Texas Commission on Environmental Quality

Waste Permits Division Correspondence Cover Sheet

Date: 11/7/2024
Facility Name: Coleto Creek Power Station
Permit or Registration No.: CCR116

Nature of Correspondence:
☐ Initial/New
☒ Response/Revision to TCEQ Tracking No.: _____ (from subject line of TCEQ letter regarding initial submission)

Affix this cover sheet to the front of your submission to the Waste Permits Division. Check appropriate box for type of correspondence. Contact WPD at (512) 239-2335 if you have questions regarding this form.

Table 1 - Municipal Solid Waste Correspondence

Applications	Reports and Notifications
☐ New Notice of Intent	☐ Alternative Daily Cover Report
☐ Notice of Intent Revision	☐ Closure Report
☐ New Permit (including Subchapter T)	☐ Compost Report
☐ New Registration (including Subchapter T)	☐ Groundwater Alternate Source Demonstration
☐ Major Amendment	☐ Groundwater Corrective Action
☐ Minor Amendment	☐ Groundwater Monitoring Report
☐ Limited Scope Major Amendment	☐ Groundwater Background Evaluation
☐ Notice Modification	☐ Landfill Gas Corrective Action
☐ Non-Notice Modification	☐ Landfill Gas Monitoring
☐ Transfer/Name Change Modification	☐ Liner Evaluation Report
☐ Temporary Authorization	☐ Soil Boring Plan
☐ Voluntary Revocation	☐ Special Waste Request
☐ Subchapter T Disturbance Non-Enclosed Structure	☐ Other:
☐ Other:	

Table 2 - Industrial & Hazardous Waste Correspondence

Applications	Reports and Responses
☐ New	☐ Annual/Biennial Site Activity Report
☐ Renewal	☐ CPT Plan/Result
☐ Post-Closure Order	☐ Closure Certification/Report
☐ Major Amendment	☐ Construction Certification/Report
☐ Minor Amendment	☐ CPT Plan/Result
☒ CCR Registration	☐ Extension Request
☐ CCR Registration Major Amendment	☐ Groundwater Monitoring Report
☐ CCR Registration Minor Amendment	☐ Interim Status Change
☐ Class 3 Modification	☐ Interim Status Closure Plan
☐ Class 2 Modification	☐ Soil Core Monitoring Report
☐ Class 1 ED Modification	☐ Treatability Study
☐ Class 1 Modification	☐ Trial Burn Plan/Result
☐ Endorsement	☐ Unsaturated Zone Monitoring Report
☐ Temporary Authorization	☐ Waste Minimization Report
☐ Voluntary Revocation	☐ Other:
☐ 335.6 Notification	
☐ Other:	

Luminant

Renee Collins
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6555 Sierra Drive.
Irving, TX 75039

T 214.875.8383
C 214.406.2452
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Delivered electronically via IHWPER@tceq.texas.gov

November 7, 2024

Mr. Srinath Venkat, P.E.
Texas Commission on Environmental Quality
Industrial and Hazardous Waste Permits Section - MC-130
12100 Park 35 Circle
Austin, TX 78753

RE: CCR116 New Registration Application-Revision 4
Coleto Creek Power, LLC – Fannin, Goliad County
Industrial Solid Waste Registration No. 31911
EPA Identification No. TXD000836999
RN100226919/CN605521988

Dear Mr. Venkat:

Please find requested hardcopies of the revisions requested via email on November 4, 2024, for Coleto Creek Power, LLC

If you have any questions or require any additional information, please contact Eric Chavers at 903-389-6062 or by e-mail at eric.chavers@luminant.com.

Sincerely,

Renee Collins

Attachments: CCR116 Registration Application-Revision 5 (w/updated signature sheet)
Appendix E Table of Contents
Supplemental Geologic and Hydrogeologic Information Report No. 3

cc with attachments:

Daniella Ortiz de Montellano (daniela.ortiz-demontellano@tceq.texas.gov)
Umair Hassan (umair.hassan@tceq.texas.gov)

Texas Commission on Environmental Quality

Registration Application for Coal Combustion Residuals (CCR) Waste Management

I. General Information

1. Reason for Submittal

Type of Registration Application

☐ New ☐ Major Amendment ☐ Minor Amendment

☒ Notice of Deficiency (NOD) Response ☐ Transfer ☐ Name Change

☐ Other

2. Application Fees

☒ $150 Application Fee

Payment Method

☐ Check ☒ Online through ePay portal <www3.tceq.texas.gov/epay/>

If paid online, enter ePay Trace Number: 582EA000467502

3. Facility Information

Facility information must match regulated entity information on the Core Data Form.

Applicant: ☐ Owner ☐ Operator ☒ Owner/Operator

Facility TCEQ Solid Waste Registration No: 31911

Facility EPA ID: TXD000836999

Regulated Entity Reference No. (if issued): RN100226919

Facility Name: COLETO CREEK POWER STATION

Facility (Area Code) Telephone Number: 361-788-5100

Facility physical street address (city, state, zip code, county): 45 FM 2987, FANNIN, TX, 77960, GOLIAD

Facility mailing address (city, state, zip code, county): 6555 Sierra Drive, Irving, TX 75039

Latitude (Degrees, Minutes Seconds): 28° 43’ 52”

Longitude (Degrees, Minutes Seconds): 97° 12’ 55”

4. Publicly Accessible Website

Provide the URL address of a publicly accessible website where the owner or operator of a CCR unit will post information.
https://www.luminant.com/ccr/

5. Facility Landowner(s) Information

Facility landowner(s) name: COLETO CREEK POWER, LLC

Facility landowner mailing address: 6555 Sierra Drive

City: Irving State: TX Zip Code: 75039

(Area Code) Telephone Number: 214-875-8338

Email Address (optional):

6. CCR Waste Management Unit(s)

☐ Landfill Unit(s) ☒ Surface Impoundment(s)

For each existing landfill, new landfill and lateral expansion, existing surface impoundment, and new surface impoundment and lateral expansion(s) provide information on type of waste, the registered unit(s) in which they are managed, and sampling and analytical methods.

Submit the following tables:

Table I.6. – CCR Waste Management Units;

Table I.6.A. – Waste Management Information;

Table I.6.B. – Waste Managed in Registered Units; and

Table I.6.C. – Sampling and Analytical Methods.

7. Description of Proposed Activities or Changes to Existing Facility

Provide a brief description of the proposed activities if application is for a new facility, or the proposed changes to an existing facility or registration conditions, if the application is for an amendment.

Coleto Creek Power, LLC operates the Coleto Creek Power Station located at 45 FM 2987 near the city of Fannin in Goliad County, Texas. The boiler uses coal as the primary fuel and fuel oil as a backup fuel to generate electricity. There are two streams of coal combustion residuals (CCR) generated at this plant. Bottom ash is collected from the boiler, combined with water, and transferred in slurry form for disposal in the facility's surface impoundment, referred to as Primary Ash Pond (PAP). Fly ash is collected from the boiler exhaust and transported pneumatically to two storage silos. From there, the fly ash is loaded into enclosed dry haul hoppers for off-site beneficial use. Off-spec fly ash is disposed in the PAP. Limited amounts of bottom ash in the surface impoundment are recovered for beneficial reuse via excavation, screening, and placement in covered dump trucks for transport off site.

8. Primary Contact Information

Contact Name: Renee Collins Title: Sr. Director Environmental Services

Contact mailing address: 6555 Sierra Drive
City: Irving County: Dallas State: TX Zip Code: 75039
(Area Code) Telephone Number: 214-875-8338

Email Address (optional):

9. Notice Publishing

Party responsible for publishing notice:
☒ Applicant ☐ Consultant ☐ Agent in Service

Contact Name: Renee Collins Title: Sr. Director, Environmental Services

Contact mailing address: 6555 Sierra Drive
City: Irving County: Dallas State: TX Zip Code: 75039
(Area Code) Telephone Number: 214-875-8338

10. Alternative Language Notice

Is an alternative language notice required for this application? For determination, refer to Alternative Language Checklist on the Public Notice Verification Form (TCEQ-20244-Waste-NORI).

☐ Yes ☒ No

11. Public Place Location of Application

Name of the Public Place: **Goliad Public Library**
Physical Address: **320 S. Commercial St**
City: **Goliad** County: **Goliad** State: **TX** Zip Code: **77963**
(Area code) Telephone Number: **361-645-2291**

12. Ownership Status of the Facility

☐ Corporation ☐ Limited Partnership
☐ Sole Proprietorship ☐ General Partnership ☒ Other (specify): Limited Liability Company

Does the Site Owner (Permittee/Registrant) own all the CCR units and all the facility property?

☒ Yes ☐ No

13. Property / Legal Description Information

Provide a legal description and supporting documents of the property where the management of CCR waste will occur; including a survey plat and a boundary metes and bounds description (30 TAC §352.231(g)).

Submit the following documents:

a. Property Legal Description
b. Property Metes and Bounds Description
c. Metes and Bounds Drawings
d. On-Site Easements Drawings

See APPENDIX A for Property/Legal Description Information and Property Owner Affidavit.

14. Operator Information

Identify the entity who will conduct facility operations, if the owner and operator are not the same.

Operator Name:

Operator mailing address:

City: State: Zip Code:

(Area Code) Telephone Number:

Email Address (optional):

15. Confidential Documents

Does the application contain confidential documents?

☐ Yes ☒ No

If "Yes", cross-reference the confidential documents throughout the application and submit as a separate attachment in a binder clearly marked "CONFIDENTIAL."

16. Permits and Construction Approvals

Permit or Approval	Received	Pending	Not Applicable
Hazardous Waste Management Program under the Texas Solid Waste Disposal Act	☒	☐	☐
Underground Injection Control Program under the Texas Injection Well Act	☐	☐	☒
National Pollutant Discharge Elimination System Program under the Clean Water Act and Waste Discharge Program under Texas Water Code, Chapter 26	☒	☐	☐
Prevention of Significant Deterioration Program under the Federal Clean Air Act (FCAA).	☒	☐	☐
National Emission Standards for Hazardous Air Pollutants Preconstruction Approval under the FCAA	☐	☐	☒
Other (describe):	☐	☐	☐

Other (describe):	☐	☐	☐
Other (describe)	☐	☐	☐

17. Legal Authority

The owner and operator of the facility shall submit verification of their legal status with the application. This shall be a one-page certificate of incorporation issued by the secretary of state. The owner or operator shall list all persons having over a 20% ownership in the facility.

See APPENDIX A for Certificate of Authority.

18. TCEQ Core Data Form

The TCEQ requires that a Core Data Form (TCEQ-10400) be submitted on all incoming applications, unless a Regulated Entity and Customer Reference Number has been issued by the TCEQ and no core data information has changed. For more information regarding the Core Data Form, call (512) 239-5175 or visit the TCEQ Website.

See APPENDIX A for TCEQ Core Data Form.

19. Other Governmental Entities Information

Coastal Management Program

Is the facility within the Coastal Management Program boundary?

☐ Yes ☒ No

Local Government Jurisdiction (If Applicable)
Within City Limits of: N/A
Within Extraterritorial Jurisdiction of: N/A

Is the facility located in an area in which the governing body of the municipality or county has prohibited the storage, processing or disposal of municipal or industrial solid waste?

☐ Yes ☒ No If "Yes", provide a copy of the ordinance or order as an attachment.

20. Attachments

Does the application include the following?

General Maps	☒ Yes	☐ No
General Topographic Map	☒ Yes	☐ No
Facility Layout Map	☒ Yes	☐ No
Surrounding Features Map	☒ Yes	☐ No
Process Flow Diagram	☒ Yes	☐ No
Land Ownership Map	☒ Yes	☐ No
Land Ownership List	☒ Yes	☐ No
Pre-printed Mailing Labels	☒ Yes	☐ No

Maps and drawings shall be legible and easily readable by eye without magnification. Scales and paper size shall be chosen based on the type of map submitted, the land area covered, and the amount of detail to be shown. See instructions for details regarding maps and drawings to be submitted in application.

See APPENDIX A for Attachments detailed in Item 20.

21. Verification of Compliance

Does the owner and operator verify that the design, construction, and operation of CCR landfill(s) and surface impoundment(s) meets the requirements of 30 TAC §352.231(f) (30 TAC §352.2; 40 CFR §257.52, and 40 CFR §§257.3-1 – 257.3-3).

☒ Yes ☐ No

As requested by TCEQ, please see "Compliance Assessment for Coleto Creek Power Station Primary Ash Pond – 40 CFR 257.52(b)" memorandum for Primary Ash Pond provided by BBA in APPENDIX A.

II. Location Restrictions and Geology

See Instructions and Technical Guidance

22. Location Restrictions

Submit certifications and technical reports demonstrating compliance of CCR unit(s) with applicable location restrictions (30 TAC 352, Subchapter E) and comply with 30 TAC §352.231(d) and 30 TAC §352.4 for submission of engineering and geoscientific information.

A. **Placement above the uppermost aquifer** (30 TAC §352.601) (40 CFR §257.60). For those CCR units whose base is less than five feet above the upper limit of the uppermost aquifer, please submit a copy of the demonstration showing evidence of compliance with 40 CFR §257.60(a) – (c).

B. **Wetlands** (30 TAC §352.611) (40 CFR §257.61). For CCR units located in wetlands, please submit a copy of the demonstration showing evidence of compliance with 40 CFR §257.61(a) – (c).

C. **Fault areas** (30 TAC §352.621) (40 CFR §257.62). For CCR units located within 200 feet of the outermost damage zone of a fault, please submit a copy of the demonstration showing evidence of compliance with 40 CFR §257.62(a) – (c).

D. **Seismic impact zones** (30 TAC §352.631) (40 CFR §257.63). For CCR units located in a seismic impact zone, please submit a copy of the demonstration showing evidence of compliance with 40 CFR §257.63(a) – (c).

E. **Unstable areas** (30 TAC §352.641) (40 CFR §257.64). For CCR units located in unstable areas, please submit a copy of the demonstration showing evidence of compliance with 40 CFR §257.64(a) – (d).

Location Restrictions Demonstration and Location Restrictions Assessment for the Primary Ash Pond located in APPENDIX B.

23. Geology Summary Report

Submit a summary of the geologic conditions at the facility, including the relation of the geologic condition to each CCR unit. The summary must include enough information and data and include sources and references for the information. Include all groundwater monitoring data required by 40 CFR Part 257, Subpart D, (30 TAC §352.241, §352.601, §352.621, §352.631, and §352.641) and submitted in accordance of 30 TAC §352.4.

Note: Previously prepared documents may be submitted but must be supplemented or updated as necessary to provide the requested information (30 TAC §352.241(b)).

For Geology Summary, please refer to "Groundwater Hydrogeologic Monitoring Plan" reports for the Primary Ash Pond located in APPENDIX E. The Geology and Hydrogeology summary is located in Section 2 of the report.

All groundwater monitoring data summarized in "2020 Annual Groundwater Monitoring and Corrective Action Report" for the Primary Ash Pond located in APPENDIX E

III. Fugitive Dust Control Plan

24. Fugitive Dust Control Plan

A. **Submit a copy of the CCR Fugitive Dust Control Plan** (30 TAC §352.801) (40 CFR §257.80(b)), or the most recently amended plan. The initial plan or subsequent amended plan must be certified by a qualified Texas licensed professional engineer (Texas P.E.) that the plan meets the requirements of 30 TAC Chapter 352.

B. **Submit the most recent Annual CCR Fugitive Dust Control Report** (30 TAC §352.801) (40 CFR §257.80(c)) and include the report information.

CCR Fugitive Dust Control Plan and 2021 Annual CCR Fugitive Dust Control Report are located in APPENDIX C.

IV. Landfill Criteria – N/A

See Instructions and Technical Guidance – No. 30 Coal Combustion Residuals Landfill

25. Landfill(s) for CCR Waste

Provide the following information below if there is a landfill; if there is more than one landfill, separate information is required for each landfill.

A. Landfill Characteristics

Describe the design, installation, construction, and operation of the landfill and submit a completed Table IV.A. – Landfill Characteristics.

B. Liner Design

1. For existing landfills, provide attachments describing how the facility will comply with 30 TAC 352, Subchapter F (Design Criteria).

2. For new landfills or lateral expansions of existing landfills, submit pages describing how the facility will comply with 30 TAC §352.261 and 30 TAC §352.701.
3. Complete Table IV.B. - Landfill Liner System and specify the type of liner used for the landfill.
4. Provide attachments describing the design, installation, and operation of the liner and leak detection system. The description must demonstrate that the liner and leak detection system will prevent discharge to the land, groundwater, and surface water. Submit a quality assurance project plan (QAPP) to ensure that each analysis is performed appropriately.

C. Leachate Collection and Removal

Submit design information and description of leachate collection and removal system in accordance with 30 TAC §352.701.

Complete Table IV.C. - Landfill Leachate Collection System

D. Design of Liner and Leachate Collection and Removal System.

For a new landfill or lateral expansion of a CCR landfill, provide a qualified Texas P.E. certification and technical report that the design of the liner and the leachate collection and removal system meets the requirements of 30 TAC §352.711.

E. Run-on and Run-off Controls

At time of application, attach pages describing how the facility will comply with the run-on and run-off system plan for an existing, new, or lateral expansion of a CCR landfill information. Provide a qualified Texas P.E. certification and technical report that the run-on and run-off control system plans meet the requirements of 30 TAC §352.811.

F. Inspection for Landfills

At time of application, attach pages describing how the facility will comply 30 TAC §352.841 and complete Table IV.D. – Inspection Schedule for Landfills. For existing CCR landfills, provide the most recent inspection report. All CCR landfills and any lateral expansions of a CCR landfill must be inspected for any structural weakness, malfunction, deterioration conditions which are disrupting or have the potential to disrupt the operation or safety of the CCR unit, or any other conditions which may cause harm to human health and environment at a frequency specified in 40 CFR §257.84(a) and (b).

V. Surface Impoundment Criteria

See Instructions and Technical Guidance – No. 31 Coal Combustion Residuals Surface Impoundment

26. Surface Impoundment(s) for CCR Waste

Provide the following information below if there is a surface impoundment; if there is more than one surface impoundment, separate information is required for each surface impoundment.

A. General Surface Impoundment(s) Characteristics

Provide information about the characteristics of the surface impoundment(s): incised, surface area (acres), storage volume (acres-feet), and depth (feet).

For all surface impoundment(s), include the following information:

1. Complete Table V.A. - Surface Impoundments Characteristics. List the surface impoundment(s) to be registered as a CCR unit(s), the wastes managed in each unit, and the rated capacity or size of each unit.

2. Describe the surface impoundment(s) and provide a plan view drawing with cross-sections, if available.

   See "History of Construction and Initial Hazard Potential Assessment, Structural Integrity Assessment, and Safety Factor Assessment" in APPENDIX D, section 2.3 for a summary description of the impoundment. For drawings, see Figures 2-4 and 2-5A.

3. Specify the minimum freeboard to be maintained and the basis of the design to prevent overtopping resulting from normal or abnormal operation; overfilling; wind and wave action; rainfall; run-on; malfunctions of level controllers, alarms, and other equipment; and human error. Show that adequate freeboard will be available to prevent overtopping from a 100-year, 24-hour storm.

   The "Inflow Design Flood Control System Plan" located in APPENDIX D indicates maximum elevation set at 136.1' to allow sufficient freeboard for design storm and wave action. See last paragraph of section 2.0.

4. Waste Flow
   Describe the means that will be used to immediately shut off the flow of waste to the impoundment in the event of liner failure or to prevent overtopping.

   All inflows that enter the surface impoundment are pumped into the unit under controlled conditions. There are no gravity or uncontrolled inflows. Pumps will be immediately removed from service to shut off flows to the impoundment.

5. Dike Construction ☒ Yes ☐ No

   If Yes, submit the dike certification (located at the end of the application).

   In October 2016, the initial certified Periodic Hazard Potential Classification Assessment, Periodic Structural Stability Assessment, and Periodic Safety Factor Assessment were completed for the Primary Ash Pond as required by 40 CFR 257.73(a), 257.73(d), and 257.73(e). In October 2021, the certified 5-Year Updates to these assessments were completed as required by 40 CFR 257.73 and 30 TAC 352.731, which identified no structural deficiencies. The most recent 2021 5-Year Assessment Updates are located in APPENDIX E. Based on the conclusion in the certified 5-year updates that no structural deficiencies exist, the facility is submitting these documents in lieu of the Dike Certification.

   The structural integrity of the dike system must be certified by a qualified Texas P.E. before the registration is issued. If the impoundment is not being used, the dike system must be certified before it can be put into use. The certification must be sealed by a qualified Texas P.E., along with the engineering firm's name and registration number (30 TAC §352.4).

   A report shall accompany the dike certification which summarizes the activities, calculations, and laboratory and field analyses performed in support of the dike certification. Describe the design basis used in construction of the dikes. A QAPP should be included in the report to ensure that each analysis is performed appropriately and include:

   (1) Slope Stability Analysis

   (2) Hydrostatic and Hydrodynamic Analysis

   (3) Storm Loading

   (4) Rapid Drawdown

Earthen dikes should have a protective cover to minimize wind and water erosion and to preserve the structural integrity of the dike. Describe the protective cover used and describe its installation and maintenance procedures.

B. Liner Design

For surface impoundment(s), provide information about how the facility will comply with 30 TAC §352.711 for existing CCR surface impoundments. For new and lateral expansion of CCR surface impoundments provide information on how the facility will comply with 30 TAC §352.261, and 30 TAC §352.721, see Instructions and Technical Guidance No. 31 Coal Combustion Residuals Surface Impoundment. The qualified Texas P.E. must certify that the design of the liner complies with the requirements of 30 TAC Chapter 352 and 40 CFR Part 257, Subpart D, where required.

Is the CCR surface impoundment unlined? ☒ Yes ☐ No

If "Yes", the CCR unit is subject to the closure requirements under 30 TAC Chapter 352 and 40 CFR §257.101(a) to retrofit or close. A notification must be prepared stating that an assessment of corrective measures has been initiated.

On November 30, 2020, Coleto Creek Power, LLC (CCP) submitted a request to the U.S. Environmental Protection Agency (EPA) for approval of a site-specific alternative deadline to initiate closure pursuant to 40 C.F.R. § 257.103(f)(2) for the Primary Ash Pond located at the Coleto Creek Power Plant near Fannin, Texas. CCP is requesting an extension pursuant to 40 C.F.R. § 257.103(f)(2) so that the Primary Ash Pond may continue to receive CCR and non-CCR wastestreams after April 11, 2021, and complete closure no later than October 17, 2028. On January 11, 2022, EPA issued a letter stating the site-specific alternative deadline demonstration was deemed complete thus tolling the cease receipt date until a final decision is issued on the demonstration. The "Coleto Creek CCR Surface Impoundment Demonstration for a Site-Specific Alternative to the Initiation of Closure" report submitted can be found in APPENDIX D.

1. Complete Table V.B. - Surface Impoundment Liner System for each surface impoundment to be registered.
2. Describe the design, installation and operation of liner and leak detection components. The description must demonstrate that the liner and leak detection system will prevent discharge to the land and surface water. Submit a QAPP report to ensure that each analysis is performed appropriately.

   See Section 2 in the "History of Construction and Initial Hazard Potential Assessment, Structural Integrity Assessment, and Safety Factor Assessment" report in APPENDIX D.
3. For new or laterally expansions of existing surface impoundments, provide a subsurface soil investigation report that must include:
   a. A description of all borings drilled, at the unit location, to test soils and characterize groundwater;
   b. A unit map drawn to scale showing the surveyed locations and elevations of the borings, including location of permanent identification markers ((30 TAC §352.731) and (40 CFR §257.73(a)(1));
   c. Cross-sections prepared from the borings depicting the generalized strata at the unit;
   d. Boring logs, including a description of materials encountered, and any discontinuities such as fractures, fissures, slickensides, lenses or seams;

e. A description of the geotechnical data and the geotechnical properties of the subsurface soil materials, including the suitability of the soils and strata for the intended uses; and

f. A demonstration that all geotechnical tests were performed in accordance with industry practices and recognized procedures.

C. Hazard Potential Classification

Provide the current hazard potential classification assessment and associated documentation, as required by 30 TAC §352.731 or §352.741 and 40 CFR §257.73(a)(2) or §257.74(a)(2). The qualified Texas P.E. must certify that the initial hazard potential classification and any subsequent periodic classification was conducted in accordance with the requirements of 30 TAC Chapter 352, where required.

Hazard Potential Classification: **LOW**

See "Hazard Potential Classification Assessment" located in APPENDIX D.

D. Emergency Action Plan for High or Significantly High Hazard Potential

Provide the current Emergency Action Plan that has been certified by a qualified Texas P.E. and includes the following requirements from 30 TAC 352, Subchapter F and 40 CFR §257.73(a)(3)(i)(A) - (E) or 40 CFR §257.74 (a)(3)(i)(A) - (E). The qualified Texas P.E. must certify that the written Emergency Action Plan and any subsequent amendment of the plan complies with the requirements of 30 TAC 352, Subchapter F, where required.

Complete Table V.J. - Inspection of Surface Impoundments

N/A

E. Inflow Design Flood Control System Plan

Describe how the surface impoundment(s) system will manage stormwater run-on away from the surface impoundment(s) (30 TAC §352.821 and 40 CFR §257.82(a) and (c)). Stormwater run-on must be diverted away from a surface impoundment, based on the hazard potential. Where dikes are used to divert run-on, they must be protected from erosion. Include all analyses used to calculate run-on volumes. Provide the inflow design flood control system plan. Provide qualified Texas P.E. certification that the initial and periodic inflow design flood control system plans meet the requirements of 30 TAC §352.821, where required.

See "Inflow Design Flood Control System Plan" located in APPENDIX D.

F. History of Construction for Existing CCR Surface Impoundment(s), or the Design and Construction Plans for New and Lateral Expansions

Provide information on the history of construction for each existing CCR surface impoundment (30 TAC §352.731 and 40 CFR §257.73(c)) or the design and construction plans for new and lateral expansions of each CCR surface impoundment (30 TAC §352.741) and (40 CFR §257.74(c)).

See "History of Construction" report located in APPENDIX D.

G. Structural Stability Assessment

Provide the most recent structural stability assessment of the surface impoundments. Include the combined capacity of all surface impoundment spillways with calculations; the peak discharge the unit must meet for all combined spillways; probable maximum flood-high hazard, 1,000-yr-significant high hazard, 100-yr-low hazard; identify if there were any structural stability deficiencies in last assessment; identify how these deficiencies were managed and corrected; and qualified Texas P.E. certification. The structural stability assessment must include all information required in 30 TAC §352.731 for existing surface impoundments or 30 TAC §352.741 for new or laterally expanding surface impoundments.

See "Structural Stability Assessment" located in APPENDIX D.

H. Safety Factor Assessment

The current safety factor assessment must be submitted with the application. It must include documentation that demonstrates whether the calculated factors of safety for each CCR surface impoundment achieve the minimum safety factors specified in 30 TAC 352, Subchapter F and 40 CFR §257.73(e)(1)(i) - (iv) and 40 CFR §257.74(e)(1)(i) - (iv) for the critical cross-section of the embankment. The critical cross-section is the cross-section anticipated to be the most susceptible to structural failure based on appropriate engineering considerations, including loading conditions. The safety factor assessments must be supported by appropriate engineering calculations and certified by a qualified Texas P.E.

See "Safety Factor Assessment" located in APPENDIX D.

VI. Groundwater Monitoring and Corrective Action (30 TAC 352, Subchapter H)

See Instructions and Technical Guidance – No. 32 Coal Combustion Residuals Groundwater Monitoring and Corrective Action

27. Groundwater Monitoring System

A. Complete Table VI.A. - Unit Groundwater Detection Monitoring System.

B. Provide a map showing location of wells, groundwater elevations, and groundwater flow direction.

See Figures 4 thru 7 in the "Groundwater Hydrogeologic Monitoring Plan" in APPENDIX E.

C. Provide attachments describing how the facility will comply with the requirements in 30 TAC §352.911 and provide a certification by a qualified Texas P.E or qualified Texas P.G. that the groundwater monitoring system design and construction meet the requirements of 30 TAC Chapter 352.

See Appendix A in the "Groundwater Hydrogeologic Monitoring Plan" located in APPENDIX E for the monitoring system certification. "Supplemental Geologic and Hydrogeologic Information Report No.2." is also included in APPENDIX E to supplement information in the "Groundwater Hydrogeologic Monitoring Plan".

D. Provide a figure showing the geologic units and fill materials overlying the uppermost aquifer, materials comprising the uppermost aquifer, and materials comprising the confining unit defining the lower boundary of the uppermost aquifer, including, but not limited to, thicknesses, stratigraphy, lithology, hydraulic conductivities, porosities and effective porosities.

See Figures 2 and 3 in the "Groundwater Hydrogeologic Monitoring Plan" in APPENDIX E. For additional information see the "Supplemental Geologic and Hydrogeologic Information Report No.2" also in APPENDIX E.

E. For a multiunit groundwater monitoring system, demonstrate that the groundwater monitoring system will be equally as capable of detecting monitored constituents at the waste boundary of the CCR unit as the individual groundwater monitoring system for each CCR unit by providing at minimum the following information:

1. Number, spacing, and orientation of each CCR unit;
2. Hydrogeologic setting; and
3. Site history.

F. Has there been any sampling concentrations of one or more constituents listed in Appendix IV detected at statistically significant levels above the groundwater protection standard (GWPS)? ☐ Yes ☒ No

G. Provide information on how monitoring wells have been constructed and cased in a manner that maintains the integrity of the monitoring well borehole and to prevent contamination of samples and the groundwater.

Groundwater monitoring well construction logs are located in Appendix B of the "Groundwater Hydrogeologic Monitoring Plan" found in APPENDIX E.

28. Groundwater Monitoring Sampling and Analysis Program

Provide a sampling and analysis plan that includes procedures and techniques; sampling and analytical methods that are appropriate for groundwater sampling; and that address the requirements of 30 TAC §352.931 and 40 CFR §257.93. Provide a P.E or P.G. certification that describes the statistical method selected to evaluate the groundwater monitoring data and certifies that the selected statistical method is appropriate for evaluating the groundwater monitoring data for the CCR management area. Refer to TG-32 for information and guidance.

See "Groundwater Monitoring Plan-Revision 1", Background Groundwater Monitoring and Statistical Analysis Summary Report", "Statistical Analysis Plan-Revision 1", and "Statistical Method Certification" in APPENDIX E.

29. CCR Unit(s) in a Detection Monitoring Program

Does the facility have CCR unit(s) in a Detection Monitoring Program?

☐ Yes ☒ No

If "Yes", Submit the following information:

A. Submit Table VI.C. – Facility CCR Units Under Detection Monitoring.

B. Provide a Background Evaluation Report.

C. Provide a report with the results of semiannual monitoring events.

1. Has a statistically significant increase (SSI) been detected for one or more of the constituents listed in Appendix III at any monitoring well?

☐ Yes ☐ No

2. Has a notification to the executive director been sent within 14 days?

   ☐ Yes ☐ No

3. Date assessment monitoring program will start:

4. Do you plan to provide an alternative source demonstration (ASD)?

   ☐ Yes ☐ No

30. CCR Unit(s) in an Assessment Monitoring Program

Does the facility have CCR unit(s) in an Assessment Monitoring Program?

☒ Yes ☐ No
If "Yes", Submit information related for units.

A. Complete Table VI.D. – CCR Units Under Assessment Monitoring.

B. Provide, for each well in assessment monitoring status, the recorded concentrations lab sheets and results in a tabulated form.

See summary Tables 3 and 4 for all results in tabulated form in the "2020 Annual Groundwater Monitoring and Corrective Action Report" in APPENDIX E.

Have the concentrations of all constituents listed in Appendices III and IV been at or below background values, using the statistical procedures in 30 TAC §352.931 and 40 CFR §257.93(g), for two consecutive sampling events for the CCR unit(s)? ☐ Yes ☒ No

If answer to above is yes, detection monitoring may resume. The owner or operator must prepare a notification stating that detection monitoring is resuming for the CCR unit and obtain written approval from the executive director.

C. Are there any concentrations of any constituent in Appendices III and IV above background values? ☒ Yes ☐ No

1. Has a notification to the executive director been sent within 14 days?

   ☒ Yes ☐ No

D. Date assessment of corrective measures will be initiated (must be within **90 days** of finding a statistically significant level above the GWPS) for the CCR unit(s):
Not required due to no SSLs to date. Unit is in assessment monitoring but has not triggered assessment of corrective measure to date.

E. Will you provide an ASD (see TG-32 for an acceptable submittal)? ☐ Yes ☒ No

F. Date assessment of corrective measures will be initiated if ASD is not accepted?
Not required.

G. Complete Table VI.D-2. - Groundwater Detection Monitoring Parameters

Note: Refer to TG-32 regarding establishing a GWPS for each constituent in Appendix IV detected in the groundwater and attach as table.

H. Have you completed the assessment of corrective measures? ☐ Yes ☒ No
If "Yes", date assessment of corrective measures was completed:
If "No", date assessment of corrective measures will be completed: Not required
Expected date of submittal of amendment (see note below):
Provide completed assessment of corrected measures materials.

Note: Within **30 days** of completing the assessment of corrective measures, and before remedy implementation, the owner or operator shall submit an application for amendment to the registration. In some circumstances, the assessment of corrective measures and selected remedy may be approved as part of the initial application for the CCR unit registration.

I. Have you selected a remedy? ☐ Yes ☐ No N/A

Provide public meeting documentation under 30 TAC §352.961 and a report under 30 TAC §352.971 and 40 CFR §257.97.

VII. Closure and Post-Closure Care

See Instructions and Technical Guidance

Submit a full closure plan and post-closure plan and all information describing how the owner or operator will comply with 30 TAC 352, Subchapter J and 40 CFR §§257.100 - 257.104. The owner of property on which an existing disposal facility is located, following the closure of a unit, must also submit documentation that a notation has been placed in the deed to the facility that will in perpetuity notify any potential purchasers of the property that the land has been used to manage CCR wastes and its use is restricted (30 TAC §352.1221 and 40 CFR §257.102(i)). For CCR units, closed after October 19, 2015, that were closed before submission of the application, the applicant should submit documentation to show that notices required under 30 TAC 352, Subchapter K and 40 CFR §257.105 or §257.106 have been filed.

See "Closure Plan" and "Post-Closure Plan" in APPENDIX F. Also included in the appendix is "Closure Plan Addendum No.1" that was prepared to meet the requirements of the site-specific alternative deadline to initiate closure. "Closure Plan Addendum No.2" and "Post-Closure Plan Addendum No.1" are also in APPENDIX F.

On January 11, 2022, USEPA provided a determination that the alternative closure demonstration was complete thus tolling the waste receipt deadline for the CCR unit until USEPA issues a final decision. To date, no decision has been issued by USEPA regarding the Coleto Creek request for a site-specific alternative deadline to initiate closure. A copy of the completeness determination letter is located in APPENDIX F.

31. Closure Plan

This section applies to the owners and operators of all CCR units required to be registered. The applicant must close the facility in a manner that minimizes need for further maintenance and controls, or eliminates, to the extent necessary to protect human health and the environment, the post-closure release of CCR waste, chemical constituents of concern, leachate, contaminated rainfall, or waste decomposition products to the groundwater, surface waters, or to the atmosphere.

The type of unit to be closed can determine the level of detail sufficient for a closure plan. CCR units which have been certified closed after October 19, 2015, must provide documentation to demonstrate compliance with state and federal regulations.

For each unit to be registered, complete Table VII.A.1. - Unit Closure and list the CCR Unit components to be decontaminated, possible methods of decontamination, and possible methods of disposal of wastes and waste residues generated during unit closure. All ancillary components must be decontaminated, and the generated waste disposed of appropriately.

Information about CCR units closed or to be closed under alternative closure requirements must be provided in Table VII.A.2. - CCR Units Under Alternative Closure Notification.

Guidance on design of a closure cap and final cover for non-hazardous industrial solid wastes landfills is provided in EPA publication 530-SW-85-014, TCEQ Technical Guidance No. 3 and TCEQ publication, RG-534, "Guidance for Liner Construction and Testing for a Municipal Solid Waste Landfill".

32. Post-Closure Care Plan

Provide a post-closure care plan that complies with the requirements of 30 TAC §352.1241.

See "Post-Closure Plan" and "Post-Closure Plan Addendum No.1" in APPENDIX F.

Post-closure care of each CCR unit must continue for at least 30 years after the date of completing closure of the unit and must consist of monitoring and reporting of the groundwater monitoring systems, in addition to the maintenance and monitoring of CCR unit. Continuation of certain security requirements may be necessary after the date of closure. Post-closure use of property on or in which waste remains after closure must never be allowed to disrupt the integrity of the containment system. In addition, submit the following information:

- The name, address, and phone number of the person or office to contact about the CCR unit during the post-closure period; and

  Luminant-Environmental Services
  Renee Collins-Senior Environmental Director
  6555 Sierra Drive
  Irving, TX 75039
  214-875-8338
  CCRPostClosurePlan@Luminant.com

- A discussion of the future use of the land associated with each unit.

  Following closure of the Primary Ash Pond, a notation on the deed to the property, or some other instrument that is normally examined during title search, will be recorded in accordance with 40 CFR 257.102(i). The notation will notify potential purchasers of the property that the land has been used as a CCR unit and its use is restricted under the post-closure care requirements per 40 CFR 257.104(d)(1)(iii).

Landfills and surface impoundments which have been certified closed after October 19, 2015, must be included in post-closure care plans, unless they have been determined to have been closed by waste removal equivalent to the closure standards in 30 TAC §352.1221 and 40 CFR §257.102 or 30 TAC §352.1231 and 40 CFR §257.103. If such a demonstration has been made pursuant to 40 CFR §257.102 or §257.103, but an equivalency determination has not been made, please submit a copy of the demonstration documentation. If an equivalency determination has been made, applicant should submit a copy of this determination.

VIII. Financial Assurance

33. Post-Closure Care Cost Estimate

Financial assurance for post-closure care (30 TAC §352.1101) applies to owners or operators of all CCR units, except CCR units from which the owner or operator intends to remove wastes and perform clean closure. Provide a written cost estimate in current dollars of the total cost of the 30-year (or longer, if applicable under 30 TAC §352.1101(d)) post-closure care period to perform post-closure care requirements as prescribed in 30 TAC §352.1241. The cost estimate must be based on the costs of hiring a third party to conduct post-closure care maintenance.

Complete Table VIII.A.1 – Post-Closure Cost Summary for Existing Registered Units

See Post-Closure Care Cost Estimate in APPENDIX G. Cost estimates for the Primary Ash Pond are summarized in Table 1.

Complete Table VIII.A.2. - Post-Closure Cost Summary for Proposed Registered Units

34. Financial Assurance Mechanism

The financial assurance for post-closure care is required in accordance with 30 TAC §352.1101. The applicant shall demonstrate the financial assurance within 90 days after approval of the registration with a financial mechanism acceptable to TCEQ in compliance with 30 TAC §352.1101(c) and 30 TAC §37, Subchapters A through D, except as indicated in 30 TAC §352.1111, in an amount no less than the amount specified in the approved Post-Closure Care Cost Summary. Provide a description of the proposed financial assurance mechanism.

Luminant Generation Company LLC will provide an acceptable financial assurance mechanism per 30 TAC 352.1101 no more than 90 days after the executive director's approval of the registration.

Complete Table VIII.B. - Post-Closure Period, for the authorized post-closure period, to meet the requirements of 30 TAC §352.1241(a) through (c).

Signature Page

I certify under penalty of law that this document and all attachments were 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 or persons who manage the system, or 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 am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Applicant Signature: _____ Date: _____

Name and Official Title (type or print): _____

Owner or Operator Signature: Renee Collins Date: 11/7/2024

Name and Official Title (type or print): Renee Collins, Senior Director

To be completed by the owner or operator if the application is signed by an authorized representative for the operator

I, _____ hereby designate _____
(operator) (authorized representative)

as my representative and hereby authorize said representative to sign any application, submit additional information as may be requested by the Commission; and/or appear for me at any hearing or before the Texas Commission on Environmental Quality in conjunction with this request for a CCR waste management registration. I further understand that I am responsible for the contents of this application, for oral statements given by my authorized representative in support of the application, and for compliance with the terms and conditions of any registration which might be issued based upon this application.

_____
Printed or Typed Name of Applicant or Principal Executive Officer

_____
Signature

(Note: Application Must Bear Signature & Seal of Notary Public)

Subscribed and sworn to before me by the said Renee Collins on this 7th day of November, 2024.

My commission expires on the 29th day of August, 2025

(Seal) Notary Public in and for Dallas County, Texas

TISH GOODSPEED
My Notary ID # 129536082
Expires August 29, 2025

Tish Goodspeed

Registration Application for Coal Combustion Residuals Waste Management

(See instructions for P.E/P.G. seal requirements.)

Attachments and Tables	**Attachment No.**
General Information	Appendix A
Property/Legal Description	
Property Owner Affidavit	
Legal Authority	
Delegation of Signature Authority	
TCEQ Core Data Form	
Attachments	
Compliance Assessment for Coleto Creek Power Station Primary Ash Pond – 40 CFR 257.52(b)	
Location Restrictions & Geology	Appendix B
Location Restrictions Demonstration	
Location Restrictions Assessment	
Fugitive Dust Control Plan	Appendix C
CCR Fugitive Dust Control Plan	
2021 Annual CCR Fugitive Dust Control Report	
Surface Impoundment Design and Operating Criteria	Appendix D
Alternative Closure Plan Demonstration – §257.103(f)(2)	
Hazard Potential Classification Assessment	
Inflow Design Flood Control Plan	
History of Construction Report	
Structural Stability Assessment	
Safety Factor Assessment	
Groundwater Monitoring and Corrective Action	Appendix E
Groundwater Hydrogeologic Monitoring Plan	
Supplemental Geologic and Hydrogeologic Information	
Supplemental Geologic and Hydrogeologic Information Report No.2	
Supplemental Geologic and Hydrogeologic Information Report No.3	
Groundwater Monitoring Plan-Revision 1	
Background Groundwater Monitoring and Statistical Analysis Summary Report	
Statistical Analysis Plan-Revision 1	
Statistical Method Certification	
2020 Groundwater Monitoring and Corrective Action Report	
2021 Groundwater Monitoring and Corrective Action Report-Revision 1	
Closure and Post-Closure Care	Appendix F
Closure Plan	
Closure Plan Addendum No.1	
Closure Plan Addendum No.2	
Alternative Closure Demonstration Completeness Determination Letter	
Post-Closure Plan	
Post-Closure Addendum No.1	
Financial Assurance	Appendix G
Post-Closure Care Cost Estimate	

Tables

Tables	Submitted	Not Applicable
Table I.6. - CCR Waste Management Units	☒	☐
Table I.6.A. - Waste Management Information	☒	☐
Table I.6.B. - Wastes Managed in Registered Units	☒	☐
Table I.6.C. - Sampling and Analytical Methods	☒	☐
Table IV.A. - Landfill Characteristics	☐	☒
Table IV.B. - Landfill Liner System	☐	☒
Table IV.C. - Landfill Leachate Collection System	☐	☒
Table IV.D. - Inspection Schedule of Landfills	☐	☒
Table V.A. - Surface Impoundments Characteristics	☒	☐
Table V.B. - Surface Impoundment Liner System	☒	☐
Table V.J. - Inspection of Surface Impoundments	☒	☐
Table VI.A. - Unit Groundwater Detection Monitoring System	☐	☐
Table VI.C. - CCR Units Under Detection Monitoring	☐	☒
Table VI.C-1. – Groundwater Detection Monitoring Parameters	☒	☐
Table VI.D. - CCR Units Under Assessment Monitoring	☒	☐
Table VI.D-2. - Groundwater Assessment Monitoring Parameters	☒	☐
Table VII.A.1. - Unit Closure	☒	☐
Table VII.A.2. - CCR Units Under Alternative Closure Notification	☒	☐
Table VIII.A.1. - Post-Closure Cost Summary for Existing Registered Units	☒	☐
Table VIII.A.2. - Post-Closure Cost Summary for Proposed Registered Units	☐	☒
Table VIII.B. - Post-Closure Period	☐	☒
Engineering Certification(s) - Dike Construction	☐	☒

Additional Attachments as Applicable - Select all those apply and add as necessary

☒ TCEQ Core Data Form(s) **Appendix A**
☒ Signatory Authority Delegation **Appendix A**
☐ Fee Payment Receipt
☐ Confidential Documents
☒ Certificate of Fact (Certificate of Incorporation) **Appendix A**
☐ Assumed Name Certificate

Table I.6. – CCR Waste Management Units

CCR Unit No.[1]	Unit Name	N.O.R. No.[1]	Unit Description[3]	Capacity	Unit Status[2]
001	Primary Ash Pond	001	Surface Impoundment	2,700 acre-feet	Active

1 Registered Unit No. and N.O.R. No. cannot be reassigned to new units or used more than once.
2 Unit Status options: Active, Closed, Inactive (built but not managing waste), Proposed (not yet built), Never Built, Transferred, Post-Closure.
3 If a unit has been transferred, the applicant should indicate which facility/permit it has been transferred to in the Unit Description column.

Table I.6.A. – Waste Management Information

Waste No.[1]	Waste Type(s)	Source	Volume (tons/year)
1	Fly Ash	Coal Combustion Byproduct	57,000 produced 425 disposed
2	Bottom Ash	Coal Combustion Byproduct	13,000 produced 400 disposed

1 Assign waste number sequentially. Do not remove waste number wastes which are no longer generated.

Table I.6.B. – Wastes Managed in Registered Units

Waste No.[1]	Waste	TCEQ Waste Form Codes and Classification Codes
1	Fly Ash	TWC-20173192, TX Form Code-319, Class 2
2	Bottom Ash	TWC-20183192, TX Form Code-319, Class 2

1 from Table I.6.A., first column

Table I.6.C – Sampling and Analytical Methods

Waste No.[1]	Sampling Location	Sampling Method	Frequency	Parameter	Test Method	Desired Accuracy Level
1	Fly Ash	Grab	<5 years	TCLP Metals	SW1311/7470A SW1311/6020B	See below [2]
2	Bottom Ash	Grab	<5 years	TCLP Metals	SW1311/7470A SW1311/6020B	See below [2]

1 from Table I.6.A., first column

2 Analytical protocol will meet EPA quality control and accuracy specifications as published in the SW-846 Methods. The laboratory will be TCEQ accredited.

Table IV.A. – Landfills Characteristics

Registered Unit No.	Landfill	N.O.R. No.	Waste Nos.[1]	Rated Capacity	Dimensions[2]	Distance from lowest liner to groundwater	Action Leakage Rate (if required)	Unit will manage CCR Waste and non-CCR Waste (state all that apply)
N/A								

1 From Table I.6.A., first column
2 Dimensions should be provided as average length, width and depth, also include the surface acreage for the unit.

Table IV.B. – Landfill Liner System

Registered Unit No.*	Landfill	Geomembrane Liner Material	Geomembrane Liner Permeability (cm/sec)	Geomembrane Liner Thickness	Soil Liner Material	Soil Liner Permeability (cm/sec)	Soil Liner Thickness
N/A							

* This number should match the Registration Unit No. given on Table IV.A.

Table IV.C. – Landfill Leachate Collection System

Registered Unit No.	Landfill Name	Drainage Media	Collection Pipes (including risers)	Filter Fabric	Geofabric	Sump Material
N/A						

Table IV.D. – Inspection Schedule of Landfills

Facility Unit(s) and Basic Elements	Possible Error, Malfunction, or Deterioration	Frequency of Inspection
N/A		

Table V.A. – Surface Impoundment Characteristics

Registered Unit No.	Surface Impoundment Name	N.O.R. No.	Waste Nos.[1]	Rated Capacity	Dimensions[2]	Distance from lowest liner to groundwater	Action Leakage Rate (if required)	Unit will manage CCR Waste and non-CCR Waste (state all that apply)
001	Primary Ash Pond	001	1, 2	2,700 acre-feet	2,450 feet W x 3,375 feet L x 20 feet D 190 acres	>5 Feet	n/a	Fly Ash, Bottom Ash

1 From Table I.6.A., first column
2 Dimensions should be provided as average length, width and depth, also include the surface acreage for the unit.

Table V.B. – Surface Impoundment Liner System

Registered Unit No.*	Surface Impoundment Name	Geomembrane Liner Material	Geomembrane Liner Permeability (cm/sec)	Geomembrane Liner Thickness	Soil Liner Material	Soil Liner Permeability (cm/sec)	Soil Liner Thickness
001	Primary Ash Pond	None	None	None	In-situ clay	$<1.0 \times 10^{-7}$ cm/sec	Ranges 10 feet to 20 feet[1]

* This number should match the Registration Unit No. given on Table V.A.
1-See description in Section 2.0 of the "Supplemental Geologic and Hydrogeologic Information Report No. 2" located in Appendix E

Table V.J. – Inspection Schedule of Surface Impoundments

Facility Unit(s) and Basic Elements	Possible Error, Malfunction, or Deterioration	Frequency of Inspection
001-Primary Ash Pond		Weekly inspections are performed at intervals not exceeding seven days per 40 CFR 257.83(a)
Above-grade piping	Deteriorating of piping/connections	Weekly inspections are performed at intervals not exceeding seven days per 40 CFR 257.83(a)
Truck Access Ramp	Spills, Deterioration	Weekly inspections are performed at intervals not exceeding seven days per 40 CFR 257.83(a), spills inspected and reported within 24-hrs
Containment Dike	Spills, excessive water levels, surface cracking, animal burrows, misalignments, slides, vegetative cover, rutting, erosion, seepage, slope protection/chutes	Weekly inspections are performed at intervals not exceeding seven days per 40 CFR 257.83(a), spills inspected and reported within 24-hrs
Instrumentation	Monitor water level	Unit instrumentation (water level gauge) is inspected and monitored at intervals not exceeding 30 days per 40 CFR 257.83(a)(1)(iii).
Groundwater	Deterioration of pads, bollards, missing locks, compromise of casing integrity	Semi-Annual Inspection
001-Primary Ash Pond		Annually per 40 CFR 257.83(b)
	Inspect for any changes in geometry of the structure since the previous annual inspection.	Annual Inspection
	Evaluate the approximate minimum, maximum, and present depth and elevation of the impounded water and CCR since previous annual inspection.	Annual Inspection
	Evaluate the storage capacity at the time of the inspection.	Annual Inspection
	Estimate the approximate volume of the impounded water and CCR contained in the unit at the time of the inspection.	Annual Inspection
	Inspect for any other change(s) which have affected the stability or operation of the CCR unit since the previous inspection	Annual Inspection

Table VI.A. - Unit Groundwater Detection Monitoring Systems

Waste Management Unit/Area Name[1]	**WMU 001 - Primary Ash Pond**								
Well Number(s):	MW-4	MW-5	MW-6	MW-8	MW-9	MW-10	MW-11	BV-5	BV-21
Hydrogeologic Unit Monitored	Houston Group	Houston Group	Houston Group	Houston Group	Houston Group	Houston Group	Houston Group	Houston Group	Houston Group
Type (e.g., point of compliance, background, observation, etc.)	POC	POC	POC	POC	POC	POC	POC	POC	POC
Up or Down Gradient	Down	Down	Down	Up	Down	Down	Down	B?	Up
Casing Diameter and Material	4" PVC	4" PVC	4" PVC	4" PVC	2" PVC	2" PVC	2" PVC	2" PVC	2" PVC
Screen Diameter and Material	4" PVC	4" PVC	4" PVC	4" PVC	2" PVC	2" PVC	2" PVC	2" PVC	2" PVC
Screen Slot Size (in.)	0.016"	0.016"	0.016"	0.016"	0.010"	0.010"	0.010"	0.010"	0.010"
Top of Casing Elevation (Ft, Mean Sea Level *[MSL]*)	137.71	122.31	119.22	134.72	132.3	130.4	118.66	135.8	131.17
Grade or Surface Elevation (Ft, MSL)	134.3	119.57	116.35	131.78	129.3	127.6	115.8	133	128.4
Well Depth (Ft, Below Grade Surface *[BGS]*)	70.1	59.27	61.15	56.88	60	60	49	40	40
Well Depth (Ft, Below Top of Casing *[BTOC]*)	73.51	62.01	64.02	59.82	63	62.8	51.86	42.8	42.77
Screen Interval									
From (Ft, BGS)	50.5	39.47	41.25	36.98	40	40	29	30	30
To (Ft, BGS)	70.1	59.27	61.15	56.88	60	60	49	40	40
Screen Interval									
From (Ft, BTOC)	53.91	42.21	44.12	39.92	43	42.8	31.86	32.8	32.77
To (Ft, BTOC)	73.51	62.01	64.02	59.82	63	62.8	51.86	42.8	42.77

1 From Tables in Section I.; *MSL* : Mean Sea Level; *BGS* : Below Grade Surface; *BTOC* : Below Top of Casing

NOTE-Data from Table 3 from Groundwater Hydrogeologic Monitoring Plan 10/17/2017

Table VI.C. – CCR Units Under Detection Monitoring

N.O.R. Unit No.	Unit Description[1,2]	Well(s)	Constituent(s)	Date of SSI Determination	Date of Assessment Monitoring Notification[3]
N/A					

1 Indicates a unit for which a 30 TAC Chapter 352/40 CFR Part 257, Subpart D alternative closure determination has been requested pursuant to 40 CFR §257.103.
2 Indicates a unit for which a 30 TAC Chapter 352/40 CFR Part 257, Subpart D alternative closure determination has been made pursuant to 40 CFR §257.103.
3 Enter month, day, and year.

Table VI.C-1. – Groundwater Detection Monitoring Parameters

Parameter	Sampling Frequency	Analytical Method	Practical Quantification Limit (units)	Concentration Limit[1]
Boron	Semi-Annual	SW6020A	0.0100 mg/L	1.3
Calcium	Semi-Annual	SW6020A	0.10 mg/L	140
Chloride	Semi-Annual	E300	0.30 mg/L	120
Fluoride	Semi-Annual	E300	0.100 mg/L	0.61
Sulfate	Semi-Annual	E300	1.00 mg/L	150
Total Dissolved Solids	Semi-Annual	M2540C	10.0 mg/L	970
pH	Semi-Annual	Field Measured	s.u.	6.5 7.3

[1] The concentration limit is the basis for determining whether a release has occurred from the CCR unit/area.

Table VI.D. – CCR Units Under Assessment Monitoring

N.O.R. Unit No.	Unit Description[1,2]	Well(s)	Constituent(s)	Date of SSI Determination	Date of Assessment Monitoring Notification[3]
001	Primary Ash Pond	MW-6, MW-9, MW-10	B	2/12/2018	Notification made 5/9/18
001	Primary Ash Pond	MW-4, MW-5, MW-6, MW-9, MW-10, MW-11	Cl, F, SO4, pH	2/12/2018	ASD Successful for all constituents except Boron (4/11/18)

1 Indicates a unit for which a 30 TAC Chapter 352/40 CFR Part 257, Subpart D alternative closure determination has been requested pursuant to 40 CFR §257.103.
2 Indicates a unit for which a 30 TAC Chapter 352/40 CFR Part 257, Subpart D alternative closure determination has been made pursuant to 40 CFR §257.103.
3 Enter month, day, and year

Table VI.D-2. – Groundwater Assessment Monitoring Parameters

Parameter	Sampling Frequency	Analytical Method	Practical Quantification Limit (units)	Concentration Limit[1]
Antimony	Semi-Annual	SW6020B	0.000800 mg/L	0.0060 mg/L
Arsenic	Semi-Annual	SW6020B	0.00200 mg/L	0.13 mg/L
Barium	Semi-Annual	SW6020B	0.00300 mg/L	2.0 mg/L
Beryllium	Semi-Annual	SW6020B	0.000300 mg/L	0.0040 mg/L
Cadmium	Semi-Annual	SW6020B	0.000300 mg/L	0.0050 mg/L
Chromium	Semi-Annual	SW6020B	0.00200 mg/L	0.10 mg/L
Cobalt	Semi-Annual	SW6020B	0.00300 mg/L	0.050 mg/L
Fluoride	Semi-Annual	SW6020B	0.100 mg/L	4.0 mg/L
Lead	Semi-Annual	SW6020B	0.000300 mg/L	0.015 mg/L
Lithium	Semi-Annual	SW6020B	0.00500 mg/L	0.040 mg/L
Mercury	Semi-Annual	SW7470A	0.0000800 mg/L	0.0020 mg/L
Molybdenum	Semi-Annual	SW6020B	0.00200 mg/L	0.10 mg/L
Selenium	Semi-Annual	SW6020B	0.00200 mg/L	0.050 mg/L
Thallium	Semi-Annual	SW6020B	0.000500 mg/L	0.0020 mg/L
Radium 226+228	Semi-Annual	904 + SM7500Ra B M	varies	5.0 pCi/L

1 The concentration limit is the basis for determining whether a release has occurred from the CCR unit/area.

Table VII.A.1. – Unit Closure

For each unit to be registered, list the unit components to be decontaminated, the possible methods of decontamination, and the possible methods of disposal of wastes and waste residues generated during unit closure.

Equipment or CCR Unit	Possible Methods of Decontamination[1]	Possible Methods of Disposal[1]
001-Primary Ash Pond Piping	Removal	Landfill
001-Primary Ash Pond	Close in Place	No Disposal

1 Applicants may list more than one appropriate method.

Table VII.A.2. – CCR Units Under Alternative Closure Notification

Registered Unit No.	N.O.R. Unit No.	Unit Description[1,2]	Date of Receipt of Last Waste[3]	Date of Closure Notification[3]
001	001	Surface Impoundment	7/17/2027	11/30/2020

1 Indicates a unit for which a 30 TAC Chapter 352/40 CFR Part 257, Subpart D alternative closure determination has been requested pursuant to 40 CFR §257.103.
2 Indicates a unit for which a 30 TAC Chapter 352/40 CFR Part 257, Subpart D alternative closure determination has been made pursuant to 40 CFR §257.103.
3 Enter month, day, and year.

Table VIII.A.1. – Post-Closure Cost Summary for Existing Registered Units

Unit	Cost
001-Primary Ash Pond	$3,117,987
Total Existing Unit Post-Closure Cost Estimate	$3,117,987 (in 2021 Dollars)[1]

Table VIII.A.2. - Post-Closure Cost Summary for Proposed Registered Units

Unit	Cost

1 As units are added or deleted from these tables through future registration amendments, the remaining itemized unit costs should be updated for inflation when re-calculating the revised total cost in current dollars.

Table VIII.B. – Post-Closure Period

Unit Name	Date Certified Closed	Authorized Post-Closure Period (Yrs.)	Earliest Date Post-Closure Ends (See Note 1)
[Unit Example 1]	**[1/1/1995]**	30 years	**[1/1/2025]**
[Unit Example 2]	**[1/1/1990]**	30 years	**[1/1/2020]**
[Unit Example 3]	**[1/1/1984]**	30 years	**[1/1/2014]**

Note 1 – Post-Closure Care shall continue beyond the specified date until the Executive Director has approved the applicant's request to reduce or terminate the post-closure period, consistent with 30 TAC §352.1241 – Post-Closure Care Requirements.

N/A

APPENDIX E – GROUNDWATER MONITORING AND CORRECTIVE ACTION

Groundwater Hydrogeologic Monitoring Plan
Supplemental Geologic and Hydrogeologic Information
Supplemental Geologic and Hydrogeologic Information Report No. 2
Supplemental Geologic and Hydrogeologic Information Report No. 3
Groundwater Monitoring Plan-Revision 1
Background Groundwater Monitoring and Statistical Analysis Summary Report
Statistical Analysis Plan-Revision 1
2020 Groundwater Monitoring and Corrective Action Report
2021 Groundwater Monitoring and Corrective Action Report-Revision 1

Bullock, Bennett & Associates, LLC

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COAL COMBUSTION RESIDUAL RULE SUPPLEMENTAL GEOLOGIC AND HYDROGEOLOGIC INFORMATION REPORT NO. 3

PRIMARY ASH POND
COLETO CREEK POWER STATION
FANNIN, TEXAS

October 16, 2024

Prepared For:

Coleto Creek Power, LLC

Prepared By:

Bullock, Bennett & Associates, LLC
165 N. Lampasas Street
Bertram, Texas 78605

Texas Engineering Firm Registration No. F-8542
Texas Geoscience Firm Registration No. 50127

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1.0 INTRODUCTION

Coleto Creek Power, LLC owns and operates the Coleto Creek Power Station (Coleto Creek), a coal-fired power plant located in Fannin, Goliad County, Texas (the Site) (**Figure 1**). Coal Combustion Residuals (CCRs) including fly ash and bottom ash that are generated as part of power plant operations have historically been managed/disposed in the Primary Ash Pond (PAP) onsite. Bottom ash is sluiced directly to the PAP from the unit boiler. Fly ash is pneumatically conveyed from the boiler to storage silos where it is loaded into hopper trucks and transported off-site for beneficial re-use. Fly ash that does not meet specifications for off-site beneficial re-use is disposed in the PAP.

This report provides geologic and hydrogeologic information associated with the PAP that supplements the information that was previously presented in the Coleto Creek Groundwater Hydrogeologic Monitoring Plan (BBA, 2017a) and Supplemental Geologic and Hydrogeologic Information Report Nos. 1 and 2 (WSP Golder, 2022; BBA, 2023).

2.0 CCR RULE GROUNDWATER MONITORING SYSTEM PERFORMANCE STANDARD

The information provided herein demonstrates that the number and locations of the PAP CCR groundwater monitoring wells are adequate to achieve the general groundwater monitoring system performance standard in 40 C.F.R. § 257.91 (and 30 TAC § 352.911, which adopts § 257.91 by reference), that all groundwater monitoring systems must consist of a sufficient number of appropriately located wells, with at least one upgradient and three downgradient wells, in order to yield groundwater samples from the uppermost aquifer that represent the quality of background groundwater and the quality of groundwater passing the waste boundary.

The Preamble of the CCR Rule provides further explanation as to what constitutes an adequate groundwater monitoring system:

> [**Federal Register / Vol. 80, No. 74 / Page 21399**]
> *Because hydrogeologic conditions vary so widely from one site to another, the rule does not prescribe the exact number, location and depth of monitoring wells needed to achieve the general performance standard. Rather, the rule requires the owner or operator to install a minimum of one upgradient and three downgradient wells, and any additional monitoring wells necessary to achieve the general performance standard of accurately representing the quality of the background groundwater and the groundwater passing the waste boundary. The number, spacing, and depths of the monitoring wells must be determined based on a thorough characterization of the site, including a number of specifically identified factors relating to the hydrogeology of the site (e.g., aquifer thickness, groundwater flow rates and direction). Further, any owner or operator who determines that the specified minimum number of wells is adequate must provide a factual justification for that decision.* ***Factors that may substantiate a reduced density of groundwater monitoring wells includes simple geology (i.e., horizontal, thick, homogenous strata that are continuous across site, with no fractures,***

faults, folds, or solution channels), a flat and constant hydraulic gradient, uniform hydraulic conductivity, low seepage velocity, and high dispersivity potential.

The following sections provide Site-specific information on the hydrogeological factors listed in the portion of the Preamble bolded above, as well as Site-specific groundwater characteristics that were the basis for the PAP groundwater monitoring system design.

3.0 SITE GEOLOGY AND HYDROGEOLOGY

The Site is located in the outcrop area of the Pleistocene-aged Lissie Formation, which is part of the Texas Gulf Coastal Plain Province. The Lissie Formation consists of sand, silt, clay, and minor amounts of gravel deposited in fluvial-deltaic environments (Barnes, 1998). Extensive soil data collected at the Site indicate the stratigraphy below the PAP is divided into three distinct lithologic units, as follows:

- **Unit 1** – The PAP is built on top of the ground surface of Unit 1 and is enclosed by above-grade dikes that were constructed using Unit 1 material. Sargent and Lundy prepared a PAP design and construction summary report that evaluated soil borings completed in the footprint of the PAP and surrounding areas (S&L, 1978). Based on the soil boring logs, Unit 1 generally consists of dry to moist, low permeability sandy clay and silty clay with intermittent clayey sand and caliche. Unit 1 is laterally continuous across the Site and ranges from about 10 to 20 feet thick below the PAP. Laboratory permeability tests conducted on geotechnical samples from Unit 1 ranged from 1.3E-08 to 2.8E-07 centimeters per second (cm/s), with a median of 3.8E-08 cm/s (S&L, 1978). These permeability values are consistent with low permeability clay and silty/sandy clay (Dominico and Schwartz, 1990). Based on the low permeabilities and general dry nature of soil samples from Unit 1, this unit is characterized as a hydraulic confining unit overlying the uppermost aquifer at the Site.

- **Unit 2** – Unit 2 lies below Unit 1 and comprises the uppermost aquifer at the Site. Unit 2 consists of moist to wet permeable sand and silty sand, with intermittent layers of less permeable clay-bearing soils of varying thickness. Unit 2 is laterally continuous at the Site with a thickness that reportedly varies from about 40 to 54 feet (BBA, 2017a).

- **Unit 3** – Unit 3, which lies below Unit 2, is a basal clay confining stratum that consists of low permeability clay and silty clay with some sandy clay zones. Based on historical soil borings completed in Unit 3, the unit appears to be laterally continuous and generally greater than 20 feet thick at the Site (BBA, 2017a). The clayey soils of Unit 3 restrict downward migration of groundwater from Unit 2.

Geologic cross sections showing the three lithologic units described above are provided on **Figure 2**. The soils that make up the uppermost aquifer (Unit 2) primarily consist of relatively recent, unlithified (i.e., material that has not been transformed into stone) sand and silty sand. As documented in the Site Location Restriction Demonstration (BBA, 2018), no faults have been observed at the Site. Dissolution features (e.g., karstic limestone or other hard rock dissolution

features) and structural conduits (e.g., fractures) that are present in other regions of Texas and the country are not present at the Site.

The lithologic units at the Site meet the criteria for “simple geology,” as described in the Preamble of the CCR Rule, because they are:

- Horizontal;
- Relatively uniform in thickness;
- Relatively homogenous and uniform across the site; and
- Contain no fractures, faults, folds, or solution channels.

4.0 CCR GROUNDWATER MONITORING SYSTEM

Unit 2 is the uppermost aquifer at the Site based on its stratigraphic location, groundwater availability, and characteristically higher permeability when compared to Unit 1 and Unit 3. All Site wells, including CCR monitoring wells and other non-CCR monitoring wells at the Site are screened within the Unit 2 aquifer.

The CCR Rule requires a minimum of one upgradient and three downgradient wells. The CCR groundwater monitoring well network for the PAP, which has been certified by a professional engineer in accordance with 40 C.F.R. § 257.91 of the CCR Rule (BBA, 2017b), consists of three upgradient wells and six downgradient wells. The locations of the CCR monitoring wells are shown on **Figure 1**. The location of each CCR monitoring well relative to the PAP is as follows:

Upgradient Wells	Downgradient Wells
BV-5	MW-4
BV-21	MW-5
MW-8	MW-6
	MW-9
	MW-10
	MW-11

Regular groundwater monitoring activities were performed at the PAP prior to the 2015 effective date of the CCR Rule in accordance with the requirements of the TCEQ Industrial and Hazardous Waste Permits Section (Solid Waste Registration No. 31911). The initial PAP groundwater monitoring program was established after construction of the PAP in 1978 and included current CCR groundwater monitoring program wells MW-4 through MW-8. Additional monitoring wells were installed at the Site during subsequent investigations in other areas of the power station, including CCR groundwater monitoring program background wells BV-5 and BV-21. CCR groundwater monitoring program wells MW-9 and MW-10 were installed in 2015, and MW-11 was installed in 2017 to increase the density of monitoring wells on the downgradient edge of the PAP prior to initiating the CCR groundwater monitoring program (BBA, 2017a). In addition to the CCR groundwater monitoring program, Site wells are monitored on a semi-annual basis as part of a Texas Pollutant Discharge Elimination System

(TPDES) permit (Permit No. WQ0002159000) groundwater monitoring program that was established in 2010. TPDES groundwater monitoring reports are submitted to the TCEQ on an annual basis. A summary of the Coleto Creek CCR groundwater monitoring program and available groundwater data was initially provided to the TCEQ Remediation Division on April 8, 2019, in response to a TCEQ letter requesting the information on March 22, 2019. The TCEQ issued a subsequent letter dated April 24, 2019, requiring the submittal of a Drinking Water Survey Report associated with the CCR unit. A final Drinking Water Survey Report (Golder, 2019) was submitted to the TCEQ on July 25, 2019, which described the CCR groundwater monitoring well network, summarized the CCR groundwater monitoring data, and inventoried drinking water wells in the area. The Drinking Water Survey Report concluded that no imminent threats to water wells or potentially affected drinking water wells were present at or in the vicinity of the PAP. The Drinking Water Survey Report was approved by the TCEQ in a letter dated August 15, 2019.

As described above, the TCEQ has reviewed the PAP monitoring well network on multiple occasions and has approved the monitoring well network as adequate for evaluating groundwater quality and potential releases from the PAP. Based on the extensive hydrogeologic evaluations conducted at the Site, the existing CCR groundwater monitoring network accurately represents the quality of groundwater and detect potential groundwater contamination at the Site.

5.0 HYDRAULIC CHARACTERISTICS OF THE UPPERMOST AQUIFER

The uppermost aquifer occurs under unconfined to semi-confined conditions within the shallow sand and silty sand strata that comprise Unit 2. The Site monitoring wells were installed in Unit 2 because that is where the water table was typically encountered during well drilling operations and because the sandy material in Unit 2 constitutes a preferential flow pathway compared to the clay-rich strata in Unit 1 and Unit 3. All CCR groundwater monitoring wells were installed under the direction of a geoscientist using recognized drilling methods. All sampling and aquifer characterization methods that have been utilized as part of the CCR groundwater monitoring program are recognized and accepted methods that provide data at a spatial resolution necessary to adequately characterize the variability of subsurface conditions that control contaminant transport. CCR monitoring well completion details and boring log information were previously provided in the Groundwater Hydrogeologic Monitoring Plan (BBA, 2017a).

Monitoring well groundwater elevations are used to determine the direction and magnitude of groundwater flow during each semiannual CCR groundwater monitoring event. As demonstrated on the groundwater potentiometric surface maps provided in **Appendix A**, groundwater at the PAP generally flows to the east-southeast toward Coleto Creek Reservoir. Groundwater elevations are consistent along the entire downgradient edge of the PAP, which demonstrates strong hydraulic connection and negligible effects due to preferential flow pathways throughout this area. The groundwater hydraulic gradient (i.e., the change in water level per unit of distance) across the PAP is relatively flat, with water elevations decreasing by only a few feet over the approximately 3,000-foot distance from the upgradient (west) side of the PAP to the downgradient (east) side of the PAP. The hydraulic gradient calculated during the most recent monitoring period (2023) was approximately 0.001 vertical feet per horizontal foot, which is consistent with historical observations.

BBA performed single-well aquifer tests (slug tests) in 2017 at six monitoring wells (BV-5, BV-21, BV-22, MW-9, MW-10, and MW-11) located adjacent to the PAP to evaluate the hydraulic conductivity (i.e., the relative ease at which a fluid moves through a medium) within the uppermost aquifer at the Site (BBA, 2017a). As shown on **Table 1**, the hydraulic conductivity values for the six test wells ranged from 1.37E-02 cm/s to 5.14E-04 cm/s, which are values consistent with water-bearing units composed of unconsolidated sand (Dominico and Schwartz, 1990). The hydraulic conductivity values for the test wells located along the downgradient edge of the PAP (MW-9, MW-10, and MW-11) were consistent, with values ranging from 1.47E-03 cm/s to 5.14E-04 cm/s.

Groundwater seepage velocity, which represents the speed at which groundwater flows in a porous medium, is a function of the groundwater hydraulic gradient (calculated from groundwater elevations), hydraulic conductivity (calculated from aquifer pumping or slug test data), and effective porosity of the aquifer (approximated at 0.3, which is typical of silty sand aquifers), as shown below:

$$V_s = \frac{K * dh/dl}{n_e}$$

where:

V_s = seepage velocity
dh/dl = hydraulic gradient
n_e = effective porosity

The groundwater seepage velocities calculated for the three test wells along the downgradient edge of the PAP are as follows:

- MW-9: 5 feet per year
- MW-10: 2 feet per year
- MW-11: 6 feet per year

Monitoring wells MW-9, MW-10, and MW-11 span almost the entire length of the PAP (**Figure 1**), and the similarity in seepage velocities in these wells suggests that the groundwater flow characteristics are uniform along the entire downgradient edge of the PAP. If new monitoring wells were installed along the downgradient edge of the PAP, the monitoring well locations would be expected to have geologic and hydraulic characteristics that are similar to those of the existing CCR monitoring well locations.

Groundwater transport occurs through the processes of advection and dispersion. Advection is the groundwater transport mechanism by which solutes are carried by flowing water. Dispersion is the process by which solutes spread from areas of high concentrations to areas of lower concentrations as a result of mechanical dispersion and diffusion. Aquifers with high advective rates and/or well-defined preferential flow pathways, such as systems with interconnected fractures or dissolution channels or isolated, high permeability zones with limited extent, tend to focus solute transport along preferential pathways, which results in low dispersivity. In contrast, the PAP groundwater-bearing unit has a

relatively high dispersivity potential due to its relatively low advective rates (i.e., seepage velocities) and the extent and uniformity of the uppermost aquifer at the Site.

Based on the information presented in this section, the hydraulic characteristics of the uppermost aquifer satisfy the criteria provided in the CCR Rule Preamble for a reduced density of groundwater monitoring wells, namely:

- Simple geology, with flat and constant hydraulic gradient;
- Uniform hydraulic conductivity;
- Low seepage velocity; and
- High dispersivity potential.

6.0 CONCLUSIONS

The CCR Rule's general groundwater monitoring performance standard requires that all groundwater monitoring systems consist of a sufficient number of appropriately located wells, with at least one upgradient and three downgradient wells, in order to yield groundwater samples from the uppermost aquifer that represent the quality of background groundwater and the quality of groundwater passing the waste boundary. The CCR groundwater monitoring well network for the PAP consists of three upgradient wells and six downgradient wells, which exceeds the CCR Rule minimum requirement. In addition, the TCEQ has reviewed the PAP monitoring well network on multiple occasions and has approved the monitoring well network as adequate for evaluating groundwater quality and potential releases from the PAP. Furthermore, hydrogeologic characteristics of the Site satisfy criteria that the CCR Rule Preamble specifies may be used to substantiate a reduced density of groundwater monitoring wells, including:

- Simple geology, demonstrated by an aquifer that consists of horizontal, thick, homogenous strata that are continuous across site, with no fractures, faults, folds, or solution channels;
- Flat and constant hydraulic gradient;
- Uniform hydraulic conductivity;
- Low seepage velocity; and
- High dispersivity potential.

Based on the information presented in this and previous evaluations of the CCR groundwater monitoring system and extensive hydrogeologic evaluations conducted at the Site since the PAP was constructed in 1978, the existing CCR groundwater monitoring system meets the CCR Rule's groundwater monitoring performance standard. The CCR groundwater monitoring program will continue as described in the Groundwater Hydrogeologic Monitoring Plan for the Site (BBA, 2017a). No changes to the CCR groundwater monitoring program are proposed at this time.

7.0 REFERENCES

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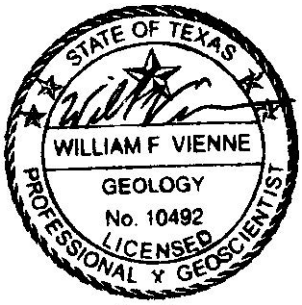
SIGNATURE PAGE

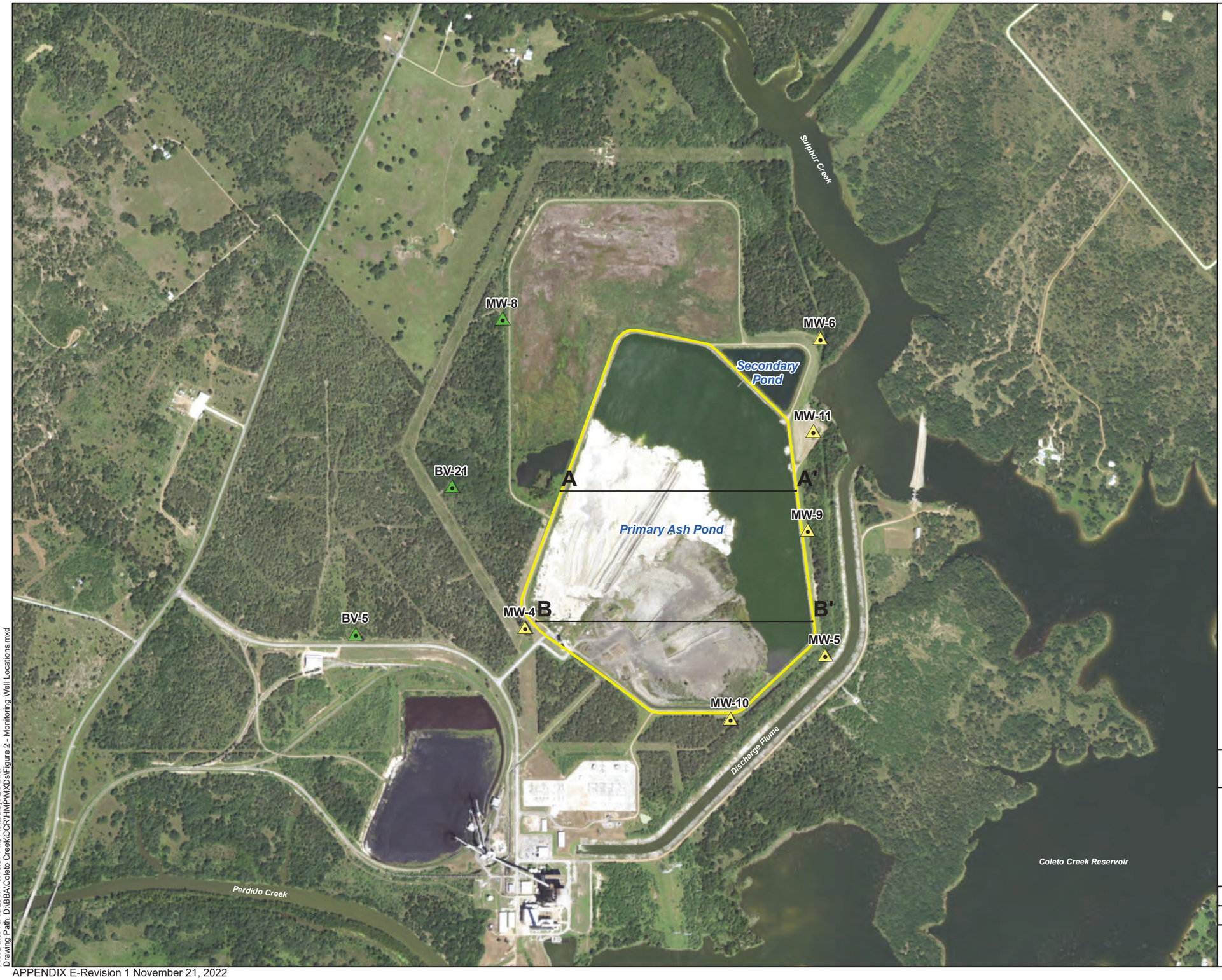
Bullock, Bennett & Associates, LLC

William Vienne, P.G.
Senior Hydrogeologist



10/16/2024

FIGURES



Explanation

- Downgradient CCR Monitoring Well
- Upgradient/Backround CCR Monitoring Well
- CCR Monitored Unit

STATE OF TEXAS
WILLIAM F VIENNE
GEOLOGY
No. 10492
LICENSED
PROFESSIONAL GEOSCIENTIST

10/06/2023

Ref: Orthoimagery from ArGIS World Imagery Server

0 — 1:12,000 — 2,000 Feet

Coleto Creek Power, LLC

Figure 1
Monitoring Well and Cross Section Locations

PROJECT: 17258	BY: EEF	REVISIONS
DATE: Oct 2017	CHECKED: CEB	

Bullock, Bennett & Associates, LLC
Engineering and Geoscience
Texas Registrations: Engineering F-8542, Geoscience 50127

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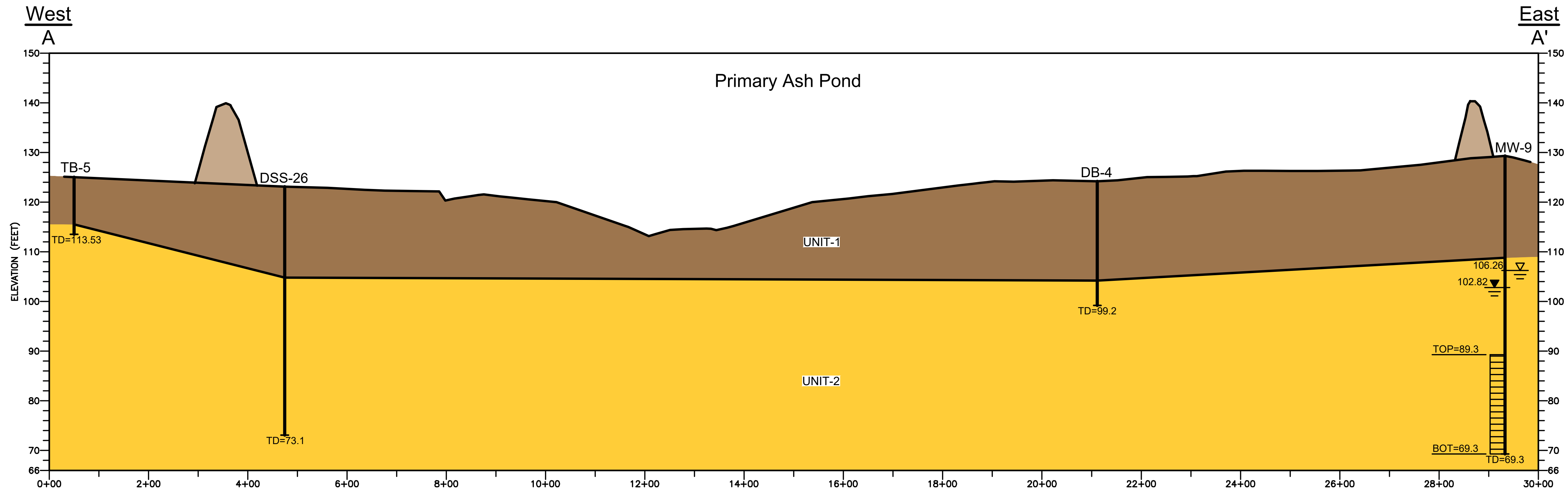
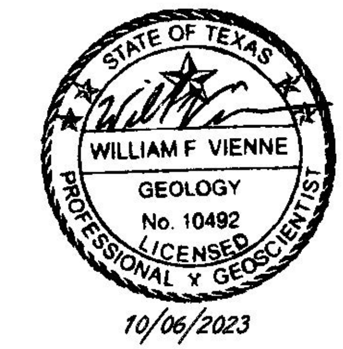
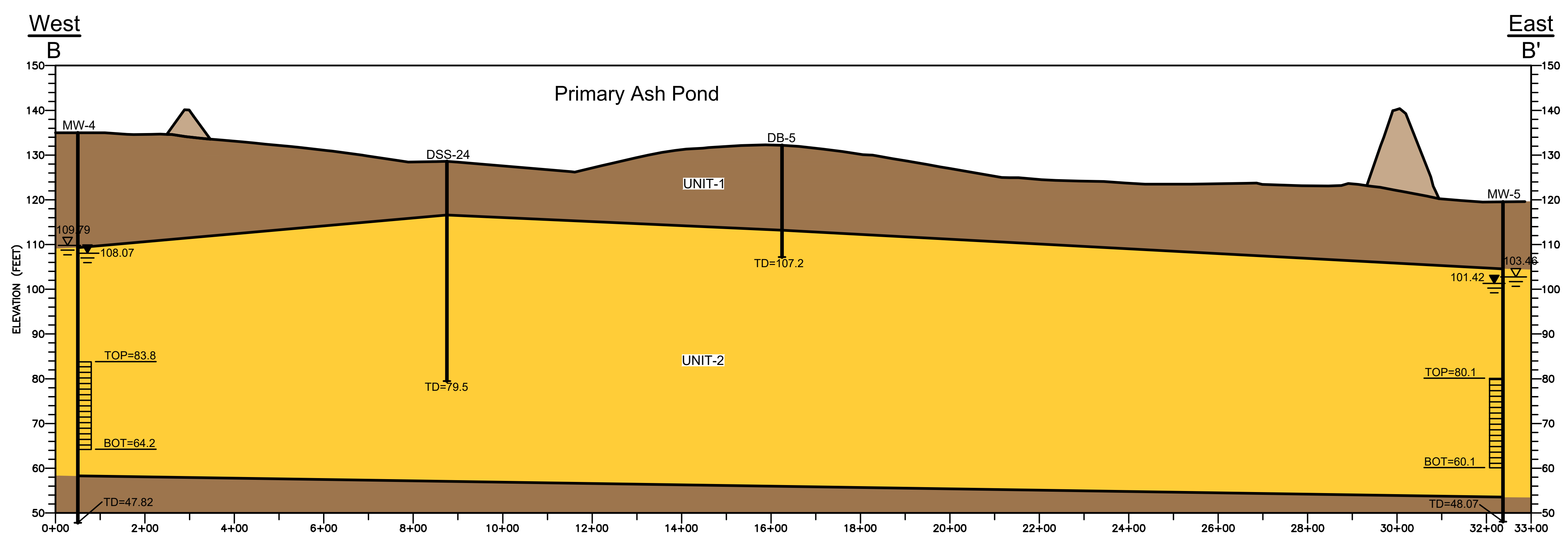




PROFILE B-B' (LOOKING NORTH)
SCALE:1"=240'(H), 1"=24'(V)



PROFILE C-C' (LOOKING NORTH)
SCALE:1"=300'(H), 1"=30'(V)

UNIT DESCRIPTIONS:

- Unit 1 - Sandy CLAY and Silty CLAY with some Caliche. Surficial unit.
- Unit 2 - Sand and Silty SAND with caliche and CLAY/Sandy CLAY lenses. First groundwater-bearing unit.
- Unit 3 - CLAY and Silty CLAY. Basal unit.
- Backfilled (Unit 1) Material

NOTES:

Pre-construction topography and site stratigraphy are estimated and interpolated based on data in Sargent & Lundy (1978), pre- and post-construction topographic data, and various post-construction borings located outside of pond footprint.

- Max CCR Monitoring Program Groundwater Potentiometric Surface (feet amsl) 2017 to 2023
- Average CCR Monitoring Program Groundwater Potentiometric Surface (feet amsl) 2017 to 2023

Coleto Creek Power, LLC

FIGURE 2

GENERALIZED GEOLOGIC CROSS SECTIONS A-A' AND B-B'

PROJECT: 23643-07	DATE: AUG 2023	BY: RCAD-RR	CHECKED: CBB

Bullock, Bennett & Associates, LLC
ENGINEERING AND GEOSCIENCE
Texas Registrations: Engineering F-8542, Geoscience 50127

Plot Date: 08/24/23 - 11:02am, Plotted by: Admin
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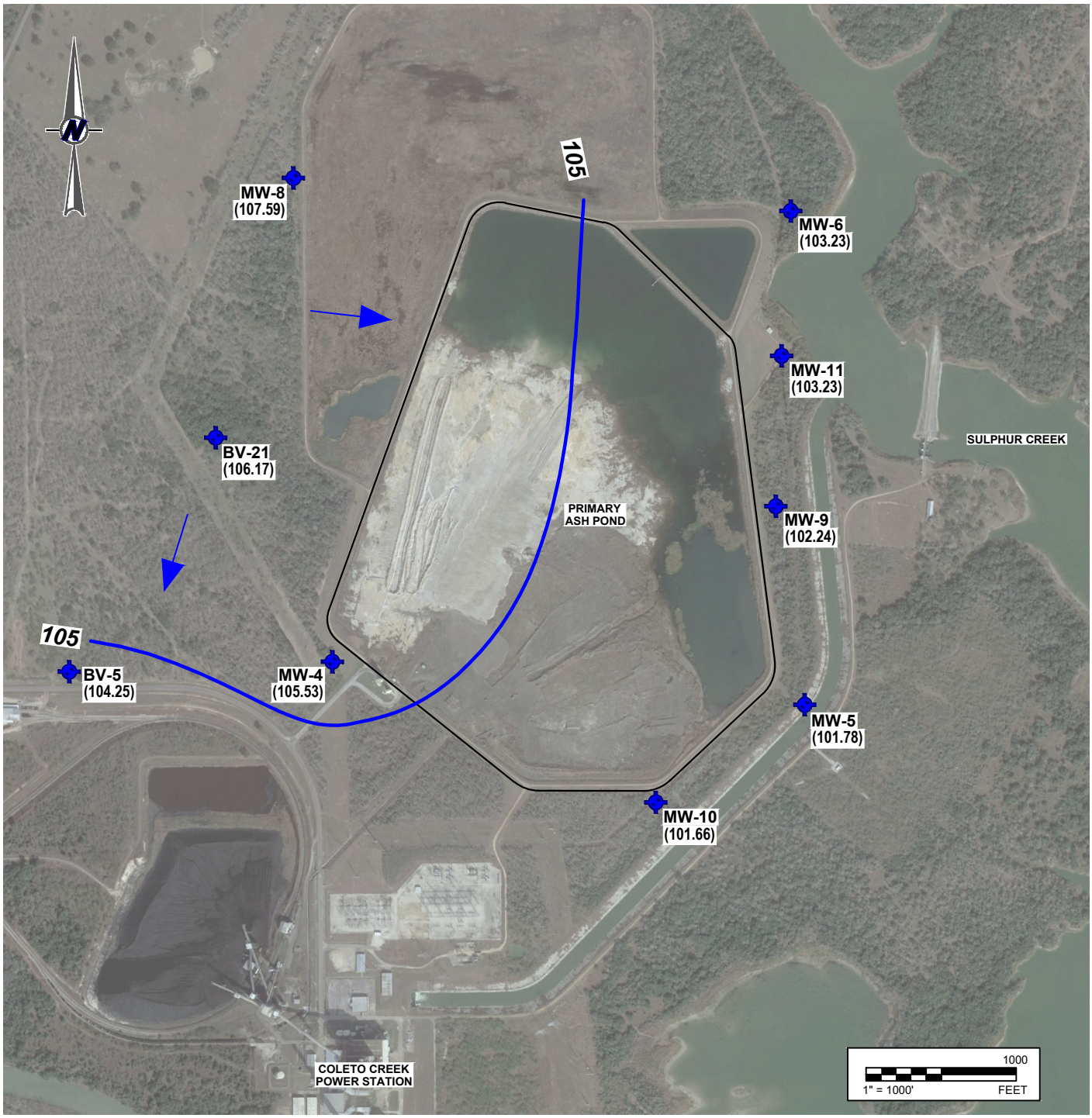
TABLES

Table 1. Hydraulic Conductivity Testing Results
Hydrogeologic Monitoring Plan
Coleto Creek Power, LP CCR Rule Groundwater Monitoring
CCR Unit Name: Coleto Creek Primary Ash Pond
Unit ID: 141

Monitoring Well	K_r (ft/day)	K_r (m/day)	K_r (cm/sec)	K_r (ft/sec)
BV-5	24.6	7.49	8.68E-03	2.84E-04
BV-21	37.8	11.5	1.34E-02	4.38E-04
BV-22	38.7	11.8	1.37E-02	4.48E-04
MW-9	3.3	1.01	1.17E-03	3.82E-05
MW-10	1.45	0.443	5.14E-04	1.68E-05
MW-11	4.17	1.27	1.47E-03	4.82E-05

APPENDIX A

2023 Groundwater Potentiometric Surface Maps



LEGEND

- CCR MONITORING WELL
- *(101.66)* GROUNDWATER POTENTIOMETRIC SURFACE (FT MSL)
- GROUNDWATER POTENTIOMETRIC SURFACE CONTOUR (C.I. = 5 FT)
- INFERRED DIRECTION OF GROUNDWATER FLOW

STATE OF TEXAS
WILLIAM F VIENNE
GEOLOGY
No. 10492
LICENSED
PROFESSIONAL GEOSCIENTIST
01/31/2024

REFERENCE(S)

BASE MAP TAKEN FROM GOOGLE EARTH, IMAGERY DATED JANUARY 2021

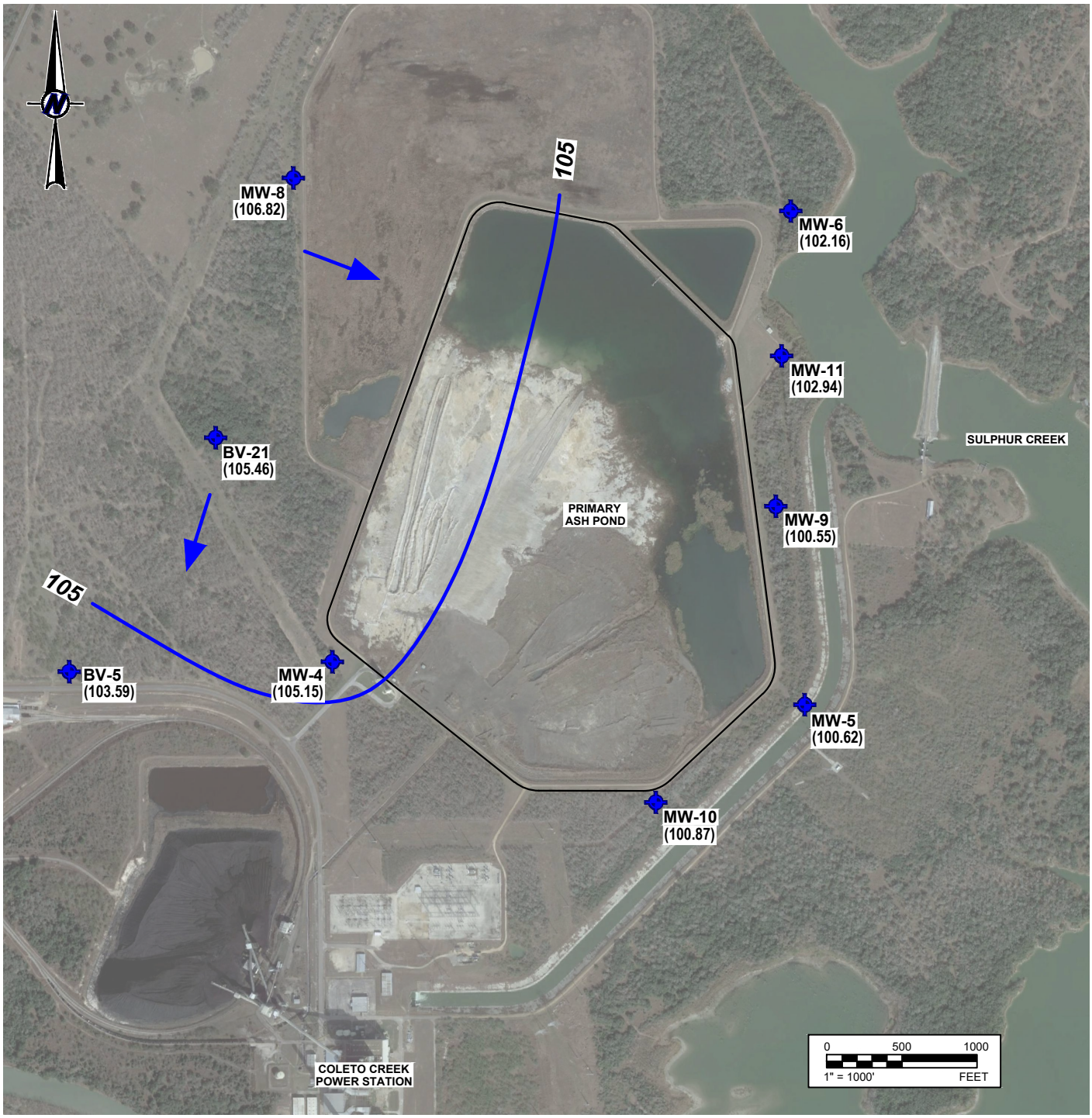
LUMINANT

COLETO CREEK POWER, LLC
FANNIN, TEXAS

PRIMARY ASH POND
POTENTIOMETRIC SURFACE MAP
MAY 2023

PROJECT: 23643.02	BY: SLB	DATE: 8/14/2023	CHECKED: WV

Bullock, Bennett & Associates, LLC
Engineering and Geoscience
Texas Registrations: Engineering F-8542, Geoscience 50127



LEGEND

- CCR MONITORING WELL
- *(101.66)* GROUNDWATER POTENTIOMETRIC SURFACE (FT MSL)
- GROUNDWATER POTENTIOMETRIC SURFACE CONTOUR (C.I. = 5 FT)
- INFERRED DIRECTION OF GROUNDWATER FLOW

STATE OF TEXAS
WILLIAM F VIENNE
GEOLOGY
No. 10492
LICENSED
PROFESSIONAL GEOSCIENTIST
01/31/2024

REFERENCE(S)

BASE MAP TAKEN FROM GOOGLE EARTH, IMAGERY DATED JANUARY 2021

LUMINANT

COLETO CREEK POWER STATION
FANNIN, TEXAS

PRIMARY ASH POND
POTENTIOMETRIC SURFACE MAP
AUGUST 2023

PROJECT: 23643.02	BY: SLB	DATE: 11/30/2023	CHECKED: WV

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Texas Registrations: Engineering F-8542, Geoscience 50127