



ENVIRONMENTAL • GEOTECHNICAL
BUILDING SCIENCES • MATERIALS TESTING

**2020 VISUAL INSPECTION OF ASH POND EMBANKMENTS
IPL PETERSBURG ASH POND SYSTEM**

IPL PETERSBURG GENERATING STATION
6925 NORTH STATE ROAD 57
PETERSBURG, INDIANA 47567

ATC PROJECT NO. 170LF00973

DECEMBER 18, 2020

PREPARED FOR:

INDIANAPOLIS POWER & LIGHT COMPANY
6925 NORTH STATE ROAD 57
PETERSBURG, INDIANA 47567

ATTENTION: MR. WIL TEAGUE



December 18, 2020

Mr. Wil Teague
Senior Scientist
Indianapolis Power and Light Company
6925 North State Road 57
Petersburg, Indiana 47567-0436

ATC Group Services / Atlas

7988 Centerpoint Dr.
Suite 100
Indianapolis, IN 46256

Phone +1 317 849 4990
Fax +1 317 849 4278

www.atcgroupservices.com

**Re: 2019 Visual Inspection of Ash Pond Embankments
IPL Petersburg Ash Basin Pond System
Indianapolis Power and Light Company
Petersburg Generating Station
Petersburg, Indiana
ATC Project No. 170LF00973**

Dear Mr. Teague:

ATC Group Services, an Atlas Company, is pleased to present the findings of the October 28 2020 Visual Site Inspection of the IPL Petersburg Generating Station Ash Pond Embankments of the Ash Ponds A, A', B, C, and D. This visual inspection and report were done in accordance with guidelines established by the Coal Combustion Residuals (CCR) Rule published by the Environmental Protection Agency (EPA) on April 17, 2015.

The scope of this inspection was limited to an examination of readily observable surficial features of the ash pond embankments and its appurtenant structures, and a review of information that you provided. Please note that the inspection did not include any test drilling, testing of materials, precise physical measurements of ash pond system features, detailed calculations to verify slope stability or other engineering analyses. Although the inspection was conducted by competent personnel in accordance with generally accepted methods for ash pond systems, it should not be considered as a warranty or guaranty of the future performance/safety of the ash pond embankments.

The ash pond embankments inspection was completed by Bill Paraskevas and Juan Carrizo of ATC Group Services (ATC). The weather condition during the inspection was approximately 54°F and sunny. Contained herein is a summary of the engineering observations of the ash pond embankments including condition of the pond side slopes, grading and erosion, vegetation, haul roads, perimeter ditches, down drain channels, riprap areas, culverts and other adjacent structures. The ash pond system features are highlighted on the attached Site Plan shown in Figures 2 and 3 of this report.

The IPL Petersburg Generating Station Ash Basin Pond System is located about four (4) miles north of the City of Petersburg in Pike County, Indiana west of State Road 57 (Figure 1). The ash pond system encompasses an area of approximately 157.9 acres (Figure 2).

The 2020 Annual Inspection was performed to address the standards and guidelines required by the CCR Rule instituted by the Environmental Protection Agency on April 17, 2015. As a result, CCR ash ponds are now required to meet the requirements of 40 C.F.R. §257 to conduct annual inspections of the landfill in accordance with 40 C.F.R. §257.83(b). Listed below are requirements specified within the CCR Rule and the observations made by Bill Paraskevas and Juan Carrizo during the annual inspection:

- i. A review of available information regarding the status and condition of the CCR Unit;
- ii. A visual inspection of the CCR Unit to identify signs of distress or malfunction;
- iii. A visual inspection of any hydraulic structures underlying the base of the CCR unit;

Inspection Summary

A layout of the ash pond system for the IPL Petersburg station is presented in Figure 2. Ash Pond A' is the only pond with water in it, the area occupied by Ash Pond D has been repurposed with the construction of a wastewater treatment plant, Ash Ponds B and C are closed, and Ash Pond A is in the closure process as in-place closure.

Engineering observations performed on October 28, 2020 are shown in Figure 3, 2020 Visual Site Inspection Grid Map. ATC visually inspected the embankments for Ash Ponds A, A', B, C, and D, and found no areas of instability or of concerns to the proper functioning of the ash basin system.

A description of the inspection findings are presented in sections below.

Changes in Geometry of Ash Pond

Observed geometry changes during the 2020 Petersburg ash basin embankment inspection consisted mainly of grading measures along the ash pond basins that are closed (Ash Pond B), under closure procedures (Ash Pond C, areas on Ash Pond A), and for the area encompassing the Ash Pond D which has been repurposed for the construction a new wastewater treatment plant and site improvements.

The ash pond descriptions, observations, and recommendations are as follows:

Ash Pond A and A'

Ash Pond A' is approximately 8.1 acres in size, and has a normal water elevation of 432.2. Based on topographic map of the site, the pond depth ranges from elevation 420 to 438. Pond A' discharges flows to Lick Creek via a concrete riser and culvert structure. As part of the closure plans for Ash Pond A, it will be filled in with structural fill. Based on a comparison of topographic elevation maps

for the years 2019 and 2020, the change in the volume of material placed in Ash Pond A is approximately 729,000 cubic yards.

The drainage basin to Ash Pond A is approximately 62 acres and its surface runoff is conveyed to Ash Pond A' via drainage ditches. In general, this basin is well-drained.

1. Well established vegetation exists along the ponding areas in Ash Pond A' as shown in Figure 3, grid D-12.
2. Ash Pond A is being filled in with structural fill as part of closure work as shown in grid locations H-11.

Ash Pond B

Ash Pond B is approximately 33.1 acres and has been closed with a geomembrane-composite final cover and does not receive ash anymore. In general, this area is has a good soil cover and is well-vegetated along the side slopes and top of the former ash pond basin.

1. Good vegetation exists along the majority of the basin, including the top of basin, and side slopes.
2. At the side slopes along the western, south-eastern, and north sections there were erosion rills and gullies observed at certain locations as shown in grid B-12, E-5, H-7, H-8, H-11, D-12, I-12, and C-13.
 - Recommendation: Repair the soil cover and install erosion control mats as needed in areas affected by erosion rills and gullies. Overseed these areas to establish a protective grass cover.
3. At the side slopes along the western side of Ash Pond B two animal burrows were observed at locations shown in grid B-12, and B-11.
 - Recommendation: Repair the soil cover and overseed these areas to establish a protective grass cover.

Ash Pond C

Ash Pond C is approximately 45.7 acres and has been recently closed with a geomembrane-composite final cover and does not receive ash anymore. As part of the closure work, much of the ground cover had been seeded in earlier in the year, and it appears to have a good soil cover and vegetation established along the side slopes. Based on a comparison of topographic elevation maps for the years 2019 and 2020, the change in the volume of material placed in Ash Pond C is approximately 162,000 cubic yards.

1. Good vegetation exists along the side slopes of the basin.
2. At the side slopes along the western, and north there were erosion rills and gullies observed at certain locations as shown in grid M-1, L-2, I-2, and H-3.

- Recommendation: Repair the soil cover and install erosion control mats as needed in areas affected by erosion rills and gullies. Overseed these areas to establish a protective grass cover.
3. Overgrown weedy vegetation was observed at down drain riprap chutes and inlet located in the east and south sections of Ash Pond B, see grid locations C-7, G-3, and G-11.
- Recommendation: Remove vegetation.

Ash Pond D

The area for Ash Pond D has been repurposed and does not receive ash sluicing anymore. In general, this area has been paved with asphalt and is now entirely occupied by a wastewater treatment plant and a parking facility.

Minimum and Maximum Depth of Ash Pond System

According to site topographic map, the minimum depth for Ash Pond A' is approximately elevation 420.0 and the maximum depth is elevation 440.0,

Ash Pond System Storage Volume

Ash Pond A and A' have a combined storage capacity of approximately 59.4 acre-feet of water within its banks.

Structural Integrity

All ash pond embankment slopes appear to be stable with no visual indications or signs of sloughing or subsidence were detected during the 2020 visual inspection.

Stability and Operation

The ash pond embankments are generally in good condition and the slopes are well vegetated in most places. No significant deficiencies were noted and operation of the ash pond system at this time is not expected to be adversely affected by any items detected during the 2020 inspection.

We appreciate the opportunity to assist you with this project. If you have any questions concerning information contained in this report, please do not hesitate to call either of the undersigned at 317.849.4990.

Sincerely,

ATC Group Services LLC



Juan D. Carrizo, P.E., CPM
Senior Project Engineer



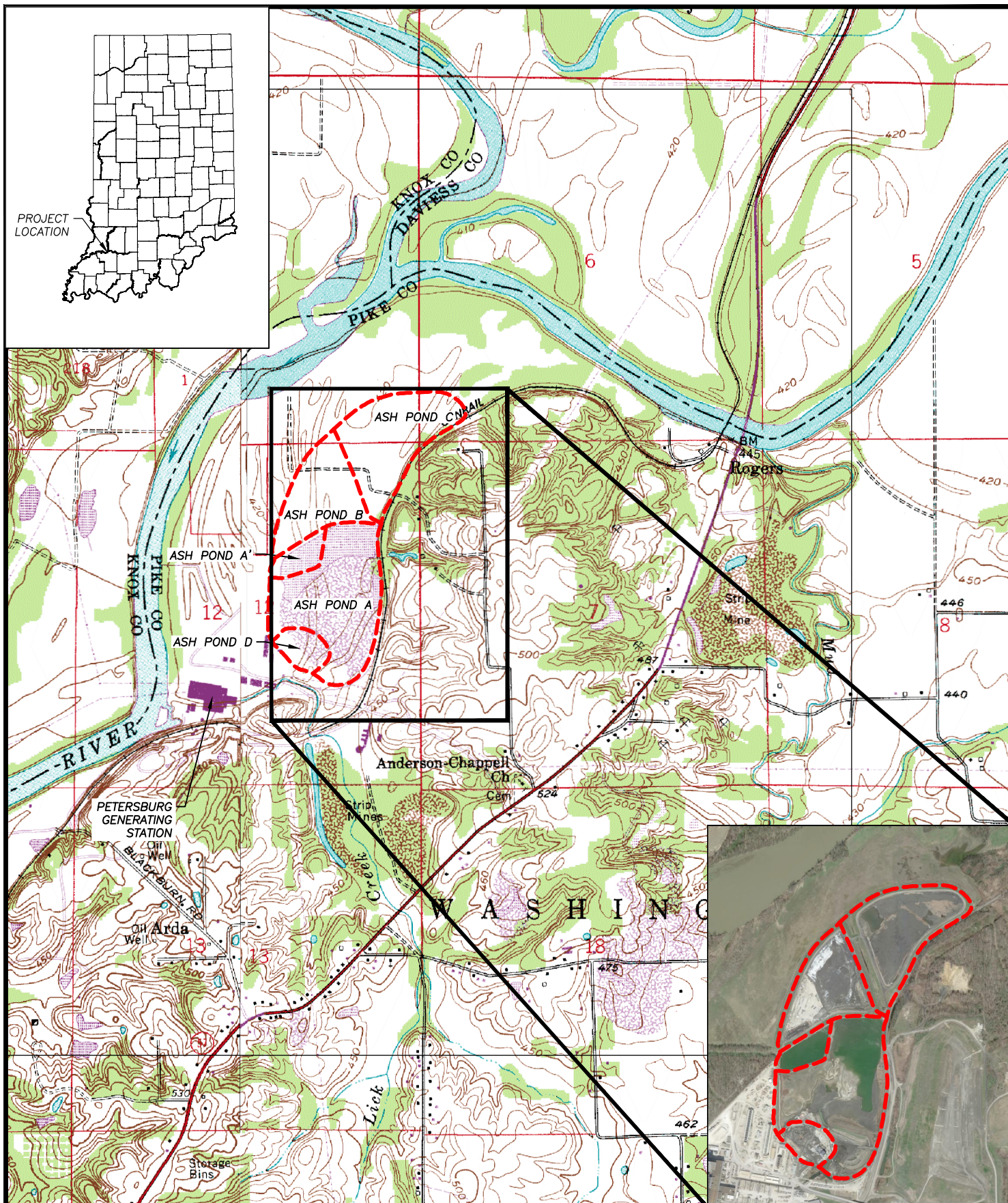
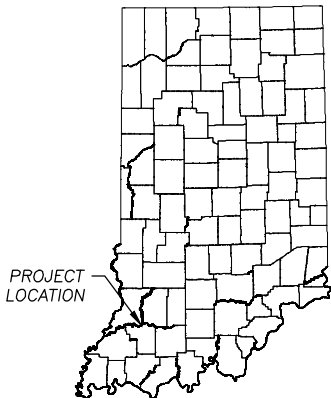
Bill Paraskevas, P.E.
Senior Project Manager

Copies: Wil Teague (1)
 Erwin Leidolf (1)

Attachments:

| | |
|----------|---------------------------------|
| Figure 1 | Vicinity Map |
| Figure 2 | CCR Disposal Facilities |
| Figure 3 | Visual Site Inspection Grid Map |

Attachment A: Dam Inspection Report



VICINITY MAP

IPL PETERSBURG ASH POND SYSTEM
INDIANAPOLIS POWER AND LIGHT COMPANY
6925 NORTH STATE ROAD 57
PETERSBURG, INDIANA

Project Number:
170LF00973
Drawing File:
SEE LOWER LEFT

Date:
12/03/2020

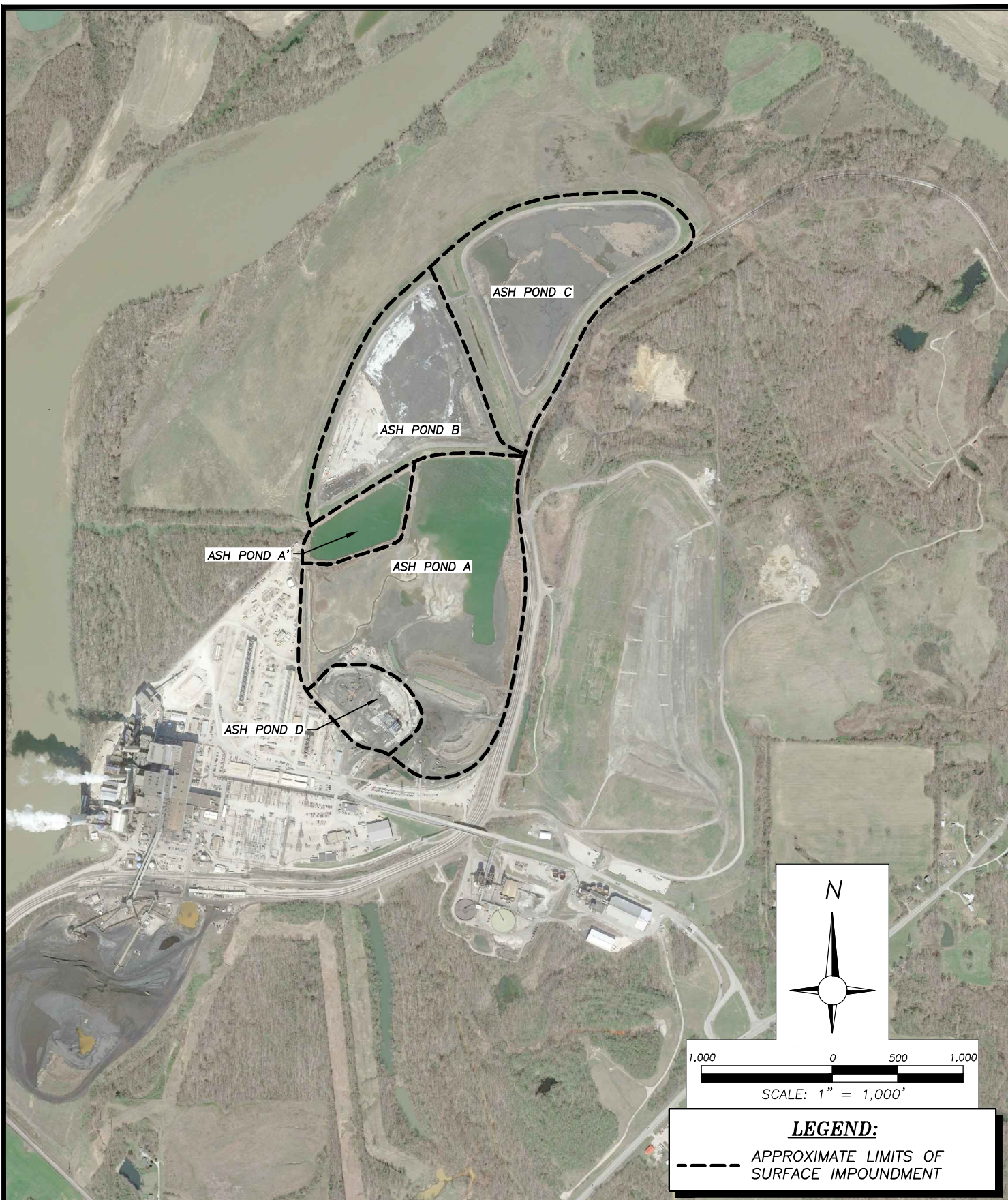
Scale:
1"= 2,000'

Drn. By:
BH
Ckd. By:
JC
App'd By:

Figure:

ATC

1



CCR ASH POND SYSTEM CCR ASH POND EMBANKMENT ANNUAL INSPECTION REPORT

IPL PETERSBURG ASH POND SYSTEM
INDIANAPOLIS POWER AND LIGHT COMPANY
6925 NORTH STATE ROAD 57
PETERSBURG, INDIANA

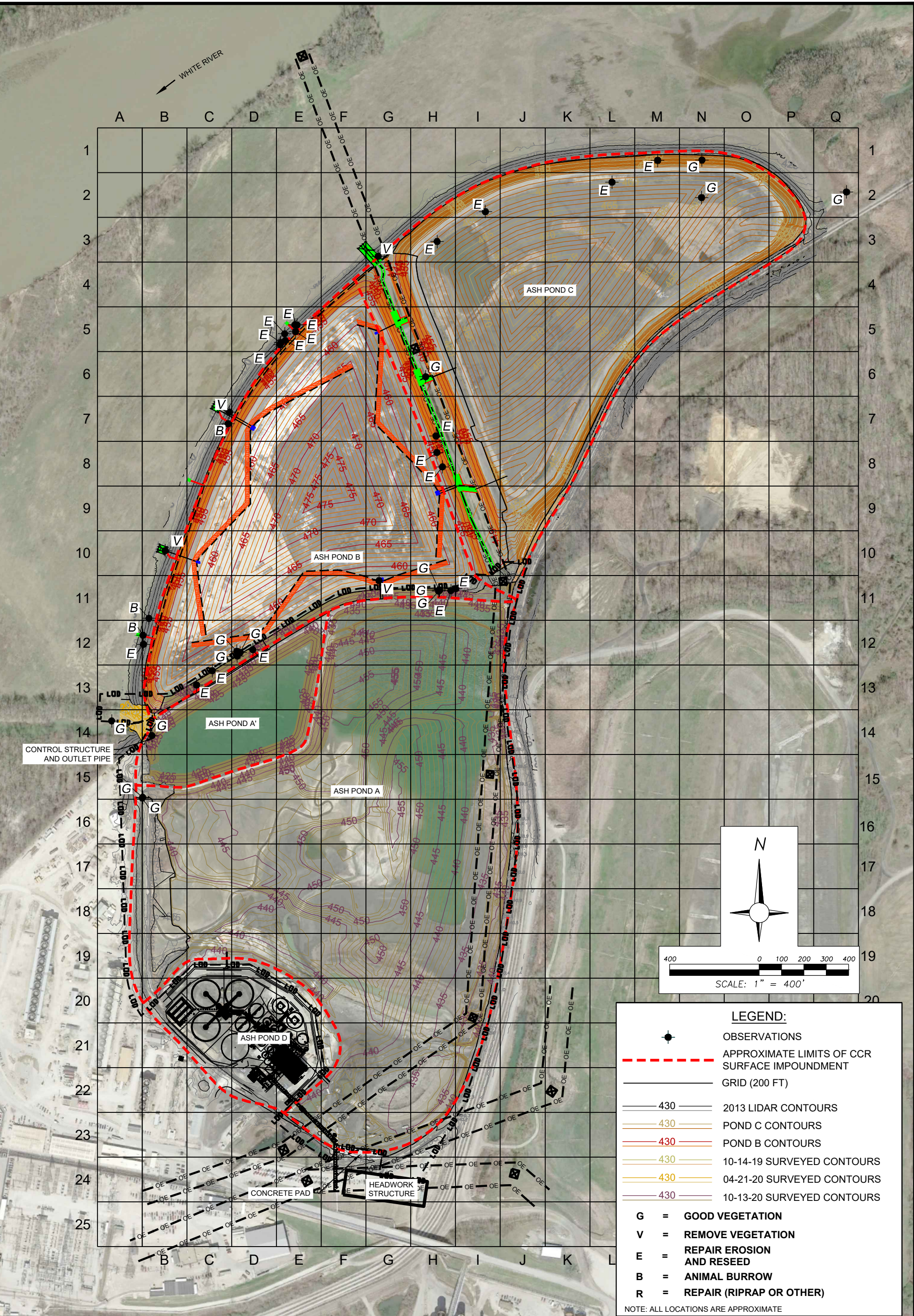
| | |
|---------------------------------|----------------|
| Project Number: 170LF00973 | Drn. By: BH |
| Drawing File: SEE LOWER LEFT | Ckd. By: JC |
| Date: 12/03/2020 | App'd By: |

Scale:
ASH SHOWN



Figure:

2



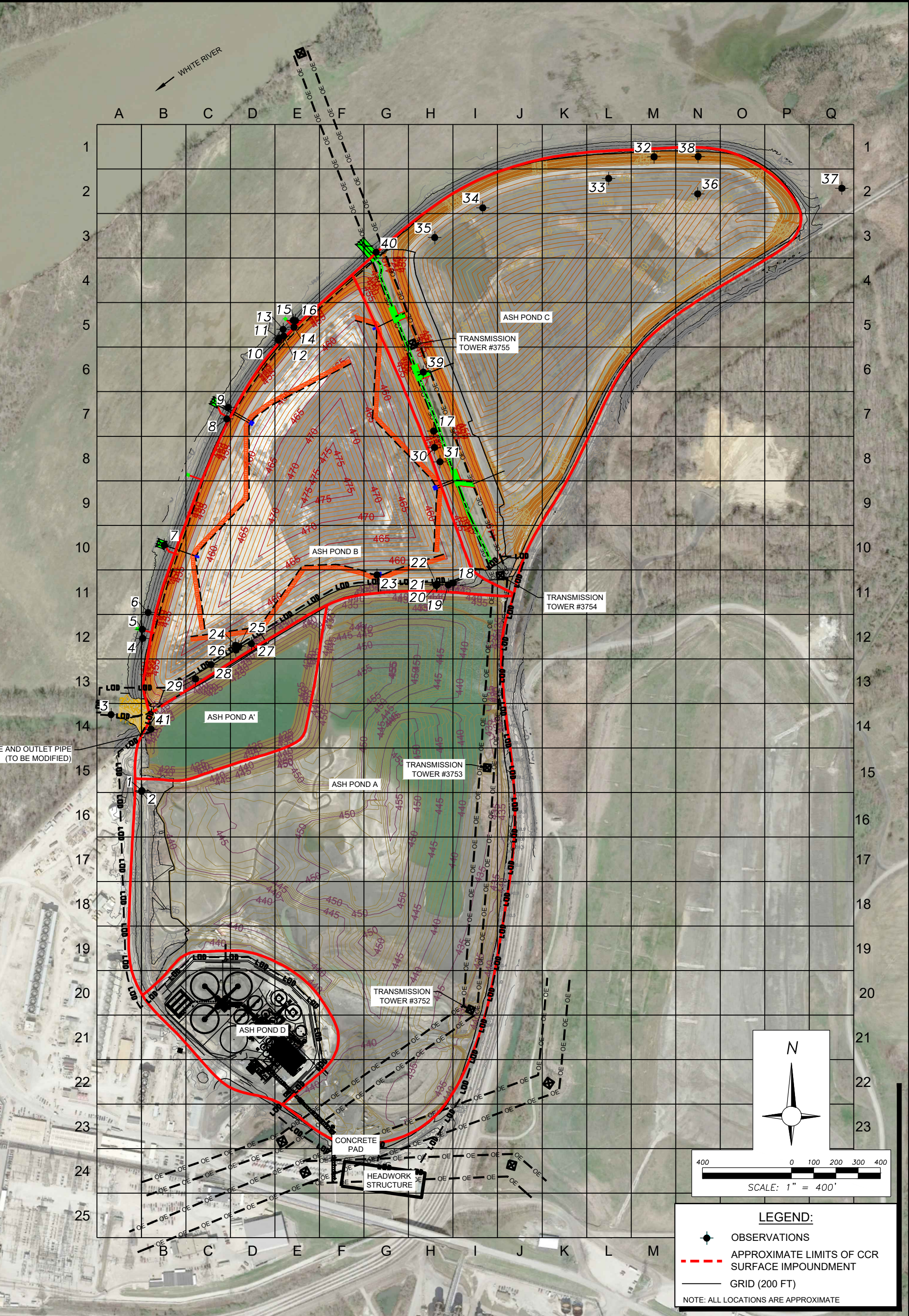




Table #1. List of Observation Photographs and Description of Ash Ponds Conditions


| Photo ID | Grid ID | Description |
|----------|---------|--|
| 1 | B-15 | Eastern boundary of Ash Pond A, west slope of pond embankment for Ash Pond A, photo looking north. |
| 2 | B-15 | Eastern boundary of Ash Pond A, west slope of pond embankment for Ash Pond A, photo looking south. |
| 3 | A-4 | Downstream view of outfall structure at Ash Pond A', west slope of Ash Pond A', no issues observed, photo looking east. |
| 4 | B-12 | Erosion gully formed at east side of western slope of Ash Pond B, photo looking east. |
| 5 | B-12 | Animal burrow, west slope of Ash Pond B, photo looking east. |
| 6 | B-11 | Animal burrow, west slope of Ash Pond B, photo looking east. |
| 7 | B-10 | Recommend removal of vegetation from riprap area at downdrain splash pad, north slope of Ash Pond B, photo looking north. |
| 8 | C-7 | Animal burrow, west slope of Ash Pond B, photo looking east. |
| 9 | C-7 | Recommend removal of vegetation from riprap area at downdrain splash pad, north slope of Ash Pond B, photo looking south. |
| 10 | E-5 | Erosion gully formed along western slope of Ash Pond B, photo looking southeast. |
| 11 | E-5 | Erosion gully formed along western slope of Ash Pond B, photo looking southeast. |
| 12 | E-5 | Erosion gully formed along western slope of Ash Pond B, photo looking southeast. |
| 13 | E-5 | Erosion gully formed along western slope of Ash Pond B, photo looking east. |
| 14 | E-5 | Erosion gully formed along western slope of Ash Pond B, photo looking east. |
| 15 | E-5 | Erosion gully formed along western slope of Ash Pond B, photo looking east. |
| 16 | E-5 | Erosion gully formed along western slope of Ash Pond B, photo looking east. |
| 17 | H-7 | Erosion gully formed at south side of drainage swale along power line corridor between Ash Pond B and C, photo looking west. |
| 18 | I-11 | Erosion gully formed along southern slope of Ash Pond B, photo looking north. |
| 19 | H-11 | Erosion gully formed along southern slope of Ash Pond B, photo looking north. |
| 20 | H-11 | View of ash filled area at northeast corner of Ash Pond A, fill grading work is part of Ash Pond A Basin Closure, photo looking southeast. |
| 21 | H-11 | View of ash filled area at north side of Ash Pond A, fill grading work is part of Ash Pond A Basin Closure, photo looking south. |
| 22 | H-11 | View of northeast side of ash filled area at Ash Pond A, fill grading work is part of Ash Pond A Basin Closure, photo looking southwest. |
| 23 | G-11 | Recommend removal of vegetation from riprap area at downdrain inlets at south side of Ash Pond B, photo looking north. |
| 24 | D-12 | Middle section of Ash Pond A', vegetation is well established along north and south sides, photo looking southeast |
| 25 | D-12 | West section of Ash Pond A', vegetation is well established along north and south sides, photo looking southwest. |
| 26 | D-12 | Erosion gullies formed at side slope of southwest section of Ash Pond B, photo looking south. |
| 27 | D-12 | Erosion gullies formed at side slope of southwest section of Ash Pond B, photo looking southeast. |
| 28 | C-13 | Erosion gullies formed at side slope of southwest section of Ash Pond B, photo looking southeast. |
| 29 | C-13 | Erosion gullies formed at side slope of southwest section of Ash Pond B, photo looking southeast. |
| 30 | H-8 | Erosion gully formed at south side of drainage swale along power line corridor between Ash Pond B and C, photo looking west. |
| 31 | H-8 | Erosion gully formed at south side of drainage swale along power line corridor between Ash Pond B and C, photo looking west. |
| 32 | M-1 | Erosion gullies formed along northern slope of Ash Pond C, photo looking south. |
| 33 | L-2 | Erosion gullies formed along northern slope of Ash Pond C, photo looking north. |
| 34 | I-2 | Erosion gullies formed along northwest slope of Ash Pond C, photo looking south. |
| 35 | H-3 | Erosion gullies formed along northwest slope of Ash Pond C, photo looking southeast. |
| 36 | M-2 | Slope of top of north section of Ash Pond C, photo looking west. |
| 37 | Q-2 | Splash pad for drainage swale northeast of Ash Pond C, photo looking north. |
| 38 | M-1 | North slope of Ash Pond C, photo looking west. |
| 39 | H-6 | Ash Pond B downdrain splash pad at power line corridor between Ash Ponds B and C, photo looking north. |
| 40 | G-3 | Recommend removal of vegetation from riprap area, splash pad at power line corridor between Ash Ponds B and C, photo looking northwest. |
| 41 | B-14 | Outfall control structure, Ash Pond A', photo looking north. |


| | | |
|---|----------------------|--|
| Grid ID B-15 | Photo ID 1 |  |
| Date October 28, 2020 | | |
| Description: Eastern boundary of Ash Pond A, west slope of pond embankment for Ash Pond A, photo looking north. | | |

| | | |
|---|----------------------|--|
| Grid ID B-15 | Photo ID 2 |  |
| Date October 28, 2020 | | |
| Description: Eastern boundary of Ash Pond A, west slope of pond embankment for Ash Pond A, photo looking south. | | |

| | | |
|--|----------------------|---|
| Grid ID A-4 | Photo ID 3 |  |
| Date October 28, 2020 | | |
| Description: Downstream view of outfall structure at Ash Pond A', west slope of Ash Pond A', no issues observed, photo looking east. | | |


| | | |
|--|----------------------|--|
| Point ID B-12 | Photo ID 4 |  |
| Date October 28, 2020 | | |
| Description: Erosion gully formed at east side of western slope of Ash Pond B, photo looking east. | | |


| | | |
|---|----------------------|---|
| Point ID B-12 | Photo ID 5 |  |
| Date October 28, 2020 | | |
| Description: Animal burrow, west slope of Ash Pond B, photo looking east. | | |


| | | |
|---|----------------------|--|
| Point ID B-11 | Photo ID 6 |  |
| Date October 28, 2020 | | |
| Description: Animal burrow, west slope of Ash Pond B, photo looking east. | | |


| | | |
|---|----------------------|--|
| Point ID B-10 | Photo ID 7 |  |
| Date October 28, 2020 | | |
| Description: Recommend removal of vegetation from riprap area at down drain splash pad, north slope of Ash Pond B, photo looking north. | | |

| | | |
|---|----------------------|--|
| Point ID C-7 | Photo ID 8 |  |
| Date October 28, 2020 | | |
| Description: Animal burrow, west slope of Ash Pond B, photo looking east. | | |

| | | |
|---|----------------------|--|
| Point ID C-7 | Photo ID 9 |  |
| Date October 28, 2020 | | |
| Description: Recommend removal of vegetation from riprap area at down drain splash pad, north slope of Ash Pond B, photo looking south. | | |

| | | |
|---|-----------------------|--|
| Point ID E-5 | Photo ID 10 |  |
| Date October 28, 2020 | | |
| Description: Erosion gully formed along western slope of Ash Pond B, photo looking southeast. | | |


| | | |
|---|-----------------------|---|
| Point ID E-5 | Photo ID 11 |  |
| Date October 28, 2020 | | |
| Description: Erosion gully formed along western slope of Ash Pond B, photo looking southeast. | | |


| | | |
|---|-----------------------|--|
| Point ID E-5 | Photo ID 12 |  |
| Date October 28, 2020 | | |
| Description: Erosion gully formed along western slope of Ash Pond B, photo looking southeast. | | |



| | | |
|--|-----------------------|---|
| Point ID E-5 | Photo ID 13 |  |
| Date October 28, 2020 | | |
| Description: Erosion gully formed along western slope of Ash Pond B, photo looking east. | | |


| | | |
|--|-----------------------|--|
| Point ID E-5 | Photo ID 14 |  |
| Date October 28, 2020 | | |
| Description: Erosion gully formed along western slope of Ash Pond B, photo looking east. | | |


| | | |
|--|-----------------------|--|
| Point ID E-5 | Photo ID 15 |  |
| Date October 28, 2020 | | |
| Description: Erosion gully formed along western slope of Ash Pond B, photo looking east. | | |
| Point ID E-5 | Photo ID 16 |  |
| Date October 28, 2020 | | |
| Description: Erosion gully formed along western slope of Ash Pond B, photo looking east. | | |


| | | |
|---|-----------------------|---|
| Point ID H-7 | Photo ID 17 |  |
| Date October 28, 2020 | | |
| Description: Erosion gully formed at south side of drainage swale along power line corridor between Ash Pond B and C, photo looking west. | | |


| | | |
|--|-----------------------|--|
| Point ID I-11 | Photo ID 18 |  |
| Date October 28, 2020 | | |
| Description: Erosion gully formed along southern slope of Ash Pond B, photo looking north. | | |


| | | |
|---|-----------------------|--|
| Point ID H-11 | Photo ID 19 |  |
| Date October 28, 2020 | | |
| Description: Erosion gully formed along southern slope of Ash Pond B, photo looking north. | | |
| Point ID H-11 | Photo ID 20 |  |
| Date October 28, 2020 | | |
| Description: View of ash filled area at northeast corner of Ash Pond A, fill grading work is part of Ash Pond A Basin Closure, photo looking southeast. | | |

| | | |
|---|-----------------------|--|
| Point ID H-11 | Photo ID 21 |  |
| Date October 28, 2020 | | |
| Description: View of ash filled area at north side of Ash Pond A, fill grading work is part of Ash Pond A Basin Closure, photo looking south. | | |



| | | |
|---|-----------------------|--|
| Point ID H-11 | Photo ID 22 |  |
| Date October 28, 2020 | | |
| Description: View of northeast side of ash filled area at Ash Pond A, fill grading work is part of Ash Pond A Basin Closure, photo looking southwest. | | |



| | | |
|--|-----------------------|--|
| Point ID G-11 | Photo ID 23 |  |
| Date October 28, 2020 | | |
| Description: Recommend removal of vegetation from riprap area at down drain inlets at south side of Ash Pond B, photo looking north. | | |

| | | |
|--|-----------------------|--|
| Point ID D-12 | Photo ID 24 |  |
| Date October 28, 2020 | | |
| Description: Middle section of Ash Pond A', vegetation is well established along north and south sides, photo looking southeast. | | |

| | | |
|--|-----------------------|--|
| Point ID D-12 | Photo ID 25 |  |
| Date October 28, 2020 | | |
| Description: West section of Ash Pond A', vegetation is well established along north and south sides, photo looking southwest. | | |



| | | |
|--|-----------------------|--|
| Point ID D-12 | Photo ID 26 |  |
| Date October 28, 2020 | | |
| Description: Erosion gullies formed at side slope of southwest section of Ash Pond B, photo looking south. | | |



| | | |
|--|-----------------------|--|
| Point ID D-12 | Photo ID 27 |  |
| Date October 28, 2020 | | |
| Description: Erosion gullies formed at side slope of southwest section of Ash Pond B, photo looking southeast. | | |
| Point ID C-13 | Photo ID 28 |  |
| Date October 28, 2020 | | |
| Description: Erosion gullies formed at side slope of southwest section of Ash Pond B, photo looking southeast. | | |

| | | |
|---|-----------------------|--|
| Point ID C-13 | Photo ID 29 |  |
| Date October 28, 2020 | | |
| Description: Erosion gullies formed at side slope of southwest section of Ash Pond B, photo looking southeast. | | |
| Point ID H-8 | Photo ID 30 |  |
| Date October 28, 2020 | | |
| Description: Erosion gully formed at south side of drainage swale along power line corridor between Ash Pond B and C, photo looking west. | | |

| | | |
|---|-----------------------|---|
| Grid ID H-8 | Photo ID 31 |  |
| Date October 28, 2020 | | |
| Description: Erosion gully formed at south side of drainage swale along power line corridor between Ash Pond B and C, photo looking west. | | |


| | | |
|--|-----------------------|--|
| Grid ID M-1 | Photo ID 32 |  |
| Date October 28, 2020 | | |
| Description: Erosion gullies formed along northern slope of Ash Pond C, photo looking south. | | |


| | | |
|---|-----------------------|--|
| Grid ID L-2 | Photo ID 33 |  |
| Date October 28, 2020 | | |
| Description: Erosion gullies formed along northern slope of Ash Pond C, photo looking north. | | |
| Point ID I-2 | Photo ID 34 |  |
| Date October 28, 2020 | | |
| Description: Erosion gullies formed along northwest slope of Ash Pond C, photo looking south. | | |


| | | |
|---|-----------------------|--|
| Point ID H-3 | Photo ID 35 |  |
| Date October 28, 2020 | | |
| Description: Erosion gullies formed along northwest slope of Ash Pond C, photo looking southeast. | | |
| Point ID M-2 | Photo ID 36 |  |
| Date October 28, 2020 | | |
| Description: Slope of top of north section of Ash Pond C, photo looking west. | | |

| | | |
|--|-----------------------|--|
| Point ID Q-2 | Photo ID 37 |  |
| Date October 28, 2020 | | |
| Description: Splash pad for drainage swale northeast of Ash Pond C, photo looking north. | | |

| | | |
|---|-----------------------|--|
| Point ID M-1 | Photo ID 38 |  |
| Date October 28, 2020 | | |
| Description: North slope of Ash Pond C, photo looking west. | | |

| | | |
|---|-----------------------|--|
| Point ID H-6 | Photo ID 39 |  |
| Date October 28, 2020 | | |
| Description: Ash Pond B downdrain splash pad at power line corridor between Ash Ponds B and C, photo looking north. | | |

| | | |
|--|-----------------------|--|
| Point ID G-3 | Photo ID 40 |  |
| Date October 28, 2020 | | |
| Description: Recommend removal of vegetation from riprap area, splash pad at power line corridor between Ash Ponds B and C, photo looking northwest. | | |

| | | |
|---|-----------------------|--|
| Point ID B-14 | Photo ID 41 |  |
| Date October 28, 2020 | | |
| Description: Outfall control structure, Ash Pond A', photo looking north. | | |
| Point ID | Photo ID | |
| Date | | |
| Description: | | |

Attachment A: Dam Inspection Report

SUGGESTED DAM INSPECTION REPORT (Refer to pages 5 and 6 for instructions.)

Print Form

| | |
|---|---|
| Name of Professional Conducting Inspection Juan D. Carrizo | Professional License No. (Indiana) 11500037 |
| Business Address 7988 Centerpoint Drive, Suite 100, Indianapolis IN 46256-3381 | Phone: (day) <u>317</u> - <u>579</u> - <u>4016</u> (evening) _____ |

Company Name ATC Group Services, an Atlas Company

INSPECTION PREPARATION: Reviewed all pertinent technical documentation related to this dam and site in the State's and the Owner's files:
Yes ☒ No ☐ Comment _____

MULTIDISCIPLINARY: I am experienced in the technical disciplines or I am working with other professionals experienced in the technical disciplines to properly inspect this dam and appurtenant works. Technical disciplines, in addition to the general civil engineering, may include geotechnical, geological, hydrologic, structural, and mechanical. Yes ☒ No ☐ Comment _____

| | | | | | | |
|---|---|--|---------------------|-------------------------|--|-----------------------------------|
| Dam Name IPL Petersburg Ash Pond A | | | Quad. Petersburg | | Date of Inspection 10 / 28 / 2020 | |
| State Dam ID N/A | Permit (if unapproved see pg. 6) N/A | County Pike | Sec. 13 | T. 1 | R. N | Last Inspection 11 / 06 / 2019 |
| Owners Name Indianapolis Power & Light | | | | | Owner's Phone (812) 601-7115 | |
| Address/Zip Code 6925 North State Road 57, Petersburg IN 47567 | | | | | | |
| Contact's Name Wil Teague | | Contact's Phone (day) <u>812</u> - <u>601</u> - <u>7115</u> (evening) <u>812</u> - <u>582</u> - <u>9797</u> | | | Spillway Width Top 50 Bot. 50 Ft. FBD. N/A | |
| Hazard Low | Drainage Area 0.16 MI ² | Surface Area 81 AC | Height 20 FT | Crest Length 6900 FT | Crest Width 20 FT | Inlet Below Crest 10 FT |
| Slope: Up 2.5 : 1 Down 2.5 : 1 | | | | | | |

| | |
|--|---|
| FIELD CONDITIONS OBSERVED | DRAWDOWN STRUCTURE |
| Water Level - Below Dam Crest <u>20</u> Ft. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> None |
| Ground Moisture Condition: Dry <input checked="" type="checkbox"/> Wet <input type="checkbox"/> Snowcover <input type="checkbox"/> Other _____ | Comment _____ |

MONITORING ☒ Yes ☐ None [☐ Gage Rod ☐ Piezometers ☐ Seepage Weirs ☐ Survey Monuments ☐ Other]

Comments _____

| | |
|---|---|
| A UPSTREAM SLOPE GOOD <input checked="" type="checkbox"/> ACCEPTABLE <input type="checkbox"/> DEFICIENT <input type="checkbox"/> POOR <input type="checkbox"/> | PROBLEMS NOTED: <input checked="" type="checkbox"/> (A-1) None <input type="checkbox"/> (A-2) Riprap - Missing, Sparse, Displaced, Weathered <input type="checkbox"/> (A-3) Wave Erosion-with Scarps <input type="checkbox"/> (A-4) Cracks-with Displacement <input type="checkbox"/> (A-5) Sinkhole <input type="checkbox"/> (A-6) Appears Too Steep <input type="checkbox"/> (A-7) Depressions or Bulges <input type="checkbox"/> (A-8) Slides <input type="checkbox"/> (A-9) Animal Burrows <input type="checkbox"/> (A-10) Trees, Brush, Briars <input type="checkbox"/> (A-11) Other _____ Comments: _____ |
|---|---|

| | |
|--|--|
| B CREST GOOD <input checked="" type="checkbox"/> ACCEPTABLE <input type="checkbox"/> DEFICIENT <input type="checkbox"/> POOR <input type="checkbox"/> | PROBLEMS NOTED: <input checked="" type="checkbox"/> (B-1) None <input type="checkbox"/> (B-2) Ruts or Puddles <input type="checkbox"/> (B-3) Erosion <input type="checkbox"/> (B-4) Cracks with Displacement <input type="checkbox"/> (B-5) Sinkholes <input type="checkbox"/> (B-6) Not Wide Enough <input type="checkbox"/> (B-7) Low Area <input type="checkbox"/> (B-8) Misalignment <input type="checkbox"/> (B-9) Inadequate Surface Drainage <input type="checkbox"/> (B-10) Trees, Brush, Briars <input type="checkbox"/> (B-11) Other _____ Comments: _____ |
|--|--|

Spillway Width refers to the open channel (typically the emergency or auxiliary spillway) at the control section.

Ft. FBD. refers to the vertical distance from the emergency (auxiliary) spillway control section to the lowest point of the crest of the dam.

Inlet Below Crest refers to the vertical distance from the inlet of the principal spillway to the crest of the dam.

| C DOWNSTREAM SLOPE | |
|---------------------------|-------------------------------------|
| GOOD | <input checked="" type="checkbox"/> |
| ACCEPTABLE | <input type="checkbox"/> |
| DEFICIENT | <input type="checkbox"/> |
| POOR | <input type="checkbox"/> |

PROBLEMS NOTED: ☐ (C-1) None ☐ (C-2) Livestock Damage ☐ (C-3) Erosion or Gullies ☐ (C-4) Cracks with Displacement ☐ (C-5) Sinkholes ☐ (C-6) Appears too Steep ☐ (C-7) Depression or Bulges ☐ (C-8) Slide ☐ (C-9) Soft Areas ☐ (C-10) Trees, Brush, Briars ☐ (C-11) Animal Burrows ☐ (C-12) Other _____

Comments:

| D SEEPAGE | |
|------------------|-------------------------------------|
| GOOD (NONE) | <input checked="" type="checkbox"/> |
| ACCEPTABLE | <input type="checkbox"/> |
| DEFICIENT | <input type="checkbox"/> |
| POOR | <input type="checkbox"/> |

PROBLEMS NOTED: ☒ (D-1) None ☐ (D-2) Saturated Embankment Area ☐ (D-3) Seepage Exits on Embankment ☐ (D-4) Seepage Exits at Point Source ☐ (D-5) Seepage Area at Toe ☐ (D-6) Flow Adjacent to Outlet ☐ (D-7) Seepage Clear/Muddy

[DRAIN OUTFALLS SEEN ____ No ____ Yes ☐ (D-8) Flow Clear/Muddy ☐ (D-9) Dry/Obstructed]

☐ (D-10) Other _____ Describe location of drains and indicate amount and quality of discharge.

Comments:

| E PRINCIPAL SPILLWAY | |
|-----------------------------|-------------------------------------|
| GOOD | <input checked="" type="checkbox"/> |
| ACCEPTABLE | <input type="checkbox"/> |
| DEFICIENT | <input type="checkbox"/> |
| POOR | <input type="checkbox"/> |

DESCRIPTION:

PROBLEMS NOTED: ☒ (E-1) None ☐ (E-2) Deterioration ☐ (E-3) Separation ☐ (E-4) Cracking ☐ (E-5) Inlet, Outlet Deficiency ☐ (E-6) Stilling Basin Inadequacies ☐ (E-7) Trash Rack ☐ (E-8) Other _____

Comments:

| F AUXILIARY SPILLWAY | |
|-----------------------------|--------------------------|
| GOOD | <input type="checkbox"/> |
| ACCEPTABLE | <input type="checkbox"/> |
| DEFICIENT | <input type="checkbox"/> |
| POOR | <input type="checkbox"/> |

DESCRIPTION:

PROBLEMS NOTED: ☐ (F-1) None ☒ (F-2) No Auxiliary Spillway Found ☐ (F-3) Erosion-with Backcutting ☐ (F-4) Crack with Displacement ☐ (F-5) Appears to be Structurally Inadequate ☐ (F-6) Appears too Small ☐ (F-7) Inadequate Freeboard ☐ (F-8) Flow Obstructed ☐ (F-9) Concrete Deteriorated/Undermined ☐ (F-10) Other _____

Comments:

| G MAINTENANCE AND REPAIRS | |
|----------------------------------|-------------------------------------|
| GOOD | <input checked="" type="checkbox"/> |
| ACCEPTABLE | <input type="checkbox"/> |
| DEFICIENT | <input type="checkbox"/> |
| POOR | <input type="checkbox"/> |

PROBLEMS NOTED: ☒ (G-1) None ☐ (G-2) Access Road Needs Maintenance ☐ (G-3) Cattle Damage ☐ (G-4) Spillway Obstruction ☐ (G-5) Brush, Weeds, Tall Grass, on Upstream Slope, Crest, Downstream Slope, Toe ☐ (G-6) Trees on Upstream Slope, Crest, Downstream Slope ☐ (G-7) Rodent Activity on Upstream Slope, Crest, Downstream Slope, Toe ☐ (G-8) Deteriorated Concrete-Facing, Outlet, Spillway ☐ (G-9) Gate and/or Drawdown Need Repair ☐ (G-10) Other _____

Comments:

H OVERALL CONDITIONS

Based on this inspection and recent file review, the overall surficial condition is determined to be: ☒ (H-1) Satisfactory ☐ (H-2) Fair ☐ (H-3) Conditionally Poor ☐ (H-4) Poor ☐ (H-5) Unsatisfactory

IMPORTANT: IF THIS RATING IS DIFFERENT THAN PREVIOUS IDNR RATING, PLEASE ATTACH EXPLANATION AND REASONS FOR CHANGE ON PAGE 4.

**RECOMMENDATIONS AND ITEMS REQUIRING ACTION BY OWNER
TO IMPROVE THE SAFETY OF THE DAM**

MAINTENANCE-MINOR REPAIR-MONITORING

- ☐ (1) Provide Additional Erosion Protection: _____
- ☐ (2) Mow: _____
- ☐ (3) Clear Trees and/or Brush From: _____
- ☐ (4) Initiate Rodent Control Program and Properly Backfill Existing Holes: _____
- ☐ (5) Repair: _____
- ☐ (6) Provide Surface Drainage For: _____
- ☐ (7) Monitor: _____
- ☐ (8) Other: _____
- ☐ (9) Other: _____

ENGINEERING-EMPLOY AN ENGINEER EXPERIENCED IN DESIGN AND CONSTRUCTION OF DAMS TO:

(Plans & Specifications must be approved by State prior to construction.)

- ☐ (10) Prepare Plans and Specifications for the Rehabilitation of the Dam: _____
- ☐ (11) Prepare As-Built Drawings of: _____
- ☐ (12) Perform a Geotechnical Investigation to Evaluate the Stability of the Dam: _____
- ☐ (13) Perform a Hydrologic Study to Determine Required Spillway Size: _____
- ☐ (14) Prepare Plans and Specifications for an Adequate Spillway: _____
- ☐ (15) Set up a Monitoring Program: _____
- ☐ (16) Refer to Unapproved Status of Dam: _____
- ☐ (17) Develop an Emergency Action Plan: _____
- ☐ (18) Other: _____
- ☐ (19) Other: _____

Recommended schedule for upgrades/comments (Please prioritize and note importance of each item.)

Photographs ☐ Attachments ☐ENGINEER'S INSTRUCTION Instructed owner on the safety concerns with the structure and how to monitor and inspect the dam and appurtenant works in the interim period between the regulatory two-year inspections. Yes ☒ No ☐

Comment

Professional Engineer's Signature _____

Date 12/10/2020

Reviewed By _____

Date

Owner/Owner's Representative

EXPLANATION FOR CHANGE IN RATINGS (Describe all repairs, upgrades or improvements made if dam conditions and rating have improved since the last inspection. Describe deteriorating conditions if ratings have worsened.)

REASONS FOR RATING CHANGE:

No change.

PREVIOUS RECOMMENDATIONS FOR MAINTENANCE, REPAIRS, AND UPGRADES:

HAVE THEY BEEN PERFORMED ☒ YES ☐ NO (If no, please explain:)

Supporting Documentation

Photographs ☐ Attachments ☐ Calculations ☐ Drawings ☐ Other ☐

Comments:

INSTRUCTIONS FOR COMPLETING DAM VISUAL INSPECTION REPORT

1. Complete all items that are applicable; if not applicable, write in "N/A". For concrete dams, complete all applicable items and use "comments" section to cover items not included in the check boxes. Also indicate that the dam is concrete in the comments section.
2. Use page 6 to determine ratings of each dam component (items A through G) and for Overall Conditions (Item H).
3. Please write legibly and concisely.
4. Inspector must be knowledgeable with the type of dam, materials, and components being inspected. If not, qualified assistance shall be engaged.
5. The inspector shall review the dam owner's and IDNR project files prior to the inspection. Previous inspection reports shall be closely reviewed for previous problems and deficiencies.
6. If the ratings of the components (items A through G) or the Overall Conditions (item H) of the dam have changed since the last inspection, please complete page 4. If a rating has improved, dam repairs, improvements, analyses, or maintenance must have been performed and documented on page 4.
7. For a dam to have a satisfactory "Overall Conditions" rating, it must have no existing or potential dam safety deficiencies recognized. Safe performance is expected under all anticipated loading conditions, including infrequent hydrologic events (PMP for high hazard dams) and seismic events. The dam owner's project files must contain hydrologic and hydraulic analyses of the dam and its spillways to verify performance. The files must also contain slope stability analyses to verify embankment stability under full reservoir conditions and rapid-draw down conditions. The dam and all of its components must meet current IDNR and design standards. "Normal" deficiencies such as minor erosion, minor seepage, or normal concrete aging may not make a dam unsatisfactory or unacceptable. For a satisfactory "Overall Conditions" rating to be assigned, items A through G generally should all have a "good" rating; however, in some cases an "acceptable" rating may be satisfactory if the "Problems Noted" are minor, or "normal" conditions, such as minor erosion rills, small puddles on crest, or if grass needs mowed, but is in good condition.
8. An inspection report form must be submitted to IDNR along with a formal technical inspection report as described in Chapter 4.0 of Part 3 of the Indiana Dam Safety Inspection Manual.
9. Please sign and date this page in the space below to verify that you have read and understand these instructions.

Inspector's Signature:  _____

Date: 12/10/2020

GUIDELINES FOR DETERMINING CONDITIONS

CONDITIONS OBSERVED - APPLIES TO UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, PRINCIPAL SPILLWAY, AUXILIARY SPILLWAY

| GOOD | ACCEPTABLE | DEFICIENT | POOR |
|---|---|--|---|
| In general, this part of the structure has a good appearance, and conditions observed in this area do not appear to threaten the safety of the dam. | Although general cross-section is maintained, surfaces may be irregular, eroded, rutted, spalled, or otherwise not in new condition. Conditions in this area do not currently appear to threaten the safety of the dam. | Continued deterioration and/or unusual loading may threaten the safety of the dam. | Conditions observed in this area appear to threaten the safety of the dam. Conditions observed in this area are unacceptable. |

CONDITIONS OBSERVED - APPLIES TO SEEPAGE

| GOOD (NONE) | ACCEPTABLE | DEFICIENT | POOR |
|---|---|---|---|
| No evidence of uncontrolled seepage. No unexplained increase in flows from designed drains. All seepage is clear. Seepage conditions do not appear to threaten the safety of the dam. | Some seepage exists at areas other than the drain outfalls, or other designed drains. No unexplained increase in flows from designed drains. All seepage is clear. Seepage conditions observed do not currently appear to threaten the safety of the dam. | Excessive seepage exists at areas other than drain outfalls and other designed drains. Seepage needs to be evaluated. Increased flow and/or continued deterioration in seepage conditions may threaten the safety of the dam. | Excessive seepage conditions observed appear to threaten the safety of the dam and is unacceptable. Examples: 1) Designed drain or seepage flows have increased without increase in reservoir level. 2) Drain or seepage flows contain sediment. i.e., muddy water or particles in jar samples. 3) Widespread seepage, concentrated seepage or ponding appears to threaten the safety of the dam. |

CONDITIONS OBSERVED - APPLIES TO MAINTENANCE AND REPAIR

| GOOD | ACCEPTABLE | DEFICIENT | POOR |
|--|---|--|---|
| Dam appears to receive effective on-going maintenance and repair, and only a few minor items may need to be addressed. | Dam appears to receive maintenance, but some maintenance items need to be addressed. No major repairs are required. | Level of maintenance of the dam needs significant improvement. Major repairs may be required. Continued neglect of maintenance may threaten the safety of the dam. | Dam does not receive adequate maintenance. One or more items needing maintenance or repair has begun to threaten the safety of the dam. Level of maintenance is unacceptable. |

OVERALL CONDITIONS

SATISFACTORY - No existing or potential dam safety deficiencies recognized. Safe performance is expected under all anticipated loading conditions, including such events as infrequent hydrologic and/or seismic events. Project Files contain necessary hydrologic, and other engineering calculations to verify dam safety and performance.

FAIR - No existing dam safety deficiencies are recognized for normal loading conditions. Infrequent hydrologic and/or

seismic events would probably result in a dam safety deficiency.

CONDITIONALLY POOR - A potential safety deficiency is recognized for unusual loading conditions which may realistically occur during the expected life of the structure. **CONDITIONALLY POOR** may also be used when uncertainties exist as to critical analysis parameters which identify a potential dam safety deficiency; further investigations and studies are necessary.

POOR - A potential dam safety deficiency is clearly recognized for normal loading conditions. Immediate actions to resolve the deficiency are recommended; reservoir restrictions may be necessary until problem resolution.

UNSATISFACTORY - A dam safety deficiency exists for normal conditions. Immediate remedial action is required for problem resolution.

HAZARD CLASSIFICATIONS OF DAMS (STRUCTURE)

LOW HAZARD- A structure the failure of which may damage farm buildings, agricultural land, or local roads

SIGNIFICANT HAZARD- A structure the failure of which may damage isolated homes and highways, or cause the temporary interruption of public utility services.

HIGH HAZARD-A structure the failure of which may cause the loss of life and serious damage to homes, industrial and commercial buildings, public utilities, major highways, or railroads.

UNAPPROVED STATUS OF DAM

A dam that has been given an unapproved status (see entry for permit) means that plans, construction specifications, hydraulic analyses, and/or a geotechnical investigation on your dam, proving the safety of the structure, have not been received and approved by the Indiana Department of Natural Resources (IDNR). IDNR records indicate that no progress has been made to secure this approval. The fact that the dam is inspected under the Regulation of Dams Act (IC 14-27-7.5) in no way alters the illegal status of the structures.

If your dam is indicated to be unapproved, it is requested that your engineer contact the Indiana Department of Natural Resources,