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Engineers and
Scientists



Fly Ash Pond Initial Dam and Dike Inspection Report

Former Philo Power Plant, Muskingum County, Ohio

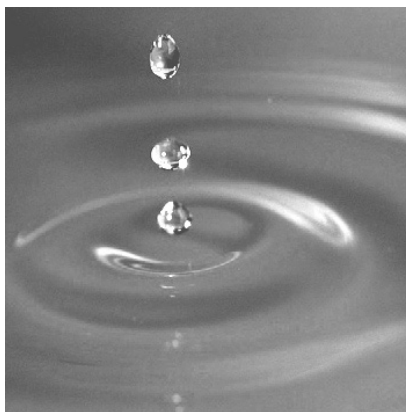
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January 2025
Project 2407654



Pedro Amaya, PE
Senior Consultant

Jeff Piaskowski, PE
Senior Engineer

2024 Annual Inspection Report



Fly Ash Pond Former Philo Power Plant

A handwritten signature in black ink that reads "Pedro J. Amaya".

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).

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Appendix A – Photolog

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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 performed the initial annual inspection of the Fly Ash Pond at the former Philo Power Generating 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 supervision 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 Fly Ash Pond at the former Philo Power Generating 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 sunny with mild temperatures between 40- and 50-degrees Fahrenheit. Less than 0.2-inches of precipitation was recorded at the regional airport in Columbus, Ohio in the 7 days prior to the inspection.

The former Philo Power Generating Plant is located near Philo, Ohio as shown on Figure 1 – Site Location Map. The facility arrangement is provided on Figure 2 – Facility Plan. The Fly 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 Philo Power Plant began commercial operation in October 1924 and was closed by the middle of 1975. The Fly Ash Pond is believed to have been in operation while the plant was generating electricity.

The Fly Ash Pond is separated from the Muskingum River and Duncan Run by a roughly 30 foot tall earthen berm with an average crest elevation of approximately 702 ft-msl. The Fly Ash Pond is located northwest of the confluence of Duncan Run and the Muskingum River in Muskingum County, Ohio. The Fly Ash Pond is approximately 17 Acres and an estimated total storage capacity of approximately 550,000 CY.

While operating as an ash pond, the water elevation was controlled with a pipe and riser type outfall structure that was located in the southeast corner of the pond. During an overflow condition, decant from the pond was discharged into the Muskingum River.

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

GEI understands that AEP is currently gathering pertinent information related to the Philo Fly 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 Philo Fly Ash Pond's initial annual inspection.

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

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

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

Below is a summary of the Philo Fly Ash Pond characteristics.

IMPOUNDMENT CHARACTERISTICS	
Water Surface Elevation at time of the inspection	No water visible
Approximate Minimum, Maximum, and Present depth/elevation of impounded water since last annual inspection	This is the initial inspection and there was no visible water.
Approximate Minimum Maximum and Present depth/elevation of CCR since last annual inspection	This is the initial inspection and the approximate depth of CCR varied from 1 to 30 feet during this inspection.
Storage Capacity of impounding structure at the time of the inspection	Approximately 550,000 CY
Approximate volume of impounded water at the time of the inspection	No water visible.
Approximate volume of CCR at the time of the inspection	Approximately 500,000 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.

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 Philo Fly Ash Pond was conducted to identify signs of distress or malfunction of the impoundment and appurtenant 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 Philo Fly Ash Pond:

The downstream slope of the dam is in fair condition. The slope vegetative cover is overgrown with woody vegetation that should be maintained to 12-inches or less as shown in Photograph Nos. 1-6, 10-14, and 167. AEP should consider identifying the unit boundary to establish limits where the vegetation should be maintained.

The upstream slope of the dam is in fair condition. The slope vegetative cover is overgrown with woody vegetation that should be maintained to 12-inches or less as shown in Photograph No. 15.

The crest of the dam is in fair condition. The surface of the crest is overgrown with woody vegetation that should be maintained to 12-inches or less.

One decant structure was observed as shown in Photograph Nos. 7, 8, and 9. No outlet for this structure was found and it is unknown if this structure is still functional. If AEP determines that

this structure is no longer required, the structure should be removed, or proper abandonment should be documented.

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 Philo Fly Ash Pond.

5. Summary of Findings

5.1 General Observations

The Philo Fly Ash Pond is generally in fair condition. The Fly Ash Pond appears to be functioning as intended with no signs of structural weakness. The constructed embankment/berms appear in fair condition, however, vegetation on the site has become overgrown and should be addressed/maintained to 12-inches or less within 25-feet of the embankment limits. AEP should consider identifying the unit boundary to establish limits where the vegetation should be maintained. AEP could consider following up with a logging company to determine if logging these areas is a cost-effective approach to addressing the vegetation. Alternatively, AEP could also 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.

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 within 25-feet of the limits of the embankments. AEP should consider identifying the unit boundary to establish limits where the vegetation should be maintained. Applies to Items 1-6 and 10-16.

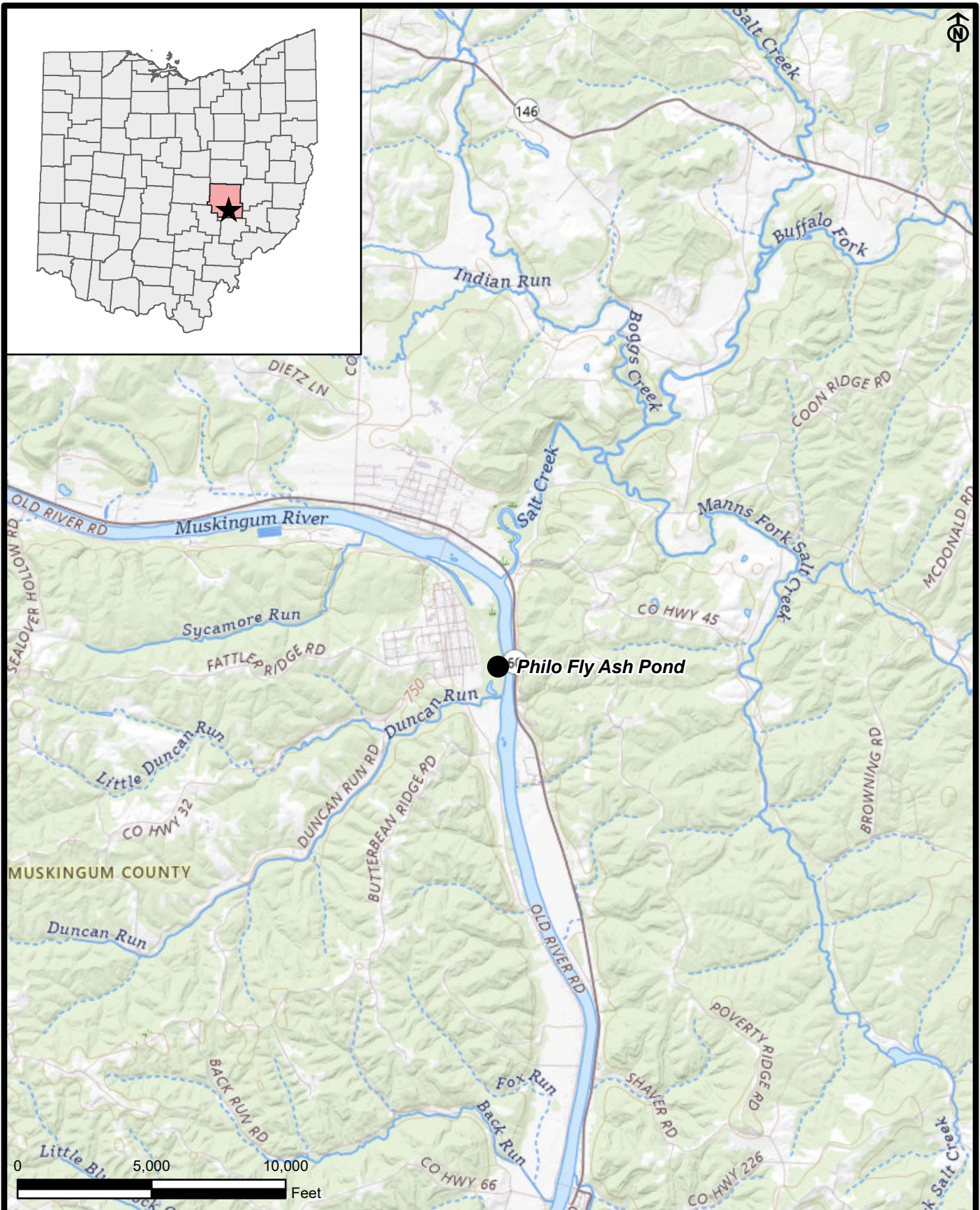
6. Deficiencies (257.83(b)(2)(vi))

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 Fly Ash Pond Inspection Report
 Philo Power Plant
 Philo, Ohio

American Electric Power Service Corporation
 Columbus, OH 43215



SITE LOCATION MAP

Project 2407654

January 2025

Fig. 1

Figure 2 – Facility Plan



LEGEND:

- 2020 Contours (10ft Intervals)
- 2020 Contours (2ft Intervals)

NOTES:

1. Aerial image obtained from USDA NAIP. Image captured summer of 2022.
2. Contours derived from 2020 LIDAR USGS Lidar - OCM Partners, 2025: 2020 - 2021 USGS Lidar: Ohio Statewide - Phase 2, <https://www.fisheries.noaa.gov/inport/item/70095>.
3. Site conditions may change over time, accuracy is not guaranteed.



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 Philo, Ohio

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 Columbus, OH 43215

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Project 2407654

FACILITY PLAN

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 summer 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.



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SITE PLAN

January 2025

Fig. 3

Figure 4 – Items to be Addressed



LEGEND:

● Repair

NOTES:

1. Aerial image obtained from USDA NAIP. Image captured summer 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.



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ITEMS TO BE ADDRESSED

January 2025

Fig. 4

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



Appendix A - Photolog

Photographic Log



Project: Philo Fly Ash Pond Inspection Report
Client: American Electric Power

GEI Project: 2407654



PHOTOGRAPH NO: 1	DATE: October 16, 2024 8:30 AM	LATITUDE: 39.85886526	LONGITUDE: -81.90159684
DIRECTION: 346°	SITE LOCATION: PHILO, OHIO		
DESCRIPTION: Downstream Slope. Ground Cover, Typical Conditions.			
PHOTO BY: GEI CONSULTANTS, INC.			
PHOTOGRAPH NO: 2	DATE: October 16, 2024 8:38 AM	LATITUDE: 39.8581628	LONGITUDE: -81.90132668
DIRECTION: 315°	SITE LOCATION: PHILO, OHIO		
DESCRIPTION: Downstream Slope. Slide, Slough, Scarp, Monitor Conditions.			
PHOTO BY: GEI CONSULTANTS, INC.			

Photographic Log



Project: Philo Fly Ash Pond Inspection Report
Client: American Electric Power

GEI Project: 2407654



PHOTOGRAPH NO: 3	DATE: October 16, 2024 8:43 AM	LATITUDE: 39.85761265	LONGITUDE: -81.90105482
DIRECTION: 293°	SITE LOCATION: PHILO, OHIO		
DESCRIPTION: Downstream Slope. Slide, Slough, Scarp, Monitor Conditions.			
PHOTO BY: GEI CONSULTANTS, INC.			
PHOTOGRAPH NO: 4	DATE: October 16, 2024 8:45 AM	LATITUDE: 39.85738631	LONGITUDE: -81.90103619
DIRECTION: 310°	SITE LOCATION: PHILO, OHIO		
DESCRIPTION: Downstream Slope. Possible drill rig access.			
PHOTO BY: GEI CONSULTANTS, INC.			

Photographic Log



Project: Philo Fly Ash Pond Inspection Report
Client: American Electric Power

GEI Project: 2407654



PHOTOGRAPH NO: 5	DATE: October 16, 2024 8:48 AM	LATITUDE: 39.85688206	LONGITUDE: -81.90089489
DIRECTION: 294°		SITE LOCATION: PHILO, OHIO	
DESCRIPTION: Toe. Slide, Slough, Scarp, Monitor Conditions.			
PHOTO BY: GEI CONSULTANTS, INC.			
PHOTOGRAPH NO: 6	DATE: October 16, 2024 9:03 AM	LATITUDE: 39.85526981	LONGITUDE: -81.90101224
DIRECTION: 309°		SITE LOCATION: PHILO, OHIO	
DESCRIPTION: Downstream Slope. Ground Cover, Monitor Conditions.			
PHOTO BY: GEI CONSULTANTS, INC.			

Photographic Log



Project: Philo Fly Ash Pond Inspection Report
Client: American Electric Power

GEI Project: 2407654



PHOTOGRAPH NO: 7	DATE: October 16, 2024 9:07 AM	LATITUDE: 39.85453293	LONGITUDE: -81.90144902
DIRECTION: 299°		SITE LOCATION: PHILO, OHIO	
DESCRIPTION: Decant Structure. General Photo, Typical Conditions.			
PHOTO BY: GEI CONSULTANTS, INC.			
PHOTOGRAPH NO: 8	DATE: October 16, 2024 9:08 AM	LATITUDE: 39.85457198	LONGITUDE: -81.90154153
DIRECTION: 314°		SITE LOCATION: PHILO, OHIO	
DESCRIPTION: Outlet Works. General Photo, Monitor Conditions.			
PHOTO BY: GEI CONSULTANTS, INC.			

Photographic Log



Project: Philo Fly Ash Pond Inspection Report
Client: American Electric Power

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PHOTOGRAPH NO: 9	DATE: October 16, 2024 9:10 AM	LATITUDE: 39.85456682	LONGITUDE: -81.90153938
DIRECTION: 174°	SITE LOCATION: PHILO, OHIO		
DESCRIPTION: Outlet Works. General Photo, Monitor Conditions.			
PHOTO BY: GEI CONSULTANTS, INC.			
PHOTOGRAPH NO: 10	DATE: October 16, 2024 9:19 AM	LATITUDE: 39.85438553	LONGITUDE: -81.90125043
DIRECTION: 61°	SITE LOCATION: PHILO, OHIO		
DESCRIPTION: Downstream Slope. Likely location of outfall from pond. No outlet found.			
PHOTO BY: GEI CONSULTANTS, INC.			

Photographic Log



Project: Philo Fly Ash Pond Inspection Report
Client: American Electric Power

GEI Project: 2407654



PHOTOGRAPH No: 11	DATE: October 16, 2024 9:20 AM	LATITUDE: 39.85422829	LONGITUDE: -81.90144485
DIRECTION: 10°		SITE LOCATION: PHILO, OHIO	
DESCRIPTION: Downstream Slope. Ground Cover, Typical Conditions.			
PHOTO BY: GEI CONSULTANTS, INC.			
PHOTOGRAPH No: 12	DATE: October 16, 2024 9:23 AM	LATITUDE: 39.85409202	LONGITUDE: -81.90198384
DIRECTION: 349°		SITE LOCATION: PHILO, OHIO	
DESCRIPTION: Downstream Slope. Vehicle Ruts, Monitor Conditions.			
PHOTO BY: GEI CONSULTANTS, INC.			

Photographic Log



Project: Philo Fly Ash Pond Inspection Report
Client: American Electric Power

GEI Project: 2407654



PHOTOGRAPH No: 13	DATE: October 16, 2024 9:25 AM	LATITUDE: 39.85404967	LONGITUDE: -81.90252694
DIRECTION: 75°		SITE LOCATION: PHILO, OHIO	
DESCRIPTION: Outboard Dike. General Photo, Monitor Conditions.			
PHOTO BY: GEI CONSULTANTS, INC.			
PHOTOGRAPH No: 14	DATE: October 16, 2024 9:33 AM	LATITUDE: 39.85447256	LONGITUDE: -81.90357579
DIRECTION: 51°		SITE LOCATION: PHILO, OHIO	
DESCRIPTION: Downstream Slope. Ground Cover, Typical Conditions.			
PHOTO BY: GEI CONSULTANTS, INC.			

Photographic Log



Project: Philo Fly Ash Pond Inspection Report
Client: American Electric Power

GEI Project: 2407654

PHOTOGRAPH No: 15	DATE: October 16, 2024 9:38 AM	LATITUDE: 39.85522147	LONGITUDE: -81.90337185
DIRECTION: 50°	SITE LOCATION: PHILO, OHIO		
DESCRIPTION: Upstream Slope. General Photo, Typical Conditions.			
PHOTO BY: GEI CONSULTANTS, INC.			
PHOTOGRAPH No: 16	DATE: October 16, 2024 9:45 AM	LATITUDE: 39.85627643	LONGITUDE: -81.90328313
DIRECTION: 47°	SITE LOCATION: PHILO, OHIO		
DESCRIPTION: Downstream Slope. Ground Cover, Typical Conditions.			
PHOTO BY: GEI CONSULTANTS, INC.			