Quality Assurance/Quality Control Plan
Coal Ash Placement Areas
BBSS Site
Gambrills, Maryland

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Introduction

This Quality Assurance/Quality Control (QA/QC) Plan is established to provide procedures for identifying, preventing, correcting, and documenting site conditions at the coal ash placement areas that could adversely affect safety or environmental protection. This plan includes the following:

- General description of practices for safety and maintenance of environmental protection
- Description of inspection and documentation procedures
- Log sheets for required periodic inspections of active, inactive, and closed ash placement areas

Safety and Environmental Protection Practices

Safety - The site is operated under Maryland Surface Mining permits 77-SP-0096 (Waugh Chapel Pit) and 94-SP-0468 (Turner Pit). Specific procedures related to safety and training for work at the site are specified by the Mine Safety and Health Administration (MSHA) per CFR 30.

Environmental Protection - Environmental protection design and procedures for the coal ash fill areas are specified in the Pollution Prevention Plan for the site, part of the Surface Mining Permit. The 10/11/07 Pollution Prevention Plan describes monitoring and reporting requirements, inspection and maintenance of the coal ash fill, and construction of future coal ash fill areas if any. It includes in appendices a Site Plan with monitoring well locations, a Remedial Response Contingency Plan, and the former Pollution Prevention Plan documenting ash placement requirements for areas filled prior to October 11, 2007, for reference.

In addition to the specific design and operation requirements in the Pollution Prevention Plan, site operations shall be performed so as to minimize potential for water infiltration into the ash fill. This includes but is not limited to:

- Grading to minimize ponding of surface water on top of or adjacent to either the exposed (active) or capped ash fill;
- Establishment and maintenance of berms and drainage swales to minimize stormwater flow to the ash fill, to control stormwater drainage from the ash fill, and to minimize potential for erosion or washout;
- Establishment and maintenance of sediment control ponds and permanent stormwater management ponds;
- Maintaining stable side slopes of the fill;
- Maintaining the integrity of the cover system, including the clay cap, topsoil cover and surface vegetation;

- Arranging for periodic mowing during the growing season of the vegetated cover of the fill, to facilitate inspection of the cover and prevent deep root penetration of the clay cap;
- Repairing in a timely manner any areas of washed out or eroded stormwater controls, including erosion of clay lining of ponds or drainage swales; eroded clay liner at areas of eroded or unvegetated cover; and any ponding of water on top of or adjacent to the ash fill.

As specified in the Pollution Prevention Plan, if a site inspection reveals the need for repair of the cap and/or cover soils the following requirements apply:

- A cover with permeability less than or equal to 10^{-7} cm/sec shall be placed over the completed ash fill area. If the cover material is soil, it shall be at least 18 inches thick on the top surface of the fill in Waugh Chapel Pit and at least 12 inches thick on top of Turner Pit. A minimum 6 inches of like cover will be placed on all side slopes. The permeability shall be confirmed by a laboratory test on the material compacted to at least 95 percent of maximum dry density based on ASTM D698 (Standard Proctor).
- Topsoil shall be placed over the low permeability cover material. The topsoil shall be at least 12 inches thick and shall be stabilized with vegetation.
- A drainage system shall be installed to divert storm water away from the fill area.
- Alternative capping systems designed to provide equal or greater protection may be used as approved by the Maryland Department of the Environment.

Also as specified in the Pollution Prevention Plan, in the event that site work associated with completion of grading or repair involves exposure of ash, the following requirements apply:

- The area of exposed coal ash shall be kept to a reasonable minimum area workable by the equipment. No more than 5 acres of ash shall be exposed at any time. All fill areas shall be capped within 30 days of reaching reclamation grade or of completing the site work.
- Dust control shall be provided by the cap and cover soil. If ash becomes exposed during maintenance or site grading, a water truck shall be available to add water on site as needed for fugitive dust control.

Inspections

Periodic inspections shall be performed to identify and document site conditions potentially affecting safety or environmental protection. The inspections shall include visual observation and recording of the condition of the cap/cover soils, side slopes, diversion ditches, sediment/remediation ponds, etc., as applicable. Corrective actions needed shall be addressed in a timely manner and documented on the inspection form. General inspection procedures are described in the attached "Inspection Procedures" page.

Inspections shall be performed at the following frequencies, at minimum:

- Active site areas: Daily, performed by Constellation representative or designated contractor.
- Inactive site areas:
    - Weekly, performed by Constellation representative or designated contractor.

    - Monthly, performed by independent third party.
- Closed site areas: Monthly, performed by Constellation representative or designated contractor.

For purposes of determining inspection frequencies, an "active" site area is one where ash fill placement or site disturbance related to the ash fill construction has occurred within the last 30 days. An "inactive" site area is one where ash fill placement or placement or site disturbance related to the ash fill construction has not occurred within the last 30 days. A "closed" site area is one where ash fill placement or site disturbance related to the ash fill construction has not occurred within the last 30 days, final closure has occurred including placement of permanent cover and stormwater controls, and where no further ash placement is planned.

Disturbance of the cap, cover soils, and ash fill to accommodate future site development shall be governed by deed restrictions to be submitted to MDE for approval and any other protocol that may be developed to specifically govern construction or site development practices. The inspection procedures in this QA/QC Plan will not apply during development related disturbance of the ash fill, unless specifically referenced by those deed restrictions and/or construction protocols.

Log sheets for documenting each type of periodic inspections are attached to this QA/QC Plan. A copy of this QA/QC Plan and the log books of the inspection sheets shall be maintained on site while the site remains active. Upon closure of the site, the QA/QC Plan and the log books of the inspection sheets shall be maintained by Constellation or its designated contractor for a minimum of 5 years after site closure, or a different period of time if specified by the Maryland Department of the Environment before the end of the 5-year period.

Inspection Procedures

Active Coal Ash Fill Areas

Site administrator will maintain a list of trained individuals to perform inspections. Site administrator or trained personnel will at least one time a day and after any significant rain event of approximately 1" or more per hour at an active beneficial fill site:

1. Inspect work area for any hazardous work conditions.
2. Inspect sediment ponds, treatment ponds, and discharge ponds.
3. Inspect berms and diversion ditches, and note any areas of ponding or potential ponding on top of or adjacent to the ash fill.
4. Estimate the amount of open area of the active placement and limit to five (5) acres.
5. Inspect equipment.
6. Walk perimeter to assure proper slope stability.
7. Log inspection in daily log book and make arrangements on a daily basis for logging inspection if not available to do so.
8. Make arrangements to correct any deficiencies as soon as reasonably possible. Log corrective actions on inspection records.

In addition, the site administrator will arrange for a third party inspection of active site areas on a monthly basis, and coordinate the third party inspection with the supervisor and general supervisor or assistant general supervisor.

Inactive Ash Fill Areas

In inactive site areas (areas where ash fill placement or site disturbance related to the ash fill construction has not occurred within the last 30 days), the site administrator or trained personnel will follow the above procedures on a weekly basis unless a significant rain event of approximately 1" or more per hour occurs; in such case he will be required to perform the inspection as soon as reasonably possible following/during the event.

In addition, the weekly inspection of inactive areas will include:

- Inspection of site stabilization measures, including temporary or permanent vegetative stabilization of inactive areas.
- Inspection of the cover of completed portions of ash fill to confirm maintenance of topsoil and vegetation, and absence of erosion/cracking/animal burrows or other locations of potential water infiltration into the ash. If cover has been repaired, confirm thickness of each layer of the repaired portion, and attach to the log sheets the laboratory data sheets documenting clay permeability.

- Assessment of the exterior condition of the monitoring well casings for vandalism or other damage.

In addition, for inactive fill areas the site administrator will arrange for a third party inspection on a monthly basis, and coordinate the third party inspection with the supervisor and general supervisor or assistant general supervisor.

Closed Ash Fill Areas

In closed site areas (areas where ash fill placement or site disturbance related to the ash fill construction has not occurred within the last 30 days, final closure has occurred including placement of permanent cover and stormwater controls, and where no further ash placement is planned), the site administrator or trained personnel will inspect the site on a monthly basis. The inspection procedures will be the same as those listed above for weekly inspections of inactive sites, plus inspection of site stabilization and closure measures, including the permanent vegetative cover. If a significant rain event of approximately 1" or more per hour occurs, the inspection shall be performed as soon as reasonably possible following/during the event.

Site Inspection Logs

- Active ash fill site area: daily inspection log
- Inactive ash fill site area: weekly inspection log
- Inactive ash fill site area: monthly inspection log, by third party
- Closed ash fill site area: monthly inspection log

Daily Site Inspection

Active Placement Area

Date: _____ **Time:** _____ AM / PM

Active placement area: ___Turner Pit ___Waugh Chapel Pit

1. Top/Temp. cap condition: _____

   _____

   Corrective actions taken: _____

   _____

   Location: _____

2. Side Slope condition: _____

   _____

   Corrective actions taken: _____

   _____

   Location: _____

   _____

3. Diversion ditches condition: _____

   _____

3cont'd Corrective actions taken: _____