Compliance with the Closure Performance Standards Required by Coal Combustion Residuals (CCR) Rule
Plant Hammond CCR Surface Impoundment Ash Pond (AP-3)

This Report supplements the closure permit application submitted to the Georgia Environmental Protection Division (GAEPD) to further demonstrate that the closure in place method selected for Plant Hammond Ash Pond 3 (AP-3) complies with the closure performance standards of the federal and state CCR rules.

I. Introduction to the regulated unit, closure method, and conceptual site model

A. Regulated Unit and Site Location

Plant Hammond (Plant) is a former four-unit, coal-fired electric generating facility owned and operated by Georgia Power Company (GPC). The Plant is located along the Coosa River, approximately 10 miles west of Rome, Floyd County, Georgia. AP-3 was commissioned in 1977, and historically received CCR from generating activities. Per State CCR Rule 391-3-4.10(2)(a), which incorporates the definitions under the Federal CCR Rule (40 C.F.R. § 257.53), AP-3 meets the definition of an inactive CCR surface impoundment because it ceased receiving CCR before October 19, 2015 and still contained both CCR and liquids after October 19, 2015. GPC submitted a permit application for the closure of AP-3 to the Georgia Environmental Protection Division on November 20, 2018.

AP-3 was constructed in 1974 and sluicing and placement began in June 1977. In the early 1980s, AP-3 was converted into a dry CCR stacking area, and AP-3 ceased receiving CCR material in the early 1990s. AP-3 is closed and covered with a geomembrane cap system. Following the closure of AP-3 and installation of the geomembrane cap system, Georgia Power submitted a Construction Certification Report on December 13, 2018 to document the closure activities.

B. Summary of Closure Method

GPC completed placement of the final cover system for the AP-3 closure-in-place in the second quarter of 2018 in accordance with State CCR Rule 391-3-4.10(7)(b), which incorporates the requirements of the Federal CCR Rule 40 C.F.R. § 257.102(d). Closure of AP-3 included grading the CCR within the unit to promote positive post-closure stormwater drainage and installing a geomembrane cover system. The Initial Written Closure Plan on the CCR Website[1], the Closure Plan included in the Permit Application, and the Closure Certification Report submitted to Georgia EPD on December 13, 2018, provide more detail on the closure method.

As outlined in the Closure Plan in the Permit Application, to construct the final cover, the CCR was graded within the footprint of the impoundment to create a subgrade for the final cover system. The final cover for AP-3 consists of (from bottom to top) a High Density Polyethylene liner, geocomposite drainage media, protective soil cover and a vegetative layer.

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[1] https://www.georgiapower.com/content/dam/georgia-power/pdfs/company-pdfs/plant-hammond/20180417_clospln_ham_ap3.pdf

In addition to the closure and capping of AP-3 with the final cover system, Georgia Power Company has chosen to use *TreeWell®* technology downgradient of the closed unit as an advanced engineering methods (AEM). This is described in greater detail in Section III.

C. Conceptual Site Model

As presented in the *Hydrogeologic Assessment Report Revision 1* (HAR Rev. 01), the Conceptual Site Model identifies that AP-3 is underlain primarily by five lithologic units; (i) fill material, (ii) terrace alluvium, (iii) residuum, (iv) highly weathered/fractured limestone bedrock, and (v) unweathered limestone bedrock. The uppermost aquifer at AP-3 is an unconfined aquifer that occurs in the residuum and within the highly weathered and fractured bedrock. The aquifer is recharged from precipitation and from release of stored water in the lower permeability residuum to the underlying units. Groundwater flow in the uppermost aquifer occurs primarily in the highly weathered limestone and in the solution-enhanced joints in the competent bedrock.

Solution openings observed in borings, through drilling and borehole geophysical investigation, likely formed by dissolution of limestone along the bedding planes and joints. The openings are mostly filled with mud and, based on collective review of Site boring logs, are not laterally continuous. Due to the discrete and discontinuous nature of these solution features, linear preferential flow pathways for groundwater are not expected, but rather flow is along the highly weathered bedrock unit atop the underlying competent bedrock. Groundwater flow direction is controlled primarily by the regional groundwater flow regime and generally flows from west to east.

II. CCR Rule Performance Standards

With the in-place closure approach selected for AP-3, the CCR Rule closure performance standards for leaving CCR in place [40 C.F.R. § 257.102(d)] apply. This section of the CCR Rule outlines the minimum technical, drainage, stabilization, and final cover system requirements that the owner, Georgia Power, must ensure. The CCR Rule requires a description of how the final cover system is designed in accordance with and will achieve the performance standards [40 C.F.R. § 257.102(b)(iii)]. The following subsections describe how the closure design meets the closure requirements when leaving CCR in place.

A. Post-closure infiltration of liquids performance standard [40 C.F.R. § 257.102(d)(1)(i)].

Per 40 C.F.R. § 257.102(d)(1)(i), AP-3 has been closed in a manner that will control, minimize or eliminate, to the maximum extent feasible, post-closure infiltration of liquids into the CCR and releases of CCR, leachate, or contaminated run-off to the ground or surface waters or to the atmosphere. In the preamble to the CCR Rule, EPA states that the infiltration performance standard requires owners and operators to ensure the integrity of the final cover in selecting the final design, including accounting for any conditions that may cause the cover system not to perform as designed [80 Fed. Reg. at 21,413].

Post-closure infiltration

The final cover system is required to control, minimize or eliminate, to the maximum extent feasible, post-closure infiltration of liquids into the waste. Infiltration is defined by the United States Geologic Survey[2] as the "flow of water from the land surface into the subsurface" or by Weight and Sonderegger (2000)[3] as "the process of precipitation waters migrating into the soil horizon". Additionally, Freeze and Cherry[4] (1979) have defined infiltration as "*the entry into soil of water made available at ground surface, together with the associated flow away from the ground surface within the unsaturated zone*." EPA also says that infiltration is how "water applied to the soil surface through rainfall and irrigation events subsequently enters the soil" and that "this term can be used in the estimation of water available for downward percolation...".[5]

Based on these and other technical definitions of infiltration, to meet the performance standard, the engineered final cover system must control, minimize, or eliminate, to the maximum extent feasible, the vertical migration of water from the surface of the consolidated closure area into the underlying CCR. This performance standard does not address lateral movement of water in the subsurface because that lateral movement is not considered infiltration. Lateral migration of groundwater is discussed in Section III.

The final cover system was constructed to control, minimize, and virtually eliminate, post-closure infiltration of liquids into the CCR and potential releases of CCR from the unit. The final cover for the 25-acre unit consists of (from bottom to top) a 60 mil High Density Polyethylene (HDPE) liner, geocomposite drainage media (GDM), a minimum 18-inch protective soil cover, and a 6-inch vegetative layer to maintain vegetation. This final cover configuration meets the required 18 inches of earthen material and a 6-inch vegetative layer [40 C.F.R. § 257.102(d)(3)(i)(B) and 40 C.F.R. § 257.102(d)(3)(i)(C)]. The Engineering Report included in Part B of the Permit Application discusses the design of the final cover system to satisfy the requirements of 40 C.F.R. § 257.102(d)(3). Additionally, the Construction Certification Report submitted to the Georgia EPD on December 13, 2018, documents that the construction and materials testing meet the performance criteria outlined in the project specifications and Construction Quality Assurance Plan.

Closure plans for AP-3 include engineered surface grading plans that were prepared using AutoCAD. The engineered final cover system was graded in a manner to convey precipitation off the closed unit through a series of stormwater conveyance features. To manage the resulting stormwater, the final cover system was designed to shed surface water to a series of riprap lined drainage ditches. The riprap drainage ditches convey stormwater to three outfall locations around AP-3. The closed-in-place condition of AP-3 was designed to accommodate the 25-year, 24-hour storm event. Storm basin calculation data were determined from the existing topography and from the Urban Hydrology for Small Watersheds Manual (TR-55). Drainage basins contributing flow to discharges in the project area were modeled using Hydraflow Hydrograph software. The perimeter ditches, diversion swales on the cap, and discharge ditches were designed using the rational method's peak flow rates. Completed stormwater

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[2] https://www.usgs.gov/special-topic/water-science-school/science/dictionary-water-terms?qt-science_center_objects=0#qt-science_center_objects
[3] Weight, W.D. and Sonderegger, J.L., Manual of Applied Field Hydrogeology, 2000
[4] Freeze and Cherry, Groundwater 1979
[5] https://www.epa.gov/water-research/infiltration-models

calculations for the closed-in-place configuration of AP-3 are presented in the Engineering Report within the Permit Application. The constructed stormwater management system conveys stormwater away from AP-3 thereby supporting the control, minimization, elimination, to the maximum extent feasible, of infiltration into the closed unit.

GPC is considering a solar installation at AP-3. The Engineering Report in the Permit Application includes calculations completed assessing the effects of the solar installation on the global stability, veneer stability, settlement, and stormwater. These calculations concluded that the current as-built condition of AP-3 would satisfy the design standards for the solar installation without additional modifications. The *Solar Panel Layout Plan* drawing in the Permit Application depicts the potential solar installation at AP-3.

Post-closure releases of CCR, leachate, or contaminated run-off

The basis for evaluating compliance with the performance standard 40 C.F.R. § 257.102(d)(1)(i) is the degree to which the closure design controls, minimizes, or eliminates, to the maximum extent feasible, releases of CCR, leachate, or contaminated run-off to the ground, surface waters, and the atmosphere. As described above, closure of AP-3 included grading the CCR within the unit to promote positive stormwater drainage and a geomembrane cover system. With the final cover system in place, there is not a pathway for the potential release of CCR to surface water, the ground or atmosphere, and the cover was designed in accordance with 40 C.F.R. § 257.102(d)(3) as discussed herein. Further information on the final cover system can be found in the Permit Application.

As highlighted above and presented in more detail in the GA EPD permit application, the AP-3 closure design includes measures necessary to meet the post-closure infiltration and releases performance standard, as required by 40 C.F.R. § 257.102(d)(1)(i).

B. Future impoundment of water, sediment, or slurry [40 C.F.R. § 257.102(d)(1)(ii)]

The final cover system must be designed to "preclude the probability of future impoundment of water, sediment, or slurry." See 40 C.F.R. § 257.102(b)(iii); (d)(1)(ii). Technical and regulatory references show that the term, "impoundment" means the surface accumulation of water, sediment, or slurry. For example, the CCR Rule defines an "impoundment" as "a facility or part of a facility that is a natural topographic depression, human-made excavation, or diked area formed primarily of earthen materials (although it may be lined with human-made materials), that is designed to hold an accumulation of liquid wastes or wastes containing free liquids and that is not an injection well. Examples of surface impoundments are holding, storage, settling, and aeration pits, ponds, and lagoons." (40 C.F.R. § 257.2).

The impoundment performance standard is based on existing Mine Safety and Health Administration (MSHA) regulations for closures of impoundments under MSHA jurisdiction. Specifically, MSHA regulation 30 C.F.R. § 77.216-5 uses the same language as the impoundment performance standard, requiring closure plans to "preclude the probability of future impoundment of water, sediment, or slurry." According to MSHA, precluding surface accumulations through capping satisfies this standard because, as stated in MSHA's Coal Mine Impoundment Inspection and Plan Review Handbook (October 2007), meeting this standard is "typically done by breaching and/or capping," which eliminate surface accumulations. EPA also indicates that the impoundment performance standard is met by precluding future surface accumulations through final cover system grades that promote surface water runoff [80 Fed. Reg. at 21,411].

The final cover system will preclude the probability of impoundment of water, sediment, and slurry because its engineering and construction will prevent the surface accumulation of water, sediment, and slurry as discussed below.

The final closure configuration and cover system has been designed to minimize erosion and prevent the impoundment of surface water. Final cover grades show a typical 3 percent grade while steeper perimeter grades will be protected immediately upgradient by stormwater diversion berms that will provide for greater control against erosion. The constructed slopes convey precipitation off the closed unit. The stormwater conveyance system also includes three riprap lined outfalls and a surge pond to protect against surface water runoff erosion. In the same manner that these design features address infiltration, they also preclude the probability of future impoundment of water, slurry, or sediment. The Construction Certification Report submitted to the Georgia EPD on December 13, 2018, documents that the final grades meet the performance criteria outlined above, and the stormwater calculations in the Permit Application contains additional design details.

In addition, settlement calculations for the closed configuration of AP-3 were performed. The findings state that expected differential settlement over a length of 350 feet results in a change in slope of 0.15%, which would not prevent positive drainage of the cap system. Thus, even accounting for possible settlement, the cover system precludes the probability of future impoundment of water, slurry, or sediment. The settlement calculations are presented in the Engineering Report in the Permit Application.

In sum, the final cover system configuration prevents surface accumulation of water, sediment, and slurry through grading and stormwater controls (i.e., swales and ditches) that carry water away from the closed unit and to locations outside the footprint of AP-3.

C. Slope stability of final cover system [40 C.F.R. § 257.102(d)(1)(iii)]

Closure of AP-3 included measures that provide for major slope stability to prevent the sloughing or movement of the final cover system during the closure and post-closure care period.
Global and veneer slope stability analyses were completed for the constructed closed configuration of AP-3 as outlined in the Engineering Report in the Permit Application. The global static and seismic stability analyses were performed in GeoStudio's SLOPE/W 2018 software. The analyzed slopes meet or exceed the defined criteria outlined in 40 C.F.R. § 257.73(e) for long-term (drained), pseudo-static, and post-earthquake stability, indicating slope stability for the analyzed conditions. For additional information, refer to the Engineering Report in the Permit Application.

As stated above, settlement calculations of the closed configuration of AP-3 were performed. The findings state that expected differential settlement over a length of 350 feet results in a change in slope of 0.15%. This minimal amount of settlement is unlikely to result in movement of the final cover system. In addition, the post-earthquake slope stability analyses considered the potential for soil liquefaction. Based on calculations and engineering judgement, the perimeter dikes, foundation soils, stacked CCR, and cover soils were judged to not liquefy under the analyzed load (i.e. design earthquake) conditions. Similarly, the liquefaction potential of the sluiced CCR within the AP-3 footprint was modeled to fall within target safety factors. For additional information, refer to the Engineering Report in the Permit Application.

The closure drawings in the Permit Application show a minimum 3 percent grade on the AP-3 final cover system. This slope is industry-accepted as a typical slope for cover soils, and as confirmed in the veneer stability analyses, the slope meets or exceeds the target factors of safety. The Construction Certification Report submitted to the Georgia EPD on December 13, 2018, documents that the final grades meet the performance criteria outlined above.

As highlighted above and presented in more detail in the GA EPD permit application, the AP-3 closure design includes measures that provide for major slope stability to prevent the sloughing or movement of the final cover system during the closure and post-closure care periods, as required by 40 C.F.R. § 257.102(d)(1)(iii).

D. Minimizes the need for further maintenance [40 C.F.R. § 257.102(d)(1)(iv)]

Per 40 C.F.R. § 257.102(d)(1)(iii), “the owner must ensure that, at a minimum, the CCR unit is closed in a manner that will minimize the need for further maintenance of the CCR unit.” The maintenance performance standard [40 C.F.R. §257.102(b)(iii), d(1)(iv)] is met because the final cover system has been designed to need minimal maintenance after placement. The 30-year post-closure care period provides sufficient time to ensure that the final cover system is properly maintained [80 Fed. Reg. at 21,426].

The final closure configuration and cover system has been designed to minimize erosion. Final cover grades show a typical 3 percent grade while steeper perimeter grades will be protected immediately upgradient by stormwater diversion berms that will provide for greater control against erosion. The stormwater conveyance system also includes three riprap lined outfalls and a surge pond to protect against surface water runoff erosion, thereby minimizing the need for further maintenance. The Construction Certification Report submitted to the Georgia EPD on December 13, 2018, documents that the final grades meet the performance criteria outlined above.

As discussed previously, the final closed configuration of AP-3 has been designed and constructed to prevent ponding of stormwater and the slopes are stable under static and seismic conditions. Therefore, maintenance is essentially minimized to regular vegetative management (e.g. mowing). In addition, the final cover system will be regularly inspected and maintained during the post-closure period. See the Post-Closure Plan included in the Permit Application for additional information.

E. Completed in the shortest amount of time consistent with recognized and generally accepted good engineering practices [40 C.F.R. § 257.102(d)(1)(v)]

As stated in the Construction Certification Report for AP-3, closure of AP-3 and final cover installation commenced on August 8, 2016 and was substantially completed on March 19, 2018. (Brantley 2018.) The Construction Certification Report documenting the closure activities, Construction Quality Control testing results and closure procedures was submitted to the Georgia EPD on December 13, 2018.

F. Stability for the final cover system [40 C.F.R. § 257.102(d)(2)]

40 C.F.R. § 257.102(d)(2) describes drainage and stabilization work that must be performed, as applicable, prior to placement of the final cover system. This work is required for the purpose of ensuring that the final cover system subgrade will provide sufficient support for the cover system. Specifically, the performance standard calls for the elimination of free liquids by removing liquid waste or solidifying the remaining wastes and waste residues, and stabilizing the remaining wastes to a

sufficient degree to support the final cover system. Consistent with standard good engineering practices, the performance standard requires the removal of standing water and additional liquids as needed to accomplish a stable in place closure, considering other stabilization work that may be performed, if necessary.

Removal of free liquids

Free liquids are defined as “liquids that readily separate from the solid portion of waste under ambient temperature and pressure.” In the CCR Rule, the requirement to eliminate free liquids by removing liquid wastes is focused on eliminating ponded water. Removal of ponded water facilitates the proper installation of the final cover system. EPA has also identified other benefits of removing ponded water. Specifically, the EPA has stated: “[d]uring operations, free liquids that are ponded in the impoundment create a strong hydraulic head that acts to increase infiltration through the base of the impoundment. The removal of free liquids and capping during closure reduces the hydraulic head…” [see EPA, Human and Ecological Risk Assessment of Coal Combustion Residuals, Appendix K at K-1 (Dec. 2014)]. Unlike ponded water, groundwater, for example, is not considered free liquid as it is defined separately from free liquids as “water below the land surface in a zone of saturation” [40 C.F.R. § 257.53].

Because AP-3 was converted to a dry stacking operation in the early 1980s and operated as such until the early 1990s when the unit ceased receiving CCRs, AP-3 did not contain standing water and minimal liquid removal was required to prepare the subgrade for final cover system construction. Rather, stormwater diversion was the only liquid management technique needed to enable grading and subgrade preparation.

Stabilization sufficient to support final cover

Prior to installation of the cover system, the sub grade was stabilized sufficiently to support the final cover system. Performance standards and a field testing program were implemented to determine acceptable sub-grade stability. Prior to placement of the AP-3 final cap, the CCR was tested against compaction and moisture content standards. As discussed in the Construction Certification Report for Plant Hammond Ash Pond 3, a total of 321 density tests were performed on the CCR, and all density tests met the required compaction criteria established. Additionally, areas requiring fill were proof rolled prior to structural earth or CCR placement. The results of this field testing are included in the Construction Certification Report for Plant Hammond Ash Pond 3. Please see preceding sections for further discussion of the stability of the existing post-closure conditions.

As highlighted above and presented in more detail in the GA EPD permit application, the AP-3 closure design meets the CCR Rule requirement [40 C.F.R. § 257.102(d)(2)] for drainage and stabilization of AP-3 prior to installation of the final cover system.

G. Final cover system [40 C.F.R. § 257.102(d)(3)]

The final cover system meets the requirements of 40 C.F.R. § 257.102(d)(3)(i). Per (d)(3)(i)(A), the final cover system permeability must be less than the lower of $1x10^{-5}$ cm/s or the permeability of the material underlying the unit. Per the *Hydrogeological Assessment Report* (HAR), the underlying Residuum (foundation soil) has a geometric mean vertical permeability of 2.9×10^{-7} cm/s.[6] The controlling

[6] Geosyntec, *Hydrogeological Assessment Report*, November 2020.

geomembrane component of the cap system has a manufacturer specified permeability of 2 x 10^{-13} cm/s, in satisfaction of this permeability limitation.

As required by 40 C.F.R. §257.102(d)(3)(i)(B) and (C), 18-inches of earthen material as an infiltration layer and 6-inches of vegetative cover soil are provided to minimize erosion. The Closure Drawings for AP-3 reflect the required 18 inches of earthen material utilized as a protective cover, as well as the required 6 inches of earthen material used as a vegetative cover layer. The Construction Certification Report for AP-3 describes the methodology used to verify the thickness of these layers and confirms that these minimum required depths were achieved or exceeded. Borrow source testing requirements are described in the CQA Plan and the results are presented in the Construction Certification Report. The Closure Plan describes the vegetation schedule including application rates and planting dates for various seed mixtures and soil amendments implemented to establish and maintain vegetative growth for erosion control.

As required by 40 C.F.R. § 257.102(d)(3)(i)(D) the disruption of the integrity of the final cover system was minimized through design that accommodates settling and subsidence. The Construction Certification Report describes the conformance for placement and compaction of the final cover system with the requirements in the CQA Plan. The Engineering Report contains a Settlement Analysis that presents material properties, analysis methodologies, design criteria, and settlement analyses. The analysis concluded that an estimated maximum total settlement is approximately 6.5 inches. This differential settlement over a length of 350 feet results in a change in slope of 0.15%, which would not prevent positive drainage of the cap system. This simplified differential settlement case would result in a minimal change in liner length, <0.01% strain, which is less than the allowable maximum strain established in the design criteria.

Differential settlement due to erosion of soils into karst features is also not expected. The mechanisms for the formation of solution openings are described in Section 4.1 of the HAR Rev 01, and the engineering measures implemented as part of the closure of AP-3 have mitigated these factors. The conversion to dry-handling of CCR at AP-3 in 1982 greatly reduced the downward hydraulic forces within the pond that previously resulted from wet-sluicing. Since the conversion to dry handling, there have been no observed cases of solution openings loss of water or material, or issues related to the foundation or dikes. The installation of the low-permeability cover system further reduces the potential for adverse effects related to the foundation soils and karst features by eliminating infiltration to the maximum extent feasible. Thus, the final cover system accommodates potential subsidence and modeled settlement of foundation soils, as required by 40 C.F.R. § 257.102(d)(3)(i)(D).

III. Advanced Engineering Method

In addition to the closure of AP-3 by capping with the final cover system, the post-closure condition of AP-3 will benefit from the closure by removal of Hammond Ash Pond 1 (AP-1), as well as the AEM that Georgia Power has elected to implement at AP-3. The AEM will be a system consisting of a field of *TreeWells®* located to the east (downgradient) of AP-3. The *TreeWell®* system utilizes a specialized lined planting unit constructed with optimum planting media designed to promote downward root growth and focus groundwater extraction from a targeted depth interval. This type of system mirrors a conventional vertical mechanical extraction system using the trees as pumps, reducing the hydraulic head in the target area.

A three-dimensional (3D), steady-state groundwater numerical model was constructed to simulate hydrogeologic conditions at AP-3. Once calibrated, the groundwater model was used to evaluate the predictive scenario for pre-closure conditions (i.e., calibration run). Documentation and details related to the construction of the groundwater model are included in the Groundwater Model Calculation Package. Then the numerical groundwater flow modeling was used to simulate the future conditions of groundwater near AP-3 under the following conditions: (i) AP-3 closed, (ii) AP-3 closed and the removal of the historically present pool and CCR from AP-1, and (iii) the combination of those measures with an AEM. The predictive scenarios and results are discussed in the Groundwater Model Calculation Package Addendum.

Subject to future refinement of the model, if necessary, results of the simulations indicate that the completed closure in place of AP-3, the closure of AP-1, and the implementation of the *TreeWell®* system selected as an AEM for AP-3 will eliminate the majority of groundwater flow through the unit. Therefore, while controlling or minimizing lateral migration is not a performance standard requirement because lateral migration is, by definition, not infiltration, lateral migration will be controlled and minimized at AP-3 to the maximum extent feasible.

Closing

As required by 40 C.F.R. § 257.102(d)(3)(iii), a Georgia-registered professional engineer has certified that the design of the final cover system meets the requirements of 257.102. The Initial Written Closure Plan on the CCR Website includes this certification. In addition, the certification is reaffirmed as provided by the engineer stamps on this report. Sections I and II are certified by Stantec and Section III is certified by Geosyntec.

"I certify that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person who manages the system and those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I do hereby certify that the requirements of the United States Environmental Protection Agency Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundment (40 C.F.R. Subpart D) and Georgia Environmental Protection Division Solid Waste Rule for Management of Coal Combustion Residuals (391-3-4-.10) have been met."

ATTEST:

Stantec Consulting Services Inc.

Engineering Firm

Matthew C. Vaughan

Name of Professional Engineer

Matthew C. Vaughan Digitally signed by Matthew C. Vaughan Date: 2020.12.04 09:51:29-05'00'

Signature

Date

"I certify that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person who manages the system and those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I do hereby certify that the requirements of the United States Environmental Protection Agency Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundment (40 C.F.R. Subpart D) and Georgia Environmental Protection Division Solid Waste Rule for Management of Coal Combustion Residuals (391-3-4-.10) have been met."

ATTEST:

Geosyntec Consultants, Inc.

Engineering Firm

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Name of Professional Engineer

Signature

12/04/2020

Date