

**MEMORANDUM – Operating Record (40 CFR 257.105(h)(12))**

September 22, 2023  
File No. 0133274-012

TO: AES Indiana – Petersburg Generating Station

FROM: Haley & Aldrich, Inc.

SUBJECT: Semi-Annual Remedy Selection Progress Report Pursuant to 40 CFR §257.97(a)  
Petersburg Generating Station - Ash Pond System and Type III Restricted Waste Landfill

Indianapolis Power & Light Company d/b/a AES Indiana (AESI) initiated corrective measures for the Ash Pond System and Type III Restricted Waste Landfill (Landfill) at the Petersburg Generating Station (PGS) on April 15, 2019, in response to statistically significant levels (SSL) of Appendix IV constituents (lithium and molybdenum) exceeding Groundwater Protection Standards (GWPS). Pursuant to 40 CFR §257.96(a), a demonstration of the need for a 60-day extension for the assessment of corrective measures was completed on July 12, 2019. The Corrective Measures Assessment (CMA) Report was completed and placed in the facility operating record on September 13, 2019, and subsequently amended on October 11, 2019.

In accordance with the Federal CCR Rule, following completion of the CMA, AES Indiana must, as soon as feasible, select a remedy that meets the standards listed in 40 CFR §257.97(b). Pursuant to §257.97(a), the owner or operator of a Coal Combustion Residual (CCR) management unit that has completed a CMA for groundwater is required to prepare a semi-annual report describing the progress made in selecting and designing the remedy. This report documents activities completed in support of selecting and designing a remedy during the period from March 21, 2023, through September 21, 2023. A summary of the progress made in selecting a remedy is provided below.

**SUMMARY OF ACTIONS COMPLETED**

Ash Pond System and Landfill

The following actions have been completed during this reporting period for the Ash Pond System and the Landfill:

- Completed the statistical analysis of the November 2022 sampling results for the presence of Appendix IV constituents to be present at concentrations above GWPS.
- Continued Assessment Monitoring: Collected groundwater samples and evaluated the results of the May 2023 sampling event in support of ongoing groundwater monitoring compliance and nature and extent (N&E) evaluations. Final laboratory results were placed in the facility’s CCR operating record. The groundwater monitoring data for the May 2023 sampling event is being evaluated for statistically significant levels compared to GWPS. Any new constituents that exceed GWPS will be considered in the selection of the final remedy.

## Ash Pond System

The following actions have been completed during this reporting period for the Ash Pond System:

- Continued implementation of the approved IDEM Ash Pond System Closure Plan / Post Closure Plan<sup>1</sup>:
  - Completed placing the protective soil cover for the final cover system over Pond A and Pond A’;
  - Completed seeding of the cover soil; and
  - Began preparation of the closure certification report.
- AESI continued efforts to further establish N&E to support the CMA and selection of remedy:
  - Collected groundwater samples from the twelve (12) supplemental nested wells (MW-36 through MW-47) in May 2023; and
  - Collected the second round of groundwater samples from the six (6) monitoring system enhancement wells (AP-9B, AP-9I, AP-10B, AP-10I, AP-11B, AP-11I) in June 2023.
- Groundwater samples were collected from the existing N&E monitoring wells during the first semi-annual sampling event in 2023 to provide supplemental groundwater data to:
  - Define the horizontal and vertical extent of Appendix IV constituents along the White River;
  - Supplement and enhance the evaluation of the extent of groundwater impacts and assessment of corrective measures;
  - Inform what additional steps, if any, are necessary to fully delineate N&E of Appendix IV constituents; and
  - Support the selection of remedy.
- Continued data collection from the pressure transducers that were installed at fourteen (14) N&E monitoring well locations to collect groundwater elevation data to better understand vertical groundwater gradients and correlate White River levels to groundwater levels to support the Site Conceptual Model (SCM). Pressure transducers were downloaded on a monthly basis through August 2023.
- Began communications with off-site property owners to seek access to perform a site reconnaissance to complete the N&E investigation activities.

## Landfill

The following actions have been completed during this reporting period for the Landfill that will better define whether historic mining activities (e.g., underground and surface mining and the placement of mine spoils) and/or naturally occurring geologic units immediately surrounding the Landfill impact background conditions:

- Collected the second groundwater sample in June 2023 from supplemental N&E monitoring well (MW-15B) to provide additional vertical delineation of Appendix IV SSLs downgradient of the landfill. Groundwater samples were collected from the two (2) new background wells MW-1A and MW-12A in April, June and August 2023. The wells will serve to supplement existing background well MW-1.

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<sup>1</sup> The CMA groundwater remedy consists of two parts: source control (unit closure) and groundwater treatment. Installation of the final cover system is the source control element for this unit that will reduce infiltration of precipitation to groundwater thereby isolating the CCR material.

- Completed hydraulic conductivity testing on monitoring wells MW-1A and MW-12A in June 2023 to provide data to refine estimates of aquifer parameters.
- Installed piezometer (LF-PZ-1) south of the landfill in August 2023. Obtained groundwater water levels from LF-PZ-1 and nearby monitoring wells in August and September 2023 to better understand groundwater flow patterns when the White River level is low.

## PLANNED ACTIVITIES

Anticipated activities which will support CMA and selection of remedy for the upcoming six months include the following (subject to change):

- Collect supplemental soil and groundwater data from select N&E locations to further evaluate groundwater treatment technologies.
- Obtain permission from off-site property owners for access and to perform site reconnaissance and N&E investigation activities.
- Complete the statistical analysis of the May 2023 sampling event to evaluate groundwater for the presence of SSLs above GWPS downgradient of the Ash Pond System and Landfill.
- Continue Assessment Monitoring by collecting groundwater samples in November 2023 from the existing CCR well network and the seven (7) supplemental monitoring wells that were installed to enhance the existing CCR network. The groundwater data will be evaluated for statistically significant levels compared to GWPS. Any new constituents that exceed GWPS will be considered in selection of the final remedy.
- Continue to collect and evaluate groundwater elevation data from the pressure transducers installed in the N&E monitoring wells located along the White River.
- Complete the Nature and Extent Report which will provide a comprehensive summary of data evaluation and the groundwater SCM.
- Collect groundwater samples from background monitoring wells (MW-1A and MW-12A) located upgradient of the landfill to provide a representative data set that can be used in a statistical evaluation.
- Evaluate the groundwater analytical data collected during the November 2023 semi-annual assessment monitoring sampling event that will include the N&E monitoring wells.
- Incorporate the supplemental groundwater data into the groundwater flow and solute transport model and provide additional data to support the groundwater SCM.
- Continue to perform an engineering review of the potential CMA remedial alternatives. For these reviews, emphases will be placed on understanding and reacting to impacts of newly gathered analytical results, identifying and evaluating applicability of emerging technologies and their impacts on the CMA and selection of remedy process.
- Submit the closure certification report for Pond A and A' to IDEM.
- Estimate quantity of Appendix IV material released as required under 40 CFR §257.95(g)(1)(ii) and place in the facility's CCR operating record.
- Provide a semi-annual progress report that summarizes AESI's progress and status regarding a selection of remedy.