

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

March 10, 2022
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 I Restricted Waste Landfill

Indianapolis Power & Light Company d/b/a AES Indiana (AESI) initiated corrective measures for the Ash Pond System and Type I Restricted Waste 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 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 constitutes the fifth semi-annual remedy selection progress report and is comprised of activities during the period of September 14, 2021, through March 10, 2022. A summary of the progress made in selecting a remedy is provided below.

SUMMARY OF ACTIONS COMPLETED

The following actions have been completed during this reporting period:

- Completed the statistical analysis of the May 2021 sampling results for the presence of Appendix IV constituents to be present at concentrations above GWPS.
- Continued Assessment Monitoring: Evaluated the results of the November 2021 sampling event to ensure the reliability of the results. Final laboratory results were placed in the facility’s CCR operating record. The groundwater monitoring data is being evaluated for statistically significant levels compared to GWPS. Any new parameters that exceed GWPS will be considered in selection of the final remedy.
- Efforts to determine the nature and extent (N&E) of the Appendix IV SSLs continued pursuant to § 257.95(g):
 - Groundwater samples were collected from the existing N&E monitoring wells in September and November 2021 to provide supplemental groundwater data to define

the horizontal and vertical extent of Appendix IV constituents along the White River;
and

- Completed hydraulic conductivity testing on the five (5) new nested monitoring wells to provide data to better understand aquifer characteristics and groundwater flow patterns.

The groundwater analytical results will be used to supplement and enhance the evaluation of the extent of groundwater impacts, assessment of corrective measures, and support selection of remedy. Groundwater characterization of the N&E monitoring wells is ongoing as the results of each sampling event are used to inform what additional steps, if any, are necessary to fully delineate nature & extent of Appendix IV constituents.

- Continued implementation of the approved Indiana Department of Environmental Management (IDEM) Ash Pond System Closure Plan / Post Closure Plan:
 - Ongoing dewatering activities of Ponds A and Pond A' as allowed under the facilities NPDES permit; and
 - Completed construction activities for Phase 1 of the final cover system (that includes approximately thirty-one (31) acres of liner installation along the east side of Pond A). The final cover system installation will reduce infiltration of precipitation to groundwater thereby isolating the CCR material.
- Completed laboratory analysis of soil samples obtained from eight (8) stratigraphic borings around the perimeter of Landfill. This data is being used to supplement and enhance the conceptual site model and support the selection of remedy.
- Completed installation of supplemental nested monitoring wells at six (6) locations surrounding the landfill:
 - Collected groundwater samples from thirteen (13) monitoring wells in November/December 2021 and February 2022; and
 - Completed hydraulic conductivity testing on the thirteen (13) new monitoring wells to provide data to better understand aquifer characteristics and groundwater flow patterns.

The groundwater analytical data are being used to better define the potential for historic mining activities (e.g., underground and surface mining and the placement of mine spoils) as well as naturally occurring geologic units immediately surrounding the landfill to impact background conditions for the landfill and Ash Pond System, CMA and selection of remedy support.

PLANNED ACTIVITIES

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

- Complete the statistical analysis of the November 2021 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 May 2022 from the CCR well 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 efforts to establish N&E along the western property boundary which will support CMA and selection of remedy:

- Collect groundwater samples from the nested N&E monitoring wells along the western property boundary/White River to define the vertical and lateral extent Appendix IV constituents; and
 - Evaluate the groundwater analytical data collected during the May 2022 semi-annual assessment monitoring sampling event that will include the N&E monitoring wells.
- Continue the ongoing landfill characterization efforts and collect groundwater samples to better understand groundwater quality within historic subsurface mine works and underlying black shale units.
- As appropriate, refine CSM and associated groundwater flow and solute transport model.
- Continue to perform an engineering review of the five (5) potential CMA alternatives. For these reviews, emphases will be placed on understanding and reacting to impacts of newly gathered analytical results, identifying and researching applicability of emerging technologies and their impacts on the CMA and selection of remedy process.
- Continue permit applicability and risk assessment for CMA options.
- Continue closure activities at Pond A and A' (dewatering activities and Phase 2 and Phase 3 final cover system installation) in accordance with the IDEM-approved and federal CCR Ash Pond System Closure Plan / Post Closure Plan.
- 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.