



Semi-Annual Progress Report Assessment of Corrective Measures and Selection of Final Remedy

Richmond Power and Light
Whitewater Valley Station Surface Impoundment
Whitewater Valley Station
Richmond, Wayne County, Indiana

GAI Project Number: C151119.25, Task 004, Subtask 002
May 2022



Prepared by: GAI Consultants, Inc.
Pittsburgh Office
385 East Waterfront Drive
Homestead, Pennsylvania 15120-5005

Prepared for: Richmond Power and Light
2000 U.S. 27 South
Richmond, Indiana 47374

Semi-Annual Progress Report Assessment of Corrective Measures and Selection of Final Remedy

Richmond Power and Light
Whitewater Valley Station Surface Impoundment
Whitewater Valley Station
Richmond, Wayne County, Indiana

GAI Project Number: C151119.25, Task 004, Subtask 002

May 2022

Prepared for:
Richmond Power and Light
2000 U.S. 27 South
Richmond, Indiana 47374

Prepared by:
GAI Consultants, Inc.
Pittsburgh Office
385 E. Waterfront Drive
Homestead, Pennsylvania 15120-5005

Report Authors:

Kevin M. Bortz, PE
Engineering Manager

A. Edward Sciulli, PG, PMP
Senior Hydrogeology Manager

Table of Contents

1.0 Introduction and Background 1

2.0 Purpose 1

3.0 Summary of Work Completed 1

4.0 Summary of Corrective Measures Assessed 2

5.0 Planned Activities and Anticipated Schedule 2

6.0 References 3

1.0 Introduction and Background

The Whitewater Valley Station (Station) is a coal-fired electric generating station in the city of Richmond, Wayne County, Indiana, and owned by Richmond Power & Light (RP&L). The Station consists of two generating units, which can produce a combined 100 megawatts of electricity.

Coal Combustion Residuals (CCR) generated at the Station were historically sluiced to the Surface Impoundment (Impoundment), which was built in the 1950s. From discussion with Station personnel, sluicing of fly ash and bottom ash to the Impoundment was reduced significantly during the mid-1970s, with rare instances when the Impoundment received sluiced fly ash as a backup option until October 19, 2015. From the mid-1970s to October 19, 2015, the Surface Impoundment received Bottom Ash Hydrobin overflow and drain water on days the Station operated, as reported by Station personnel. Starting in 2012, the Station began operating as a peaking station and typically operates 20 to 30 days per year. The size of the Impoundment is approximately 14 acres. The state identification number for the Impoundment is 89-UP-04.

The Impoundment is inactive and only receives localized site stormwater runoff. A coal pond has been constructed to minimize stormwater runoff to the Impoundment.

A polishing pond known as Pond P1-P3 is adjacent to the Impoundment to the north. The Impoundment discharges to Pond P1-P3 via a series of gravel drains, and some CCR material has been observed in Pond P1-P3. Water drains from Pond P1-P3 through Pond P-4 to the Richmond Sanitary District sewer line on the north side of the property as part of a Non-Categorical Industrial Wastewater Discharge Permit.

The Impoundment is regulated as an existing CCR surface impoundment under the United States Environmental Protection Agency's *Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments* (40 CFR 257 Subpart D) published in the Federal Register on April 17, 2015, with an effective date of October 19, 2015, (CCR Rule) and subsequent revisions. The Impoundment meets the provisions of the CCR Rule's *Extension of Compliance Deadlines for Certain Inactive Surface Impoundments: Response to Partial Vacatur*, effective October 4, 2016.

In February 2020 a notice documenting a statistically significant level of molybdenum had been observed in a groundwater monitoring well was placed within the Station's operating record. As per CCR Rule requirements, GAI Consultants, Inc. (GAI) prepared an Assessment of Corrective Measures (ACM) for the Impoundment (GAI, 2020).

2.0 Purpose

Pursuant to CCR Rule Section 257.97(a), the owner of a CCR impoundment must prepare a semiannual report describing the progress in selecting and designing a remedy based on the ACM. This Progress Report includes:

- ▶ Summary of Corrective Measures Assessed.
- ▶ Summary of Work Completed.
- ▶ Planned Activities and Anticipated Schedule.

3.0 Summary of Corrective Measures Assessed

The ACM report listed corrective measures for potential use at the Impoundment site. These included:

- ▶ Monitored Natural Attenuation.
 - Physical measures (including dilution, dispersion, and flushing).
 - Chemical mechanisms (including adsorption and precipitation).
- ▶ Source Removal with Post-Removal Monitoring.

- ▶ Hydraulic Containment.
- ▶ Physical Containment/Hydraulic Barrier.
- ▶ Permeable Reactive Barrier.
- ▶ In-Situ Stabilization.

4.0 Summary of Work Completed

A groundwater monitoring system was established at the Impoundment site beginning in 2016. In March 2019 a statistically significant increase in fluoride was observed in two downgradient monitoring wells. Subsequent assessment monitoring, beginning in September 2019, revealed a statistically significant level of molybdenum in a downgradient well. As a result of these findings, preparation of an ACM report is required by the CCR Rule. The ACM report was completed in September 2020.

GAI, RP&L, and the Indiana Department of Environmental Management (IDEM) had preliminary discussions regarding the expectations and requirements for selected corrective measures. In addition, GAI prepared opinions of probable costs for feasible corrective measures.

The Initial Semi-Annual Progress Report, ACM was completed April 2021 (GAI, 2021). The second Semi-Annual Progress Report, ACM was completed September 2021 (GAI, 2021). Additional groundwater monitoring occurred in March and September 2021 and March 2022. The latest groundwater sampling results are presented in the *Third Annual Groundwater Monitoring and Corrective Action Report*, dated August 2021. IDEM was notified when the reports were completed and posted to RPL's publicly available website.

A public meeting was held on June 28, 2021, to discuss the ACM report as required by 40 CFR Section 257.96. As required by the CCR Rule, this meeting occurred at least 30 days prior to the selection of a corrective measures remedy.

Site investigations occurred in December 2021. The investigations consisted of drilling borings along the perimeter of the Impoundment and through the interior to determine parameters such as depth and extent of CCR material, depth and extent of clay material, and permeability of material underlying the CCR.

Initial design activities for Impoundment closure have commenced. These include reviewing the results of the site investigations to evaluate the success potential of the various corrective measures.

5.0 Planned Activities and Anticipated Schedule

RPL is planning to meet with the Indiana Department of Environmental Management (IDEM) to discuss the results of the site investigations. This will allow for IDEM input in the evaluation and final selection of a corrective measure. After the meeting with IDEM, RPL intends to select a corrective measure and prepare a final selection report with a schedule for implementing remedial activities in accordance with CCR Rule Section 257.97. As stated in CCR Rule Section 257.98(a), implementation of the corrective action program includes:

- ▶ Establishing a corrective action groundwater monitoring program;
- ▶ Implementing the corrective action remedy; and
- ▶ Taking interim measures to reduce contaminants leaching from the Impoundment and/or potential exposures to human or ecological receptors.

The closure plan, which will include the selected corrective measure, is anticipated to be submitted to IDEM in the fall of 2022. Once the Impoundment closure plan is approved by IDEM, construction documents will be prepared to achieve the closure. Closure construction is expected to be completed within four to six years after construction begins.

6.0 References

GAI Consultants, Inc. 2021. *Initial Semi-Annual Progress Report, Assessment of Corrective Measures*. April 2021.

GAI Consultants, Inc. 2020. *Assessment of Corrective Measures*. September 2020.

GAI Consultants, Inc. 2021. *Semi-Annual Progress Report, Assessment of Corrective Measures*. September 2021.

United States Environmental Protection Agency. 2018. *40 CFR Parts 257 and 261, Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities*. April 17, 2015; revised July 2018.