

# **CLECO CAJUN LLC**

**BIG CAJUN II POWER PLANT**

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



## **5-YEAR PERIODIC REVIEW INFLOW DESIGN FLOOD CONTROL SYSTEM PLAN FLY ASH BASIN**

**OCTOBER 2021**

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Providence Project No: 002-286



**TABLE OF CONTENTS**

<b><u>Section</u></b>	<b><u>Page</u></b>
<b>1.0 INTRODUCTION .....</b>	<b>1</b>
<b>2.0 INFLOW DESIGN FLOOD CONTROL SYSTEM PLAN .....</b>	<b>1</b>
<b>3.0 CONCLUSIONS .....</b>	<b>3</b>
<b>4.0 REFERENCES .....</b>	<b>3</b>

**LIST OF FIGURES**

**Figure**

- 1 Site Location Map
- 2 Site Map
- 3 Solid Waste Management Units

**LIST OF APPENDICES**

**Appendix**

- A Inflow Design Flood Control System Plan Calculations
- B P.E. Certification

## 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 Inflow Design Flood Control System Plan of the Fly Ash Basin at Cleco's Big Cajun II (BCII) Power Plant.

The Coal Combustion Residual (CCR) regulations at 40 CFR 257.82 established requirements for owners and operators to design, construct, operate and maintain an inflow design flood control system that must adequately manage the flow into and the flow from the CCR unit during and following the peak discharge. CB&I Environmental & Infrastructure, Inc. (CB&I) conducted the initial Inflow Design Flood Control System Plan and placed it in the facility operating record on October 17, 2016.

This 5-year periodic review for the Inflow Design Flood Control System Plan pertains to the Fly 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 Fly Ash Basin is shown in **Figure 2**.

BCII ceased hauling fly ash to the Fly Ash Basin on April 11, 2021. Prior to that date, fly ash was hauled to the Fly Ash Basin in transport trucks and spread by dozers. The fly ash was hydrated naturally by rainfall and was compacted in the process. Fly ash was initially deposited in the southeast corner of the Fly Ash Basin. BCII had planned for the filling to proceed westward along the south levee.

The BCII facility contains five solid waste management units that operate under the Louisiana Department of Environmental Quality (LDEQ) solid waste permit P-0108R2. The Fly Ash Basin and the Bottom Ash Basin are required to comply with the requirements of the CCR regulations. The Primary Treatment Pond, Secondary Treatment Pond and the Rainfall Surge Pond are not subject to the CCR regulations. These solid waste management units are shown on **Figure 3**.

## 2.0 INFLOW DESIGN FLOOD CONTROL SYSTEM PLAN

Per the CCR regulations, the Inflow Design Flood Control System Plan must contain documentation, including supporting engineering calculations that the inflow design control system has been designed and constructed to:

- Adequately manage flow into the CCR unit during and following the peak discharge of the inflow design flood,
- Adequately manage flow from the CCR unit to collect and control the peak discharge resulting from the inflow design flood, and

- Handle discharge from the CCR unit in accordance with the surface water requirements in 40 CFR 257.3-3.

The initial and 5-year periodic review of the hazard potential classification determined that the Fly Ash Basin is a low hazard potential CCR surface impoundment, therefore, the inflow design flood is based on the 100-year flood as noted in 40 CFR 257.73(a)(2) or 257.74(a)(2).

All surface water runoff from the Fly Ash Basin and Bottom Ash Basin is collected and transported by gravity to the Rainfall Surge Pond. All water collected in the Rainfall Surge Pond is treated in the solid waste surface impoundments permitted under the Louisiana Pollutant Discharge Elimination System (LPDES) Permit No. LA0054135. The inflow design flood control system and surface water impoundment features are shown in **Figure 3**.

As noted in CB&I's 2016 report, rain falling on the Fly Ash Basin will fall on either the in-place fly ash and then run off to the open water area of the Fly Ash Basin or on the open water. The rainfall runoff exits from the northeast corner of the basin. A swale (Item 1) channels the runoff toward the Fly Ash Basin drainpipe (Item 2). Rainfall runoff leaves the Fly Ash Basin by passing through a concrete entrance box and then through a 30-inch diameter, schedule 40 steel pipe. The Fly Ash Basin drainpipe passes through the levee that separates the Fly Ash Basin and the Bottom Ash Basin and discharges into a drainage swale (Item 3) in the Bottom Ash Basin. This swale runs from west to east near the north levee. This swale carries runoff from the Fly Ash Basin drainpipe and also collects and channels the surface runoff from the Bottom Ash Basin to the Bottom Ash Basin exit weir (Item 4). The Bottom Ash Basin exit weir serves as an inlet to the Bottom Ash Basin drainpipe (Item 5). This drainpipe is a 30-inch diameter, schedule 40 steel pipe that carries the combined Fly Ash Basin and Bottom Ash Basin surface runoff through the north levee. The flow of water is controlled with a 30-inch butterfly valve (Item 6). Item 7 is a continuation of the 30-inch drainpipe, which carries the runoff from the Bottom Ash Basin through a junction box (Item 8) and to the drainpipe discharge area (Item 9) in the Rainfall Surge Pond. The discharge apron is fitted with a concrete apron to prevent erosion caused by the discharge of wastewater.

Items 1 through 9 described above are the elements of the Fly Ash Basin and Bottom Ash Basin runoff collection system. Since the discharge point (Item 9) is the lowest elevation point in the system, all movement of surface runoff is by gravity. The collection system was designed without pumps to minimize the operation and maintenance costs and to avoid the drainage problems that could arise from downtime due to equipment failure or maintenance.

Items 10 through 14 are components of the LPDES treatment ponds. Item 10 is Lift Station No. 1. Its purpose is to pump the water from the Rainfall Surge Pond up to the Primary Treatment Basin. Item 11 is the chemical storage area. Water treatment chemicals may be added to the wastewater at this point to adjust the pH

or to reduce suspended solids to the limits defined in the LPDES permit. Item 12 is the 24-inch diameter steel pipe that is used to carry the water from the Lift Station No. 1 to the Primary Treatment Pond. Item 13 is an air mix chamber that is connected to the end of a 48-inch diameter steel pipe. Water flows from the Primary Treatment Pond through the pipe, over the air mix chamber and into the Secondary Treatment Pond. The air mix chamber adds oxygen to the wastewater flowing over it. Item 14 is Lift Station No. 2, which pumps the treated wastewater to the Mississippi River in accordance with the LPDES permit.

The current operational status of the Fly Ash Basin has not changed since 2016 when the initial Inflow Design Flood Control System Plan was completed, except fly ash has ceased being placed in the basin since April 11, 2021. Based on the calculations shown in **Appendix A**, Providence has determined that this Inflow Design Flood Control System Plan for the Fly Ash Basin is adequate for the facility.

### 3.0 CONCLUSIONS

Based on the review of the calculations for the Inflow Design Flood Control System Plan, the Fly Ash Basin at Cleco's Big Cajun II Power Plant has been designed in accordance with good engineering practice and meets the requirements of 40 CFR 257.82 and that this Plan is adequate for the facility. **Appendix B** contains a P.E. Certification that attests to the 5-year periodic review of the Inflow Design Flood Control System Plan for the Fly Ash Basin.

### 4.0 REFERENCES

The following reports/documents were used to prepare this 5-year periodic review of the Inflow Design Flood Control System Plan for the Fly Ash Basin:

CB&I Environmental & Infrastructure, Inc.; 2016; Big Cajun II CCR Compliance, Inflow Design Flood Control System Plan, NRG Louisiana Generating, LLC, NRG Energy, Inc., New Roads, Louisiana.

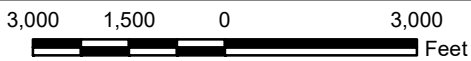
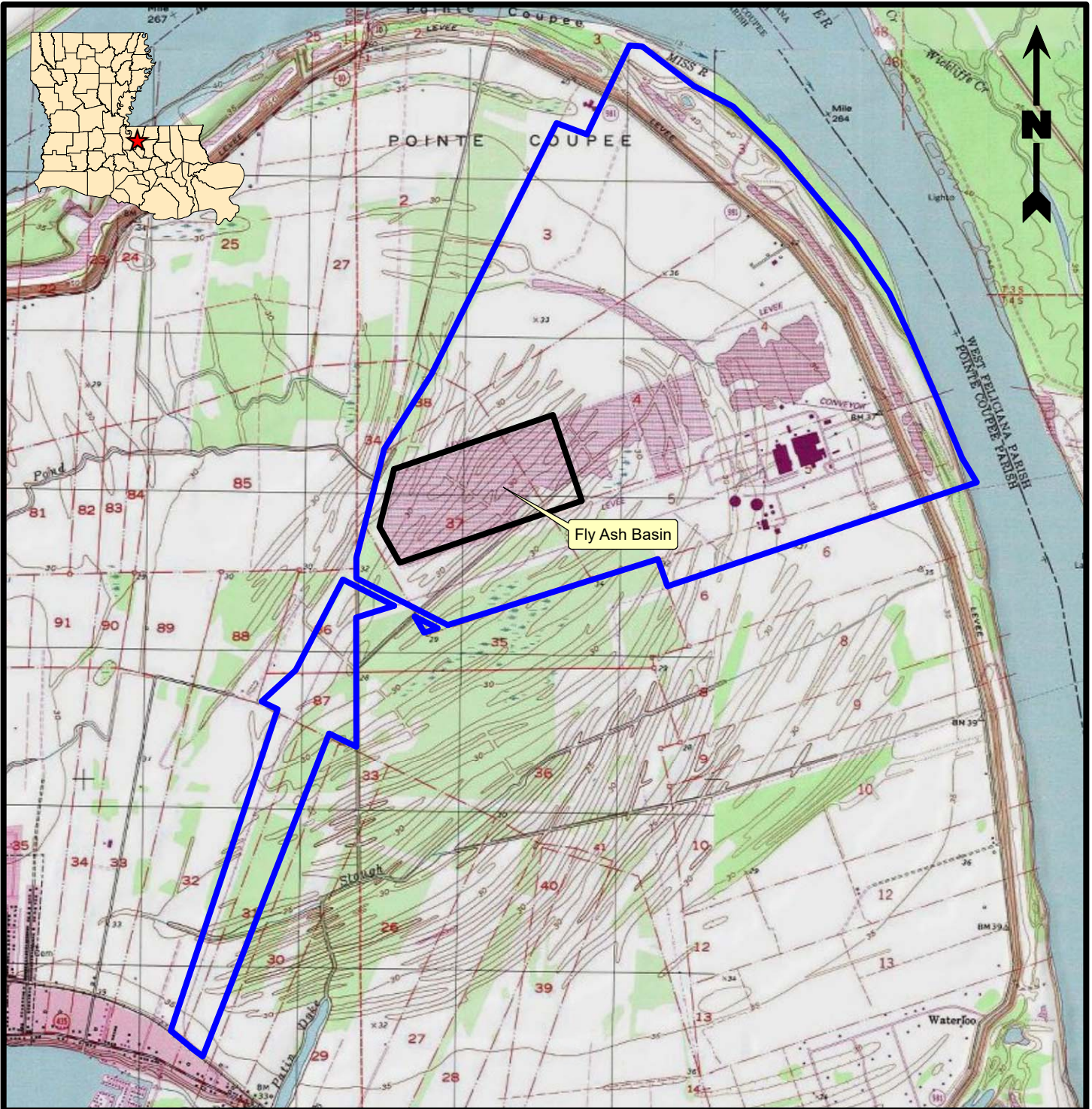
Geosyntec Consultants; 2020; Big Cajun II Power Plant; CCR Surface Impoundment Annual Inspection Report, Cleco Cajun LLC, New Roads, Louisiana.

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.

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  
Inflow Design Flood Control System - Fly Ash Basin**  
New Roads, Pointe Coupee Parish, Louisiana

**Cleco Cajun LLC**  
Big Cajun II



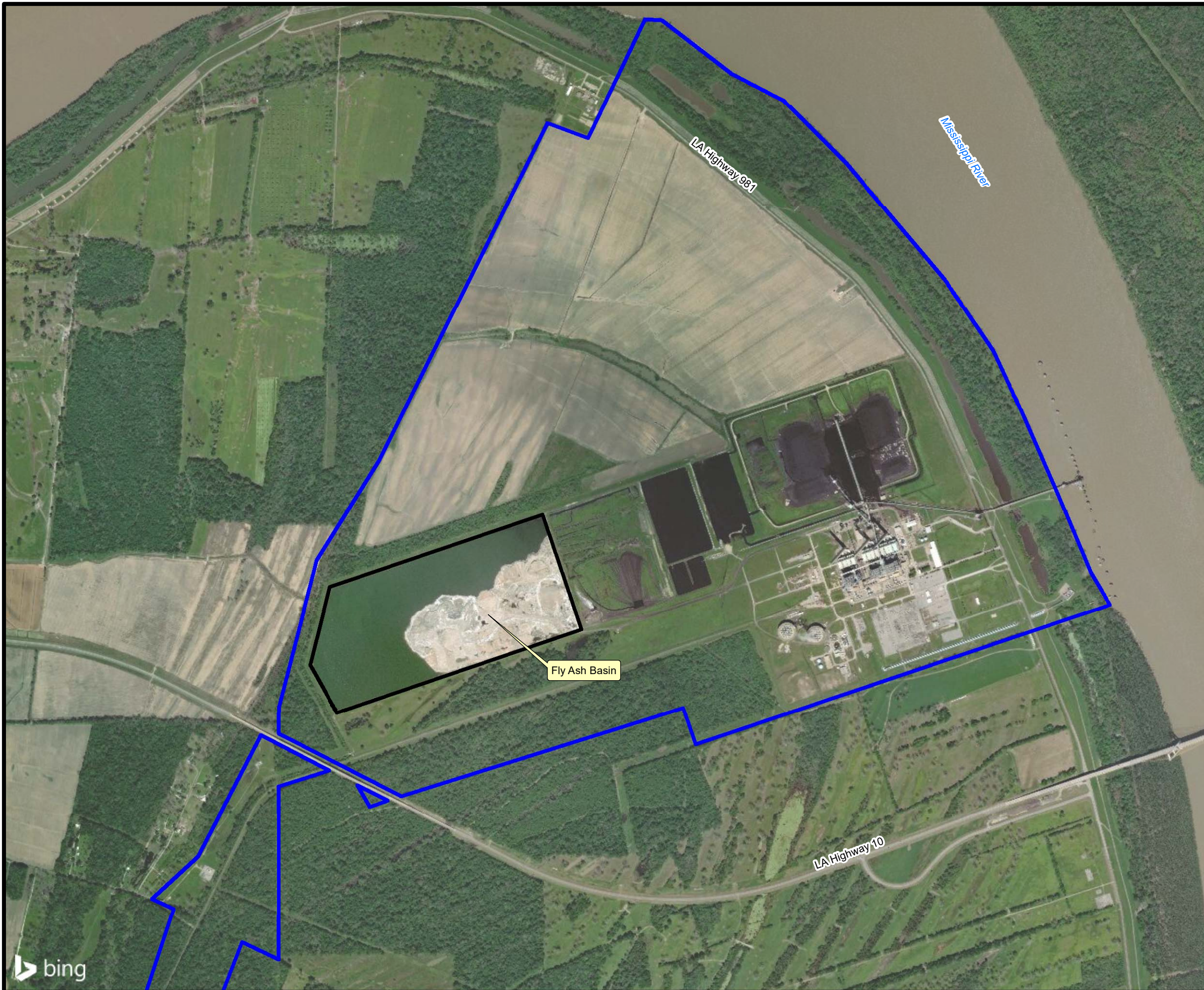
**PROVIDENCE**

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



Project Number	996-018	<b>1</b> Figure
Drawing Number	996-018-A008	

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



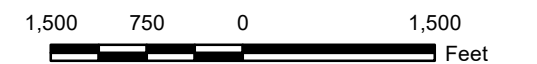


**Legend**

-  Property Boundary
-  Facility Boundary

**Reference**

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



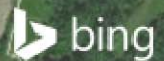
**Site Map**

**5-Year Periodic Review  
Inflow Design Flood Control System - Fly Ash Basin**  
New Roads, Pointe Coupee Parish, Louisiana

**Cleco Cajun LLC**  
Big Cajun II



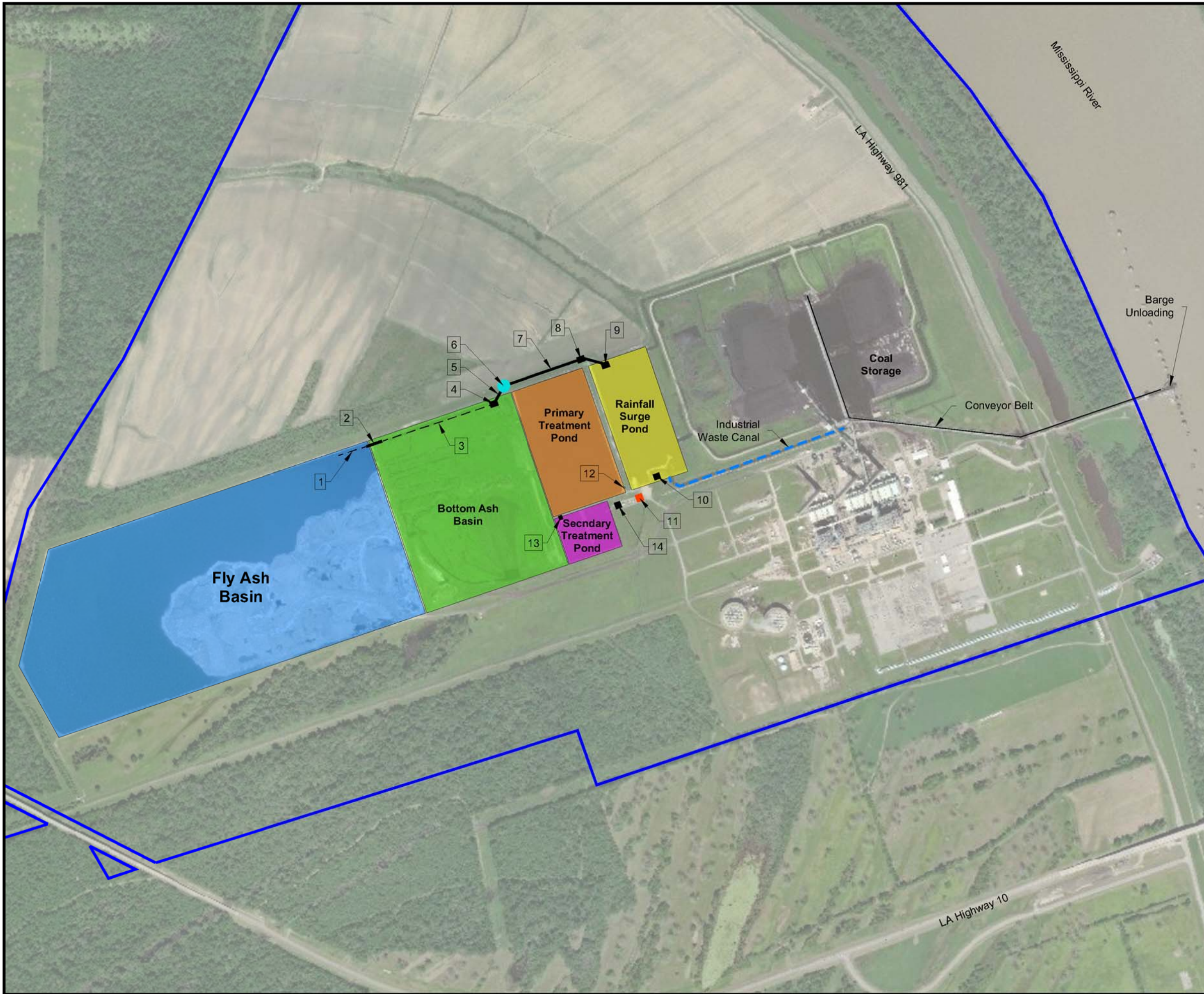
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Checked By	LMH	10/08/21
Approved By	CVH	10/08/21
Project Number	996-018	
Drawing Number	996-018-B016	
	<b>2</b>	Figure





**FIGURE 3**  
**SOLID WASTE MANAGEMENT UNITS**



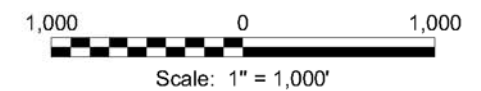


**Legend**

- Property Boundary
- 1 3 Interior Drainage Swale
- 2 5 7 30" Dia. Pipe
- 4 Exit Weir
- 6 Butterfly Valve
- 8 Junction Box
- 9 Discharge
- 10 Lift Station
- 11 Chemical Storage
- 12 Discharge to Primary Treatment
- 13 Aerator
- 14 Lift Station to Mississippi River

**Reference**

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



**Solid Waste Management Units**

5-Year Periodic Review  
 Inflow Design Flood Control System - Fly Ash Basin  
 New Roads, Pointe Coupee Parish, Louisiana

**Cleco Cajun LLC**  
 Big Cajun II

	Drawn By	LMH	10/12/21
	Checked By	LMH	10/12/21
	Approved By	CVH	10/12/21
	Project Number	996-018	
	Drawing Number	996-018-B024	
		<b>3</b>	Figure



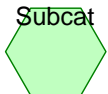
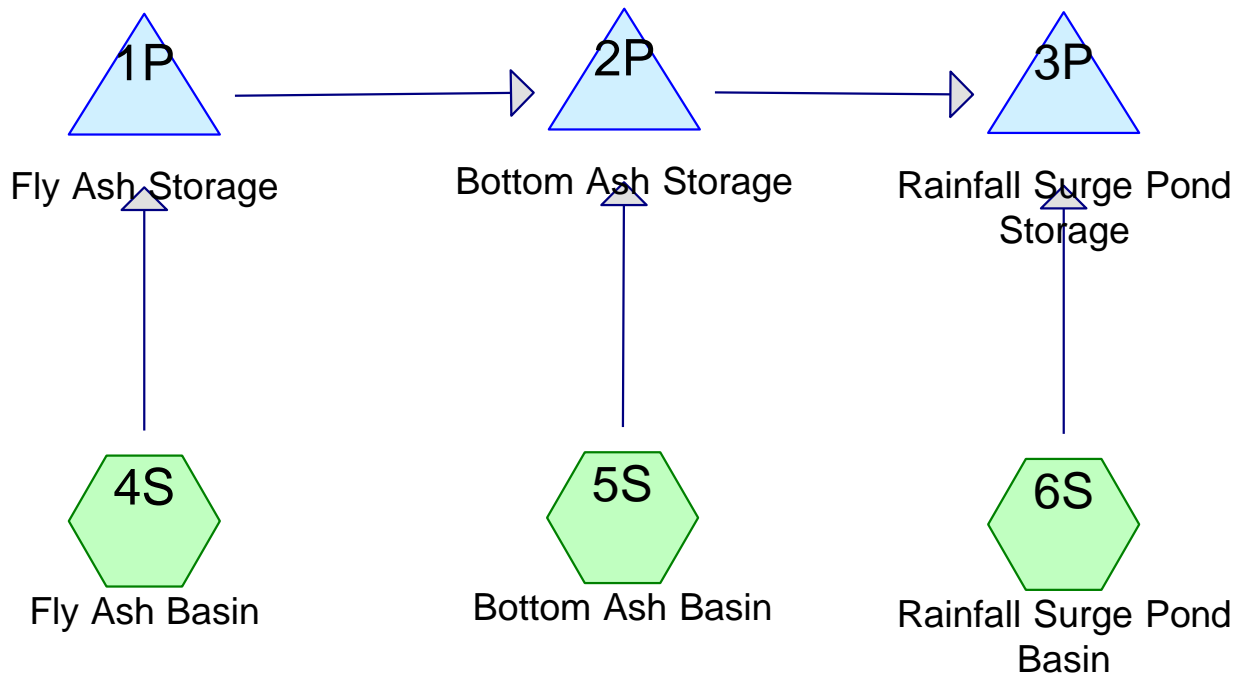
**APPENDIX A**

**INFLOW DESIGN FLOOD CONTROL SYSTEM  
CALCULATIONS**



PROVIDENCE

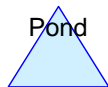
## INFLOW DESIGN FLOOD CONTROL SYSTEM CALCULATIONS



Subcat



Reach



Pond



Link

Routing Diagram for 996-018 Flood Control

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**996-018 Flood Control**Prepared by Providence Engineering and Environmental Group LLC  
HydroCAD® 10.00-26 s/n 08031 © 2020 HydroCAD Software Solutions LLCPrinted 10/8/2021  
Page 2**Area Listing (all nodes)**

Area (acres)	CN	Description (subcatchment-numbers)
39.813	89	<50% Grass cover, Poor, HSG D (5S)
69.693	94	Fallow, bare soil, HSG D (4S)
20.600	94	Newly graded area, HSG D (5S)
118.533	98	Water Surface, HSG D (4S, 5S, 6S)
<b>248.639</b>	<b>95</b>	<b>TOTAL AREA</b>

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 Page 3

**Ground Covers (all nodes)**

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	39.813	0.000	39.813	<50% Grass cover, Poor	5S
0.000	0.000	0.000	69.693	0.000	69.693	Fallow, bare soil	4S
0.000	0.000	0.000	20.600	0.000	20.600	Newly graded area	5S
0.000	0.000	0.000	118.533	0.000	118.533	Water Surface	4S, 5S, 6S
<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>248.639</b>	<b>0.000</b>	<b>248.639</b>	<b>TOTAL AREA</b>	



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Page 4

Time span=0.00-120.00 hrs, dt=0.05 hrs, 2401 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 4S: Fly Ash Basin** Runoff Area=167.544 ac 58.40% Impervious Runoff Depth=12.21"  
 Flow Length=2,230' Slope=0.0007 '/' Tc=57.4 min CN=96 Runoff=861.16 cfs 170.522 af

**Subcatchment 5S: Bottom Ash Basin** Runoff Area=62.303 ac 3.03% Impervious Runoff Depth=11.59"  
 Flow Length=6,910' Slope=0.0030 '/' Tc=26.7 min CN=91 Runoff=459.88 cfs 60.152 af

**Subcatchment 6S: Rainfall Surge Pond** Runoff Area=18.792 ac 100.00% Impervious Runoff Depth=12.46"  
 Flow Length=753' Tc=1.6 min CN=98 Runoff=254.82 cfs 19.510 af

**Pond 1P: Fly Ash Storage** Peak Elev=36.24' Storage=588.996 af Inflow=861.16 cfs 170.522 af  
 30.0" Round Culvert n=0.030 L=82.0' S=0.0024 '/' Outflow=27.72 cfs 226.148 af

**Pond 2P: Bottom Ash Storage** Peak Elev=38.67' Storage=272.868 af Inflow=482.75 cfs 286.300 af  
 Outflow=15.00 cfs 140.073 af

**Pond 3P: Rainfall Surge Pond Storage** Peak Elev=28.52' Storage=23.975 af Inflow=267.11 cfs 159.582 af  
 Outflow=42.96 cfs 139.776 af

**Total Runoff Area = 248.639 ac Runoff Volume = 250.184 af Average Runoff Depth = 12.07"**  
**52.33% Pervious = 130.106 ac 47.67% Impervious = 118.533 ac**

**996-018 Flood Control**

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Page 5

**Summary for Subcatchment 4S: Fly Ash Basin**

Runoff = 861.16 cfs @ 12.73 hrs, Volume= 170.522 af, Depth=12.21"

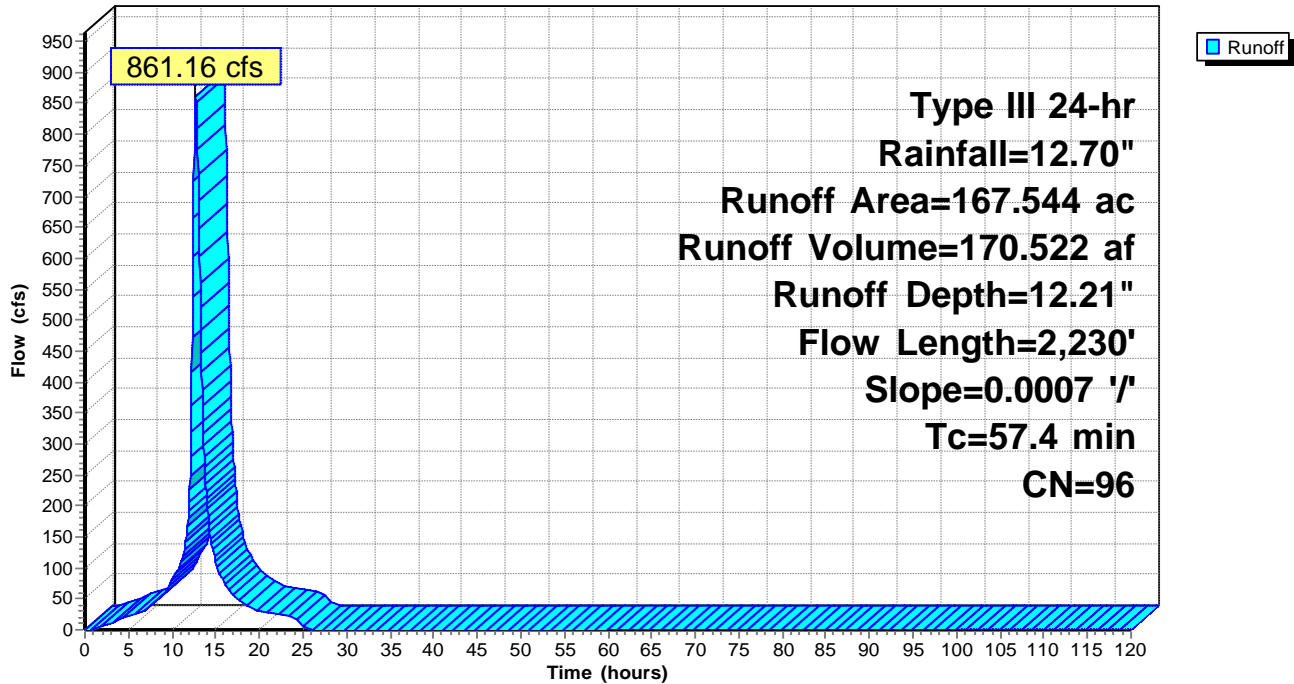
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs  
 Type III 24-hr Rainfall=12.70"

Area (ac)	CN	Description
97.851	98	Water Surface, HSG D
69.693	94	Fallow, bare soil, HSG D
167.544	96	Weighted Average
69.693		41.60% Pervious Area
97.851		58.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.7	300	0.0007	0.57		<b>Sheet Flow, Sheet Flow</b> Smooth surfaces n= 0.011 P2= 5.23"
48.7	1,930		0.66		<b>Direct Entry, Shallow Concentrated Flow</b>
57.4	2,230	Total			

**Subcatchment 4S: Fly Ash Basin**

Hydrograph



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Page 6

**Hydrograph for Subcatchment 4S: Fly Ash Basin**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.32	0.09	8.34
5.00	0.72	0.39	22.12
7.50	1.29	0.90	37.43
10.00	2.40	1.96	80.52
12.50	8.92	8.43	<b>724.58</b>
15.00	10.85	10.36	<b>109.25</b>
17.50	11.68	11.19	49.58
20.00	12.15	11.67	30.76
22.50	<b>12.52</b>	<b>12.04</b>	23.98
25.00	<b>12.70</b>	<b>12.21</b>	5.99
27.50	12.70	12.21	0.00
30.00	12.70	12.21	0.00
32.50	12.70	12.21	0.00
35.00	12.70	12.21	0.00
37.50	12.70	12.21	0.00
40.00	12.70	12.21	0.00
42.50	12.70	12.21	0.00
45.00	12.70	12.21	0.00
47.50	12.70	12.21	0.00
50.00	12.70	12.21	0.00
52.50	12.70	12.21	0.00
55.00	12.70	12.21	0.00
57.50	12.70	12.21	0.00
60.00	12.70	12.21	0.00
62.50	12.70	12.21	0.00
65.00	12.70	12.21	0.00
67.50	12.70	12.21	0.00
70.00	12.70	12.21	0.00
72.50	12.70	12.21	0.00
75.00	12.70	12.21	0.00
77.50	12.70	12.21	0.00
80.00	12.70	12.21	0.00
82.50	12.70	12.21	0.00
85.00	12.70	12.21	0.00
87.50	12.70	12.21	0.00
90.00	12.70	12.21	0.00
92.50	12.70	12.21	0.00
95.00	12.70	12.21	0.00
97.50	12.70	12.21	0.00
100.00	12.70	12.21	0.00
102.50	12.70	12.21	0.00
105.00	12.70	12.21	0.00
107.50	12.70	12.21	0.00
110.00	12.70	12.21	0.00
112.50	12.70	12.21	0.00
115.00	12.70	12.21	0.00
117.50	12.70	12.21	0.00
120.00	12.70	12.21	0.00

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Page 7

**Summary for Subcatchment 5S: Bottom Ash Basin**

Runoff = 459.88 cfs @ 12.35 hrs, Volume= 60.152 af, Depth=11.59"

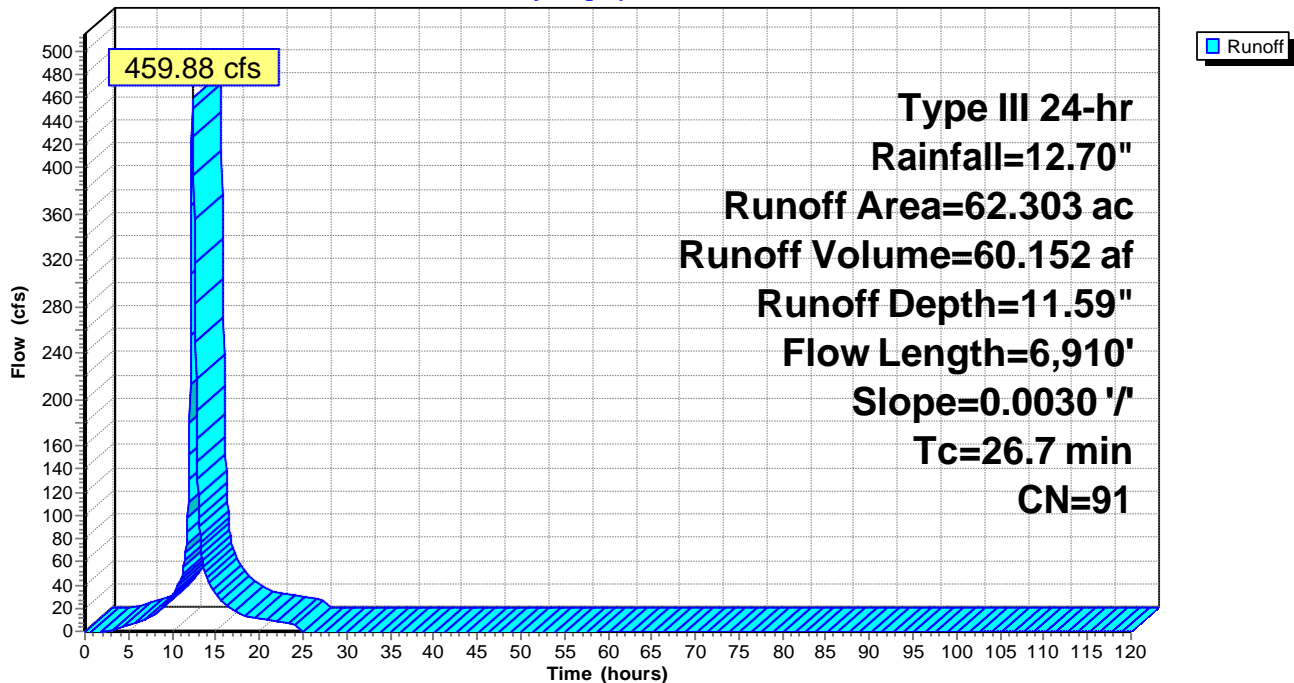
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs  
 Type III 24-hr Rainfall=12.70"

Area (ac)	CN	Description
1.890	98	Water Surface, HSG D
20.600	94	Newly graded area, HSG D
39.813	89	<50% Grass cover, Poor, HSG D
62.303	91	Weighted Average
60.413		96.97% Pervious Area
1.890		3.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.9	300	0.0030	1.03		<b>Sheet Flow, Sheet Flow</b> Smooth surfaces n= 0.011 P2= 5.23"
17.4	5,540		5.32		<b>Direct Entry, Open Channel Flow 1</b>
4.2	937		3.68		<b>Direct Entry, Open Channel Flow 2</b>
0.2	133		12.68		<b>Direct Entry, Open Channel Flow 3</b>
26.7	6,910	Total			

**Subcatchment 5S: Bottom Ash Basin**

Hydrograph



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Page 8

**Hydrograph for Subcatchment 5S: Bottom Ash Basin**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.32	0.01	1.01
5.00	0.72	0.18	5.83
7.50	1.29	0.57	12.77
10.00	2.40	1.52	<b>31.34</b>
12.50	8.92	7.83	<b>392.17</b>
15.00	10.85	9.75	33.47
17.50	11.68	10.57	16.30
20.00	12.15	11.04	10.80
22.50	<b>12.52</b>	<b>11.41</b>	8.45
25.00	<b>12.70</b>	<b>11.59</b>	0.11
27.50	12.70	11.59	0.00
30.00	12.70	11.59	0.00
32.50	12.70	11.59	0.00
35.00	12.70	11.59	0.00
37.50	12.70	11.59	0.00
40.00	12.70	11.59	0.00
42.50	12.70	11.59	0.00
45.00	12.70	11.59	0.00
47.50	12.70	11.59	0.00
50.00	12.70	11.59	0.00
52.50	12.70	11.59	0.00
55.00	12.70	11.59	0.00
57.50	12.70	11.59	0.00
60.00	12.70	11.59	0.00
62.50	12.70	11.59	0.00
65.00	12.70	11.59	0.00
67.50	12.70	11.59	0.00
70.00	12.70	11.59	0.00
72.50	12.70	11.59	0.00
75.00	12.70	11.59	0.00
77.50	12.70	11.59	0.00
80.00	12.70	11.59	0.00
82.50	12.70	11.59	0.00
85.00	12.70	11.59	0.00
87.50	12.70	11.59	0.00
90.00	12.70	11.59	0.00
92.50	12.70	11.59	0.00
95.00	12.70	11.59	0.00
97.50	12.70	11.59	0.00
100.00	12.70	11.59	0.00
102.50	12.70	11.59	0.00
105.00	12.70	11.59	0.00
107.50	12.70	11.59	0.00
110.00	12.70	11.59	0.00
112.50	12.70	11.59	0.00
115.00	12.70	11.59	0.00
117.50	12.70	11.59	0.00
120.00	12.70	11.59	0.00

**996-018 Flood Control**

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**Summary for Subcatchment 6S: Rainfall Surge Pond Basin**

[49] Hint:  $T_c < 2dt$  may require smaller dt

Runoff = 254.82 cfs @ 12.02 hrs, Volume= 19.510 af, Depth=12.46"

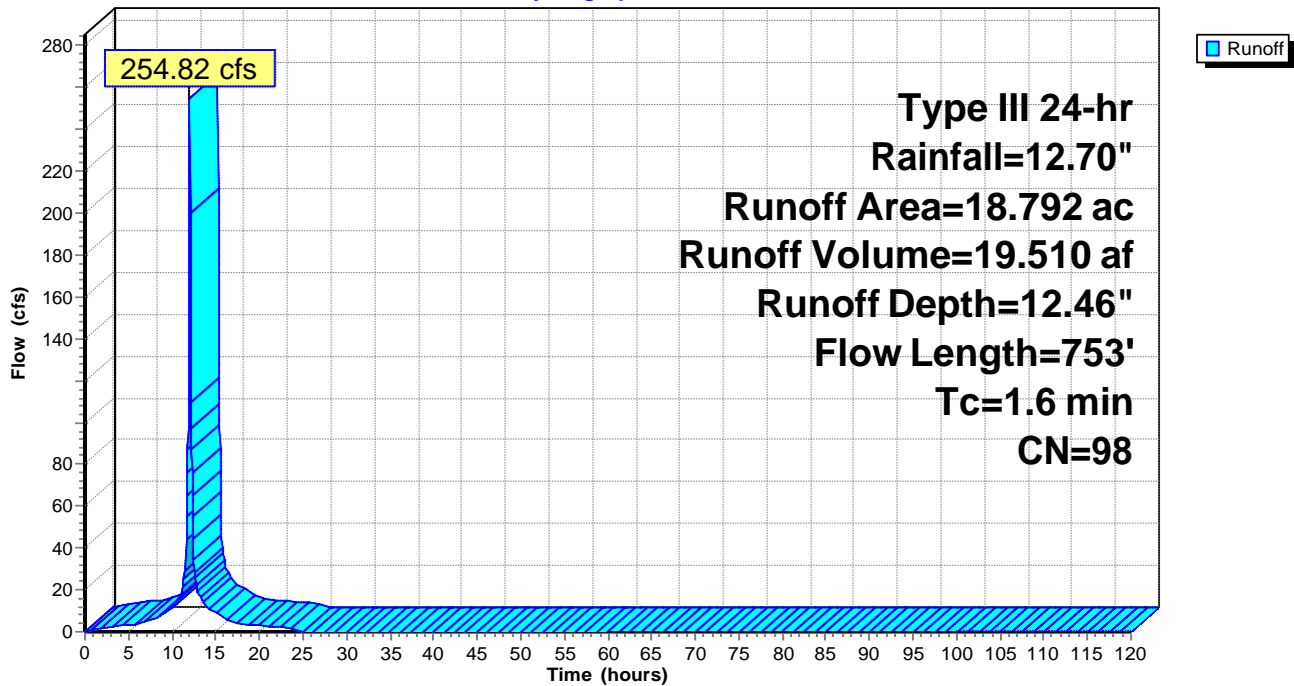
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs  
Type III 24-hr Rainfall=12.70"

Area (ac)	CN	Description
18.792	98	Water Surface, HSG D
18.792		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	753		8.02		Lake or Reservoir, Water Body Mean Depth= 2.00'

**Subcatchment 6S: Rainfall Surge Pond Basin**

Hydrograph



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Page 10

**Hydrograph for Subcatchment 6S: Rainfall Surge Pond Basin**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
2.50	0.32	0.16	2.11
5.00	0.72	0.52	3.29
7.50	1.29	1.07	5.51
10.00	2.40	2.17	<b>11.65</b>
12.50	8.92	8.68	<b>33.95</b>
15.00	10.85	10.61	9.09
17.50	11.68	11.43	4.48
20.00	12.15	11.91	3.14
22.50	<b>12.52</b>	<b>12.28</b>	2.46
25.00	<b>12.70</b>	<b>12.46</b>	0.00
27.50	12.70	12.46	0.00
30.00	12.70	12.46	0.00
32.50	12.70	12.46	0.00
35.00	12.70	12.46	0.00
37.50	12.70	12.46	0.00
40.00	12.70	12.46	0.00
42.50	12.70	12.46	0.00
45.00	12.70	12.46	0.00
47.50	12.70	12.46	0.00
50.00	12.70	12.46	0.00
52.50	12.70	12.46	0.00
55.00	12.70	12.46	0.00
57.50	12.70	12.46	0.00
60.00	12.70	12.46	0.00
62.50	12.70	12.46	0.00
65.00	12.70	12.46	0.00
67.50	12.70	12.46	0.00
70.00	12.70	12.46	0.00
72.50	12.70	12.46	0.00
75.00	12.70	12.46	0.00
77.50	12.70	12.46	0.00
80.00	12.70	12.46	0.00
82.50	12.70	12.46	0.00
85.00	12.70	12.46	0.00
87.50	12.70	12.46	0.00
90.00	12.70	12.46	0.00
92.50	12.70	12.46	0.00
95.00	12.70	12.46	0.00
97.50	12.70	12.46	0.00
100.00	12.70	12.46	0.00
102.50	12.70	12.46	0.00
105.00	12.70	12.46	0.00
107.50	12.70	12.46	0.00
110.00	12.70	12.46	0.00
112.50	12.70	12.46	0.00
115.00	12.70	12.46	0.00
117.50	12.70	12.46	0.00
120.00	12.70	12.46	0.00



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Page 11

**Summary for Pond 1P: Fly Ash Storage**

Inflow Area = 167.544 ac, 58.40% Impervious, Inflow Depth = 12.21"  
 Inflow = 861.16 cfs @ 12.73 hrs, Volume= 170.522 af  
 Outflow = 27.72 cfs @ 20.99 hrs, Volume= 226.148 af, Atten= 97%, Lag= 495.2 min  
 Primary = 27.72 cfs @ 20.99 hrs, Volume= 226.148 af

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs  
 Starting Elev= 35.00' Surf.Area= 97.851 ac Storage= 466.699 af  
 Peak Elev= 36.24' @ 20.99 hrs Surf.Area= 98.844 ac Storage= 588.996 af (122.297 af above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= 2,600.5 min ( 3,392.8 - 792.3 )

Volume	Invert	Avail.Storage	Storage Description
#1	30.16'	763.845 af	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
30.16	95.000	0.000	0.000
35.00	97.851	466.699	466.699
36.00	98.649	98.250	564.949
38.00	100.247	198.896	763.845

Device	Routing	Invert	Outlet Devices
#1	Primary	31.00'	<b>30.0" Round CMP_Round 30"</b> L= 82.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 31.00' / 30.80' S= 0.0024 '/' Cc= 0.900 n= 0.030, Flow Area= 4.91 sf

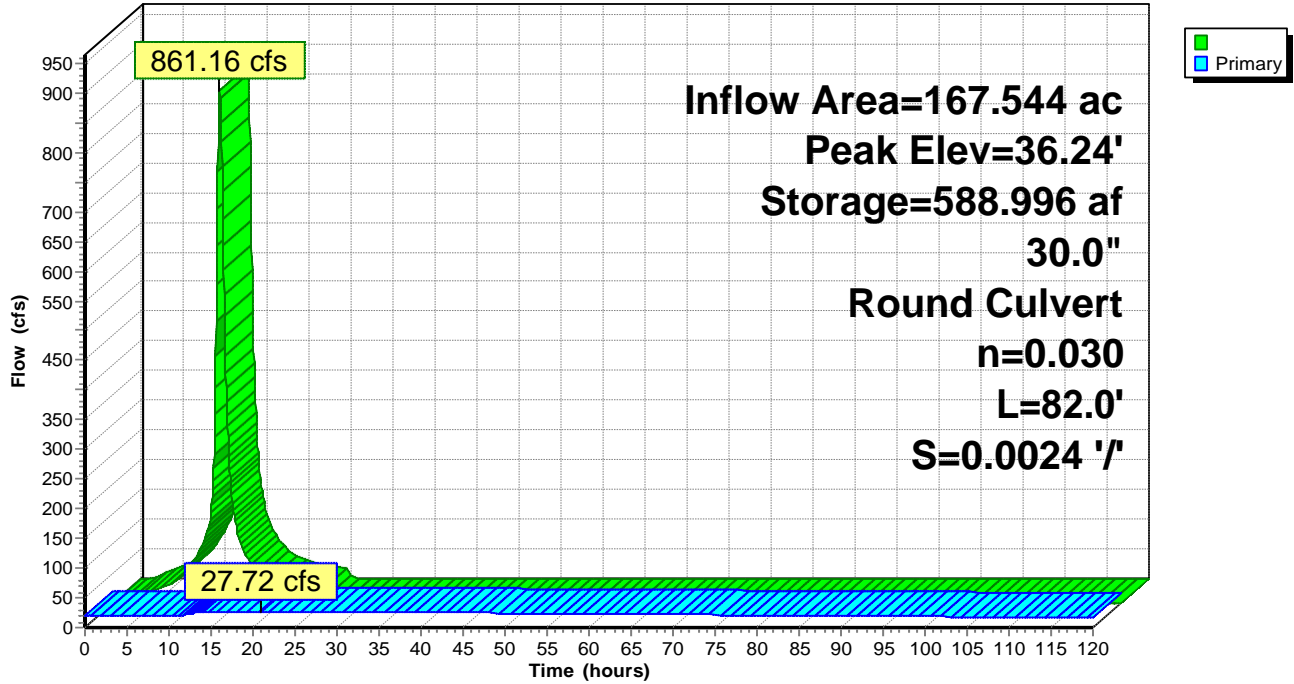
**Primary OutFlow** Max=27.73 cfs @ 20.99 hrs HW=36.24' (Free Discharge)  
 ↳ **1=CMP\_Round 30"** (Barrel Controls 27.73 cfs @ 5.65 fps)

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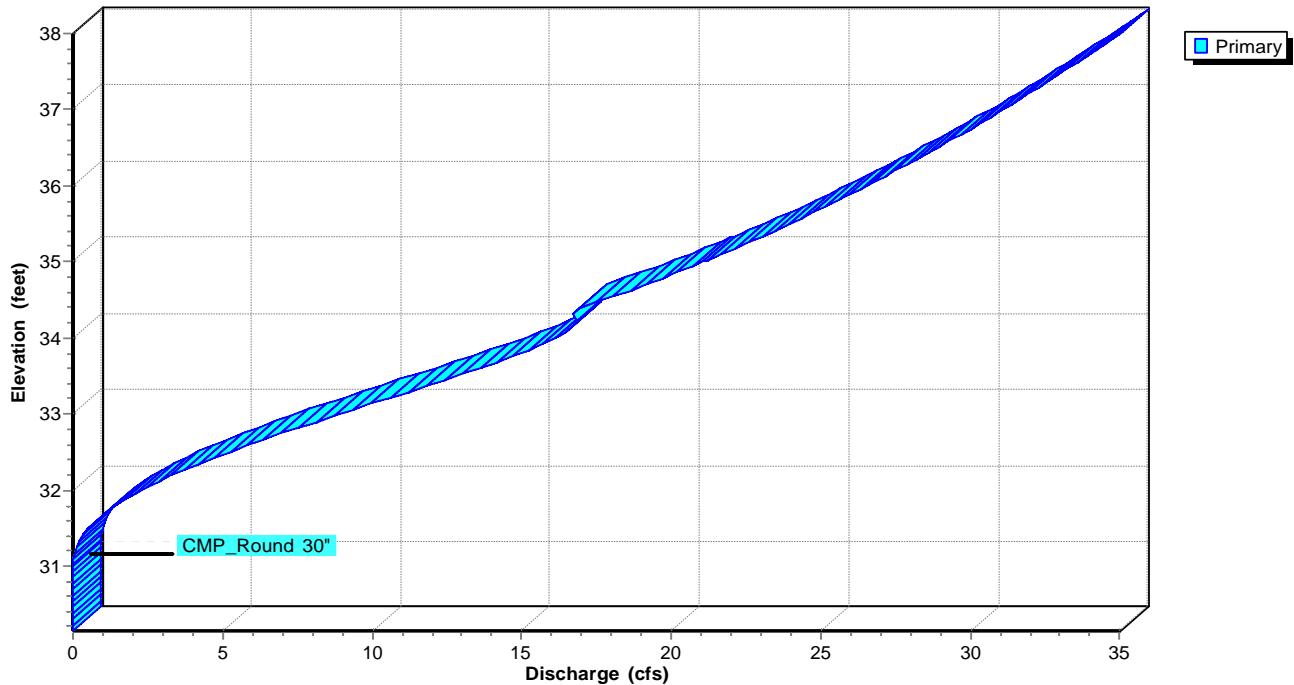
### Pond 1P: Fly Ash Storage

Hydrograph



### Pond 1P: Fly Ash Storage

Stage-Discharge



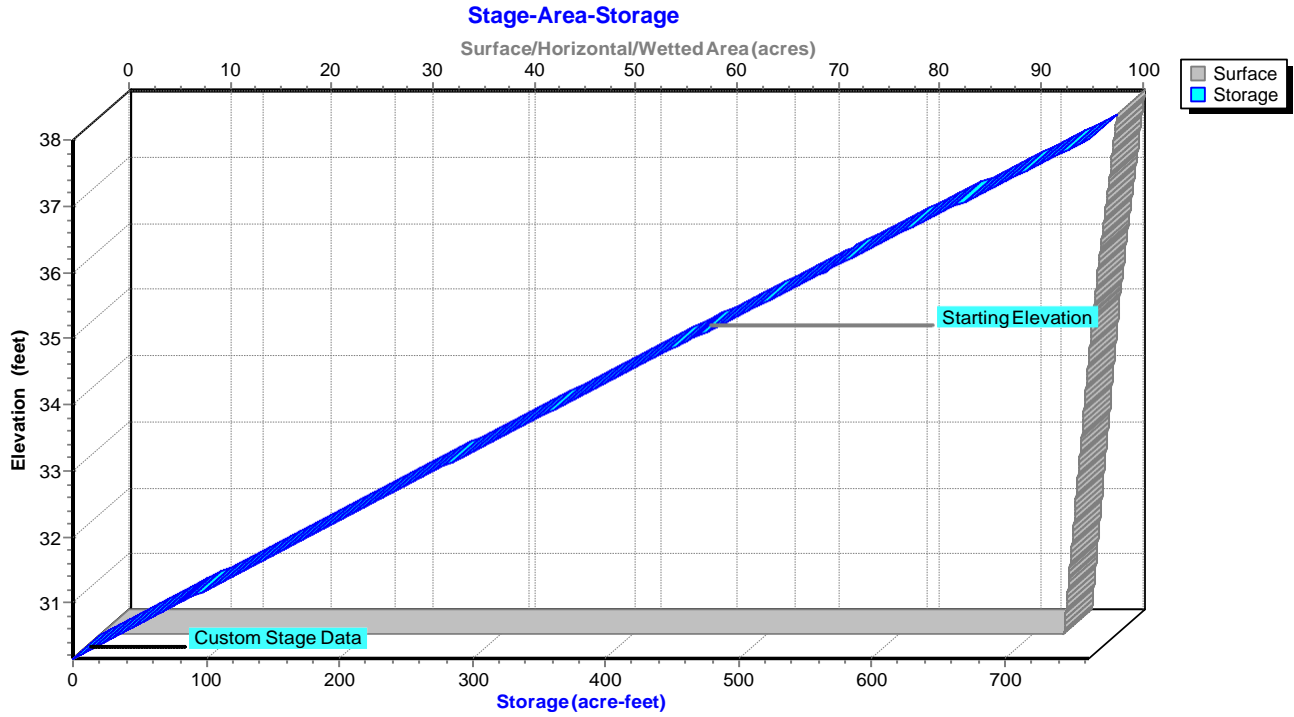
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Type III 24-hr Rainfall=12.70"

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Page 13

## Pond 1P: Fly Ash Storage



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Page 14

**Hydrograph for Pond 1P: Fly Ash Storage**

Time (hours)	Inflow (cfs)	Storage (acre-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	466.699	35.00	21.07
2.50	8.34	462.807	34.96	20.82
5.00	22.12	461.723	34.95	20.75
7.50	37.43	463.306	34.97	20.85
10.00	80.52	470.336	35.04	21.30
12.50	<b>724.58</b>	503.798	35.38	23.30
15.00	<b>109.25</b>	577.202	36.12	27.16
17.50	49.58	586.759	36.22	27.62
20.00	30.76	<b>588.878</b>	<b>36.24</b>	<b>27.72</b>
22.50	23.98	<b>588.759</b>	<b>36.24</b>	<b>27.71</b>
25.00	5.99	587.031	36.22	27.63
27.50	0.00	581.537	36.17	27.37
30.00	0.00	575.911	36.11	27.09
32.50	0.00	570.342	36.05	26.82
35.00	0.00	564.828	36.00	26.55
37.50	0.00	559.372	35.94	26.27
40.00	0.00	553.972	35.89	26.00
42.50	0.00	548.628	35.83	25.73
45.00	0.00	543.341	35.78	25.45
47.50	0.00	538.111	35.73	25.18
50.00	0.00	532.937	35.68	24.90
52.50	0.00	527.820	35.62	24.63
55.00	0.00	522.759	35.57	24.36
57.50	0.00	517.756	35.52	24.08
60.00	0.00	512.808	35.47	23.81
62.50	0.00	507.918	35.42	23.53
65.00	0.00	503.085	35.37	23.26
67.50	0.00	498.308	35.32	22.98
70.00	0.00	493.588	35.27	22.71
72.50	0.00	488.925	35.23	22.43
75.00	0.00	484.319	35.18	22.16
77.50	0.00	479.770	35.13	21.88
80.00	0.00	475.277	35.09	21.61
82.50	0.00	470.842	35.04	21.33
85.00	0.00	466.463	35.00	21.05
87.50	0.00	462.142	34.95	20.78
90.00	0.00	457.877	34.91	20.50
92.50	0.00	453.669	34.87	20.23
95.00	0.00	449.519	34.82	19.95
97.50	0.00	445.425	34.78	19.68
100.00	0.00	441.389	34.74	19.40
102.50	0.00	437.409	34.70	19.12
105.00	0.00	433.487	34.66	18.85
107.50	0.00	429.622	34.62	18.57
110.00	0.00	425.814	34.58	18.29
112.50	0.00	422.063	34.54	18.02
115.00	0.00	418.369	34.51	17.74
117.50	0.00	414.732	34.47	17.46
120.00	0.00	411.153	34.43	17.19

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Page 15

**Stage-Discharge for Pond 1P: Fly Ash Storage**

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
30.16	0.00	32.24	3.54	34.32	16.70	36.40	28.45
30.20	0.00	32.28	3.78	34.36	16.64	36.44	28.64
30.24	0.00	32.32	4.02	34.40	16.95	36.48	28.82
30.28	0.00	32.36	4.27	34.44	17.25	36.52	29.00
30.32	0.00	32.40	4.52	34.48	17.55	36.56	29.18
30.36	0.00	32.44	4.78	34.52	17.85	36.60	29.36
30.40	0.00	32.48	5.04	34.56	18.14	36.64	29.53
30.44	0.00	32.52	5.31	34.60	18.43	36.68	29.71
30.48	0.00	32.56	5.59	34.64	18.71	36.72	29.89
30.52	0.00	32.60	5.87	34.68	18.98	36.76	30.06
30.56	0.00	32.64	6.15	34.72	19.26	36.80	30.23
30.60	0.00	32.68	6.44	34.76	19.53	36.84	30.40
30.64	0.00	32.72	6.73	34.80	19.79	36.88	30.58
30.68	0.00	32.76	7.03	34.84	20.05	36.92	30.75
30.72	0.00	32.80	7.33	34.88	20.31	36.96	30.92
30.76	0.00	32.84	7.63	34.92	20.57	37.00	31.08
30.80	0.00	32.88	7.94	34.96	20.82	37.04	31.25
30.84	0.00	32.92	8.25	35.00	21.07	37.08	31.42
30.88	0.00	32.96	8.56	35.04	21.32	37.12	31.58
30.92	0.00	33.00	8.87	35.08	21.56	37.16	31.75
30.96	0.00	33.04	9.19	35.12	21.80	37.20	31.91
31.00	0.00	33.08	9.50	35.16	22.04	37.24	32.08
31.04	0.00	33.12	9.82	35.20	22.28	37.28	32.24
31.08	0.01	33.16	10.14	35.24	22.51	37.32	32.40
31.12	0.02	33.20	10.46	35.28	22.74	37.36	32.56
31.16	0.04	33.24	10.78	35.32	22.97	37.40	32.72
31.20	0.07	33.28	11.09	35.36	23.19	37.44	32.88
31.24	0.10	33.32	11.41	35.40	23.42	37.48	33.04
31.28	0.14	33.36	11.73	35.44	23.64	37.52	33.20
31.32	0.19	33.40	12.04	35.48	23.86	37.56	33.35
31.36	0.25	33.44	12.35	35.52	24.08	37.60	33.51
31.40	0.31	33.48	12.66	35.56	24.29	37.64	33.67
31.44	0.39	33.52	12.97	35.60	24.51	37.68	33.82
31.48	0.47	33.56	13.27	35.64	24.72	37.72	33.97
31.52	0.56	33.60	13.56	35.68	24.93	37.76	34.13
31.56	0.66	33.64	13.86	35.72	25.14	37.80	34.28
31.60	0.76	33.68	14.14	35.76	25.35	37.84	34.43
31.64	0.88	33.72	14.42	35.80	25.55	37.88	34.58
31.68	1.00	33.76	14.70	35.84	25.75	37.92	34.73
31.72	1.13	33.80	14.96	35.88	25.96	37.96	34.88
31.76	1.27	33.84	15.22	35.92	26.16	38.00	<b>35.03</b>
31.80	1.42	33.88	15.46	35.96	26.36		
31.84	1.57	33.92	15.69	36.00	26.55		
31.88	1.74	33.96	15.91	36.04	26.75		
31.92	1.91	34.00	16.12	36.08	26.94		
31.96	2.09	34.04	16.31	36.12	27.14		
32.00	2.27	34.08	16.48	36.16	27.33		
32.04	2.47	34.12	16.63	36.20	27.52		
32.08	2.67	34.16	16.75	36.24	27.71		
32.12	2.88	34.20	16.84	36.28	27.90		
32.16	3.09	34.24	16.88	36.32	28.08		
32.20	3.31	34.28	16.86	36.36	28.27		

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Page 16

**Stage-Area-Storage for Pond 1P: Fly Ash Storage**

<u>Elevation</u> <u>(feet)</u>	<u>Surface</u> <u>(acres)</u>	<u>Storage</u> <u>(acre-feet)</u>	<u>Elevation</u> <u>(feet)</u>	<u>Surface</u> <u>(acres)</u>	<u>Storage</u> <u>(acre-feet)</u>
30.16	95.000	0.000	35.36	98.138	501.977
30.26	95.059	9.503	35.46	98.218	511.795
30.36	95.118	19.012	35.56	98.298	521.621
30.46	95.177	28.527	35.66	98.378	531.455
30.56	95.236	38.047	35.76	98.457	541.297
30.66	95.295	47.574	35.86	98.537	551.146
30.76	95.353	57.106	35.96	98.617	561.004
30.86	95.412	66.644	36.06	98.697	570.870
30.96	95.471	76.188	36.16	98.777	580.743
31.06	95.530	85.739	36.26	98.857	590.625
31.16	95.589	95.295	36.36	98.937	600.515
31.26	95.648	104.856	36.46	99.017	610.412
31.36	95.707	114.424	36.56	99.096	620.318
31.46	95.766	123.998	36.66	99.176	630.232
31.56	95.825	133.577	36.76	99.256	640.153
31.66	95.884	143.163	36.86	99.336	650.083
31.76	95.942	152.754	36.96	99.416	660.021
31.86	96.001	162.351	37.06	99.496	669.966
31.96	96.060	171.954	37.16	99.576	679.920
32.06	96.119	181.563	37.26	99.656	689.881
32.16	96.178	191.178	37.36	99.736	699.851
32.26	96.237	200.799	37.46	99.816	709.829
32.36	96.296	210.425	37.56	99.895	719.814
32.46	96.355	220.058	37.66	99.975	729.808
32.56	96.414	229.696	37.76	100.055	739.809
32.66	96.473	239.341	37.86	100.135	749.819
32.76	96.532	248.991	37.96	<b>100.215</b>	<b>759.836</b>
32.86	96.590	258.647			
32.96	96.649	268.309			
33.06	96.708	277.977			
33.16	96.767	287.651			
33.26	96.826	297.330			
33.36	96.885	307.016			
33.46	96.944	316.707			
33.56	97.003	326.405			
33.66	97.062	336.108			
33.76	97.121	345.817			
33.86	97.179	355.532			
33.96	97.238	365.253			
34.06	97.297	374.980			
34.16	97.356	384.712			
34.26	97.415	394.451			
34.36	97.474	404.195			
34.46	97.533	413.946			
34.56	97.592	423.702			
34.66	97.651	433.464			
34.76	97.710	443.232			
34.86	97.769	453.006			
34.96	97.827	462.786			
35.06	97.899	472.572			
35.16	97.979	482.366			
35.26	98.058	492.168			

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**Summary for Pond 2P: Bottom Ash Storage**

[81] Warning: Exceeded Pond 1P by 4.24' @ 119.95 hrs

Inflow Area = 229.847 ac, 43.39% Impervious, Inflow Depth > 14.95"  
 Inflow = 482.75 cfs @ 12.35 hrs, Volume= 286.300 af  
 Outflow = 15.00 cfs @ 120.00 hrs, Volume= 140.073 af, Atten= 97%, Lag= 6,458.9 min  
 Primary = 15.00 cfs @ 120.00 hrs, Volume= 140.073 af

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs  
 Starting Elev= 35.00' Surf.Area= 38.649 ac Storage= 126.623 af  
 Peak Elev= 38.67' @ 120.00 hrs Surf.Area= 41.062 ac Storage= 272.868 af (146.246 af above start)

Plug-Flow detention time= 6,661.9 min calculated for 13.407 af (5% of inflow)  
 Center-of-Mass det. time= 875.7 min ( 3,719.5 - 2,843.8 )

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	456.876 af	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)
Elevation	Surf.Area	Inc.Store	Cum.Store
<u>(feet)</u>	<u>(acres)</u>	<u>(acre-feet)</u>	<u>(acre-feet)</u>
30.00	12.000	0.000	0.000
35.00	38.649	126.623	126.623
36.00	39.305	38.977	165.600
38.00	40.620	79.925	245.525
40.00	41.939	82.559	328.084
42.00	43.261	85.200	413.284
43.00	43.923	43.592	456.876

Device	Routing	Invert	Outlet Devices
#1	Primary	30.00'	<b>30.0" Round CMP_Round 30"</b> L= 1,249.0' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 30.00' / 27.00' S= 0.0024 '/' Cc= 0.900 n= 0.030, Flow Area= 4.91 sf
#2	Device 1	34.00'	<b>30.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

**Primary OutFlow** Max=15.00 cfs @ 120.00 hrs HW=38.67' (Free Discharge)  
 ↑ **1=CMP\_Round 30"** (Barrel Controls 15.00 cfs @ 3.06 fps)  
 ↑ **2=Orifice/Grate** (Passes 15.00 cfs of 51.07 cfs potential flow)



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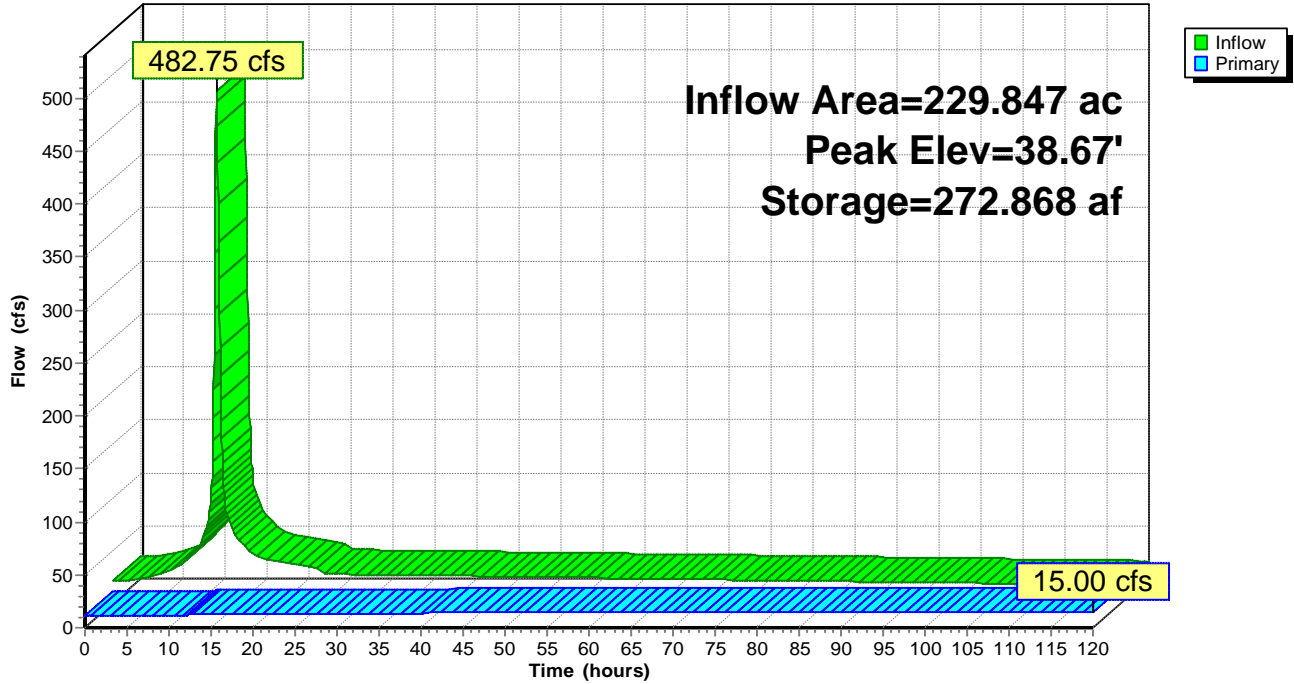
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Page 18

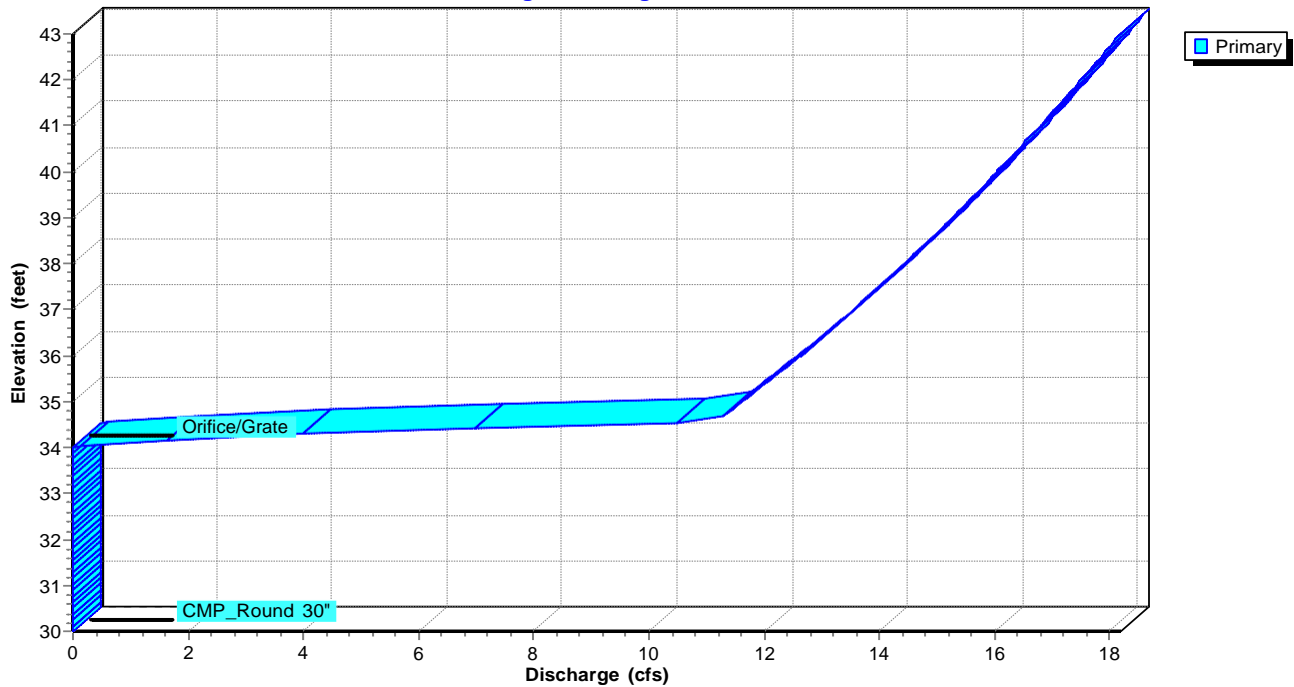
### Pond 2P: Bottom Ash Storage

Hydrograph



### Pond 2P: Bottom Ash Storage

Stage-Discharge



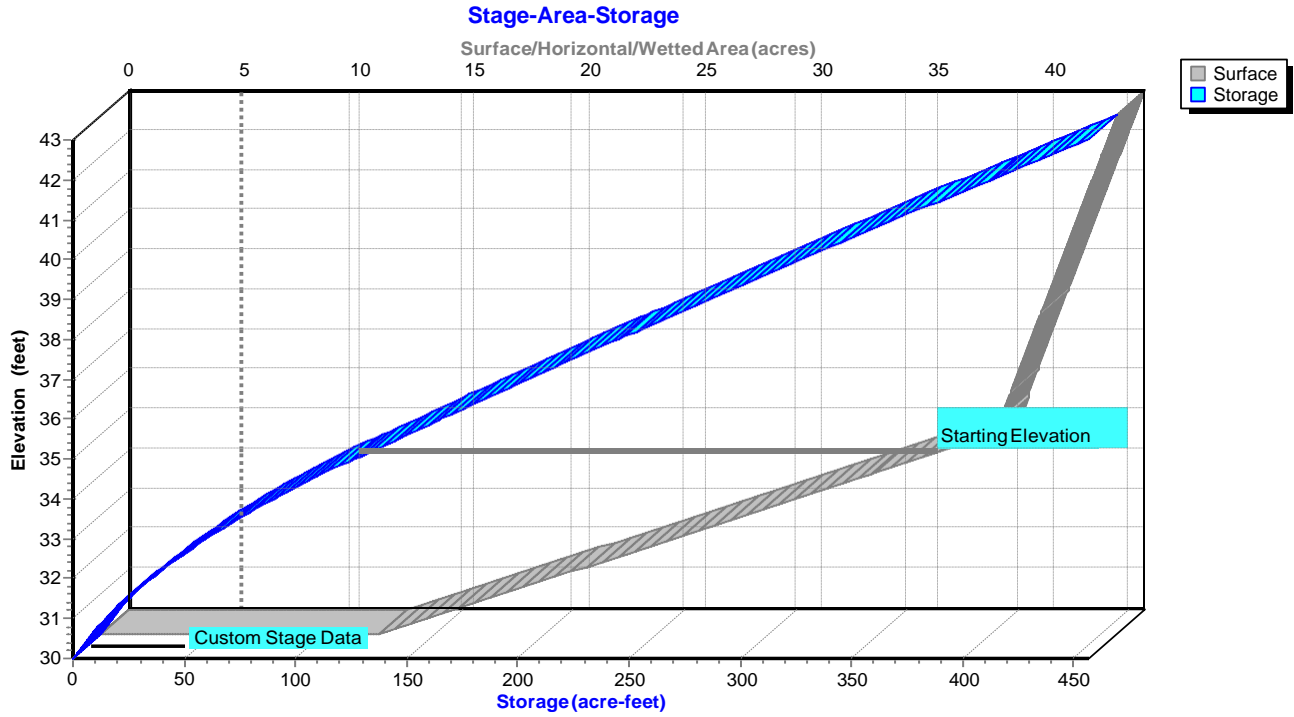
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Type III 24-hr Rainfall=12.70"

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Page 19

## Pond 2P: Bottom Ash Storage



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Page 20

**Hydrograph for Pond 2P: Bottom Ash Storage**

Time (hours)	Inflow (cfs)	Storage (acre-feet)	Elevation (feet)	Primary (cfs)
0.00	21.07	126.666	35.00	11.62
2.50	21.83	128.612	35.05	11.67
5.00	26.58	131.190	35.12	11.74
7.50	33.63	134.841	35.21	11.84
10.00	<b>52.64</b>	140.976	35.37	12.00
12.50	<b>415.47</b>	167.423	36.05	12.67
15.00	60.63	188.418	36.58	13.18
17.50	43.92	196.167	36.77	13.36
20.00	38.52	201.752	36.91	13.48
22.50	36.16	206.661	37.04	13.59
25.00	27.74	210.763	37.14	13.69
27.50	27.37	213.612	37.21	13.75
30.00	27.09	216.391	37.28	13.81
32.50	26.82	219.100	37.35	13.87
35.00	26.55	221.741	37.41	13.93
37.50	26.27	224.314	37.48	13.99
40.00	26.00	226.819	37.54	14.04
42.50	25.73	229.256	37.60	14.09
45.00	25.45	231.626	37.66	14.14
47.50	25.18	233.929	37.71	14.19
50.00	24.90	236.165	37.77	14.24
52.50	24.63	238.335	37.82	14.29
55.00	24.36	240.439	37.87	14.33
57.50	24.08	242.477	37.92	14.37
60.00	23.81	244.450	37.97	14.42
62.50	23.53	246.357	38.02	14.46
65.00	23.26	248.200	38.07	14.49
67.50	22.98	249.978	38.11	14.53
70.00	22.71	251.692	38.15	14.57
72.50	22.43	253.342	38.19	14.60
75.00	22.16	254.928	38.23	14.63
77.50	21.88	256.451	38.27	14.66
80.00	21.61	257.910	38.30	14.69
82.50	21.33	259.306	38.34	14.72
85.00	21.05	260.640	38.37	14.75
87.50	20.78	261.912	38.40	14.78
90.00	20.50	263.121	38.43	14.80
92.50	20.23	264.268	38.46	14.82
95.00	19.95	265.353	38.49	14.85
97.50	19.68	266.377	38.51	14.87
100.00	19.40	267.340	38.53	14.89
102.50	19.12	268.242	38.56	14.90
105.00	18.85	269.083	38.58	14.92
107.50	18.57	269.864	38.60	14.94
110.00	18.29	270.585	38.61	14.95
112.50	18.02	271.245	38.63	14.96
115.00	17.74	271.846	38.64	14.98
117.50	17.46	272.388	38.66	14.99
120.00	17.19	<b>272.870</b>	<b>38.67</b>	<b>15.00</b>

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Page 21

**Stage-Discharge for Pond 2P: Bottom Ash Storage**

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
30.00	0.00	37.80	14.27
30.15	0.00	37.95	14.40
30.30	0.00	38.10	14.52
30.45	0.00	38.25	14.65
30.60	0.00	38.40	14.77
30.75	0.00	38.55	14.90
30.90	0.00	38.70	15.02
31.05	0.00	38.85	15.14
31.20	0.00	39.00	15.26
31.35	0.00	39.15	15.38
31.50	0.00	39.30	15.50
31.65	0.00	39.45	15.62
31.80	0.00	39.60	15.74
31.95	0.00	39.75	15.86
32.10	0.00	39.90	15.97
32.25	0.00	40.05	16.09
32.40	0.00	40.20	16.20
32.55	0.00	40.35	16.31
32.70	0.00	40.50	16.43
32.85	0.00	40.65	16.54
33.00	0.00	40.80	16.65
33.15	0.00	40.95	16.76
33.30	0.00	41.10	16.87
33.45	0.00	41.25	16.98
33.60	0.00	41.40	17.08
33.75	0.00	41.55	17.19
33.90	0.00	41.70	17.30
34.05	0.29	41.85	17.40
34.20	2.30	42.00	17.51
34.35	5.32	42.15	17.61
34.50	9.08	42.30	17.72
34.65	11.24	42.45	17.82
34.80	11.40	42.60	17.92
34.95	11.56	42.75	18.03
35.10	11.72	42.90	<b>18.13</b>
35.25	11.88		
35.40	12.03		
35.55	12.18		
35.70	12.33		
35.85	12.48		
36.00	12.63		
36.15	12.77		
36.30	12.91		
36.45	13.06		
36.60	13.20		
36.75	13.33		
36.90	13.47		
37.05	13.61		
37.20	13.74		
37.35	13.88		
37.50	14.01		
37.65	14.14		

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Page 22

**Stage-Area-Storage for Pond 2P: Bottom Ash Storage**

Elevation (feet)	Surface (acres)	Storage (acre-feet)	Elevation (feet)	Surface (acres)	Storage (acre-feet)
30.00	12.000	0.000	37.80	40.488	237.414
30.15	12.799	1.860	37.95	40.587	243.494
30.30	13.599	3.840	38.10	40.686	249.590
30.45	14.398	5.940	38.25	40.785	255.700
30.60	15.198	8.159	38.40	40.884	261.825
30.75	15.997	10.499	38.55	40.983	267.965
30.90	16.797	12.959	38.70	41.082	274.120
31.05	17.596	15.538	38.85	41.181	280.290
31.20	18.396	18.237	39.00	41.279	286.474
31.35	19.195	21.057	39.15	41.378	292.674
31.50	19.995	23.996	39.30	41.477	298.888
31.65	20.794	27.055	39.45	41.576	305.117
31.80	21.594	30.234	39.60	41.675	311.361
31.95	22.393	33.533	39.75	41.774	317.619
32.10	23.193	36.952	39.90	41.873	323.893
32.25	23.992	40.491	40.05	41.972	330.181
32.40	24.792	44.150	40.20	42.071	336.485
32.55	25.591	47.929	40.35	42.170	342.803
32.70	26.390	51.827	40.50	42.270	349.136
32.85	27.190	55.846	40.65	42.369	355.483
33.00	27.989	59.984	40.80	42.468	361.846
33.15	28.789	64.242	40.95	42.567	368.224
33.30	29.588	68.621	41.10	42.666	374.616
33.45	30.388	73.119	41.25	42.765	381.024
33.60	31.187	77.737	41.40	42.864	387.446
33.75	31.987	82.475	41.55	42.964	393.883
33.90	32.786	87.333	41.70	43.063	400.335
34.05	33.586	92.311	41.85	43.162	406.802
34.20	34.385	97.409	42.00	43.261	413.284
34.35	35.185	102.627	42.15	43.360	419.780
34.50	35.984	107.964	42.30	43.460	426.292
34.65	36.784	113.422	42.45	43.559	432.818
34.80	37.583	118.999	42.60	43.658	439.359
34.95	38.383	124.697	42.75	43.758	445.915
35.10	38.715	130.491	42.90	<b>43.857</b>	<b>452.487</b>
35.25	38.813	136.305			
35.40	38.911	142.135			
35.55	39.010	147.979			
35.70	39.108	153.838			
35.85	39.207	159.711			
36.00	39.305	165.600			
36.15	39.404	171.503			
36.30	39.502	177.421			
36.45	39.601	183.353			
36.60	39.699	189.301			
36.75	39.798	195.263			
36.90	39.897	201.240			
37.05	39.995	207.232			
37.20	40.094	213.239			
37.35	40.193	219.260			
37.50	40.291	225.297			
37.65	40.390	231.348			

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**Summary for Pond 3P: Rainfall Surge Pond Storage**

[79] Warning: Submerged Pond 2P Primary device # 1 OUTLET by 1.52'

Inflow Area = 248.639 ac, 47.67% Impervious, Inflow Depth > 7.70"  
 Inflow = 267.11 cfs @ 12.02 hrs, Volume= 159.582 af  
 Outflow = 42.96 cfs @ 12.54 hrs, Volume= 139.776 af, Atten= 84%, Lag= 30.8 min  
 Primary = 42.96 cfs @ 12.54 hrs, Volume= 139.776 af

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs  
 Peak Elev= 28.52' @ 12.54 hrs Surf.Area= 16.176 ac Storage= 23.975 af

Plug-Flow detention time= 894.5 min calculated for 139.752 af (88% of inflow)  
 Center-of-Mass det. time= 416.3 min ( 3,770.7 - 3,354.3 )

Volume	Invert	Avail.Storage	Storage Description
#1	26.00'	85.520 af	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)
Elevation	Surf.Area	Inc.Store	Cum.Store
<u>(feet)</u>	<u>(acres)</u>	<u>(acre-feet)</u>	<u>(acre-feet)</u>
26.00	0.103	0.000	0.000
28.00	15.668	15.771	15.771
30.00	17.641	33.309	49.080
32.00	18.799	36.440	85.520

Device	Routing	Invert	Outlet Devices
#1	Primary	28.00'	<b>43.0' long x 128.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

**Primary OutFlow** Max=42.93 cfs @ 12.54 hrs HW=28.52' (Free Discharge)  
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 42.93 cfs @ 1.94 fps)

996-018 Flood Control

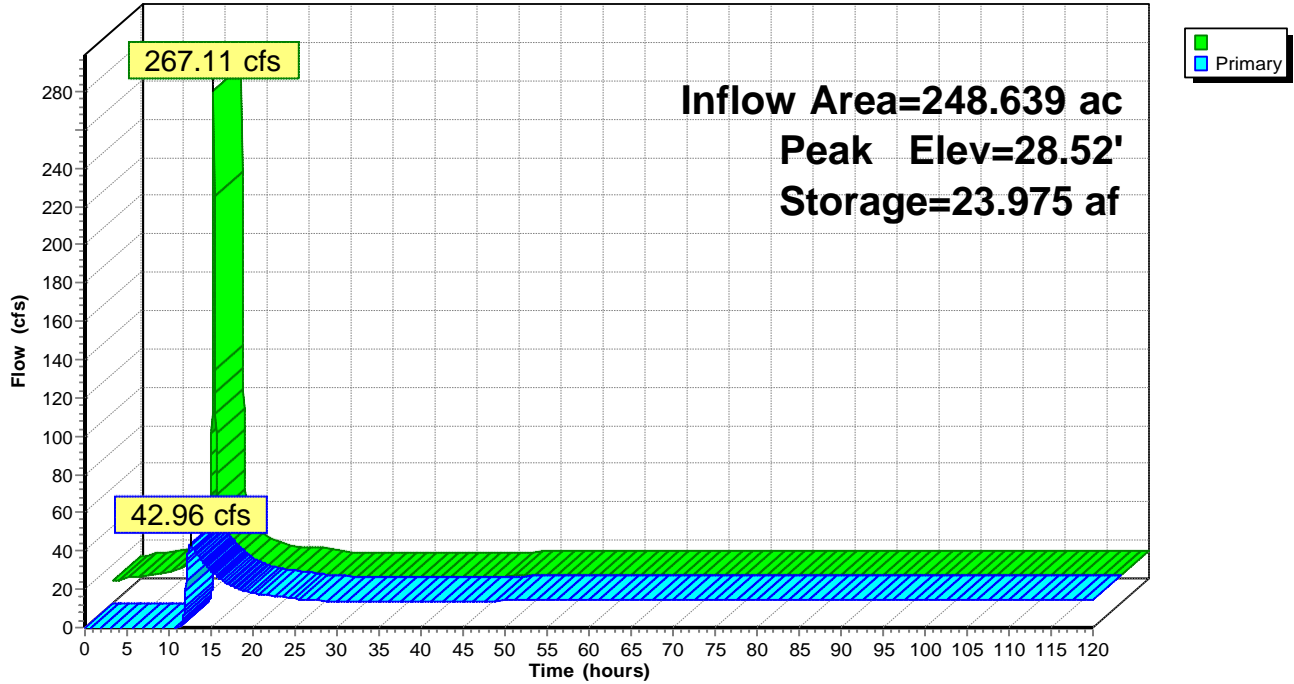
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Page 24

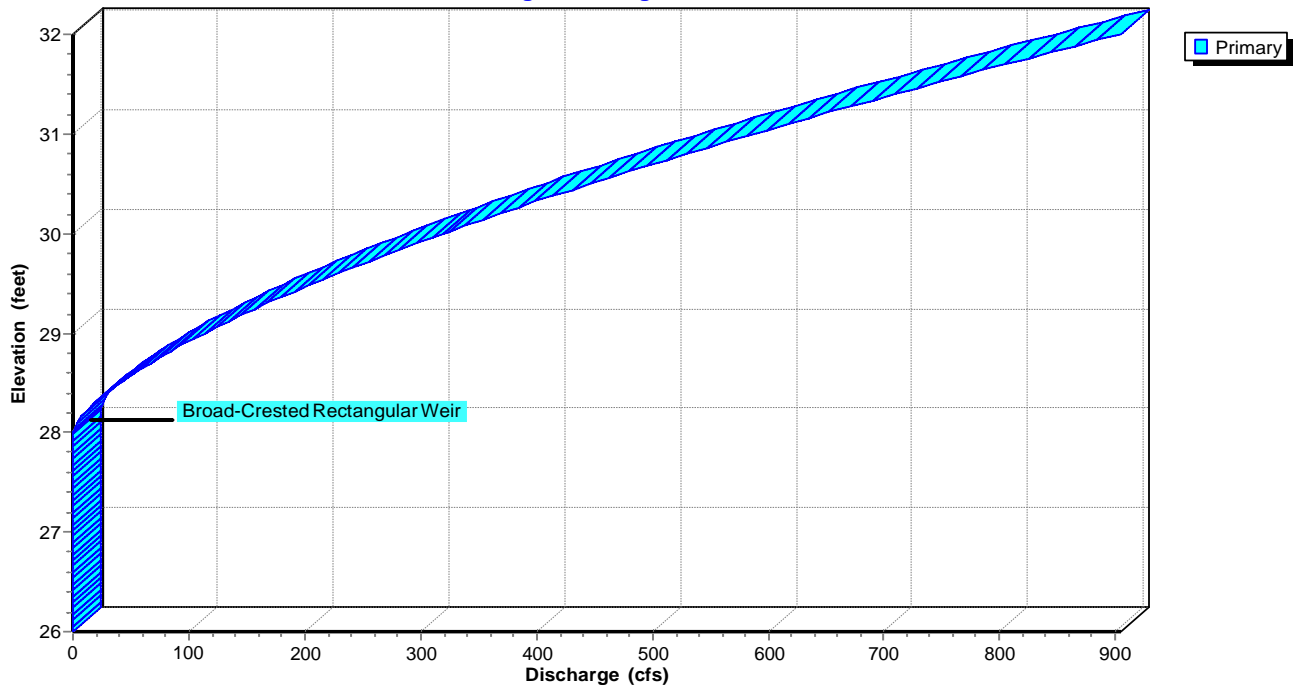
Pond 3P: Rainfall Surge Pond Storage

Hydrograph



Pond 3P: Rainfall Surge Pond Storage

Stage-Discharge





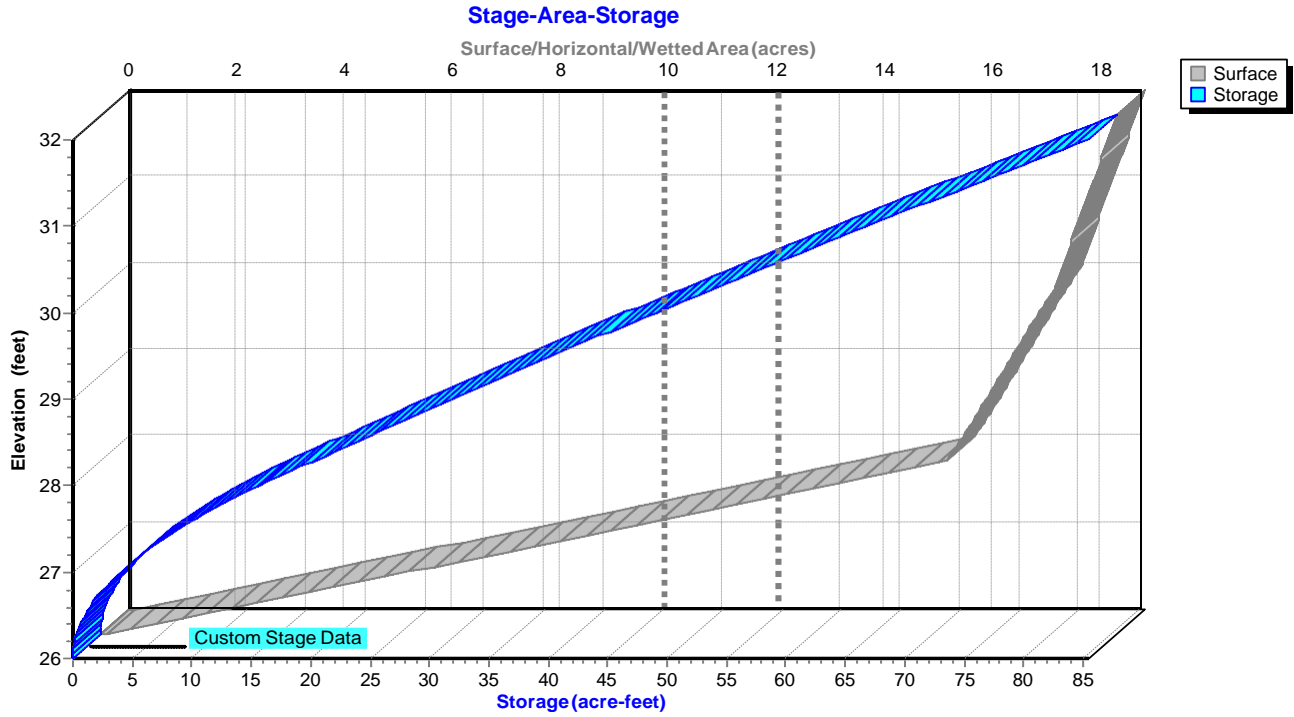
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Big Cajun II - 2021 5 Year Periodic Review  
Type III 24-hr Rainfall=12.70"

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Page 25

## Pond 3P: Rainfall Surge Pond Storage



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Page 26

**Hydrograph for Pond 3P: Rainfall Surge Pond Storage**

Time (hours)	Inflow (cfs)	Storage (acre-feet)	Elevation (feet)	Primary (cfs)
0.00	11.62	0.024	26.06	0.00
2.50	13.78	2.677	26.82	0.00
5.00	15.03	5.659	27.19	0.00
7.50	17.35	8.953	27.50	0.00
10.00	<b>23.65</b>	13.119	27.82	0.00
12.50	<b>46.62</b>	<b>23.971</b>	<b>28.51</b>	<b>42.93</b>
15.00	22.26	<b>22.184</b>	<b>28.40</b>	<b>29.84</b>
17.50	17.84	20.982	28.33	21.91
20.00	16.62	20.400	28.29	18.36
22.50	16.05	20.154	28.28	16.89
25.00	13.69	19.884	28.26	15.41
27.50	13.75	19.675	28.25	14.27
30.00	13.81	19.615	28.24	13.94
32.50	13.87	19.603	28.24	13.88
35.00	13.93	19.607	28.24	13.90
37.50	13.99	19.615	28.24	13.94
40.00	14.04	19.624	28.24	13.99
42.50	14.09	19.634	28.24	14.05
45.00	14.14	19.644	28.25	14.10
47.50	14.19	19.653	28.25	14.15
50.00	14.24	19.662	28.25	14.20
52.50	14.29	19.671	28.25	14.25
55.00	14.33	19.679	28.25	14.29
57.50	14.37	19.687	28.25	14.34
60.00	14.42	19.695	28.25	14.38
62.50	14.46	19.702	28.25	14.42
65.00	14.49	19.710	28.25	14.46
67.50	14.53	19.717	28.25	14.50
70.00	14.57	19.723	28.25	14.53
72.50	14.60	19.730	28.25	14.57
75.00	14.63	19.736	28.25	14.60
77.50	14.66	19.742	28.25	14.64
80.00	14.69	19.748	28.25	14.67
82.50	14.72	19.753	28.25	14.70
85.00	14.75	19.758	28.25	14.73
87.50	14.78	19.763	28.25	14.75
90.00	14.80	19.768	28.25	14.78
92.50	14.82	19.772	28.25	14.80
95.00	14.85	19.777	28.25	14.83
97.50	14.87	19.780	28.25	14.85
100.00	14.89	19.784	28.25	14.87
102.50	14.90	19.788	28.25	14.89
105.00	14.92	19.791	28.25	14.91
107.50	14.94	19.794	28.25	14.92
110.00	14.95	19.797	28.25	14.94
112.50	14.96	19.800	28.26	14.95
115.00	14.98	19.802	28.26	14.97
117.50	14.99	19.804	28.26	14.98
120.00	15.00	19.806	28.26	14.99

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Page 27

**Stage-Discharge for Pond 3P: Rainfall Surge Pond Storage**

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
26.00	0.00	28.08	2.61	30.16	359.01
26.04	0.00	28.12	4.79	30.20	369.03
26.08	0.00	28.16	7.38	30.24	379.14
26.12	0.00	28.20	10.31	30.28	389.34
26.16	0.00	28.24	13.57	30.32	399.63
26.20	0.00	28.28	17.13	30.36	410.01
26.24	0.00	28.32	20.95	30.40	420.48
26.28	0.00	28.36	25.04	30.44	431.03
26.32	0.00	28.40	29.37	30.48	441.67
26.36	0.00	28.44	33.89	30.52	452.40
26.40	0.00	28.48	38.61	30.56	463.22
26.44	0.00	28.52	43.53	30.60	474.12
26.48	0.00	28.56	48.65	30.64	485.10
26.52	0.00	28.60	53.96	30.68	496.17
26.56	0.00	28.64	59.18	30.72	507.31
26.60	0.00	28.68	64.52	30.76	518.55
26.64	0.00	28.72	69.98	30.80	529.86
26.68	0.00	28.76	75.55	30.84	541.25
26.72	0.00	28.80	81.23	30.88	552.73
26.76	0.00	28.84	87.33	30.92	564.28
26.80	0.00	28.88	93.57	30.96	575.92
26.84	0.00	28.92	99.95	31.00	587.63
26.88	0.00	28.96	106.45	31.04	599.42
26.92	0.00	29.00	113.09	31.08	611.29
26.96	0.00	29.04	120.03	31.12	623.24
27.00	0.00	29.08	127.12	31.16	635.26
27.04	0.00	29.12	134.35	31.20	647.36
27.08	0.00	29.16	141.72	31.24	659.54
27.12	0.00	29.20	149.23	31.28	671.79
27.16	0.00	29.24	156.75	31.32	684.12
27.20	0.00	29.28	164.39	31.36	696.52
27.24	0.00	29.32	172.16	31.40	708.99
27.28	0.00	29.36	180.04	31.44	721.54
27.32	0.00	29.40	188.05	31.48	734.16
27.36	0.00	29.44	196.01	31.52	746.86
27.40	0.00	29.48	204.08	31.56	759.62
27.44	0.00	29.52	212.25	31.60	772.46
27.48	0.00	29.56	220.52	31.64	785.37
27.52	0.00	29.60	228.88	31.68	798.35
27.56	0.00	29.64	237.51	31.72	811.41
27.60	0.00	29.68	246.26	31.76	824.53
27.64	0.00	29.72	255.10	31.80	837.72
27.68	0.00	29.76	264.05	31.84	850.98
27.72	0.00	29.80	273.11	31.88	864.31
27.76	0.00	29.84	282.26	31.92	877.71
27.80	0.00	29.88	291.52	31.96	891.18
27.84	0.00	29.92	300.87	32.00	<b>904.72</b>
27.88	0.00	29.96	310.32		
27.92	0.00	30.00	319.87		
27.96	0.00	30.04	329.51		
28.00	0.00	30.08	339.25		
28.04	0.92	30.12	349.08		

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Page 28

**Stage-Area-Storage for Pond 3P: Rainfall Surge Pond Storage**

<u>Elevation</u> <u>(feet)</u>	<u>Surface</u> <u>(acres)</u>	<u>Storage</u> <u>(acre-feet)</u>	<u>Elevation</u> <u>(feet)</u>	<u>Surface</u> <u>(acres)</u>	<u>Storage</u> <u>(acre-feet)</u>
26.00	0.103	0.000	31.20	18.336	70.666
26.10	0.881	0.049	31.30	18.394	72.503
26.20	1.659	0.176	31.40	18.452	74.345
26.30	2.438	0.381	31.50	18.510	76.193
26.40	3.216	0.664	31.60	18.567	78.047
26.50	3.994	1.024	31.70	18.625	79.906
26.60	4.773	1.463	31.80	18.683	81.772
26.70	5.551	1.979	31.90	18.741	83.643
26.80	6.329	2.573	32.00	<b>18.799</b>	<b>85.520</b>
26.90	7.107	3.245			
27.00	7.886	3.994			
27.10	8.664	4.822			
27.20	9.442	5.727			
27.30	10.220	6.710			
27.40	10.998	7.771			
27.50	11.777	8.910			
27.60	12.555	10.126			
27.70	13.333	11.421			
27.80	14.112	12.793			
27.90	14.890	14.243			
28.00	15.668	15.771			
28.10	15.767	17.343			
28.20	15.865	18.924			
28.30	15.964	20.516			
28.40	16.063	22.117			
28.50	16.161	23.728			
28.60	16.260	25.349			
28.70	16.359	26.980			
28.80	16.457	28.621			
28.90	16.556	30.272			
29.00	16.654	31.932			
29.10	16.753	33.603			
29.20	16.852	35.283			
29.30	16.950	36.973			
29.40	17.049	38.673			
29.50	17.148	40.383			
29.60	17.246	42.103			
29.70	17.345	43.832			
29.80	17.444	45.572			
29.90	17.542	47.321			
30.00	17.641	49.080			
30.10	17.699	50.847			
30.20	17.757	52.620			
30.30	17.815	54.398			
30.40	17.873	56.183			
30.50	17.931	57.973			
30.60	17.988	59.769			
30.70	18.046	61.571			
30.80	18.104	63.378			
30.90	18.162	65.191			
31.00	18.220	67.011			
31.10	18.278	68.835			

**APPENDIX B**  
**P.E. CERTIFICATION**

**BIG CAJUN II POWER PLANT  
BOTTOM ASH BASIN  
5-YEAR PERIODIC REVIEW – INFLOW DESIGN FLOOD CONTROL SYSTEM PLAN**

**PROFESSIONAL ENGINEER CERTIFICATION**

I hereby certify that I have performed the 5-year periodic review of the Inflow Design Flood Control System Plan for Cleco Cajun LLC (Cleco) Big Cajun II Power Plant Fly Ash Basin in accordance with the CCR requirements at 40 CFR 257.82. This 5-year periodic review of the Inflow Design Flood Control System Plan has determined that the Fly Ash Basin has been designed in accordance with good engineering practice and meets the requirements of 40 CFR 257.82 and that this Plan is adequate for the facility.

**James C. Van Hoof**

Name

**24630**

Registration No.

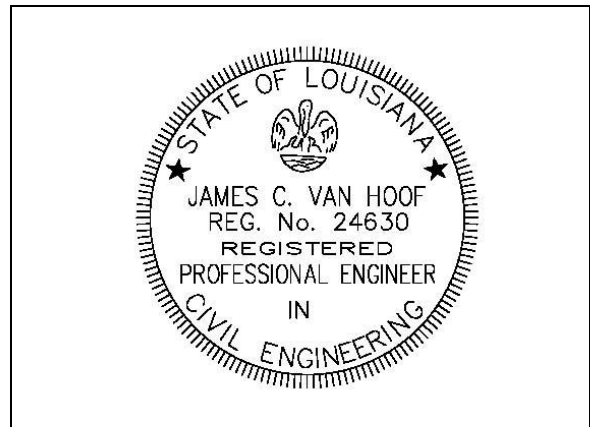
**LA**

State

Signature

October 15, 2021

Date



(Seal)