

Consulting Engineers and Scientists



Ash Pond Initial Dam and Dike Inspection Report

Cabin Creek Power Plant Cabin Creek, West Virginia

Submitted to:

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

Submitted by:

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January 2025 Project 2407654

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Todro J. Cmayer

2024 Annual Inspection Report



Ash Pond Cabin Creek Power Plant

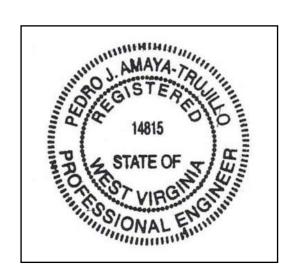
Signature

Pedro Amaya, PE Senior Consultant GEI Consultants, Inc.

Sodro J. Curayer

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).

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JRP

 $B: Working AEP \ AEP \ Legacy \ CCR \ SI \ Inspection \ \ \ \ \ Cabin \ Creek \ Final \ _Cabin \ Creek Ash Pond \ _Report. docx$

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 report is required to posted to the CCR website 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 Cabin Creek Ash Pond 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 Cabin Creek Ash Pond at the Cabin Creek Power Pant.

The inspection was performed on October 14, 2024, in general accordance with the Mining Safety and Health Administration (MSHA) Dam Inspection Guidelines. Weather conditions were overcast with mild temperatures between 49 and 66 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 Cabin Creek Power Plant is located in Cabin Creek, West Virginia as shown on Figure 1 – Site Location Map. The facility arrangement is provided on Figure 2 – Facility Plan. The Ash Pond and its appurtenances are shown on Figure 3 – Site Plan. Locations of items to be addressed are provided on Figure 4 – Items to be Addressed.

2. Description of Impoundments

The Cabin Creek Plant began operating in 1914 and was retired in 1981. The Cabin Creek Ash Pond was constructed around 1956. The Cabin Creek Ash Pond is surrounded by an earthen berm that ranges in elevation between approximately 590 and approximately 620 feet msl based on topographic data presented in Figure 2. The Ash Pond is approximately 19 acres and is located adjacent to the Kanawha River in Kanawha County, West Virginia. While the ash pond was operating, the water elevation was controlled with an outfall structure that was located on the western end – see Photograph No. 10. During an overflow condition, decant from the pond was discharged into the Kanawha River.

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

GEI understand that AEP is currently gathering pertinent information related to the Cabin Creek Ash Pond. At the time this report was written, sketches from a 1956 US Army Corps Permit were reviewed.

The 1956 sketches called for the construction a dike around Cabin Creek Island and to fill the back channel. Compensation dredging of approximately 200,000 CY was performed to offset for filling the back channel. The 1956 sketches call for a line of wood piling 35' deep with rockfill landward of the piling, for 650 feet along the downstream, riverward portion of the dike. The upstream, riverward portion of the dike received a band of riprap along the shoreline for 650 feet.

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 Cabin Creek Ash Pond's initial annual inspection.

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

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

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

Below is a summary of the Cabin Creek Ash Pond characteristics.

IMPOUNDMENT CHARACTERISTICS			
Water Surface Elevation at time of the inspection	Ponded water was not visible from the surface		
Approximate Minimum, Maximum, and Present depth/elevation of impounded water since last annual inspection	This is the initial inspection. Ponded water was not visible from the surface.		
Approximate Minimum Maximum and Present depth/elevation of CCR since last annual inspection	This is the initial inspection. The top surface of the CCR is approximately 620-ft msl and approximately 30 feet thick.		
Storage Capacity of impounding structure at the time of the inspection	800,000 CY		
Approximate volume of impounded water at the time of the inspection	Ponded water was not visible from the surface.		
Approximate volume of CCR at the time of the inspection	800,000 CY		

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.

Ash Pond Initial Dam and Dike Inspection Report Cabin Creek Power Plant Cabin Creek, West Virginia January 2025

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 Cabin Creek 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/spillway structure. Photographs taken during the inspection are provided in Attachment A - Photolog.

The following summarizes the visual inspection of the Cabin Creek Ash Pond:

The downstream slope of the dam is in fair condition. The slope is overgrown with woody vegetation. AEP should consider identifying the unit boundary so vegetation on the downstream slope can be addressed/maintained to 12-inches or less as shown in Photograph No. 1, 2, 3, 5, 7, 8, 9, 12, 13, 14, 18, 19, 20, and 22.

Isolated area of the downstream slope was observed to have heavy foot traffic as shown in Photograph No. 12. AEP should consider improving site security to protect public health and the environment.

The upstream slope of the dam is in fair condition. The slope is overgrown with woody vegetation. AEP should consider identifying the unit boundary so vegetation on the upstream

Ash Pond Initial Dam and Dike Inspection Report Cabin Creek Power Plant Cabin Creek, West Virginia January 2025

slope can be addressed/maintained to 12-inches or less. It was difficult to determine the extends of the upstream slope in the field.

The interior of the site is in fair condition. It is heavily vegetated as shown in Photograph No. 4, 6, 15, 16, and 17. AEP should consider addressing/maintaining the vegetation to 12-inches or less in the pond's interior in preparation to comply with upcoming Legacy CCR Surface Impoundment requirements.

Debris, trash, and possible encampment were documented as shown in Photograph No. 15, 16, and 17. AEP should consider removing the trash and improving/addressing site security.

The Ash Pond outlet structure appears to be abandoned as shown in Photograph No. 10 and No. 11. AEP should review its existing documentation to confirm its abandonment.

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 Cabin Creek Ash Pond.

5. Summary of Findings

5.1 General Observations

The Cabin Creek Ash Pond is generally in fair condition. The Cabin Creek Ash Pond appears to be functioning with no signs of structural weakness. The constructed embankment appears to be in fair condition structurally, but vegetation on the downstream slope has become overgrown and should be addressed/maintained to 12-inches or less within 25-feet of the downstream toe of slope. AEP should consider retaining a company that specializes in forestry mulching for transmission and power line easements to address the woody vegetation that exceeds 12-inches in height.

The Cabin Creek Ash Pond interior is in fair condition. Vegetation on the interior of the pond has become overgrown and should be addressed/maintained to 12 inches or less in preparation to comply with upcoming Legacy CCR Surface Impoundment requirements. Additionally, trash, debris, and an encampment were observed on the interior pond. AEP should consider removing trash and improving/addressing site security.

The Cabin Creek Ash Pond outfall structure appears to be abandoned. AEP should review its existing documentation to confirm its abandonment.

5.2 Maintenance Items

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

5.3 Items to be Monitored

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

5.4 Items to be Addressed

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

• Address/maintain vegetation to 12-inches or less on the upstream and downstream slopes. AEP to review the existing drawings to determine the top and toe of the slopes. Applies to Item 1, 2, 3, 5, 7, 8, 9, 12-20, and 22.

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 / <u>dsmurphy1@aep.com</u> or David Miller at 614-716-2281 / <u>damiller@aep.com</u>.

Figure 1 – Site Location Map

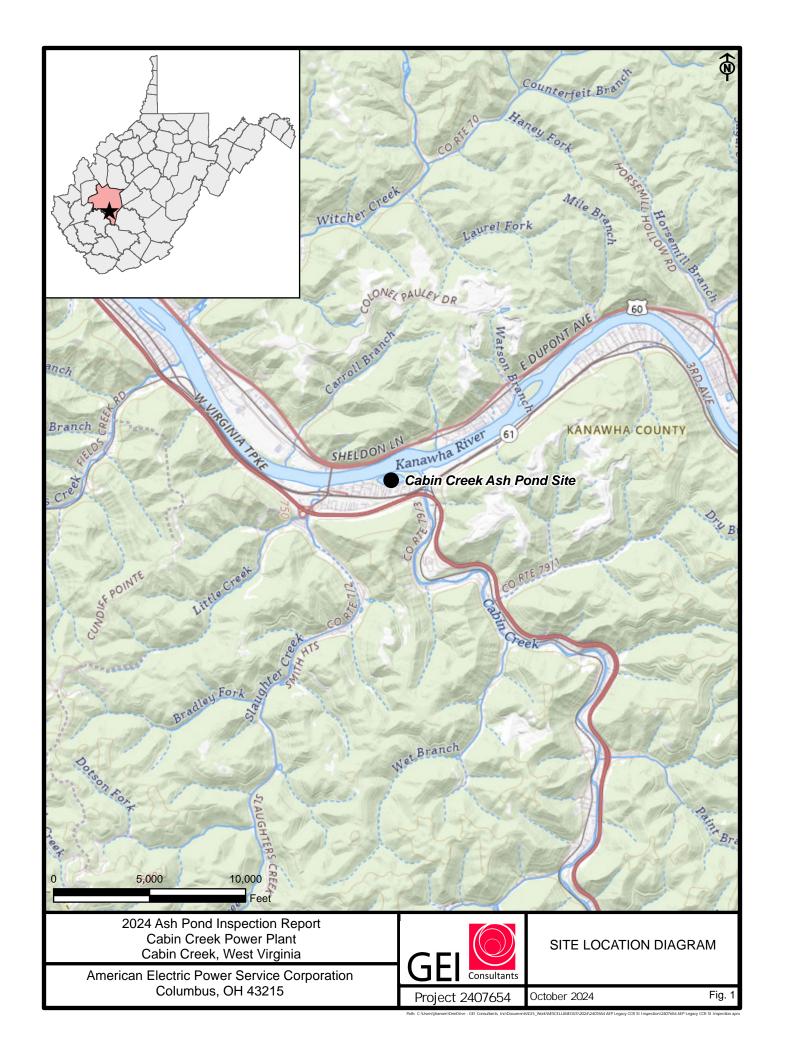


Figure 2 – Facility Plan

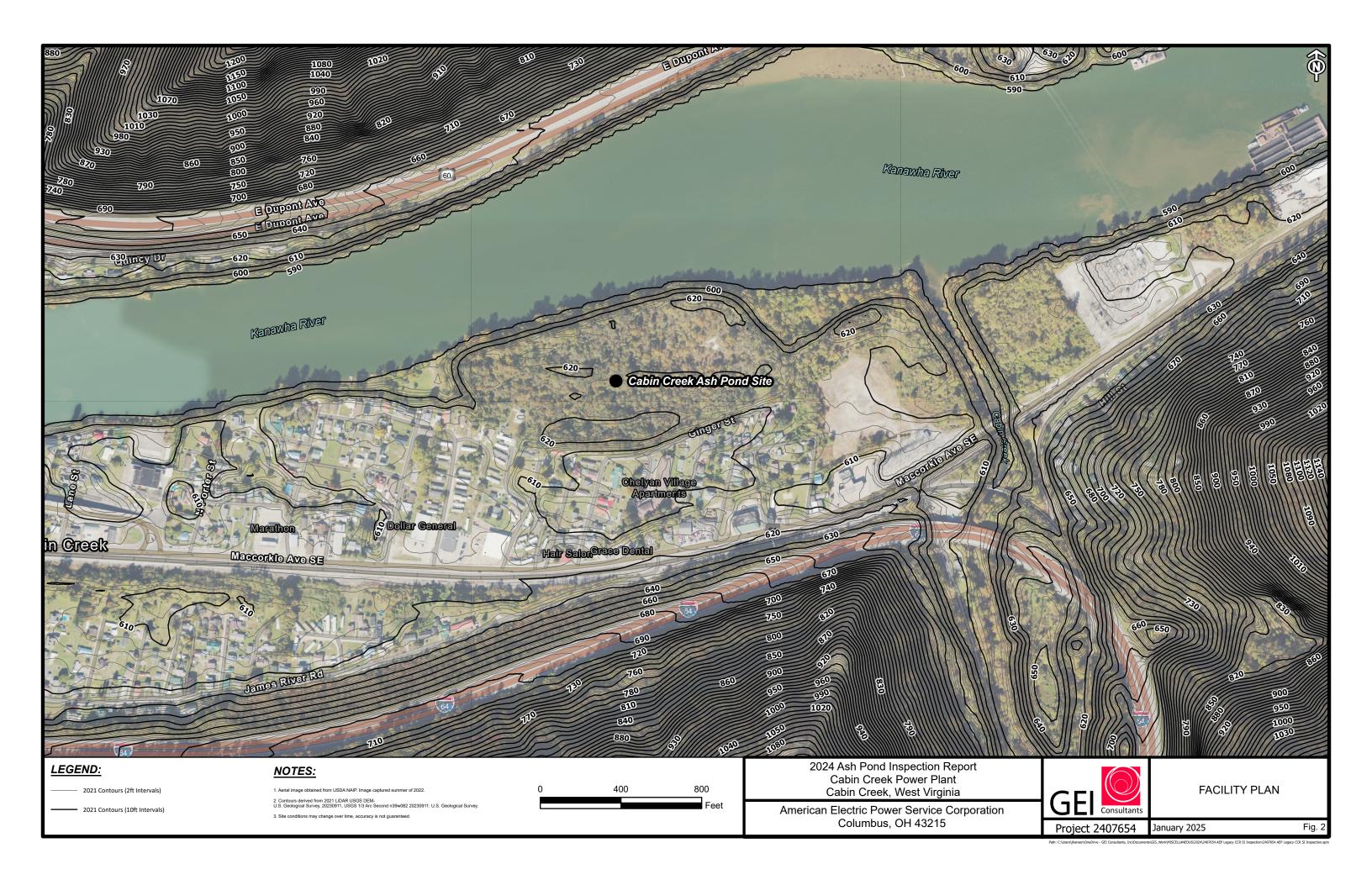


Figure 3 – Site Plan

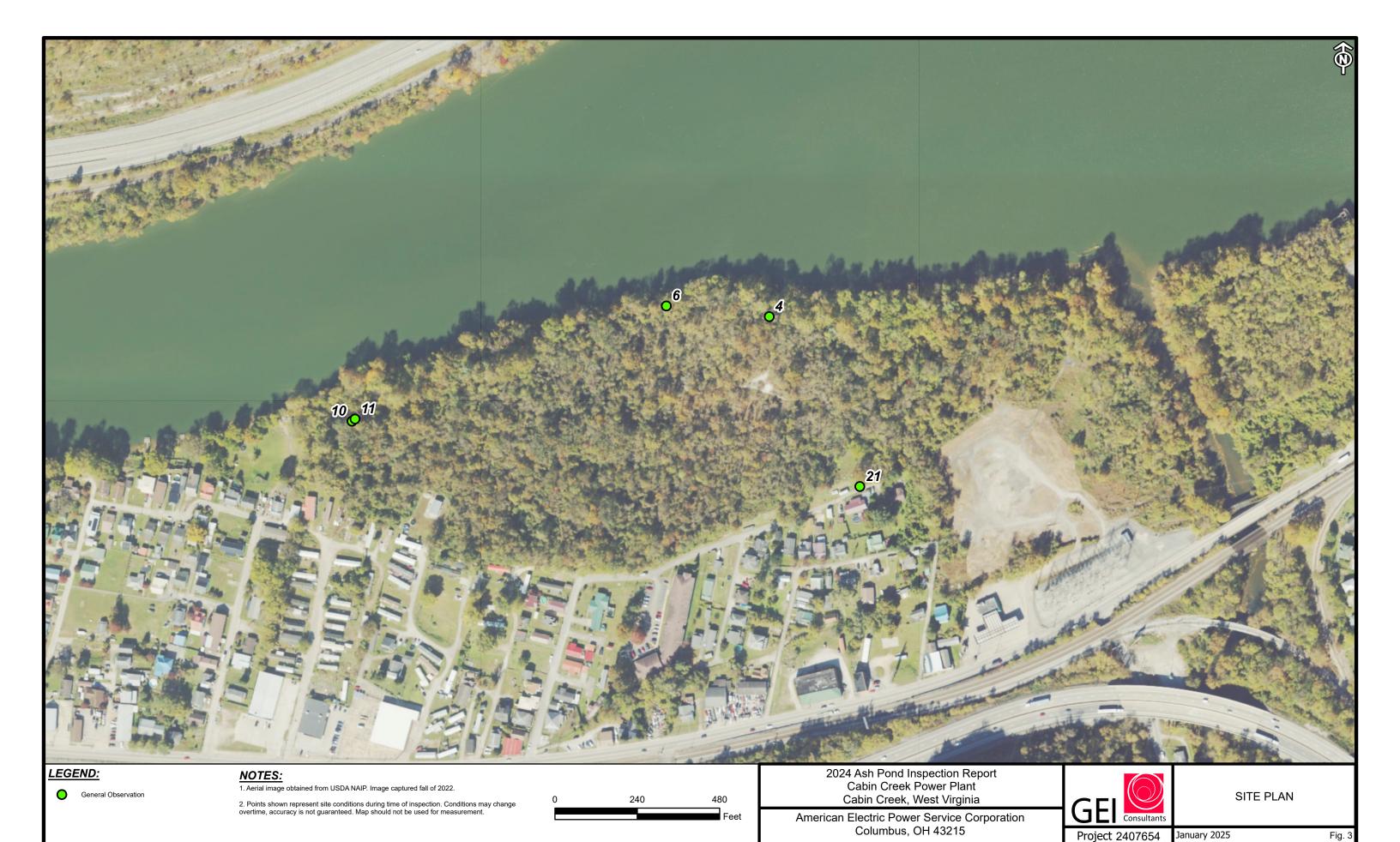
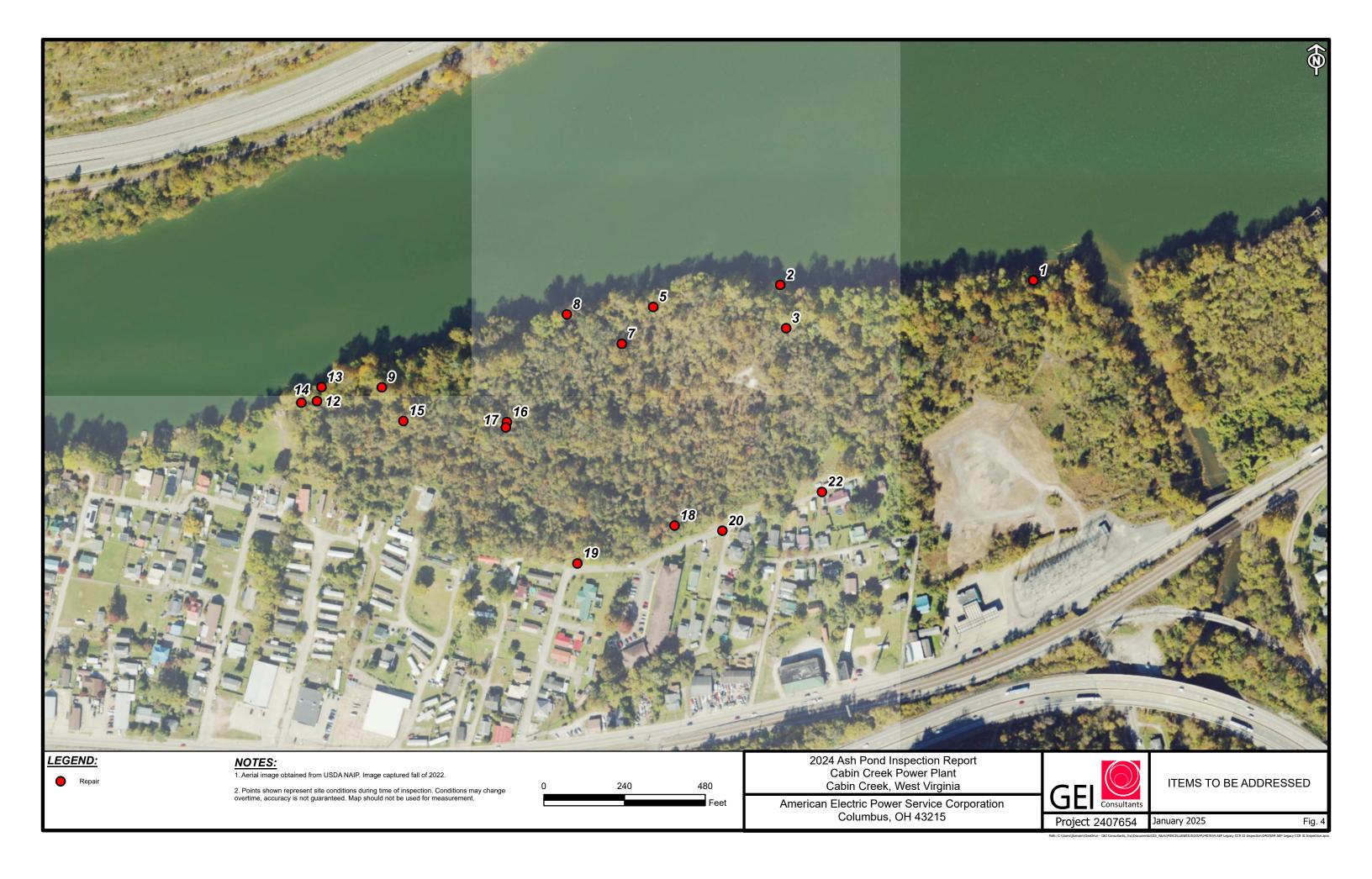


Figure 4 – Items to be Addressed



Appendix A - Photolog



Project: Cabin Creek Ash Pond Inspection Report

Client: American Electric Power GEI Project: 2407654

PHOTOGRAPH NO: 1	DATE:	LATITUDE:	LONGITUDE:
	October 14, 2024 12:14 PM	38.19899322	-81.48067534

DIRECTION: 210° SITE LOCATION: CABIN CREEK, WEST VIRGINIA

DESCRIPTION:

Downstream Slope.
Maintain vegetation to
12-inches or less within
25-feet of the toe of the
downstream slope.

AEP to review existing drawings to determine limits of the downstream slope / toe of slope.



рното ву:

GEI CONSULTANTS, INC.

	PHOTOGRAPH NO: 2	DATE: October 14, 2024 12:25 PM	Latitude: 38.19894563	LONGITUDE: -81.4832945
DIRECTION: 250°		SITE LOCATION: CABIN CREEK, WEST VIRGINIA		

DESCRIPTION:

Downstream Slope.
Maintain vegetation to
12-inches or less within
25-feet of the toe of the
downstream slope.

AEP to review existing drawings to determine limits of the downstream slope / toe of slope.



рното ву:



Project: Cabin Creek Ash Pond Inspection Report

Client: American Electric Power GEI Project: 2407654

PHOTOGRAPH NO: 3	DATE: October 14, 2024 12:28 PM	Latitude: 38.19859225	LONGITUDE: -81.48323284
direction: 60°	SITE LOCATION: CABIN CREEK, WEST V	IRGINIA	

DESCRIPTION:

Downstream Slope.
Maintain vegetation to
12-inches or less within
25-feet of the toe of the
downstream slope.

AEP to review existing drawings to determine limits of the downstream slope / toe of slope.



рното ву:

GEI CONSULTANTS, INC.

	Рното дгарн No: 4	DATE:	LATITUDE:	LONGITUDE:
		October 14, 2024 12:31 PM	38.1987157	-81.48356811
DIRECTION: 180°		SITE LOCATION: CARIN CREEK WEST VIRGINIA		

DESCRIPTION:

Ash Pond Interior. General Photo, Typical Conditions. 6-8 feet freeboard.



рното ву:



Project: Cabin Creek Ash Pond Inspection Report

Client: American Electric Power GEI Project: 2407654

	PHOTOGRAPH NO: 5	DATE: October 14, 2024 12:36 PM	LATITUDE: 38.19876106	LONGITUDE: -81.48460932
direction: 80°		SITE LOCATION: CABIN CREEK, WEST VIRGINIA		

DESCRIPTION:

Downstream Slope. Maintain vegetation to 12-inches or less within 25-feet of the toe of the downstream slope.

AEP to review existing drawings to establish limits of the downstream slope / toe of slope.



рното ву:

GEI CONSULTANTS, INC.

PHOTOGRAPH NO: 6	DATE: October 14, 2024 12:41 PM	LATITUDE: 38.1987975	LONGITUDE: -81.4846117

SITE LOCATION: CABIN CREEK, WEST VIRGINIA

direction: 90°

DESCRIPTION:

Ash Pond Interior. General Photo, Typical Conditions.



РНОТО ВҮ:



Project: Cabin Creek Ash Pond Inspection Report

Client: American Electric Power GEI Project: 2407654

Duotoco anu No. 7	DATE:	LATITUDE:	LONGITUDE:
PHOTOGRAPH NO: 7	October 14, 2024 12:51 PM	38.19845812	-81.48493232

DIRECTION: 180°

SITE LOCATION: CABIN CREEK, WEST VIRGINIA

DESCRIPTION:

Downstream Slope. Maintain vegetation to 12-inches or less within 25-feet of the toe of the downstream slope.

AEP to review existing drawings to establish limits of the downstream slope / toe of slope.



РНОТО ВУ:

GEI CONSULTANTS, INC.

PHOTOGRAPH NO: 8	DATE: October 14, 2024 12:54 PM	L ATITUDE: 38.19869542	LONGITUDE: -81.48550167
direction: 90°	SITE LOCATION: CABIN CREEK, WEST VIRGINIA		

DESCRIPTION:

Downstream Slope. Maintain vegetation to 12-inches or less within 25-feet of the toe of the downstream slope.

AEP to review existing drawings to establish limits of the downstream slope / toe of slope.



рното ву:



Project: Cabin Creek Ash Pond Inspection Report

Client: American Electric Power GEI Project: 2407654

	PHOTOGRAPH NO: 9	DATE: October 14, 2024 1:05 PM	Latitude: 38.19809249	LONGITUDE: -81.4874134
DIRECTION: 0°		SITE LOCATION: CABIN CREEK, WEST VIRGINIA		

DESCRIPTION:

Downstream Slope. Maintain vegetation to 12-inches or less within 25-feet of the toe of the downstream slope.

AEP to review existing drawings to establish limits of the downstream slope / toe of slope.



рното ву:

GEI CONSULTANTS, INC.

Рнотодгарн No: 10	DATE: October 14, 2024 1:08 PM	LATITUDE: 38.19786114	LONGITUDE: -81.48779331

direction: 0°

SITE LOCATION: CABIN CREEK, WEST VIRGINIA

DESCRIPTION:

Outlet Works, Concrete Structure. Consider documenting abandonment.



РНОТО ВҮ:



Project: Cabin Creek Ash Pond Inspection Report

Client: American Electric Power GEI Project: 2407654

PHOTOGRAPH NO: 11	DATE:	LATITUDE:	LONGITUDE:
	October 14, 2024 1:10 PM	38.19787966	-81.487761
		•	

DIRECTION: 20°

SITE LOCATION: CABIN CREEK, WEST VIRGINIA

DESCRIPTION:

Outlet Works, Concrete Debris. Consider documenting abandonment.



рното ву:

GEI CONSULTANTS, INC.

PHOTOGRAPH NO: 12	DATE:	L ATITUDE:	LONGITUDE:
	October 14, 2024 1:12 PM	38.19797764	-81.48808339
DIRECTION: 165°	SITE LOCATION: CABIN CREEK, WEST VIRGINIA		

DESCRIPTION:

Downstream Slope.
Maintain vegetation to
12-inches or less within
25-feet of the toe of the
downstream slope.

AEP to review existing drawings to establish limits of the downstream slope / toe of slope.

Secure site/ limit traffic



рното ву:



Project: Cabin Creek Ash Pond Inspection Report

Client: American Electric Power GEI Project: 2407654

•			
PHOTOGRAPH NO: 13	DATE: October 14, 2024 1:17 PM	LATITUDE: 38.19809138	LONGITUDE: -81.48803756
DIRECTION: 250°	SITE LOCATION: CABIN CREEK, WEST VIRGINIA		
DESCRIPTION:			
Downstream Slope. Maintain vegetation to 12-inches or less within 25-feet of the toe of the downstream slope. AEP to review existing drawings to establish limits of the downstream slope / toe of slope.			

рното ву:

GEI CONSULTANTS, INC.

PHOTOGRAPH NO: 14	DATE: October 14, 2024 1:18 PM	L ATITUDE: 38.19796208	LONGITUDE: -81.48824507	
DIRECTION: 100°	SITE LOCATION: CABIN CREEK, WEST VIRGINIA			
DESCRIPTION: Downstream Slope.				

Maintain vegetation to 12-inches or less within 25-feet of the toe of the downstream slope.

AEP to review existing drawings to establish limits of the downstream slope / toe of slope.



рното ву:



Project: Cabin Creek Ash Pond Inspection Report

Client: American Electric Power GEI Project: 2407654

PHOTOGRAPH NO: 15	DATE: October 14, 2024 1:24 PM	LATITUDE: 38.19781866	Longitude: -81.48718805
DIRECTION: 45°	SITE LOCATION: CABIN CREEK, WEST V	IRGINIA	

DESCRIPTION:

Ash Pond Interior. Address site access / secure site.



рното ву:

GEI CONSULTANTS, INC.

Рнотодгарн No: 16	DATE: October 14, 2024 1:28 PM	L atitude: 38.19781268	LONGITUDE: -81.48611718
DIRECTION: 270°	SITE LOCATION: CABIN CREEK. WEST V	IRGINIA	

DESCRIPTION:

Ash Pond Interior. Address site access / secure site.



рното ву:



Project: Cabin Creek Ash Pond Inspection Report

Client: American Electric Power GEI Project: 2407654

Duezaer seu No. 17	DATE:	LATITUDE:	LONGITUDE:	
	PHOTOGRAPH NO: 17	October 14, 2024 1:33 PM	38.19776877	-81.48612718
	direction: 70°	SITE LOCATION: CABIN CREEK, WEST V	IRGINIA	

DESCRIPTION:

Ash Pond Interior. Address site access / secure site.



рното ву:

GEI CONSULTANTS, INC.

Рнотодгарн No: 18	DATE:	L ATITUDE:	LONGITUDE:
	October 14, 2024 1:44 PM	38.19697451	-81.48437706
DIRECTION: 15°	SITE LOCATION: CABIN CREEK, WEST VIRGINIA		

DESCRIPTION:

Downstream Slope.
Maintain vegetation to
12-inches or less within
25-feet of the toe of the
downstream slope.

AEP to review existing drawings to establish limits of the downstream slope / toe of slope.



рното ву:



Project: Cabin Creek Ash Pond Inspection Report

Client: American Electric Power GEI Project: 2407654

Рнотодкарн No: 19	DATE:	LATITUDE:	LONGITUDE:
	October 14, 2024 2:10 PM	38.19666215	-81.48537819

DIRECTION: 10° SITE LOCATION: CABIN CREEK, WEST VIRGINIA

DESCRIPTION:

Downstream Slope.
Maintain vegetation to
12-inches or less within
25-feet of the toe of the
downstream slope.
Secure the site.

AEP to review existing drawings to establish limits of the downstream slope / toe of slope.



рното ву:

GEI CONSULTANTS, INC.

PHOTOGRAPH NO: 20	DATE: October 14, 2024 2:12 PM	L ATITUDE: 38.19693521	LONGITUDE: -81.48388105
DIRECTION: 15°	SITE LOCATION: CABIN CREEK, WEST VIRGINIA		

DESCRIPTION:

Downstream Slope.
Maintain vegetation to
12-inches or less within
25-feet of the toe of the
downstream slope.

AEP to review existing drawings to establish limits of the downstream slope / toe of slope.



РНОТО ВҮ:



Project: Cabin Creek Ash Pond Inspection Report

Client: American Electric Power GEI Project: 2407654

PHOTOGRAPH NO: 21	DATE:	LATITUDE:	LONGITUDE:
	October 14, 2024 2:14 PM	38.19735906	-81.48263986

DIRECTION: 320° SITE LOCATION: CABIN CREEK, WEST VIRGINIA

DESCRIPTION:

Downstream Slope. General Photo, Typical Conditions. Secure the site.



рното ву:

GEI CONSULTANTS, INC.

PHOTOGRAPH No: 22	DATE:	L ATITUDE:	LONGITUDE:
	October 14, 2024 2:17 PM	38.19725545	-81.48285299
DIRECTION: 320°	SITE LOCATION: CABIN CREEK, WEST VIRGINIA		

DESCRIPTION:

Downstream Slope.
Maintain vegetation to
12-inches or less within
25-feet of the toe of the
downstream slope.

AEP to review existing drawings to establish limits of the downstream slope / toe of slope.



рното ву: