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Ash Pond

Initial Dam and Dike Inspection Report

Kammer Power Plant, Marshall County, WV

Submitted to:
American Electric Power Service Corporation
1 Riverside Plaza
Columbus, OH 43215

Submitted by:
GEI Consultants, Inc.
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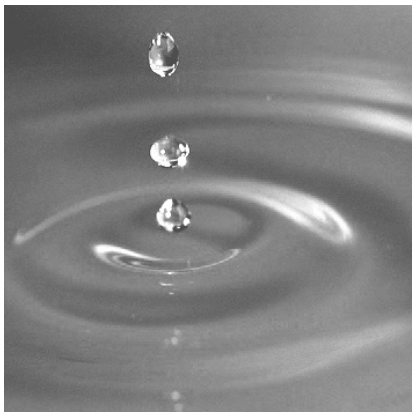
January 2025
Project 2407654



Pedro Amaya, PE
Senior Consultant

Jeff Piaskowski, PE
Senior Engineer

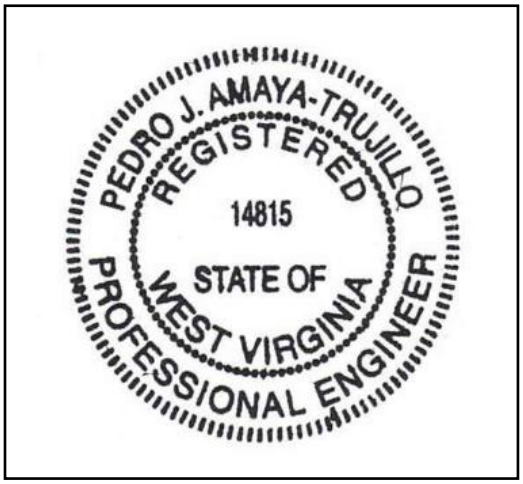
2024 Annual Inspection Report

Ash Pond
Kammer Power Plant

Signature

Pedro Amaya, PE
Senior Consultant
GEI Consultants, Inc.

January 31, 2025
Date



I certify, to the best of my knowledge, that the information provided in this report satisfies the requirements of 40 CFR 257.83(b).

Table of Contents

JRP
B:\Working\AEP\2407654 AEP Legacy CCR SI Inspection\05_GIS\Final\Kammer Ash Pond\DRAFT_KammerAshPond_Report.docx

1. Introduction

GEI Consultants, Inc. was retained by AEP to implement the initial annual inspection of the Legacy CCR Surface Impoundments at various AEP facilities. The initial annual inspection is required by February 10, 2025 as a result of the EPA's provision to 40 CFR 257.50(e) in response to the August 21, 2018 USWAG decision. The provision indicates that Legacy CCR Surface Impoundments are subject to 40 CFR 257 (CCR Rule), where applicable, with an effective date of November 8, 2024.

As a result, GEI's Chris Keenan, P.E. performed the initial annual inspection of the Ash Pond at the former Kammer Power Plant to fulfill requirements of 40 CFR 257.83. Mr. Justin R. Jent was the AEP contact who assisted with the initial annual inspection and provided history of Legacy CCR Surface Impoundment. This report was prepared under the direction of Pedro Amaya, PE and Jeff Piaskowski, PE of GEI and serves as a summary of the inspection and an assessment of the general conditions of the Ash Pond at the former Kammer Power Plant.

The inspection was performed on October 16, 2024, in general accordance with the Mining Safety and Health Administration (MSHA) Dam Inspection Guidelines. Weather conditions were overcast with mild temperatures between 42- and 52-degrees Fahrenheit. Less than 0.1-inches of precipitation was recorded at the regional airport in Charleston, West Virginia in the 7 days prior to the inspection.

The Kammer Ash Pond is located in Moundsville, WV as shown on Figure 1 – Site Location Map. The facility arrangement is provided on Figure 2 – Facility Plan. The Bottom Ash Pond and its appurtenances are shown on Figure 3 – Site Plan. Locations of items to be monitored and items to be addressed are provided on Figure 4 and Figure 5, respectively.

2. Description of Impoundments

The Kammer Plant was commissioned in 1958 and shut down in 2015. The Kammer Ash Pond was operated from 1958 to 2015 while the Kammer Power Plant was generating electricity. The Kammer Ash Pond is surrounded by an earthen berm with a crest elevation of approximately 640 feet msl based on topographic data presented in Figure 2.

The Ash Pond is approximately 20 acres and is located adjacent to the Ohio River in Marshall County, West Virgina. The water elevation in the Ash Pond is controlled with an outfall structure that was located in the southwest corner. During an overflow condition, decant from the pond is discharged into the Ohio River. The outlet of the decant structure pipe is reportedly El. 613 ft-msl and beneath the normal water surface elevation of the Ohio River.

Based on record drawings, the bottom of the Ash Pond is elevation 612.5 ft-msl and original ground within the Ash Pond Area varied between El 625 to 638 ft- msl. The records drawings show the exterior slope of the dike is 2H:1V and the interior slopes are 1.75H:1V.

A series of splitter dikes have been constructed within the Ash Pond to control flow and allow for access for excavation equipment during clean-out events. The splitter dikes have a concrete flume near the eastern end to pass water.

3. Review of Available Information (257.83(b)(1)(i))

GEI understands that AEP is currently gathering pertinent information related to the Kammer Ash Pond. This information was not available for review prior to preparing this report. This section will be updated in subsequent annual inspection reports.

4. Inspection (257.83(b)(1)(ii))

4.1 Changes in Geometry Since Last Inspection (257.83(b)(2(i))

This section is not applicable, as this is the Kammer Ash Pond's initial annual inspection.

4.2 Instrumentation (257.83(b)(2)(ii))

This section is not applicable, as the Kammer Ash Pond does not have any instrumentation.

4.3 Impoundment Characteristics (257.83(b)(2)(iii, iv, v))

Below is a summary of the Kammer Ash Pond characteristics.

IMPOUNDMENT CHARACTERISTICS	
Water Surface Elevation at time of the inspection	628
Approximate **Minimum, Maximum, and Present** depth/elevation of impounded water since last annual inspection	First Inspection: Present Depth 5 ft
Approximate **Minimum Maximum and Present** depth/elevation of CCR since last annual inspection	First Inspection: Present Depth 11 ft
Storage Capacity of impounding structure at the time of the inspection	500 ac-ft
Approximate volume of impounded water at the time of the inspection	90 ac-ft
Approximate volume of CCR at the time of the inspection	180 ac-ft

Notes:

1. na

4.4 Definitions of Visual Observations and Deficiencies

This summary of the visual observations uses terms to describe the general appearance or condition of an observed item, activity, or structure. The meaning of these terms is as follows:

Good: A condition or activity that is generally better or slightly better than what is minimally expected or anticipated from a design or maintenance point of view.

Fair/Satisfactory: A condition or activity that generally meets what is minimally expected or anticipated from a design or maintenance point of view.

Poor: A condition or activity that is generally below what is minimally expected or anticipated from a design or maintenance point of view.

Minor: A reference to an observed item (e.g. erosion, seepage, vegetation, cracks, concrete surface etc.) where the current maintenance condition is below what is normal or desired, but which is not currently causing concern from a structure safety or stability point of view.

Significant: A reference to an observed item (e.g. erosion, seepage, vegetation, cracks, concrete surface etc.) where the current maintenance program has neglected to improve the condition. Usually, conditions that have been identified in previous inspections, but have not been corrected.

Excessive: A reference to an observed item (e.g. erosion, seepage, vegetation, cracks, concrete surface etc.) where the current maintenance condition is below or worse than what is normal or desired, and which may have affected the ability of the observer to properly evaluate the structure or area being observed or which may be a concern from a structure safety or stability point of view.

This document also uses the definition of a "deficiency" as referenced in the CCR rule section §257.84(b)(5) Inspection Requirements for CCR Landfills. This definition has been assembled using the CCR rule preamble as well as guidance from MSHA, "Qualifications for Impoundment Inspection" CI-31, 2004. These guidance documents further elaborate on the definition of deficiency. Items not defined by deficiency are considered maintenance or items to be monitored.

A "deficiency" is some evidence that the CCR Unit has developed a problem that could impact its structural integrity. There are four general categories of deficiencies. These four categories are described below:

1. Uncontrolled Seepage

   Uncontrolled seepage is an uncontrolled release from the unit.

2. Displacement of the Embankment

   Displacement of the embankment is large scale movement of part of the pond embankment. Common signs of displacement are cracks, scarps, bulges, depressions, sinkholes, and slides.

3. Blockage of Control Features

   Blockage of Control Features is the restriction of flow at spillways, decant or pipe spillways, or drains.

4. Erosion

   Erosion is the gradual movement of surface material by water, wind, or ice. Erosion is considered a deficiency when it is more than a minor routine maintenance item.

4.5 Visual Inspection (257.83(b)(2)(i))

A visual inspection of the Kammer Ash Pond was conducted to identify signs of distress or malfunction of the impoundment and appurtenant structures which includes its hydraulic structures. Specific items inspected included structural elements of the dam such as upstream and downstream slopes, crest, and toe; as well as appurtenances such as the outlet structure. Photographs taken during the inspection are provided in Attachment A - Photolog.

The following summarizes the visual inspection of the Kammer Ash Pond:

The downstream slope of the dam is in fair to good condition with no observed erosion. The slope is overgrown with vegetation that should be maintained to 12-inches or less as shown in Photograph No. 3 and 8. Ideally, the dead woody vegetation from herbicide applications should be mowed to present better conditions for visual observations.

The upstream of the dam is in fair to good condition with no observed erosion. The slope is overgrown with vegetation that should be maintained to 12-inches or less as shown in Photograph No. 5 and 10. Ideally, the dead woody vegetation from herbicide applications should be mowed to present better conditions for visual observations.

The outfall structure of the dam is in good condition with no observed blockages. We recommend AEP monitor the oil boom, shown in Photograph No. 7 and 10, for signs of failure including but not limited to critical accumulation of material, sheens on downstream side, anchor failure, and submergence. AEP should replace the oil boom as needed.

The interior control structure is in fair condition. A minor blockage/debris was observed in the structure and should be addressed/removed to allow the structure to operate as it was designed. See Photograph No. 12 and 14.

The stormwater inlet appears to be in satisfactory condition, with no debris or blockages covering the inlet as shown on Photograph No. 15.

4.6 Changes that Effect Stability or Operation (257.83(b)(2)(vii))

This section is not applicable, as this is the initial annual inspection report for the Kammer Ash Pond.

5. Summary of Findings

5.1 General Observations

The Kammer Ash Pond is generally in fair to good condition and appears to be functioning as intended with no signs of structural weakness. The constructed embankment/berms appear to be in satisfactory condition structurally, but vegetation on the upstream and downstream slopes should be addressed/maintained to 12-inches or less. AEP could consider increasing the frequency of mowing and management efforts.

The Kammer Ash Pond stormwater inlet and outfall structure are in fair to good condition. No blockages were observed, but AEP should consider monitoring the oil booms and replacing them as needed.

The Kammer Ash Pond interior control structure is in fair condition. Some vegetation and debris should be addressed/removed that would obstructing flow conditions.

5.2 Maintenance Items

No items were identified as items to be maintained during the visual inspection.

5.3 Items to be Monitored

The following item was identified during the inspection as an item that should be monitored and if necessary, addressed if conditions become more significant.

Item 7 – Monitor oil boom, replace as necessary.

5.4 Items to be Addressed

The following items were identified during the inspection as items that should be addressed.

Item 3, 5, 8, and 10 – Address/maintain the vegetation to 12-inches or less on the upstream and downstream slopes.

Item 12 – Address/replace oil boom

Item 14 – Address minor blockage to allow the structure to operate as it was designed.

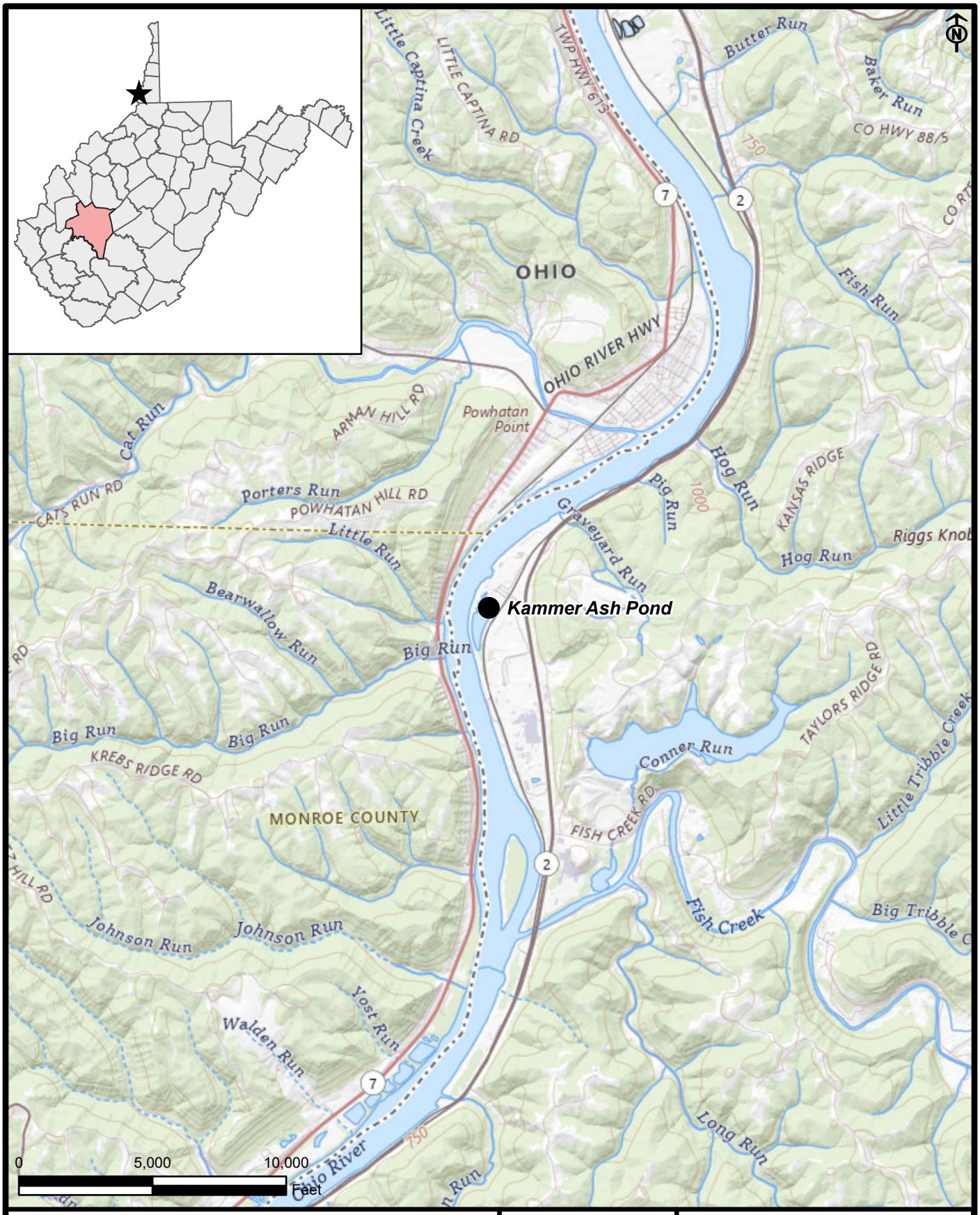
6. Deficiencies (257.83(b)(2)(vi))

There were no signs of structural weakness or disruptive conditions that were observed at the time of the inspection that would require additional investigation or remedial action. There were no deficiencies noted during this inspection or during any of the periodic inspections. A deficiency is defined as either:

- uncontrolled seepage
- displacement of the embankment
- blockage of control features
- erosion, more than minor maintenance

If any of these conditions occur or if you have any questions with regard to this report, please contact Dan Murphy at 614-933-2467 / dsmurphy1@aep.com or David Miller at 614-716-2281 / damiller@aep.com.

Figure 1 – Site Location Map



2024 Ash Pond Inspection Report
Kammer Power Plant
Moundsville, West Virginia

American Electric Power Service Corporation
Columbus, OH 43215

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SITE LOCATION DIAGRAM

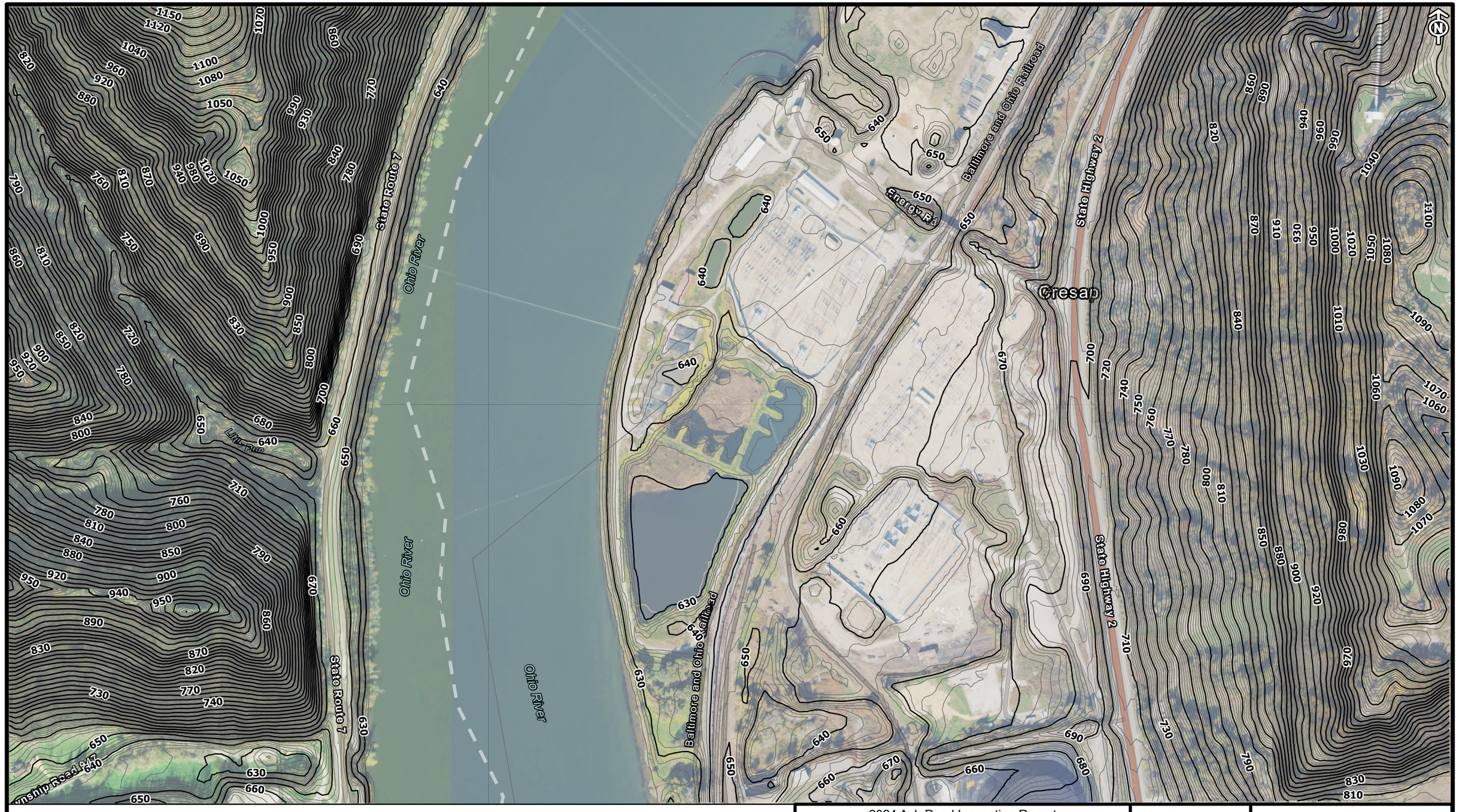
Project 2407654

January 2025

Fig. 1

Path: C:\Users\jhansen\OneDrive - GEI Consultants, Inc\Documents\GIS_Work\MISCELLANEOUS\2024\2407654 AEP Legacy CCR SI Inspection\2407654 AEP Legacy CCR SI Inspection.aprx

Figure 2 – Facility Plan



LEGEND:

- 2021 Contours (10ft Intervals)
- 2021 Contours (2ft Intervals)

NOTES:

1. Aerial image obtained from USDA NAIP. Image captured summer of 2022.
2. Contours derived from 2021 LiDAR USGS DEM-
U.S. Geological Survey, 20230911, USGS 1/3 Arc Second n40w081 20230911: U.S. Geological Survey.
3. Site conditions may change over time, accuracy is not guaranteed.

0 400 800 Feet

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Moundsville, West Virginia

American Electric Power Service Corporation
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FACILITY PLAN

Project 2305686 | January 2025 | Fig. 2

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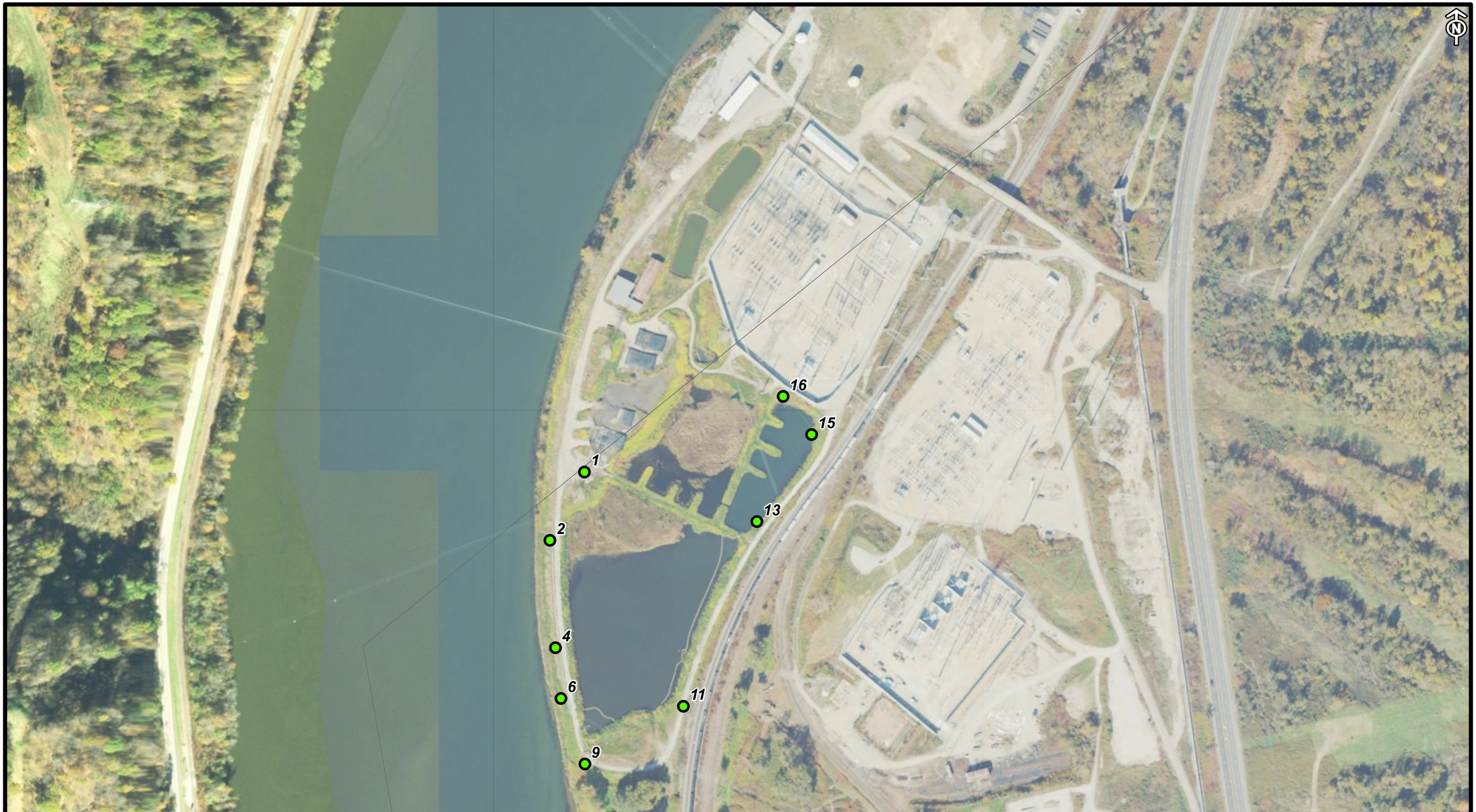
Figure 3 – Site Plan



LEGEND:

- General Observation

NOTES:

1. Aerial image obtained from USDA NAIP. Image captured fall of 2022.
2. Points shown represent site conditions during time of inspection. Conditions may change overtime, accuracy is not guaranteed. Map should not be used for measurement.

0 300 600 Feet

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Kammer Power Plant
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American Electric Power Service Corporation
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SITE PLAN

Project 2407654 | January 2025 | Fig. 3

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Figure 4 – Items to be Monitored

LEGEND:

Monitor

NOTES:

1. Aerial image obtained from USDA NAIP. Image captured fall of 2022.

2. Points shown represent site conditions during time of inspection. Conditions may change overtime, accuracy is not guaranteed. Map should not be used for measurement.

0 300 600 Feet

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Kammer Power Plant
Moundsville, West Virginia

American Electric Power Service Corporation
Columbus, OH 43215

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ITEMS TO BE MONITORED

Project 2407654 | January 2025 | Fig. 4

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Figure 5 – Items to be Addressed

LEGEND:

Repair

NOTES:

1. Aerial image obtained from USDA NAIP. Image captured fall of 2022.

2. Points shown represent site conditions during time of inspection. Conditions may change overtime, accuracy is not guaranteed. Map should not be used for measurement.

0 300 600 Feet

2024 Ash Pond Inspection Report
Kammer Power Plant
Moundsville, West Virginia

American Electric Power Service Corporation
Columbus, OH 43215

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ITEMS TO BE ADDRESSED

Project 2407654 | January 2025 | Fig. 5

Path: C:\Users\jhansen\OneDrive - GEI Consultants, Inc\Documents\GIS_Work\MISCELLANEOUS\2024\2407654 AEP Legacy CCR SI Inspection\2407654 AEP Legacy CCR SI Inspection.aprx

Appendix A - Photolog

Photographic Log

Project: Kammer Ash Pond Inspection Report
Client: American Electric Power **GEI Project:** 2407654

PHOTOGRAPH NO: 1	**DATE:** October 16, 2024 1:33 PM	**LATITUDE:** 39.84121588	**LONGITUDE:** -80.82334409
DIRECTION: 317°	**SITE LOCATION:** MOUNDSVILLE, WEST VIRGINIA		
DESCRIPTION: Ash Pond, Downstream Slope. General Photo, Typical Conditions.			
PHOTO BY: **GEI CONSULTANTS, INC.**			

PHOTOGRAPH NO: 2	**DATE:** October 16, 2024 1:39 PM	**LATITUDE:** 39.84060519	**LONGITUDE:** -80.82374669
DIRECTION: 345°	**SITE LOCATION:** MOUNDSVILLE, WEST VIRGINIA		
DESCRIPTION: Ash Pond, Downstream Slope. General Photo, Typical Conditions.			
PHOTO BY: **GEI CONSULTANTS, INC.**			

Photographic Log

Project: Kammer Ash Pond Inspection Report
Client: American Electric Power **GEI Project:** 2407654

PHOTOGRAPH NO: 3	**DATE:** October 16, 2024 1:41 PM	**LATITUDE:** 39.84030401	**LONGITUDE:** -80.82380052
DIRECTION: 356°	**SITE LOCATION:** MOUNDSVILLE, WEST VIRGINIA		
DESCRIPTION: Ash Pond, Downstream Slope. Riprap Ground Cover, Typical Conditions. Address/Maintain vegetation to 12-inches or less on the downstream slope.			
PHOTO BY: **GEI CONSULTANTS, INC.**			

PHOTOGRAPH NO: 4	**DATE:** October 16, 2024 1:43 PM	**LATITUDE:** 39.83964386	**LONGITUDE:** -80.82368444
DIRECTION: 312°	**SITE LOCATION:** MOUNDSVILLE, WEST VIRGINIA		
DESCRIPTION: Ash Pond, Downstream Slope. Ground Cover, Typical Conditions.			
PHOTO BY: **GEI CONSULTANTS, INC.**			

Photographic Log

Project: Kammer Ash Pond Inspection Report
Client: American Electric Power **GEI Project:** 2407654

PHOTOGRAPH NO: 5	DATE: October 16, 2024 1:46 PM	LATITUDE: 39.83940852	LONGITUDE: -80.82348962
DIRECTION: 322°	SITE LOCATION: MOUNDSVILLE, WEST VIRGINIA		

DESCRIPTION:

Ash Pond Upstream Slope. Ground Cover, Typical Conditions.

Address/Maintain vegetation to 12-inches or less on the upstream slope.

PHOTO BY:

GEI CONSULTANTS, INC.

PHOTOGRAPH NO: 6	DATE: October 16, 2024 1:47 PM	LATITUDE: 39.83918955	LONGITUDE: -80.82362169
DIRECTION: 46°	SITE LOCATION: MOUNDSVILLE, WEST VIRGINIA		

DESCRIPTION:

Ash Pond, Downstream Slope. Riprap Ground Cover, Typical Conditions.

PHOTO BY:

GEI CONSULTANTS, INC.

Photographic Log

Project: Kammer Ash Pond Inspection Report
Client: American Electric Power **GEI Project:** 2407654

PHOTOGRAPH NO: 7	DATE: October 16, 2024 1:49 PM	LATITUDE: 39.83893356	LONGITUDE: -80.82333988
DIRECTION: 343°	SITE LOCATION: MOUNDSVILLE, WEST VIRGINIA		

DESCRIPTION:

Ash Pond, Upstream Outfall Structure. General Photo, Typical Conditions.

Monitor the oil boom / replace as needed.

PHOTO BY:

GEI CONSULTANTS, INC.

PHOTOGRAPH NO: 8	DATE: October 16, 2024 1:51 PM	LATITUDE: 39.83886517	LONGITUDE: -80.82347555
DIRECTION: 1°	SITE LOCATION: MOUNDSVILLE, WEST VIRGINIA		

DESCRIPTION:

Ash Pond, Downstream Outfall Structure. Pipe not observed.

Address/maintain vegetation to 12-inches or less.

PHOTO BY:

GEI CONSULTANTS, INC.

Photographic Log

Project: Kammer Ash Pond Inspection Report
Client: American Electric Power **GEI Project:** 2407654

PHOTOGRAPH NO: 9	DATE: October 16, 2024 1:54 PM	LATITUDE: 39.83860274	LONGITUDE: -80.82334528
DIRECTION: 17°	SITE LOCATION: MOUNDSVILLE, WEST VIRGINIA		
DESCRIPTION: Ash Pond, Downstream Slope. General Photo, Typical Conditions.			
PHOTO BY: GEI CONSULTANTS, INC.			

PHOTOGRAPH NO: 10	DATE: October 16, 2024 1:55 PM	LATITUDE: 39.83882214	LONGITUDE: -80.82322094
DIRECTION: 338°	SITE LOCATION: MOUNDSVILLE, WEST VIRGINIA		
DESCRIPTION: Ash Pond, Upstream Outfall Structure. General Photo, Typical Conditions. Address/Maintain vegetation to 12-inches or less on the upstream slope.			
PHOTO BY: GEI CONSULTANTS, INC.			

Photographic Log

Project: Kammer Ash Pond Inspection Report
Client: American Electric Power **GEI Project:** 2407654

PHOTOGRAPH NO: 11	DATE: October 16, 2024 2:00 PM	LATITUDE: 39.83911744	LONGITUDE: -80.82220055
DIRECTION: 337°	SITE LOCATION: MOUNDSVILLE, WEST VIRGINIA		
DESCRIPTION: Ash Pond, Downstream Slope. Ground Cover, Typical Conditions.			
PHOTO BY: GEI CONSULTANTS, INC.			

PHOTOGRAPH NO: 12	DATE: October 16, 2024 2:03 PM	LATITUDE: 39.8406373	LONGITUDE: -80.82150994
DIRECTION: 76°	SITE LOCATION: MOUNDSVILLE, WEST VIRGINIA		
DESCRIPTION: Ash Pond, Interior Control Structure. General Photo, Typical Conditions. Address/replace oil boom.			
PHOTO BY: GEI CONSULTANTS, INC.			

Photographic Log

Project: Kammer Ash Pond Inspection Report
Client: American Electric Power **GEI Project:** 2407654

PHOTOGRAPH NO: 13	DATE: October 16, 2024 2:04 PM	LATITUDE: 39.84076959	LONGITUDE: -80.82134308
DIRECTION: 303°	SITE LOCATION: MOUNDSVILLE, WEST VIRGINIA		
DESCRIPTION: Ash Pond Upstream Slope. General Photo, Typical Conditions.			
PHOTO BY: GEI CONSULTANTS, INC.			

PHOTOGRAPH NO: 14	DATE: October 16, 2024 2:05 PM	LATITUDE: 39.84062751	LONGITUDE: -80.82146418
DIRECTION: 116°	SITE LOCATION: MOUNDSVILLE, WEST VIRGINIA		
DESCRIPTION: Ash Pond, Interior Control Structure. Address minor blockage to allow the structure to operate as it was designed.			
PHOTO BY: GEI CONSULTANTS, INC.			

Photographic Log

Project: Kammer Ash Pond Inspection Report
Client: American Electric Power **GEI Project:** 2407654

PHOTOGRAPH NO: 15	DATE: October 16, 2024 2:10 PM	LATITUDE: 39.84154779	LONGITUDE: -80.82070543
DIRECTION: 319°	SITE LOCATION: MOUNDSVILLE, WEST VIRGINIA		
DESCRIPTION: Ash Pond Stormwater Inlet Structure. General Photo, Typical Conditions.			
PHOTO BY: GEI CONSULTANTS, INC.			

PHOTOGRAPH NO: 16	DATE: October 16, 2024 2:13 PM	LATITUDE: 39.84188966	LONGITUDE: -80.82103507
DIRECTION: 333°	SITE LOCATION: MOUNDSVILLE, WEST VIRGINIA		
DESCRIPTION: Ash Pond, Ash Sluice Pipe Inlet. General Photo, Typical Conditions.			
PHOTO BY: GEI CONSULTANTS, INC.			