

September 5, 2022

## **SEMIANNUAL REMEDY SELECTION PROGRESS REPORT ASH POND NO. 2 HENNEPIN POWER PLANT**

In accordance with Title 40 Code of Federal Regulations (40 C.F.R.) § 257.97(a), the owner or operator of a coal combustion residuals (CCR) unit must prepare a semiannual report describing the progress in selecting and designing a remedy for statistically significant levels (SSLs) of constituents listed in Appendix IV of 40 C.F.R. § 257 over the groundwater protection standards established in accordance with 40 C.F.R. § 257.95(h).

Ash Pond No. 2 (AP2) is located in the State of Illinois and is also subject to the state's CCR program located at Title 35 of the Illinois Administrative Code (35 I.A.C.) Part 845. An application for an operating permit for AP2 required by 35 I.A.C § 845.230 was submitted to the Illinois Environmental Protection Agency (IEPA) by October 31, 2021 and is pending approval. An evaluation of background groundwater quality was completed and presented in the operating permit application. Exceedances of groundwater protection standards established under Part 845 require corrective action through a permitting process administered by IEPA. The operating permit application and related documents can be found on the company's publicly available CCR website: <https://www.luminant.com/ccr/illinois-ccr/>

This report is for activities occurring between March 6, 2022 and September 5, 2022 at AP2 at Hennepin Power Plant.

As stated in the March 5, 2020 Semiannual Remedy Selection Progress report, a Corrective Measures Assessment (CMA) was completed for AP2 on September 5, 2019 to address SSLs for total lithium and total molybdenum (see related notification dated February 6, 2019), as required by 40 C.F.R. § 257.96. The CMA evaluated closure in place with a soil cover system and Monitored Natural Attenuation (MNA) in accordance with the Closure and Post Closure Care Plan submitted to the Illinois Environmental Protection Agency (IEPA) in February 2018 with final revisions submitted in January 2020. IEPA approved the Closure and Post Closure Care Plan on February 26, 2020. Closure construction began in May 2020 and was completed in November 2020.

As stated in the September 5, 2020 Semiannual Remedy Selection Progress Report, existing groundwater and source water data were reviewed, as well as identification and collection of additional groundwater and source water samples to evaluate the feasibility of MNA. These data indicate that site-specific conditions appear favorable for implementation of MNA in combination with the recently completed closure referenced above.

Additional activities were completed during the reporting period. These activities include bench scale testing, including characterization of the materials and batch adsorption tests, to better understand natural attenuation mechanisms, rates, and aquifer capacity. A site-specific attenuation capacity for molybdenum was calculated using the results of the bench scale testing. Testing is ongoing to determine a site-specific attenuation capacity for lithium. Additional analysis of the bench scale testing results is ongoing, including evaluating the reversibility of these constituents' attenuation mechanisms under varying site conditions. This analysis is needed to complete the tiered evaluation referenced in United States Environmental Protection Agency (USEPA) guidance, including development of a geochemical conceptual site model. These activities are necessary to understand the natural attenuation mechanisms occurring at the site and their potential

ability to reduce the aqueous concentrations of total lithium and total molybdenum to below the applicable groundwater protection standards.

As stated in the notification dated August 30, 2022, an SSL for total lithium was identified at AP2 following assessment monitoring completed during the reporting period in accordance with 40 C.F.R. § 257.95. An SSL for total molybdenum was not identified, which is inconsistent with previous reporting periods. Results from future sampling events will be evaluated to determine if continued evaluation of total molybdenum for corrective action is warranted for AP2.

Remedy selection will take into consideration compliance with both 40 C.F.R. § 257 and 35 I.A.C. Part 845, the latter of which cannot be completed until IEPA approves the groundwater monitoring program and issues an operating permit. In accordance with 40 C.F.R. § 257.97, remedy selection is to be completed as soon as feasible following completion of the corrective measures assessment. As required by 35 I.A.C. § 845.670, a corrective action plan that identifies the selected remedy must be submitted to IEPA within one year after completing the assessment of corrective measures. It is anticipated that these activities related to 35 I.A.C. Part 845 compliance will occur in 2023 with submittal of a corrective action plan in 2024 that meets both 40 C.F.R. § 257 and 35 I.A.C. Part 845.