

# **CLECO CAJUN LLC**

**BIG CAJUN II POWER PLANT**

**NEW ROADS, POINTE COUPEE PARISH, LOUISIANA**



## **5-YEAR PERIODIC REVIEW HAZARD POTENTIAL CLASSIFICATION ASSESSMENT BOTTOM ASH BASIN**

**OCTOBER 2021**

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Providence Project No: 996-018



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## 1.0 INTRODUCTION

Providence Engineering and Environmental Group LLC (Providence) was contracted by Cleco Cajun LLC (Cleco) to perform the 5-year periodic review of the Hazard Potential Classification Assessment of the Bottom Ash Basin at Cleco's Big Cajun II (BCII) Power Plant.

The Coal Combustion Residual (CCR) regulations at 40 CFR 257.73(a)(2) established requirements for owners and operators to conduct a Hazard Potential Classification Assessment to assess the potential adverse incremental consequences that would occur if there was a failure of the CCR surface impoundment. Cleco conducted the initial Hazard Potential Classification Assessment and placed it in the facility operating record on October 17, 2016.

This 5-year periodic review for the Hazard Potential Classification Assessment pertains to the Bottom Ash Basin that is utilized for the Big Cajun II coal-fired generation unit. BCII is located at 10431 Cajun II Road, New Roads, Pointe Coupee Parish, Louisiana. A site location map showing the BCII Power Plant is included as **Figure 1**. The Bottom Ash Basin is shown in **Figure 2**.

Bottom ash from Boiler Unit No. 1 is currently sluiced to the southern part of the Bottom Ash Basin. Also, the clarifier sediments are piped to the southeast corner of the Bottom Ash Basin.

## 2.0 HAZARD POTENTIAL CLASSIFICATION ASSESSMENT

Per the CCR regulations, a hazard potential classification provides an indication for danger to life, development, or the environment in the event of a release of CCR from a surface impoundment. The CCR rule requires an owner or operator of any existing or new CCR surface impoundment or any lateral expansion of a CCR surface impoundment to determine which of the following hazard potential classifications apply to their particular CCR unit. These potential classifications include the following:

- High Hazard Potential CCR Surface Impoundment – means a diked surface impoundment where failure or misoperation will probably cause loss of life.
- Significant Hazard Potential CCR Surface Impoundment – means a diked surface impoundment where failure or misoperation results in no probable loss of human life, but can cause economic loss, environmental damage, disruption of lifeline facilities, or impact other concerns.
- Low Hazard Potential CCR Surface Impoundment – means a diked surface impoundment where failure or misoperation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the surface impoundment's owner's property.

The 2016 CB&I Environmental & Infrastructure, Inc. (CB&I), report analyzed the Bottom Ash Basin to determine effects of a breach in the levee system.

A review of the possible adverse consequences that could result from the release of water or stored contents due to failure of the Bottom Ash Basin or mis-operation of the Bottom Ash Basin was completed. It was determined that failure or mis-operation of the diked surface impoundments was unlikely to cause loss of human life. Failure or misoperation would cause low economic and/or environmental loss. Any disruption or loss is basically to Cleco's own property. This determination was based on the materials stored in the impoundments and the impoundment's capacity and physical location relative to downgradient inhabitants/structures and environmental systems. Specifically, it was determined that:

- The bottom ash stored in the Bottom Ash Basin consists of particles that are the approximate size of coarse sand, which makes this material less susceptible to flow over long distances.
- If failure or mis-operation of the diked surface impoundments occurred, topographic control would generally direct flow away from inhabitants and sensitive structures as shown on the Levee Breach Drainage Map (**Figure 3**).
- Power plant structures are more than 1,500 feet away and are not downgradient from the Bottom Ash Basin.
- Flow would generally proceed in a southerly direction until reaching an unnamed drainage ditch located about 750 feet south of the impoundments, then proceed southwesterly in the drainage ditch, flowing under LA Highway 10, then along a southerly path under a railroad track, then along an approximate 1.75 mile wooded area.
- The Bottom Ash Basin capacity is insufficient to cause physical damage to the railroad track, highway, or environmental damage to the nearest water body (Lake Patin), even under complete and sudden failure conditions.
- Levees along the Mississippi River and the topography of the area would prevent a release from impacting the river.

The Bottom Ash Basin is currently operated in the same manner that it was in 2016, when the initial Hazard Potential Classification Assessment was completed. Providence reviewed this assessment and has determined that the Bottom Ash Basin will remain classified as a low hazard potential CCR surface impoundment.

### 3.0 CONCLUSIONS

Based on the review of the results of the levee breach analysis, the Bottom Ash Basin at Cleco's Big Cajun II Power Plant will remain classified as a low hazard potential CCR surface impoundment due to the abovementioned factors in Section 2.0. **Appendix A** contains a P.E. Certification that attests to the 5-year periodic Hazard Potential Classification Assessment of the Bottom Ash Basin.

### 4.0 REFERENCES

The following reports/documents were used to prepare this 5-year periodic review of the hazard potential classification assessment for the Bottom Ash Basin:

CB&I Environmental & Infrastructure, Inc.; 2016; Big Cajun II CCR Compliance, Fly Ash and Bottom Ash Basin Structural Integrity Assessment Report, NRG Louisiana Generating, LLC, NRG Energy, Inc., New Roads, Louisiana.

Geosyntec Consultants; 2020; Big Cajun II Power Plant; CCR Surface Impoundment Annual Inspection Report, Cleco Cajun LLC, New Roads, Louisiana.

Environmental Protection Agency; 2015; 40 CFR Parts 257 and 261 Rules and Regulations, Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities, Volume 80, No. 74; Final Rule.

GeoEngineers, Inc.; 2011 (May); Preliminary Geotechnical Engineering Services, Ash Basins/Wastewater Treatment Ponds, Big Cajun II Generating Site, New Roads, Pointe Coupee Parish, Louisiana.

GeoEngineers, Inc.; 2011 (September); Embankment Dike Inspections Services, Ash Basins/Wastewater Treatment Ponds, Big Cajun II Generating Site, New Roads, Pointe Coupee Parish, Louisiana.

GeoEngineers, Inc.; 2012; Geotechnical Engineering Services Report, Big Cajun II Generating Site, New Roads, Pointe Coupee Parish, Louisiana.

GeoEngineers, Inc.; 2014; Preliminary Geotechnical Engineering Services, Ash Basins/Wastewater Treatment Ponds, Big Cajun II Generating Site, New Roads, Pointe Coupee Parish, Louisiana.

GeoEngineers, Inc.; 2015; Dike Slope and Failure Evaluations, Ash Basin Ponds, Big Cajun II Generating Site, New Roads, Pointe Coupee Parish, Louisiana.

Louis J. Capozzoli and Associates, Inc.; 1974; Preliminary Subsoil Investigation and Foundation Design Data, Big Cajun 2, Site C-2, New Roads, Louisiana, File No. 74-30.

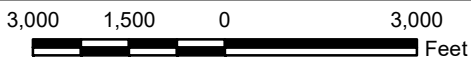
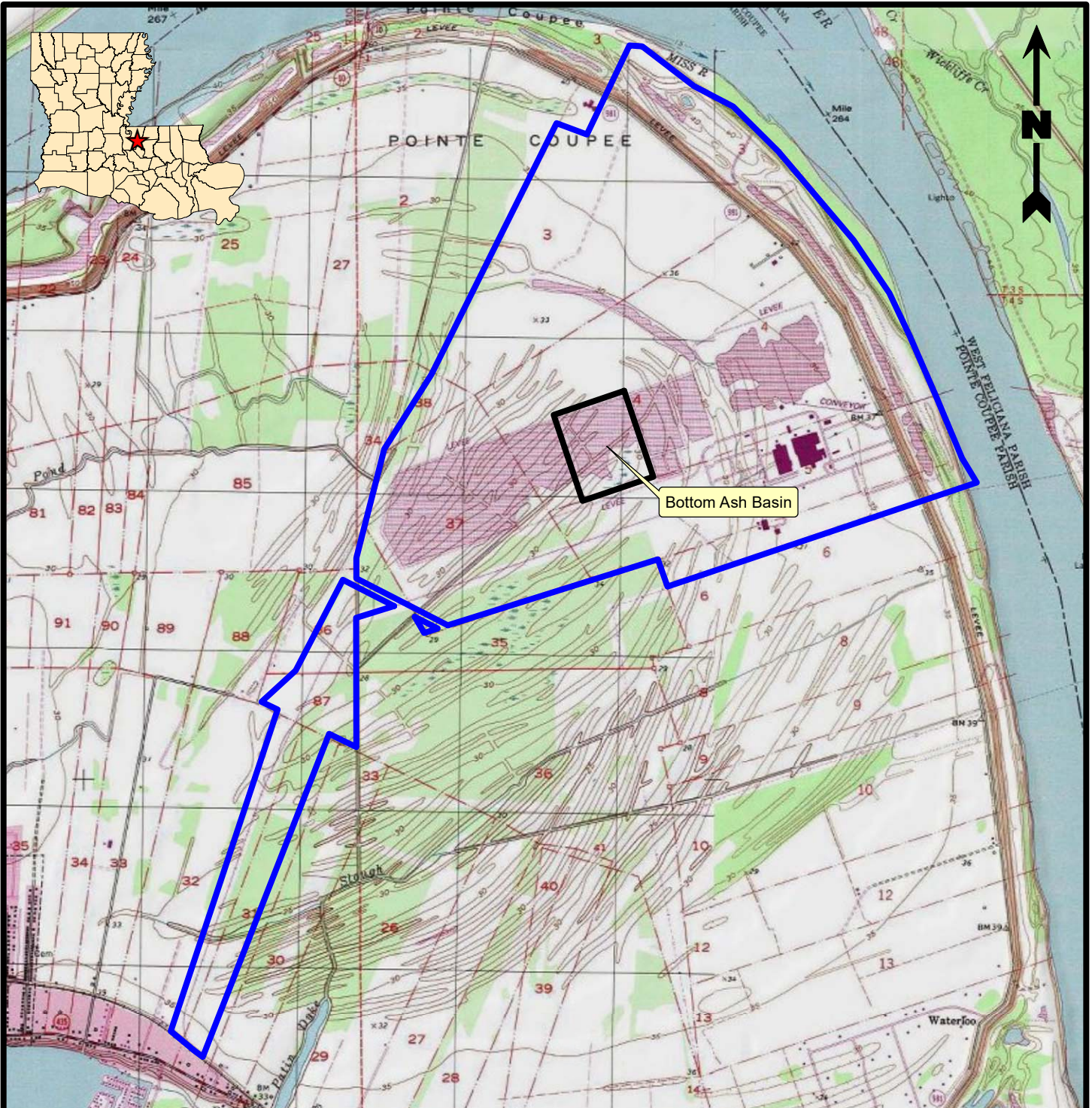
Louis J. Capozzoli and Associates, Inc.; 1977; Preliminary Subsurface Soil Investigation and Laboratory Testing, Ash Storage Area, CEPCO No. 2, Plant Site, New Roads, Louisiana.

Louis J. Capozzoli and Associates, Inc.; 2006; Geotechnical Investigation, Bottom Ash Storage Pond Expansion; Big Cajun No. 2, Pointe Coupee Parish Plant Site, Louisiana, LJC&A File 0558.



Providence Engineering and Environmental Group LLC; November 2019; Type I Industrial Surface Impoundments Permit Renewal Application P-0108R1 prepared for Louisiana Generating LLC, Big Cajun II Power Plant, New Roads, Pointe Coupee Parish, Louisiana.

**FIGURE 1**  
**SITE LOCATION MAP**





**Legend**

-  Property Boundary
-  Facility Boundary

**Reference**

Base map comprised of United States Geological Survey (USGS) 7.5-minute topographic maps, "St. Francisville, LA", "Elm Park, LA", "New Roads, LA", and "Port Hudson, LA".

**Site Location Map**

**5-Year Periodic Review  
Hazard Potential Classification Assessment - Bottom Ash Basin**  
New Roads, Pointe Coupee Parish, Louisiana

**Cleco Cajun LLC**  
Big Cajun II



**PROVIDENCE**

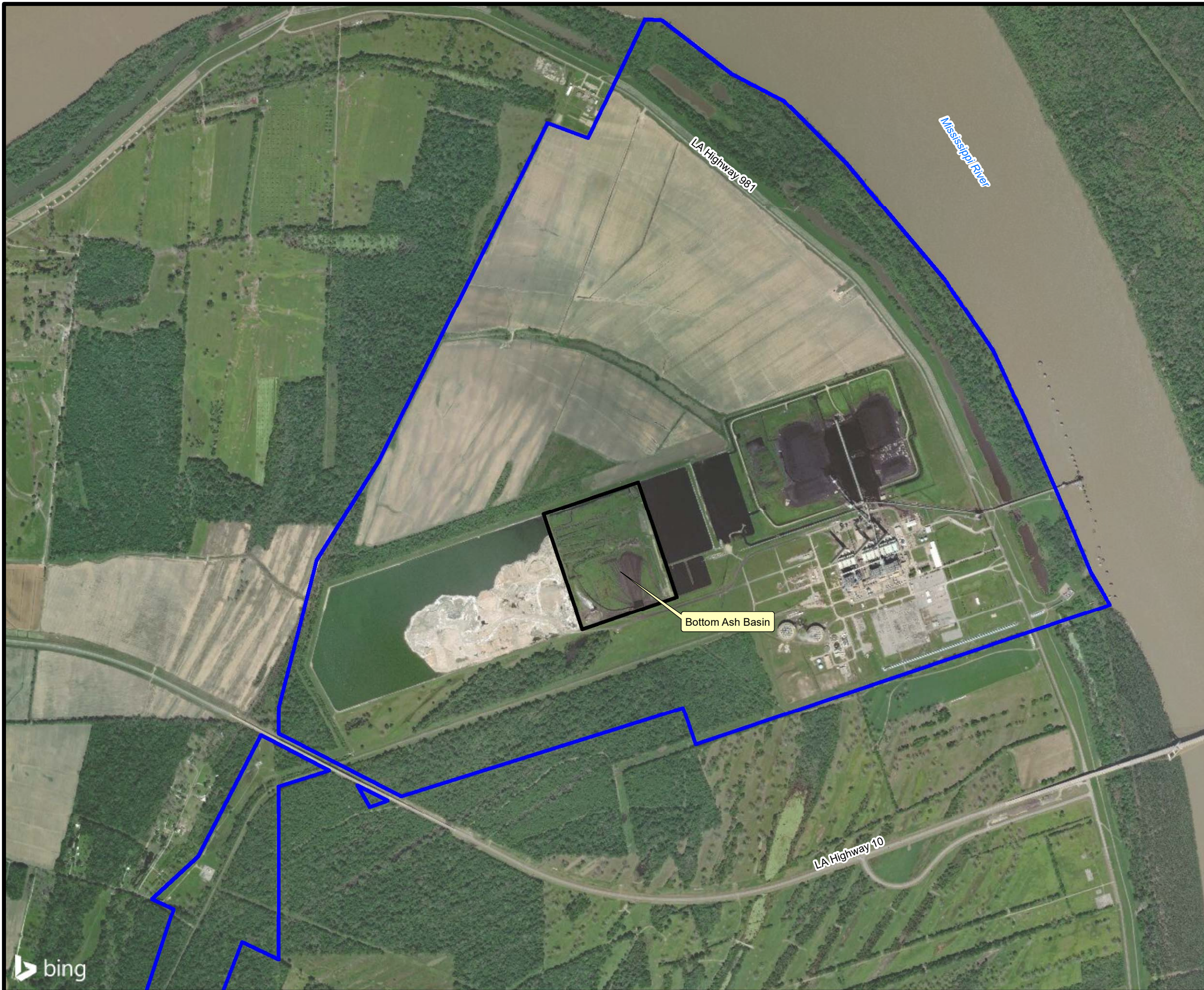
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Checked By	LMH	10/08/21
Approved By	CVH	10/08/21

Project Number	996-018	<b>1</b> Figure
Drawing Number	996-018-A001	



**FIGURE 2**  
**SITE MAP**



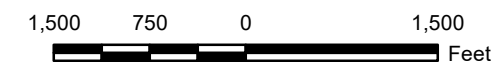


**Legend**

- Property Boundary
- Facility Boundary

**Reference**

Base map comprised of Bing Maps aerial imagery from (c) 2021 Microsoft Corporation and its data suppliers.



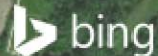
**Site Map**

**5-Year Periodic Review  
Hazard Potential Classification Assessment - Bottom Ash Basin**  
New Roads, Pointe Coupee Parish, Louisiana

**Cleco Cajun LLC**  
Big Cajun II



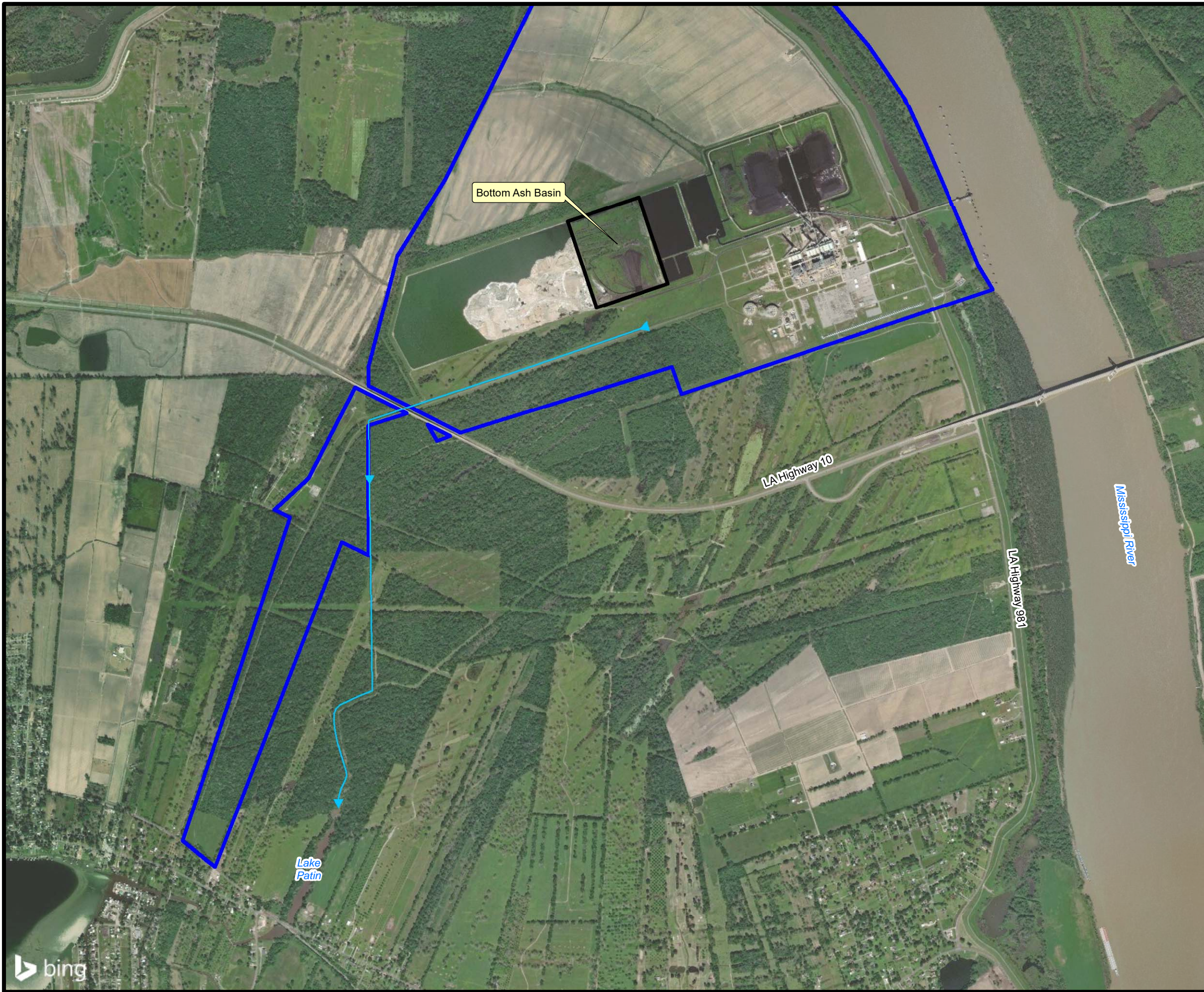
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Approved By	CVH	10/08/21
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	<b>2</b>	Figure





**FIGURE 3**  
**LEVEE BREACH DRAINAGE MAP**





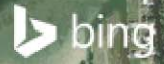
Bottom Ash Basin

LA Highway 10

Mississippi River

LA Highway 981

Lake Patin

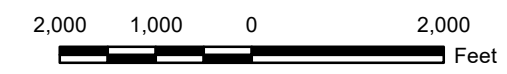


**Legend**

- Property Boundary
- Facility Boundary
- Drainage Flow Route

**Reference**

Base map comprised of Bing Maps aerial imagery from (c) 2021 Microsoft Corporation and its data suppliers.



**Levee Breach Drainage Map**

**5-Year Periodic Review  
Hazard Potential Classification Assessment - Bottom Ash Basin  
New Roads, Pointe Coupee Parish, Louisiana**

**Cleco Cajun LLC**  
Big Cajun II



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**APPENDIX A**  
**P.E. CERTIFICATION**

**BIG CAJUN II POWER PLANT  
BOTTOM ASH BASIN  
5-YEAR PERIODIC REVIEW – CCR HAZARD POTENTIAL CLASSIFICATION  
ASSESSMENT**

**PROFESSIONAL ENGINEER CERTIFICATION**

I hereby certify that I have performed the 5-year periodic review of the Hazard Potential Classification Assessment for Cleco Cajun LLC (Cleco) Big Cajun II Power Plant Bottom Ash Basin in accordance with the CCR requirements at 40 CFR 257.73(a)(2). This 5-year periodic review of the Hazard Potential Classification Assessment has determined that the Bottom Ash Basin continues to be classified as a low hazard potential surface impoundment.

**James C. Van Hoof**

Name

**24630**

Registration No.

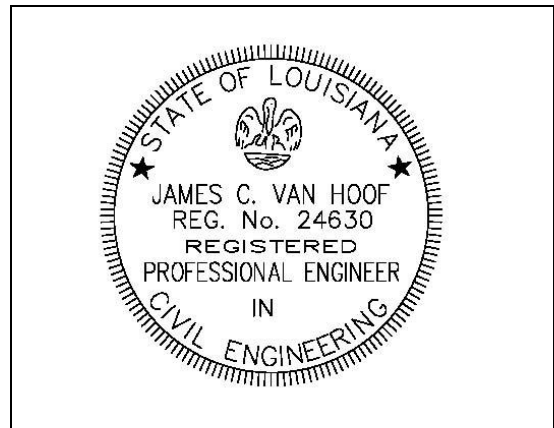
**LA**

State

Signature

October 15, 2021

Date



(Seal)