

# **2023 ANNUAL ASH POND COMPLEX INSPECTION REPORT**

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**CEC Project 196-318 Task 1131**

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**Civil & Environmental Consultants, Inc.**

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## FIGURE

Figure 1 – Site Layout and Photograph Plan

## APPENDICES

Appendix A –Ash Pond Complex Inspection Checklist

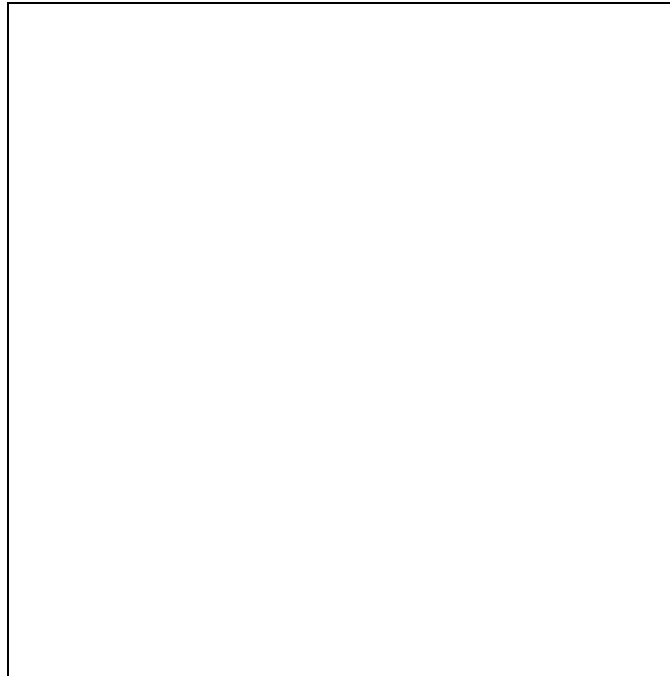
Appendix B – Recent Weather History

Appendix C – Photographs

## ENGINEER'S VERIFICATION STATEMENT

I hereby verify that an annual inspection was conducted for the Ash Pond Complex and the associated appurtenances, which is owned by Conesville Industrial Park, LLC (CIP). This engineer's inspection is required by Title 40, Chapter I, Part 257.83 (b) of the Code of Federal Regulations (CFR). The attached annual inspection report documents and engineer completed the following:

- 1) A review of available operations and site data;
- 2) Observed and inspected the site on December 6, 2023;
- 3) Observations noted during the site reconnaissance; and,
- 4) Developed remedial actions and maintenance recommendations.



John B. Gronnett IV, P.E.  
Civil & Environmental Consultants, Inc.

## 1.0 INTRODUCTION

The Ash Pond Complex was owned and operated by American Electric Power (AEP) and has since been transferred to Conesville Industrial Park, LLC (CIP). CIP is in the process of removing the CCR materials within the pond as part of the closure plan and re-development planning for the Conesville Power Plant. The Ash Pond Complex is located directly east of the former and decommissioned Conesville Power Generation Plant in Coshocton County, Ohio. The Ash Pond Complex was originally comprised of multiple components consisting of Pond Nos. 1 through 5, a Bottom Ash Pond and a Clearwater Pond, each separated by interior dikes. To date, the Ash Pond Complex has been dewatered and the Coal Combustion Residuals (CCR) material within the pond has and is currently being excavated and transported off-site (i.e., closure-by-removal in accordance with the CCR unit Closure Plan).

In accordance with Title 40, Chapter I, Part 257.83 (b) of the Code of Federal Regulations (CFR), Civil & Environmental Consultants, Inc. (CEC) performed an annual inspection of the Ash Pond Complex. The inspection was performed by a qualified professional engineer<sup>(1)</sup>. This inspection included a review of available operational data and a reconnaissance of the Ash Pond Complex. The reconnaissance was performed on December 6, 2023, by Mr. John B. Gronnett IV, P.E. of CEC. As part of the reconnaissance, Mr. Gronnett visually observed the condition of the various components and engineering systems in order to evaluate whether the design, construction, operation, and maintenance of the Ash Pond Complex is consistent with the design and closure plans, and recognized or generally accepted engineering standards. CEC performed these visual observations of the site to identify the presence of deficiencies, and the need for remedial actions or maintenance activities. Where applicable, CEC has provided recommended remedial actions and maintenance activities.

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<sup>(1)</sup> An Engineer's inspection does not constitute a warranty or guarantee expressed or implied, nor does it relieve any other party of their responsibility to abide by contract documents, applicable codes, standards, regulations, or ordinances.

## 2.0 REVIEW OF AVAILABLE OPERATIONS INFORMATION

Preparation of this 2023 Annual Ash Pond Complex Inspection Report included a review of available operational data. This included a review of the Structural Stability Assessment Report, Safety Factor Assessment Report, CIP 30-day monitoring instrumentation data reports, CIP 7-day inspection reports, and the status of previously recommended remedial and maintenance activities within the 2022 Annual Ash Pond Complex Inspection Report. A summary of the data reviewed is included in the following subsections.

### 2.1 INSTRUMENTATION

Per Title 40, Chapter I, Part 257.83 (b) (2) (ii), the maximum recorded readings of each instrument (i.e., piezometer) is provided in the table below. Additionally, previously established action levels associated with Factor of Safety conditions of 1.5 and 1.0 are also provided as described in the Safety Factor Assessment Report.

<b>Ash Pond Complex Piezometer Data</b>			
Piezometer	2023 Maximum Reading <sup>(1)</sup>	Recommended Piezometer Reading Action Level for FOS=1.5	Recommended Piezometer Reading Action Level for FOS=1.0
B-7	725.52	N/A <sup>(2)</sup>	N/A <sup>(2)</sup>
P-11	727.58	N/A <sup>(2)</sup>	N/A <sup>(2)</sup>
P-12	746.11	753	759
P-13	749.85	751	755
B-0901	729.03	733	736 (Above Existing Ground Surface) <sup>(3)</sup>
B-0902	N/A	Above Existing Pool Level <sup>(4)</sup>	Above Existing Pool Level <sup>(4)</sup>
B-0902R	746.30		
B-0903	N/A	753	759
B-0904	743.67	743.5 (Above Existing Ground Surface)	743.5 (Above Existing Ground Surface)

(1) 2023 Maximum reading based on data provided by CIP.

(2) Piezometers B-7 and P-11 were likely monitoring groundwater table and action levels were not determined.

(3) Saturation of outboard embankment slope below 745.

(4) Existing Pool elevations was modeled as El. 762.

The action level at Piezometer B-0904 was slightly exceeded. Based on a review of the Safety Factor Assessment prepared by S&ME in December 2015 and updated by CEC in January 2022, the S&ME analyses to determine the Factor of Safety (FOS) for the outboard side of the east containment berm utilized the following three conditions: 1) a maximum pool level of 762 feet amsl for the ponds; 2) a groundwater level of 753 feet amsl at the crest of the slope (i.e., Piezometers B-0903/P-12); and, 3) groundwater above the ground surface at the toe of the slope (i.e., Piezometer B-0904). Given that the ponds have been dewatered, the containment berm is no longer subjected to the maximum pool level. Further, the maximum groundwater level at Piezometer P-12 was about 7 feet below the required action level of 753 feet amsl for a FOS of 1.5. Lastly, based on discussions with CIP, no visible water was observed above the ground surface or seeping from the slope. On this basis, it is our opinion that no further action is required other than the slope should continue to be monitored weekly in accordance with the CFR.

## 2.2 IMPOUNDMENT DATA

The Ash Pond Complex had been and remains dewatered, with CCR materials being removed and transported off-site. Per Title 40, Chapter I, Part 257.83 (b) (2) (ii), relevant impoundment data is provided in the table below. CEC notes that the data provided in the table below is generally based on previous Annual Inspection Reports with updates based on current conditions at the site.

<b>Impoundment Data for Ash Pond Complex at Time of Inspection</b>		
<b>Parameter</b>	<b>Value</b>	<b>Note</b>
Approximate <u>minimum</u> depth of impounded water	0 ft	Based on Visual Observations
Approximate <u>maximum</u> depth of impounded water	0 ft	Based on Visual Observations
Approximate <u>minimum</u> depth of CCR <sup>(1)</sup>	5.5 ft	See Note 1
Approximate <u>maximum</u> depth of CCR <sup>(1)</sup>	32 ft	See Note 1
Storage capacity of impounding structure	2,500 acre-feet	See Note 1
Approximate volume of impounded water <sup>(2)</sup>	≈0.0 acre-feet	See Note 2
Approximate volume of CCR removed <sup>(3)</sup>	≈341 acre-feet	See Note 3

(1) Based on amounts from previous annual reports prepared by others. CCR is currently being removed for closure.

(2) Ponds have been drained for removal of CCR material.

- (3) Based on disposal data provided by CIP from December 2022 to December 2023, approximately 1,717,200 tons of CCR was removed from the APC and transported off-site. Using an assumed unit weight of CCR material of 100 lbs / ft<sup>3</sup> to convert to cubic yards gives 1,717,200 tons \* (2,000 lbs / 1 ton) \* (1 ft<sup>3</sup> / 100 lbs) \* (1 C.Y. / 27 ft<sup>3</sup>) = 1,272,000 C.Y. Now converting to acre-feet gives 1,272,000 C.Y. \* (27 ft<sup>3</sup> / 1 C.Y.) \* (1 acre-foot / 43,560 ft<sup>3</sup>) = 789 acre-feet. Based on an Ash Pond Excavation Quantity Estimate Plan prepared by CEC in in 2021, approximately 3,540,000 C.Y. or 2,200 acre-feet of CCR was estimated at the APC. Therefore, 2,200 acre-feet – 1,070 acre-feet (since CCR removal began in 2020 from previous annual reports) – 789 acre-feet (in 2023) = 341 acre-feet.

## 2.3 CCR IN THE ASH POND COMPLEX

Based on a review of available topographic data and communications with site personnel, no significant changes to the geometry of the containment berms have occurred nor were observed for the Ash Pond Complex when compared to the geometry present during last years' annual inspection. It is reported that no new CCR material has been placed in the Ash Pond Complex since the last annual inspection. Rather, the existing CCR material has and is currently being excavated from the Ash Pond Complex. The CCR removed from the pond (approximately 1,717,200 tons since about December 2022) is being transported to nearby CCU Coal and Construction, LLC sites as part of beneficial use activities and to the State Route 83 Landfill.

## 2.4 REVIEW OF 7-DAY INSPECTION REPORTS

This 2023 Annual Ash Pond Complex Inspection included review of the 7-day inspection reports to comply with CCR Rule §257.83. Our assessment of the available data consisted of a cursory review of the 7-day inspection reports prepared by CIP from December, 2022 through December, 2023. The reports were made available in electronic format after our site visit. CEC coordinated with CIP regarding how the previously identified issues were addressed. From this review, the following list of issues was identified. The issues are described below in **bold** print, followed by a brief description as to how these issues were addressed.

**ISSUE NO. 1 – June 20, 2023: The vegetation was sparse along the crest of the east outboard slope from the installation of the high-pressure pipe.**

RESPONSE:

The area was re-seeded.

**ISSUE NO. 2 – July 26, 2023: The trees and woody vegetation were overgrown along the toe of a portion of the east outboard slope.**

RESPONSE:

The trees and woody vegetation were removed.

**ISSUE NO. 3 – September 13, 2023: Erosion was observed along the inboard side of the north containment berm.**

RESPONSE:

The erosion was filled in with soil, re-graded and re-seeded.

**ISSUE NO. 4 – September 19, 2023: Animal burrows were identified at the outboard side of the north containment berm.**

RESPONSE:

The holes were filled in.

## **2.5 2022 ANNUAL INSPECTION RECOMMENDED REMEDIAL ACTIONS AND MAINTENANCE ACTIVITIES**

Several remedial actions and maintenance recommendations were included in the 2022 Annual Ash Pond Complex Inspection Report. Prior to performing the reconnaissance, described in Section 3.3 of this report, CEC reviewed these recommendations with CIP personnel to discuss how each of the items had been addressed. Below, each of the recommended remedial actions or maintenance activities included in the previous report are presented below in **bold**, followed by response brief description as to how these issues were addressed.

**RECOMMENDATION NO. 1 - The four existing culverts located beneath the original Coal Haul Road (i.e., east berm) should be inspected quarterly and closure/removal of the culvert is addressed as part of the final closure activities.**



RESPONSE:

The culverts have not been inspected and it is unclear if when ultimate culvert removal will be performed as part of the overall final closure activities.

**RECOMMENDATION NO. 2 - Areas with minimal vegetation, erosion and/or rutting from equipment operations should be re-graded and re-seeded. In specific, the following locations: 1) Inboard slope of the east berm adjacent to Pond No. 3; and, 2) Along the outboard slope of the southwest berm.**

RESPONSE:

Area No. 1 is in the process of being excavated to remove the CCR. Area No. 2 was re-vegetated.

**RECOMMENDATION NO. 3 – Soil erosion and missing vegetation along the inboard side of the north containment berm below the haul road should be re-graded and re-seeded.**

RESPONSE:

The equipment rutting was remediated by filling in with soil, re-grading and re-seeding.

**RECOMMENDATION NO. 4 – Animal burrows along the outboard side of the northern and southeastern containment berms should be filled in.**

RESPONSE:

The animal burrows were filled in.

**RECOMMENDATION NO. 5 - Trees/brush at the east containment berm should be removed.**

RESPONSE:

The trees and woody vegetation remain along the outboard slope of the east containment berm.

**RECOMMENDATION NO. 6 – Excessive vegetative growth at the north containment berm drainage ditch and stormwater pipe should be removed to allow for appropriate water flow. In addition, an assessment should be made to evaluate options for proper flow at the outlet end of the stormwater pipe (i.e., north side of County Road 273)**

RESPONSE:

The excessive vegetation growth at the north containment berm drainage ditch remains an outstanding item. Based on conversations with CIP personnel, it is understood that the outlet at the north side of County Road 273 is within a protected wetland area. Therefore, CIP has been unable to remediate the outlet to provide proper flow. The associated water that “ponds” in the drainage ditches upstream of the pipes also limits CIP from maintaining some of the vegetation proximate to the areas with ponded water.

### **3.0 SITE RECONNAISSANCE**

As part of this 2023 Annual Ash Pond Complex Inspection, a reconnaissance was performed to visually observe and evaluate the various engineering components and systems. A summary of the observations made during the reconnaissance are included in the following subsections. Additionally an inspection checklist noting some of the issues identified is included in Appendix A of this Report. Photographs from the reconnaissance are included in Appendix C of this Report.

#### **3.1 DATE AND PERSONNEL PARTICIPATING IN THE SITE RECONNAISSANCE**

The reconnaissance was performed on December 6, 2023 and included the following personnel:

- CIP
  - Mike Wisecarver – CIP (Escort)
  - Bonnie Bridwell – CIP (Escort)
- CEC
  - John B. Gronnett IV, P.E. – Engineer performing the 2023 Annual Ash Pond Complex Inspection

#### **3.2 WEATHER CONDITIONS DURING AND PRIOR TO THE SITE RECONNAISSANCE**

A calendar showing recent weather history leading up to the reconnaissance December 6, 2023, is included in Appendix B of this report. Rainfall for the 7 days prior to the site walk totaled 0.15 inches. Weather conditions during the site walk were partly sunny with temperatures ranging from 30° to 36° Fahrenheit.

#### **3.3 SITE RECONNAISSANCE OBSERVATIONS**

As part of the reconnaissance, observations were made and recorded regarding the overall condition and operation of the various components of the Ash Pond Complex (i.e., embankment slopes, stormwater collection/conveyance/storage structures, etc.). The site observations were

limited to the areas of the site and structures that could be visually observed at the ground surface, and did not include invasive inspection, investigation or exploration of the site, structures or equipment. A summary of the observations made during the reconnaissance is documented and reported on an Ash Pond Complex Inspection Checklist contained in Appendix A of this report. Photographs from the reconnaissance are included in Appendix C of this Report.

A summary of general observations and applicable operational issues noted during the reconnaissance, are described below, and generally separated by area or structure.

### 3.3.1 Ash Pond Complex

#### General Observations

1. CCR materials are in the process of being excavated and transported off-site. As part of the CCR removal, the interior berms of the ponds and associated stormwater structures have been removed. The exterior containment berms generally remains in place; however, a significant portion of the inboard slopes have and are being excavated during removal activities (refer to Photograph No. 13 in Appendix C).
2. Because of the large, flat ground surface associated with the CCR removal methods, stormwater within the pond generally collects on the ground surface and infiltrates into the ground. With the exception of small, shallow areas of ponded water were observed on the surface of the excavated CCR. No flowing water was observed within or exiting the current outlet structures for the Ash Pond Complex.
3. Area with minimal vegetation along the outboard slope of the southwest berm appeared to have sufficient vegetation (refer to Photograph No. 6 in Appendix C).
4. Excavation was ongoing within the area with minimal vegetation and rutting from equipment operations at the inboard slope of the east berm adjacent to former Pond No. 3. Therefore, this area is no longer accessible.
5. Soil erosion and missing vegetation along the inboard side of the north containment berm below the haul road was remediated (refer to Photograph No. 7 in Appendix C).

#### Operational Issues Noted

1. The four existing culverts located beneath the original Coal Haul Road (i.e., east berm) have not been inspected quarterly per previous recommendations, and the closure/removal

of these culverts still needs to be addressed as part of the final closure activities (refer to Photograph No. 2 in Appendix C).

2. The woody vegetation remains along the outboard side of the northern portion of the east containment berm (refer to Photograph No. 4 in Appendix C).
3. Animal burrows developed along the outboard side of the northern and eastern containment berms should be filled in (refer to Photograph Nos. 5 and 11 in Appendix C).

### 3.3.2 Stormwater Drainage Ditches

#### General Observations

1. The designated stormwater ditches along the outside perimeter of the containment berms were generally unobstructed with no signs of ponded water, blockage or erosion. However, there are three locations where vegetation is partially restricting designed drainage path: 1) along the northern portion of the outboard slope at the east containment berm; 2) along the toe of the outboard slope at the north containment berm; and, 3) culvert located beneath County Road 273.

#### Operational Issues Noted

1. Brush/trees are present in the drainage swale and along the toe of the outboard slope at the east containment berm (refer to Photograph No. 4 in Appendix C) are restricting water flow.
2. Woody vegetation was present in the drainage swale along the toe of the outboard slope at the north containment berm (refer to Photograph No. 12 in Appendix C) are restricting water flow.
3. The culvert located beneath County Road 273 that transports stormwater from the north containment berm outboard slope drainage swale to a swale located on the north side of County Road 273 appeared to be partially blocked at the outlet end with excessive vegetation. This is causing a ponding of water in the north containment berm drainage swale (refer to Photograph Nos. 8 and 9 in Appendix C) and inhibiting the ability to regularly mow the tall vegetation proximate to the wet saturate areas.

## **4.0 RECOMMENDED REMEDIAL ACTIONS**

Based on our observations described in Section 3.3, CEC is providing remedial actions and maintenance activities that should be considered, as described in the sections below.

### **4.1 LIST OF RECOMMENDED REMEDIAL ACTIONS**

Below is a list of recommended remedial actions.

#### **4.1.1 Ash Pond Complex (refer to Section 3.3.1)**

- a) The four existing culverts located beneath the original Coal Haul Road (i.e., east berm) should be inspected quarterly and closure/removal of the culvert addressed as part of the final closure activities (refer to Photograph No. 2 in Appendix C).
- b) Animal burrows developed along the outboard side of the northern and eastern containment berms should be filled in (refer to Photograph Nos. 5 and 11 in Appendix C).
- c) Trees/brush at the northern portion of the east berm should be removed (refer to Photograph No. 4 in Appendix C).

#### **4.1.2 Stormwater Drainage Ditches (refer to Section 3.3.2)**

- a) Excessive vegetative growth at the north containment berm drainage ditch should be maintained to limit the height and allow for appropriate water flow (refer to Photograph No. 12 in Appendix C).
- b) An assessment should be made to evaluate options to establish proper flow at the outlet end of the stormwater pipe (i.e., north side of County Road 273) or to relieve the persistent ponding that is being created upstream of the pipes (refer to Photograph Nos. 8 and 9 in Appendix C).

## 5.0 SUMMARY AND CONCLUSIONS

CEC provided a qualified Professional Engineer to perform an annual inspection of the Ash Pond Complex. Based on our observations, the site features and engineering systems appeared to be constructed and/or operating in general accordance with accepted industry standards. No significant signs of site instability or operational concerns were observed with respect to the containment berms. It should also be noted that the CCR disposal into the Ash Pond Complex has ceased and the normal operating pool levels in the ponds have been eliminated. Therefore, the perimeter containment berms are no longer subject to the previous operational pool levels. Despite the operational changes, CEC has provided appropriate remedial actions and maintenance activities, described in Section 4.0 of this report, to improve the operational performance of the Ash Pond Complex.

We trust this report and supporting data are sufficient for your needs at this time. The services provided for this project were performed with the care and skill ordinarily exercised by reputable members of the profession practicing under similar conditions at the same time and the same or similar locality. No warranty, expressed or implied, is made or intended by rendition of these consulting services or by furnishing oral or written reports of the findings made. This report has been prepared for exclusive use by CIP.

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**FIGURE**

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**APPENDIX A**

**ASH POND COMPLEX INSPECTION CHECKLIST**

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**APPENDIX B**

**RECENT WEATHER HISTORY**

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**APPENDIX C**  
**PHOTOGRAPHS**

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