SEAM
126-259	-	-	PATCH	-	-	-	-	-	-
127-259	10/19/18	PG	A	30	30	1433	1438	P	ENTIRE LENGTH OF SEAM
228-235	10/18/18	PG	A	30	30	1051	1056	P	ENTIRE LENGTH OF SEAM
227-235	10/18/18	PG	A	30	30	1052	1057	P	ENTIRE LENGTH OF SEAM
227-234	10/18/18	PG	A	30	30	1110	1115	P	ENTIRE LENGTH OF SEAM
234-235	10/18/18	PG	A	30	30	1054	1059	P	ENTIRE LENGTH OF SEAM
224-229	10/18/18	PG	A	30	30	1339	1344	P	ENTIRE LENGTH OF SEAM
229-230	10/18/18	PG	A	30	30	1341	1346	P	ENTIRE LENGTH OF SEAM
230-231	10/18/18	PG	A	30	30	1344	1349	P	ENTIRE LENGTH OF SEAM
231-232	10/18/18	PG	A	30	30	1354	1359	P	ENTIRE LENGTH OF SEAM
232-233	10/18/18	PG	A	30	30	1356	1401	P	ENTIRE LENGTH OF SEAM
238-239	10/18/18	PG	A	30	30	1147	1152	P	ENTIRE LENGTH OF SEAM
236-237	10/18/18	PG	A	30	30	1136	1141	P	ENTIRE LENGTH OF SEAM
234-237	10/18/18	PG	A	30	30	1140	1145	P	ENTIRE LENGTH OF SEAM
234-236	10/18/18	PG	A	30	30	1111	1116	P	ENTIRE LENGTH OF SEAM
235-236	10/18/18	PG	A	30	30	1053	1058	P	ENTIRE LENGTH OF SEAM
236-239	10/18/18	PG	A	30	30	1113	1118	P	NEOS TO 245'
236-239	10/18/18	PG	A	30	30	1114	1119	P	245' TO 445'
236-239	10/18/18	PG	A	30	30	1128	1133	P	445' TO 461'



NON-DESTRUCTIVE TESTING FORM

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PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
236-239	10/18/18	PG	A	30	30	1130	1135	P	461' TO SEOS
237-239	10/18/18	PG	A	30	30	1138	1143	P	ENTIRE LENGTH OF SEAM
237-238	10/18/18	PG	A	30	30	1143	1148	P	ENTIRE LENGTH OF SEAM
238-241	10/18/18	PG	A	30	30	1150	1155	P	ENTIRE LENGTH OF SEAM
239-241	10/18/18	PG	A	30	30	1237	1242	P	SEOS TO 190'
239-241	10/18/18	PG	A	30	30	1236	1241	P	190' TO 333'
239-241	10/18/18	PG	A	30	30	1516	1521	P	333' TO NEOS
239-240	10/18/18	PG	A	30	30	1519	1524	P	ENTIRE LENGTH OF SEAM
240-242	10/18/18	PG	A	30	30	1520	1525	P	ENTIRE LENGTH OF SEAM
241-242	10/18/18	PG	A	30	30	1505	1510	P	ENTIRE LENGTH OF SEAM
241-243	10/18/18	PG	A	30	30	1504	1509	P	ENTIRE LENGTH OF SEAM
240-241	10/18/18	PG	A	30	30	1518	1523	P	ENTIRE LENGTH OF SEAM
242-243	10/18/18	PG	A	30	30	1508	1513	P	ENTIRE LENGTH OF SEAM
233-244	10/18/18	PG	A	30	30	1408	1413	P	NEOS TO 16'
233-244	10/18/18	PG	A	30	30	1403	1408	P	16' TO SEOS
243-244	10/18/18	PG	A	30	30	1418	1423	P	ENTIRE LENGTH OF SEAM
243-245	-	-	PATCH	-	-	-	-	-	SEOS TO 8'
243-245	10/18/18	PG	A	30	30	1427	1432	P	8' TO 20'
243-245	10/18/18	PG	A	30	30	1430	1435	P	20' TO 37'
243-245	10/18/18	PG	A	30	30	1431	1436	P	37' TO 50'



NON-DESTRUCTIVE TESTING FORM

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PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
243-245	10/18/18	PG	A	30	30	1435	1440	P	50' TO 150'
243-245	10/18/18	PG	A	30	30	1457	1502	P	150' TO NEOS
242-245	-	-	PATCH	-	-	-	-	-	SEOS TO 8'
242-245	10/18/18	PG	A	30	30	1502	1507	P	8' TO 17'
242-245	10/18/18	PG	A	30	30	1511	1516	P	17' TO NEOS
242-246	10/18/18	PG	A	30	30	1523	1528	P	ENTIRE LENGTH OF SEAM
245-246	10/18/18	PG	A	30	30	1515	1520	P	ENTIRE LENGTH OF SEAM
246-247	10/18/18	PG	A	30	30	1522	1527	P	ENTIRE LENGTH OF SEAM
245-247	10/18/18	PG	A	30	30	1516	1521	P	ENTIRE LENGTH OF SEAM
245-248	10/18/18	PG	A	30	30	1442	1447	P	ENTIRE LENGTH OF SEAM
248-249	10/18/18	PG	A	30	30	1543	1548	P	ENTIRE LENGTH OF SEAM
247-249	10/18/18	PG	A	30	30	1538	1543	P	SEOS TO 397'
247-249	10/18/18	PG	A	30	30	1555	1600	P	397' TO NEOS
247-248	10/18/18	PG	A	30	30	1440	1445	P	ENTIRE LENGTH OF SEAM
249-250	10/18/18	PG	A	30	30	1608	1613	P	WEOS TO 4'
249-250	10/18/18	PG	A	30	30	1559	1604	P	4' TO EEOS
247-250	10/18/18	PG	A	30	30	1601	1606	P	ENTIRE LENGTH OF SEAM
250-251	10/18/18	PG	A	30	30	1611	1616	P	ENTIRE LENGTH OF SEAM
249-251	10/18/18	PG	A	30	30	1556	1601	P	ENTIRE LENGTH OF SEAM
251-252	10/18/18	PG	A	30	30	1615	1620	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

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PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
119-252	10/18/18	PG	A	30	30	1628	1633	P	NEOS TO 8'
119-252	10/18/18	PG	A	30	30	1627	1632	P	8' TO 14'
119-252	10/18/18	PG	A	30	30	1628	1633	P	14' TO SEOS
121-252	-	-	PATCH	-	-	-	-	-	-
110-235	-	-	PATCH	-	-	-	-	-	-
111-235	10/19/18	PG	A	30	30	1000	1005	P	ENTIRE LENGTH OF SEAM
111-236	-	-	PATCH	-	-	-	-	-	-
112-236	10/19/18	PG	A	30	30	958	1003	P	ENTIRE LENGTH OF SEAM
112-239	-	-	PATCH	-	-	-	-	-	-
113-239	10/19/18	PG	A	30	30	957	1002	P	ENTIRE LENGTH OF SEAM
113-240	-	-	PATCH	-	-	-	-	-	-
114-240	10/19/18	PG	A	30	30	956	1001	P	ENTIRE LENGTH OF SEAM
114-242	-	-	PATCH	-	-	-	-	-	-
115-242	10/19/18	PG	A	30	30	955	1000	P	ENTIRE LENGTH OF SEAM
115-246	-	-	PATCH	-	-	-	-	-	-
116-246	10/19/18	PG	A	30	30	948	953	P	ENTIRE LENGTH OF SEAM
116-247	-	-	PATCH	-	-	-	-	-	-
117-247	10/19/18	PG	A	30	30	947	952	P	ENTIRE LENGTH OF SEAM
117-250	-	-	PATCH	-	-	-	-	-	-
118-250	10/19/18	PG	A	30	30	946	951	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

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PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
118-251	-	-	PATCH	-	-	-	-	-	-
119-251	10/19/18	PG	A	30	30	945	950	P	ENTIRE LENGTH OF SEAM
120-252	-	-	PATCH	-	-	-	-	-	WEOS TO 10'
120-252	10/19/18	PG	A	30	30	1639	1644	P	10' TO EEOS
259-260	10/22/18	PG	A	30	30	1411	1416	P	ENTIRE LENGTH OF SEAM
260-261	10/22/18	PG	A	30	30	1413	1418	P	ENTIRE LENGTH OF SEAM
260-262	10/22/18	PG	A	30	30	1430	1435	P	NEOS TO 305'
260-262	10/22/18	PG	A	30	30	1500	1505	P	305' TO SEOS
261-262	10/22/18	PG	A	30	30	1414	1419	P	ENTIRE LENGTH OF SEAM
261-263	10/22/18	PG	A	30	30	1415	1420	P	ENTIRE LENGTH OF SEAM
262-263	10/22/18	PG	A	30	30	1435	1440	P	ENTIRE LENGTH OF SEAM
262-264	10/22/18	PG	A	30	30	1444	1449	P	ENTIRE LENGTH OF SEAM
263-264	10/22/18	PG	A	30	30	1451	1456	P	ENTIRE LENGTH OF SEAM
263-265	10/22/18	PG	A	30	30	1447	1452	P	ENTIRE LENGTH OF SEAM
264-266	10/22/18	PG	A	30	30	1456	1501	P	ENTIRE LENGTH OF SEAM
265-266	10/22/18	PG	A	30	30	1457	1502	P	ENTIRE LENGTH OF SEAM
265-268	10/22/18	PG	A	30	30	1521	1526	P	NEOS TI 19'
265-268	-	-	PATCH	-	-	-	-	-	19' TO SEOS
265-267	10/22/18	PG	A	30	30	1505	1510	P	ENTIRE LENGTH OF SEAM
266-267	10/22/18	PG	A	30	30	1506	1511	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
267-268	10/22/18	PG	A	30	30	1525	1530	P	ENTIRE LENGTH OF SEAM
268-269	10/22/18	PG	A	30	30	1519	1524	P	EEOS TO 10'
268-269	-	-	PATCH	-	-	-	-	-	10' TO 15'
268-269	10/22/18	PG	A	30	30	1526	1531	P	15' TO WEOS
267-269	10/22/18	PG	A	30	30	1518	1523	P	NEOS TO 165'
267-269	10/22/18	PG	A	30	30	1533	1538	P	165' TO SEOS
269-270	10/22/18	PG	A	30	30	1534	1539	P	ENTIRE LENGTH OF SEAM
269-271	10/22/18	PG	A	30	30	1540	1545	P	NEOS TO 58'
269-271	10/22/18	PG	A	30	30	1550	1555	P	58' TO SEOS
270-271	10/22/18	PG	A	30	30	1541	1546	P	ENTIRE LENGTH OF SEAM
270-272	-	-	PATCH	-	-	-	-	-	NEOS TO 22'
270-272	10/22/18	PG	A	30	30	1537	1542	P	22' TO SEOS
271-272	10/22/18	PG	A	30	30	1549	1554	P	ENTIRE LENGTH OF SEAM
271-273	10/22/18	PG	A	30	30	1557	1602	P	ENTIRE LENGTH OF SEAM
272-273	10/22/18	PG	A	30	30	1559	1604	P	ENTIRE LENGTH OF SEAM
264-265	10/22/18	PG	A	30	30	1446	1451	P	ENTIRE LENGTH OF SEAM
272-274	10/22/18	PG	A	30	30	1608	1613	P	SEOS TO 148'
272-274	10/22/18	PG	A	30	30	1610	1615	P	148' TO NEOS
273-274	10/22/18	PG	A	30	30	1600	1605	P	ENTIRE LENGTH OF SEAM
274-275	-	-	PATCH	-	-	-	-	-	NEOS TO 4'



NON-DESTRUCTIVE TESTING FORM

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PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
274-275	10/22/18	PG	A	30	30	1616	1621	P	4' TO SEOS
275-276	10/22/18	PG	A	30	30	1638	1643	P	SEOS TO 61'
275-276	10/22/18	PG	A	30	30	1641	1646	P	61' TO 77'
275-276	-	-	PATCH	-	-	-	-	-	77' TO 111'
275-276	10/22/18	PG	A	30	30	1647	1652	P	111' TO NEOS
275-277	10/22/18	PG	A	30	30	1620	1625	P	ENTIRE LENGTH OF SEAM
276-277	10/22/18	PG	A	30	30	1628	1633	P	ENTIRE LENGTH OF SEAM
276-278	10/22/18	PG	A	30	30	1631	1636	P	ENTIRE LENGTH OF SEAM
277-278	10/22/18	PG	A	30	30	1622	1627	P	ENTIRE LENGTH OF SEAM
127-260	-	-	PATCH	-	-	-	-	-	-
128-260	10/22/18	PG	A	30	30	1422	1427	P	ENTIRE LENGTH OF SEAM
128-261	-	-	PATCH	-	-	-	-	-	-
129-261	10/22/18	PG	A	30	30	1419	1424	P	ENTIRE LENGTH OF SEAM
130-263	10/22/18	PG	A	30	30	1418	1423	P	ENTIRE LENGTH OF SEAM
131-263	-	-	PATCH	-	-	-	-	-	-
131-265	10/22/18	PG	A	30	30	1406	1411	P	ENTIRE LENGTH OF SEAM
131-268	-	-	PATCH	-	-	-	-	-	-
132-268	10/22/18	PG	A	30	30	1405	1410	P	ENTIRE LENGTH OF SEAM
132-269	-	-	PATCH	-	-	-	-	-	-
134-269	10/22/18	PG	A	30	30	1410	1415	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

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PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
134-270	-	-	PATCH	-	-	-	-	-	-
135-270	10/22/18	PG	A	30	30	1400	1405	P	ENTIRE LENGTH OF SEAM
137-270	-	-	PATCH	-	-	-	-	-	-
137-272	10/22/18	PG	A	30	30	1351	1356	P	ENTIRE LENGTH OF SEAM
143-274	10/22/18	PG	A	30	30	1350	1355	P	ENTIRE LENGTH OF SEAM
146-274	-	-	PATCH	-	-	-	-	-	-
146-275	10/22/18	PG	A	30	30	1349	1354	P	ENTIRE LENGTH OF SEAM
155-276	10/22/18	PG	A	30	30	1348	1353	P	ENTIRE LENGTH OF SEAM
163-276	-	-	PATCH	-	-	-	-	-	-
163-278	10/22/18	PG	A	30	30	1332	1337	P	ENTIRE LENGTH OF SEAM
278-279	10/23/18	PG	A	30	30	1046	1051	P	ENTIRE LENGTH OF SEAM
279-288	10/23/18	PG	A	30	30	1057	1102	P	ENTIRE LENGTH OF SEAM
288-289	10/23/18	PG	A	30	30	1101	1106	P	ENTIRE LENGTH OF SEAM
279-289	10/23/18	PG	A	30	30	1051	1056	P	ENTIRE LENGTH OF SEAM
289-290	10/23/18	PG	A	30	30	1053	1058	P	ENTIRE LENGTH OF SEAM
288-290	10/23/18	PG	A	30	30	1134	1139	P	ENTIRE LENGTH OF SEAM
280-281	10/23/18	PG	A	30	30	1319	1324	P	ENTIRE LENGTH OF SEAM
281-282	10/23/18	PG	A	30	30	1310	1315	P	ENTIRE LENGTH OF SEAM
282-283	10/23/18	PG	A	30	30	1304	1309	P	ENTIRE LENGTH OF SEAM
283-284	10/23/18	PG	A	30	30	1256	1301	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
284-286	10/23/18	PG	A	30	30	1248	1253	P	ENTIRE LENGTH OF SEAM
284-285	10/23/18	PG	A	30	30	1253	1258	P	ENTIRE LENGTH OF SEAM
285-286	10/23/18	PG	A	30	30	1241	1246	P	ENTIRE LENGTH OF SEAM
286-287	10/23/18	PG	A	30	30	1240	1245	P	ENTIRE LENGTH OF SEAM
285-287	10/23/18	PG	A	30	30	1242	1247	P	ENTIRE LENGTH OF SEAM
290-291	10/23/18	PG	A	30	30	1124	1129	P	ENTIRE LENGTH OF SEAM
291-294	10/23/18	PG	A	30	30	1114	1119	P	NEOS TO 10'
291-294	-	-	PATCH	-	-	-	-	-	10' TO SEOS
293-294	10/23/18	PG	A	30	30	1113	1118	P	ENTIRE LENGTH OF SEAM
291-293	10/23/18	PG	A	30	30	1115	1120	P	ENTIRE LENGTH OF SEAM
192-193	10/23/18	PG	A	30	30	1120	1125	P	ENTIRE LENGTH OF SEAM
191-192	10/23/18	PG	A	30	30	1122	1127	P	ENTIRE LENGTH OF SEAM
287-292	10/23/18	PG	A	30	30	1144	1149	P	ENTIRE LENGTH OF SEAM
287-291	10/23/18	PG	A	30	30	1143	1148	P	ENTIRE LENGTH OF SEAM
287-290	10/23/18	PG	A	30	30	1140	1145	P	ENTIRE LENGTH OF SEAM
287-288	10/23/18	PG	A	30	30	1135	1140	P	SEOS TO 6'
287-288	10/23/18	PG	A	30	30	1132	1137	P	6' TO NEOS
286-288	10/23/18	PG	A	30	30	1246	1251	P	ENTIRE LENGTH OF SEAM
284-288	10/23/18	PG	A	30	30	1251	1256	P	ENTIRE LENGTH OF SEAM
283-288	10/23/18	PG	A	30	30	1258	1303	P	ENTIRE LENGTH OF SEAM



NON-DESTRUCTIVE TESTING FORM

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PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH PO	Test Criteria	AIR TEST	Test Criteria	Vacuum Test
PROJECT NO.:	18009	Start Pressure	30 PSI	Vac. Time	10 SEC
MATERIAL TYPE:	40MIL HDPE MICROSPIKE	Test Time	5 MIN	Vac. Pres.	5 PSI
MATERIAL LAYER:	PRIMARY	Accept. Drop	2 PSI		
QC NAME:	CHERYL HINA				

Seam Number	Test Date	Tech Initials	Test Type (A or V)	Air Pressure Test		Time		Test Result (P or F)	Test Locations
				PSI Start	PSI Finish	Start	End		
282-288	10/23/18	PG	A	30	30	1307	1312	P	ENTIRE LENGTH OF SEAM
281-288	10/23/18	PG	A	30	30	1311	1316	P	ENTIRE LENGTH OF SEAM
280-288	10/23/18	PG	A	30	30	1317	1322	P	ENTIRE LENGTH OF SEAM
177-280	10/23/18	PG	A	30	30	1329	1334	P	ENTIRE LENGTH OF SEAM
169-279	10/23/18	PG	A	30	30	1335	1340	P	ENTIRE LENGTH OF SEAM
177-288	10/23/18	PG	A	30	30	1330	1335	P	ENTIRE LENGTH OF SEAM



DESTRUCTIVE TEST FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	2P / 2S	2P / 2S
PROJECT NO.:	18009	Fusion Peel	60	60
MATERIAL TYPE:	40MIL HD MICRO SPIKE	Extrus Peel	52	52
MATERIAL LAYER:	PRIMARY	Peel Sep.	25%	25%
QC NAME:	CHERYL HINA	Shear	80	80

Sample I.D.	Seam NO.	Tech Initials	Machn No.	Peel (ppi)					Shear (ppi)					Pass Fail	SAMPLE LOCATION
				1	2	3	4	5	1	2	3	4	5		
1	3-4	BR	W114	87	86	78	79							Pass	11' NEOS
2	8-35	JM	W120	94	92	85	86							Pass	8' EEOS
3	35-37	JM	W120	79	81	74	70							Pass	148' SEOS
4	33-35	BR	W114	74	89	81	79							Pass	24' SEOS
5	23-24	JM	W120	79	78	77	75							Pass	12' EEOS
6	29-30	LH	W118	86	91	78	87							Pass	280' SEOS
7	17-18	LH	W118	89	89	76	86							Pass	20' EEOS
8	31-41	BR	W114	84	83	82	83							Pass	8' WEOS
9	29-48	JM	W120	78	83	76	79							Pass	150 'SEOS
10	48-49	BR	W114	73	87	76	83							Pass	150' NEOS
11	49-51	LH	W118	-	-	-	-							Fail	289' SEOS
11A	49-51	LH	W118	89	80	74	87							Pass	300' SEOS



DESTRUCTIVE TEST FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	2P / 2S	2P / 2S
PROJECT NO.:	18009	Fusion Peel	60	60
MATERIAL TYPE:	40MIL HD MICRO SPIKE	Extrus Peel	52	52
MATERIAL LAYER:	PRIMARY	Peel Sep.	25%	25%
QC NAME:	CHERYL HINA	Shear	80	80

Sample I.D.	Seam NO.	Tech Initials	Machn No.	Peel (ppi)										Shear (ppi)					Pass Fail	SAMPLE LOCATION
				1	2	3	4	5	1	2	3	4	5							
11B	49-51	LH	W118	89	84	77	86							100	99				Pass	278' SEOS
12	52-53	JM	W120	100	96	94	84							100	95				Pass	10' WEOS
13	52-56	BR	W114	83	81	74	83							100	98				Pass	50' SEOS
14	62-78	BR	W114	73	80	74	72							88	84				Pass	58' SEOS
15	63-82	BR	W114	74	71	78	71							87	80				Pass	14' SEOS
16	63-65	BR	W114	74	80	76	69							92	95				Pass	300' SEOS
17	69-71	BR	W114	73	69	69	71							92	88				Pass	432' NEOS
18	70-71	BR	W114	89	87	85	87							96	86				Pass	6' WEOS
19	56-61	JM	W120	90	96	69	77							101	95				Pass	50' NEOS
20	61-63	LH	W118	81	74	79	77							98	99				Pass	447' SEOS
21	59-62	LH	W118	90	96	88	83							98	93				Pass	5' WEOS
22	74-77	BR	W114	73	74	79	76							97	94				Pass	350' NEOS



DESTRUCTIVE TEST FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	2P / 2S	2P / 2S
PROJECT NO.:	18009	Fusion Peel	60	60
MATERIAL TYPE:	40MIL HD MICRO SPIKE	Extrus Peel	52	52
MATERIAL LAYER:	PRIMARY	Peel Sep.	25%	25%
QC NAME:	CHERYL HINA	Shear	80	80

Sample I.D.	Seam NO.	Tech Initials	Machn No.	Peel (ppi)										Shear (ppi)					Pass Fail	SAMPLE LOCATION
				1	2	3	4	5	1	2	3	4	5							
23	71-74	JM	W120	75	77	69	70							99	102				Pass	10' SEOS
24	67-68	JM	W120	90	80	76	80							109	104				Pass	15' NEOS
25	76-84	BR	W114	68	65	68	67							83	81				Pass	100' SEOS
26	86-88	BR	W114	72	71	67	66							84	81				Pass	500' SEOS
27	93-94	BR	W114	68	69	67	70							84	82				Pass	6' NEOS
28	85-86	LH	W118	76	67	67	70							82	83				Pass	300' SEOS
29	75-87	LH	W118	68	67	69	65							84	82				Pass	8' NEOS
30	84-85	JM	W120	67	65	69	68							84	87				Pass	200' SEOS
31	88-89	JM	W120	67	66	67	66							82	83				Pass	400' SEOS
32	83-85	JM	W120	72	74	69	72							82	85				Pass	50' MSEOS
33	85-90	JM	W120	74	71	69	68							82	86				Pass	5' WEOS
34	89-95	JM	W120	69	66	72	69							82	82				Pass	370' NEOS



DESTRUCTIVE TEST FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	2P / 2S	2P / 2S
PROJECT NO.:	18009	Fusion Peel	60	60
MATERIAL TYPE:	40MIL HD MICRO SPIKE	Extrus Peel	52	52
MATERIAL LAYER:	PRIMARY	Peel Sep.	25%	25%
QC NAME:	CHERYL HINA	Shear	80	80

Sample I.D.	Seam NO.	Tech Initials	Machn No.	Peel (ppi)					Shear (ppi)					Pass Fail	SAMPLE LOCATION
				1	2	3	4	5	1	2	3	4	5		
35	89-95	JM	W120	-	-	-	-		-	-				Fail	30' SEOS
36	97-98	JM	W120	67	77	73	72		103	95				Pass	100' NEOS
37	95-96	BR	W114	65	65	68	65		85	81				Pass	450' SEOS
38	98-99	BR	W114	82	87	77	84		84	82				Pass	50' NEOS
39	98-99	BR	W114	73	72	67	72		81	81				Pass	70' SEOS
40	96-97	LH	W118	66	65	65	69		82	84				Pass	150' NEOS
41	96-97	LH	W118	68	69	69	69		84	85				Pass	200' SEOS
42	99-100	LH	W118	-	-	-	-		-	-				Fail	265' SEOS
42A	99-100	LH	W118	71	77	68	69		87	81				Fail	SEOS 254' TO 276'
42B	99-100	LH	W118	75	74	69	72		84	82				Pass	SEOS 276' TO 287'
43	102-103	LH	W118	88	86	89	81		87	83				Pass	60' NEOS
44	102-103	LH	W118	85	73	81	65		84	82				Pass	580' NEOS

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	2P / 2S	2P / 2S
PROJECT NO.:	18009	Fusion Peel	60	60
MATERIAL TYPE:	40MIL HD MICRO SPIKE	Extrus Peel	52	52
MATERIAL LAYER:	PRIMARY	Peel Sep.	25%	25%
QC NAME:	CHERYL HINA	Shear	80	80

Sample I.D.	Seam NO.	Tech Initials	Machn No.	Peel (ppi)										Shear (ppi)					Pass Fail	SAMPLE LOCATION
				1	2	3	4	5	1	2	3	4	5							
45	101-102	BR	W114	86	65	75	69							103	99				Pass	250' NEOS
46	103-104	BR	W114	104	87	77	91							84	82				Pass	90' NEOS
47	103-104	BR	W114	97	88	88	69							82	84				Pass	155' SEOS
35A	89-95	JM	W120	69	66	74	68							82	84				Pass	20' SEOS
35B	89-95	JM	W120	66	68	65	68							84	84				Pass	40' SEOS
27A	92-93	BR	W114	70	68	72	69							87	82				Pass	10' SEOS
27B	93-94	BR	W114	67	69	71	70							84	83				Pass	20' SEOS
42AA	99-100	LH	W118	70	65	67	68							81	83				Pass	SEOS 243' TO 254'
48	100-101	JM	W120	79	82	68	74							95	87				Pass	283' NEOS
42AAA	99-100	LH	W118	69	67	70	68							82	81				Pass	SEOS 232' TO 243'
49	104-105	BR	W114	67	67	68	70							80	85				Pass	79' NEOS
50	104-105	BR	W114	65	65	68	74							81	82				Pass	544' NEOS

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	2P / 2S	2P / 2S
PROJECT NO.:	18009	Fusion Peel	60	60
MATERIAL TYPE:	40MIL HD MICRO SPIKE	Extrus Peel	52	52
MATERIAL LAYER:	PRIMARY	Peel Sep.	25%	25%
QC NAME:	CHERYL HINA	Shear	80	80

Sample I.D.	Seam NO.	Tech Initials	Machn No.	Peel (ppi)										Shear (ppi)					Pass Fail	SAMPLE LOCATION
				1	2	3	4	5	1	2	3	4	5							
51	105-106	JM	W120	61	63	61	64							81	83				Fail	310' SEOS
51A	105-106	JM	W120	69	70	74	68							82	83				Pass	300' SEOS
51B	105-106	JM	W120	68	72	74	69							84	82				Pass	320' SEOS
52	106-107	LH	W118	63	60	62	67							82	84				Pass	58' NEOS
53	106-107	LH	W118	61	63	67	66							84	82				Pass	534' NEOS
54	107-108	BR	W114	62	63	64	66							80	86				Pass	295' SEOS
55	108-109	JM	W120	68	67	71	70							80	83				Pass	52-' NEOS
56	108-109	JM	W120	67	64	68	66							84	81				Pass	540' NEOS
57	109-110	LH	W118	80	70	79	76							91	97				Pass	269' SEOS
58	110-111	BR	W114	64	63	71	68							81	83				Pass	40' NEOS
58A	110-111	BR	W114	63	61	69	69							80	82				Pass	20' NEOS
58AA	110-111	BR	W114	76	61	63	60	69	66					88	91				Pass	10' NEOS



DESTRUCTIVE TEST FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	2P / 2S	2P / 2S
PROJECT NO.:	18009	Fusion Peel	60	60
MATERIAL TYPE:	40MIL HD MICRO SPIKE	Extrus Peel	52	52
MATERIAL LAYER:	PRIMARY	Peel Sep.	25%	25%
QC NAME:	CHERYL HINA	Shear	80	80

Sample I.D.	Seam NO.	Tech Initials	Machn No.	Peel (ppi)										Shear (ppi)					Pass Fail	SAMPLE LOCATION
				1	2	3	4	5	1	2	3	4	5							
58B	110-111	BR	W114	64	63	67	69							84	82				Pass	50' NEOS
59	110-111	BR	W114	64	66	61	72							82	89				Pass	522' NEOS
60	111-112	JM	W120	69	64	67	68							83	81				Pass	271' SEOS
61	111-112	JM	W120	70	67	69	66							86	90				Pass	693' SEOS
62	112-113	LH	W118	83	76	87	83							91	97				Pass	464' NEOS
63	113-114	BR	W114	66	69	60	75							80	81				Pass	220' SEROS
64	113-114	BR	W114	72	64	72	71							84	87				Pass	700' SEOS
65	114-115	JM	W120	-	-	-	-							-	-				Fail	465' NEOS
65A	114-115	JM	W120	69	62	74	68							81	87				Pass	455' NEOS
65B	114-115	JM	W120	67	64	68	62							82	84				Pass	475' NEOS
66	115-116	LH	W118	66	77	73	75							83	87				Pass	260' SEOS
67	115-116	LH	W118	72	64	76	88							88	96				Pass	696' SEOS

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	2P / 2S	2P / 2S
PROJECT NO.:	18009	Fusion Peel	60	60
MATERIAL TYPE:	40MIL HD MICRO SPIKE	Extrus Peel	52	52
MATERIAL LAYER:	PRIMARY	Peel Sep.	25%	25%
QC NAME:	CHERYL HINA	Shear	80	80

Sample I.D.	Seam NO.	Tech Initials	Machn No.	Peel (ppi)										Shear (ppi)					Pass Fail	SAMPLE LOCATION
				1	2	3	4	5	1	2	3	4	5							
68	116-117	BR	W114	67	66	71	72							80	83				Pass	440' NEOS
69	117-118	JM	W120	68	68	73	60							86	90				Pass	110' SEOS
70	117-118	JM	W120	69	70	81	68							87	94				Pass	588' SEOS
71	118-119	BR	W114	66	66	70	60							80	83				Pass	360' NEOS
72	119-120	LH	W118	64	60	69	60							80	84				Pass	90' SEOS
73	119-120	LH	W118	65	64	69	61							80	82				Pass	585' SEOS
74	120-121	BR	W114	63	67	68	72							81	88				Pass	380' NEOS
75	121-122	BR	W114	62	64	62	61							84	81				Pass	170' NEOS
76	121-122	BR	W114	63	70	69	64							81	87				Fail	610' SEOS
76A	121-122	BR	W114	73	62	76	67							84	86				Pass	600' SEOS
76B	121-122	BR	W114	70	61	74	69							89	82				Pass	620' SEOS
77	122-123	LH	W118	76	74	79	81							86	94				Pass	380' NEOS

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	2P / 2S	2P / 2S
PROJECT NO.:	18009	Fusion Peel	60	60
MATERIAL TYPE:	40MIL HD MICRO SPIKE	Extrus Peel	52	52
MATERIAL LAYER:	PRIMARY	Peel Sep.	25%	25%
QC NAME:	CHERYL HINA	Shear	80	80

Sample I.D.	Seam NO.	Tech Initials	Machn No.	Peel (ppi)								Shear (ppi)					Pass Fail	SAMPLE LOCATION		
				1		2		3		4		5		1	2	3			4	5
78	123-124	JM	W120	74	69	80	73							88	92				Pass	110' SEOS
79	123-124	JM	W120	78	64	81	66							86	96				Pass	610' SEOS
80	124-125	BR	W114	63	62	67	69							80	80				Pass	384' NEOS
81	125-126	LH	W118	75	71	85	70							88	94				Pass	135' SEOS
82	125-126	LH	W118	81	72	75	85							90	97				Pass	635' SEOS
83	126-127	JM	W120	60	64	74	72							81	83				Pass	515' NEOS
84	128-129	JM	W120	77	77	84	82							96	104				Pass	202' SEOS
85	128-129	JM	W120	77	75	81	83							94	102				Pass	650' SEOS
86	129-130	JM	W120	66	79	81	74							93	100				Pass	250' NEOS
87	130-131	JM	W120	80	73	89	69							99	104				Pass	10' NEOS
88	130-131	JM	W120	81	71	76	75							92	101				Pass	250' SEOS
89	127-128	LH	W118	-	-	-	-							-	-				Fail	150' NEOS

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	2P / 2S	2P / 2S
PROJECT NO.:	18009	Fusion Peel	60	60
MATERIAL TYPE:	40MIL HD MICRO SPIKE	Extrus Peel	52	52
MATERIAL LAYER:	PRIMARY	Peel Sep.	25%	25%
QC NAME:	CHERYL HINA	Shear	80	80

Sample I.D.	Seam NO.	Tech Initials	Machn No.	Peel (ppi)										Shear (ppi)					Pass Fail	SAMPLE LOCATION
				1	2	3	4	5	1	2	3	4	5							
89A	127-128	LH	W118	64	60	67	71							84	87				Pass	133' NEOS
89B	127-128	LH	W118	63	61	66	64							82	84				Pass	212' NEOS
90	127-128	LH	W121	-	-	-	-							-	-				Fail	494' SEOS
90A	127-128	LH	W121	67	67	60	64							84	84				Pass	482' NEOS
90B	127-128	LH	W121	63	67	61	65							84	83				Pass	509' NEOS
91	131-132	JM	W120	80	68	93	88							96	104				Pass	300' NEOS
92	132-133	JM	W120	70	79	72	80							95	102				Pass	300' SEOS
93	137-143	JM	W132	68	69	72	64							89	92				Pass	275' NEOS
94A	153-154	JM	W132	74	64	74	61							84	89				Pass	26' WEOS
94B	153-154	JM	W132	70	69	75	64							87	88				Pass	6' WEOS
94	153-154	JM	W132	70	60	74	62							91	95				Pass	16' WEOS
95	146-148	JM	W132	72	81	76	84							89	96				Pass	6' NEOS

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	2P / 2S	2P / 2S
PROJECT NO.:	18009	Fusion Peel	60	60
MATERIAL TYPE:	40MIL HD MICRO SPIKE	Extrus Peel	52	52
MATERIAL LAYER:	PRIMARY	Peel Sep.	25%	25%
QC NAME:	CHERYL HINA	Shear	80	80

Sample I.D.	Seam NO.	Tech Initials	Machn No.	Peel (ppi)										Shear (ppi)					Pass Fail	SAMPLE LOCATION
				1	2	3	4	5	1	2	3	4	5							
96	133-135	LH	W118	84	72	84	72		95	99				Pass						625' SEOS
97	133-138	LH	W118	83	77	88	82		91	97				Pass						5' NEOS
98	169-175	LH	W118	77	90	81	85		99	98				Pass						11' NEOS
99	135-137	JH	W120	75	77	74	83		91	96				Pass						251' SEOS
100	143-146	JH	W120	70	61	78	69		85	90				Pass						500' NEOS
101	155-163	JH	W120	67	64	77	78		85	94				Pass						175' NEOS
102	163-169	JH	W120	75	76	90	72		86	92				Pass						50' NEOS
103	163-166	JH	W120	73	76	80	73		84	89				Pass						6' NEOS
104	94-178	LH	W118	98	76	90	86		130	133				Pass						6' NEOS
105	183-202	LH	W118	-	-	-	-		-	-	-	-	-	Fail						10' WEOS
105A	183-202	LH	W118	97	92	95	102		134	138				Pass						EEOS
105B	184-203	LH	W118	100	102	95	112		131	133				Pass						WEOS

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	2P / 2S	2P / 2S
PROJECT NO.:	18009	Fusion Peel	60	60
MATERIAL TYPE:	40MIL HD MICRO SPIKE	Extrus Peel	52	52
MATERIAL LAYER:	PRIMARY	Peel Sep.	25%	25%
QC NAME:	CHERYL HINA	Shear	80	80

Sample I.D.	Seam NO.	Tech Initials	Machn No.	Peel (ppi)										Shear (ppi)					Pass Fail	SAMPLE LOCATION
				1	2	3	4	5	1	2	3	4	5							
106	203-205	RN	W132	86	78	91	85							126	131				Pass	55' NEOS
107	202-203	JH	W120	94	91	100	101							126	124				Pass	100' SEOS
108	197-198	JH	W120	95	89	100	77							130	96				Pass	16' NEOS
109	208-211	JH	W120	97	83	86	90							117	129				Pass	22' NEOS
110	210-211	LH	W118	128	122	129	132							132	144				Pass	8' WEOS
111	214-216	JH	W120	91	80	91	82							123	121				Pass	36' NEOS
112	216-218	LH	W118	96	88	86	90							116	133				Pass	57' SEOS
113	218-220	LH	W118	83	100	104	92							129	135				Pass	30' NEOS
114	220-226	JH	W120	82	79	103	103							117	125				Pass	50' SEOS
115	107-218	JH	W120	109	98	106	83							129	131				Pass	7' WEOS
116	194-215	LH	W118	100	96	78	98							119	118				Pass	15' EEOS
117	227-234	JH	W120	69	75	82	75							90	100				Pass	52' NEOS

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	2P / 2S	2P / 2S
PROJECT NO.:	18009	Fusion Peel	60	60
MATERIAL TYPE:	40MIL HD MICRO SPIKE	Extrus Peel	52	52
MATERIAL LAYER:	PRIMARY	Peel Sep.	25%	25%
QC NAME:	CHERYL HINA	Shear	80	80

Sample I.D.	Seam NO.	Tech Initials	Machn No.	Peel (ppi)								Shear (ppi)					Pass Fail	SAMPLE LOCATION		
				1		2		3		4		5		1	2	3			4	5
118	235-236	LH	W118	65	65	69	65							87	90				Pass	101' SEOS
119	239-241	JH	W120	65	69	86	81							93	95				Pass	277' SEOS
120	236-239	LH	W118	74	76	88	82							96	100				Pass	327' NEOS
121	240-241	LH	W118	92	105	104	110							119	128				Pass	12' EEOS
122	241-243	LH	W118	74	75	84	81							103	109				Pass	15' SEOS
123	243-245	LH	W118	76	72	80	85							104	108				Pass	198' SEOS
124	247-249	JH	W120	74	75	82	70							93	99				Pass	376' SEOS
125	245-247	LH	W118	101	98	109	91							125	134				Pass	160' SEOS
126	117-247	LH	W118	88	101	106	106							128	132				Pass	12' EEOS
127	249-251	RN	W132	79	90	88	94							123	114				Pass	150' NEOS
128	251-252	RN	W132	93	90	82	79							125	130				Pass	130' SEOS
129 A	119-252	JH	W120	76	72	70	79							109	111				Pass	SEOS

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	2P / 2S	2P / 2S
PROJECT NO.:	18009	Fusion Peel	60	60
MATERIAL TYPE:	40MIL HD MICRO SPIKE	Extrus Peel	52	52
MATERIAL LAYER:	PRIMARY	Peel Sep.	25%	25%
QC NAME:	CHERYL HINA	Shear	80	80

Sample I.D.	Seam NO.	Tech Initials	Machn No.	Peel (ppi)										Shear (ppi)					Pass Fail	SAMPLE LOCATION
				1	2	3	4	5	1	2	3	4	5							
129 B	119-252	JH	W120	77	69	78	77							114	107				Pass	23' SEOS
129 BB	119-252	JH	W120	78	88	82	78							104	107				Pass	NEOS
129BBB	119-152	JH	W120	83	79	81	80							114	121				Pass	10' NEOS
129	119-252	JH	W120	75	70	79	76							110	115				Fail	13' SEOS
130 A	224-227	RN	W132	91	79	94	74							110	113				Pass	EEOS
130 B	224-227	RN	W132	87	84	79	81							107	110				Pass	WEOS
130	224-227	RN	W132	94	98	122	116							119	127				Pass	13' EEOS
131	252-253	JH	W120	83	79	96	76							118	129				Pass	326' NEOS.
132	253-254	LH	W118	80	83	79	80							123	121				Pass	351' NEOS
133	254-255	JH	W120	79	77	87	82							94	97				Pass	147' SEOS
134	255-256	LH	W118	77	74	92	84							115	121				Pass	100' SEOS
135	255-256	JH	W120	83	69	100	100							109	112				Pass	85' NEOS



DESTRUCTIVE TEST FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	2P / 2S	2P / 2S
PROJECT NO.:	18009	Fusion Peel	60	60
MATERIAL TYPE:	40MIL HD MICRO SPIKE	Extrus Peel	52	52
MATERIAL LAYER:	PRIMARY	Peel Sep.	25%	25%
QC NAME:	CHERYL HINA	Shear	80	80

Sample I.D.	Seam NO.	Tech Initials	Machn No.	Peel (ppi)					Shear (ppi)					Pass Fail	SAMPLE LOCATION
				1	2	3	4	5	1	2	3	4	5		
136A	254-255	JH	W120	75	72	74	77		110	107				Pass	58' NEOS
136B	254-255	JH	W120	76	74	78	72		113	116				Pass	38' NEOS
136AA	254-255	JH	W120	74	83	94	87		98	99				Pass	28' NEOS
136BB	254-255	JH	W120	74	85	96	91		99	105				Pass	18' NEOS
136BBB	254-255	JH	W120	78	84	69	74		121	119				Pass	38' NEOS
136	254-255	JH	W120	69	71	67	70		90	97				Pass	48' NEOS
137	257-258	LH	W118	65	65	65	70		95	89				Pass	407' NEOS
138	258-259	JH	W120	91	65	94	90		117	131				Pass	200' SEOS
139	256-257	JH	W120	83	87	94	83		122	125				Pass	325' NEOS
140	127-259	LH	W118	90	76	93	83		105	107				Pass	17' EEOS
141	259-260	LH	W118	76	85	80	76		123	136				Pass	255' NEOS
142	260-262	JH	W120	76	96	82	93		130	135				Pass	127' NEOS

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	2P / 2S	2P / 2S
PROJECT NO.:	18009	Fusion Peel	60	60
MATERIAL TYPE:	40MIL HD MICRO SPIKE	Extrus Peel	52	52
MATERIAL LAYER:	PRIMARY	Peel Sep.	25%	25%
QC NAME:	CHERYL HINA	Shear	80	80

Sample I.D.	Seam NO.	Tech Initials	Machn No.	Peel (ppi)										Shear (ppi)					Pass Fail	SAMPLE LOCATION
				1	2	3	4	5	1	2	3	4	5							
143	263-264	BR	W133	121	121	104	100							124	123				Pass	10' WEOS
144	263-265	LH	W118	87	85	102	89							127	134				Pass	152' SEOS
145	265-266	LH	W118	123	104	113	106							114	121				Pass	8' EEOS
146	265-267	JH	W120	105	79	97	85							123	127				Pass	285' SEOS
147	267-269	BR	W133	78	71	91	81							101	98				Pass	105' SEOS
148	269-270	JH	W120	90	84	92	85							124	127				Pass	34' NEOS
149	269-271	JH	W120	90	65	93	74							118	126				Pass	16' SEOS
150	271-273	BR	W133	79	80	87	73							100	109				Pass	77' NEOS
151A	275-276	LH	W118	99	73	96	98							101	119				Pass	87' NEOS
151B	275-276	LH	W118	87	70	91	79							101	115				Pass	67' NEOS
151	275-276	LH	W118	-	-	-	-							-	-				Fail	160' NEOS
152	273-274	BR	W133	74	73	79	88							104	112				Pass	125' NEOS



DESTRUCTIVE TEST FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	2P / 2S	2P / 2S
PROJECT NO.:	18009	Fusion Peel	60	60
MATERIAL TYPE:	40MIL HD MICRO SPIKE	Extrus Peel	52	52
MATERIAL LAYER:	PRIMARY	Peel Sep.	25%	25%
QC NAME:	CHERYL HINA	Shear	80	80

Sample I.D.	Seam NO.	Tech Initials	Machn No.	Peel (ppi)										Shear (ppi)					Pass Fail	SAMPLE LOCATION
				1	2	3	4	5	1	2	3	4	5							
153A	274-275	JH	W120	98	85	82	93							111	119				Pass	50' SEOS
153B	274-275	JH	W120	97	80	80	90							120	124				Pass	30' SEOS
153	274-275	JH	W120	-	-	-	-							-	-				Fail	40' SEOS
154	277-278	BR	W133	104	83	106	79							111	116				Pass	136' NEOS
155	135-270	LH	W118	89	89	104	116							115	119				Pass	4' EEOS
156AA	278-279	BR	W133	80	73	76	79							117	123				Pass	233' SEOS
156A	278-279	BR	W133	83	87	81	90							129	117				Pass	243' SEOS
156BB	278-279	BR	W133	84	79	67	71							121	114				Pass	273' SEOS
156B	278-279	BR	W133	95	93	76	84							111	109				Pass	263' SEOS
156	278-279	BR	W133	104	85	118	86							125	131				Pass	253' SEOS
157	279-289	JH	W120	76	74	80	89							124	126				Pass	89' NEOS
158	289-290	LH	W118	87	104	81	83							123	125				Pass	56' SEOS



DESTRUCTIVE TEST FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND	Test Criteria	2P / 2S	2P / 2S
PROJECT NO.:	18009	Fusion Peel	60	60
MATERIAL TYPE:	40MIL HD MICRO SPIKE	Extrus Peel	52	52
MATERIAL LAYER:	PRIMARY	Peel Sep.	25%	25%
QC NAME:	CHERYL HINA	Shear	80	80

Sample I.D.	Seam NO.	Tech Initials	Machn No.	Peel (ppi)					Shear (ppi)					Pass Fail	SAMPLE LOCATION
				1	2	3	4	5	1	2	3	4	5		
159	281-288	BR	W133	98	91	92	99		121	120				Pass	4' NEOS
160	285-286	JH	W120	95	108	108	97		113	116				Pass	10' NEOS
161	292-293	LH	W118	105	96	109	108		110	107				Pass	4' WEOS



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
1	8-9-10	-	08/18/18	FR	P	0856	2X2	08/27/18	SR	PASS
2	13-14-15	-	08/18/18	JM	P	0816	2X3	08/27/18	SR	PASS
3	16-17	WEOS	08/18/18	JM	P	0837	2X2	08/27/18	SR	PASS
4	18-19-20	-	08/18/18	JM	P	0914	2X2	08/27/18	SR	PASS
5	29-30-31	-	08/18/18	BR	P	0751	2X7	08/27/18	SR	PASS
6	30-31-32	-	08/18/18	BR	P	0741	2X2	08/27/18	SR	PASS
7	32-33-34	-	08/18/18	BR	P	0735	2X2	08/27/18	SR	PASS
8	33-34-36	-	08/18/18	BR	P	0834	2X2	08/27/18	SR	PASS
9	33-35-36	-	08/18/18	BR	P	0847	2X2	08/27/18	SR	PASS
10	35-36-37	-	08/18/18	BR	P	0856	2X2	08/27/18	SR	PASS
11	29-31	40' SEOS	08/18/18	BR	P	0809	2X13	08/27/18	SR	PASS
12	24-25-26	-	08/18/18	BR	P	0916	4X4	08/27/18	SR	PASS
13	1-2-29	-	08/18/18	FR	P	0745	2X2	08/27/18	SR	PASS
14	2-3-29-30	-	08/18/18	FR	P	0750	2X5	08/27/18	SR	PASS
15	3-4-30	-	08/18/18	FR	P	0755	2X2	08/27/18	SR	PASS
16	4-30-32	-	08/18/18	FR	P	0801	2X3	08/27/18	SR	PASS
17	4-5-32	-	08/18/18	FR	P	0809	2X2	08/27/18	SR	PASS
18	5-32	9' WEOS	08/18/18	FR	P	0812	1X2	08/27/18	SR	PASS
19	5-6-32	-	08/18/18	FR	P	0816	1X1	08/27/18	SR	PASS
20	6-32-33	-	08/18/18	FR	P	0818	3X3	08/27/18	SR	PASS
21	6-7-33	-	08/18/18	FR	P	0840	1X1	08/27/18	SR	PASS
22	7-33-35	-	08/18/18	FR	P	0842	1X1	08/27/18	SR	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
23	7-8-35	-	08/18/18	FR	P	0844	1X2	08/27/18	SR	PASS
24	8-10-35	-	08/18/18	FR	P	0850	1X2	08/27/18	SR	PASS
25	10-35-37	-	08/18/18	FR	P	0852	2X2	08/27/18	SR	PASS
26	10-11-37	-	08/18/18	JM	P	0753	2X2	08/27/18	SR	PASS
27	11-12-37	-	08/18/18	JM	P	0800	2X2	08/27/18	SR	PASS
28	12-37-38	-	08/18/18	JM	P	0804	2X4	08/27/18	SR	PASS
29	12-13-38	-	08/18/18	JM	P	0807	2X2	08/27/18	SR	PASS
30	13-15-38	-	08/18/18	JM	P	0812	1X1	08/27/18	SR	PASS
31	15-16-38	-	08/18/18	JM	P	0819	1X1	08/27/18	SR	PASS
32	16-38	7' SEOS	08/18/18	JM	P	0821	2X2	08/27/18	SR	PASS
33	16-17-38	-	08/18/18	JM	P	0845	2X2	08/27/18	SR	PASS
34	17-18-38	-	08/18/18	JM	P	0855	2X11	08/27/18	SR	PASS
35	18-20-38	-	08/18/18	JM	P	0859	2X2	08/27/18	SR	PASS
36	3-4	11' EEOS	08/18/18	FR	DT1	0845	2X4	08/27/18	SR	PASS
37	8-35	8' EEOS	08/18/18	FR	DT2	0846	2X3	08/27/18	SR	PASS
38	35-37	148' SEOS	08/18/18	BR	DT3	0852	2X4	08/27/18	SR	PASS
39	17-18	20' EEOS	08/18/18	JM	DT7	0903	2X4	08/27/18	SR	PASS
40	20-21-38	-	08/18/18	JM	P	0926	1X2	08/27/18	SR	PASS
41	21-22-38	-	08/18/18	JM	P	0940	2X2	08/27/18	SR	PASS
42	22-23-38	-	08/18/18	JM	P	0945	2X2	08/27/18	SR	PASS
43	23-37-38	-	08/18/18	BR	P	0902	1X3	08/27/18	SR	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
44	23-24-37	-	08/18/18	BR	P	0905	1X2	08/27/18	SR	PASS
45	23-24	12' EEOS	08/18/18	BR	DT5	0910	2X3	08/27/18	SR	PASS
46	24-26-37	-	08/18/18	BR	P	0920	1X2	08/27/18	SR	PASS
47	26-36-37	-	08/18/18	BR	P	0926	1X2	08/27/18	SR	PASS
48	26-27-36	-	08/18/18	BR	P	0927	1X1	08/27/18	SR	PASS
49	27-28-34-36	-	08/18/18	FR	P	0908	2X6	08/27/18	SR	PASS
50	28-34-39	-	08/18/18	FR	P	0910	2X2	08/27/18	SR	PASS
51	33-35	24' SEOS	08/18/18	FR	DT4	0848	2X24	08/27/18	SR	PASS
52	29-30	280' SEOS	08/18/18	BR	DT6	0822	2X3	08/27/18	SR	PASS
53	32-34-39	-	08/18/18	FR	P	0913	2X2	08/27/18	SR	PASS
54	32-39-40	-	08/18/18	FR	P	0915	2X2	08/27/18	SR	PASS
55	31-32-40	-	08/18/18	FR	P	0918	2X2	08/27/18	SR	PASS
56	31-40-41	-	08/18/18	FR	P	0921	2X3	08/27/18	SR	PASS
57	31-41	8' WEOS	08/18/18	FR	DT8	0924	2X4	08/27/18	SR	PASS
58	29-31-41	-	08/18/18	FR	P	0926	2X3	08/27/18	SR	PASS
59	29-41-42-43	-	08/18/18	BR	P	0940	4X4	08/27/18	SR	PASS
60	41-43	17' SEOS	08/18/18	BR	P	0945	2X4	08/27/18	SR	PASS
61	41-43	NEOS TO 9'	08/18/18	BR	P	0950	2X10	08/27/18	SR	PASS
62	15-16	WEOS	08/18/18	JM	P	0832	2X4	08/27/18	SR	PASS
63	17-18	WEOS	08/18/18	JM	P	0909	2X2	08/27/18	SR	PASS
64	45	ON P45	08/23/18	JM	P	0816	1X1+1"X20' BEAD TO R 133	08/27/18	SR	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
65	19-20	WEOS	08/18/18	JM	P	0923	2X2	08/27/18	SR	PASS
66	1-29-48	-	08/23/18	JM	P	0927	2X3	08/27/18	SR	PASS
67	29-42-48	-	08/23/18	FR	P	0941	2X2	08/27/18	SR	PASS
68	49-50-51	-	08/23/18	FR	P	1142	2X2	08/27/18	SR	PASS
69	50-51-52	-	08/23/18	FR	P	1045	2X2	08/27/18	SR	PASS
70	51-52-53	-	08/23/18	FR	P	1301	2X2	08/27/18	SR	PASS
71	53-56-57	-	08/23/18	FR	P	1315	2X2	08/27/18	SR	PASS
72	52-53-56	-	08/23/18	FR	P	1251	2X2	08/27/18	SR	PASS
73	56-57-61	1X1+1"X20' BEAD TO R 133	08/23/18	FR	P	1317	2X2	08/27/18	SR	PASS
74	61-62-78-79	-	08/23/18	FR	P	1653	2X2	08/27/18	SR	PASS
75	57-61-62	-	08/23/18	FR	P	1318	2X2	08/27/18	SR	PASS
76	69-70-71	-	08/23/18	BR	P	1119	1X1	08/27/18	SR	PASS
77	70-71-73	-	08/23/18	BR	P	1112	1X1	08/27/18	SR	PASS
78	71-73-74	-	08/23/18	BR	P	1104	2X2	08/27/18	SR	PASS
79	69-71	374' NEOS	08/23/18	BR	P	1151	2X2	08/27/18	SR	PASS
80	74-76-77	-	08/23/18	BR	P	1134	2X2	08/27/18	SR	PASS
81	73-74-76	-	08/23/18	BR	P	1108	2X2	08/27/18	SR	PASS
82	60-64	6' NEOS	08/23/18	JM	P	1126	2X2	08/27/18	SR	PASS
83	69-71	477' NEOS	08/23/18	BR	P	1049	1X2	08/27/18	SR	PASS
84	69-70	5' SEOS	08/23/18	JM	P	1309	2X2	08/27/18	SR	PASS
85	71-74	NEOS	08/23/18	FR	P	1015	2X4	08/27/18	SR	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
86	65-69	NEOS	08/23/18	FR	P	1008	2X4	08/27/18	SR	PASS
87	56-61	NEOS	08/23/18	FR	P	1001	2X2	08/27/18	SR	PASS
88	49-50	160' SEOS TO NEOS	08/23/18	FR	P	0915	4X39	08/27/18	SR	PASS
89	48-49	NEOS	08/23/18	FR	P	0930	2X2	08/27/18	SR	PASS
90	48-49	22' NEOS	08/23/18	FR	P	0928	4X4	08/27/18	SR	PASS
91	42-48	12' NEOS	08/23/18	JM	P	0939	2X13	08/27/18	SR	PASS
92	1-47-48	-	08/23/18	JM	P	0930	2X2	08/27/18	SR	PASS
93	45-47-48	-	08/23/18	JM	P	0935	1X2	08/27/18	SR	PASS
94	45-48-49	-	08/23/18	JM	P	0937	1X2	08/27/18	SR	PASS
95	45-46-49	-	08/23/18	JM	P	0943	2X2	08/27/18	SR	PASS
96	46-49-51	-	08/23/18	JM	P	0947	2X2	08/27/18	SR	PASS
97	46-51-54	-	08/23/18	JM	P	0953	2X2	08/27/18	SR	PASS
98	51-53-54	-	08/23/18	JM	P	0958	2X3	08/27/18	SR	PASS
99	53-54-55	-	08/23/18	JM	P	1001	2X2	08/27/18	SR	PASS
100	53-55-57	-	08/23/18	JM	P	1041	2X2	08/27/18	SR	PASS
101	55-57-58	-	08/23/18	JM	P	1045	2X2	08/27/18	SR	PASS
102	57-58-62	-	08/23/18	JM	P	1103	3X4	08/27/18	SR	PASS
103	58-59-62	-	08/23/18	JM	P	1107	2X2	08/27/18	SR	PASS
104	59-62-63-78	-	08/23/18	FR	P	1644	4X6	08/27/18	SR	PASS
105	59-60-63-78	-	08/23/18	JM	P	1118	2X2	08/27/18	SR	PASS
106	60-63-64-65	-	08/23/18	JM	P	1123	2X3	08/27/18	SR	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
107	SAME AS 108	-	08/23/18	JM	P	1149	2X3	08/27/18	SR	PASS
108	64-65-66-69	-	08/23/18	JM	P	1149	2X3	08/27/18	SR	PASS
109	66-67-69	-	08/23/18	JM	P	1306	2X2	08/27/18	SR	PASS
110	67-69-70	-	08/23/18	JM	P	1312	2X2	08/27/18	SR	PASS
111	67-68-70	-	08/23/18	JM	P	1329	2X2	08/27/18	SR	PASS
112	68-70-73	-	08/23/18	JM	P	1334	2X4	08/27/18	SR	PASS
113	68-72-73	-	08/23/18	JM	P	1343	2X2	08/27/18	SR	PASS
114	72-73-76	-	08/23/18	JM	P	1350	2X2	08/27/18	SR	PASS
115	72-75-76	-	08/23/18	JM	P	1355	2X3	08/27/18	SR	PASS
116	29-48	150' SEOS	08/23/18	FR	DT9	1312	2X4	08/27/18	SR	PASS
117	48-49	150' NEOS	08/23/18	FR	DT10	0959	2X4	08/27/18	SR	PASS
118	49-51	289- SEOS	08/23/18	FR	DT11 A-B	1114	2X25	08/27/18	SR	PASS
119	52-53	10' WEOS	08/23/18	FR	DT12	1258	2X4	08/27/18	SR	PASS
120	52-56	50' SEOS	08/23/18	FR	DT13	1145	2X4	08/27/18	SR	PASS
121	63-65	300' SEOS	08/23/18	FR	DT16	1130	2X4	08/27/18	SR	PASS
122	69-71	432' NEOS	08/23/18	BR	DT17	1144	2X4	08/27/18	SR	PASS
123	70-71	10' EEOS	08/23/18	BR	DT18	1117	2X4	08/27/18	SR	PASS
124	56-61	50' NEOS	08/23/18	FR	DT19	1029	2X4	08/27/18	SR	PASS
125	61-63	447' SEOS	08/23/18	FR	DT20	1019	2X4	08/27/18	SR	PASS
126	59-62	5' WEOS	08/23/18	JM	DT21	1111	2X4	08/27/18	SR	PASS
127	74-77	350' NEOS	08/23/18	BR	DT22	1153	2X4	08/27/18	SR	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
128	71-74	10' SEOS	08/23/18	BR	DT23	1125	2X4	08/27/18	SR	PASS
129	67-68	15' NEOS	08/23/18	JM	DT24	1322	2X4	08/27/18	SR	PASS
130	53-57	23' NEOS	08/23/18	FR	P	1321	2X2	08/27/18	SR	PASS
131	1-44-47	-	08/23/18	JM	P	0921	2X6	08/27/18	SR	PASS
132	44-45	-	08/23/18	JM	P	0836	1"X24'	08/27/18	SR	PASS
133	44-45-47	-	08/23/18	JM	P	0845	2X4	08/27/18	SR	PASS
134	45-46	SEOS	08/23/18	JM	P	0824	2X6	08/27/18	SR	PASS
135	54-55	SEOS	08/23/18	JM	P	1005	2X4	08/27/18	SR	PASS
136	55-58	SEOS	08/23/18	JM	P	1051	2X7	08/27/18	SR	PASS
137	58-59	SEOS	08/23/18	JM	P	1056	2X4	08/27/18	SR	PASS
138	59-60	SEOS	08/23/18	JM	P	1137	2X3	08/27/18	SR	PASS
139	6-64	SEOS	08/23/18	JM	P	1133	2X4	08/27/18	SR	PASS
140	62-78	23' SEOS	08/23/18	FR	P	1651	2X2	08/27/18	SR	PASS
141	62-78	58' SEOS	08/23/18	FR	DT14	1653	2X5	08/27/18	SR	PASS
142	61-63-78-79	-	08/23/18	FR	P	1656	4X4	08/27/18	SR	PASS
143	61-63-79-80	-	08/23/18	FR	P	1712	4X4	08/27/18	SR	PASS
144	61-63-80-81	-	08/23/18	JM	P	1710	4X4	08/27/18	SR	PASS
145	61-63-81-82	-	08/23/18	JM	P	1705	4X4	08/27/18	SR	PASS
146	63-82	14' SEOS	08/23/18	JM	DT15	1655	2X4	08/27/18	SR	PASS
147	61-82	24' SEOS	08/23/18	JM	P	1650	2X4	08/27/18	SR	PASS
148	61-82	40' SEOS	08/23/18	JM	P	1649	2X4	08/27/18	SR	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
149	61-63-82	-	08/23/18	JM	P	1640	4X4	08/27/18	SR	PASS
150	49-50	NEOS IN SPILLWAY	09/04/18	FR	BEAD	1105	68'	09/04/18	RB	PASS
151	77-83-84	-	09/05/18	FR	P	1410	2X2	09/10/18	PG	PASS
152	76-77-84	-	09/10/18	JM	P	0907	2X2	09/10/18	PG	PASS
153	83-84-85	-	09/05/18	FR	P	1412	2X2	09/10/18	PG	PASS
154	85-86	678' NEOS	09/10/18	JM	P	0822	2X2	09/10/18	PG	PASS
155	85-86	662' NEOS	09/10/18	JM	P	0824	2X2	09/10/18	PG	PASS
156	85-86	556' NEOS	09/10/18	JM	P	0833	2X7	09/10/18	PG	PASS
157	85-86	505' NEOS	09/10/18	JM	P	0912	2X2	09/10/18	PG	PASS
158	86-88	37' SEOS	09/10/18	JM	P	0818	2X2	09/10/18	PG	PASS
159	84-85	494' SEOS	09/05/18	FR	P	1409	2X2	09/10/18	PG	PASS
160	85-86	41' NEOS	09/05/18	FR	P	1426	2X2	09/10/18	PG	PASS
161	85-86	23' NEOS	09/05/18	FR	P	1428	2X2	09/10/18	PG	PASS
162	85-86	11' NEOS	09/10/18	BR	P	1015	2X11	09/10/18	PG	PASS
163	86-88	NEOS	09/10/18	BR	P	1051	2X12	09/10/18	PG	PASS
164	88-89	NEOS	09/10/18	BR	P	1100	2X5	09/10/18	PG	PASS
165	89-95	NEOS	09/10/18	BR	P	1110	2X5	09/10/18	PG	PASS
166	76-84	100' SEOS	09/10/18	JM	DT25	0840	2X4	09/10/18	PG	PASS
167	86-88	500' SEOS	09/05/18	FR	DT26	1405	2X4	09/10/18	PG	PASS
168	93-94	6' NEOS	09/10/18	JM	DT27	0805	2X15	09/10/18	PG	PASS
169	85-86	300' SEOS	09/05/18	FR	DT28	1341	2X4	09/10/18	PG	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
170	75-87	8' NEOS	09/05/18	JM	DT29	1357	2X4	09/10/18	PG	PASS
171	84-85	200' SEOS	09/10/18	JM	DT30	0857	2X4	09/10/18	PG	PASS
172	88-89	400' SEOS	09/05/18	FR	DT31	1359	2X4	09/10/18	PG	PASS
173	83-85	50' NEOS	09/05/18	FR	DT32	1416	2X4	09/10/18	PG	PASS
174	85-90	5' WEOS	09/05/18	JM	DT33	1432	2X4	09/10/18	PG	PASS
175	75-76-84	-	09/05/18	JM	P	1342	2X5	09/10/18	PG	PASS
176	75-84-87	-	09/05/18	JM	P	1350	2X4	09/10/18	PG	PASS
177	84-85-87	-	09/05/18	JM	P	1410	6X10	09/10/18	PG	PASS
178	85-87-90	-	09/05/18	JM	P	1428	2X3	09/10/18	PG	PASS
179	85-86-90-91	-	09/05/18	JM	P	1509	2X2	09/10/18	PG	PASS
180	86-88-91-92	-	09/05/18	JM	P	1523	4X4	09/10/18	PG	PASS
181	88-92-93	-	09/05/18	JM	P	1546	2X2	09/10/18	PG	PASS
182	88-89-93	-	09/05/18	JM	P	1550	1X1	09/10/18	PG	PASS
183	93-94	SEOS	09/10/18	JM	P	1012	2X5	09/10/18	PG	PASS
184	92-93	SEOS	09/10/18	JM	P	1032	3X7	09/10/18	PG	PASS
185	91-92	SEOS	09/05/18	JM	P	1502	2X6	09/10/18	PG	PASS
186	90-91	SEOS	09/05/18	JM	P	1450	2X6	09/10/18	PG	PASS
187	87-90	SEOS	09/05/18	JM	P	1443	2X6	09/10/18	PG	PASS
188	75-87	SEOS	09/05/18	JM	P	1454	2X5	09/10/18	PG	PASS
189	87-90	17' NEOS	09/05/18	JM	P	1436	1X1	09/10/18	PG	PASS
190	88-93	SEAM	09/05/18	JM	BEAD	1548	1"X5'	09/10/18	PG	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
191	89-93-94	-	09/05/18	JM	P	1556	2X3	09/10/18	PG	PASS
192	88-89	709' NEOS	09/10/18	JM	P	0810	2X2	09/10/18	PG	PASS
193	95-96	131' SEOS	09/10/18	FR	P	1112	2X4	09/10/18	PG	PASS
194	96-97	NEOS	09/10/18	BR	P	1610	2X4	09/10/18	PG	PASS
195	100-101	519' NEOS	09/10/18	FR	P	1548	2X3	09/10/18	PG	PASS
196	96-97	NEOS 570' TO 577'	09/10/18	FR	P	1101	2X8	09/10/18	PG	PASS
197	96-97	NEOS 642' TO 659'	09/10/18	FR	P	1056	2X10	09/10/18	PG	PASS
198	96-97	670' NEOS	09/10/18	FR	P	1053	2X4	09/10/18	PG	PASS
199	97-98	728' SEOS	09/10/18	FR	P	1530	2X2	09/10/18	PG	PASS
200	98-99	NEOS	09/10/18	BR	P	1623	2X4	09/10/18	PG	PASS
201	98-99	470' NEOS	09/05/18	FR	P	1531	2X2	09/10/18	PG	PASS
202	97-98	NEOS	09/10/18	BR	P	1615	2X2	09/10/18	PG	PASS
203	98-99	NEOS 502' TO 513'	09/10/18	FR	P	0840	2X10	09/10/18	PG	PASS
204	98-99	127' NEOS	09/10/18	FR	P	1515	1X2	09/10/18	PG	PASS
205	98-99	154' NEOS	09/10/18	FR	P	1513	1X2	09/10/18	PG	PASS
206	98-99	234' NEOS	09/10/18	FR	P	1450	1X1	09/10/18	PG	PASS
207	98-99	261' NEOS	09/10/18	FR	P	1442	1X1	09/10/18	PG	PASS
208	98-99	314' NEOS	09/10/18	FR	P	1412	2X4	09/10/18	PG	PASS
209	98-99	428' NEOS	09/10/18	FR	P	1502	2X3	09/10/18	PG	PASS
210	97-98	175' SEOS	09/10/18	FR	P	1302	2X3	09/10/18	PG	PASS
211	101-102	NEOS	09/10/18	BR	P	1656	2X7	09/10/18	PG	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
212	101-102	194' NEOS	09/10/18	FR	P	1507	2X2	09/10/18	PG	PASS
213	101-102	320' NEOS	09/10/18	FR	P	1428	2X2	09/10/18	PG	PASS
214	101-102	344' NEOS	09/10/18	FR	P	1421	2X5	09/10/18	PG	PASS
215	101-102	462' NEOS	09/10/18	FR	P	0756	2X9	09/10/18	PG	PASS
216	101-102	488' NEOS	09/10/18	FR	P	0751	2X2	09/10/18	PG	PASS
217	101-102	499' NEOS	09/05/18	FR	P	1602	2X4	09/10/18	PG	PASS
218	100-101	478' NEOS	09/10/18	FR	P	0801	2X2	09/10/18	PG	PASS
219	101-102	592' NEOS	09/10/18	FR	P	1030	2X2	09/10/18	PG	PASS
220	99-100	131' SEOS	09/10/18	FR	P	1644	2X2	09/10/18	PG	PASS
221	99-100	185' SEOS	09/10/18	FR	P	0900	2X2	09/10/18	PG	PASS
222	99-100	214' SEOS	09/05/18	FR	P	1542	2X2	09/10/18	PG	PASS
223	99-100	230' SEOS	09/10/18	FR	P	1538	2X4	09/10/18	PG	PASS
224	99-100	SEOS 284' TO 294'	09/05/18	FR	P	1541	2X5	09/10/18	PG	PASS
225	99-100	306' SEOS	09/05/18	FR	P	1505	1X1	09/10/18	PG	PASS
226	102-103	NEOS	09/10/18	BR	P	1704	2X7	09/10/18	PG	PASS
227	102-103	510' NEOS	09/10/18	FR	P	0841	2X4	09/10/18	PG	PASS
228	102-103	666' NEOS	09/10/18	FR	P	1033	2X4	09/10/18	PG	PASS
229	100-101	164' SEOS	09/10/18	FR	P	1035	2X4	09/10/18	PG	PASS
230	89-95	370' NEOS	09/10/18	FR	DT34	1355	2X4	09/10/18	PG	PASS
231	89-95	30' SEOS	09/10/18	JM	DT35	0814	2X4	09/10/18	PG	PASS
232	97-98	100' NEOS	09/10/18	FR	DT36	1522	2X4	09/10/18	PG	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
233	95-96	450' SEOS	09/10/18	FR	DT37	1402	2X4	09/10/18	PG	PASS
234	98-99	50' NEOS	09/10/18	FR	DT38	1525	2X6	09/10/18	PG	PASS
235	98-99	70' SEOS	09/10/18	FR	DT39	1050	2X12	09/10/18	PG	PASS
236	96-97	150' NEOS	09/10/18	FR	DT40	1430	2X4	09/10/18	PG	PASS
237	96-97	200' SEOS	09/10/18	FR	DT41	1108	2X4	09/10/18	PG	PASS
238	99-100	154' TO 276' SEOS	09/10/18	FR	DT42A	0935	2X4	09/10/18	PG	PASS
239	102-103	60' NEOS	09/10/18	FR	DT43	1542	2X4	09/10/18	PG	PASS
240	102-103	580' NEOS	09/10/18	FR	DT44	1023	2X4	09/10/18	PG	PASS
241	101-102	250' NEOS	09/10/18	FR	DT45	1459	2X4	09/10/18	PG	PASS
242	103-104	90' NEOS	09/10/18	FR	DT46	1533	2X4	09/10/18	PG	PASS
243	103-104	155' SEOS	09/10/18	FR	DT47	1021	2X4	09/10/18	PG	PASS
244	89-95	20' SEOS	09/10/18	JM	DT35A	1405	2X13	09/10/18	PG	PASS
245	89-95	40' SEOS	09/10/18	JM	DT35B	1400	2X10	09/10/18	PG	PASS
246	93-94	20' SEOS	09/10/18	JM	DT27B	0805	2X11	09/10/18	PG	PASS
247	92-93	10' SEOS	09/10/18	JM	DT27A	1127	2X4	09/10/18	PG	PASS
248	100-101	446' NEOS	09/05/18	FR	P	1512	2X2	09/10/18	PG	PASS
249	100-101	283' NEOS	09/10/18	FR	DT48	1431	2X6	09/10/18	PG	PASS
250	101-102	211' NEOS	09/10/18	FR	P	1506	1X2	09/10/18	PG	PASS
251	101-102	386' NEOS	09/10/18	FR	P	1429	1X2	09/10/18	PG	PASS
252	101-102	446' NEOS	09/10/18	FR	P	1521	2X3	09/10/18	PG	PASS
253	103-104	497' SEOS	09/10/18	FR	P	1503	2X3	09/10/18	PG	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
254	89-94	SEAM	09/05/18	JM	BEAD	1603	1"X10'	09/10/18	PG	PASS
255	86-88	SEAM	09/05/18	JM	BEAD	1538	1"X26'	09/10/18	PG	PASS
256	49-50-52-56-61-63-65-69-71-74-77-83-85-86-88-89		09/10/18	BR	A-TRENCH	0941	4X360	09/10/18	PG	PASS
257	99-100	243' TO 254	09/11/18	FR	DT42AA	1413	2X12	09/11/18	PG	PASS
258	99-100	155' SEOS	09/10/18	FR	P	0920	2X9	09/10/18	PG	PASS
259	87-90-91-92-93-94	-	09/10/18	JM	A-TRENCH	1007	4X105	09/10/18	PG	PASS
260	99-100	SEOS 232' TO 243'	09/12/18	JM	DT42AAA	1413	2X11	09/12/18	PG	PASS
261	96-97	631' NEOS	09/10/18	FR	P	1058	1X1	09/10/18	PG	PASS
262	110	NEOS CENTER OF PANEL	09/17/18	BR	P	0905	2"X28'	09/17/18	PG	PASS
263	99-100	SEOS 276' TO 287'	09/10/18	FR	P	0941	2X12	09/10/18	PG	PASS
264	99-100	NEOS	09/10/18	BR	P	1643	2X6	09/10/18	PG	PASS
265	100-101	NEOS	09/10/18	BR	P	1700	2X7	09/10/18	PG	PASS
266	103-104	NEOS	09/10/18	BR	P	1705	2X7	09/10/18	PG	PASS
267	107-108	573' SEOS	09/17/18	FR	P	0910	2X2	09/17/18	PG	PASS
268	104-105	79' NEOS	09/17/18	BR	DT49	0955	2X4	09/17/18	PG	PASS
269	104-105	544' NEOS	09/17/18	FR	DT50	0812	2X4	09/17/18	PG	PASS
270	105-106	310' SEOS	09/17/18	FR	DT51 A-B	0809	2X4	09/17/18	PG	PASS
271	106-107	58' NEOS	09/17/18	BR	DT52	1000	2X4	09/17/18	PG	PASS
272	106-107	534' NEOS	09/17/18	FR	DT53	0815	2X4	09/17/18	PG	PASS
273	107-108	295' SEOS	09/17/18	FR	DT54	0802	2X4	09/17/18	PG	PASS
274	108-109	52' NEOS	09/17/18	BR	DT55	1007	2X4	09/17/18	PG	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
275	108-109	540' NEOS	09/17/18	FR	DT56	0817	2X4	09/17/18	PG	PASS
276	110-111	40' NEOS TO NEOS	09/20/18	FR	DT58A B AA AAA	0755	2X4	09/20/18	PG	PASS
277	106-107	380' NEOS	09/17/18	FR	P	0803	2X2	09/17/18	PG	PASS
278	109-110	NEOS	09/17/18	BR	P	0827	2X4	09/17/18	PG	PASS
279	109-110	269' SEOS	09/17/18	FR	DT57	0825	2X3	09/17/18	PG	PASS
280	109-110	595' SEOS	09/17/18	FR	P	0915	2X2	09/17/18	PG	PASS
281	110-111	522' NEOS	09/17/18	FR	DT59	0821	2X4	09/17/18	PG	PASS
282	110-111	NEOS	09/17/18	BR	P	0937	1"X17'	09/17/18	PG	PASS
283	111-112	271' SEOS	09/17/18	FR	DT60	0841	2X4	09/17/18	PG	PASS
284	113-114	26' NEOS & 6' WEST ON 113	09/17/18	BR	P	1054	1X1	09/17/18	PG	PASS
285	113-114	19' NEOS & 6' WEST ON 113	09/17/18	BR	P	1100	1X1	09/17/18	PG	PASS
286	113-114	12' NEOS & 6' WEST ON 113	09/17/18	BR	P	1102	1X1	09/17/18	PG	PASS
287	113-114	4' NEOS & 6' WEST ON 113	09/17/18	BR	P	1105	1X1	09/17/18	PG	PASS
288	111-112	693' SEOS	09/17/18	BR	DT61	1027	2X4	09/17/18	PG	PASS
289	112-113	464' NEOS	09/17/18	FR	DT62	0855	2X4	09/17/18	PG	PASS
290	113-114	220' SEOS	09/17/18	FR	DT63	1248	2X4	09/17/18	PG	PASS
291	113-114	700' SEOS	09/17/18	BR	DT64	1109	2X4	09/17/18	PG	PASS
292	114-115	NEOS 455' to 475'	09/17/18	FR	DT65AB	1352	2X22	09/17/18	PG	PASS
293	115-116	32' SEOS	09/17/18	FR	P	1135	2X2	09/17/18	PG	PASS
294	115-116	260' SEOS	09/17/18	FR	DT66	1140	2X4	09/17/18	PG	PASS
295	115-116	696' SEOS	09/17/18	BR	DT67	1115	2X4	09/17/18	PG	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
296	116-117	440' NEOS	09/17/18	FR	DT68	1318	2X4	09/17/18	PG	PASS
297	116-117	266' NEOS	09/17/18	FR	P	101	1X2	09/17/18	PG	PASS
298	110-111	NEOS 23' TO 28'	09/17/18	BR	P	0939	2X8	09/17/18	PG	PASS
299	117-118	7' NEOS & 6' WEST ON 117	09/17/18	BR	P	1150	1X1	09/17/18	PG	PASS
300	118-119	555' SEOS	09/17/18	FR	P	1120	1X2	09/17/18	PG	PASS
301	116-117	167' NEOS	09/17/18	FR	P	0921	1X2	09/17/18	PG	PASS
302	120-121	NEOS	09/17/18	BR	P	1309	2X4	09/17/18	PG	PASS
303	120-121	17' NEOS	09/17/18	BR	P	1304	1X3	09/17/18	PG	PASS
304	119-120	487' SEOS	09/17/18	FR	P	0943	1X2	09/17/18	PG	PASS
305	117-118	110' SEOS	09/17/18	FR	DT69	1130	2X4	09/17/18	PG	PASS
306	117-118	588' SEOS	09/17/18	FR	DT70	0924	2X4	09/17/18	PG	PASS
307	118-119	360' NEOS	09/17/18	FR	DT71	1004	2X4	09/17/18	PG	PASS
308	119-120	90' SEOS	09/17/18	FR	DT72	1125	2X4	09/17/18	PG	PASS
309	119-120	585' SEOS	09/17/18	BR	DT73	1339	2X4	09/17/18	PG	PASS
310	120-121	380' NEOS	09/19/18	FR	DT74	0840	2X25	09/19/18	PG	PASS
311	121-122	170' NEOS	09/17/18	FR	DT75	1115	2X4	09/17/18	PG	PASS
312	121-122	SEOS 598' TO 625'	09/20/18	FR	DT76AB	0830	2X25	09/20/18	PG	PASS
313	122-123	380' NEOS	09/17/18	FR	DT77	1018	2X4	09/17/18	PG	PASS
314	123-124	110' SEOS	09/17/18	FR	DT78	1111	2X4	09/17/18	PG	PASS
315	123-124	610' SEOS	09/17/18	BR	DT79	1330	2X4	09/17/18	PG	PASS
316	124-125	384' NEOS	09/17/18	FR	DT80	1042	2X4	09/17/18	PG	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
317	125-126	135' SEOS	09/17/18	FR	DT81	1101	2X4	09/17/18	PG	PASS
318	125-126	635' SEOS	09/17/18	BR	DT82	1326	2X4	09/17/18	PG	PASS
319	126-127	515' NEOS	09/17/18	FR	DT83	1054	2X4	09/17/18	PG	PASS
320	108-109	95' NEOS	09/17/18	BR	P	1046	1X1	09/17/18	PG	PASS
321	104-105	NEOS	09/17/18	BR	P	0752	2X4	09/17/18	PG	PASS
322	107-108	NEOS	09/17/18	BR	P	0758	2X4	09/17/18	PG	PASS
323	108-109	NEOS	09/17/18	BR	P	0800	2X4	09/17/18	PG	PASS
324	111-112	NEOS	09/17/18	BR	P	1033	2X4	09/17/18	PG	PASS
325	112-113	NEOS	09/17/18	BR	P	1038	2X4	09/17/18	PG	PASS
326	113-114	NEOS	09/17/18	BR	P	1141	2X4	09/17/18	PG	PASS
327	114-115	NEOS	09/17/18	BR	P	1125	2X4	09/17/18	PG	PASS
328	123-124	728' NEOS & 15' WEST ON 123	09/17/18	BR	P	1315	1X1	09/17/18	PG	PASS
329	116-117	NEOS	09/17/18	BR	P	1133	2X4	09/17/18	PG	PASS
330	126-127	NEOS	09/17/18	BR	P	1322	2X4	09/17/18	PG	PASS
331	105-106	299' SEOS	09/17/18	FR	DT51A	1425	2X11	09/17/18	PG	PASS
332	105-106	320' SEOS	09/17/18	FR	DT51B	1425	2X11	09/17/18	PG	PASS
333	128-129	202' SEOS	09/25/18	PG	DT84	0943	2X2	09/17/18	PG	PASS
334	128-129	650' SEOS	09/25/18	LH	DT85	0807	2X2	09/17/18	PG	PASS
335	129-130	250' NEOIS	09/25/18	LH	DT86	0856	2X2	09/17/18	PG	PASS
336	130-131	10' NEOS	09/25/18	LH	DT87	0830	2X2	09/17/18	PG	PASS
337	130-131	250' SEOS	09/25/18	LH	DT88	0916	2X2	09/17/18	PG	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
338	127-128	134' TO 213' SEOS	09/25/18	PG	DT89A B	0900	2X22	09/17/18	PG	PASS
339	127-128	483' TO 510' SEOS	09/25/18	LH	DT90A B	1002	2X22	09/17/18	PG	PASS
340	131-132	300' NEOS	09/25/18	LH	DT91	0843	2X2	09/17/18	PG	PASS
341	132-133	30' SEOS	09/25/18	LH	DT92	0905	2X2	09/17/18	PG	PASS
342	127-128	229' SEOS	09/25/18	PG	P	0925	2X2	09/17/18	PG	PASS
343	127-128	265' SEOS	09/25/18	PG	P	0931	2X2	09/17/18	PG	PASS
344	127-128	292' SEOS	09/25/18	PG	P	0935	2X2	09/17/18	PG	PASS
345	127-128	302' SEOS	09/25/18	PG	P	0940	2X2	09/17/18	PG	PASS
346	127-128	319' SEOS	09/25/18	PG	P	0955	2X2	09/17/18	PG	PASS
347	127-128	327' SEOS	09/25/18	PG	P	0958	2X2	09/17/18	PG	PASS
348	127-128	361' SEOS	09/25/18	LH	P	1050	2X2	09/17/18	PG	PASS
349	127-128	400' SEOS	09/25/18	LH	P	1044	2X2	09/17/18	PG	PASS
350	127-128	433' TO 450' SEOS	09/25/18	LH	P	1036	2X2	09/17/18	PG	PASS
351	127-128	455' SEOS	09/25/18	LH	P	1020	2X2	09/17/18	PG	PASS
352	119-120	NEOS	09/25/18	LH	P	1115	2X2	09/17/18	PG	PASS
353	127-128	NEOS	09/25/18	LH	P	0800	2X2	09/17/18	PG	PASS
354	132-133-134	-	09/29/18	PG	P	1310	2X3	09/29/18	PG	PASS
355	133-134-135	-	09/29/18	PG	P	1305	2X2	09/29/18	PG	PASS
356	133-136-138	-	09/29/18	PG	P	0808	2X2	09/29/18	PG	PASS
357	133-135-136	-	09/29/18	PG	P	0813	2X3	09/29/18	PG	PASS
358	137-143	275' NEOS	09/29/18	PG	DT93	1003	2X4	09/29/18	PG	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
359	153-154	6' WEOS TO 26'	09/29/18	JH	DT94A B	0951	2X22	10/03/18	PG	PASS
360	146-148	6' NEOS	09/29/18	JH	DT95	0915	2X4	09/29/18	PG	PASS
361	133-135	625' SEOS	09/29/18	PG	DT96	1254	2X4	09/29/18	PG	PASS
362	133-138	5' NEOS	09/29/18	PG	DT97	0906	2X4	09/29/18	PG	PASS
363	169-175	11' NEOS	09/29/18	JH	DT98	1200	2X4	09/29/18	PG	PASS
364	135-137	251' SEOS	09/29/18	PG	DT99	1042	2X4	09/29/18	PG	PASS
365	143-146	500' NEOS	09/29/18	PG	DT100	0929	2X4	09/29/18	PG	PASS
366	155-163	175' NEOIS	09/29/18	PG	DT101	1055	2X4	09/29/18	PG	PASS
367	163-169	50' NEOS	09/29/18	PG	DT102	1106	2X4	09/29/18	PG	PASS
368	163-166	6' NEOS	09/29/18	JH	DT103	1103	2X4	09/29/18	PG	PASS
369	135-136-139	-	09/29/18	PG	P	0818	3X3	09/29/18	PG	PASS
370	135-137-139	-	09/29/18	PG	P	0823	1X2	09/29/18	PG	PASS
371	137-139-140	-	09/29/18	PG	P	0827	2X2	09/29/18	PG	PASS
372	137-140-141-143	-	09/29/18	PG	P	0834	2X4	09/29/18	PG	PASS
373	141-142-143	-	09/29/18	JH	P	0834	2X2	09/29/18	PG	PASS
374	142-143-145	-	09/29/18	JH	P	0839	2X2	09/29/18	PG	PASS
375	142-144-145	-	09/29/18	JH	P	0849	2X2	09/29/18	PG	PASS
376	143-145-146	-	09/29/18	PG	P	0852	3X4	09/29/18	PG	PASS
377	145-146-147	-	09/29/18	JH	P	0900	3X4	09/29/18	PG	PASS
378	147-148	13' WEOS	09/29/18	JH	P	0811	1X1	09/29/18	PG	PASS
379	147-148	16' WEOS & 13' SOUTH ON 148	09/29/18	JH	P	0856	1X3	09/29/18	PG	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
380	146-148-149	-	09/29/18	JH	P	0917	2X2	09/29/18	PG	PASS
381	146-149-150	-	09/29/18	JH	P	0928	2X2	09/29/18	PG	PASS
382	146-150-151	-	09/29/18	JH	P	0929	1X1	09/29/18	PG	PASS
383	146-151-152	-	09/29/18	JH	P	0934	2X2	09/29/18	PG	PASS
384	146-152-153	-	09/29/18	JH	P	0941	2X2	09/29/18	PG	PASS
385	146-153-154	-	09/29/18	JH	P	0945	2X2	09/29/18	PG	PASS
386	146-154-155	-	09/29/18	PG	P	0948	3X4	09/29/18	PG	PASS
387	154-155-156	-	09/29/18	JH	P	0958	2X3	09/29/18	PG	PASS
388	155-156-157	-	09/29/18	JH	P	1000	2X2	09/29/18	PG	PASS
389	155-157-158	-	09/29/18	JH	P	1024	2X2	09/29/18	PG	PASS
390	155-158-159	-	09/29/18	PG	P	1014	1X1	09/29/18	PG	PASS
391	155-159-160	-	09/29/18	PG	P	1018	2X3	09/29/18	PG	PASS
392	155-160-161	-	09/29/18	JH	P	1033	1X2	09/29/18	PG	PASS
393	155-161-162	-	09/29/18	JH	P	1038	2X3	09/29/18	PG	PASS
394	155-162-163	-	09/29/18	PG	P	1032	3X4	09/29/18	PG	PASS
395	162-163-164	-	09/29/18	JH	P	1047	4X4	09/29/18	PG	PASS
396	163-164-165	-	09/29/18	JH	P	1055	2X2	09/29/18	PG	PASS
397	163-165-166	-	09/29/18	JH	P	1056	4X4	09/29/18	PG	PASS
398	163-166-167	-	09/29/18	JH	P	1104	2X2	09/29/18	PG	PASS
399	163-167-168	-	09/29/18	JH	P	1109	1X1	09/29/18	PG	PASS
400	163-168-169	-	09/29/18	JH	P	1128	3X8	09/29/18	PG	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
401	168-169-170	-	09/29/18	JH	P	1144	2X6	09/29/18	PG	PASS
402	169-170-171	-	09/29/18	JH	P	1149	1X1	09/29/18	PG	PASS
403	169-171-172	-	09/29/18	PG	P	1140	2X4	09/29/18	PG	PASS
404	169-172-173	-	09/29/18	PG	P	1142	2X2	09/29/18	PG	PASS
405	169-173-174	-	09/29/18	PG	P	1145	2X2	09/29/18	PG	PASS
406	169-174-175	-	09/29/18	JH	P	1158	1X1	09/29/18	PG	PASS
407	169-175-176	-	09/29/18	JH	P	1249	2X2	09/29/18	PG	PASS
408	175-176	EEOS TO 7'	09/29/18	JH	P	1252	2X7	09/29/18	PG	PASS
409	176-177	25' WEOS	09/29/18	JH	P	1310	2X2	09/29/18	PG	PASS
410	169-176-177	-	09/29/18	JH	P	1301	2X4	09/29/18	PG	PASS
411	146-147-148	-	09/29/18	JH	P	0905	2X2	09/29/18	PG	PASS
412	152-153	EEOS	09/29/18	JH	P	1017	2X2	09/29/18	PG	PASS
413	169-172	1' SEOS & 4' WEST ON 169	09/29/18	PG	P	1133	2X2	09/29/18	PG	PASS
414	94-178	SEOS	10/25/18	BR	P	0857	3X4	10/25/18	PG	PASS
415	188-189	6' SEOS	10/25/18	JV	P	0815	2X6	10/25/18	PG	PASS
416	189-190	25' SEOS	10/25/18	JV	P	0759	2X3	10/25/18	PG	PASS
417	197-198	4' SEOS	10/25/18	JV	P	1030	2X9	10/25/18	PG	PASS
418	190-191	9' SEOS	10/25/18	JV	P	1038	2X4	10/25/18	PG	PASS
419	190-191	SEOS 22' TO 29'	10/25/18	JV	P	1030	2X8	10/25/18	PG	PASS
420	203-205-206	-	10/24/18	JV	P	1628	2X6	10/25/18	PG	PASS
421	89-94-199	-	10/25/18	BR	P	0835	2X3	10/25/18	PG	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
422	200-201	75' SEOS	10/24/18	BR	P	1636	2X5	10/25/18	PG	PASS
423	94-178-199	-	10/25/18	BR	P	0845	2X5	10/25/18	PG	PASS
424	178-179-199	-	10/25/18	BR	P	0902	1X1	10/25/18	PG	PASS
425	179-199-200	-	10/25/18	BR	P	0906	1X1	10/25/18	PG	PASS
426	179-180-200	-	10/25/18	BR	P	0915	1X2	10/25/18	PG	PASS
427	180-181-200-201	-	10/25/18	BR	P	0919	1X3	10/25/18	PG	PASS
428	181-182-201	-	10/25/18	BR	P	0932	1X1	10/25/18	PG	PASS
429	182-201-202	-	10/25/18	BR	P	0940	2X10	10/25/18	PG	PASS
430	182-183-202	-	10/25/18	BR	P	0948	2X2	10/25/18	PG	PASS
431	183-184-202-203-204	-	10/25/18	BR	P	1008	2X10	10/25/18	PG	PASS
432	184-185-204	-	10/25/18	JV	P	0843	1X2	10/25/18	PG	PASS
433	185-204-206	-	10/25/18	JV	P	0840	1X1	10/25/18	PG	PASS
434	185-186-206	-	10/25/18	JV	P	0838	1X1	10/25/18	PG	PASS
435	203-204-206	-	10/25/18	JV	P	0850	2X3	10/25/18	PG	PASS
436	204-206	6' NEOS	10/25/18	JV	P	0845	1X1	10/25/18	PG	PASS
437	203-206	16' NEOS	10/24/18	JV	P	1640	1X3	10/25/18	PG	PASS
438	203-205	72' NEOS	10/24/18	JV	P	1650	2X2	10/25/18	PG	PASS
439	95-199	ENTIRE SEAM	10/25/18	BR	P	0828	2X22	10/25/18	PG	PASS
440	95-96-199-200	WEOS TO 7/96-200	10/25/18	BR	CAP	0828	2X22	10/25/18	PG	PASS
441	96-97-200-201	-	10/24/18	BR	P	1634	1X2	10/25/18	PG	PASS
442	97-98-201-202	-	10/24/18	BR	P	1628	1X2	10/25/18	PG	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
443	98-99-202-203	-	10/24/18	BR	P	1626	2X2	10/25/18	PG	PASS
444	99-100-203-205	-	10/24/18	BR	P	1624	3X3	10/25/18	PG	PASS
445	94-178	6' NEOS	10/25/18	BR	DT104	0850	2X4	10/25/18	PG	PASS
446	183-202	10' WEOS	10/25/18	BR	DT105A B	1005	2X24	10/25/18	PG	PASS
447	203-205	55' NEOS	10/24/18	BR	DT106	1640	2X4	10/25/18	PG	PASS
448	202-203	100' SEOS	10/24/18	BR	DT107	1638	2X4	10/25/18	PG	PASS
449	197-198	16' NEOS	10/24/18	BR	DT108	0901	2X4	10/25/18	PG	PASS
450	205-206-207	-	10/24/18	JV	P	1617	2X3	10/25/18	PG	PASS
451	207-208-209	-	10/24/18	JV	P	1540	2X4	10/25/18	PG	PASS
452	207-208	114' SEOS	10/24/18	JV	P	1608	2X2	10/25/18	PG	PASS
453	207-208	131' SEOS	10/24/18	JV	P	1614	2X3	10/25/18	PG	PASS
454	208-210-211	-	10/24/18	JV	P	1553	1X1	10/25/18	PG	PASS
455	208-209-211	-	10/24/18	JV	P	1530	1X1	10/25/18	PG	PASS
456	211-212-213	-	10/24/18	JV	P	1505	2X2	10/25/18	PG	PASS
457	210-211-212	-	10/24/18	JV	P	1544	2X2	10/25/18	PG	PASS
458	212-214-215	-	10/24/18	JV	P	1452	1X1	10/25/18	PG	PASS
459	212-213-215	-	10/24/18	JV	P	1500	1X2	10/25/18	PG	PASS
460	208-211	22' NEOS	10/24/18	JV	DT109	1605	2X4	10/25/18	PG	PASS
461	210-211	8' WEOS	10/24/18	JV	DT110	1550	2X4	10/25/18	PG	PASS
462	215-216-217	-	10/25/18	LH	P	0945	2X2	10/25/18	PG	PASS
463	214-215-216	-	10/24/18	JV	P	1450	2X2	10/25/18	PG	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
464	216-218-219	-	10/24/18	JV	P	1432	2X2	10/25/18	PG	PASS
465	218-219-220	-	10/24/18	JV	P	1430	2X2	10/25/18	PG	PASS
466	214-216	36' NEOS	10/24/18	BR	DT111	1605	2X4	10/25/18	PG	PASS
467	215-216	13' SEOS	10/25/18	LH	P	0948	2X2	10/25/18	PG	PASS
468	219-220-221	-	10/25/18	LH	P	0851	1X1	10/25/18	PG	PASS
469	220-221-226	-	10/25/18	LH	P	0842	1X2	10/25/18	PG	PASS
470	221-225-226	-	10/25/18	LH	P	0832	2X2	10/25/18	PG	PASS
471	225-226-227	-	10/25/18	LH	P	0752	2X2	10/25/18	PG	PASS
472	226-227-228	-	10/24/18	JV	P	1408	1X2	10/24/18	PG	PASS
473	216-218	57' SEOS	10/24/18	JV	DT112	1435	2X4	10/24/18	PG	PASS
474	218-220	30' NEOS	10/24/18	BR	DT113	1548	2X3	10/25/18	PG	PASS
475	100-101-205-207	-	10/24/18	BR	P	1617	2X4	10/25/18	PG	PASS
476	101-102-207-208	-	10/24/18	BR	P	1615	2X5	10/25/18	PG	PASS
477	102-103-208-210	-	10/24/18	BR	P	1609	1X2	10/25/18	PG	PASS
478	103-104-210-212	-	10/24/18	BR	P	1608	1X2	10/25/18	PG	PASS
479	104-105-212-214	-	10/24/18	BR	P	1550	3X3	10/25/18	PG	PASS
480	105-106-214-216	-	10/24/18	BR	P	1600	2X3	10/25/18	PG	PASS
481	106-107-216-218	-	10/24/18	BR	P	1558	1X2	10/25/18	PG	PASS
482	107-108-218-220	-	10/24/18	BR	P	1544	2X6	10/25/18	PG	PASS
483	108-109-220-226	-	10/24/18	BR	P	1536	2X5	10/25/18	PG	PASS
484	220-226	50' SEOS	10/25/18	BR	DT114	0846	2X4	10/25/18	PG	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
485	107-218	7' WEOS	10/24/18	BR	DT115	1547	2X4	10/25/18	PG	PASS
486	194-215	15' EEOS	10/25/18	BR	DT116	0952	2X4	10/25/18	PG	PASS
487	227-228-235	-	10/24/18	JV	P	1358	1X2	10/24/18	PG	PASS
488	227-234-235	-	10/24/18	JV	P	1352	1X1	10/24/18	PG	PASS
489	234-236-237	-	10/24/18	LH	P	1515	2X2	10/25/18	PG	PASS
490	234-235-236	-	10/24/18	JV	P	1336	3X3	10/24/18	PG	PASS
491	216-217-219	-	10/25/18	LH	P	0936	1X1	10/25/18	PG	PASS
492	109-110-226-228	-	10/24/18	BR	P	1533	2X7	10/25/18	PG	PASS
493	236-239	445' NEOS	10/24/18	LH	P	1544	2X5	10/24/18	PG	PASS
494	236-239	461' NEOS	10/24/18	LH	P	1531	2X5	10/24/18	PG	PASS
495	236-237-239	-	10/24/18	LH	P	1511	1X1	10/24/18	PG	PASS
496	237-238-239	-	10/24/18	LH	P	1453	2X2	10/25/18	PG	PASS
497	238-239-241	-	10/24/18	LH	P	1446	1X2	10/24/18	PG	PASS
498	239-240-241	-	10/24/18	JV	P	1044	1X1	10/24/18	PG	PASS
499	240-241-242	-	10/24/18	JV	P	1038	1X1	10/24/18	PG	PASS
500	241-242-243	-	10/24/18	JV	P	1125	2X2	10/25/18	PG	PASS
501	243-244	NEOS	10/24/18	LH	P	1418	4X9	10/24/18	PG	PASS
502	242-243-245	-	10/24/18	JV	P	1142	2X5	10/24/18	PG	PASS
503	242-245-246	-	10/24/18	JV	P	1110	1X2	10/24/18	PG	PASS
504	245-246-247	-	10/24/18	JV	P	1112	2X2	10/24/18	PG	PASS
505	245-247-248	-	10/24/18	LH	P	1030	2X2	10/24/18	PG	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
506	236-239	245' NEOS	10/24/18	JV	P	1330	1X1	10/24/18	PG	PASS
507	239-241	190' SEOS	10/24/18	JV	P	1320	2X7	10/24/18	PG	PASS
508	247-248-249	-	10/24/18	LH	P	1026	2X2	10/24/18	PG	PASS
509	243-245	150' SEOS	10/24/18	LH	P	1042	2X9	10/24/18	PG	PASS
510	247-249-250	-	10/24/18	BR	P	1502	2X7 & 21' BEED	10/24/18	PG	PASS
511	227-234	52' NEOS	10/24/18	JV	DT117	1340	2X3	10/24/18	PG	PASS
512	235-236	101' SEOS	10/24/18	JV	DT118	1404	2X4	10/24/18	PG	PASS
513	239-241	277' SEOS	10/24/18	JV	DT119	1100	2X4	10/24/18	PG	PASS
514	236-239	327' NEOS	10/24/18	JV	DT120	1326	2X3	10/24/18	PG	PASS
515	240-241	12' EEOS	10/24/18	JV	DT121	1041	2X3	10/24/18	PG	PASS
516	241-243	15' SEOS	10/24/18	LH	DT122	1442	2X3	10/24/18	PG	PASS
517	243-245	198' SEOS	10/24/18	LH	DT123	1050	2X3	10/24/18	PG	PASS
518	247-249	376' SEOS	10/24/18	JV	DT124	1022	2X4	10/24/18	PG	PASS
519	249-250-251	-	10/24/18	BR	P	1449	1X1	10/25/18	PG	PASS
520	242-245	17' SEOS	10/24/18	JV	P	1138	2X7	10/24/18	PG	PASS
521	243-245	SEOS TO 8'	10/24/18	LH	P	1147	2X10	10/24/18	PG	PASS
522	243-245	20' SEOS	10/24/18	LH	P	1138	2X10	10/24/18	PG	PASS
523	243-245	37' SEOS	10/24/18	LH	P	1117	2X12	10/24/18	PG	PASS
524	243-245	50' SEOS	10/24/18	LH	P	1119	2X13	10/24/18	PG	PASS
525	231-232	SEOS	10/24/18	LH	P	1548	2X6	10/24/18	PG	PASS
526	245-248	SEOS	10/24/18	LH	P	1322	2X4 & 26' BEED	10/24/18	PG	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
527	247-249	397' SEOS	10/24/18	JV	P	1028	2X3	10/24/18	PG	PASS
528	249-250	4' WEOS	10/24/18	BR	P	1450	1X2	10/25/18	PG	PASS
529	110-111-228-235	-	10/24/18	BR	P	1530	3X3	10/24/18	PG	PASS
530	111-112-235-236	-	10/24/18	BR	P	1518	2X3	10/24/18	PG	PASS
531	112-113-236-239	-	10/24/18	BR	P	1514	2X3	10/24/18	PG	PASS
532	113-114-239-240	-	10/24/18	BR	P	1513	2X3	10/24/18	PG	PASS
533	114-115-240-242	-	10/24/18	BR	P	1512	2X4	10/24/18	PG	PASS
534	115-116-242-246	-	10/24/18	BR	DT129BBB	1445	2X3	10/24/18	PG	PASS
535	116-117-246-247	-	10/24/18	BR	P	1445	2X4	10/24/18	PG	PASS
536	117-118-247-250	-	10/24/18	BR	P	1433	2X6	10/24/18	PG	PASS
537	118-119-250-251	-	10/24/18	BR	P	1428	2X3	10/24/18	PG	PASS
538	119-251-252	-	10/24/18	BR	P	1402	2X3	10/24/18	PG	PASS
539	119-252	8' NEOS	10/24/18	BR	P	1415	2X4	10/24/18	PG	PASS
540	120-252	WEOS TO 12'	10/24/18	BR	P	1420	2X13	10/24/18	PG	PASS
541	120-121-252-253	ENTIRE SEAM	10/24/18	BR	P	1349	2X29	10/24/18	PG	PASS
542	233-244	16' NEOS	10/24/18	LH	P	1426	2X3	10/24/18	PG	PASS
543	223-225-227	-	10/25/18	LH	P	0812	2X6	10/25/18	PG	PASS
544	224-227-229	-	10/24/18	LH	P	1645	2X4	10/25/18	PG	PASS
545	227-229-234	-	10/24/18	LH	P	1613	2X4	10/25/18	PG	PASS
546	229-230-234	-	10/24/18	LH	P	1609	3X4	10/25/18	PG	PASS
547	230-234-237	-	10/24/18	LH	P	1518	1X1	10/25/18	PG	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
548	239-241	333' SEOS	10/24/18	JV	P	1050	2X4	10/25/18	PG	PASS
549	230-231-237	-	10/24/18	LH	P	1506	3X4	10/25/18	PG	PASS
550	231-232-237-238	-	10/24/18	LH	P	1501	2X6	10/25/18	PG	PASS
551	232-233-238-241	-	10/24/18	LH	P	1450	1X2	10/25/18	PG	PASS
552	233-241-243-244	-	10/24/18	LH	P	1433	4X4	10/25/18	PG	PASS
553	252-253	245' NEOS	10/24/18	JV	P	1010	1X2	10/25/18	PG	PASS
554	254-255	SEOS	10/24/18	LH	P	1015	2X7	10/25/18	PG	PASS
555	254-255	362' SEOS	10/24/18	LH	P	0846	2X2	10/25/18	PG	PASS
556	254-255	469' SEOS	10/25/18	JV	P	0950	2X2	10/25/18	PG	PASS
557	254-255	490' SEOS	10/24/18	JV	P	0935	2X5	10/25/18	PG	PASS
558	254-255	497' SEOS	10/24/18	JV	P	0937	2X2	10/25/18	PG	PASS
559	254-255	48' NEOS	10/24/18	BR	DT136 A-B-AA-BB	1322	2X30	10/25/18	PG	PASS
560	254-255	614' SEOS	10/24/18	BR	P	1330	2X6	10/25/18	PG	PASS
561	121-122-253-254	-	10/24/18	BR	P	1158	2X2	10/25/18	PG	PASS
562	122-123-254-255	-	10/24/18	BR	P	1149	2X6	10/25/18	PG	PASS
563	123-124-255-256	-	10/24/18	BR	P	1148	1X2	10/25/18	PG	PASS
564	124-125-256-257	-	10/24/18	BR	P	1138	1X2	10/25/18	PG	PASS
565	125-126-257-258	-	10/24/18	BR	P	1130	2X3	10/25/18	PG	PASS
566	126-127-258-259	-	10/24/18	BR	P	1123	1X2	10/25/18	PG	PASS
567	254-255	587' SEOS	10/24/18	BR	P	1323	2X12	10/25/18	PG	PASS
568	245-247	160' SEOS	10/24/18	JV	DT125	1305	2X4	10/25/18	PG	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
569	117-247	12' EEOS	10/24/18	BR	DT126	1439	2X4	10/25/18	PG	PASS
570	249-251	150' NEOS	10/24/18	JV	DT127	1018	2X4	10/25/18	PG	PASS
571	251-252	130' SEOS	10/24/18	LH	DT128	1022	2X4	10/25/18	PG	PASS
572	119-252	13' SEOS	10/24/18	BR	DT129A-B-BB	1404	2X24	10/25/18	PG	PASS
573	224-227	13' EEOS	10/24/18	LH	DT130 A-B	1640	2X22	10/25/18	PG	PASS
574	252-253	326' NEOS	10/24/18	LH	DT131	0857	2X4	10/25/18	PG	PASS
575	253-254	351' NEOS	10/24/18	LH	DT132	0902	2X4	10/25/18	PG	PASS
576	254-255	147' SEOS	10/24/18	LH	DT133	0919	2X4	10/25/18	PG	PASS
577	255-256	100' SEOS	10/24/18	LH	DT134	0924	2X4	10/25/18	PG	PASS
578	255-256	85' NEOS	10/24/18	BR	DT135	1331	2X4	10/25/18	PG	PASS
579	257-258	407' NEOS	10/24/18	LH	DT137	0902	2X4	10/25/18	PG	PASS
580	258-259	200' SEOS	10/24/18	LH	DT138	0819	2X4	10/25/18	PG	PASS
581	256-257	325' NEOS	10/24/18	LH	DT139	0842	2X4	10/25/18	PG	PASS
582	127-259	17' EEOS	10/24/18	BR	DT140	1117	2X4	10/25/18	PG	PASS
583	260-261-262	-	10/24/18	JV	P	0855	2X3	10/25/18	PG	PASS
584	259-260	SEOS	10/23/18	LH	P	1606	2X4	10/24/18	PG	PASS
585	262-263-264	-	10/23/18	LH	P	1642	1X2	10/24/18	PG	PASS
586	261-262-263	-	10/24/18	JV	P	0848	2X3	10/24/18	PG	PASS
587	263-264-265	-	10/24/18	JV	P	0900	2X2	10/24/18	PG	PASS
588	264-265-266	-	10/23/18	LH	P	1617	2X2	10/24/18	PG	PASS
589	265-266-267	-	10/23/18	LH	P	1627	2X2	10/24/18	PG	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
590	265-267-268	-	10/24/18	BR	P	1018	2X6	10/24/18	PG	PASS
591	267-268-269	-	10/24/18	BR	P	1010	1X2	10/24/18	PG	PASS
592	268-269	8' NEOS	10/24/18	BR	P	1007	1X5	10/24/18	PG	PASS
593	269-270-271	-	10/24/18	JV	P	0810	1X2	10/24/18	PG	PASS
594	270-271-272	-	10/24/18	JV	P	0800	1X2	10/24/18	PG	PASS
595	271-272-273	-	10/23/18	LH	P	1411	2X3	10/24/18	PG	PASS
596	269-271	347' SEOS	10/24/18	JV	P	0815	1X2	10/24/18	PG	PASS
597	275-276-277	-	10/23/18	LH	P	1335	2X3	10/24/18	PG	PASS
598	276-277-278	-	10/23/18	LH	P	1340	2X2	10/24/18	PG	PASS
599	127-128-259-260	-	10/24/18	BR	P	1057	3X6	10/24/18	PG	PASS
600	259-260	255' NEOS	10/23/18	LH	DT141	1635	2X4	10/24/18	PG	PASS
601	260-262	127' NEOS	10/23/18	LH	DT142	1638	2X4	10/24/18	PG	PASS
602	263-264	10' WEOS	10/23/18	LH	DT143	1646	2X4	10/24/18	PG	PASS
603	263-265	152' SEOS	10/24/18	JV	DT144	1000	2X4	10/24/18	PG	PASS
604	265-266	8' EEOS	10/23/18	LH	DT145	1623	2X4	10/24/18	PG	PASS
605	265-267	285' SEOS	10/24/18	JV	DT146	0840	2X4	10/24/18	PG	PASS
606	267-269	105' SEOS	10/24/18	JV	DT147	0835	2X4	10/24/18	PG	PASS
607	269-270	34' NEOS	10/24/18	BR	DT148	0828	2X4	10/24/18	PG	PASS
608	269-271	16' SEOS	10/23/18	LH	DT149	1556	2X4	10/24/18	PG	PASS
609	271-273	77' NEOS	10/23/18	LH	DT150	1451	2X4	10/24/18	PG	PASS
610	275-276	160' NEOS	10/23/18	LH	DT151 A B	1320	2X4	10/24/18	PG	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
611	273-274	125' NEOS	10/23/18	LH	DT152	1444	2X4	10/24/18	PG	PASS
612	274-275	40' SEOS	10/23/18	LH	DT153 A B	1528	2X27	10/24/18	PG	PASS
613	277-278	136' NEOS	10/23/18	LH	DT154	1358	2X4	10/24/18	PG	PASS
614	128-129-260-261	-	10/24/18	BR	P	1047	1X1	10/24/18	PG	PASS
615	129-130-261-263	-	10/24/18	BR	P	1042	2X27	10/24/18	PG	PASS
616	130-131-263-265	CAP 131-263	10/24/18	BR	CAP	1037	2X11	10/24/18	PG	PASS
617	131-132-265-268	-	10/24/18	BR	P	1027	2X27	10/24/18	PG	PASS
618	132-134-268-269	-	10/24/18	BR	P	1005	2X4	10/24/18	PG	PASS
619	134-135-269-270	-	10/24/18	BR	P	0952	1X1	10/24/18	PG	PASS
620	135-137-270-272	-	10/23/18	BR	P	1634	2X5	10/24/18	PG	PASS
621	137-143-272-274	-	10/23/18	BR	P	1628	2X27	10/24/18	PG	PASS
622	143-146-274-275	CAP 146-274	10/23/18	BR	CAP	1623	2X9	10/24/18	PG	PASS
623	146-155-275-276	-	10/23/18	BR	P	1616	2X27	10/24/18	PG	PASS
624	155-163-276-278	CAP 163-276	10/23/18	BR	CAP	1611	2X7	10/24/18	PG	PASS
625	279-288-289	-	10/23/18	BR	P	1400	2X27	10/24/18	PG	PASS
626	285-286-287	-	10/23/18	BR	P	1440	1X1	10/24/18	PG	PASS
627	278-279	253' SEOS	10/23/18	BR	DT156	1408	2X4	10/24/18	PG	PASS
628	279-289	89' NEOS	10/23/18	BR	DT157	1338	2X4	10/24/18	PG	PASS
629	289-290	56' SEOS	10/23/18	BR	DT158	1322	2X4	10/24/18	PG	PASS
630	291-294	10' NEOS	10/23/18	BR	P	1319	2X5	10/24/18	PG	PASS
631	291-293-294	-	10/23/18	BR	P	1307	2X27	10/24/18	PG	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
632	291-292-293	-	10/23/18	BR	P	1349	2X27	10/24/18	PG	PASS
633	281-288	4' NEOS	10/23/18	BR	DT159	1527	2X4	10/24/18	PG	PASS
634	287-291-292	-	10/23/18	BR	P	1430	1X1	10/24/18	PG	PASS
635	287-290-291	-	10/23/18	BR	P	1427	1X1	10/24/18	PG	PASS
636	287-288-290	-	10/23/18	BR	P	1420	2X2	10/24/18	PG	PASS
637	287-288	6' SEOS	10/23/18	BR	P	1450	2X3	10/24/18	PG	PASS
638	177-280	EEOS	10/23/18	BR	P	1544	2X2	10/24/18	PG	PASS
639	163-169-278-279	-	10/23/18	BR	P	1604	2X4	10/25/18	PG	PASS
640	169-177-279-288	-	10/23/18	BR	P	1546	2X7	10/25/18	PG	PASS
641	177-280-288	-	10/23/18	BR	P	1536	2X2	10/25/18	PG	PASS
642	280-281-288	-	10/23/18	BR	P	1528	3X4	10/25/18	PG	PASS
643	281-282-288	-	10/23/18	BR	P	1517	1X1	10/25/18	PG	PASS
644	282-283-288	-	10/23/18	BR	P	1514	2X2	10/25/18	PG	PASS
645	283-284-288	-	10/23/18	BR	P	1502	2X2	10/25/18	PG	PASS
646	284-286-288	-	10/23/18	BR	P	1456	2X2	10/25/18	PG	PASS
647	286-287-288	-	10/23/18	BR	P	1444	2X3	10/25/18	PG	PASS
648	285-286	10' NEOS	10/23/18	BR	DT160	1446	2X4	10/25/18	PG	PASS
649	186-187-206-207	-	10/25/18	JV	P	0828	2X3	10/25/18	PG	PASS
650	187-188-207	-	10/25/18	JV	P	0822	1X2	10/25/18	PG	PASS
651	188-207-209	-	10/25/18	JV	P	0807	1X2	10/25/18	PG	PASS
652	188-189-209	-	10/25/18	JV	P	0805	2X2	10/25/18	PG	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
653	189-190-209	-	10/25/18	JV	P	0753	1X2	10/25/18	PG	PASS
654	190-209-211	-	10/25/18	JV	P	0755	1X2	10/25/18	PG	PASS
655	190-191-211	-	10/25/18	LH	P	1011	2X2	10/25/18	PG	PASS
656	191-192-211-213	-	10/24/18	JV	P	1508	2X6	10/25/18	PG	PASS
657	192-193-213	-	10/25/18	LH	P	1006	1X2	10/25/18	PG	PASS
658	193-213-215	-	10/25/18	LH	P	1000	1X1	10/25/18	PG	PASS
659	193-194-215	-	10/25/18	LH	P	0956	1X1	10/25/18	PG	PASS
660	194-195-215-217	-	10/25/18	LH	P	0940	2X3	10/24/18	PG	PASS
661	195-196-217	-	10/25/18	LH	P	0926	2X2	10/25/18	PG	PASS
662	196-217-219	-	10/25/18	LH	P	0916	2X2	10/25/18	PG	PASS
663	196-197-219	-	10/25/18	LH	P	0913	2X2	10/25/18	PG	PASS
664	197-198-219-221	-	10/25/18	LH	P	0856	2X2	10/25/18	PG	PASS
665	198-221-222	-	10/25/18	LH	P	0837	1X2	10/25/18	PG	PASS
666	221-222-225	-	10/25/18	LH	P	0828	2X3	10/25/18	PG	PASS
667	222-223-225	-	10/25/18	LH	P	0824	2X4	10/25/18	PG	PASS
668	292-293	4' WEOS	10/23/18	BR	DT161	1349	2X4	10/25/18	PG	PASS
669	288-289-290	-	10/23/18	BR	P	1357	2X2	10/25/18	PG	PASS
670	284-285-286	-	10/23/18	BR	P	1450	2X2	10/25/18	PG	PASS
671	278-279	SEOS	10/25/18	BR	P	1118	2X4	10/25/18	PG	PASS
672	274-275	SEOS	10/23/18	LH	P	1537	2X8	10/25/18	PG	PASS
673	273-274	SEOS	10/25/18	BR	P	1124	2X4	10/25/18	PG	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



REPAIR FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	40MIL HD MICRO SPIKE
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
674	267-269	SEOS	10/23/18	LH	P	1600	2X7	10/25/18	PG	PASS
675	260-262	305' NEOS	10/23/18	LH	P	1612	2X2	10/25/18	PG	PASS
676	267-269	165' NEOS	10/24/18	JV	P	0822	1X2	10/25/18	PG	PASS
677	272-274	148' SEOS	10/23/18	LH	P	1255	1X2	10/25/18	PG	PASS
678	272-273-274	-	10/23/18	LH	P	1404	2X3	10/25/18	PG	PASS
679	275-276	111' NEOS	10/23/18	LH	P	1326	2X5	10/25/18	PG	PASS
680	275-276	SEOS 61' TO 97'	10/23/18	LH	P	1320	2X26	10/25/18	PG	PASS
681	135-270	4' EOS	10/23/18	BR	DT155	1643	2X4	10/25/18	PG	PASS
682	270-272	17' NEOS	10/23/18	BR	P	1638	1X1	10/25/18	PG	PASS
683	251	28' BEED & 3 2X2 PATCHES	10/24/18	LH	P	1355	28' BEAD	10/25/18	PG	PASS
684	257-258	160' NEOS	10/24/18	JV	P	0920	2X2	10/25/18	PG	PASS
685	257-258	440' NEOS	10/24/18	JV	P	0805	2x4	10/25/18	PG	PASS
686	257-258	515' NEOS	10/24/18	JV	P	0908	2X2	10/25/18	PG	PASS
687	257-258	597' NEOS	10/24/18	JV	P	0933	2X3	10/25/18	PG	PASS
688	251-252	SEOS	10/24/18	JV	P	1402	2X8	10/25/18	PG	PASS
689	248-249	SEOS	10/24/18	JV	P	1328	2X6	10/25/18	PG	PASS
690	230-231	SEOS	10/24/18	JV	P	1603	2X4	10/25/18	PG	PASS
691	186-187-206	-	10/24/18	JV	P	1025	2X3	10/25/18	PG	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)



Date: 2018-08-11

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Bill To:

Geotechnology Inc

e-mail:asaindon@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: Meredosia Ash Pond Closure

TRI Job Reference Number: **40164**

Material(s) Tested: (10) Heat Fusion Weld Seam(s)
(1) 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,

Patricia Zabaleta
Project Manager
Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc
Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40164

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DT-1 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	90	96	88	89	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)	85	91	83	91	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	
Shear						Shear
Shear Strength (ppi)	111	112	113	111	111	112
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-2 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	95	97	95	95	99	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)	88	87	89	100	92	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)	108	111	106	108	107	108
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

The testing herein 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.

TRI ENVIRONMENTAL, INC.

9063 BEE CAVES RD. - AUSTIN, TX 78733 - USA | PH: 800.880.TEST OR 512.263.2101



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40164

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DT-3 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	91	89	97	92	99	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)	80	83	84	83	83	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)	111	115	111	112	112	112
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-4 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	85	105	91	103	98	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)	99	99	97	99	104	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)	108	110	107	109	108	108
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40164

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DT-5 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	82	88	80	84	86	84
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	87	86	91	85	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)	116	116	116	112	115	115
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-6 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	97	99	102	105	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	
Side: B						Peel B
Peel Strength (ppi)	94	101	97	103	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	
Shear						Shear
Shear Strength (ppi)	113	111	111	111	111	111
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40164

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DT-8 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	102	98	96	96	103	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)	78	76	81	72	88	79
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)	108	110	110	110	109	109
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-9 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	94	95	95	96	98	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)	94	92	75	90	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	
Shear						Shear
Shear Strength (ppi)	107	106	108	105	106	106
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40164

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DT-10 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	94	92	92	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	
Side: B						Peel B
Peel Strength (ppi)	93	88	87	90	88	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)	109	111	109	108	107	109
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DT-11 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	96	95	96	94	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)	94	89	89	91	92	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)	115	114	113	114	113	114
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI ENVIRONMENTAL, INC.

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**DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS - SINGLE TRACK****TRI Client: Geotechnology Inc****Project: Meredosia Ash Pond Closure****Material: 40 mil. HDPE****SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)****TRI Log#: 40164**

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DT-7 Weld: Single Extrusion						
Side: Peel						Peel
Peel Strength (ppi)	84	84	79	74	66	77
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	112	114	110	110	112
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

The testing herein 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.

TRI ENVIRONMENTAL, INC.

9063 BEE CAVES RD. - AUSTIN, TX 78733 - USA | PH: 800.880.TEST OR 512.263.2101



Date: 2018-08-14

Mail To:

**Anna Saindon
Geotechnology Inc
11816 Lackland Road
St. Louis , MO , 63146**

Bill To:

Geotechnology Inc

e-mail:

asaindon@geotechnology.com dnina@gsibp.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:

Meredosia Ash Pond Closure

TRI Job Reference Number:

40233

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,

Brian Anderson
Project Manager
Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40233

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-12 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	99	95	100	95	98	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)	100	99	104	97	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)	109	111	109	111	110	110
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-13 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	88	90	90	90	89	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)	86	92	93	92	91	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)	105	107	105	108	109	107
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI ENVIRONMENTAL, INC.

9063 BEE CAVES RD. - AUSTIN, TX 78733 - USA | PH: 800.880.TEST OR 512.263.2101



Date: 2018-08-21

Mail To:

**Anna Saindon
Geotechnology Inc
11816 Lackland Road
St. Louis , MO , 63146**

Bill To:

Geotechnology Inc

e-mail:

asaindon@geotechnology.com invoice@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:

Meredosia Ash Pond Closure

TRI Job Reference Number:

40416

Material(s) Tested:

(8) 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,

Alex Osborn

Geosynthetic Services Division

<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc
Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40416

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: FAD-1 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	100	98	99	100	99	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)	92	93	90	94	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)	109	104	109	111	110	109
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: FAD-2 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	104	101	98	101	100	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)	107	110	108	110	108	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)	107	108	107	108	108	108
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40416

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: FAD-3 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	82	94	86	93	88	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)	79	78	83	91	76	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)	108	109	108	109	107	108
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: FAD-4 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	99	96	90	95	100	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)	96	92	95	89	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)	107	110	109	110	106	108
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40416

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: FAD-5 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	97	96	96	95	97	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)	95	95	96	99	86	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)	111	111	111	112	111	111
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: FAD-6 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	79	77	82	88	83	82
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	88	87	87	76	84
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)	93	117	114	113	116	111
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI ENVIRONMENTAL, INC.

9063 BEE CAVES RD. - AUSTIN, TX 78733 - USA | PH: 800.880.TEST OR 512.263.2101



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40416

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: FAD-7 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	103	102	103	105	102	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)	98	97	97	98	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)	99	111	111	112	111	109
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: FAD-8 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	95	102	102	101	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	
Side: B						Peel B
Peel Strength (ppi)	100	103	103	103	103	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)	99	100	100	100	99	100
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI ENVIRONMENTAL, INC.

9063 BEE CAVES RD. - AUSTIN, TX 78733 - USA | PH: 800.880.TEST OR 512.263.2101



Date: 2018-08-24

Mail To:

**Anna Saindon
Geotechnology Inc
11816 Lackland Road
St. Louis , MO , 63146**

Bill To:

Geotechnology Inc

e-mail:

asaindon@geotechnology.com invoice@geotechnology.com dhina@gsibp.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:

Meredosia Ash Pond Closure

TRI Job Reference Number:

40540

Material(s) Tested:

(8) 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,

Brian Anderson
Project Manager
Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40540

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-9 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	88	89	89	85	81	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)	86	87	88	89	92	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	
Shear						Shear
Shear Strength (ppi)	108	107	109	108	107	108
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-10 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	96	97	96	96	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)	79	80	78	80	78	79
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)	109	111	109	109	113	110
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI ENVIRONMENTAL, INC.

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40540

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-11A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	87	90	92	88	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	
Side: B						Peel B
Peel Strength (ppi)	80	83	83	82	85	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)	104	105	105	104	107	105
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-11B Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	84	89	91	90	93	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)	84	88	87	90	93	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	
Shear						Shear
Shear Strength (ppi)	108	106	106	106	105	106
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI ENVIRONMENTAL, INC.

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40540

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-12 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	95	101	99	98	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	
Side: B						Peel B
Peel Strength (ppi)	95	99	97	97	104	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)	103	106	104	104	108	105
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-13 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	93	95	92	93	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)	99	86	82	83	83	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)	108	111	109	109	112	110
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40540

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-16 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	90	91	91	94	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	
Side: B						Peel B
Peel Strength (ppi)	79	81	81	79	86	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)	100	101	99	100	104	101
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-17 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	82	89	80	86	84	84
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)	79	83	79	79	75	79
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)	96	97	98	96	98	97
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI ENVIRONMENTAL, INC.

9063 BEE CAVES RD. - AUSTIN, TX 78733 - USA | PH: 800.880.TEST OR 512.263.2101



Date: 2018-08-24

Mail To:

**Anna Saindon
Geotechnology Inc
11816 Lackland Road
St. Louis , MO , 63146**

Bill To:

Geotechnology Inc

e-mail:

asaindon@geotechnology.com invoice@geotechnology.com dhina@gsibp.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:

Meredosia Ash Pond Closure

TRI Job Reference Number:

40545

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,

Brian Anderson
Project Manager
Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc
Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40545

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: D-18 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	94	96	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	
Side: B						Peel B
Peel Strength (ppi)	95	99	96	97	94	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)	90	97	91	94	95	93
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-19 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	99	102	101	104	98	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)	96	90	81	84	76	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	
Shear						Shear
Shear Strength (ppi)	111	115	111	113	112	112
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI ENVIRONMENTAL, INC.

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40545

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-20 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	100	101	100	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	
Side: B						Peel B
Peel Strength (ppi)	100	101	98	98	98	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)	110	111	113	113	109	111
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-21 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	93	94	100	99	94	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)	99	96	93	94	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)	102	100	98	102	100	100
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI ENVIRONMENTAL, INC.

9063 BEE CAVES RD. - AUSTIN, TX 78733 - USA | PH: 800.880.TEST OR 512.263.2101



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40545

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-22 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	92	91	90	92	89	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)	92	90	92	90	86	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)	101	104	100	102	99	101
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-23 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	78	84	76	74	85	79
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)	79	79	78	81	80	79
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)	100	99	100	104	102	101
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40545

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-24 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	90	88	87	94	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)	87	86	95	96	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	
Shear						Shear
Shear Strength (ppi)	109	112	109	99	108	107
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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Date: 2018-08-28

Mail To:

**Anna Saindon
Geotechnology Inc
11816 Lackland Road
St. Louis , MO , 63146**

Bill To:

Geotechnology Inc

e-mail:

asaindon@geotechnology.com invoice@geotechnology.com dhina@gsibp.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:

Meredosia Ash Pond Closure

TRI Job Reference Number:

40636

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,

Brian Anderson
Project Manager
Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40636

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-14 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	93	95	91	91	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	
Side: B						Peel B
Peel Strength (ppi)	89	89	84	87	83	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)	102	102	101	101	102	102
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-15 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	86	92	89	87	87	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)	85	87	85	85	85	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	
Shear						Shear
Shear Strength (ppi)	99	100	97	97	100	99
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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Date: 2018-09-06

Mail To:

**Anna Saindon
Geotechnology Inc
11816 Lackland Road
St. Louis , MO , 63146**

Bill To:

Geotechnology Inc

e-mail:

asaindon@geotechnology.com invoice@geotechnology.com dhina@gsibp.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:

Meredosia Ash Pond Closure

TRI Job Reference Number:

40879

Material(s) Tested:

(14) 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,

Mansukh Patel
Sr. Laboratory Coordinator
Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40879

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-25 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	92	91	89	90	91	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)	80	81	80	80	78	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	
Shear						Shear
Shear Strength (ppi)	112	113	113	111	114	113
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-26 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	83	87	93	89	87	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)	82	86	82	83	86	84
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)	102	104	103	101	102	102
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40879

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: D-27 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	90	92	74	88	90	87
Peel Incursion (%)	<5	<5	100	40	<5	
Peel Locus Of Failure Code	SE	SE	AD	AD-BRK	SE	
Peel NSF Failure Code	FTB	FTB	NON-FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	87	86	83	83	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	
Shear						Shear
Shear Strength (ppi)	101	100	96	101	97	99
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-28 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	92	93	93	90	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	
Side: B						Peel B
Peel Strength (ppi)	83	82	83	80	86	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)	101	103	102	101	101	102
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40879

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-29 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	94	94	60	98	100	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)	86	88	81	86	87	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)	112	112	112	109	114	112
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-30 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	71	76	76	78	83	77
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)	86	86	88	85	81	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	
Shear						Shear
Shear Strength (ppi)	104	102	104	104	102	103
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI ENVIRONMENTAL, INC.

9063 BEE CAVES RD. - AUSTIN, TX 78733 - USA | PH: 800.880.TEST OR 512.263.2101



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40879

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-31 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	90	90	92	92	95	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	95	95	89	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)	115	116	116	114	115	115
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-32 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	86	87	93	91	94	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)	89	96	93	90	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)	112	112	112	112	113	112
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40879

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-33 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	96	97	95	96	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)	93	96	94	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)	95	96	97	97	95	96
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-34 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	81	87	85	81	86	84
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	76	80	81	83	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)	113	113	114	113	114	113
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI ENVIRONMENTAL, INC.

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40879

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-37 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	83	76	83	80	82	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	
Side: B						Peel B
Peel Strength (ppi)	76	74	76	71	72	74
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)	104	105	105	104	106	105
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-39 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	92	92	93	92	93	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)	87	86	85	89	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	
Shear						Shear
Shear Strength (ppi)	119	119	119	118	118	119
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI ENVIRONMENTAL, INC.

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40879

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-40 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	86	90	89	85	88	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)	83	86	83	84	85	84
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)	103	106	104	104	106	105
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-41 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	91	93	89	91	93	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)	83	71	69	67	69	72
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)	104	103	103	102	103	103
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI ENVIRONMENTAL, INC.

9063 BEE CAVES RD. - AUSTIN, TX 78733 - USA | PH: 800.880.TEST OR 512.263.2101



Date: 2018-09-11

Mail To:

**Anna Saindon
Geotechnology Inc
11816 Lackland Road
St. Louis , MO , 63146**

Bill To:

Geotechnology Inc

e-mail:

asaindon@geotechnology.com invoice@geotechnology.com dhina@gsibp.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:

Meredosia Ash Pond Closure

TRI Job Reference Number:

40992

Material(s) Tested:

(14) 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,

Patricia Zabaleta
Project Manager
Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40992

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-27A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	75	74	71	73	74	73
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	84	81	82	83	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)	91	93	93	91	94	92
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-27B Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	86	92	85	84	96	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	80	86	88	97	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	
Shear						Shear
Shear Strength (ppi)	93	93	96	100	100	96
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40992

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-35A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	80	81	81	79	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)	80	79	77	78	80	79
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)	91	91	91	89	93	91
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-35B Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	81	79	80	80	70	78
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)	78	77	78	79	78	78
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)	92	90	90	91	93	91
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI ENVIRONMENTAL, INC.

9063 BEE CAVES RD. - AUSTIN, TX 78733 - USA | PH: 800.880.TEST OR 512.263.2101



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40992

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-36 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	83	93	90	88	94	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)	96	73	91	85	91	87
Peel Incursion (%)	<5	20	<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)	96	100	100	95	102	99
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-38 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	99	97	99	101	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)	85	87	85	85	87	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)	107	112	114	114	114	112
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40992

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-42A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	62	65	65	69	70	66
Peel Incursion (%)	90	90	90	90	90	
Peel Locus Of Failure Code	AD-BRK	AD-BRK	AD-BRK	AD-BRK	AD-BRK	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	82	84	85	84	84	84
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)	110	109	109	110	109	109
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-42B Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	68	77	70	71	78	73
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)	84	96	86	85	84	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)	112	113	113	114	115	113
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40992

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-43 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	94	97	99	92	97	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)	80	94	98	91	96	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)	99	100	98	97	97	98
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-44 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	90	95	95	91	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	
Side: B						Peel B
Peel Strength (ppi)	87	87	89	82	84	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)	93	95	94	95	94	94
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc
Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40992

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: D-45 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	89	81	85	81	88	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)	80	75	82	78	74	78
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)	100	99	94	99	98	98
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-46 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	98	95	94	95	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)	89	89	85	83	88	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)	108	107	106	107	111	108
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc
Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 40992

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: D-47 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	98	99	101	93	91	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)	89	95	84	99	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	
Shear						Shear
Shear Strength (ppi)	109	109	110	112	111	110
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-48 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	94	98	94	92	97	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)	75	79	70	70	79	75
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)	106	108	107	104	105	106
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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Date: 2018-09-12

Mail To:

**Anna Saindon
Geotechnology Inc
11816 Lackland Road
St. Louis , MO , 63146**

Bill To:

Geotechnology Inc

e-mail:

asaindon@geotechnology.com invoice@geotechnology.com dhina@gsibp.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:

Meredosia Ash Pond Closure

TRI Job Reference Number:

41025

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,

Mansukh Patel
Sr. Laboratory Coordinator
Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 41025

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-42AA Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	69	70	69	72	71	70
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)	60	59	59	61	61	60
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)	94	98	108	102	101	101
Shear Elongation @ Break (%)	31	36	>50	42	36	

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Date: 2018-09-13

Mail To:

**Anna Saindon
Geotechnology Inc
11816 Lackland Road
St. Louis , MO , 63146**

Bill To:

Geotechnology Inc

e-mail:

asaindon@geotechnology.com invoice@geotechnology.com dhina@gsibp.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:

Meredosia Ash Pond Closure

TRI Job Reference Number:

41063

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: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 41063

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-42AAA Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	79	80	77	77	78	78
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)	73	74	74	73	71	73
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)	92	92	92	92	93	92
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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Date: 2018-09-17

Mail To:

**Anna Saindon
Geotechnology Inc
11816 Lackland Road
St. Louis , MO , 63146**

Bill To:

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asaindon@geotechnology.com invoice@geotechnology.com dhina@gsibp.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:

Meredosia Ash Pond Closure

TRI Job Reference Number:

41147

Material(s) Tested:

(8) 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,

Brian Anderson
Project Manager
Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 41147

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-49 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	93	90	86	87	94	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)	83	78	84	79	81	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)	111	111	112	110	111	111
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-50 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	86	88	86	94	84	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)	81	80	82	81	81	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)	106	106	106	106	107	106
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc
Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 41147

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-51 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	86	85	87	87	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	
Side: B						Peel B
Peel Strength (ppi)	83	82	77	80	83	81
Peel Incursion (%)	<5	<5	90	<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)	98	97	96	97	98	97
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-52 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	77	78	77	84	83	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)	74	81	75	76	72	76
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)	104	103	103	102	105	103
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 41147

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-53 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	88	91	97	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)	75	75	73	76	73	74
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)	101	102	103	102	101	102
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-54 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	86	84	84	86	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)	85	85	84	72	79	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)	99	99	99	98	97	98
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI Log#: 41147

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: D-55 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	92	93	93	97	97	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)	82	71	85	75	90	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)	99	90	89	96	99	95
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-56 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	82	83	81	83	85	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)	93	95	98	95	97	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)	103	104	103	102	104	103
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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Date: 2018-09-18

Mail To:

**Anna Saindon
Geotechnology Inc
11816 Lackland Road
St. Louis , MO , 63146**

Bill To:

Geotechnology Inc

e-mail:

asaindon@geotechnology.com invoice@geotechnology.com dhina@gsibp.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:

Meredosia Ash Pond Closure

TRI Job Reference Number:

41178

Material(s) Tested:

(30) 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,

Brian Anderson
Project Manager
Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 41178

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-51A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	85	90	89	87	89	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)	86	93	90	86	85	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	
Shear						Shear
Shear Strength (ppi)	101	103	102	102	102	102
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-51B Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	79	81	82	81	83	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	
Side: B						Peel B
Peel Strength (ppi)	74	88	89	89	88	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)	106	106	106	101	106	105
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI Client: Geotechnology Inc
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Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 41178

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: D-57 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	94	100	95	99	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)	93	97	101	100	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	
Shear						Shear
Shear Strength (ppi)	111	107	112	110	111	110
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-58 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	85	84	85	85	85	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)	78	61	67	70	60	67
Peel Incursion (%)	50	40	<5	90	90	
Peel Locus Of Failure Code	AD-BRK	AD-BRK	SE	AD-BRK	AD-BRK	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	102	102	102	101	101	102
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI Log#: 41178

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-59 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	88	91	87	89	91	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)	71	70	76	68	69	71
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)	100	101	101	102	104	102
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-60 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	82	92	90	90	91	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)	81	77	80	76	82	79
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)	98	101	100	102	103	101
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI Log#: 41178

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-61 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	86	88	86	88	88	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)	81	75	79	75	66	75
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)	105	108	107	107	110	107
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-62 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	102	103	103	93	106	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)	94	95	95	94	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)	112	114	111	111	113	112
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-63 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	94	91	90	91	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	
Side: B						Peel B
Peel Strength (ppi)	61	65	63	63	62	63
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)	98	103	102	101	102	101
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-64 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	98	101	99	99	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	
Side: B						Peel B
Peel Strength (ppi)	81	94	79	73	81	82
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)	104	105	104	103	104	104
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-65A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	82	82	80	82	79	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	
Side: B						Peel B
Peel Strength (ppi)	82	81	84	83	82	82
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)	94	95	94	94	95	94
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-65B Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	85	87	79	84	80	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)	80	73	75	80	82	78
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)	92	92	92	93	93	92
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI Log#: 41178

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-66 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	98	99	93	96	98	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)	91	94	97	94	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)	107	109	112	110	111	110
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-67 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	103	97	106	98	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	
Side: B						Peel B
Peel Strength (ppi)	91	94	97	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)	112	112	112	112	113	112
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI Log#: 41178

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-68 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	91	87	80	83	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)	87	87	86	86	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	
Shear						Shear
Shear Strength (ppi)	100	98	99	98	101	99
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-69 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	98	101	102	96	98	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)	87	95	92	92	88	91
Peel Incursion (%)	10	<5	<5	<5	10	
Peel Locus Of Failure Code	AD-BRK	SE	SE	SE	AD-BRK	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	114	116	116	113	115	115
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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9063 BEE CAVES RD. - AUSTIN, TX 78733 - USA | PH: 800.880.TEST OR 512.263.2101



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 41178

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-70 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	97	99	96	92	98	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)	84	88	98	82	85	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)	99	107	108	108	110	106
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-71 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	95	93	92	93	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)	78	78	78	74	73	76
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)	99	101	100	99	101	100
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 41178

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-72 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	80	75	81	78	81	79
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)	71	84	85	82	87	82
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)	102	102	101	100	100	101
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-73 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	95	97	98	97	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)	69	75	69	69	69	70
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)	93	99	100	101	102	99
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 41178

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-74 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	93	90	89	91	90	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)	74	88	86	74	72	79
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)	103	103	103	98	96	101
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-75 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	78	80	80	80	82	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)	79	78	76	86	84	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)	104	105	105	106	106	105
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 41178

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-76 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	82	84	83	83	82	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)	77	81	81	82	78	80
Peel Incursion (%)	90	90	90	90	90	
Peel Locus Of Failure Code	AD-BRK	AD-BRK	AD-BRK	AD-BRK	AD-BRK	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	93	100	99	98	94	97
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-77 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	97	99	100	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	
Side: B						Peel B
Peel Strength (ppi)	93	95	94	95	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)	107	111	108	109	110	109
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 41178

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-78 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	99	97	98	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	
Side: B						Peel B
Peel Strength (ppi)	89	76	76	76	76	79
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)	108	95	108	107	100	104
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-79 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	97	96	98	94	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)	73	76	71	73	81	75
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)	109	93	109	110	109	106
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 41178

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-80 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	91	91	89	92	89	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)	85	90	85	85	85	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)	96	96	97	98	97	97
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-81 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	103	101	103	104	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	
Side: B						Peel B
Peel Strength (ppi)	85	86	87	86	92	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)	113	110	114	115	111	113
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc
Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 41178

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-82 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	100	104	104	103	103	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)	87	89	91	95	93	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)	112	105	113	113	113	111
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-83 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	73	74	72	75	76	74
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)	82	91	84	84	84	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	
Shear						Shear
Shear Strength (ppi)	102	101	102	104	103	102
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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Date: 2018-09-20

Mail To:

**Anna Saindon
Geotechnology Inc
11816 Lackland Road
St. Louis , MO , 63146**

Bill To:

Geotechnology Inc

e-mail:

asaindon@geotechnology.com invoice@geotechnology.com dhina@gsibp.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:

Meredosia Ash Pond Closure

TRI Job Reference Number:

41250

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,

Brian Anderson
Project Manager
Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 41250

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-58A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	81	82	77	81	83	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	
Side: B						Peel B
Peel Strength (ppi)	65	71	63	58	71	66
Peel Incursion (%)	100	100	100	20	100	
Peel Locus Of Failure Code	AD	AD	AD	AD-BRK	AD	
Peel NSF Failure Code	NON-FTB	NON-FTB	NON-FTB	FTB	NON-FTB	
Shear						Shear
Shear Strength (ppi)	97	97	98	96	100	98
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-58B Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	77	82	75	86	82	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)	82	82	82	82	87	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)	92	93	93	93	91	92
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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Date: 2018-09-21

Mail To:

**Anna Saindon
Geotechnology Inc
11816 Lackland Road
St. Louis , MO , 63146**

Bill To:

Geotechnology Inc

e-mail:

asaindon@geotechnology.com invoice@geotechnology.com dhina@gsibp.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:

Meredosia Ash Pond Closure

TRI Job Reference Number:

41289

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,

Brian Anderson
Project Manager
Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 41289

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DS-76A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	79	84	85	83	82	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)	74	74	73	73	74	74
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)	92	94	90	92	92	92
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-76B Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	67	72	77	78	67	72
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	79	82	81	80	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)	92	96	83	96	91	92
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI ENVIRONMENTAL, INC.

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Date: 2018-09-24

Mail To:

**Anna Saindon
Geotechnology Inc
11816 Lackland Road
St. Louis , MO , 63146**

Bill To:

Geotechnology Inc

e-mail:

asaindon@geotechnology.com invoice@geotechnology.com dhina@gsibp.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:

Meredosia Ash Pond Closure

TRI Job Reference Number:

41317

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,

Brian Anderson
Project Manager
Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 41317

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-58AA Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	73	74	71	72	74	73
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)	77	76	75	74	79	76
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)	93	95	96	94	98	95
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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Date: 2018-09-26

Mail To:

**Anna Saindon
Geotechnology Inc
11816 Lackland Road
St. Louis , MO , 63146**

Bill To:

Geotechnology Inc

e-mail:

asaindon@geotechnology.com invoice@geotechnology.com dhina@gsibp.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:

Meredosia Ash Pond Closure

TRI Job Reference Number:

41434

Material(s) Tested:

(11) 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).
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Sincerely,

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Project Manager
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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc
Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 41434

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: D-84 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	85	88	86	85	85	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)	86	87	85	80	85	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	
Shear						Shear
Shear Strength (ppi)	103	106	105	108	102	105
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-85 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	88	93	87	90	86	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)	87	87	85	88	82	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)	109	103	107	110	106	107
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI ENVIRONMENTAL, INC.

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 41434

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-86 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	89	90	86	85	89	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)	77	79	77	79	77	78
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)	104	100	96	103	103	101
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-87 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	91	90	86	87	87	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)	81	78	81	79	77	79
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)	103	107	98	104	106	104
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 41434

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-88 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	93	95	89	90	90	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)	90	89	77	94	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)	102	105	106	104	105	104
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-89A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	81	81	77	78	76	79
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)	67	80	76	72	72	73
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)	94	96	97	96	96	96
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 41434

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-89 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	77	81	82	80	73	79
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)	65	64	63	61	64	63
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)	95	90	92	95	90	92
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-90A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	71	65	71	72	73	70
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)	84	86	81	81	74	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)	95	93	93	97	89	93
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 41434

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-90B Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	68	66	64	67	69	67
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)	84	89	85	88	83	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)	96	95	97	97	95	96
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-91 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	83	86	87	88	88	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)	79	79	81	80	83	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	
Shear						Shear
Shear Strength (ppi)	99	98	94	100	98	98
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 41434

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-92 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	97	97	100	103	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	
Side: B						Peel B
Peel Strength (ppi)	77	80	78	79	80	79
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)	108	108	107	110	106	108
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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Date: 2018-10-02

Mail To:

**Anna Saindon
Geotechnology Inc
11816 Lackland Road
St. Louis , MO , 63146**

Bill To:

Geotechnology Inc

e-mail:

asaindon@geotechnology.com invoice@geotechnology.com dhina@gsibp.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:

Meredosia Ash Pond Closure

TRI Job Reference Number:

41610

Material(s) Tested:

(11) 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.
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FTB	Film tearing bond (all non "AD" failures).
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If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

Brian Anderson
Project Manager
Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 41610

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: D-93 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	78	78	79	73	73	76
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)	77	80	78	73	79	77
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)	96	98	97	81	98	94
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-94 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	80	79	83	80	85	81
Peel Incursion (%)	<5	30	<5	20	<5	
Peel Locus Of Failure Code	SE	AD-BRK	SE	AD-BRK	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	73	74	77	72	73	74
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)	99	101	100	99	103	100
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 41610

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-95 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	84	93	83	94	88	88
Peel Incursion (%)	10	10	<5	<5	<5	
Peel Locus Of Failure Code	AD-BRK	AD-BRK	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	92	93	90	85	84	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)	97	98	102	99	101	99
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-96 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	93	94	94	92	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)	78	84	87	80	85	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)	100	104	99	100	105	102
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 41610

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-97 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	89	90	94	87	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)	92	94	92	90	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)	101	99	99	102	102	101
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-98 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	78	80	82	82	86	82
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)	78	90	87	86	87	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)	109	108	107	106	108	108
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 41610

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-99 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	87	82	83	82	81	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)	84	84	89	80	81	84
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)	102	103	102	101	103	102
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-100 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	80	79	78	78	76	78
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)	75	82	79	80	84	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	
Shear						Shear
Shear Strength (ppi)	96	94	96	93	96	95
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 41610

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-101 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	82	82	83	81	83	82
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)	82	83	83	84	87	84
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)	93	95	95	95	96	95
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-102 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	90	90	90	89	91	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)	85	82	85	78	84	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)	93	94	94	92	94	93
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 41610

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-103 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	91	90	91	90	92	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)	92	92	92	91	93	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)	93	93	93	93	94	93
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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Date: 2018-10-04

Mail To:

**Anna Saindon
Geotechnology Inc
11816 Lackland Road
St. Louis , MO , 63146**

Bill To:

Geotechnology Inc

e-mail:

asaindon@geotechnology.com invoice@geotechnology.com dhina@gsibp.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:

Meredosia Ash Pond Closure

TRI Job Reference Number:

41689

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,

Brian Anderson
Project Manager
Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 41689

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-94A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	71	73	69	71	76	72
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)	73	75	77	79	77	76
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)	95	97	93	94	94	95
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-94B Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	71	74	70	73	70	72
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)	77	76	79	72	74	76
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)	93	94	92	89	94	92
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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Date: 2018-10-22

Mail To:

**Anna Saindon
Geotechnology Inc
11816 Lackland Road
St. Louis , MO , 63146**

Bill To:

Geotechnology Inc

e-mail:

asaindon@geotechnology.com invoice@geotechnology.com dhina@gsibp.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:

Meredosia Ash Pond Closure

TRI Job Reference Number:

42214

Material(s) Tested:

(15) 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,

Brian Anderson
Project Manager
Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42214

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-104 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	82	82	87	86	86	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)	80	83	80	86	89	84
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)	100	102	99	100	99	100
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-105A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	97	84	95	95	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	
Side: B						Peel B
Peel Strength (ppi)	96	97	94	97	97	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)	111	111	112	110	110	111
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42214

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-105B Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	94	95	94	95	94	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	96	94	93	98	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)	104	105	106	106	106	105
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-106 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	78	91	92	76	75	82
Peel Incursion (%)	10	<5	<5	<5	<5	
Peel Locus Of Failure Code	AD-BRK	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	76	76	74	74	82	76
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)	98	100	99	99	100	99
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42214

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-107 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	83	80	84	85	82	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)	83	81	80	85	85	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)	97	99	98	95	96	97
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-108 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	88	92	93	87	77	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)	80	76	81	78	80	79
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)	98	96	97	98	99	98
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42214

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-109 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	77	77	77	82	77	78
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	81	82	75	81	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	
Shear						Shear
Shear Strength (ppi)	97	99	100	99	99	99
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-110 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	116	110	114	109	104	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)	115	112	113	115	114	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	
Shear						Shear
Shear Strength (ppi)	119	116	117	115	122	118
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42214

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-111 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	89	90	87	88	87	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)	84	85	82	78	84	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)	102	98	101	101	101	101
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-112 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	92	91	91	95	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	
Side: B						Peel B
Peel Strength (ppi)	82	95	83	87	88	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)	100	99	102	95	93	98
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42214

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-113 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	88	94	85	85	82	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)	85	90	84	79	84	84
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)	101	104	105	104	99	103
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-114 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	101	93	95	96	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	
Side: B						Peel B
Peel Strength (ppi)	89	86	85	89	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	
Shear						Shear
Shear Strength (ppi)	101	108	106	109	102	105
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42214

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: D-115 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	97	97	94	96	97	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)	93	96	94	92	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)	97	99	96	99	95	97
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-116 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	85	90	89	92	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)	91	89	88	84	95	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)	93	92	92	96	95	94
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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Date: 2018-10-23

Mail To:

**Anna Saindon
Geotechnology Inc
11816 Lackland Road
St. Louis , MO , 63146**

Bill To:

Geotechnology Inc

e-mail:

asaindon@geotechnology.com invoice@geotechnology.com dhina@gsibp.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:

Meredosia Ash Pond Closure

TRI Job Reference Number:

42238

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,

Brian Anderson
Project Manager
Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

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Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42238

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-117 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	87	89	88	84	89	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)	88	85	84	81	85	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	
Shear						Shear
Shear Strength (ppi)	99	100	100	97	101	99
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-118 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	83	81	83	80	81	82
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)	78	69	76	72	75	74
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)	89	88	88	88	89	88
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42238

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-119 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	71	74	78	77	76	75
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)	63	64	65	69	61	64
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)	83	86	84	85	88	85
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-120 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	74	78	77	73	68	74
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)	75	77	80	65	76	75
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)	85	83	86	82	82	84
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42238

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-121 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	94	98	99	97	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)	100	96	99	92	101	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)	104	104	101	101	103	103
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-122 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	83	82	74	80	80	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)	74	74	73	72	68	72
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)	89	90	90	90	89	90
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42238

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-123 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	70	72	74	76	74	73
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)	80	80	83	79	76	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	
Shear						Shear
Shear Strength (ppi)	89	88	88	87	86	88
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-124 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	77	76	72	68	71	73
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)	68	74	71	65	70	70
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	85	85	84	88	85
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42238

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-125 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	90	87	85	89	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)	97	96	87	92	97	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)	112	110	110	109	110	110
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-126 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	107	100	109	109	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	
Side: B						Peel B
Peel Strength (ppi)	106	107	106	101	107	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)	108	112	108	111	109	110
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI Log#: 42238

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: D-127 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	90	91	92	89	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	
Side: B						Peel B
Peel Strength (ppi)	76	77	74	78	75	76
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)	109	106	106	109	110	108
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-128 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	88	88	90	90	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	
Side: B						Peel B
Peel Strength (ppi)	89	94	93	90	90	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)	107	107	104	105	108	106
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI Log#: 42238

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: D-129 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	78	87	86	79	83	83
Peel Incursion (%)	<5	30	75	<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)	74	83	80	78	73	78
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)	93	95	98	97	94	95
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-130 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	91	83	95	89	92	90
Peel Incursion (%)	60	75	<5	60	30	
Peel Locus Of Failure Code	AD-BRK	AD-BRK	SE	AD-BRK	AD-BRK	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	95	98	92	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)	100	96	99	95	102	98
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI Log#: 42238

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-131 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	88	88	86	93	89	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)	80	86	75	85	84	82
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)	101	104	102	102	104	103
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-132 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	82	81	80	80	82	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	
Side: B						Peel B
Peel Strength (ppi)	81	88	87	91	81	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)	102	105	103	102	103	103
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI Log#: 42238

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-133 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	78	63	70	69	64	69
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)	77	79	78	76	76	77
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	84	83	83	82	83
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-134 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	88	87	85	83	92	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)	86	85	79	82	83	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)	103	104	104	103	102	103
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42238

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: D-135 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	78	82	84	81	74	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)	72	72	70	80	69	73
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)	94	90	91	94	93	92
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-136 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	47	60	61	57	55	56
Peel Incursion (%)	100	90	100	90	90	
Peel Locus Of Failure Code	AD	AD-BRK	AD	AD-BRK	AD-BRK	
Peel NSF Failure Code	NON-FTB	FTB	NON-FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	77	81	61	68	81	74
Peel Incursion (%)	<5	<5	90	85	<5	
Peel Locus Of Failure Code	SE	SE	AD-BRK	AD-BRK	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	81	83	83	84	83	83
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42238

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-137 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	70	81	76	73	77	75
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)	61	64	61	70	66	64
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)	85	86	86	86	86	86
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-138 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	88	96	88	87	83	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)	71	78	74	70	84	75
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)	104	103	102	100	100	102
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42238

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-139 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	95	93	90	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)	83	84	90	87	79	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	
Shear						Shear
Shear Strength (ppi)	100	107	106	107	108	106
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-140 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	91	94	95	94	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)	82	91	98	91	89	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)	98	98	99	98	98	98
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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Date: 2018-10-24

Mail To:

**Anna Saindon
Geotechnology Inc
11816 Lackland Road
St. Louis , MO , 63146**

Bill To:

Geotechnology Inc

e-mail:

asaindon@geotechnology.com invoice@geotechnology.com dhina@gsibp.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:

Meredosia Ash Pond Closure

TRI Job Reference Number:

42290

Material(s) Tested:

(16) 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,

Brian Anderson
Project Manager
Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42290

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-141 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	80	80	78	82	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)	89	85	87	93	84	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	
Shear						Shear
Shear Strength (ppi)	107	108	106	108	104	107
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-142 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	90	95	90	90	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)	87	82	78	82	84	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)	108	95	103	106	107	104
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42290

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-143 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	107	105	107	108	104	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)	108	98	108	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	
Shear						Shear
Shear Strength (ppi)	108	106	105	107	108	107
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-144 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	92	89	89	93	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	
Side: B						Peel B
Peel Strength (ppi)	85	87	86	83	85	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	
Shear						Shear
Shear Strength (ppi)	108	108	109	106	108	108
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42290

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-145 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	98	97	101	100	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)	98	99	94	99	94	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)	98	100	98	99	98	99
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-146 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	95	99	91	95	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)	91	87	88	89	89	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)	105	105	104	104	106	105
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42290

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-147 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	84	84	79	84	81	82
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)	76	74	73	74	78	75
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)	88	84	84	86	86	86
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-148 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	86	89	90	85	83	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)	85	81	82	82	78	82
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)	107	107	96	109	110	106
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42290

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-149 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	96	96	94	96	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)	91	98	95	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)	102	94	86	98	100	96
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-150 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	77	82	80	83	85	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	
Side: B						Peel B
Peel Strength (ppi)	70	72	72	70	74	72
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)	106	102	104	106	107	105
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42290

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: D-151A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	76	81	83	79	80	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)	72	74	71	73	70	72
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)	92	90	90	93	94	92
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-151B Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	85	88	92	99	91	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)	68	81	81	78	83	78
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)	107	105	99	109	107	105
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42290

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: D-152 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	87	82	83	84	86	84
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)	75	73	72	71	72	73
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)	100	97	96	98	98	98
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-153A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	90	93	97	92	97	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)	86	88	85	85	85	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)	88	87	87	87	87	87
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc
Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42290

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: D-153B Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	79	80	86	89	87	84
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	87	85	87	82	84
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)	90	94	92	92	91	92
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-154 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	92	91	90	86	89	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)	98	96	91	96	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)	106	108	109	108	108	108
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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Date: 2018-10-25

Mail To:

**Anna Saindon
Geotechnology Inc
11816 Lackland Road
St. Louis , MO , 63146**

Bill To:

Geotechnology Inc

e-mail:

asaindon@geotechnology.com invoice@geotechnology.com dhina@gsibp.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:

Meredosia Ash Pond Closure

TRI Job Reference Number:

42347

Material(s) Tested:

(13) 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,

Brian Anderson
Project Manager
Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42347

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-129A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	70	69	68	69	69	69
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)	75	70	74	72	67	72
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)	81	84	83	84	85	83
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-129B Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	69	68	72	46	69	65
Peel Incursion (%)	<5	<5	<5	90	<5	
Peel Locus Of Failure Code	SE	SE	SE	AD-BRK	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	62	63	70	58	66	64
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)	88	87	89	89	88	88
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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TRI ENVIRONMENTAL, INC.

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42347

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-130A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	98	95	96	99	95	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	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)	95	98	98	100	98	98
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-130B Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	98	96	97	98	98	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)	98	100	96	96	95	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)	97	99	98	97	95	97
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42347

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-136A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	74	74	71	73	69	72
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)	55	71	65	74	67	66
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)	87	88	88	90	88	88
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-136B Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	70	66	71	59	71	67
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)	70	71	75	73	69	72
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)	70	80	78	80	75	77
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42347

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-155 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	91	97	92	87	95	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)	85	95	91	92	87	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)	92	93	97	95	94	94
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-156 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	93	90	95	92	85	91
Peel Incursion (%)	<5	<5	<5	<5	80	
Peel Locus Of Failure Code	SE	SE	SE	SE	AD-BRK	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	87	88	89	88	80	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)	91	98	102	106	103	100
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42347

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-157 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	80	87	97	90	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	
Side: B						Peel B
Peel Strength (ppi)	78	79	77	82	76	78
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)	104	103	108	107	106	106
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-158 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	69	76	74	73	72	73
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	88	90	80	89	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)	99	98	102	100	101	100
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc
Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42347

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: D-159 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	85	91	88	89	93	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)	87	87	85	86	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)	91	88	89	89	90	89
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-160 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	92	84	84	92	97	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)	94	93	88	91	89	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)	92	97	94	96	92	94
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42347

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-161 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	90	92	91	91	89	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)	87	87	84	95	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)	89	89	89	90	91	90
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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Date: 2018-10-29

Mail To:

**Anna Saindon
Geotechnology Inc
11816 Lackland Road
St. Louis , MO , 63146**

Bill To:

Geotechnology Inc

e-mail:

asaindon@geotechnology.com invoice@geotechnology.com dhina@gsibp.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:

Meredosia Ash Pond Closure

TRI Job Reference Number:

42433

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,

Brian Anderson
Project Manager
Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosias Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42433

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-129BB Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	89	92	88	90	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)	80	85	74	77	75	78
Peel Incursion (%)	<5	<5	50	85	85	
Peel Locus Of Failure Code	SE	SE	AD-BRK	AD-BRK	AD-BRK	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	105	106	107	103	107	106
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-136AA Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	91	93	94	92	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)	85	83	81	83	82	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)	103	103	102	104	101	103
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc
Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42433

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: D-136BB Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	76	84	68	95	97	84
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)	70	67	69	80	72	72
Peel Incursion (%)	45	75	90	75	90	
Peel Locus Of Failure Code	AD-BRK	AD-BRK	AD-BRK	AD-BRK	AD-BRK	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	103	100	103	104	105	103
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-156A Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	61	71	61	68	68	66
Peel Incursion (%)	90	25	90	90	90	
Peel Locus Of Failure Code	AD-BRK	AD-BRK	AD-BRK	AD-BRK	AD-BRK	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	91	80	87	85	86	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)	93	95	96	96	98	96
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

The testing herein 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.

TRI ENVIRONMENTAL, INC.

9063 BEE CAVES RD. - AUSTIN, TX 78733 - USA | PH: 800.880.TEST OR 512.263.2101



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42433

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-156B Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	67	78	85	84	84	80
Peel Incursion (%)	90	<5	<5	<5	10	
Peel Locus Of Failure Code	AD-BRK	SE	SE	SE	AD-BRK	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	91	92	88	92	90	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)	101	101	103	102	102	102
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

The testing herein 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.



Date: 2018-10-31

Mail To:

**Anna Saindon
Geotechnology Inc
11816 Lackland Road
St. Louis , MO , 63146**

Bill To:

Geotechnology Inc

e-mail:

asaindon@geotechnology.com invoice@geotechnology.com dhina@gsibp.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:

Meredosia Ash Pond Closure

TRI Job Reference Number:

42513

Material(s) Tested:

(4) 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,

Brian Anderson
Project Manager
Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc
Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 42513

TEST REPLICATE NUMBER						
PARAMETER	1	2	3	4	5	MEAN
Sample ID: D-129BBB Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	79	80	81	80	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)	95	92	94	95	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	
Shear						Shear
Shear Strength (ppi)	104	104	92	108	106	103
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-136BBB Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	79	82	79	87	80	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	
Side: B						Peel B
Peel Strength (ppi)	82	96	90	92	89	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)	108	109	107	108	111	109
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

The testing herein 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.

TRI ENVIRONMENTAL, INC.

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DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Geotechnology Inc

Project: Meredosia Ash Pond Closure

Material: 40 mil. HDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

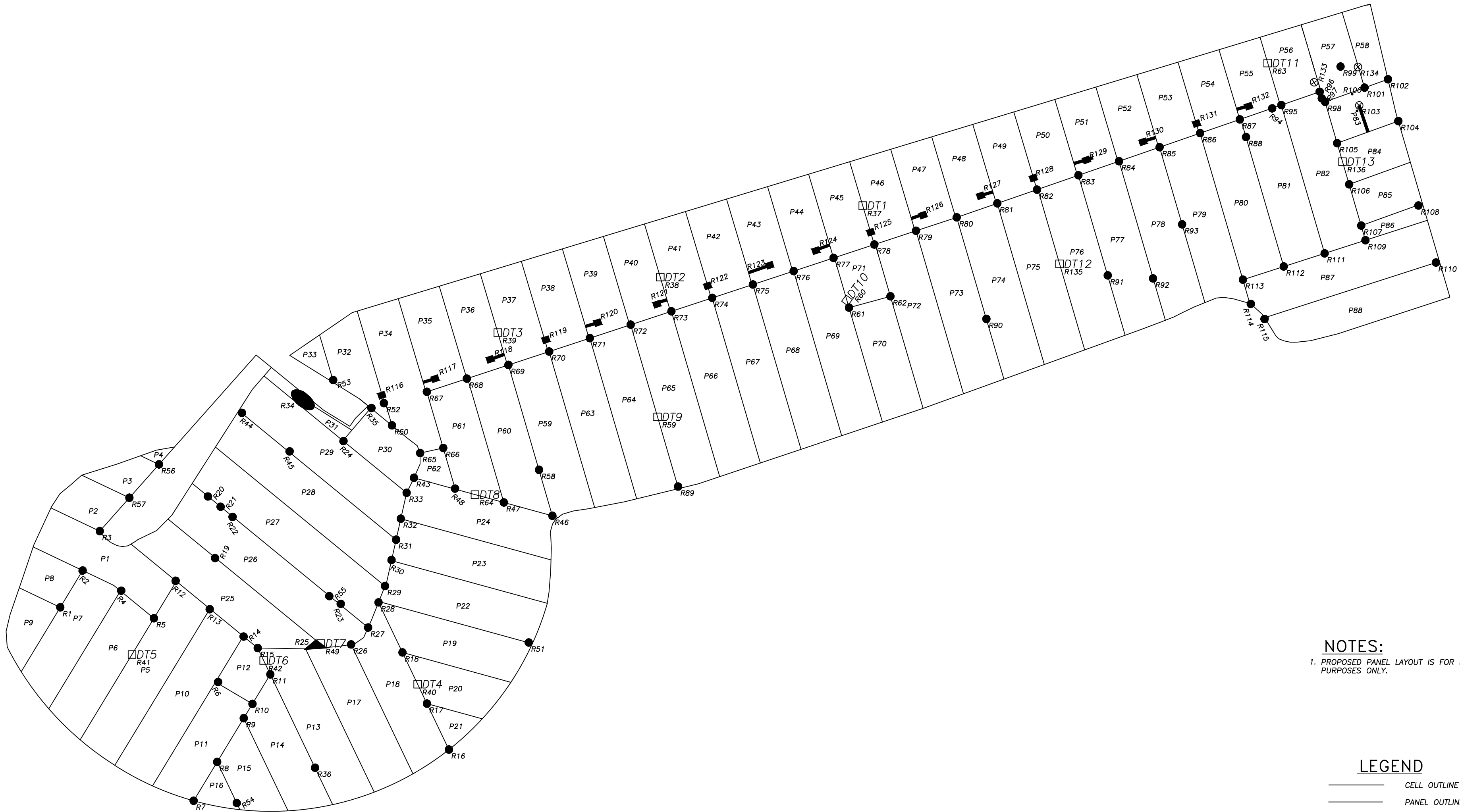
TRI Log#: 42513

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: D-156AA Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	82	79	79	81	84	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	
Side: B						Peel B
Peel Strength (ppi)	87	89	85	89	88	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	
Shear						Shear
Shear Strength (ppi)	109	96	105	105	110	105
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: D-156BB Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	83	83	77	89	79	82
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	90	87	87	84	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	
Shear						Shear
Shear Strength (ppi)	106	107	108	108	110	108
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

The testing herein 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.

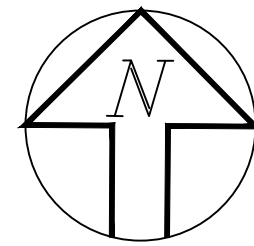
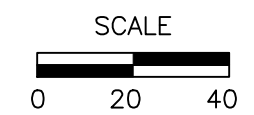
TRI ENVIRONMENTAL, INC.

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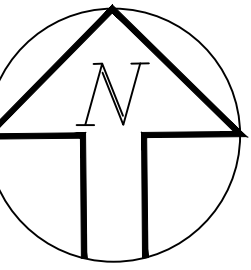
NOTES:
 1. PROPOSED PANEL LAYOUT IS FOR SCHEMATIC PURPOSES ONLY.

- LEGEND**
- CELL OUTLINE
 - PANEL OUTLINE
 - P# PANEL NUMBER
 - R# REPAIR NUMBER
 - PATCH
 - DT# DESTRUCTIVE TEST
 - ⊗ PIPE BOOT
 - CAP PATCH
 - ~ EXTRUSION WELD
 - STRUCTURE



DRAWN BY: CH DATE: 10/06/18 CHKD BY: DATE: SCALE: 1" = 40'-0" JOB #: 18009 EST #: 116023-4	REVISIONS NO. DATE 1 10/16/18 2 12/18/18
	PROJECT NAME & LOCATION: AMEREN MEREDOSIA ASH POND CLOSURES MEREDOSIA, ILLINOIS
	MATERIAL & DRAWING DESCRIPTION: 40MIL HDPE MICROSPIKE RECORD DRAWING BOTTOM ASH POND
	FILENAME: AMEREN MEREDOSIA ASH POND CLOSURE
DRAWING # RD-1	

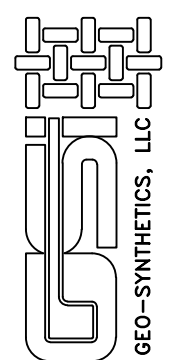
GEO-SYNTHETICS, LLC
 2401 PEWAUKEE ROAD
 WAUKESHA, WI 53188
 262-524-7979



DATE: 1/25/19
DRAWN BY: CH
CHECKED BY: AL
SCALE: 1" = 50'-0"
JOB #: 15203

NO.	DATE
1	12/11/18
2	12/18/18

GEI-SYNTHETICS, LLC
2400 S. WILSON AVE.
MILWAUKEE, WI 53227
TEL: 414-224-9925



LOCATION:
MERCEDOSIA, ILLINOIS

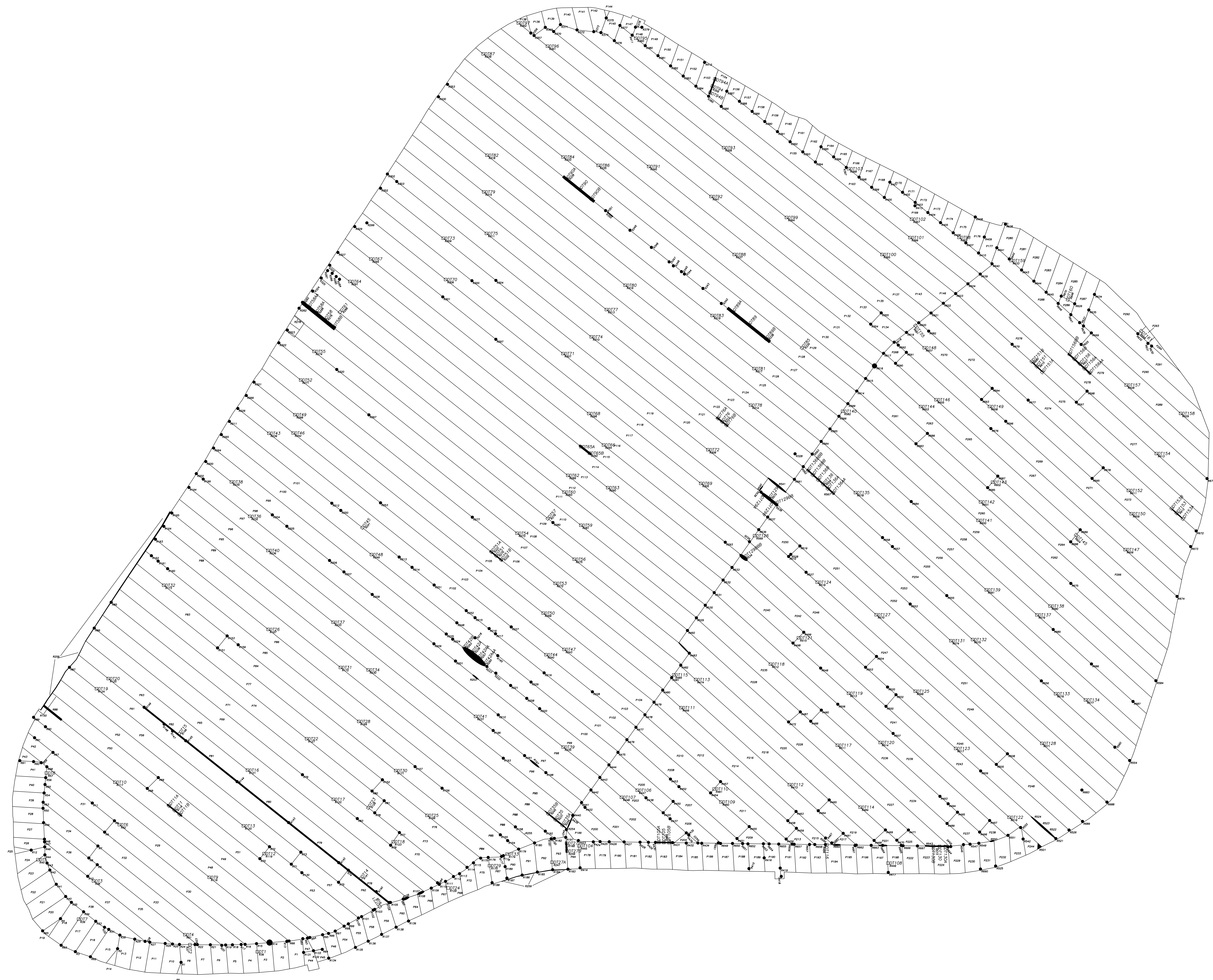
PROJECT NAME:
AMEREN
ASH POND CLOSURES

MATERIAL & DRAWING DESCRIPTION:
40MIL HOPE MICROSPINE
REPAIR
FLY ASH POND

FILENAME:
AMEREN
MERCEDOSIA
15203.DWG

DRAWING #

RD-2



NOTES:
1. RECORD DRAWING IS FOR SCHEMATIC PURPOSES ONLY.

LEGEND	
—	CELL OUTLINE
—	PANEL OUTLINE
P#	PANEL NUMBER
R#	REPAIR NUMBER
●	PATCH
○	DESTRUCTIVE TEST
⊗	PIPE BOOT
—	CAP PATCH
—	EXTRUSION WELD

SCALE
0 25 50



APPENDIX E – SYNTHETIC TURF GEOTEXTILE



June 6, 2018

July 9, 2018

Updated - Added UV Resistance

Mail To:

Anna Saindon
Geotechnology
11816 Lackland Road
St Louis MS 63146

email: asaindon@geotechnology.com
ccemail: jgoodwin@geotechnology.com

Dear Ms. Saindon:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report of the laboratory testing for the sample(s) listed below.

Project: **Meredosia Power Station - Fly Ash & Bottom Ash Ponds**

TRI Job Reference Number: 37892

Material(s) Tested: One Closure Turf (s)

Test(s) Requested: Grab Tensile (ASTM D 4632)
CBR Puncture Strength (ASTM D 6241)
Trapezoidal Tear (ASTM D 4533)
Yarn Tensile (ASTM D 2256)
Apparent Opening Size (ASTM D 4751)
Permittivity (ASTM D 4491)
UV Resistance (GT13a)
Wide Width Tensile (ASTM D 4595)

If you have any questions or require any additional information, please call us at 1-800-880-8378

Sincerely,

Sam Allen
Vice President
Geosynthetic Services Division
www.GeosyntheticTesting.com

*Signature is on file



GEOTEXTILE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Closure Turf

Sample Identification: AAIGDEV

TRI Log #: 37892

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	
	1	2	3	4	5	6	7	8	9	10			
Grab Tensile Properties (ASTM D 4632)													
MD - Tensile Strength (lbs)	328	307	315	310	327	313	316	319	307	316	316	7	
TD - Tensile Strength (lbs)	229	215	229	206	215	238	214	207	213	209	217	11	
MD - Elong. @ Max. Load (%)	41	42	50	39	47	39	39	43	40	38	42	4	
TD - Elong. @ Max. Load (%)	30	26	28	29	27	29	26	31	30	29	28	2	
CBR Puncture Strength (ASTM D 6241)													
Puncture Resistance (lbs)	1161	1182	1180	1140	1136	1146	1151	1144	1108	1117	1147	24	
Trapezoidal Tear (ASTM D 4533)													
MD - Tear Strength (lbs)	129	139	189	153	163	182	199	191	229	159	173	30	
TD - Tear Strength (lbs)	162	114	111	139	147	227	154	133	150	221	156	39	
Yarn Tensile (ASTM D 2256, Mod for Short Length Turf)													
Tensile Strength (lbs)	41.9	42.4	41.9	41.4	43.0	40.8	42.0	41.5	41.8	41.1	41.8	0.6	
Elong. @ Max. Load (%)	39.9	42.2	39.5	36.8	38.4	39.9	37.2	36.1	34.8	36.7	38.1	2.2	
Apparent Opening Size (ASTM D 4751)													
Opening Size Diameter (mm)	0.494	0.544	0.464	0.509	0.567						0.516	0.041	
Sieve No.	30	30	30	30	30						30		
UV Resistance (GT13a)													
Strength Retained measured via strip tensile (ASTM D 5035)													
MD - Tensile Strength (lbs) - B	331	401	439	348	392						382	43	PERCENT RETAINED
MD - Tensile Strength (ppi) - B	166	201	220	174	196						191	22	
MD - Tensile Strength (N) - B	1473	1784	1954	1549	1744						1701	192	
MD - Tensile Strength (kN/m) - B	29.0	35.1	38.5	30.5	34.3						33.5	3.8	
MD - Tensile Strength (lbs) - E	391	317	373	387	336						361	33	94
MD - Tensile Strength (ppi) - E	196	159	187	193	168						181	16	
MD - Tensile Strength (N) - E	1742	1411	1661	1722	1497						1607	145	
MD - Tensile Strength (kN/m) - E	34.3	27.8	32.7	33.9	29.5						31.6	2.9	
TD - Tensile Strength (lbs) - B	373	365	364	342	375						364	13	99
TD - Tensile Strength (ppi) - B	187	183	182	171	188						182	7	
TD - Tensile Strength (N) - B	1660	1624	1620	1522	1669						1619	58	
TD - Tensile Strength (kN/m) - B	32.7	32.0	31.9	30.0	32.9						31.9	1.1	
TD - Tensile Strength (lbs) - E	336	370	383	354	350						359	18	99
TD - Tensile Strength (ppi) - E	168	185	192	177	175						179	9	
TD - Tensile Strength (N) - E	1495	1648	1705	1575	1557						1596	82	
TD - Tensile Strength (kN/m) - E	29.4	32.4	33.6	31.0	30.7						31.4	1.6	
MD - Elong. @ Max. Load (%) - B	45	53	46	47	44						47	3	91
MD - Elong. @ Max. Load (%) - E	44	45	44	41	41						43	2	
TD - Elong. @ Max. Load (%) - B	34	35	35	33	33						34	1	90
TD - Elong. @ Max. Load (%) - E	32	35	28	28	31						31	3	
B - Baseline - exposed for 48 hours ONLY to facilitate thermally induced dimensional chnages unrelated to loss in durability. E - Exposed for 500 hours of ASTM D 4355 Cycle													
MD Machine Direction TD Transverse Direction													



GEOTEXTILE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Closure Turf

Sample Identification: AAIGDEV

TRI Log #: 37892

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.			
	1	2	3	4	5	6	7	8	9	10					
Falling Head Permittivity (ASTM D 4491, 9-in Upper Standpipe; 2 in opening)															
Water Temp. (C):	<table border="1"><tr><td>19.1</td></tr></table>										19.1				
19.1															
Correction Factor:	<table border="1"><tr><td>1.024</td></tr></table>										1.024				
1.024															
Test Specimen No. >:	1					2									
Thickness (mils)	332.7	332.7	332.7	332.7	332.7	355.9	355.9	355.9	355.9	355.9					
Time (s)	63.8	64.5	64.0	64.0	63.9	60.1	60.5	60.6	60.8	60.3					
Specimen Permittivity (s-1)	0.44	0.44	0.44	0.44	0.44	0.47	0.47	0.47	0.47	0.47					
Specimen Permittivity @20°C (sec-1)	0.46	0.45	0.45	0.45	0.45	0.48	0.48	0.48	0.48	0.48					
Specimen Flow rate (GPM/ft2)	34.1	33.7	34.0	34.0	34.0	36.2	35.9	35.9	35.7	36.0					
Specimen Permeability (cm/s)	0.38	0.38	0.38	0.38	0.38	0.44	0.43	0.43	0.43	0.44					
Test Specimen No. >:	3					4									
Thickness (mils)	369.3	369.3	369.3	369.3	369.3	319.7	319.7	319.7	319.7	319.7					
Time (s)	67.3	67.0	67.9	67.2	67.1	70.7	70.9	71.6	71.7	70.9					
Specimen Permittivity (s-1)	0.42	0.42	0.42	0.42	0.42	0.40	0.40	0.40	0.40	0.40					
Specimen Permittivity @20°C (sec-1)	0.43	0.43	0.43	0.43	0.43	0.41	0.41	0.41	0.41	0.41					
Specimen Flow rate (GPM/ft2)	32.3	32.4	32.0	32.3	32.4	30.7	30.7	30.4	30.3	30.7					
Specimen Permeability (cm/s)	0.41	0.41	0.40	0.41	0.41	0.33	0.33	0.33	0.33	0.33					
TEMPERATURE CORRECTED VALUES						Permittivity (s-1) Flow rate (GPM/ft2) Permeability (cm/s)					<table border="1"><tr><td>0.44</td></tr><tr><td>33.2</td></tr><tr><td>0.39</td></tr></table>	0.44	33.2	0.39	
0.44															
33.2															
0.39															
MD Machine Direction TD Transverse Direction															



GEOTEXTILE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Closure Turf

Sample Identification: AAIGDEV

TRI Log #: 37892

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.
	1	2	3	4	5	6	7	8	9	10		
Wide Width Tensile Properties (ASTM D 4595)												
MD Specimen Width (inches)	8											
MD Specimen Width (mm)	203											
MD Ultimate Strength (lbs)	1312	1327	1363	1371	1408	1464					1374	56
MD Ultimate Strength (N)	5839	5905	6066	6101	6264	6515					6115	247
MD Ultimate Strength (ppi)	164	166	170	171	176	183					172	7
MD Ultimate Strength (kN/m)	28.7	29.1	29.9	30.0	30.8	32.1					30.1	1.2
MD Strength @ 2% Strain (lbs)	51.2	50.5	51.8	50.0	51.4	49.9					50.8	0.8
MD Strength @ 2% Strain (N)	228	225	231	223	229	222					226	4
MD Strength @ 2% Strain (ppi)	6.40	6.31	6.48	6.25	6.43	6.24					6.35	0.10
MD Strength at 2% Strain (kN/m)	1.12	1.11	1.14	1.10	1.13	1.09					1.11	0.02
MD Strength @ 5% Strain (lbs)	207	217	215	213	217	208					213	4
MD Strength @ 5% Strain (N)	920	968	955	948	966	928					947	20
MD Strength @ 5% Strain (ppi)	25.8	27.2	26.8	26.6	27.1	26.1					26.6	0.6
MD Strength at 5% Strain (kN/m)	4.53	4.76	4.70	4.66	4.76	4.56					4.66	0.10
MD Strength @ 10% Strain (lbs)	496	510	517	515	526	512					513	10
MD Strength @ 10% Strain (N)	2209	2271	2302	2293	2342	2280					2283	44
MD Strength @ 10% Strain (ppi)	62.0	63.8	64.7	64.4	65.8	64.0					64.1	1.2
MD Strength at 10% Strain (kN/m)	10.9	11.2	11.3	11.3	11.5	11.2					11.2	0.2
MD Break Elongation (%)	30.9	31.3	31.7	33.7	32.4	34.4					32.4	1.4
TD Specimen Width (in)	8											
TD Specimen Width (mm)	203											
TD Ultimate Strength (lbs)	1117	1127	1182	1126	1172	1080					1134	38
TD Ultimate Strength (N)	4973	5015	5258	5010	5216	4804					5046	167
TD Ultimate Strength (ppi)	140	141	148	141	147	135					142	5
TD Ultimate Strength (kN/m)	24.5	24.7	25.9	24.7	25.7	23.6					24.8	0.8
TD Strength @ 2% Strain (lbs)	150	159	167	166	154	171					161	8
TD Strength @ 2% Strain (N)	669	706	742	737	683	762					716	36
TD Strength @ 2% Strain (ppi)	18.8	19.8	20.8	20.7	19.2	21.4					20.1	1.0
TD Strength at 2% Strain (kN/m)	3.29	3.47	3.65	3.63	3.36	3.75					3.53	0.18
TD Strength @ 5% Strain (lbs)	374	376	397	388	379	397					385	11
TD Strength @ 5% Strain (N)	1662	1673	1769	1727	1686	1768					1714	47
TD Strength @ 5% Strain (ppi)	46.7	47.0	49.7	48.5	47.3	49.7					48.1	1.3
TD Strength at 5% Strain (kN/m)	8.18	8.23	8.71	8.50	8.30	8.70					8.44	0.23
TD Strength @ 10% Strain (lbs)	677	674	706	692	683	706					689	14
TD Strength @ 10% Strain (N)	3011	2997	3140	3079	3040	3140					3068	62
TD Strength @ 10% Strain (ppi)	84.6	84.2	88.2	86.5	85.4	88.2					86.2	1.8
TD Strength at 10% Strain (kN/m)	14.8	14.8	15.5	15.2	15.0	15.5					15.1	0.3
TD Break Elongation (%)	22.2	22.2	20.8	20.8	21.8	20.0					21.3	0.9
MD Machine Direction	TD Transverse Direction											



TESTING, RESEARCH, CONSULTING AND FIELD SERVICES

Austin, TX - USA | Anaheim, CA - USA | Anderson, SC - USA | Gold Coast - Australia | Suzhou - China

June 1, 2018

June 4, 2018

Updated - Permittivity Results

Mail To:

Anna Saindon
Geotechnology
11816 Lackland Road
St Louis MS 63146

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Dear Ms. Saindon:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report of the laboratory testing for the sample(s) listed below.

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

TRI Job Reference Number: 36964

Material(s) Tested: Five, Closure Turf(s)

Test(s) Requested:
Grab Tensile (ASTM D 4632)
CBR Puncture Strength (ASTM D 6241)
Trapezoidal Tear (ASTM D 4533)
Yarn Tensile (ASTM D 2256)
Apparent Opening Size (ASTM D 4751)
Permittivity (ASTM D 4491)
UV Resistance (GT13a)
Wide Width Tensile (ASTM D 4595)

Updating==>

If you have any questions or require any additional information, please call us at 1-800-880-8378

Sincerely,

Mansukh Patel
Laboratory Manager
Geosynthetic Services Division
www.GeosyntheticTesting.com

*Signature is on file

GEOTEXTILE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Closure Turf

Sample Identification: AAIFE7E

TRI Log #: 36964

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.
	1	2	3	4	5	6	7	8	9	10		
Grab Tensile Properties (ASTM D 4632)												
MD - Tensile Strength (lbs)	262	319	287	283	311	298	290	294	291	266	290	18
TD - Tensile Strength (lbs)	196	210	192	187	193	192	200	190	186	206	195	8
MD - Elong. @ Max. Load (%)	49	49	55	49	53	47	49	51	49	49	50	2
TD - Elong. @ Max. Load (%)	22	28	22	25	26	27	25	29	27	32	26	3
CBR Puncture Strength (ASTM D 6241)												
Puncture Resistance (lbs)	946	955	931	894	933	967	914	955	956	937	939	22
Trapezoidal Tear (ASTM D 4533)												
MD - Tear Strength (lbs)	178	166	157	153	184	158	183	190	160	160	169	13
TD - Tear Strength (lbs)	94	87	138	113	119	179	158	161	139	95	128	32
Yarn Tensile (ASTM D 2256, Mod for Short Length Turf)												
Tensile Strength (lbs)	47	43	42	43	45	43	44	43	42	49	44.0	2.4
Elong. @ Max. Load (%)	54	65	48	48	50	63	48	66	54	50	54.6	7.2
Apparent Opening Size (ASTM D 4751)												
Opening Size Diameter (mm)	0.813	0.899	0.841	0.816	0.918						0.858	0.048
Sieve No.	20	16	20	20	16						16	
MD Machine Direction	TD Transverse Direction											

GEOTEXTILE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Closure Turf
 Sample Identification: AAIFE7E
 TRI Log #: 36964

PARAMETER										MEAN	STD. DEV.
Falling Head Permittivity (ASTM D 4491, 9-in Upper Standpipe; 2 in opening)											
Water Temp. (C):	20.7										
Correction Factor:	0.988										
Test Specimen No. >:	1					2					
Thickness (mils)	282	282	282	282	282	289	289	289	289	289	
Time (s)	56.5	56.7	56.6	57.1	57.5	58.9	58.5	58.7	58.6	58.9	
Specimen Permittivity (s-1)	0.50	0.50	0.50	0.50	0.49	0.48	0.49	0.48	0.48	0.48	
Specimen Permittivity @20°C (sec-1)	0.50	0.49	0.50	0.49	0.49	0.48	0.48	0.48	0.48	0.48	
Specimen Flow rate (GPM/ft2)	37.1	37.0	37.0	36.7	36.5	35.6	35.8	35.7	35.8	35.6	
Specimen Permeability (cm/s)	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	
Test Specimen No. >:	3					4					
Thickness (mils)	313	313	313	313	313	291	291	291	291	291	
Time (s)	52.9	52.9	52.9	53.4	53.6	50.9	51.0	51.1	51.0	50.5	
Specimen Permittivity (s-1)	0.54	0.54	0.54	0.53	0.53	0.56	0.56	0.56	0.56	0.56	
Specimen Permittivity @20°C (sec-1)	0.53	0.53	0.53	0.52	0.52	0.55	0.55	0.55	0.55	0.55	
Specimen Flow rate (GPM/ft2)	39.6	39.6	39.6	39.3	39.1	41.2	41.1	41.0	41.1	41.5	
Specimen Permeability (cm/s)	0.42	0.42	0.42	0.42	0.42	0.41	0.41	0.40	0.41	0.41	
TEMPERATURE CORRECTED VALUES										Permittivity (s-1) Flow rate (GPM/ft2) Permeability (cm/s)	0.03
										0.51 38.3 0.38	

GEOTEXTILE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Closure Turf

Sample Identification: AAIFE7E

TRI Log #: 36964

							MEAN	STD. DEV.
PARAMETER	TEST REPLICATE NUMBER							
	1	2	3	4	5	6		
Wide Width Tensile Properties (ASTM D 4595)								
MD Specimen Width (inches)	8							
MD Specimen Width (mm)	203							
MD Ultimate Strength (lbs)	1248	1174	1279	1230	1211	1319	1244	51
MD Ultimate Strength (N)	5553	5223	5692	5472	5391	5871	5534	228
MD Ultimate Strength (ppi)	156	147	160	154	151	165	155	6
MD Ultimate Strength (kN/m)	27.3	25.7	28.0	26.9	26.5	28.9	27.2	1.1
MD Strength @ 2% Strain (lbs)	53.1	46.4	46.7	51.4	46.2	45.7	48.3	3.2
MD Strength @ 2% Strain (N)	236	207	208	229	205	204	215	14
MD Strength @ 2% Strain (ppi)	6.64	5.81	5.84	6.42	5.77	5.72	6.03	0.39
MD Strength at 2% Strain (kN/m)	1.16	1.02	1.02	1.12	1.01	1.00	1.06	0.07
MD Strength @ 5% Strain (lbs)	204	182	182	193	179	183	187	9
MD Strength @ 5% Strain (N)	907	809	811	858	795	814	832	42
MD Strength @ 5% Strain (ppi)	25.5	22.7	22.8	24.1	22.3	22.9	23.4	1.2
MD Strength at 5% Strain (kN/m)	4.46	3.98	3.99	4.22	3.91	4.00	4.10	0.21
MD Strength @ 10% Strain (lbs)	476	451	456	466	444	459	459	11
MD Strength @ 10% Strain (N)	2116	2005	2029	2073	1976	2043	2041	50
MD Strength @ 10% Strain (ppi)	59.4	56.3	57.0	58.2	55.5	57.4	57.3	1.4
MD Strength at 10% Strain (kN/m)	10.4	9.87	10.0	10.2	9.73	10.1	10.0	0.2
MD Break Elongation (%)	31.9	31.4	32.1	32.9	32.4	32.5	32.2	0.5
TD Specimen Width (in)	8							
TD Specimen Width (mm)	203							
TD Ultimate Strength (lbs)	1077	1053	1069	1072	1102	1065	1073	16
TD Ultimate Strength (N)	4791	4688	4759	4771	4902	4738	4775	72
TD Ultimate Strength (ppi)	135	132	134	134	138	133	134	2
TD Ultimate Strength (kN/m)	23.6	23.1	23.4	23.5	24.1	23.3	23.5	0.4
TD Strength @ 2% Strain (lbs)	160	149	148	151	136	167	152	11
TD Strength @ 2% Strain (N)	712	664	660	673	606	745	677	48
TD Strength @ 2% Strain (ppi)	20.0	18.7	18.5	18.9	17.0	20.9	19.0	1.3
TD Strength at 2% Strain (kN/m)	3.50	3.27	3.25	3.31	2.98	3.66	3.33	0.23
TD Strength @ 5% Strain (lbs)	396	374	382	383	375	398	385	10
TD Strength @ 5% Strain (N)	1762	1666	1699	1704	1669	1771	1712	45
TD Strength @ 5% Strain (ppi)	49.5	46.8	47.7	47.9	46.9	49.8	48.1	1.3
TD Strength at 5% Strain (kN/m)	8.67	8.20	8.36	8.39	8.21	8.72	8.42	0.22
TD Strength @ 10% Strain (lbs)	734	700	711	713	707	731	716	14
TD Strength @ 10% Strain (N)	3265	3113	3166	3174	3147	3254	3187	60
TD Strength @ 10% Strain (ppi)	91.7	87.5	88.9	89.2	88.4	91.4	89.5	1.7
TD Strength at 10% Strain (kN/m)	16.1	15.3	15.6	15.6	15.5	16.0	15.7	0.3
TD Break Elongation (%)	17.8	18.4	18.7	18.0	18.2	17.1	18.0	0.6
MD Machine Direction	TD Transverse Direction							

GEOTEXTILE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Closure Turf

Sample Identification: AAIFH3P

TRI Log #: 36964

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.
	1	2	3	4	5	6	7	8	9	10		
Grab Tensile Properties (ASTM D 4632)												
MD - Tensile Strength (lbs)	267	322	294	279	308	309	320	294	297	308	<div>300</div>	17
TD - Tensile Strength (lbs)	196	209	209	193	188	202	189	180	181	204	<div>195</div>	11
MD - Elong. @ Max. Load (%)	47	51	49	46	43	48	47	51	51	48	<div>48</div>	2
TD - Elong. @ Max. Load (%)	37	26	36	40	34	39	27	35	27	29	<div>33</div>	5
CBR Puncture Strength (ASTM D 6241)												
Puncture Resistance (lbs)	998	993	832	999	1016	958	993	918	999	975	<div>968</div>	55
Trapezoidal Tear (ASTM D 4533)												
MD - Tear Strength (lbs)	171	149	181	145	156	177	149	131	176	149	<div>158</div>	17
TD - Tear Strength (lbs)	137	132	120	89	95	152	89	103	62	133	<div>111</div>	28
Yarn Tensile (ASTM D 2256)												
Tensile Strength (lbs)	43	42	41	42	43	39	40	43	41	46	<div>42.1</div>	2.0
Elong. @ Max. Load (%)	50	61	50	47	46	51	52	52	49	46	<div>50.3</div>	4.2
Apparent Opening Size (ASTM D 4751)												
Opening Size Diameter (mm)	0.757	0.503	0.518	0.584	0.579						<div>0.588</div>	0.101
Sieve No.	20	30	30	30	30						<div>30</div>	
MD Machine Direction	TD Transverse Direction											

GEOTEXTILE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Closure Turf

Sample Identification: AAIFH3P

TRI Log #: 36964

PARAMETER											MEAN	STD. DEV.
Falling Head Permittivity (ASTM D 4491, 9-In Upper Standpipe; 2 In opening)												
Water Temp. (C):	21.0											
Correction Factor:	0.982											
Test Specimen No. >:	1					2						
Thickness (mils)	305	305	305	305	305	330	330	330	330	330		
Time (s)	50.0	50.0	50.1	49.3	49.6	53.4	54.3	54.0	54.6	54.2		
Specimen Permittivity (s-1)	0.57	0.57	0.57	0.58	0.57	0.53	0.52	0.53	0.52	0.52		
Specimen Permittivity @20°C (sec-1)	0.56	0.56	0.56	0.57	0.56	0.52	0.51	0.52	0.51	0.51		
Specimen Flow rate (GPM/ft2)	41.7	41.7	41.6	42.3	42.0	39.0	38.4	38.6	38.2	38.5		
Specimen Permeability (cm/s)	0.43	0.43	0.43	0.44	0.44	0.44	0.43	0.43	0.43	0.43		
Test Specimen No. >:	3					4						
Thickness (mils)	325	325	325	325	325	285	285	285	285	285		
Time (s)	49.1	49.2	49.8	49.1	49.9	51.6	52.3	51.3	52.6	51.9		
Specimen Permittivity (s-1)	0.58	0.58	0.57	0.58	0.57	0.55	0.54	0.55	0.54	0.55		
Specimen Permittivity @20°C (sec-1)	0.57	0.57	0.56	0.57	0.56	0.54	0.53	0.54	0.53	0.54		
Specimen Flow rate (GPM/ft2)	42.5	42.4	41.9	42.5	41.8	40.4	39.9	40.6	39.6	40.2		
Specimen Permeability (cm/s)	0.47	0.47	0.46	0.47	0.46	0.39	0.39	0.39	0.38	0.39		
TEMPERATURE CORRECTED VALUES						Permittivity (s-1) Flow rate (GPM/ft2) Permeability (cm/s)					0.54 40.7 0.43	0.02

GEOTEXTILE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Closure Turf

Sample Identification: AAIFH3P

TRI Log #: 36964

PARAMETER	TEST REPLICATE NUMBER						MEAN	STD. DEV.
	1	2	3	4	5	6		
Wide Width Tensile Properties (ASTM D 4595)								
MD Specimen Width (inches)	8							
MD Specimen Width (mm)	203							
MD Ultimate Strength (lbs)	1229	1334	1281	1320	1291	1292	1291	36
MD Ultimate Strength (N)	5470	5935	5702	5876	5744	5749	5746	162
MD Ultimate Strength (ppi)	154	167	160	165	161	161	161	5
MD Ultimate Strength (kN/m)	26.9	29.2	28.1	28.9	28.3	28.3	28.3	0.8
MD Strength @ 2% Strain (lbs)	47.1	47.5	56.6	58.7	41.4	42.0	48.9	7.3
MD Strength @ 2% Strain (N)	209	211	252	261	184	187	217	32
MD Strength @ 2% Strain (ppi)	5.88	5.94	7.08	7.33	5.18	5.25	6.11	0.91
MD Strength at 2% Strain (kN/m)	1.03	1.04	1.24	1.28	0.91	0.92	1.07	0.16
MD Strength @ 5% Strain (lbs)	205	214	232	242	161	175	205	32
MD Strength @ 5% Strain (N)	914	952	1032	1076	718	778	912	140
MD Strength @ 5% Strain (ppi)	25.7	26.8	29.0	30.2	20.2	21.9	25.6	3.9
MD Strength at 5% Strain (kN/m)	4.50	4.69	5.08	5.29	3.53	3.83	4.49	0.69
MD Strength @ 10% Strain (lbs)	535	534	555	570	440	472	518	51
MD Strength @ 10% Strain (N)	2380	2376	2472	2537	1958	2101	2304	225
MD Strength @ 10% Strain (ppi)	66.8	66.7	69.4	71.3	55.0	59.0	64.7	6.3
MD Strength at 10% Strain (kN/m)	11.7	11.7	12.2	12.5	9.6	10.3	11.3	1.1
MD Break Elongation (%)	26.9	28.2	27.5	27.7	30.2	30.5	28.5	1.5
TD Specimen Width (in)	8							
TD Specimen Width (mm)	203							
TD Ultimate Strength (lbs)	1069	1153	1151	1193	1170	1197	1156	46
TD Ultimate Strength (N)	4758	5132	5122	5308	5209	5325	5142	206
TD Ultimate Strength (ppi)	134	144	144	149	146	150	144	6
TD Ultimate Strength (kN/m)	23.4	25.3	25.2	26.1	25.6	26.2	25.3	1.0
TD Strength @ 2% Strain (lbs)	157	122	146	134.1	129	140	138	12
TD Strength @ 2% Strain (N)	700	543	648	597	575	623	614	56
TD Strength @ 2% Strain (ppi)	19.7	15.3	18.2	16.76	16.2	17.5	17.3	1.6
TD Strength at 2% Strain (kN/m)	3.44	2.67	3.19	2.94	2.83	3.07	3.02	0.27
TD Strength @ 5% Strain (lbs)	403	391	401	395	386	399	396	6
TD Strength @ 5% Strain (N)	1795	1741	1785	1756	1718	1774	1761	29
TD Strength @ 5% Strain (ppi)	50.4	48.9	50.1	49.3	48.3	49.8	49.5	0.8
TD Strength at 5% Strain (kN/m)	8.83	8.57	8.79	8.64	8.45	8.73	8.67	0.14
TD Strength @ 10% Strain (lbs)	764	773	780	780	766	774	773	7
TD Strength @ 10% Strain (N)	3401	3441	3469	3471	3408	3442	3439	30
TD Strength @ 10% Strain (ppi)	95.5	96.6	97.5	97.5	95.7	96.7	96.6	0.8
TD Strength at 10% Strain (kN/m)	16.7	16.9	17.1	17.1	16.8	16.9	16.9	0.1
TD Break Elongation (%)	17.1	17.8	17.4	17.4	17.9	17.7	17.6	0.3
MD Machine Direction	TD Transverse Direction							

GEOTEXTILE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Closure Turf

Sample Identification: AAIFJCA

TRI Log #: 36964

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.
	1	2	3	4	5	6	7	8	9	10		
Grab Tensile Properties (ASTM D 4632)												
MD - Tensile Strength (lbs)	291	316	315	265	289	273	340	292	293	280	295	23
TD - Tensile Strength (lbs)	183	178	177	166	181	190	196	180	180	177	181	8
MD - Elong. @ Max. Load (%)	67	57	59	59	55	52	68	58	58	51	58	6
TD - Elong. @ Max. Load (%)	33	25	29	29	27	36	28	28	31	39	30	4
CBR Puncture Strength (ASTM D 6241)												
Puncture Resistance (lbs)	861	879	905	844	812	806	818	794	880	802	840	39
Trapezoidal Tear (ASTM D 4533)												
MD - Tear Strength (lbs)	146	172	150	143	169	147	143	156	149	136	151	12
TD - Tear Strength (lbs)	101	137	95	52	139	164	84	111	129	152	116	34
Yarn Tensile (ASTM D 2256)												
Tensile Strength (lbs)	45	43	38	40	45	45	44	45	45	43	43.4	2.3
Elong. @ Max. Load (%)	39	44	46	41	47	44	47	45	46	45	44.3	2.7
Apparent Opening Size (ASTM D 4751)												
Opening Size Diameter (mm)	0.582	0.529	0.533	1.100	0.428						0.634	0.266
Sieve No.	30	30	30	16	30						20	
MD Machine Direction	TD Transverse Direction											

GEOTEXTILE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Closure Turf

Sample Identification: AAIFJCA

TRI Log #: 36964

PARAMETER										MEAN	STD. DEV.
Falling Head Permittivity (ASTM D 4491, 9-in Upper Standpipe; 2 in opening)											
Water Temp. (C):	20.0										
Correction Factor:	1.003										
Test Specimen No. >:	1					2					
Thickness (mils)	307	307	307	307	307	294	294	294	294	294	
Time (s)	55.4	56.3	55.9	56.0	55.4	47.2	47.0	47.0	47.0	47.3	
Specimen Permittivity (s-1)	0.51	0.50	0.51	0.51	0.51	0.60	0.60	0.60	0.60	0.60	
Specimen Permittivity @20°C (sec-1)	0.51	0.51	0.51	0.51	0.51	0.60	0.61	0.61	0.61	0.60	
Specimen Flow rate (GPM/ft ²)	38.4	37.8	38.1	38.0	38.4	45.1	45.3	45.3	45.3	45.0	
Specimen Permeability (cm/s)	0.40	0.39	0.40	0.40	0.40	0.45	0.45	0.45	0.45	0.45	
Test Specimen No. >:	3					4					
Thickness (mils)	328	328	328	328	328	286	286	286	286	286	
Time (s)	52.7	52.9	52.6	52.8	52.9	58.2	58.2	52.6	58.3	58.2	
Specimen Permittivity (s-1)	0.54	0.54	0.54	0.54	0.54	0.49	0.49	0.54	0.49	0.49	
Specimen Permittivity @20°C (sec-1)	0.54	0.54	0.54	0.54	0.54	0.49	0.49	0.54	0.49	0.49	
Specimen Flow rate (GPM/ft ²)	40.4	40.2	40.5	40.3	40.2	36.6	36.6	40.5	36.5	36.6	
Specimen Permeability (cm/s)	0.45	0.45	0.45	0.45	0.45	0.36	0.36	0.39	0.36	0.36	
TEMPERATURE CORRECTED VALUES						Permittivity (s-1)				0.54	0.04
						Flow rate (GPM/ft ²)				40.3	
						Permeability (cm/s)				0.42	

GEOTEXTILE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Closure Turf

Sample Identification: AAIFJCA

TRI Log #: 36964

PARAMETER	TEST REPLICATE NUMBER						MEAN	STD. DEV.
	1	2	3	4	5	6		
Wide Width Tensile Properties (ASTM D 4595)								
MD Specimen Width (inches)	8							
MD Specimen Width (mm)	203							
MD Ultimate Strength (lbs)	1153	1097	1126	1159	1123	1167	1138	27
MD Ultimate Strength (N)	5132	4881	5013	5159	4995	5193	5062	119
MD Ultimate Strength (ppi)	144	137	141	145	140	146	142	3
MD Ultimate Strength (kN/m)	25.3	24.0	24.7	25.4	24.6	25.6	24.9	0.6
MD Strength @ 2% Strain (lbs)	40.8	32.6	42.5	41.3	43.0	44.2	40.7	4.1
MD Strength @ 2% Strain (N)	182	145	189	184	191	197	181	18
MD Strength @ 2% Strain (ppi)	5.11	4.08	5.31	5.16	5.37	5.52	5.09	0.52
MD Strength at 2% Strain (kN/m)	0.89	0.71	0.93	0.90	0.94	0.97	0.89	0.09
MD Strength @ 5% Strain (lbs)	165	123	172	164	170	173	161	19
MD Strength @ 5% Strain (N)	735	547	766	729	756	771	717	85
MD Strength @ 5% Strain (ppi)	20.7	15.4	21.5	20.5	21.2	21.6	20.2	2.4
MD Strength at 5% Strain (kN/m)	3.62	2.69	3.77	3.59	3.72	3.79	3.53	0.42
MD Strength @ 10% Strain (lbs)	416	368	431	408	419	424	411	22
MD Strength @ 10% Strain (N)	1851	1639	1917	1814	1865	1885	1828	99
MD Strength @ 10% Strain (ppi)	52.0	46.0	53.8	51.0	52.4	52.9	51.4	2.8
MD Strength at 10% Strain (kN/m)	9.11	8.07	9.43	8.93	9.18	9.28	9.00	0.49
MD Break Elongation (%)	33.1	31.5	29.3	33.6	31.6	32.6	32.0	1.6
TD Specimen Width (in)	8							
TD Specimen Width (mm)	203							
TD Ultimate Strength (lbs)	898	1030	1070	1044	1071	1052	1027	65
TD Ultimate Strength (N)	3994	4586	4759	4644	4768	4682	4572	291
TD Ultimate Strength (ppi)	112	129	134	130	134	132	128	8
TD Ultimate Strength (kN/m)	19.7	22.6	23.4	22.9	23.5	23.0	22.5	1.4
TD Strength @ 2% Strain (lbs)	62.4	108	118	115	118	121	107	22
TD Strength @ 2% Strain (N)	278	482	523	513	527	539	477	100
TD Strength @ 2% Strain (ppi)	7.8	13.5	14.7	14.4	14.8	15.1	13.4	2.8
TD Strength at 2% Strain (kN/m)	1.37	2.37	2.57	2.52	2.59	2.65	2.35	0.49
TD Strength @ 5% Strain (lbs)	265	338	352	349	354	353	335	35
TD Strength @ 5% Strain (N)	1181	1505	1564	1555	1576	1572	1492	154
TD Strength @ 5% Strain (ppi)	33.2	42.3	43.9	43.7	44.3	44.2	41.9	4.3
TD Strength at 5% Strain (kN/m)	5.81	7.41	7.70	7.65	7.75	7.74	7.34	0.76
TD Strength @ 10% Strain (lbs)	580	660	677	682	685	686	662	41
TD Strength @ 10% Strain (N)	2583	2937	3015	3035	3047	3051	2945	182
TD Strength @ 10% Strain (ppi)	72.6	82.5	84.7	85.2	85.6	85.7	82.7	5.1
TD Strength at 10% Strain (kN/m)	12.7	14.5	14.8	14.9	15.0	15.0	14.5	0.9
TD Break Elongation (%)	16.8	17.9	18.6	17.9	18.0	17.7	17.8	0.6
MD Machine Direction	TD Transverse Direction							

GEOTEXTILE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Closure Turf

Sample Identification: AAIFJV

TRI Log #: 36964

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.
	1	2	3	4	5	6	7	8	9	10		
Grab Tensile Properties (ASTM D 4632)												
MD - Tensile Strength (lbs)	278	304	284	296	268	264	277	270	294	283	282	13
TD - Tensile Strength (lbs)	188	204	186	176	199	205	195	205	188	201	195	10
MD - Elong. @ Max. Load (%)	48	41	45	47	44	44	44	45	49	43	45	2
TD - Elong. @ Max. Load (%)	29	28	36	33	33	33	29	36	33	28	32	3
CBR Puncture Strength (ASTM D 6241)												
Puncture Resistance (lbs)	983	932	1002	1032	1063	967	931	1022	1055	1081	1007	53
Trapezoidal Tear (ASTM D 4533)												
MD - Tear Strength (lbs)	143	196	139	147	145	155	137	150	151	158	152	17
TD - Tear Strength (lbs)	105	161	95	128	82	180	149	161	88	151	130	35
Yarn Tensile (ASTM D 2256)												
Tensile Strength (lbs)	43	44	42	41	41	43	44	44	45	44	42.9	1.2
Elong. @ Max. Load (%)	58	46	61	46	47	51	42	47	44	51	49.2	5.9
Apparent Opening Size (ASTM D 4751)												
Opening Size Diameter (mm)	0.715	0.584	0.510	0.991	0.980						0.756	0.222
Sieve No.	20	30	30	16	16						20	
MD Machine Direction	TD Transverse Direction											

GEOTEXTILE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Closure Turf

Sample Identification: AAIFJV

TRI Log #: 36964

PARAMETER											MEAN	STD. DEV.
Falling Head Permittivity (ASTM D 4491, 9-In Upper Standpipe; 2 In opening)												
Water Temp. (C):	19.4											
Correction Factor:	1.018											
Test Specimen No. >:	1					2						
Thickness (mils)	313	313	313	313	313	314	314	314	314	314		
Time (s)	51.7	51.7	51.6	51.7	51.1	46.4	47.2	47.3	46.7	47.2		
Specimen Permittivity (s-1)	0.55	0.55	0.55	0.55	0.56	0.61	0.60	0.60	0.61	0.60		
Specimen Permittivity @20°C (sec-1)	0.56	0.56	0.56	0.56	0.57	0.62	0.61	0.61	0.62	0.61		
Specimen Flow rate (GPM/ft2)	41.8	41.8	41.9	41.8	42.3	46.6	45.8	45.7	46.3	45.8		
Specimen Permeability (cm/s)	0.44	0.44	0.45	0.44	0.45	0.50	0.49	0.49	0.49	0.49		
Test Specimen No. >:	3					4						
Thickness (mils)	347	347	347	347	347	305	305	305	305	305		
Time (s)	48.4	49.1	49.4	49.3	49.1	55.4	55.5	55.0	56.0	55.7		
Specimen Permittivity (s-1)	0.59	0.58	0.57	0.58	0.58	0.51	0.51	0.52	0.51	0.51		
Specimen Permittivity @20°C (sec-1)	0.60	0.59	0.58	0.59	0.59	0.52	0.52	0.53	0.52	0.52		
Specimen Flow rate (GPM/ft2)	44.6	44.0	43.7	43.8	44.0	39.0	38.9	39.3	38.6	38.8		
Specimen Permeability (cm/s)	0.53	0.52	0.51	0.52	0.52	0.40	0.40	0.41	0.40	0.40		
TEMPERATURE CORRECTED VALUES						Permittivity (s-1) Flow rate (GPM/ft2) Permeability (cm/s)					0.57 42.7 0.46	0.04

GEOTEXTILE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Closure Turf

Sample Identification: AAIFJV

TRI Log #: 36964

PARAMETER	TEST REPLICATE NUMBER						MEAN	STD. DEV.
	1	2	3	4	5	6		
Wide Width Tensile Properties (ASTM D 4595)								
MD Specimen Width (inches)	8							
MD Specimen Width (mm)	203							
MD Ultimate Strength (lbs)	1288	1277	1324	1312	1319	1323	1307	20
MD Ultimate Strength (N)	5733	5683	5891	5840	5870	5888	5817	88
MD Ultimate Strength (ppi)	161	160	165	164	165	165	163	2
MD Ultimate Strength (kN/m)	28.2	28.0	29.0	28.7	28.9	29.0	28.6	0.4
MD Strength @ 2% Strain (lbs)	48.7	54.5	47.6	54.9	54.7	46.2	51.1	4.0
MD Strength @ 2% Strain (N)	217	243	212	244	243	205	227	18
MD Strength @ 2% Strain (ppi)	6.08	6.82	5.95	6.86	6.84	5.77	6.39	0.51
MD Strength at 2% Strain (kN/m)	1.07	1.19	1.04	1.20	1.20	1.01	1.12	0.09
MD Strength @ 5% Strain (lbs)	198	210	194	211	222	197	205	11
MD Strength @ 5% Strain (N)	881	935	864	939	986	875	913	48
MD Strength @ 5% Strain (ppi)	24.7	26.3	24.3	26.4	27.7	24.6	25.7	1.3
MD Strength at 5% Strain (kN/m)	4.33	4.60	4.25	4.62	4.85	4.31	4.49	0.23
MD Strength @ 10% Strain (lbs)	484	497	488	506	521	492	498	14
MD Strength @ 10% Strain (N)	2156	2211	2171	2250	2320	2191	2216	60
MD Strength @ 10% Strain (ppi)	60.6	62.1	61.0	63.2	65.2	61.5	62.3	1.7
MD Strength at 10% Strain (kN/m)	10.6	10.9	10.7	11.1	11.4	10.8	10.9	0.3
MD Break Elongation (%)	31.6	31.1	32.2	31.6	29.7	30.6	31.1	0.9
TD Specimen Width (in)	8							
TD Specimen Width (mm)	203							
TD Ultimate Strength (lbs)	1026	1077	1071	1106	1126	1122	1088	38
TD Ultimate Strength (N)	4566	4792	4767	4921	5009	4993	4841	168
TD Ultimate Strength (ppi)	128	135	134	138	141	140	136	5
TD Ultimate Strength (kN/m)	22.5	23.6	23.5	24.2	24.7	24.6	23.8	0.8
TD Strength @ 2% Strain (lbs)	150	123	111	144	137	140	134	14
TD Strength @ 2% Strain (N)	668	549	494	639	608	621	596	64
TD Strength @ 2% Strain (ppi)	18.8	15.4	13.9	18.0	17.1	17.5	16.8	1.8
TD Strength at 2% Strain (kN/m)	3.29	2.70	2.43	3.15	2.99	3.06	2.94	0.32
TD Strength @ 5% Strain (lbs)	362	350	341	383	371	371	363	15
TD Strength @ 5% Strain (N)	1610	1559	1517	1704	1650	1652	1615	68
TD Strength @ 5% Strain (ppi)	45.2	43.8	42.6	47.9	46.4	46.4	45.4	1.9
TD Strength at 5% Strain (kN/m)	7.92	7.67	7.46	8.38	8.12	8.13	7.95	0.34
TD Strength @ 10% Strain (lbs)	668	685	666	718	702	704	690	21
TD Strength @ 10% Strain (N)	2974	3048	2963	3195	3123	3131	3072	93
TD Strength @ 10% Strain (ppi)	83.6	85.6	83.2	89.8	87.7	87.9	86.3	2.6
TD Strength at 10% Strain (kN/m)	14.6	15.0	14.6	15.7	15.4	15.4	15.1	0.5
TD Break Elongation (%)	19.1	20.4	18.5	18.3	19.1	19.2	19.1	0.7
MD Machine Direction	TD Transverse Direction							

GEOTEXTILE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Closure Turf

Sample Identification: AAIG5EH

TRI Log #: 36964

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.
	1	2	3	4	5	6	7	8	9	10		
Grab Tensile Properties (ASTM D 4632)												
MD - Tensile Strength (lbs)	323	317	316	291	307	320	317	311	297	318	312	10
TD - Tensile Strength (lbs)	225	234	211	220	218	230	211	214	216	210	219	8
MD - Elong. @ Max. Load (%)	53	47	49	43	50	52	48	55	45	52	49	4
TD - Elong. @ Max. Load (%)	43	29	33	32	34	43	32	37	33	30	35	5
CBR Puncture Strength (ASTM D 6241)												
Puncture Resistance (lbs)	1056	1116	1101	1115	1108	1106	1133	1140	1110	1191	1117	34
Trapezoidal Tear (ASTM D 4533)												
MD - Tear Strength (lbs)	176	182	197	210	189	175	179	*	*	*	187	13
TD - Tear Strength (lbs)	166	167	146	100	186	177	*	*	*	*	157	31
*insufficient material to complete required number of replicates												
Yarn Tensile (ASTM D 2256)												
Tensile Strength (lbs)	43	42	41	42	43	45	44	44	39	43	42.6	1.8
Elong. @ Max. Load (%)	44	47	50	42	39	41	45	45	45	44	44.2	3.2
Apparent Opening Size (ASTM D 4751)												
Opening Size Diameter (mm)	0.455	0.409	0.422	0.517	0.461						0.453	0.042
Sieve No.	30	40	40	30	30						30	
MD Machine Direction TD Transverse Direction												

GEOTEXTILE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Closure Turf

Sample Identification: AAIG5EH

TRI Log #: 36964

PARAMETER										MEAN	STD. DEV.
Falling Head Permittivity (ASTM D 4491, 9-in Upper Standpipe; 2 in opening)											
Water Temp. (C):	20.0										
Correction Factor:	1.005										
Test Specimen No. >:	1					2					
Thickness (mils)	343	343	343	343	343	332	332	332	332	332	
Time (s)	48.8	48.9	48.4	48.4	49.1	58.0	58.8	58.6	58.6	59.0	
Specimen Permittivity (s-1)	0.58	0.58	0.59	0.59	0.58	0.49	0.48	0.48	0.48	0.48	
Specimen Permittivity @20°C (sec-1)	0.58	0.58	0.59	0.59	0.58	0.49	0.48	0.49	0.49	0.48	
Specimen Flow rate (GPM/ft2)	43.7	43.6	44.1	44.1	43.4	36.8	36.3	36.4	36.4	36.1	
Specimen Permeability (cm/s)	0.51	0.51	0.51	0.51	0.51	0.41	0.41	0.41	0.41	0.41	
Test Specimen No. >:	3					4					
Thickness (mils)	336	336	336	336	336	345	345	345	345	345	
Time (s)	63.9	64.3	64.1	64.7	63.9	61.6	61.6	61.5	62.1	62.0	
Specimen Permittivity (s-1)	0.44	0.44	0.44	0.44	0.44	0.46	0.46	0.46	0.46	0.46	
Specimen Permittivity @20°C (sec-1)	0.45	0.44	0.44	0.44	0.45	0.46	0.46	0.46	0.46	0.46	
Specimen Flow rate (GPM/ft2)	33.4	33.2	33.3	33.0	33.4	34.6	34.6	34.7	34.3	34.4	
Specimen Permeability (cm/s)	0.38	0.38	0.38	0.38	0.38	0.41	0.41	0.41	0.40	0.40	
TEMPERATURE CORRECTED VALUES						Permittivity (s-1)				0.49	0.06
						Flow rate (GPM/ft2)				37.0	
						Permeability (cm/s)				0.43	

GEOTEXTILE TEST RESULTS

TRI Client: Geotechnology

Project: Meredosla Power Station - Fly Ash & Bottom Ash Ponds

Material: Closure Turf

Sample Identification: AAIG5EH

TRI Log #: 36964

							MEAN	STD. DEV.
PARAMETER	TEST REPLICATE NUMBER							
	1	2	3	4	5	6		
Wide Width Tensile Properties (ASTM D 4595)								
MD Specimen Width (inches)	8							
MD Specimen Width (mm)	203							
MD Ultimate Strength (lbs)	1277	1230	1335	1297	1294	1436	1312	70
MD Ultimate Strength (N)	5684	5473	5942	5773	5759	6390	5837	311
MD Ultimate Strength (ppi)	160	154	167	162	162	179	164	9
MD Ultimate Strength (kN/m)	28.0	26.9	29.2	28.4	28.3	31.4	28.7	1.5
MD Strength @ 2% Strain (lbs)	49.9	51.0	48.6	45.7	52.0	48.0	49.2	2.3
MD Strength @ 2% Strain (N)	222	227	216	203	231	214	219	10
MD Strength @ 2% Strain (ppi)	6.24	6.38	6.07	5.71	6.50	6.00	6.15	0.28
MD Strength at 2% Strain (kN/m)	1.09	1.12	1.06	1.00	1.14	1.05	1.08	0.05
MD Strength @ 5% Strain (lbs)	196	194	192	186	205	192	194	6
MD Strength @ 5% Strain (N)	870	862	856	826	912	855	864	28
MD Strength @ 5% Strain (ppi)	24.4	24.2	24.1	23.2	25.6	24.0	24.3	0.8
MD Strength at 5% Strain (kN/m)	4.28	4.24	4.21	4.07	4.49	4.21	4.25	0.14
MD Strength @ 10% Strain (lbs)	469	461	470	463	481	480	471	8
MD Strength @ 10% Strain (N)	2088	2052	2092	2058	2139	2137	2094	37
MD Strength @ 10% Strain (ppi)	58.7	57.6	58.8	57.8	60.1	60.0	58.8	1.0
MD Strength at 10% Strain (kN/m)	10.3	10.1	10.3	10.1	10.5	10.5	10.3	0.2
MD Break Elongation (%)	33.6	33.7	33.9	31.8	32.0	36.2	33.5	1.6
TD Specimen Width (in)	8							
TD Specimen Width (mm)	203							
TD Ultimate Strength (lbs)	1186	1134	1102	1057	1162	1118	1126	46
TD Ultimate Strength (N)	5278	5045	4902	4704	5170	4976	5013	203
TD Ultimate Strength (ppi)	148	142	138	132	145	140	141	6
TD Ultimate Strength (kN/m)	26.0	24.8	24.1	23.1	25.4	24.5	24.7	1.0
TD Strength @ 2% Strain (lbs)	100	127	96	101	150	163	123	29
TD Strength @ 2% Strain (N)	444	565	428	452	668	727	547	127
TD Strength @ 2% Strain (ppi)	12.5	15.9	12.0	12.7	18.8	20.4	15.4	3.6
TD Strength at 2% Strain (kN/m)	2.18	2.78	2.11	2.22	3.29	3.58	2.69	0.63
TD Strength @ 5% Strain (lbs)	346	372	311	347	387	400	361	32
TD Strength @ 5% Strain (N)	1539	1654	1386	1543	1722	1782	1604	144
TD Strength @ 5% Strain (ppi)	43.2	46.5	38.9	43.3	48.4	50.1	45.1	4.0
TD Strength at 5% Strain (kN/m)	7.58	8.14	6.82	7.59	8.48	8.77	7.90	0.71
TD Strength @ 10% Strain (lbs)	690	695	625	357	706	720	632	139
TD Strength @ 10% Strain (N)	3071	3094	2783	1589	3143	3203	2814	618
TD Strength @ 10% Strain (ppi)	86.3	86.9	78.2	44.6	88.3	90.0	79.0	17.3
TD Strength at 10% Strain (kN/m)	15.1	15.2	13.7	7.82	15.5	15.8	13.8	3.0
TD Break Elongation (%)	20.3	20.5	21.8	20.8	20.9	20.8	20.9	0.5
MD Machine Direction	TD Transverse Direction							



PANEL PLACEMENT FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	ENGINEERED TURF
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
1	AA1FEV4	08/20/18	299	14.5	
2	AA1FGF2	08/20/18	299	14.5	
3	AA1FGKK	08/20/18	299	14.5	
4	AA1FGKH	08/20/18	299	14.5	
5	AA1FGCK	08/20/18	299	14.5	
6	AA1FGKM	08/20/18	299	14.5	
7	AA1FEZT	08/20/18	299	14.5	
8	AA1FGCJ	08/20/18	299	14.5	
9	AA1FGEZ	08/20/18	299	14.5	
10	AA1FETJ	08/20/18	299	14.5	
11	AA1FGCH	08/20/18	299	14.5	
12	AA1FGF1	08/20/18	299	14.5	
13	AA1FGCG	08/20/18	299	14.5	
14	AA1FETF	08/20/18	299	14.5	
15	AA1FETG	08/20/18	299	14.5	
16	AA1FE1F	08/27/18	299	14.5	
17	AA1FD7G	08/27/18	299	14.5	
18	AA1FETH	08/27/18	299	14.5	
19	AA1G5EJ	08/27/18	299	14.5	



PANEL PLACEMENT FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	ENGINEERED TURF
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
20	AA1FDCP	08/27/18	299	14.5	
21	AA1FJWP	08/27/18	299	14.5	
22	AA1FJVR	08/27/18	299	14.5	
23	AA1FJWR	08/27/18	299	14.5	
24	AA1FJWT	08/27/18	299	14.5	
25	AA1FDYT	08/27/18	299	14.5	
26	AA1FE5V	08/27/18	299	14.5	
27	AA1FJVU	08/27/18	299	14.5	
28	AA1FEV2	08/27/18	299	14.5	
29	AA1FCE4	08/27/18	299	14.5	
30	AA1FJZ3	08/27/18	299	14.5	
31	AA1FE23	08/27/18	299	14.5	
32	AA1FE25	08/27/18	299	14.5	
33	AA1FK1N	08/27/18	299	14.5	
34	AA1FJVT	08/28/18	299	14.5	
35	AA1FJVV	08/28/18	299	14.5	
36	AA1FGCF	08/28/18	299	14.5	
37	AA1FED6	08/28/18	299	14.5	
38	AA1FEHP	08/28/18	299	14.5	



PANEL PLACEMENT FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	ENGINEERED TURF
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
39	AA1FE1E	08/28/18	299	14.5	
40	AA1FE6K	08/28/18	299	14.5	
41	AA1FE1H	08/28/18	299	14.5	
42	AA1FE5U	08/28/18	299	14.5	
43	AA1FE2U	08/28/18	299	14.5	
44	AA1FEEU	08/28/18	299	14.5	
45	AA1FE2Z	08/28/18	299	14.5	
46	AA1FCWY	08/28/18	299	14.5	
47	AA1FD5Z	08/28/18	299	14.5	
48	AA1FDYU	08/28/18	299	14.5	
49	AA1FDAN	08/28/18	299	14.5	
50	AA1FD5U	08/28/18	299	14.5	
51	AA1FGCE	09/11/18	299	14.5	
52	AA1G53W	09/11/18	299	14.5	
53	AA1G53V	09/11/18	299	14.5	
54	AA1G51F	09/11/18	299	14.5	
55	AA1G51C	09/11/18	299	14.5	
56	AA1G42K	09/11/18	299	14.5	
57	AA1G42J	09/11/18	299	14.5	



PANEL PLACEMENT FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	ENGINEERED TURF
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
58	AA1G43Y	09/11/18	299	14.5	
59	AA1G4YH	09/11/18	299	14.5	
60	AA1G4YE	09/11/18	299	14.5	
61	AA1G4YC	09/11/18	299	14.5	
62	AA1FK1R	09/11/18	299	14.5	
63	AA1FJU2	09/11/18	299	14.5	
64	AA1FJA9	09/11/18	299	14.5	
65	AA1FEC7	09/11/18	299	14.5	
66	AA1FGEY	09/11/18	299	14.5	
67	AA1FEZR	09/11/18	299	14.5	
68	AA1G53Y	09/11/18	299	14.5	
69	AA1FJZ1	09/12/18	299	14.5	
70	AA1FJZ2	09/12/18	299	14.5	
71	AA1FJZ4	09/12/18	299	14.5	
72	AA1FJZ5	09/12/18	299	14.5	
73	AA1FJZU	09/12/18	299	14.5	
74	AA1FJZV	09/12/18	299	14.5	
75	AA1FJZW	09/12/18	299	14.5	
76	AA1FJWU	09/12/18	299	14.5	



PANEL PLACEMENT FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	ENGINEERED TURF
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
77	AA1FJWV	09/12/18	299	14.5	
78	AA1FJWW	09/12/18	299	14.5	
79	AA1FJXR	09/12/18	299	14.5	
80	AA1FJXT	09/12/18	299	14.5	
81	AA1FJXU	09/12/18	299	14.5	
82	AA1FJXV	09/12/18	299	14.5	
83	AA1FJXW	09/12/18	299	14.5	
84	AA1FJXX	09/12/18	299	14.5	
85	AA1FJYZ	09/12/18	299	14.5	
86	AA1G4YF	09/12/18	299	14.5	
87	AA1G4YG	09/12/18	299	14.5	
88	AA1G51A	09/12/18	299	14.5	
89	AA1G519	09/12/18	299	14.5	
90	AA1GDGG	09/17/18	299	14.5	
91	AA1G5EK	09/17/18	299	14.5	
92	AA1G55A	09/17/18	299	14.5	
93	AA1G55C	09/17/18	299	14.5	
94	AA1G55E	09/17/18	299	14.5	
95	AA1G572	09/17/18	299	14.5	



PANEL PLACEMENT FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	ENGINEERED TURF
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
96	AA1G59E	09/17/18	299	14.5	
97	AA1FK1P	09/18/18	299	14.5	
98	AA1FJMW	09/18/18	299	14.5	
99	AA1GDGE	09/18/18	299	14.5	
100	AA1GDGF	09/18/18	299	14.5	
101	AA1G4YD	09/18/18	299	14.5	
102	AA1G5D6	09/18/18	299	14.5	
103	AA1G53T	09/18/18	299	14.5	
104	AA1G53U	09/18/18	299	14.5	
105	AA1G56Z	09/18/18	299	14.5	
106	AA1G59J	09/18/18	299	14.5	
107	AA1G573	09/18/18	299	14.5	
108	AA1G59D	09/18/18	299	14.5	
109	AA1G59G	09/18/18	299	14.5	
110	AA1G59H	09/18/18	299	14.5	
111	AA1G524	09/18/18	299	14.5	
112	AA1FK1M	09/19/18	299	14.5	
113	AA1FJZZ	09/19/18	299	14.5	
114	AA1G59F	09/22/18	299	14.5	



PANEL PLACEMENT FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	ENGINEERED TURF
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
115	AA1GDEW	09/22/18	299	14.5	
116	AA1G5AH	09/22/18	299	14.5	
117	AA1G5AG	09/22/18	299	14.5	
118	AA1G5AF	09/22/18	299	14.5	
119	AA1G525	09/22/18	299	14.5	
120	AA1FJZY	09/22/18	299	14.5	
121	AA1FJHY	09/22/18	299	14.5	
122	AA1FJEN	09/22/18	299	14.5	
123	AA1FJE6	09/22/18	299	14.5	
124	AA1FJE4	09/22/18	299	14.5	
125	AA1FJC7	09/22/18	299	14.5	
126	AA1FJC9	09/22/18	299	14.5	
127	AA1FJAA	09/22/18	299	14.5	
128	AA1FJKK	09/24/18	299	14.5	
129	AA1FJKH	09/24/18	299	14.5	
130	AA1FJHV	09/24/18	299	14.5	
131	AA1G5AK	09/24/18	299	14.5	
132	AA1G5D3	09/24/18	299	14.5	
133	AA1G5D4	09/24/18	299	14.5	



PANEL PLACEMENT FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	ENGINEERED TURF
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
134	AA1FJFW	09/25/18	299	14.5	
135	AA1FJT1	09/25/18	299	14.5	
136	AA1FJU3	09/25/18	299	14.5	
137	AA1FJKE	09/25/18	299	14.5	
138	AA1FJKJ	09/25/18	299	14.5	
139	AA1G5AE	09/25/18	299	14.5	
140	AA1G5AJ	09/25/18	299	14.5	
141	AA1GDGK	09/25/18	299	14.5	
142	AA1G5D5	09/25/18	299	14.5	
143	AA1G5D7	09/25/18	299	14.5	
144	AA1GDGH	09/27/18	299	14.5	
145	AA1GDGJ	09/27/18	299	14.5	
146	AA1G5EH	09/27/18	299	14.5	
147	AA1G5D8	09/27/18	299	14.5	
148	AA1FJRZ	09/27/18	299	14.5	
149	AA1FJT3	09/27/18	299	14.5	
150	AA1FJT2	09/27/18	299	14.5	
151	AA1FJT5	09/27/18	299	14.5	
152	AA1FJM5	09/27/18	299	14.5	



PANEL PLACEMENT FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	ENGINEERED TURF
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
153	AA1FJN1	09/27/18	299	14.5	
154	AA1FJMX	09/27/18	299	14.5	
155	AA1FJMY	09/27/18	299	14.5	
156	AA1FJT4	09/27/18	299	14.5	
157	AA1FJH5	09/27/18	299	14.5	
158	AA1FJU4	09/27/18	299	14.5	
159	AA1FJVN	10/01/18	299	14.5	
160	AA1FJU6	10/01/18	299	14.5	
161	AA1FJP9	10/01/18	299	14.5	
162	AA1FJP7	10/01/18	299	14.5	
163	AA1FJP5	10/01/18	299	14.5	
164	AA1FJN2	10/01/18	299	14.5	
165	AA1FJM3	10/01/18	299	14.5	
166	AA1FJHX	10/01/18	299	14.5	
167	AA1FJHA	10/01/18	299	14.5	
168	AA1FJH7	10/01/18	299	14.5	
169	AA1FHVM	10/01/18	299	14.5	
170	AA1FHVD	10/01/18	299	14.5	
171	AA1FHDP	10/01/18	299	14.5	



PANEL PLACEMENT FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	ENGINEERED TURF
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
172	AA1FHDR	10/01/18	299	14.5	
173	AA1FHCK	10/01/18	299	14.5	
174	AA1FJM2	10/01/18	299	14.5	
175	AA1FJA7	10/01/18	299	14.5	
176	AA1FJ6G	10/01/18	299	14.5	
177	AA1FJ43	10/01/18	299	14.5	
178	AA1FJ7R	10/02/18	299	14.5	
179	AA1FJ3Y	10/02/18	299	14.5	
180	AA1FJ2Y	10/02/18	299	14.5	
181	AA1FJP6	10/02/18	299	14.5	
182	AA1FJ6E	10/02/18	299	14.5	
183	AA1FJ8Y	10/02/18	299	14.5	
184	AA1FJ7T	10/02/18	299	14.5	
185	AA1FJA5	10/02/18	299	14.5	
186	AA1FJA6	10/02/18	299	14.5	
187	AA1FJ3Z	10/02/18	299	14.5	
188	AA1FJ5G	10/02/18	299	14.5	
189	AA1FJ5H	10/02/18	299	14.5	
190	AA1FJ5J	10/02/18	299	14.5	



PANEL PLACEMENT FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	ENGINEERED TURF
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
191	AA1FJ6F	10/02/18	299	14.5	
192	AA1FJ6J	10/02/18	299	14.5	
193	AA1FJ6K	10/02/18	299	14.5	
194	AA1FJ7N	10/02/18	299	14.5	
195	AA1FJ7P	10/02/18	299	14.5	
196	AA1FJ7U	10/03/18	299	14.5	
197	AA1FJ8X	10/03/18	299	14.5	
198	AA1FJ8Z	10/03/18	299	14.5	
199	AA1FJ91	10/03/18	299	14.5	
200	AA1FJ92	10/03/18	299	14.5	
201	AA1FJ93	10/03/18	299	14.5	
202	AA1FH27	10/25/18	299	14.5	
203	AA1FH24	10/25/18	299	14.5	
204	AA1FH1G	10/25/18	299	14.5	
205	AA1FH1H	10/25/18	299	14.5	
206	AA1G527	10/29/18	299	14.5	
207	AA1FJ42	10/29/18	299	14.5	
208	AA1G526	10/29/18	299	14.5	
209	AA1G528	10/29/18	299	14.5	



PANEL PLACEMENT FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	ENGINEERED TURF
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
210	AA1FH26	10/29/18	299	14.5	
211	AA1FJET	10/29/18	299	14.5	
212	AA1FJFU	10/29/18	299	14.5	
213	AA1FJCC	10/29/18	299	14.5	
214	AA1FJCA	10/29/18	299	14.5	
215	AA1FJEU	10/29/18	299	14.5	
216	AA1FJFV	10/29/18	299	14.5	
217	AA1FJEV	10/29/18	299	14.5	
218	AA1FJEP	10/29/18	299	14.5	
219	AA1FJC8	10/30/18	299	14.5	
220	AA1FJA8	10/30/18	299	14.5	
221	AA1FJE3	10/30/18	299	14.5	
222	AA1FJE2	10/30/18	299	14.5	
223	AA1FJJG	10/30/18	299	14.5	
224	AA1FHIJ	10/30/18	299	14.5	
225	AA1FJJJ	10/30/18	299	14.5	
226	AA1FH1N	10/30/18	299	14.5	
227	AA1FH1K	10/30/18	299	14.5	
228	AA1FGZE	10/30/18	299	14.5	



PANEL PLACEMENT FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	ENGINEERED TURF
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
229	AA1FJJD	11/07/18	299	14.5	
230	AA1FJP8	11/07/18	299	14.5	
231	AA1F6Z9	11/07/18	299	14.5	
232	AA1FJH6	11/07/18	299	14.5	
233	AA1FJH8	11/07/18	299	14.5	
234	AA1FJH9	11/07/18	299	14.5	
235	AA1FJKG	11/07/18	299	14.5	
236	AA1FH3N	11/07/18	299	14.5	
237	AA1FJHU	11/07/18	299	14.5	
238	AA1FH3K	11/07/18	299	14.5	
239	AA1FH78	11/07/18	299	14.5	
240	AA1FH3M	11/07/18	299	14.5	
241	AA1FHCE	11/07/18	299	14.5	
242	AA1FH28	11/07/18	299	14.5	
243	AA1FH5E	11/07/18	299	14.5	
244	AA1FH5F	11/07/18	299	14.5	
245	AA1FGZD	11/07/18	299	14.5	
246	AA1FEA4	11/07/18	298	14.5	
247	AA1FEA5	11/07/18	298	14.5	



PANEL PLACEMENT FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	ENGINEERED TURF
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
248	AA1FEC6	11/07/18	298	14.5	
249	AA1FGKJ	11/08/18	298	14.5	
250	AA1FGHW	11/08/18	298	14.5	
251	AA1FH4N	11/08/18	298	14.5	
252	AA1FDXY	11/08/18	298	14.5	
253	MJ45402	11/08/18	298	14.5	
254	MJ45401	11/08/18	298	14.5	
255	AA1FDAT	11/08/18	298	14.5	
256	AA1FE21	11/08/18	298	14.5	
257	AA1FH29	11/08/18	298	14.5	
258	AA1FH3P	11/08/18	298	14.5	
259	AA1FH5K	11/08/18	298	14.5	
260	AA1FH98	11/08/18	298	14.5	
261	AA1FHAN	11/08/18	298	14.5	
262	AA1FHCF	11/08/18	298	14.5	
263	AA1FHVH	11/08/18	298	14.5	
264	AA1FJ32	11/08/18	298	14.5	
265	AA1FJ6H	11/08/18	298	14.5	
266	AA1FJC6	11/08/18	298	14.5	



PANEL PLACEMENT FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	ENGINEERED TURF
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
267	AA1FJE7	11/08/18	298	14.5	
268	AA1FJER	11/08/18	298	14.5	
269	AA1FHCG	11/08/18	298	14.5	
270	AA1FHAT	11/08/18	298	14.5	
271	AA1FHAR	11/08/18	298	14.5	
272	AA1FHAP	11/08/18	298	14.5	
273	AA1FHAK	11/08/18	298	14.5	
274	AA1FH96	11/08/18	298	14.5	
275	AA1FH99	11/08/18	298	14.5	
276	AA1FH77	11/08/18	298	14.5	
277	AA1FH75	11/08/18	298	14.5	
278	AA1FH74	11/08/18	298	14.5	
279	AA1FH5J	11/08/18	298	14.5	
280	AA1FH5H	11/08/18	298	14.5	
281	AA1FH4R	11/08/18	298	14.5	
282	AA1FH3J	11/08/18	298	14.5	
283	AA1FGZC	11/08/18	298	14.5	
284	AA1FGZA	11/08/18	298	14.5	
285	AA1FGTZ	11/08/18	298	14.5	



PANEL PLACEMENT FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	ENGINEERED TURF
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
286	AA1FGTW	11/08/18	298	14.5	
287	AA1FGJN	11/08/18	298	14.5	
288	AA1FGJ1	11/08/18	298	14.5	
289	AA1FGJP	11/08/18	298	14.5	
290	AA1FGHZ	11/08/18	298	14.5	
291	AA1FGHY	11/08/18	298	14.5	
292	AA1FGGY	11/08/18	298	14.5	
293	AA1FGGW	11/08/18	298	14.5	
294	AA1FGGU	11/08/18	298	14.5	
295	AA1FGHX	11/19/18	298	14.5	
296	AA1FGHV	11/19/18	298	14.5	
297	AA1FJM6	11/19/18	298	14.5	
298	AA1FJJE	11/19/18	298	14.5	
299	AA1FHCH	11/19/18	298	14.5	
300	AA1FH9A	11/19/18	298	14.5	
301	AA1FH73	11/19/18	298	14.5	
302	AA1FH5G	11/19/18	298	14.5	
303	AA1FH4T	11/19/18	298	14.5	
304	AA1FH5K	11/19/18	298	14.5	



PANEL PLACEMENT FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	ENGINEERED TURF
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
305	AA1FH3R	11/19/18	298	14.5	
306	AA1FGTX	11/19/18	298	14.5	
307	AA1FGJR	11/19/18	298	14.5	
308	AA1FGGX	11/19/18	298	14.5	
309	AA1FGGZ	11/19/18	298	14.5	
310	AA1FJFT	11/20/18	298	14.5	
311	AA1FJHT	11/20/18	298	14.5	
312	AA1FJJF	11/20/18	298	14.5	
313	AA1FJJH	11/20/18	298	14.5	
314	AA1FHCJ	11/20/18	298	14.5	
315	AA1FHAVN	11/20/18	298	14.5	
316	AA1FH25	11/20/18	298	14.5	
317	AA1FJHW	11/20/18	298	14.5	
318	AA1FJM4	11/20/18	298	14.5	
319	AA1FJFR	11/20/18	298	14.5	
320	AA1FJ44	11/20/18	298	14.5	
321	AA1FHVG	11/20/18	298	14.5	
322	AA1FHVK	11/20/18	298	14.5	
323	AA1FHAM	11/20/18	298	14.5	



PANEL PLACEMENT FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	ENGINEERED TURF
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
324	AA1FH97	11/20/18	298	14.5	
325	AA1FH95	11/20/18	298	14.5	
326	AA1FH76	11/20/18	298	14.5	
327	AA1FH4M	11/20/18	298	14.5	
328	AA1FH4P	11/20/18	298	14.5	
329	AA1FEAX	11/20/18	298	14.5	
330	AA1FE83	11/20/18	298	14.5	
331	AA1FGZ8	11/20/18	298	14.5	
332	AA1FGU2	11/20/18	298	14.5	
333	AA1FGU1	11/20/18	298	14.5	
334	AA1FGF4	11/20/18	298	14.5	
335	AA1FJMZ	11/20/18	298	14.5	
336	AA1FEV7	11/21/18	298	14.5	
337	AA1FE7C	11/21/18	298	14.5	
338	AA1FEWR	11/21/18	298	14.5	
339	AA1FEV6	11/21/18	298	14.5	
340	AA1FEAW	11/21/18	298	14.5	
341	AA1FE8R	11/21/18	298	14.5	
342	AA1FE7G	11/21/18	298	14.5	



PANEL PLACEMENT FORM

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	ENGINEERED TURF
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
343	AA1FEC5	11/21/18	298	14.5	
344	AA1FEWU	11/21/18	298	14.5	
345	AA1FEXN	11/21/18	298	14.5	
346	AA1FEAU	11/21/18	298	14.5	
347	AA1FHDN	11/21/18	298	14.5	
348	AA1FHVJ	11/21/18	298	14.5	
349	AA1FGTY	11/21/18	298	14.5	
350	AA1FGF3	11/21/18	298	14.5	
351	AA1FGGV	11/21/18	298	14.5	
352	AA1FJ5E	11/21/18	298	14.5	
353	AA1FJ2Z	11/21/18	298	14.5	
354	AA1FJ7V	11/21/18	298	14.5	
355	AA1FJ31	11/21/18	298	14.5	
356	AA1FJ5D	11/21/18	298	14.5	
357	AA1FJ33	11/21/18	298	14.5	
358	AA1FJ41	11/21/18	298	14.5	
359	AA1FJ2X	11/21/18	298	14.5	
360	AA1FH DU	11/21/18	298	14.5	
361	AA1FJP4	11/21/18	298	14.5	



PANEL PLACEMENT FORM

Page 20 of 20

PROJECT NAME:	AMEREN MEREDOSIA-FLY ASH POND
PROJECT NO.:	18009
MATERIAL TYPE:	ENGINEERED TURF
MATERIAL LAYER:	PRIMARY
QC NAME:	CHERYL HINA

PANEL NO.	ROLL NO.	PLACEMENT DATE	PANEL LENGTH (FT)	PANEL WIDTH (FT)	COMMENTS
362	AA1FJFP	11/21/18	298	14.5	
363	AA1FJ5F	11/21/18	298	14.5	
364	AA1FJE5	11/21/18	298	14.5	
365	AA1FJKF	11/21/18	298	14.5	
366	AA1FJM7	11/21/18	298	14.5	
367	AA1FJU5	11/21/18	298	14.5	
368	AA1FJVP	11/21/18	298	14.5	
369	AA1FJZX	11/21/18	298	14.5	
370	AA1FKIT	11/21/18	298	14.5	
371	AA1G441	11/21/18	298	14.5	
372	AA1G55D	11/21/18	298	14.5	
373	AA1G56Y	11/21/18	298	14.5	
374	AA1GDEV	11/21/18	299	14.5	



APPENDIX F – INSTALLER CERTIFICATION



Construction Services Group

**CERTIFICATE OF ACCEPTANCE OF SUBGRADE
SURFACE PREPARATION FOR GEOSYNTHETIC INSTALLATION**

2401 Pewaukee Road
Waukesha, WI 53188
(800)444-5523
Fax: (262)542-8306

PROJECT NAME: Ameren Meredosia Bottom Ash Pond

LOCATION: Meredosia, IL

JOB NO.: 18009

PROJECT OWNER: Ameren

PRIME CONTRACTOR: Blankenship Construction

(If GSI is not contracted with the Owner)

AREA ACCEPTED:


Bottom Ash Pond P-1 thru P49

The undersigned authorized representative of Geo-Synthetics, LLC (GSI) certifies that he or she has visually inspected the subgrade surface of the area described above and has found the surface to be acceptable for installation of the geosynthetic materials.

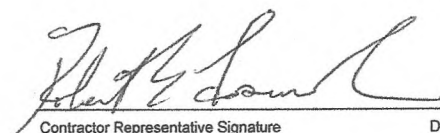
This certification is based on observations of the subgrade surface conditions only. GSI has made no sub-terrain inspections or tests and makes no representations or warranties as to the conditions that may exist below the surface of the subgrade. Nor does GSI take responsibility that the subgrade is within the project specifications.

I, the undersigned, a duly appointed representative of the Owner and/or Contractor, do hereby acknowledge and accept Geo-Synthetics, LLC terms for Certification of Acceptance of Subgrade Surface Preparation for Geosynthetic Installation.

CERTIFICATE APPROVED AND ACCEPTED BY:


Owner / CQA Representative Signature 8/9/2018
Date

SteveGraham CQA
Representative Name and Title


Contractor Representative Signature 8/9/2018
Date

Rob Fosnock Superintendent
Representative Name and Title


Geo-Synthetics, LLC Representative Signature 8/9/2018
Date

David Hina Superintendent
Representative Name and Title



Construction Services Group

**CERTIFICATE OF ACCEPTANCE OF SUBGRADE
SURFACE PREPARATION FOR GEOSYNTHETIC INSTALLATION**

2401 Pewaukee Road
Waukesha, WI 53188
(800)444-5523
Fax: (262)542-8306

PROJECT NAME: Ameren Meredosia Bottom Ash Pond

LOCATION: Meredosia, IL

JOB NO.: 18009

PROJECT OWNER: Ameren

PRIME CONTRACTOR: Blankenship Construction

(If GSI is not contracted with the Owner)

AREA ACCEPTED:

Bottom Ash Pond P-50 Thru 88

The undersigned authorized representative of Geo-Synthetics, LLC (GSI) certifies that he or she has visually inspected the subgrade surface of the area described above and has found the surface to be acceptable for installation of the geosynthetic materials.

This certification is based on observations of the subgrade surface conditions only. GSI has made no sub-terrain inspections or tests and makes no representations or warranties as to the conditions that may exist below the surface of the subgrade. Nor does GSI take responsibility that the subgrade is within the project specifications.

I, the undersigned, a duly appointed representative of the Owner and/or Contractor, do hereby acknowledge and accept Geo-Synthetics, LLC terms for Certification of Acceptance of Subgrade Surface Preparation for Geosynthetic Installation.

CERTIFICATE APPROVED AND ACCEPTED BY:


Owner / CQA Representative Signature 8/10/2018
Date

Steve Graham CQA
Representative Name and Title


Contractor Representative Signature 8/10/2018
Date

Rob Fosnock Superintendent
Representative Name and Title


Geo-Synthetics, LLC Representative Signature 8/10/2018
Date

David Hina Superintendent
Representative Name and Title



Construction Services Group

**CERTIFICATE OF ACCEPTANCE OF SUBGRADE
SURFACE PREPARATION FOR GEOSYNTHETIC INSTALLATION**

2401 Pewaukee Road
Waukesha, WI 53188
(800)444-5523
Fax: (262)542-8308

PROJECT NAME: Ameren Meredosia Fly Ash Pond

LOCATION: Meredosia, IL

JOB NO.: 18009

PROJECT OWNER: Ameren

PRIME CONTRACTOR: Blankenship Construction

(If GSI is not contracted with the Owner)

AREA ACCEPTED:

Panels 1-43

The undersigned authorized representative of Geo-Synthetics, LLC (GSI) certifies that he or she has visually inspected the subgrade surface of the area described above and has found the surface to be acceptable for installation of the geosynthetic materials.

This certification is based on observations of the subgrade surface conditions only. GSI has made no sub-terrain inspections or tests and makes no representations or warranties as to the conditions that may exist below the surface of the subgrade. Nor does GSI take responsibility that the subgrade is within the project specifications.

I, the undersigned, a duly appointed representative of the Owner and/or Contractor, do hereby acknowledge and accept Geo-Synthetics, LLC terms for Certification of Acceptance of Subgrade Surface Preparation for Geosynthetic Installation.

CERTIFICATE APPROVED AND ACCEPTED BY:

 8/17/2018
Owner / CQA Representative Signature Date

Jessie Goodwin Engineer
Representative Name and Title

 8/17/2018
Contractor Representative Signature Date

Rob Fosnock Superintendent
Representative Name and Title

 8/17/2018
Geo-Synthetics, LLC Representative Signature

David Hina Superintendent
Representative Name and Title



Construction Services Group

**CERTIFICATE OF ACCEPTANCE OF SUBGRADE
SURFACE PREPARATION FOR GEOSYNTHETIC INSTALLATION**

2401 Pewaukee Road
Waukesha, WI 53188
(800) 444-5523
Fax: (262) 542-8306

PROJECT NAME: Ameren Meredosia Fly Ash Pond

LOCATION: Meredosia, IL

JOB NO.: 18009

PROJECT OWNER: Ameren

PRIME CONTRACTOR: Blankenship Construction

(If GSI is not contracted with the Owner)

AREA ACCEPTED:

Panels 44-77

The undersigned authorized representative of Geo-Synthetics, LLC (GSI) certifies that he or she has visually inspected the subgrade surface of the area described above and has found the surface to be acceptable for installation of the geosynthetic materials.

This certification is based on observations of the subgrade surface conditions only. GSI has made no sub-terrain inspections or tests and makes no representations or warranties as to the conditions that may exist below the surface of the subgrade. Nor does GSI take responsibility that the subgrade is within the project specifications.

I, the undersigned, a duly appointed representative of the Owner and/or Contractor, do hereby acknowledge and accept Geo-Synthetics, LLC terms for Certification of Acceptance of Subgrade Surface Preparation for Geosynthetic Installation.

CERTIFICATE APPROVED AND ACCEPTED BY:

Jessie Goodwin 8/22/2018
Owner / CQA Representative Signature Date

Jessie Goodwin Engineer
Representative Name and Title

Rob Fosnock 8/22/2018
Contractor Representative Signature Date

Rob Fosnock Superintendent
Representative Name and Title

David Hina 8/22/2018
Geo-Synthetics, LLC Representative Signature

David Hina Superintendent
Representative Name and Title



Construction Services Group

**CERTIFICATE OF ACCEPTANCE OF SUBGRADE
SURFACE PREPARATION FOR GEOSYNTHETIC INSTALLATION**

2401 Persimmon Road
Waukegan, WI 53188
(800) 444-5523
Fax: (262) 542-6306

PROJECT NAME: Ameren Meredosia Fly Ash Pond

LOCATION: Meredosia, IL

JOB NO.: 18009

PROJECT OWNER: Ameren

PRIME CONTRACTOR: Blankenship Construction
(If GSI is not contracted with the Owner)

AREA ACCEPTED:

Panels 78 thru 82


The undersigned authorized representative of Geo-Synthetics, LLC (GSI) certifies that he or she has visually inspected the subgrade surface of the area described above and has found the surface to be acceptable for installation of the geosynthetic materials.

This certification is based on observations of the subgrade surface conditions only. GSI has made no sub-terrain inspections or tests and makes no representations or warranties as to the conditions that may exist below the surface of the subgrade. Nor does GSI take responsibility that the subgrade is within the project specifications.

I, the undersigned, a duly appointed representative of the Owner and/or Contractor, do hereby acknowledge and accept Geo-Synthetics, LLC terms for Certification of Acceptance of Subgrade Surface Preparation for Geosynthetic Installation.

CERTIFICATE APPROVED AND ACCEPTED BY:

 8/23/2018
Owner / CQA Representative Signature Date

 23-Aug-2018
Contractor Representative Signature Date

Jessie Goodwin, Engineer
Representative Name and Title

Rob E. Fosnock - Project Superintendent
Representative Name and Title

 23-Aug-2018
Geo-Synthetics, LLC Representative Signature Date

Dave Clausen
Representative Name and Title



Construction Services Group

**CERTIFICATE OF ACCEPTANCE OF SUBGRADE
SURFACE PREPARATION FOR GEOSYNTHETIC INSTALLATION**

2401 Populus Road
Waukegan, WI 53188
(800)444-5522
Fax: (262)542-8806

PROJECT NAME: Ameren Meredosia Fly Ash Pond

LOCATION: Meredosia, IL

JOB NO.: 18009

PROJECT OWNER: Ameren

PRIME CONTRACTOR: Blankenship Construction
(If GSI is not contracted with the Owner)

AREA ACCEPTED:

Panels 83 thru 94

The undersigned authorized representative of Geo-Synthetics, LLC (GSI) certifies that he or she has visually inspected the subgrade surface of the area described above and has found the surface to be acceptable for installation of the geosynthetic materials.

This certification is based on observations of the subgrade surface conditions only. GSI has made no sub-terrain inspections or tests and makes no representations or warranties as to the conditions that may exist below the surface of the subgrade. Nor does GSI take responsibility that the subgrade is within the project specifications.

I, the undersigned, a duly appointed representative of the Owner and/or Contractor, do hereby acknowledge and accept Geo-Synthetics, LLC terms for Certification of Acceptance of Subgrade Surface Preparation for Geosynthetic Installation.

CERTIFICATE APPROVED AND ACCEPTED BY:

Jesse M. Goodwin 9/4/2018
Owner / CQA Representative Signature Date

Jesse Goodwin, Engineer
Representative Name and Title

Robert E. Fosnock 04-Sept-2018
Contractor Representative Signature Date

Rob E. Fosnock- Project Superintendent
Representative Name and Title

Dave Clausen 04-Sept-2018
Geo-Synthetics, LLC Representative Signature Date

Dave Clausen
Representative Name and Title



Construction Services Group

**CERTIFICATE OF ACCEPTANCE OF SUBGRADE
SURFACE PREPARATION FOR GEOSYNTHETIC INSTALLATION**

2401 Powaukee Road
Waukesha, WI 53188
(800)444-5523
Fax: (262)542-8306

PROJECT NAME: Ameren Meredosia Fly Ash Pond

LOCATION: Meredosia, IL

JOB NO.: 18009

PROJECT OWNER: Ameren

PRIME CONTRACTOR: Blankenship Construction

(If GSI is not contracted with the Owner)

AREA ACCEPTED:

Panels 95-104

The undersigned authorized representative of Geo-Synthetics, LLC (GSI) certifies that he or she has visually inspected the subgrade surface of the area described above and has found the surface to be acceptable for installation of the geosynthetic materials.

This certification is based on observations of the subgrade surface conditions only. GSI has made no sub-terrain inspections or tests and makes no representations or warranties as to the conditions that may exist below the surface of the subgrade. Nor does GSI take responsibility that the subgrade is within the project specifications.

I, the undersigned, a duly appointed representative of the Owner and/or Contractor, do hereby acknowledge and accept Geo-Synthetics, LLC terms for Certification of Acceptance of Subgrade Surface Preparation for Geosynthetic Installation.

CERTIFICATE APPROVED AND ACCEPTED BY:

[Signature] 9/5/2018
Owner / CQA Representative Signature Date

Representative Name and Title

[Signature] 9/5/2018
Contractor Representative Signature Date

ROSS WILSON Superintendent
Representative Name and Title

[Signature] 9/5/2018
Geo-Synthetics, LLC Representative Signature

David Hina Superintendent
Representative Name and Title



Construction Services Group

**CERTIFICATE OF ACCEPTANCE OF SUBGRADE
SURFACE PREPARATION FOR GEOSYNTHETIC INSTALLATION**

2401 Pewaukee Road
Waukesha, WI 53188
(800)444-5523
Fax: (262)542-8306

PROJECT NAME: Ameren Meredosia Fly Ash Pond

LOCATION: Meredosia, IL

JOB NO.: 18009

PROJECT OWNER: Ameren

PRIME CONTRACTOR: Blankenship Construction

(If GSI is not contracted with the Owner)

AREA ACCEPTED:

Panels 105-117

The undersigned authorized representative of Geo-Synthetics, LLC (GSI) certifies that he or she has visually inspected the subgrade surface of the area described above and has found the surface to be acceptable for installation of the geosynthetic materials.

This certification is based on observations of the subgrade surface conditions only. GSI has made no sub-terrain inspections or tests and makes no representations or warranties as to the conditions that may exist below the surface of the subgrade. Nor does GSI take responsibility that the subgrade is within the project specifications.

I, the undersigned, a duly appointed representative of the Owner and/or Contractor, do hereby acknowledge and accept Geo-Synthetics, LLC terms for Certification of Acceptance of Subgrade Surface Preparation for Geosynthetic Installation.

CERTIFICATE APPROVED AND ACCEPTED BY:

Steve Graham 9/14/2018
Owner / CQA Representative Signature Date

Steve Graham
Representative Name and Title

Ross Wilson 9/14/2018
Contractor Representative Signature Date

Ross Wilson Superintendent
Representative Name and Title

David Hina 9/14/2018
Geo-Synthetics, LLC Representative Signature

David Hina Superintendent
Representative Name and Title



Construction Services Group

**CERTIFICATE OF ACCEPTANCE OF SUBGRADE
SURFACE PREPARATION FOR GEOSYNTHETIC INSTALLATION**

2401 Pewaukee Road
Waukesha, WI 53188
(800) 444-5523
Fax: (262) 542-8306

PROJECT NAME: Ameren Meredosia Fly Ash Pond

LOCATION: Meredosia, IL

JOB NO.: 18009

PROJECT OWNER: Ameren

PRIME CONTRACTOR: Blankenship Construction

(If GSI is not contracted with the Owner)

AREA ACCEPTED:


Panels 118-127

The undersigned authorized representative of Geo-Synthetics, LLC (GSI) certifies that he or she has visually inspected the subgrade surface of the area described above and has found the surface to be acceptable for installation of the geosynthetic materials.

This certification is based on observations of the subgrade surface conditions only. GSI has made no sub-terrain inspections or tests and makes no representations or warranties as to the conditions that may exist below the surface of the subgrade. Nor does GSI take responsibility that the subgrade is within the project specifications.

I, the undersigned, a duly appointed representative of the Owner and/or Contractor, do hereby acknowledge and accept Geo-Synthetics, LLC terms for Certification of Acceptance of Subgrade Surface Preparation for Geosynthetic Installation.

CERTIFICATE APPROVED AND ACCEPTED BY:




Owner / Contractor Representative Signature

9/15/2018

Date

Steve Graham

Representative Name and Title



Contractor Representative Signature

9/15/2018

Date

Ross Wilson

Representative Name and Title

Superintendent



Geo-Synthetics, LLC Representative Signature

9/15/2018

David Hina

Representative Name and Title

Superintendent



Construction Services Group

**CERTIFICATE OF ACCEPTANCE OF SUBGRADE
SURFACE PREPARATION FOR GEOSYNTHETIC INSTALLATION**

2401 Pewaukee Road
Waukesha, WI 53188
(800) 444-5523
Fax (262) 542-8308

PROJECT NAME: Ameren Meredosia Fly Ash Pond

LOCATION: Meredosia, IL

JOB NO.: 18009

PROJECT OWNER: Ameren

PRIME CONTRACTOR: Blankenship Construction

(If GSI is not contracted with the Owner)

AREA ACCEPTED:

Panels 128-133

The undersigned authorized representative of Geo-Synthetics, LLC (GSI) certifies that he or she has visually inspected the subgrade surface of the area described above and has found the surface to be acceptable for installation of the geosynthetic materials.

This certification is based on observations of the subgrade surface conditions only. GSI has made no sub-terrain inspections or tests and makes no representations or warranties as to the conditions that may exist below the surface of the subgrade. Nor does GSI take responsibility that the subgrade is within the project specifications.

I, the undersigned, a duly appointed representative of the Owner and/or Contractor, do hereby acknowledge and accept Geo-Synthetics, LLC terms for Certification of Acceptance of Subgrade Surface Preparation for Geosynthetic Installation.

CERTIFICATE APPROVED AND ACCEPTED BY:


Owner / CQA Representative Signature

9/24/2018
Date

Jessie Goodwin, Engineer
Representative Name and Title


Contractor Representative Signature

9/24/2018
Date

Rob Fosnock
Representative Name and Title

Superintendent


Geo-Synthetics, LLC Representative Signature

9/24/2018
Date

David Hina
Representative Name and Title

Superintendent



Construction Services Group

**CERTIFICATE OF ACCEPTANCE OF SUBGRADE
SURFACE PREPARATION FOR GEOSYNTHETIC INSTALLATION**

2401 Pewaukee Road
Waukesha, WI 53188
(800)444-5523
Fax: (262)542-8308

PROJECT NAME: Ameren Meredosia Fly Ash Pond

LOCATION: Meredosia, IL

JOB NO.: 18009

PROJECT OWNER: Ameren

PRIME CONTRACTOR: Blankenship Construction

(If GSI is not contracted with the Owner)

AREA ACCEPTED:


Panels 134-177

The undersigned authorized representative of Geo-Synthetics, LLC (GSI) certifies that he or she has visually inspected the subgrade surface of the area described above and has found the surface to be acceptable for installation of the geosynthetic materials.

This certification is based on observations of the subgrade surface conditions only. GSI has made no sub-terrain inspections or tests and makes no representations or warranties as to the conditions that may exist below the surface of the subgrade. Nor does GSI take responsibility that the subgrade is within the project specifications.

I, the undersigned, a duly appointed representative of the Owner and/or Contractor, do hereby acknowledge and accept Geo-Synthetics, LLC terms for Certification of Acceptance of Subgrade Surface Preparation for Geosynthetic Installation.

CERTIFICATE APPROVED AND ACCEPTED BY:



9/28/2018

Owner / COA Representative Signature

Date



9/28/2018

Contractor Representative Signature

Date

Jessie Y Goodwin Engineer

Representative Name and Title

Rob Fosnock

Superintendent

Representative Name and Title



9/28/2018

Geo-Synthetics, LLC Representative Signature

David Hina

Superintendent

Representative Name and Title



Construction Services Group

**CERTIFICATE OF ACCEPTANCE OF SUBGRADE
SURFACE PREPARATION FOR GEOSYNTHETIC INSTALLATION**

2401 Pewaukee Road
Waukesha, WI 53188
(800)444-5523
Fax: (262)542-8906

PROJECT NAME: Ameren Meredosia Fly Ash Pond

LOCATION: Meredosia, IL

JOB NO.: 18009

PROJECT OWNER: Ameren

PRIME CONTRACTOR: Blankenship Construction

(If GSI is not contracted with the Owner)

AREA ACCEPTED:

Panels 178-206

The undersigned authorized representative of Geo-Synthetics, LLC (GSI) certifies that he or she has visually inspected the subgrade surface of the area described above and has found the surface to be acceptable for installation of the geosynthetic materials.

This certification is based on observations of the subgrade surface conditions only. GSI has made no sub-terrain inspections or tests and makes no representations or warranties as to the conditions that may exist below the surface of the subgrade. Nor does GSI take responsibility that the subgrade is within the project specifications.

I, the undersigned, a duly appointed representative of the Owner and/or Contractor, do hereby acknowledge and accept Geo-Synthetics, LLC terms for Certification of Acceptance of Subgrade Surface Preparation for Geosynthetic Installation.

CERTIFICATE APPROVED AND ACCEPTED BY:

Stephen Brach 10/16/2018
Owner / CQA Representative Signature Date

Representative Name and Title

Rob Fosnock 10/16/2018
Contractor Representative Signature Date

Rob Fosnock Superintendent
Representative Name and Title

David Hina 10/16/2018
Geo-Synthetics, LLC Representative Signature

David Hina Superintendent
Representative Name and Title



Construction Services Group

**CERTIFICATE OF ACCEPTANCE OF SUBGRADE
SURFACE PREPARATION FOR GEOSYNTHETIC INSTALLATION**

2401 Pewaukee Road
Westlake, WI 53188
(920)444-5523
Fax: (920)444-5300

PROJECT NAME: Ameren Meredosia Fly Ash Pond

LOCATION: Meredosia, IL

JOB NO.: 18009

PROJECT OWNER: Ameren

PRIME CONTRACTOR: Blankenship Construction
(If GSI is not contracted with the Owner)

AREA ACCEPTED:

Panels 207 thru 228

The undersigned authorized representative of Geo-Synthetics, LLC (GSI) certifies that he or she has visually inspected the subgrade surface of the area described above and has found the surface to be acceptable for installation of the geosynthetic materials.

This certification is based on observations of the subgrade surface conditions only. GSI has made no sub-terrain inspections or tests and makes no representations or warranties as to the conditions that may exist below the surface of the subgrade. Nor does GSI take responsibility that the subgrade is within the project specifications.

I, the undersigned, a duly appointed representative of the Owner and/or Contractor, do hereby acknowledge and accept Geo-Synthetics, LLC terms for Certification of Acceptance of Subgrade Surface Preparation for Geosynthetic Installation.

CERTIFICATE APPROVED AND ACCEPTED BY:

Stephen Graham
Owner / COA Representative Signature

10/17/18
Date

Rob E. Fosnock
Contractor Representative Signature

17-Oct-2018
Date

STEPHEN GRAHAM
Representative Name and Title

Rob E. Fosnock- Project Superintendent
Representative Name and Title

Dave Clausen
Geo-Synthetics, LLC Representative Signature

17-Oct-2018
Date

Dave Clausen

Representative Name and Title



Construction Services Group

**CERTIFICATE OF ACCEPTANCE OF SUBGRADE
SURFACE PREPARATION FOR GEOSYNTHETIC INSTALLATION**

2401 Penstock Road
Waukegan, WI 53108
(800)444-5623
Fax: (262)542-8308

PROJECT NAME: Ameren Meredosia Fly Ash Pond

LOCATION: Meredosia, IL

JOB NO.: 18009

PROJECT OWNER: Ameren

PRIME CONTRACTOR: Blankenship Construction
(If GSI is not contracted with the Owner)

AREA ACCEPTED:

Panels 229 thru 252

The undersigned authorized representative of Geo-Synthetics, LLC (GSI) certifies that he or she has visually inspected the subgrade surface of the area described above and has found the surface to be acceptable for installation of the geosynthetic materials.

This certification is based on observations of the subgrade surface conditions only. GSI has made no sub-terrain inspections or tests and makes no representations or warranties as to the conditions that may exist below the surface of the subgrade. Nor does GSI take responsibility that the subgrade is within the project specifications.

I, the undersigned, a duly appointed representative of the Owner and/or Contractor, do hereby acknowledge and accept Geo-Synthetics, LLC terms for Certification of Acceptance of Subgrade Surface Preparation for Geosynthetic Installation.

CERTIFICATE APPROVED AND ACCEPTED BY:

Stephen Graham 10/18/18
Owner / CCA Representative Signature Date

STEPHEN GRAHAM
Representative Name and Title

Rob E. Fosnock 18-Oct-2018
Contractor Representative Signature Date

Rob E. Fosnock- Project Superintendent
Representative Name and Title

Dave Clausen 18-Oct-2018
Geo-Synthetics, LLC Representative Signature Date

Dave Clausen
Representative Name and Title



Construction Services Group

**CERTIFICATE OF ACCEPTANCE OF SUBGRADE
SURFACE PREPARATION FOR GEOSYNTHETIC INSTALLATION**

2401 Potomac Road
Westfield, WI 53090
(800) 444-5628
Fax: (262) 542-8900

PROJECT NAME: Ameren Meredosia Fly Ash Pond

LOCATION: Meredosia, IL

JOB NO.: 18009

PROJECT OWNER: Ameren

PRIME CONTRACTOR: Blankenship Construction
(If GSI is not contracted with the Owner)

AREA ACCEPTED:

Panels 253 thru 259

The undersigned authorized representative of Geo-Synthetics, LLC (GSI) certifies that he or she has visually inspected the subgrade surface of the area described above and has found the surface to be acceptable for installation of the geosynthetic materials.

This certification is based on observations of the subgrade surface conditions only. GSI has made no sub-terrain inspections or tests and makes no representations or warranties as to the conditions that may exist below the surface of the subgrade. Nor does GSI take responsibility that the subgrade is within the project specifications.

I, the undersigned, a duly appointed representative of the Owner and/or Contractor, do hereby acknowledge and accept Geo-Synthetics, LLC terms for Certification of Acceptance of Subgrade Surface Preparation for Geosynthetic Installation.

CERTIFICATE APPROVED AND ACCEPTED BY:

Stephen Graham 10/19/18
Owner / CCA Representative Signature Date

STEPHEN GRAHAM
Representative Name and Title

Rob E. Fosnock 19-Oct-2018
Contractor Representative Signature Date

Rob E. Fosnock - Project Superintendent
Representative Name and Title

Dave Clausen 19-Oct-2018
Geo-Synthetics, LLC Representative Signature Date

Dave Clausen
Representative Name and Title



Construction Services Group

**CERTIFICATE OF ACCEPTANCE OF SUBGRADE
SURFACE PREPARATION FOR GEOSYNTHETIC INSTALLATION**

2401 Peninsula Road
Waukegan, WI 53185
(800)444-8623
Fax(262)542-8308

PROJECT NAME: Ameren Meredosia Fly Ash Pond

LOCATION: Meredosia, IL

JOB NO.: 18009

PROJECT OWNER: Ameren

PRIME CONTRACTOR: Blankenship Construction
(If GSI is not contracted with the Owner)

AREA ACCEPTED:

Panels 260 thru 278

The undersigned authorized representative of Geo-Synthetics, LLC (GSI) certifies that he or she has visually inspected the subgrade surface of the area described above and has found the surface to be acceptable for installation of the geosynthetic materials.

This certification is based on observations of the subgrade surface conditions only. GSI has made no sub-terrain inspections or tests and makes no representations or warranties as to the conditions that may exist below the surface of the subgrade. Nor does GSI take responsibility that the subgrade is within the project specifications.

I, the undersigned, a duly appointed representative of the Owner and/or Contractor, do hereby acknowledge and accept Geo-Synthetics, LLC terms for Certification of Acceptance of Subgrade Surface Preparation for Geosynthetic Installation.

CERTIFICATE APPROVED AND ACCEPTED BY:

Stephen G. ... 10/22/18
Owner / CDA Representative Signature Date

Stephen G. ...
Representative Name and Title

Rob E. Fosnock 22-Oct-2018
Contractor Representative Signature Date

Rob E. Fosnock - Project Superintendent
Representative Name and Title

Dave Clausen 22-Oct-2018
Geo-Synthetics, LLC Representative Signature Date

Dave Clausen
Representative Name and Title



Construction Services Group

**CERTIFICATE OF ACCEPTANCE OF SUBGRADE
SURFACE PREPARATION FOR GEOSYNTHETIC INSTALLATION**

2401 Penrose Road
Waukegan, WI 53188
(800)444-6523
Fax: (262)542-8308

PROJECT NAME: Ameren Meredosia Fly Ash Pond

LOCATION: Meredosia, IL

JOB NO.: 18009

PROJECT OWNER: Ameren

PRIME CONTRACTOR: Blankenship Construction
(If GSI is not contracted with the Owner)

AREA ACCEPTED:

Panels 279 thru 294

Final acceptance- FAP liner has been fully installed

The undersigned authorized representative of Geo-Synthetics, LLC (GSI) certifies that he or she has visually inspected the subgrade surface of the area described above and has found the surface to be acceptable for installation of the geosynthetic materials.

This certification is based on observations of the subgrade surface conditions only. GSI has made no sub-terrain inspections or tests and makes no representations or warranties as to the conditions that may exist below the surface of the subgrade. Nor does GSI take responsibility that the subgrade is within the project specifications.

I, the undersigned, a duly appointed representative of the Owner and/or Contractor, do hereby acknowledge and accept Geo-Synthetics, LLC terms for Certification of Acceptance of Subgrade Surface Preparation for Geosynthetic Installation.

CERTIFICATE APPROVED AND ACCEPTED BY:

 10/23/18
Owner / O&A Representative Signature Date

STEPHEN GRAHAM
Representative Name and Title

 23-Oct-2018
Contractor Representative Signature Date

Rob E. Fosnock- Project Superintendent
Representative Name and Title

 23-Oct-2018
Geo-Synthetics, LLC Representative Signature Date

Dave Clausen
Representative Name and Title



APPENDIX G – CALIBRATIONS

Demtech Services, Inc.
Placerville, California, USA

CALIBRATION CERTIFICATE

Tensiometer Model: Pro-Tester T-0100

Device Calibrated: S-Type load cell
Range: 0 - 750 lbs. Tension

Calibration Apparatus:

Model No: M2405-750#

Pro-Cal unit, model TC-0100/A

Serial No: 704534

A/D Module Model No: T-029

A/D Module Serial No: 3913704534

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: 9.018779

Scale: 3.162595

Applied Force lbs.

2
52
102
152
202
252
302

Cell Response:

2
52
102
152
202
252
302

Deviation Error:

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.

Ryan Beck

Date: 03/05/18



Demtech Services, Inc.
Placerville, California, USA

CALIBRATION CERTIFICATE

Tensiometer Model:

Pro-Tester T-0100

Device Calibrated:

S-Type load cell
0 - 750 lbs. Tension

Range:

Model No:

M2405-750#

Serial No:

686336

Calibration Apparatus:

Pro-Cal unit, model TC-0100/A

A/D Module Model No:

T-029

A/D Module Serial No:

4612686336

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:

-3.018167

Scale:

3.143786

Applied Force lbs.

2
52
102
152
202
252
302

Cell Response:

2
52
102
152
202
252
302

Deviation Error:

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.

Ryan Beck

Date: 03/05/18



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.

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.

Celeste M. Crowley
Acting Manager
Environmental Laboratory Accreditation Program

John South
Accreditation Officer
Environmental Laboratory Accreditation Program

Certificate No.: 004352
Expiration Date: 01/31/2019
Issued On: 03/16/2018

State of Illinois Environmental Protection Agency

Certificate No.: 004352

Awards the Certificate of Approval to:

Teklab, Incorporated
5445 Horseshoe Lake Rd.
Collinsville, IL 62234

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.

FOT Name: Drinking Water, Inorganic

Method: SM2120B,18Ed

Matrix Type: Potable Water

Color

Method: SM2130B,18Ed

Matrix Type: Potable Water

Turbidity

Method: SM2130B,20Ed

Matrix Type: Potable Water

Turbidity

Method: SM2320B,18Ed

Matrix Type: Potable Water

Alkalinity

Method: SM2340B,18Ed

Matrix Type: Potable Water

Hardness

Method: SM2510B,21Ed

Matrix Type: Potable Water

Conductivity

Method: SM2540C,18Ed

Matrix Type: Potable Water

Total dissolved solids

Method: SM3112B,18Ed

Matrix Type: Potable Water

Mercury

Method: SM4500CI-G,18Ed

Matrix Type: Potable Water

Chlorine (free,combined,total)

Method: SM4500F-C,18Ed

Matrix Type: Potable Water

State of Illinois
Environmental Protection Agency
Awards the Certificate of Approval

Certificate No.: 004352

Teklab, Incorporated
5445 Horseshoe Lake Rd.
Collinsville, IL 62234

FOT Name: Drinking Water, Inorganic

Method: SM4500F-C,18Ed

Matrix Type: Potable Water

Fluoride

Method: SM4500H-B,18Ed

Matrix Type: Potable Water

Hydrogen ion (pH)

Method: SM4500NO2-B,18Ed

Matrix Type: Potable Water

Nitrite

Method: SM4500P-E,18Ed

Matrix Type: Potable Water

ortho-Phosphate

Method: SM4500Si-E,18Ed

Matrix Type: Potable Water

Silica

Method: SM5310C,19Ed

Matrix Type: Potable Water

Dissolved Organic Carbon

Total Organic Carbon (TOC)

Method: SM5540C,21Ed

Matrix Type: Potable Water

Foaming Agents

Method: USEPA180.1

Matrix Type: Potable Water

Turbidity

Method: USEPA200.7R4.4

Matrix Type: Potable Water

Aluminum

Barium

Beryllium

Cadmium

Calcium

Chromium

Copper

Iron

Magnesium

Manganese

Nickel

Silver

Sodium

Zinc

Method: USEPA200.8R5.4

Matrix Type: Potable Water

Aluminum

Antimony

State of Illinois
Environmental Protection Agency
Awards the Certificate of Approval

Certificate No.: 004352

Teklab, Incorporated
5445 Horseshoe Lake Rd.
Collinsville, IL 62234

FOT Name: Drinking Water, Inorganic

Method: USEPA200.8R5.4

Matrix Type: Potable Water

Barium
Cadmium
Copper
Manganese
Nickel
Silver
Zinc

Arsenic
Beryllium
Chromium
Lead
Molybdenum
Selenium
Thallium

Method: USEPA245.1R3.0

Matrix Type: Potable Water

Mercury

Method: USEPA335.4R1.0

Matrix Type: Potable Water

Cyanide

Method: USEPA353.2R2.0

Matrix Type: Potable Water

Nitrate

Nitrite

FOT Name: Non Potable Water, Inorganic

Method: OIA-1677-09(L.Kahn)

Matrix Type: NPW

Cyanide, Available

Method: SM2120B,2001

Matrix Type: NPW

Color

Method: SM2130B,2001

Matrix Type: NPW/SCM

Turbidity

Method: SM2310B,1997

Matrix Type: NPW/SCM

Acidity

Method: SM2320B,1997

Matrix Type: NPW/SCM

Alkalinity

Method: SM2340B,1997

State of Illinois
Environmental Protection Agency
Awards the Certificate of Approval

Certificate No.: 004352

Teklab, Incorporated
5445 Horseshoe Lake Rd.
Collinsville, IL 62234

FOT Name: Non Potable Water, Inorganic

Method: SM2340B,1997

Matrix Type: NPW

Hardness

Method: SM2510B,1997

Matrix Type: NPW

Specific conductance

Method: SM2540B,1997

Matrix Type: NPW

Residue (Total)

Method: SM2540C,1997

Matrix Type: NPW

Residue (TDS)

Method: SM2540D,1997

Matrix Type: NPW

Residue (TSS)

Method: SM2540F,1997

Matrix Type: NPW/SCM

Residue (settleable)

Method: SM2550B,2000

Matrix Type: NPW/SCM

Temperature

Method: SM3112B,2009

Matrix Type: NPW/SCM

Mercury

Method: SM3120B,1999

Matrix Type: NPW/SCM

Aluminum

Arsenic

Beryllium

Cadmium

Chromium

Copper

Lead

Manganese

Nickel

Antimony

Barium

Boron

Calcium

Cobalt

Iron

Magnesium

Molybdenum

Phosphorus

State of Illinois
Environmental Protection Agency
Awards the Certificate of Approval

Certificate No.: 004352

Teklab, Incorporated
5445 Horseshoe Lake Rd.
Collinsville, IL 62234

FOT Name: Non Potable Water, Inorganic

Method: SM3120B,1999

Matrix Type: NPW/SCM

Potassium

Selenium

Silver

Sodium

Thallium

Vanadium

Zinc

Method: SM3500Cr-B,2009

Matrix Type: NPW/SCM

Chromium VI

Method: SM4500Cl⁻-C,1997

Matrix Type: NPW/SCM

Chloride

Method: SM4500Cl⁻-E,1997

Matrix Type: NPW/SCM

Chloride

Method: SM4500Cl-G,2000

Matrix Type: NPW/SCM

Chlorine, Total Residual

Method: SM4500CN-E,1999

Matrix Type: NPW

Cyanide

Method: SM4500CN-G,1999

Matrix Type: NPW/SCM

Cyanide, Available

Method: SM4500F-C,1997

Matrix Type: NPW

Fluoride

Method: SM4500H-B,2000

Matrix Type: NPW

Hydrogen ion (pH)

Method: SM4500NH3-H,1997

Matrix Type: NPW/SCM

Ammonia

Method: SM4500NO2-B,2000

Matrix Type: NPW/SCM

Nitrite

State of Illinois
Environmental Protection Agency
Awards the Certificate of Approval

Certificate No.: 004352

Teklab, Incorporated
5445 Horseshoe Lake Rd.
Collinsville, IL 62234

FOT Name: Non Potable Water, Inorganic

Method: SM4500NO3-F,2000

Matrix Type: NPW/SCM

Nitrate-nitrite (as N)

Method: SM4500O-G,2001

Matrix Type: NPW

Oxygen - Dissolved

Method: SM4500P-E,1999

Matrix Type: NPW/SCM

Orthophosphate

Method: SM4500S2-D,2000

Matrix Type: NPW/SCM

Sulfide

Method: SM4500SO3-B,2000

Matrix Type: NPW/SCM

Sulfite

Method: SM5210B,2001

Matrix Type: NPW

Biochemical Oxygen Demand (BOD)

Carbonaceous Biochemical Oxygen Demand (CBOI)

Method: SM5220D,1997

Matrix Type: NPW

Chemical Oxygen Demand (COD)

Method: SM5310C,2000

Matrix Type: NPW

Total organic carbon (TOC)

Method: SM5540C,2000

Matrix Type: NPW

Surfactants

Method: USEPA120.1,1982

Matrix Type: NPW

Specific conductance

Method: USEPA160.4,1971

Matrix Type: NPW/SCM

Residue (Volatile)

Method: USEPA1631E

Matrix Type: NPW

State of Illinois
Environmental Protection Agency
Awards the Certificate of Approval

Certificate No.: 004352

Teklab, Incorporated
5445 Horseshoe Lake Rd.
Collinsville, IL 62234

FOT Name: Non Potable Water, Inorganic

Method: USEPA1631E

Matrix Type: NPW

Mercury

Method: USEPA1664A

Matrix Type: NPW

Oil and Grease

Method: USEPA180.1R2.0,1993

Matrix Type: NPW

Turbidity

Method: USEPA200.7,1994

Matrix Type: NPW/SCM

Aluminum

Antimony

Arsenic

Barium

Beryllium

Boron

Cadmium

Calcium

Chromium

Cobalt

Copper

Iron

Lead

Magnesium

Manganese

Molybdenum

Nickel

Phosphorus

Potassium

Selenium

Silver

Sodium

Thallium

Tin

Titanium

Vanadium

Zinc

Method: USEPA200.8,1994

Matrix Type: NPW

Aluminum

Antimony

Arsenic

Barium

Beryllium

Boron

Cadmium

Calcium

Chromium

Cobalt

Copper

Iron

Lead

Magnesium

Manganese

Molybdenum

Nickel

Potassium

State of Illinois
Environmental Protection Agency
Awards the Certificate of Approval

Certificate No.: 004352

Teklab, Incorporated
5445 Horseshoe Lake Rd.
Collinsville, IL 62234

FOT Name: Non Potable Water, Inorganic

Method: USEPA200.8,1994

Matrix Type: NPW

Selenium

Silver

Sodium

Thallium

Tin

Titanium

Vanadium

Zinc

Method: USEPA245.1R3.0,1994

Matrix Type: NPW/SCM

Mercury

Method: USEPA335.4R1.0,1993

Matrix Type: NPW

Cyanide

Method: USEPA350.1R2.0,1993

Matrix Type: NPW

Ammonia

Method: USEPA351.2R2.0,1993

Matrix Type: NPW/SCM

Total Kjeldahl Nitrogen

Method: USEPA353.2R2.0,1993

Matrix Type: NPW/SCM

Nitrate

Nitrate-nitrite (as N)

Nitrite (as N)

Method: USEPA365.4,1974

Matrix Type: NPW/SCM

Phosphorus

Method: USEPA375.2R2.0,1993

Matrix Type: NPW

Sulfate

Method: USEPA410.4R2.0,1993

Matrix Type: NPW

Chemical Oxygen Demand (COD)

Method: USEPA420.1,1978

Matrix Type: NPW/SCM

Phenolics

Method: USEPA420.4R1.0,1993

State of Illinois
Environmental Protection Agency
Awards the Certificate of Approval

Certificate No.: 004352

Teklab, Incorporated
5445 Horseshoe Lake Rd.
Collinsville, IL 62234

FOT Name: Non Potable Water, Inorganic

Method: USEPA420.4R1.0,1993

Matrix Type: NPW

Phenolics

FOT Name: Non Potable Water, Organic

Method: USEPA608

Matrix Type: NPW/SCM

4,4'-DDD	4,4'-DDE
4,4'-DDT	Aldrin
alpha-BHC	beta-BHC
Chlordane	delta-BHC
Dieldrin	Endosulfan I
Endosulfan II	Endosulfan sulfate
Endrin	Endrin aldehyde
gamma-BHC (Lindane)	Heptachlor
Heptachlor epoxide	Methoxychlor
PCB-1016	PCB-1221
PCB-1232	PCB-1242
PCB-1248	PCB-1254
PCB-1260	Toxaphene

Method: USEPA615

Matrix Type: NPW

2,4,5-T	2,4,5-TP (Silvex)
2,4-D	Dicamba

Method: USEPA624

Matrix Type: NPW/SCM

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
2-Chloroethylvinyl ether	Acetonitrile
Acrolein (Propenal)	Acrylonitrile
Benzene	Bromodichloromethane
Bromoform	Bromomethane
Carbon tetrachloride	Chlorobenzene

State of Illinois
Environmental Protection Agency
Awards the Certificate of Approval

Certificate No.: 004352

Teklab, Incorporated
5445 Horseshoe Lake Rd.
Collinsville, IL 62234

FOT Name: Non Potable Water, Organic

Method: USEPA624

Matrix Type: NPW/SCM

Chloroform
cis-1,3-Dichloropropene
Dichloromethane (Methylene chloride)
Methyl tert-butyl ether (MTBE)
Toluene
trans-1,3-Dichloropropene
Trichlorofluoromethane
Xylenes (total)

Chloroethane
Chloromethane
Dibromochloromethane
Ethylbenzene
Tetrachloroethene
trans-1,2-Dichloroethene
Trichloroethene
Vinyl chloride

Method: USEPA625

Matrix Type: NPW/SCM

1,2,4-Trichlorobenzene
1,3-Dichlorobenzene
2,2-Oxybis (1-chloropropane)
2,4-Dichlorophenol
2,4-Dinitrophenol
2,6-Dinitrotoluene (2,6-DNT)
2-Chlorophenol
2-Nitrophenol
4-Bromophenyl phenyl ether
4-Chlorophenyl phenyl ether
Acenaphthene
Anthracene
Benzo(a)anthracene
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Bis(2-chloroethoxy) methane
Bis(2-ethylhexyl) phthalate
Dibenz(a,h)anthracene
Dimethyl phthalate
Di-n-octyl phthalate
Fluorene
Hexachlorobutadiene
Hexachloroethane
Isophorone

1,2-Dichlorobenzene
1,4-Dichlorobenzene
2,4,6-Trichlorophenol
2,4-Dimethylphenol
2,4-Dinitrotoluene (2,4-DNT)
2-Chloronaphthalene
2-Methyl-4,6-dinitrophenol
3,3'-Dichlorobenzidine
4-Chloro-3-methylphenol
4-Nitrophenol
Acenaphthylene
Benzidine
Benzo(a)pyrene
Benzo(g,h,i)perylene
Benzyl butyl phthalate
Bis(2-chloroethyl) ether
Chrysene
Diethyl phthalate
Di-n-butyl phthalate
Fluoranthene
Hexachlorobenzene
Hexachlorocyclopentadiene
Indeno(1,2,3-cd) pyrene
Naphthalene

State of Illinois
Environmental Protection Agency
Awards the Certificate of Approval

Certificate No.: 004352

Teklab, Incorporated
5445 Horseshoe Lake Rd.
Collinsville, IL 62234

FOT Name: Non Potable Water, Organic

Method: USEPA625

Matrix Type: NPW/SCM

N-Nitrosodimethylamine

N-Nitrosodiphenylamine

Phenanthrene

Pyrene

Nitrobenzene

N-Nitrosodi-n-propylamine

Pentachlorophenol

Phenol

FOT Name: Solid and Chemical Materials, Inorganic

Method: 1010A

Matrix Type: NPW/SCM

Ignitability

Method: 1020B

Matrix Type: NPW/SCM

Ignitability

Method: 1311

Matrix Type: NPW/SCM

TCLP (Organic and Inorganic)

Method: 1312

Matrix Type: NPW/SCM

Synthetic Precipitation Leaching Procedure

Method: 6010B

Matrix Type: NPW/SCM

Aluminum

Arsenic

Beryllium

Cadmium

Chromium

Copper

Lead

Magnesium

Molybdenum

Phosphorus

Selenium

Sodium

Thallium

Titanium

Antimony

Barium

Boron

Calcium

Cobalt

Iron

Lithium

Manganese

Nickel

Potassium

Silver

Strontium

Tin

Vanadium

State of Illinois
Environmental Protection Agency
Awards the Certificate of Approval

Certificate No.: 004352

Teklab, Incorporated
5445 Horseshoe Lake Rd.
Collinsville, IL 62234

FOT Name: Solid and Chemical Materials, Inorganic

Method: 6010B

Matrix Type: NPW/SCM

Zinc

Method: 6020A

Matrix Type: NPW

Calcium

Matrix Type: NPW/SCM

Aluminum

Antimony

Arsenic

Barium

Beryllium

Boron

Cadmium

Chromium

Cobalt

Copper

Iron

Lead

Magnesium

Manganese

Molybdenum

Nickel

Potassium

Selenium

Silver

Sodium

Thallium

Vanadium

Zinc

Method: 7196A

Matrix Type: NPW/SCM

Chromium VI

Method: 7470A

Matrix Type: NPW

Mercury

Method: 7471B

Matrix Type: NPW/SCM

Mercury

Method: 9012A

Matrix Type: NPW

Cyanide

Method: 9014

Matrix Type: NPW/SCM

Cyanide

Method: 9020B

Matrix Type: NPW/SCM

State of Illinois
Environmental Protection Agency
Awards the Certificate of Approval

Certificate No.: 004352

Teklab, Incorporated
5445 Horseshoe Lake Rd.
Collinsville, IL 62234

FOT Name: Solid and Chemical Materials, Inorganic

Method: 9020B

Matrix Type: NPW/SCM

TOX (Total Organic Halides)

Method: 9023

Matrix Type: NPW/SCM

EOX-Extractable Organic Halides

Method: 9034

Matrix Type: NPW/SCM

Sulfides

Method: 9036

Matrix Type: NPW/SCM

Sulfate

Method: 9040B

Matrix Type: NPW

Hydrogen Ion (pH)

Method: 9045C

Matrix Type: SCM

Hydrogen Ion (pH)

Method: 9050A

Matrix Type: NPW

Specific conductance

Method: 9060A

Matrix Type: NPW/SCM

Total Organic Carbon (TOC)

Method: 9065

Matrix Type: NPW/SCM

Phenolics

Method: 9066

Matrix Type: NPW

Phenolics

Method: 9095A

Matrix Type: NPW

Paint Filter

Method: 9214

Matrix Type: NPW/SCM

Fluoride

State of Illinois
Environmental Protection Agency
Awards the Certificate of Approval

Certificate No.: 004352

Teklab, Incorporated
5445 Horseshoe Lake Rd.
Collinsville, IL 62234

FOT Name: Solid and Chemical Materials, Inorganic

Method: 9251

Matrix Type: NPW

Chloride

FOT Name: Solid and Chemical Materials, Organic

Method: 8015B

Matrix Type: NPW/SCM

1,4-Dioxane

1-Butanol (n-Butyl alcohol)

1-Propanol

2-Methyl-1-propanol (Isobutyl alcohol)

2-Propanol (Isopropyl alcohol)

Diesel range organics (DRO)

Ethanol

Ethylene glycol

Methanol

t-Butyl alcohol

Method: 8081B

Matrix Type: NPW/SCM

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

Method: 8082

Matrix Type: NPW/SCM

PCB-1016

PCB-1221

PCB-1232

PCB-1242

PCB-1248

PCB-1254

PCB-1260

Method: 8151A

Matrix Type: NPW/SCM

2,4,5-T

2,4,5-TP (Silvex)

2,4-D

2,4-DB

State of Illinois
Environmental Protection Agency
Awards the Certificate of Approval

Certificate No.: 004352

Teklab, Incorporated
5445 Horseshoe Lake Rd.
Collinsville, IL 62234

FOT Name: Solid and Chemical Materials, Organic

Method: 8151A

Matrix Type: NPW/SCM

4-Nitrophenol
Bentazon
Dalapon
Dicamba
Dinoseb
MCP
Picloram

3,5-Dichlorobenzoic acid
Acifluorfen
Chloramben
DCPA diacid
Dichloroprop
MCPA
Pentachlorophenol

Method: 8260B

Matrix Type: NPW/SCM

1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
1,1-Dichloroethane
1,1-Dichloropropene
1,2,3-Trichloropropane
1,2,4-Trimethylbenzene
1,2-Dibromoethane (EDB)
1,2-Dichloroethane
1,3,5-Trimethylbenzene
1,3-Dichloropropane
1-Chlorobutane
2-Butanone (Methyl ethyl ketone, MEK)
2-Chloroethyl vinyl ether
2-Hexanone
4-Chlorotoluene
Acetone
Acrolein (Propenal)
Allyl chloride
Bromobenzene
Bromodichloromethane
Bromomethane
Carbon tetrachloride
Chlorodibromomethane (Dibromochloromethane)
Chloroform
Chloroprene

1,1,1-Trichloroethane
1,1,2-Trichloroethane
1,1-Dichloroethene
1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dichlorobenzene
1,2-Dichloropropane
1,3-Dichlorobenzene
1,4-Dichlorobenzene
2,2-Dichloropropane
2-Chloro-1,3-butadiene (Chloroprene)
2-Chlorotoluene
2-Nitropropane
4-Methyl-2-pentanone (Methyl isobutyl ketone, MIBK)
Acetonitrile
Acrylonitrile
Benzene
Bromochloromethane
Bromoform
Carbon disulfide
Chlorobenzene
Chloroethane
Chloromethane
cis-1,2-Dichloroethene

State of Illinois
Environmental Protection Agency
Awards the Certificate of Approval

Certificate No.: 004352

Teklab, Incorporated
5445 Horseshoe Lake Rd.
Collinsville, IL 62234

FOT Name: Solid and Chemical Materials, Organic

Method: 8260B

Matrix Type: NPW/SCM

cis-1,4-Dichloro-2-butene
Dichlorodifluoromethane
Diethyl ether
Ethyl ether
Ethylbenzene
Hexachloroethane
Isopropylbenzene
Methyl acrylate
Methyl iodide (Iodmethane)
Methyl methacrylate
m-Xylene
n-Butylbenzene
n-Propylbenzene
Pentachloroethane
Propionitrile (Ethyl cyanide)
sec-Butylbenzene
t-Butyl alcohol
Tetrachloroethene
Toluene
trans-1,3-Dichloropropene
Trichloroethene
Trichlorotrifluoroethane
Vinyl chloride
Xylenes (Total)

cis-1,3-Dichloropropene
Dibromomethane
Dichloromethane (Methylene chloride)
Ethyl acetate
Ethyl methacrylate
Hexachlorobutadiene
Isopropyl ether
Methacrylonitrile
Methyl ethyl ketone
Methyl isobutyl ketone
Methyl-t-butyl ether
Naphthalene
Nitrobenzene
o-Xylene
p-Isopropyltoluene
p-Xylene
Styrene
tert-Butylbenzene
Tetrahydrofuran
trans-1,2-Dichloroethene
trans-1,4-Dichloro-2-butene
Trichlorofluoromethane
Vinyl acetate
Vinylidene chloride

Method: 8270C

Matrix Type: NPW

1,4-Naphthoquinone
2-Naphthylamine
3-Methylcholanthrene
5-Nitro-o-toluidine
Acetophenone
Diallate
Diphenylamine
Famphur

1-Naphthylamine
3,3'-Dimethylbenzidine
4-Aminobiphenyl
7,12-Dimethylbenz(a)anthracene
Chlorobenzilate
Dimethoate
Ethyl methanesulfonate
Hexachloropropene

State of Illinois
Environmental Protection Agency
Awards the Certificate of Approval

Certificate No.: 004352

Teklab, Incorporated
5445 Horseshoe Lake Rd.
Collinsville, IL 62234

FOT Name: Solid and Chemical Materials, Organic

Method: 8270C

Matrix Type: NPW

Isosafrole
Methyl methanesulfonate
N-Nitrosopiperidine
O,O,O-Triethyl phosphorothioate
p-Dimethylaminoazobenzene
Pronamide

Isodrin
m-Dinitrobenzene
N-Nitrosodi-n-butylamine (N-Nitrosodibutylamine)
N-Nitrosopyrrolidine
Parathion
Pentachloronitrobenzene
Safrole

Matrix Type: NPW/SCM

1,2,4-Trichlorobenzene
1,2-Diphenylhydrazine
1,4-Dichlorobenzene
2,2-Oxybis (1-chloropropane)
2,4,6-Trichlorophenol
2,4-Dimethylphenol
2,4-Dinitrotoluene (2,4-DNT)
2-Chloronaphthalene
2-Methylnaphthalene
2-Nitrophenol
3-Nitroaniline
4-Bromophenyl phenyl ether
4-Chloroaniline
4-Nitroaniline
Acenaphthene
Aniline
Benzidine
Benzo(a)pyrene
Benzo(g,h,i)perylene
Benzoic acid
Bis(2-chloroethoxy) methane
Bis(2-ethylhexyl) phthalate
Carbazole
Dibenz(a,h)anthracene
Diethyl phthalate
Di-n-butyl phthalate
Fluoranthene

1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dioxane
2,4,5-Trichlorophenol
2,4-Dichlorophenol
2,4-Dinitrophenol
2,6-Dinitrotoluene (2,6-DNT)
2-Chlorophenol
2-Nitroaniline
3,3'-Dichlorobenzidine
4,6-Dinitro-2-methylphenol
4-Chloro-3-methylphenol
4-Chlorophenyl phenyl ether
4-Nitrophenol
Acenaphthylene
Anthracene
Benzo(a)anthracene
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Benzyl alcohol
Bis(2-chloroethyl) ether
Butyl benzyl phthalate
Chrysene
Dibenzofuran
Dimethyl phthalate
Di-n-octyl phthalate
Fluorene

State of Illinois
Environmental Protection Agency
Awards the Certificate of Approval

Certificate No.: 004352

Teklab, Incorporated
5445 Horseshoe Lake Rd.
Collinsville, IL 62234

FOT Name: Solid and Chemical Materials, Organic

Method: 8270C

Matrix Type: NPW/SCM

Hexachlorobutadiene
Hexachloroethane
Isophorone
Naphthalene
N-Nitrosodiethylamine
N-Nitrosodi-n-propylamine
N-Nitrosomethylethylamine
o-Toluidine
Pentachlorobenzene
Phenanthrene
Pyrene

Hexachlorobenzene
Hexachlorocyclopentadiene
Indeno(1,2,3-cd) pyrene
m-Cresol (3-Methylphenol)
Nitrobenzene
N-Nitrosodimethylamine
N-Nitrosodiphenylamine
o-Cresol (2-Methylphenol)
p-Cresol (4-Methylphenol)
Pentachlorophenol
Phenol
Pyridine

Method: 8270C Mod_Farm Chemicals

Matrix Type: NPW/SCM

Acetochlor
Atrazine
Cyanazine
Metolachlor
Pendimethalin
Trifluralin

Alachlor
Butylate
EPTC
Metribuzin
Simazine

Accreditation #:
GAI-LAP - 01 - 1995
TEL (610) 522-8440

Geosynthetic Institute
475 Kedron, Ave.
Folsom, PA 19033

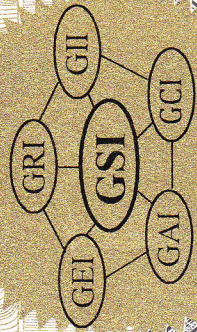


TRI Environmental, Inc.

*is granted accreditation
for designated geosynthetic test methods in accordance with the
Geosynthetic Accreditation Institute - Laboratory Accreditation Program
(GAI-LAP), as published in its annual directory.
This accreditation is valid until June 30, 2019.*

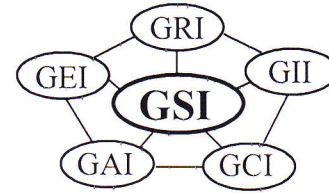
Robert M. Koerner, Ph.D., P.E.
Director Emeritus

George R. Koerner, Ph.D., P.E. & CQA
Auditor



Geosynthetic Institute

475 Kedron Avenue
Folsom, PA 19033-1208 USA
TEL (610) 522-8440
FAX (610) 522-8441



June 14, 2018

Mr. Jarrett Nelson
TRI/ Environmental Inc.
9063 Bee Caves Road
Austin, TX 78733-6201

Re: GAI-LAP Accreditation

Dear Mr. Nelson,

The Geosynthetic Institute (GSI) is pleased to acknowledge TRI/ Environmental Inc. on its repertoire of Geosynthetic Accreditation Institute's-Laboratory Accreditation Program (GAI-LAP) accredited tests. This letter should serve as notification that TRI/Environmental Inc. located in Austin, TX is currently accredited for the following one hundred and sixty-one test methods until June 30, 2019.

1. ASTM D413 Test Methods for Rubber Property-Adhesion to Flexible Substrate
2. ASTM D570 Test Method for Water Absorption of Plastics
3. ASTM D638 Test Method for Tensile Properties of Plastics
4. ASTM D696 Test Method for Coefficient of Linear Thermal Expansion of Plastics
5. ASTM D737 Test Method for Air Permeability of Textiles
6. ASTM D746 Test Method for Brittleness Temperature of Plastics and Elastomers by Impact
7. ASTM D751 Test Methods for Coated Fabrics (thickness), (mass/unit area), (tongue tear), (grab), (hydrostatic resistance) and/or (bonded seam strength)
8. ASTM D790 Test Method for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
9. ASTM D792 Test Method for Specific Gravity (Relative Density) and Density of Plastics by Displacement
10. ASTM D882 Test Methods for Tensile Properties of Thin Plastic Sheeting (strip tensile)
11. ASTM D1004 Test Method for Initial Tear Resistance of Plastic Film and Sheeting
12. ASTM D1203 Test Method for Volatile Loss from Plastics Using Activated Carbon Methods
13. ASTM D1204 Test Method for Linear Dimensional Changes of Nonrigid Thermoplastic Sheeting or Film at Elevated Temperature

14. ASTM D1238 Test Method for Flow Rates of Thermoplastics by Extrusion Plastometer
15. ASTM D1388 Test Method for Stiffness of Fabrics
16. ASTM D1505 Test Method for Density of Plastics by the Density-Gradient Technique
17. ASTM D1593 Specification for Nonrigid Vinyl Chloride Plastic Sheeting (thickness)
18. ASTM D1603 Test Method for Carbon Black in Olefin Plastics
19. ASTM D1621 Test Method for Compressive Properties of Rigid Cellular Plastics
20. ASTM D1693 Test Method for Environmental Stress-Cracking of Ethylene Plastics
21. ASTM D1709 Standard Test Methods for Impact Resistance of Plastic Film by the Free-Falling Dart Method
22. ASTM D1777 Test Method for Measuring Thickness of Textile Materials
23. ASTM D 1790 Brittleness Temperature by Impact (PVC)
24. ASTM D1822 Standard Test Method for Tensile-Impact Energy to Break Plastics and Electrical Insulating Materials
25. ASTM D1922 Standard Test Method for Propagation Tear Resistance of Plastic Film and Thin Sheeting by Pendulum Method
26. ASTM D1987 Test Method for Biological Clogging of Geotextile or Soil Geotextile Filters
27. ASTM D2122 Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings
28. ASTM D2136 Test Method for Coated Fabrics-Low Temperature Bend Test
29. ASTM D2240 Test Method for Measuring Durometer Hardness
30. ASTM D2256 Standard Test Method for Tensile Properties of Yarns by the Single-Strand Method
31. ASTM D2412 Test Method for Determination of the External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading
32. ASTM D2444 Test Method for Determination of the Impact Resistance of Thermoplastic Pipe Fittings by Means of a Tup (Falling Weight)
33. ASTM D3015 Standard Practice for Microscopic Examination of Pigment Dispersion in Plastic Compounds
34. ASTM D3030 Test Method for Volatile Matter (Including Water) of Vinyl Chloride Resins
35. ASTM D3083 Standard Specification for Flexible Poly (Vinyl Chloride) Plastic Sheeting for Pond, Canal, and Reservoir Lining, (soil burial), (water extraction) and/or (bonded seam strength)
36. ASTM D3350 Specification for Polyethylene Plastic Pipe and Fittings Materials
37. ASTM D3776 Test Method for Mass Per Unit Area (Weight) or Woven Fabric
38. ASTM D3786 Test Method for Hydraulic Burst Strength of Knitted Goods and Nonwoven Fabrics (Diaphragm Bursting Strength Tester Method)
39. ASTM D3787 Test Method for Bursting Strength of Textiles-Constant-Rate-of-Traverse (CRT) Ball Burst Test
40. ASTM D3895 Test Methods for Oxidative-Induction Time of Polyolefins by Differential Scanning Calorimetry

41. ASTM D4218 Test Method for Carbon Black Content in Polyethylene Compounds by the Muffle-Furnace Technique
42. ASTM D4355 Test Method for Determination of Geotextiles from Exposure to Ultraviolet Light and Water (Xenon-Arc Type Apparatus)
43. ASTM D4491 Test Methods for Water Permeability of Geotextiles by Permittivity
44. ASTM D4533 Test Method for Index Trapezoidal Tearing Strength of Geotextiles
45. ASTM D4595 Test Method for Tensile Properties of Geotextiles by the Wide-Width Strip Method
46. ASTM D4603 Test Method for Determining Inherent Viscosity of Poly (Ethylene Terephthalate) (PET)
47. ASTM D4632 Test Method for Grab Breaking Load and Elongation of Geotextiles
48. ASTM D4703 Standard Practice for Compression Molding Thermoplastic Materials into Test Specimens, Plaques, or Sheets
49. ASTM D4716 Test Method for Determining the (In-Plane) Flow Rate per Unit Width and Hydraulic Transmissivity of a Geosynthetic Using a Constant Head
50. ASTM D4751 Test Method for Determining Apparent Opening Size of a Geotextile
51. ASTM D4833 Test Method for Index Puncture Resistance of Geotextiles, Geomembranes and Related Products
52. ASTM D4884 Test Method for Seam Strength of Sewn Geotextiles
53. ASTM D4885 Test Method for Determining Performance Tensile Strength of Geomembranes Using Wide Strip Testing
54. ASTM D4886 Test Method for Abrasion Resistance of Geotextiles (Sand Paper/Sliding Block Method)
55. ASTM D5035 Test Method for Breaking Strength and Elongation of Textile Fabrics (Strip Method)
56. ASTM D5101 Test Method for Measuring the Soil-Geotextile System Clogging Potential by the Gradient Ratio
57. ASTM D5199 Test Method for Measuring Nominal Thickness of Geotextiles and Geomembranes
58. ASTM D5261 Test Method for Measuring Mass per Unit Area of Geotextiles
59. ASTM D5262 Test Method for Evaluating the Unconfined Tension Creep Behavior of Geosynthetics
60. ASTM D5321 Test Methods for Determining the Coefficient of Soil and Geosynthetic or Geosynthetic and Geosynthetic Friction by the Direct Shear Method,
61. ASTM D5322 Standard Practice for Immersion Procedures for Evaluating the Chemical Resistance of Geosynthetics to Liquids
62. ASTM D5323 Determination of 2% Secant Modulus for Polyethylene Geomembranes
63. ASTM D5397 Test Method for Evaluation of Stress Crack Resistance of Polyolefin Geomembranes using Notched Constant Tension Load Test
64. ASTM D5493 Test Method for the Permittivity of Geotextiles Under Load
65. ASTM D5494 Test Methods for the Determination of Pyramidal Puncture Resistance of Unprotected and Protected Geomembranes
66. ASTM D5514 Test Method for Large Scale Hydrostatic Puncture Testing of Geosynthetics

67. ASTM D5596 Test Methods for Microscopic Evaluation of the Dispersion of Carbon Black in Polyolefin Geosynthetics
68. ASTM D5617 Test Methods for Multi-Axial Tension Test for Geosynthetics
69. ASTM D5721 Standard Practice for Air-Oven Aging of Polyolefin Geomembranes
70. ASTM D5747 Standard Practice for Tests to Evaluate the Chemical Resistance of Geomembranes to Liquids
71. ASTM D5818 Standard Practice for Obtaining Samples of Geosynthetics from a Test Section for Assessment of Installation Damage
72. ASTM D5884 Test Method for the Tearing Strength of Internally Reinforced Geomembranes
73. ASTM D5885 Standard Test Method for Oxidative Induction Time of Polyolefin Geosynthetics by High-Pressure Differential Scanning Calorimetry
74. ASTM D5887 Standard Test Method for Measurement of Index Flux Through Saturated Geosynthetic Clay Liners Specimens Using a Flexible Wall Permeameter
75. ASTM D5890 Standard Test Method for Swell Index of Clay Mineral Component of Geosynthetic Clay Liners
76. ASTM D5891 Standard Test Method for Fluid Loss of Clay Component of Geosynthetic Clay Liners
77. ASTM D5993 Test Method for Measuring the Mass Per Unit Area of GCL
78. ASTM D5994 Test Method for Measuring the Core Thickness of Textured Geomembranes
79. ASTM D6140 Test Method for Determine of Asphalt Retention of Paving Fabrics Used in Asphalt Paving for Full Width Applications
80. ASTM D6213 Standard Practice for Tests to Evaluate the Chemical Resistance of Geogrids to Liquids
81. ASTM D6214 Test Method for Determining the Integrity of Field Seams Used in Joining Geomembranes by Chemical Fusion Methods
82. ASTM D6241 Test Method for the Static Puncture Strength of Geotextiles and Geotextile Related Products Using a 50-mm Probe
83. ASTM D6243 Test Method for Determine the Internal and Interface Shear Resistance of Geosynthetic Clay Liners by the Direct Shear Method
84. ASTM D6364 Test Method for Determining the Short-Term Compression Behavior of Geosynthetics
85. ASTM D6389 Standard Practice for Tests to Evaluate the Chemical Resistance of Geotextiles to Liquids
86. ASTM D6392 Standard Test Method for Determining the Integrity of Nonreinforced Geomembrane Seams Produced Using Thermo-Fusion Methods
87. ASTM D6454 Standard Test Method for Determining the Short-Term Compression Behavior of Turf Reinforcement Mats (TRMs)
88. ASTM D6475 Test Method for Measuring Mass Per Unit Area of Erosion Control Blankets
89. ASTM D6496 Test Method for Determining the Average Bonding Peel Strength Between Top and Bottom Layers of Needle-Punched Geosynthetic Clay Liners
90. ASTM D6524 Test Method for Measuring Resiliency of Turf Reinforcement Mats (TRMs)

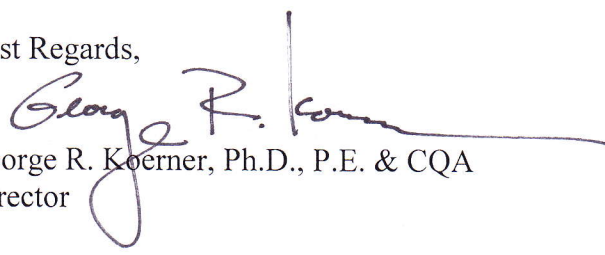
91. ASTM D6525 Test Method for Measuring Nominal Thickness of Permanent Erosion Control Products
92. ASTM D6566 Test Method for Measuring Mass per Unit Area of Turf Reinforcement Mats (TRMs)
93. ASTM D6567 Test Method for Measuring Light Penetration of Turf Reinforcement Mat (TRM)
94. ASTM D6574 Test Method for Determining the In-plane Hydraulic Transmissivity of a Geosynthetic by Radial Flow
95. ASTM D6575 Test Method for Determining Stiffness of Geosynthetics used as Turf Reinforcement Mats
96. ASTM D6636 Test Method for Determination of Ply Adhesion Strength of Reinforced Geomembranes
97. ASTM D6637 Test Method for Determining Tensile Properties of Geogrids by the Single or Multi-Rib Tensile Method
98. ASTM D6638 Test Method for Determining Connection Strength Between Geosynthetic Reinforcement and Segmental Concrete Units (Modular Concrete Blocks)
99. ASTM D6693 Test Method for Determining Tensile Properties of Nonreinforced Polyethylene and Nonreinforced Flexible Polypropylene Geomembranes
100. ASTM D6706 Test Method for Determining Pull-Out Resistance of Geosynthetics
101. ASTM D6766 Test Method for Evaluation of Hydraulic Properties of Geosynthetic Clay Liners Permeated with Potentially Incompatible Liquids
102. ASTM D6767 Test Method for Pore Size Characteristics of Geotextiles by Capillary Flow Test
103. ASTM D6768 Test Method for Tensile Strength of Geosynthetic Clay Liners
104. ASTM D6818 Test Method for Ultimate Tensile Properties of Turf Reinforcement Mats
105. ASTM D 6916 Geogrid Pull-out from Segmental Concrete walls.
106. ASTM D6918 Standard Test Method for Testing Vertical Strip Drains in the Crimped Condition
107. ASTM D6992 Test Method for Time-Temperature Superposition Using Stepped Isothermal Method
108. ASTM D7003 Test Method for Strip Tensile Properties of Reinforced Geomembranes
109. ASTM D7004 Test Method for Grab Tensile Properties of Reinforced Geomembranes
110. ASTM D7005 Test Method for Determining the Bond Strength (Ply Adhesion) of Geocomposites
111. ASTM D7056 Test Method for Determining the Tensile Shear Strength of Prefabricated Bituminous Geomembrane Seams
112. ASTM D7101 Test Method for RECP slope
113. ASTM D7179 Test Method for Determining Geonet Breaking Force
114. ASTM D7207 Test Method for RECP shear
115. ASTM D7238 Standard Test Method for Effect of Exposure of Unreinforced Polyolefin Geomembrane Using Fluorescent UV Condensation Apparatus

116. ASTM D7272 Test Method for Determining the Integrity of Seams Used in Joining Geomembranes by Pre-manufactured Taped Methods
117. ASTM D7275 Test Method for Tensile Properties of Bituminous Geomembranes (BGM)
118. ASTM D7322 Test Method for RECP germination
119. ASTM D7361 Test Method for Compressive SIM
120. ASTM D7406 Test Method for Time-Dependent (Creep) Deformation Under Constant Pressure for Geosynthetic Drainage Products
121. ASTM D7409 Test Method for CEG of PET
122. ASTM D 7447 RGM-Seams Strip Method
123. ASTM D 7448 Flexural Rigidity of Geogrid
124. ASTM D 7449 RGM-Seams - Grab Method
125. ASTM D7466 Test Method for Asperity Height
126. ASTM D 7737 Junction Strength Geogrid
127. ASTM E96 Test Method for Water Vapor Transmission of Materials
128. ASTM F904 Test Method for Comparison of Bond Strength or Ply Adhesion of Similar Laminates Made from Flexible Materials
129. ASTM F1249 Standard Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Infrared Sensor
130. ASTM F1473 Test Method for Notched Tensile Test to Measure the Resistance to Slow Crack Growth of Polyethylene Pipes and Resins
131. ASTM F2136 Test Method for Notched, Constant-Ligament-Stress (NCLS) Test to Determine Slow Crack-Growth Resistance of HDPE Resins and HDPE Corrugated Pipe
132. FTM STD. No. 101c(method 2065-82), Puncture Resistance and Elongation Test (1/8 in. radius probe)
133. GRI GG-1 Geogrid Rib Tensile Strength
134. GRI GG-2 Geogrid Junction Strength
135. GRI GG-7 Carboxyl End Group Content of PET Yarns
136. GRI GG-8 Determination of the Number Average Molecular Weight of PET Yarns Based on Relative Viscosity Value
137. GRI GM-11 Accelerated Weathering of Geomembranes Using a Fluorescent UVA Device
138. GRI GS-7 Determining the Index Friction Properties of Geosynthetics
139. ISO 527 Plastics – Determination of Tensile properties – Part 3: Test conditions for films and sheets
140. ISO 9863 Thickness
141. ISO 9864 Geotextiles - Determination of mass per unit area
142. ISO 10319 Geotextiles - Wide width tensile test
143. ISO 10321 Wide Width Seams
144. ISO 10722 Geotextiles and geotextiles - related products – Procedure for simulating damage during installation Part 1: Installation in granular materials
145. ISO 11058 Geotextiles and geotextile-related products -- Determination of water permeability characteristics normal to the plane, without load
146. ISO 12225 Geotextiles and geotextiles - related products – Screening test method for determining the resistance to microbiological degradation

147. ISO 12236 Geotextiles and geotextiles - related products – Static puncture test (CBR test)
148. ISO 12447 Geotextiles and geotextiles - related products – Screening test method for determining the resistance to hydrolysis
149. ISO 12956 Geotextiles and geotextiles - related products – Determination of the characteristic opening size
150. ISO 12957 Geosynthetics – Determination of friction characteristics Part 1: Direct shear test, Part 2: Inclined plane test
151. ISO 12958 Geotextiles and geotextiles - related products – Determination of water flow capacity in their plane
152. ISO 12960 Geotextiles and geotextiles - related products – Screening test method for determining the resistance to liquids
153. ISO 13426 Geotextiles and geotextiles - related products – Strength of internal structural junctions – Part 1: Geocells Part 2: Geocomposites
154. ISO 13431 Geotextiles and geotextiles – related products - Determination of the tensile creep and creep rupture behavior
155. ISO 13433 Geosynthetics -- Dynamic perforation test (cone drop test)
156. ISO 13438 Geotextiles and geotextiles - related products – Screening test method for determining the resistance to oxidation
157. ISO 13934 Textiles -- Tensile properties of fabrics -- Part 1: Determination of maximum force and elongation at maximum force using the strip -- Part 2: Determination of maximum force using the grab method
158. EN 12224 Geotextiles and geotextile-related products –. Determination of the resistance to weathering.
159. EN 14030 Geotextiles and geotextiles-related products – Screening test method for determining the resistance to liquids
160. Germany: Federal Waterway Engineering and Research Institute (BAW) RPG - - Guidelines for Testing Geotextiles for Navigable Waterways: Section 3.11 Abrasion resistance
161. CAN/CGSB-148.1-10 Filtration Opening Size of Geotextiles by Hydrodynamic Sieving

Any questions regarding your accreditation should be directed to George or Robert Koerner at (610) 522-8440. Once again congratulation and thank you for participating in the GAI-LAP.

Best Regards,


George R. Koerner, Ph.D., P.E. & CQA
Director



CERTIFICATE OF ACCREDITATION



Geotechnology, Inc.

in

St. Louis, Missouri, USA

has demonstrated proficiency for the testing of construction materials and has conformed to the requirements established in AASHTO R 18 and the AASHTO Accreditation policies established by the AASHTO Committee on Materials and Pavements.

The scope of accreditation can be viewed on the Directory of AASHTO Accredited Laboratories (aashtoresource.org).


Bud Wright,
AASHTO Executive Director


Moe Jamshidi,
AASHTO COMP Chair

This certificate was generated on 12/20/2018 at 12:02 PM Eastern Time. Please confirm the current accreditation status of this laboratory at aashtoresource.org/aap/accreditation-directory



SCOPE OF AASHTO ACCREDITATION FOR:

Geotechnology, Inc.
in St. Louis, Missouri, USA

Quality Management System

Standard:

Accredited Since:

R18	Establishing and Implementing a Quality System for Construction Materials Testing Laboratories	03/15/1996
C1077 (Aggregate)	Laboratories Testing Concrete and Concrete Aggregates	01/10/2011
C1077 (Concrete)	Laboratories Testing Concrete and Concrete Aggregates	06/12/2017
D3666 (Aggregate)	Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials	01/10/2011
D3666 (Asphalt Mixture)	Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials	01/10/2011
D3740 (Soil)	Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction	01/10/2011
E329 (Aggregate)	Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction	02/21/2012
E329 (Asphalt Mixture)	Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction	01/10/2011
E329 (Concrete)	Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction	06/12/2017
E329 (Soil)	Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction	01/10/2011



SCOPE OF AASHTO ACCREDITATION FOR:

Geotechnology, Inc.
in St. Louis, Missouri, USA

Asphalt Mixture

Standard:

Accredited Since:

R47	Reducing Samples of Hot-Mix Asphalt to Testing Size	05/01/1997
R68	Preparation of Asphalt Mixtures by Means of the Marshall Apparatus	09/30/2016
T30	Mechanical Analysis of Extracted Aggregate	05/01/1997
T166	Bulk Specific Gravity of Compacted Hot Mix Asphalt Using Saturated Surface-Dry Specimens	05/01/1997
T209	Maximum Specific Gravity of Hot Mix Asphalt Paving Mixtures	08/22/2016
T245	Resistance to Plastic Flow of Asphalt Mixtures Using Marshall Apparatus	09/30/2016
T269	Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures	05/01/1997
T308	Determining the Asphalt Content of Hot Mix Asphalt (HMA) by the Ignition Method	05/01/1997
D2041	Maximum Specific Gravity of Hot Mix Asphalt Paving Mixtures	08/22/2016
D2726	Bulk Specific Gravity of Compacted Hot Mix Asphalt Using Saturated Surface-Dry Specimens	05/01/1997
D2950	Density of Bituminous Concrete In Place by Nuclear Methods	03/12/2014
D3203	Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures	05/01/1997
D5444	Mechanical Analysis of Extracted Aggregate	05/01/1997
D6307	Determining the Asphalt Content of Hot Mix Asphalt (HMA) by the Ignition Method	05/01/1997
D6926	Preparation of Asphalt Mixtures by Means of the Marshall Apparatus	09/30/2016
D6927	Resistance to Plastic Flow of Asphalt Mixtures Using Marshall Apparatus	09/30/2016



SCOPE OF AASHTO ACCREDITATION FOR:

Geotechnology, Inc.
in St. Louis, Missouri, USA

Soil

Standard:

Accredited Since:

R58	Dry Preparation of Disturbed Soil and Soil Aggregate Samples for Test	08/22/2016
T88	Particle Size Analysis of Soils by Hydrometer	10/15/2001
T89	Determining the Liquid Limit of Soils (Atterberg Limits)	10/15/2001
T90	Plastic Limit of Soils (Atterberg Limits)	10/15/2001
T99	The Moisture-Density Relations of Soils Using a 5.5 lb [2.5 kg] Rammer and a 12 in. [305 mm] Drop	10/15/2001
T100	Specific Gravity of Soils	10/15/2001
T180	Moisture-Density Relations of Soils Using a 10 lb [4.54 kg] Rammer and an 18 in. [457 mm] Drop	10/15/2001
T191	Density of Soil In-Place by the Sand Cone Method	10/15/2001
T193	The California Bearing Ratio	10/15/2001
T208	Unconfined Compressive Strength of Cohesive Soil	10/15/2001
T216	One-Dimensional Consolidation Properties of Soils Using Incremental Loading	10/15/2001
T265	Laboratory Determination of Moisture Content of Soils	10/15/2001
T288	Minimum Soil Resistivity	08/22/2016
T289	pH of Soils for Corrosion Testing	03/12/2014
T296	Unconsolidated, Undrained Compressive Strength of Cohesive Soils in Triaxial Compression	10/15/2001
T297	Consolidated-Undrained Triaxial Compression Test on Cohesive Soils	02/21/2012
T310	In-Place Density and Moisture Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)	10/15/2001
D421	Dry Preparation of Disturbed Soil and Soil Aggregate Samples for Test	08/22/2016
D422	Particle Size Analysis of Soils by Hydrometer	10/15/2001
D698	The Moisture-Density Relations of Soils Using a 5.5 lb [2.5 kg] Rammer and a 12 in. [305 mm] Drop	10/15/2001
D854	Specific Gravity of Soils	10/15/2001
D1140	Amount of Material in Soils Finer than the No. 200 (75- μ m) Sieve	10/15/2001
D1556	Density of Soil In-Place by the Sand Cone Method	10/15/2001



SCOPE OF AASHTO ACCREDITATION FOR:

Geotechnology, Inc.
in St. Louis, Missouri, USA

Soil (Continued)

Standard:

Accredited Since:

D1557 Moisture-Density Relations of Soils Using a 10 lb [4.54 kg] Rammer and an 18 in. [457 mm] Drop	10/15/2001
D1883 The California Bearing Ratio	10/15/2001
D2166 Unconfined Compressive Strength of Cohesive Soil	10/15/2001
D2216 Laboratory Determination of Moisture Content of Soils	10/15/2001
D2435 One-Dimensional Consolidation Properties of Soils Using Incremental Loading	10/15/2001
D2487 Classification of Soils for Engineering Purposes (Unified Soil Classification System)	10/15/2001
D2488 Description and Identification of Soils (Visual-Manual Procedure)	10/15/2001
D2850 Unconsolidated, Undrained Compressive Strength of Cohesive Soils in Triaxial Compression	10/15/2001
D2937 Density of Soil in Place by the Drive-Cylinder Method	09/30/2016
D4318 Determining the Liquid Limit of Soils (Atterberg Limits)	10/15/2001
D4318 Plastic Limit of Soils (Atterberg Limits)	10/15/2001
D4546 One-Dimensional Swell or Settlement Potential of Cohesive Soils	10/15/2001
D4767 Consolidated-Undrained Triaxial Compression Test on Cohesive Soils	02/21/2012
D4972 pH Testing of Soils	02/21/2012
D5084 Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter	10/15/2001
D6913 Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis	03/12/2014
D6938 In-Place Density and Moisture Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)	10/15/2001



SCOPE OF AASHTO ACCREDITATION FOR:

Geotechnology, Inc.
in St. Louis, Missouri, USA

Rock

Standard:

Accredited Since:

D5731 Point Load Strength Index of Rock

03/12/2014

D7012 Compressive Strength of Rock Core Specimens (Method C)

02/21/2012



SCOPE OF AASHTO ACCREDITATION FOR:

Geotechnology, Inc.
in St. Louis, Missouri, USA

Aggregate

Standard:

Accredited Since:

R76	Reducing Samples of Aggregate to Testing Size	10/15/2001
R90	Sampling Aggregate	03/12/2014
T11	Materials Finer Than 75- μ m (No. 200) Sieve in Mineral Aggregates by Washing	10/15/2001
T19	Bulk Density ("Unit Weight") and Voids in Aggregate	03/12/2014
T21	Organic Impurities in Fine Aggregates for Concrete	10/15/2001
T27	Sieve Analysis of Fine and Coarse Aggregates	10/15/2001
T84	Specific Gravity (Relative Density) and Absorption of Fine Aggregate	10/15/2001
T85	Specific Gravity and Absorption of Coarse Aggregate	10/15/2001
T96	Resistance to Abrasion of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine	10/15/2001
T112	Clay Lumps and Friable Particles in Aggregate	10/15/2001
T113	Lightweight Pieces in Aggregate	03/12/2014
T176	Plastic Fines in Graded Aggregates and Soils by Use of the Sand Equivalent Test	10/15/2001
T255	Total Moisture Content of Aggregate by Drying	10/15/2001
T304	Uncompacted Void Content of Fine Aggregate (Influenced by Shape, Texture, and Grading)	03/12/2014
T335	Determining the Percentage of Fractured Particles in Coarse Aggregate	03/12/2014
C29	Bulk Density ("Unit Weight") and Voids in Aggregate	03/12/2014
C40	Organic Impurities in Fine Aggregates for Concrete	10/15/2001
C117	Materials Finer Than 75- μ m (No. 200) Sieve in Mineral Aggregates by Washing	10/15/2001
C123	Lightweight Pieces in Aggregate	03/12/2014
C127	Specific Gravity and Absorption of Coarse Aggregate	10/15/2001
C128	Specific Gravity (Relative Density) and Absorption of Fine Aggregate	10/15/2001
C131	Resistance to Abrasion of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine	10/15/2001
C136	Sieve Analysis of Fine and Coarse Aggregates	10/15/2001



SCOPE OF AASHTO ACCREDITATION FOR:
Geotechnology, Inc.
in St. Louis, Missouri, USA

Aggregate (Continued)

Standard:

Accredited Since:

C142 Clay Lumps and Friable Particles in Aggregate	10/15/2001
C535 Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine	10/15/2001
C566 Total Moisture Content of Aggregate by Drying	10/15/2001
C702 Reducing Samples of Aggregate to Testing Size	10/15/2001
C1252 Uncompacted Void Content of Fine Aggregate (Influenced by Shape, Texture, and Grading)	03/12/2014
D75 Sampling Aggregate	03/12/2014
D2419 Plastic Fines in Graded Aggregates and Soils by Use of the Sand Equivalent Test	10/15/2001
D4791 Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate	03/12/2014
D5821 Determining the Percentage of Fractured Particles in Coarse Aggregate	03/12/2014



SCOPE OF AASHTO ACCREDITATION FOR:

Geotechnology, Inc.
in St. Louis, Missouri, USA

Concrete

Standard:

Accredited Since:

M201	Moist Cabinets, Moist Rooms, and Water Storage Tanks Used in the testing of Hydraulic Cements and Concretes	02/10/2015
R39	Making and Curing Concrete Test Specimens in the Laboratory	02/10/2015
R60	Sampling Freshly Mixed Concrete	02/10/2015
T22	Compressive Strength of Cylindrical Concrete Specimens	02/10/2015
T23	Making and Curing Concrete Test Specimens in the Field	02/10/2015
T97	Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)	02/10/2015
T119	Slump of Hydraulic Cement Concrete	02/10/2015
T121	Density (Unit Weight), Yield, and Air Content of Concrete	02/10/2015
T152	Air Content of Freshly Mixed Concrete by the Pressure Method	02/13/2015
T196	Air Content of Freshly Mixed Concrete by the Volumetric Method	02/10/2015
T231 (7000 psi and below)	Capping Cylindrical Concrete Specimens	02/10/2015
T309	Temperature of Freshly Mixed Portland Cement Concrete	02/10/2015
T325	Estimating Concrete Strength by the Maturity Method	02/10/2015
C31	Making and Curing Concrete Test Specimens in the Field	03/15/1996
C39	Compressive Strength of Cylindrical Concrete Specimens	03/15/1996
C78	Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)	03/15/1996
C138	Density (Unit Weight), Yield, and Air Content of Concrete	03/15/1996
C143	Slump of Hydraulic Cement Concrete	03/15/1996
C172	Sampling Freshly Mixed Concrete	03/15/1996
C173	Air Content of Freshly Mixed Concrete by the Volumetric Method	03/15/1996
C192	Making and Curing Concrete Test Specimens in the Laboratory	03/15/1996
C231	Air Content of Freshly Mixed Concrete by the Pressure Method	02/13/2015
C511	Moist Cabinets, Moist Rooms, and Water Storage Tanks Used in the testing of Hydraulic Cements and Concretes	10/29/2012



SCOPE OF AASHTO ACCREDITATION FOR:
Geotechnology, Inc.
in St. Louis, Missouri, USA

Concrete (Continued)

Standard:

Accredited Since:

C617 (7000 psi and below)	Capping Cylindrical Concrete Specimens	02/10/2015
C1064	Temperature of Freshly Mixed Portland Cement Concrete	03/15/1996
C1074	Estimating Concrete Strength by the Maturity Method	03/15/1996
C1218	Water-Soluble Chloride in Mortar and Concrete	03/15/1996
C1231 (7000 psi and below)	Use of Unbonded Caps in Determination of Compressive Strength of Hardened Concrete Cylinders	10/29/2012