Memo

Date: Tuesday, July 26, 2022

To: Lansing Board of Water & Light

From: HDR Michigan, Inc.

Subject: Erickson Station Semiannual Progress Report for Selection of Remedy per 40 CFR §257.97(a)

Erickson Power Station (Erickson or Site) is an electrical power generation facility located at 3725 South Canal Road in Delta Township, Eaton County, Michigan owned and operated by Lansing Board of Water & Light (BWL). Erickson operates a single coal-fired generator capable of producing 165 megawatts of electricity. Erickson has three CCR impoundments that are subject to the U.S. Environmental Protection Agency's (EPA's) Coal Combustion Residuals (CCR) Rule specified in 40 CFR 257: the Forebay, Retention Basin, and Clear Water Pond (CWP). The CCR impoundments have triggered assessment of corrective measures and therefore are the subject of this update on remedy selection. BWL anticipates plant shut down December 2022 and will cease disposal of waste to the impoundments at that time. BWL submitted a Draft Closure Work Plan in April 2022 to the Michigan Department of Environment, Great Lakes, and Energy (EGLE) for ash removal from the CCR impoundments in 2023. BWL has continued implementation of the federal CCR Rule groundwater monitoring program, as required by §257.90-95.

Assessment of Corrective Measures Update

Following determinations of statically significant levels of lithium over groundwater protection standards (GPS), BWL completed an Assessment of Corrective Measures (ACM) in November 2021. In addition, BWL installed additional wells at the site boundary in 2021 to evaluate the contamination and initiated a groundwater flow and transport model to serve as an addition evaluation tool and to model corrective measure scenarios for the selection of a remedy. In 2022, BWL installed seven new monitoring wells at the site (MW-7B, MW-7C, MW-11, MW-11B, MW-12, MW-12B, and MW-13) in spring 2022. Each of the monitoring wells served a specific purpose to further characterize groundwater flow direction in both the glacial and bedrock aquifer, evaluate potential connectivity between the glacial and bedrock aquifers, evaluate background water quality for both the glacial and bedrock aquifers, and evaluate if background MW-1 was impacted by the CWP. These wells also allowed for the expansion of the hydrogeologic conceptual site model to include the bedrock aquifer, and further delineate the contaminant transport pathways.

In 2022, assessment monitoring sampling event was in February for wells MW-1 through MW-10. After installation of the seven new monitoring wells, samples are being collected on a five-week frequency for eight sample events in order to achieve statistical strength in the sampling data. After background wells have eight sample events completed statistical background values for the site will be updated, this is anticipated in approximately February 2023. In spring 2022, BWL also sampled the surface water in the wetland on the eastern property boundary downgradient of the CCR impoundments. The wetland water quality had concentrations of all COIs lower than the Federal CCR GPS.

The groundwater and contaminant transport modeling objectives are to simulate the rate of movement, the contaminant delineation, and the potential offsite migration of COCs within the local groundwater system. Because new monitoring wells were installed at the site in 2022, this provided new information to update into the groundwater model, including lithology, hydraulic properties from additional slug testing, refinement of the potentiometric surface, and water quality. The model was in a preliminary state in January 2022 and has been updated to include data collected from monitoring wells installed in spring 2022. Once calibration is complete, predictive model runs will simulate movement of constituents of concern and simulate corrective measure alternatives impacts on contaminant transport. Contaminant transport modeling is in development for boron, lithium, and molybdenum.
The following tasks were completed during the first half of 2022 to further the groundwater monitoring program site investigation:

- Seven new monitoring wells were installed in Spring 2022 (MW-7B, MW-7C, MW-11, MW-11B, MW-12, MW-12B, and MW-13).
- Monitoring of well MW-3 has continued in 2022. Water level measurements indicate the well is cross gradient and not upgradient of the Forebay. Water quality data collected shows GPS exceedances of lithium, and molybdenum.
- Water levels were measured during each sample event. Groundwater flow in the glacial aquifer is consistently east-northeast under the impoundments. However, contours are different than glacial aquifer and background water quality is different than the glacial aquifer.
- Groundwater flow in the bedrock aquifer shows an eastern flow direction under the impoundments.
- Wells MW-1 through MW-10 of the certified monitoring system were sampled in February 2022 for assessment monitoring. Four wells (MW-7 through MW-10) completed the eighth round of background monitoring in February 2022. Water quality results were statistically evaluated, and MW-7 was found to have SSLs.
- Background monitoring at the seven new monitoring wells (MW-7B, MW-7C, MW-11, MW-11B, MW-12, MW-12B, and MW-13) commenced in Spring 2022 and will continue on a five-week interval through the end of 2022.
- Surface water at the wetland on the east property boundary downgradient of the CCR impoundments was sampled in March 2022 and found to have concentrations that do not exceed groundwater site specific GPS.

- The Hydrogeologic Monitoring Plan (HMP), the Assessment Monitoring Plan (HDR, 2022a), and the Well Installation Report (HDR, 2022b) were revised to include Spring 2022 monitoring well construction. The HMP will not be submitted to the EPA until the updated background water quality is calculated.
- The groundwater flow and transport model has had a significant update in 2022 with information gathered from drilling new wells. The model is in calibration for the constituents of concern.
- Anticipated closure of the Erickson Power Station is scheduled for the end of 2022. BWL has submitted a Draft CCR Impoundment Closure Plan to EGLE, and CCR impoundment cleanout is scheduled to initiate in January 2023.
- Erickson Station impoundment monitoring status is assessment monitoring and assessment of corrective measures.

Progress Towards Remedy Selection

BWL completed the ACM in November 2021, and it was determined that groundwater flow and transport modeling would be appropriate to aid in the selection of a remedy for the site. BWL is coordinating land agreements on the eastern Erickson property boundary to install and monitor wells outside of the Erickson property to evaluate the potential extent of contamination. Data collected from additional monitoring wells will be used to refine model accuracy and may influence selection of potential remedies. It is anticipated that the remedy selection process for addressing affected groundwater will proceed following the full implementation of the CCR source removal, estimated to begin in January 2023, and evaluation of the impact of the source removal on groundwater quality.

Additionally, BWL will continue implementing CCR groundwater compliance schedule in conformance with §257.90 - §257.98, which includes semiannual assessment monitoring in accordance with §257.95 to monitor groundwater conditions and inform the remedy selection. The final remedy will be formally selected per §257.97 once the selected option is reviewed and commented on by EGLE and a public meeting is conducted at least 30-days prior to the final selection as required under §257.96(e).

The following activities are proposed to be completed or initiated in the next 6-month period:

- continued semiannual groundwater assessment monitoring,
- completion background monitoring of the seven monitoring wells installed in spring 2022 and statistical reevaluation of background threshold values,
- installation of offsite monitoring wells to evaluate the potential extent of contamination,
- calibration of the existing groundwater flow and transport model, and
- continued progress associated with CCR impoundment closure, including planning for the cessation of waste to the impoundments, CCR ash removal design, bid documents, and contractor selection.