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December 6, 2025

Delivered Electronically

Mr. John Logue, OEPA Director Ohio
Environmental Protection Agency 50
West Town Street, Suite 700
P.O. Box 1049
Columbus, OH 43216-1049

Dear Mr. Logue:

Re: Ohio Valley Electric Corporation
December 2025 Semi-Annual Selection of Remedy Report
For Kyger Creek Station Boiler Slag Pond

As required by 40 CFR 257.106(h)(9), the Ohio Valley Electric Corporation is providing notification to the Director of the Ohio Environmental Protection Agency that the twelfth Semi-Annual Selection of Remedy report has been completed in compliance with 40 CFR 257.97(a) for Kyger Creek Station's Boiler Slag Pond (BSP). The intent of the report is to provide a six-month update on the progress of selecting a remedy for confirmed Appendix IV SSIs above the groundwater protection standard in the groundwater at the BSP. The report has been placed in the facility's operating record in accordance with 40 CFR 257.105(h)(12), as well as, on the company's publicly accessible internet site in accordance with 40 CFR 257.107(h)(9), which can be viewed at https://www.ovec.com/CCRCompliance.php.

If you have any questions, or require any additional information, please call me at (740) 289-7259 or Gabe Coriell at (740) 289-7267.

Sincerely,

Jeremy Galloway
Environmental Specialist II

JDG:zsh

Semi-Annual Report on the Progress of Remedy Selection

40 CFR 257.97(a)

Boiler Slag Pond

Kyger Creek Station

Cheshire, Ohio

December 2025

Prepared by: Ohio Valley Electric Corporation

3932 U.S. Route 23

Piketon, OH 45661

OVEC/IKEC

Ohio Valley Electric Corporation / Indiana-Kentucky Electric Corporation

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1 INTRODUCTION

In accordance with 40 CFR § 257.97(a), the Ohio Valley Electric Corporation (OVEC) has prepared this Semi-Annual report to document progress toward remedy selection, design and implementation of corrective actions associated with groundwater monitoring exceedances at the Kyger Creek Station's Boiler Slag Pond (BSP). This report summarizes activities during the period of June 1, 2025 through December 1, 2025. Updates to the report will be published semi-annually, until such time a remedy has been selected. Upon selection, a final report will be prepared describing the selected remedy and how it meets the standards specified in the rule.

1.1 REGULATORY BACKGROUND

On December 19, 2014, the United States Environmental Protection Agency (U.S. EPA) issued their final Coal Combustion Residuals (CCR) regulation which regulates CCR as a non-hazardous waste under Subtitle D of Resource Conservation and Recovery Act (RCRA) and became effective six (6) months from the date of its publication (April 17, 2015) in the Federal Register, referred to as the "CCR Rule." The rule applies to new and existing landfills, and surface impoundments used to dispose of or otherwise manage CCR generated by electric utilities and independent power producers. The rule includes requirements for monitoring groundwater and assessing corrective measures if constituents listed in Appendix IV of the rule are detected in groundwater samples collected from downgradient monitoring wells at Statistically Significant Levels (SSL) greater than the established Groundwater Protection Standards (GWPS).

In May 2019, OVEC initiated an Assessment of Corrective Measures (ACM) at the Kyger Creek BSP as a result of a confirmed SSL of Appendix IV constituent Arsenic in monitoring well KC-15-07 during September 2018 Assessment Monitoring Activities, as required by 40 CFR § 257.97(a). In accordance with 40 CFR § 257.96(a), OVEC prepared an ACM report for the Kyger Creek BSP. It was placed in the facility's operating record and uploaded to OVEC's CCR Rule Compliance internet site on September 19, 2019. A revised ACM report, which contains supplemental information was placed on OVEC's CCR Rule Compliance internet site, on November 30, 2020. The ACM Reports provide an assessment of the effectiveness of potential corrective measures in achieving the criteria provided in 40 CFR § 257.96(c). Multiple strategies were evaluated to address groundwater exhibiting concentrations of Arsenic above the GWPS, with two technically feasible options identified. Both feasible options require dewatering of the pond, followed by the execution of an engineered cap and closure of the BSP facility. The options determined to be technically feasible include:

- Monitored Natural Attenuation (MNA); and
- Conventional Vertical Well System (Groundwater Extraction and Treatment) (Ex-Situ).

Following the completion of the ACM Report, OVEC hosted a public meeting to present the options for remediation on November 6, 2019, in Gallipolis, Ohio. OVEC then observed a 30-day public comment period, per 40 CFR § 257.97(a), prior to beginning the process of selecting a remedy. No comments were received during this time period.

During routine monitoring, measured Oxidation Reduction Potential (ORP) values for groundwater at the BSP (where Arsenic exceedances have been observed) are typically less than zero. These negative ORP results are indicative of reducing conditions in groundwater, which can result in the mobilization of Arsenic into solution and greater Arsenic levels in groundwater. Based on these results, In-Situ Chemical Stabilization through the injection of oxygenating compounds may be an additional viable remedial alternative for the BSP. Therefore, OVEC has chosen to further evaluate whether this option is technically feasible to address groundwater at the BSP. Details regarding this evaluation are presented in later sections of this report.

Semi-annual reports are required pursuant to 40 CFR § 257.97(a) to document progress toward remedy selection and design. The CCR Rule provides flexibility for additional field investigation, which is still ongoing, data analysis and consideration prior to the selection of a remedy. OVEC will continue to review new data as it becomes available from active site evaluation and implement changes to the groundwater monitoring and corrective action program as necessary to maintain compliance with the rule.

1.2 Report Contents

This twelfthsemi-annual progress report provides regulatory background, an overview of site characteristics and ACM findings, and summarizes activities supporting the selection and implementation of a remedy during the period June 1, 2025 through December 1, 2025.

2 Site Background

The Kyger Creek Station, located in Cheshire, Ohio, is a 1.1-gigawatt coal-fired generating station operated by OVEC. The Kyger Creek Station has five (5), 217-megawatt generating units and has been in operation since 1955. CCRs were sluiced to surface impoundments located in the plant site since it began operation. The Kyger Creek BSP is located at the south end of the Kyger Creek Station and is approximately 32 acres in size. The BSP was built to serve as a process and management area for coal combustion waste products generated at the station. Overflow from the BSP was carried into a reinforced concrete intake structure at the south end of the Boiler Slag Complex. Water entering the intake structure was discharged into the Clearwater Pond, which serves as a polishing pond. Built in 1980, the Clearwater Pond is approximately

nine (9) acres in size and is located to the southwest end of BSP. The Clearwater Pond is not a CCR unit and monitoring is not required.

2.1 Unit Specific Geology and Hydrogeology

Available data show deposits of silts and clays beneath the base of the BSP range from 15 to over 50 feet thick. The silts and clays transition to a layer of sand and gravel where groundwater is present. Based on previously reported physical properties and yield, the sand and gravel unit was determined to be the uppermost aquifer beneath the BSP and is located more than five (5) feet beneath the bottom of the BSP as required by the CCR Rule. Water level data from the existing wells illustrate groundwater flowing primarily toward the south and southeast.

Regional groundwater flows to the south and southeast towards the Ohio River. Local groundwater flow beneath the BSP generally flows from the northwest to the south and southeast towards the Ohio River. During periods when the water level in the Ohio River rises significantly and flooding occurs, groundwater flow in the uppermost aquifer will temporarily reverse with groundwater flowing toward the north and northwest beneath the BSP. This flow reversal has been observed in multiple groundwater level measurement events. Additional evaluation of the site is needed to gain a better understanding of how this reversal in groundwater flow direction can impact the remedy that is ultimately selected for the BSP.

2.2 Potential Receptor Review

OVEC completed an assessment of the proximity of public and private drinking water supplies to the BSP in response to SSLs above the GWPS. It was determined that the closest withdrawal wells designated by the Ohio Department of Natural Resources (ODNR) as drinking water wells are located greater than one mile from the facility, and are not hydraulically connected to the groundwater at the BSP facility.

3 Groundwater Assessment Monitoring Program

Groundwater assessment monitoring for the Kyger Creek BSP is conducted in accordance with 40 CFR § 257.95.

3.1 Groundwater Monitoring Well Network

In compliance with 40 CFR § 257.91, the CCR groundwater monitoring network for the BSP consists of the following eight (8) wells:

- KC-15-01 (Upgradient);
- KC-15-02 (Upgradient);
- KC-15-03 (Upgradient);

- KC-15-04 (Downgradient);
- KC-15-05a (Downgradient);
- KC-15-06 (Downgradient);
- KC-15-07 (Downgradient); and
- KC-15-08 (Downgradient).

Additionally, three (3) monitoring wells that were installed as part of the additional assessment activities for the BSP were added to the CCR groundwater monitoring network for the BSP as follows:

- KC-19-27 (Downgradient);
- KC-19-28 (Downgradient); and
- KC-19-29 (Downgradient).

3.2 Groundwater Characterization

Groundwater assessment monitoring was first conducted at the Kyger BSP during September 2018 sampling. Arsenic, an Appendix IV constituent, was detected and confirmed to exceed the GWPS of 10 µg/L at well KC-15-07. This well is centrally located within the Kyger BSP groundwater monitoring network, and it was confirmed that exceedances did not occur at adjacent wells. In response, OVEC was required to characterize the extent of the release, pursuant to 40 CFR § 257.95(g)(1), and installed additional monitoring wells at the property boundary (wells KC-19-27, KC-19-28, KC-19-29). It was determined that Arsenic was not leaving the property at levels higher than the GWPS, and therefore the potential remediation zone was confined to the BSP complex. Semi-annual sampling at the BSP sentinel wells has continued, and has further demonstrated the assessment that Arsenic at levels higher than the GWPS are confined to OVEC property.

4 Assessment of Corrective Measures

In accordance with 40 CFR § 257.96(a), OVEC prepared an ACM report for the Kyger Creek BSP and placed it in the facility's operating record. It was uploaded to OVEC's CCR Rule Compliance internet site on September 19, 2019. As noted above, a revised ACM report containing supplemental information was posted to OVEC's CCR Rule Compliance internet site on November 30, 2020. The ACM Report provides an assessment of the effectiveness of potential corrective measures in achieving the criteria provided in 40 CFR § 257.96(c).

4.1 Planned Source Control Measures

Per 40 CFR § 257.96(a), the objectives of the corrective measures evaluated in this ACM Report are "to prevent further releases, to remediate any releases, and to restore

affected area to original conditions." As required in 40 CFR § 257.97(b), corrective measures, at minimum, must:

> *(1) Be protective of human health and the environment;*
>
> *(2) Attain the groundwater protection standard as specified pursuant to § 257.95(h);*
>
> *(3) Control the source(s) of releases so as to reduce or eliminate, to the maximum extent feasible, further releases of constituents in Appendix IV to this part into the environment;*
>
> *(4) Remove from the environment as much of the contaminated material that was Released from the CCR unit as is feasible, taking into account factors such as avoiding in appropriate disturbance of sensitive ecosystems;*
>
> *(5) Comply with standards for management of wastes as specified in § 257.98(d).*

During the ACM development process, several in-situ and ex-situ remedial technologies were evaluated to address Arsenic in groundwater at the BSP, and screened against evaluation criteria requirements in 40 CFR § 257.96(c). The two (2) technologies that appear to be most technically feasible, and therefore most likely for selection as a remedy were:

- Monitored Natural Attenuation; and
- Conventional Vertical Well System (Groundwater Extraction) (Ex-Situ).

As presented in Section 1.1, based on ongoing monitoring results, a third option, In-Situ Chemical Stabilization (Oxygenation) will also be evaluated. OVEC is committed to continued compliance with the requirements and timeframes of the CCR Rule, and will close the Kyger BSP in accordance with 40 CFR § 257. OVEC, with the assistance of its Qualified Professional Engineer, evaluated its site and available resources, and determined that no alternative capacity was available to receive the boiler slag. As a result, OVEC worked with its Qualified Professional Engineers to develop the design for the development of alternative capacity, and constructed a new concrete boiler slag handling system (BSHS). The BSHS is a concrete tank system, which includes a synthetic liner system. In addition, a new lined low-volume wastewater treatment system (LVWTS) was constructed within a portion of the BSP footprint after CCR materials were removed. These modifications enabled the Kyger Creek Station to cease placement of CCR and non-CCR waste streams in the BSP prior to October 17, 2023, and initiate closure.

OVEC secured numerous permits from the Ohio Environmental Protection Agency, as well as the Ohio Department of Natural Resources in support of these activities.

The initial activities described above are anticipated to reduce the potential for releases and migration of CCR constituents. Groundwater assessment monitoring as required by 40 CFR § 257.96(b) will continue until a remedy is selected and implemented. The monitoring will be conducted to track changes in groundwater conditions as a result of these closures and operational changes. These data will also be considered in the selection and design of a remedy in accordance with 40 CFR § 257.97.

Further, as noted above, OVEC has initiated the closure of the BSP. Currently, passive dewatering activities are underway in support of closure. OVEC intends to close the BSP by removal of CCR.

4.2 Potential Remedial Technologies

As a source control measure, the Kyger Creek BSP will be closed in accordance with CFR § 257.102 prior to implementation of further groundwater remediation efforts. In addition to source control measures, two primary strategies were identified to address groundwater exhibiting concentrations of Arsenic above the GWPS, including:

- Monitored Natural Attenuation; and
- Conventional Vertical Well System (Groundwater Extraction) (Ex-Situ).

The ACM report titled “Kyger Creek BSP- Assessment of Corrective Measures Report-Rev 1”, which is available on OVEC’s publicly accessible internet site, provides a more detailed description of these corrective measures. The effectiveness of each potential corrective measure was assessed in accordance with 40 CFR § 257.96 (c), and both options listed above are considered technically feasible, and appropriate for groundwater remediation efforts at the BSP.

As noted in Section 1.1, during ongoing monitoring, ORP values for groundwater at well KC-15-07 at the BSP (where Arsenic exceedances have been observed) are typically less than zero. Negative ORP results are indicative of reducing conditions in groundwater, which can result in the mobilization of Arsenic into solution and greater Arsenic levels in groundwater. Based on these results, OVEC’s hydrogeologist has determined that Arsenic exceedances at well KC-15-07 may be related to a lack of oxygen in the uppermost aquifer, which results in a reducing environment.

Given that the Arsenic levels in groundwater at well KC-15-07 appear to be related to reducing conditions at the site, in-situ stabilization through the injection of oxygenating compounds may be an additional viable remedial option for the BSP. Therefore, OVEC has chosen to further evaluate whether this option, In-Situ Chemical Stabilization (Oxygenation), is technically feasible to address Arsenic in groundwater at the BSP.

5 Selection of Remedy: Current Progress

5.1 Source Control

As noted in the ACM Report, OVEC originally determined that an effective method for source control would be to leave the CCR material in place and install a CCR compliant cap system to prevent future infiltration of stormwater.

A design for the construction of a new lined low volume wastewater treatment system within the BSP was developed, and a Permit-to-Install application was submitted to the Ohio Environmental Protection Agency for their review and approval. Final approval from the agency was granted on October 19, 2021, allowing construction activities to commence on October 27, 2021. Construction activities have concluded, and OVEC initiated closure of the BSP prior to October 17, 2023.

In addition, a design package was developed and submitted to the Ohio Department of Natural Resources, who regulates dams and dikes in the State of Ohio, on October 14, 2021, to request permission to alter the existing BSP dam structure to support initiation of closure activities of the impoundment. Influence on groundwater caused by alterations to the BSP dam structure are unknown at this time. The approved permit application was received from ODNR on March 6, 2023, and an approved permit modification approval received on March 24, 2023. This work was completed in conjunction with the facility's CCR Rule, Part A project work.

5.2 Ongoing Groundwater Monitoring

OVEC's hydrogeologist conducted the semi-annual groundwater sampling and testing during this report period. In addition to sampling the monitoring wells in the CCR groundwater monitoring network, the sentinel wells installed to aid in ACM activities were also sampled. A total of 11 wells (8 Network and 3 Sentinel) were sampled near the BSP and the results will be summarized in the 2025 Groundwater Monitoring and Corrective Actions Report. Preliminary analyses indicate that concentrations of Arsenic at the sentinel wells continue to be well below the unit's GWPS. In addition to the semi-annual monitoring, OVEC's hydrogeologist also collected monthly depth-to-groundwater readings at wells in the area of the BSP in order to better understand the dynamic nature of groundwater flow at the BSP.

5.3 Evaluation of Conventional Vertical Well System (Groundwater Extraction) (Ex-Situ)

To support the design for a potential pump and treat system at the BSP, OVEC's hydrogeologist developed a simple MODFLOW model that approximated the aquifer characteristics in the area; the model mimicked the geometry of the aquifer, including the exposure of the aquifer to the river on its south and southwest edges. The model was used to estimate the number of recovery wells and pumping rates required to

address Arsenic that exceeds the GWPS in groundwater at the BSP. Given an estimated plume width of approximately 237 feet (centered across well CF-15-07), the model estimated that one to two wells with pumping rates of approximately five gallons per minute each would be sufficient for the system.

Further evaluation of this option is currently suspended while OVEC learns how the finalization of USEPA's 2024 ELG Rule revisions will impact such systems.

5.4 Evaluation of In-Situ Chemical Stabilization (Oxygenation)

To evaluate whether in-situ stabilization via oxygenation is a technically feasible option to address Arsenic in groundwater, OVEC opted to conduct a pilot test for the technology at well KC-15-07. To support this approach, OVEC's hydrogeologist oversaw the installation of three (3) deep and three (3) shallow piezometers around well KC-15-07, which were planned to inject oxygen into the uppermost aquifer. The piezometers were installed, developed, and sampled during 2023.

The pilot test was conducted during the third quarter of 2024. Prior to the test, well KC-15-07 and the six (6) piezometers around were sampled for analysis of Alkalinity, Sulfate, and Dissolved and Total Iron, Manganese, and Arsenic. After the sampling, Micro-Diver pressure transducers and dedicated bladder pumps were installed in the piezometers; a modified wellhead adapter was then installed on each. The pilot test included two (2),12-hour sparging rounds, where ambient air was injected into the deep piezometers; pressure and flow readings were collected at regular intervals during each round. Between the sparging rounds, groundwater samples were collected from the piezometers and well KC-15-07 to analyze Alkalinity, Sulfate, and Dissolved and Total Iron, Manganese, and Arsenic. After the second sparging round was complete, three (3) additional rounds of groundwater sampling for these same parameters were collected one (1) week after the second sparging round, one (1) month after the second sparging round, and 2 months after the second sparging round.

Based on the test results, the in-situ stabilization program was successful in increasing oxygen levels in groundwater in the treatment area; Arsenic concentrations decreased accordingly. These results will aid in evaluating the potential to select this technology as a remedy for this unit.

5.5 Planned Work

OVEC's consultant or hydrogeologist will sample and test all of the monitoring wells as part of the semi-annual requirement.

OVEC's hydrogeologist will continue to collect monthly depth-to-groundwater readings at wells in the area of the BSP. This will help to better understand the dynamic nature of groundwater flow at the BSP, and ensure the remedy selected is appropriate.

OVEC's hydrogeologist will continue the development of Time-Series evaluations to determine if the concentrations of Arsenic are increasing, decreasing, or are asymptotic.

OVEC's hydrogeologist will continue to evaluate the effects of flood events on the site.

OVEC's hydrogeologist will review the field and laboratory results from the pilot testing to evaluate the effectiveness of this remedial technology.

OVEC and their CCR hydrogeologist will continue to evaluate the technology options identified in the ACM, and engage the site's Qualified Professional Engineer to ensure the alternatives meet the criteria set forth in 40 CFR 257.97.

OVEC will submit the next progress report in June 2026.

A final report will be prepared after the remedy is selected. This report will describe the proposed solution and how it meets the standards specified in 40 CFR § 257.97(b) and 257.97(c). Recordkeeping requirements specified in 40 CFR § 257.105(h), notification requirements specified in 40 CFR § 257.106(h), and internet requirements specified in 40 CFR § 257.107(h) will be complied with as required by 40 CFR § 257.96(f).