RAMBOLL

ENVIRONMENT
& HEALTH

March 5, 2022

SEMIANNUAL REMEDY SELECTION PROGRESS REPORT
FLY ASH POND SYSTEM
BALDWIN 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).

This report is for activities occurring between September 6, 2021 and March 5, 2022 at the Fly Ash Pond System at the Baldwin Power Plant.

As stated in previous Semiannual Remedy Selection Progress Reports, a Corrective Measures Assessment (CMA) was completed for the Fly Ash Pond System on September 5, 2019 to address an SSL for total lithium (see related notification dated February 6, 2019), as required by 40 C.F.R. § 257.96. The CMA was revised on November 15, 2019 to address typographical errors. Additional revisions were made to the CMA on November 30, 2020 to include additional information related to site geology/hydrogeology and the potential groundwater corrective measures of Monitored Natural Attenuation (MNA), permeable reactive barrier, and in-situ chemical treatment.

The CMA indicated the source control measure consists of closure in place with a final cover system of earthen material in accordance with the Closure and Post Closure Care Plan for the Fly Ash Pond System submitted to the Illinois Environmental Protection Agency (IEPA) in March 2016. IEPA approved the Closure and Post Closure Care Plan on August 16, 2016. Construction of the final cover system was initiated in 2018 and completed in November 2020.

An SSL for total lithium was not identified at the Fly Ash Pond System following assessment monitoring completed during the reporting period in accordance with 40 C.F.R. § 257.95. Further evaluation of MNA is not currently necessary for the Fly Ash Pond System as discussed in the MNA Evaluation Update provided in Attachment A to this progress report. However, review and evaluation of previously collected data in support of groundwater remedy selection will continue despite the absence of a lithium SSL during this reporting period.

ATTACHMENT A
TECHNICAL MEMORANDUM – BALDWIN FLY ASH POND MONITORED NATURAL ATTENUATION (MNA) EVALUATION UPDATE

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TECHNICAL MEMORANDUM

Date:	March 3, 2022
To:	Brian Voelker - Vistra
Copies to:	Stu Cravens and Phil Morris - Vistra
From:	Allison Kreinberg - Geosyntec Consultants
Subject:	Baldwin Fly Ash Pond Monitored Natural Attenuation (MNA) Evaluation Update

This memorandum, prepared by Geosyntec Consultants, Inc. (Geosyntec), summarizes the status of the initial evaluation of monitored natural attenuation (MNA), in combination with coal combustion residual (CCR) unit source control measures, as a potential groundwater remedy for statistically significant levels (SSLs) of total lithium above the groundwater protection standard (GWPS) at the Baldwin Fly Ash Pond System (Site).

SSLs for total lithium were not identified at the Fly Ash Pond System following assessment monitoring completed during the most recent reporting period in accordance with 40 Code of Federal Regulations (C.F.R.) § 257.95. SSLs for total lithium were not determined in the last two consecutive semi-annual monitoring events which were completed in March 2021, with resample in June 2021, and in September 2021. Therefore, the MNA evaluation for the Site is no longer required at this time.

GROUNDWATER EVALUATION

An assessment monitoring program was established for the Fly Ash Pond System on April 9, 2018. The detection of total lithium SSLs during completion of assessment monitoring in 2019 resulted in the preparation of a Corrective Measures Assessment (CMA)[1], as required by 40 C.F.R. § 257.96. MNA in conjunction with the current source control was identified as a potential groundwater remedy in the CMA. The CMA indicated that the source control measures for the Fly Ash Pond System consisted of closure in place with a final cover system of earthen material, in accordance with the Closure and Post Closure Care Plan submitted to the Illinois Environmental Protection Agency (IEPA) in March 2016. IEPA approved the Closure and Post Closure Care Plan on August 16, 2016. Construction of the final cover system was initiated in 2018 and completed in November 2020.

[1] Ramboll, 2020. *Corrective Measures Assessment, Revision 2. Baldwin Fly Ash Pond System. Baldwin Energy Complex*. November

The assessment monitoring program was continued in accordance with 40 C.F.R. § 257.95 while the CMA evaluation was conducted. An SSL for total lithium was not identified in the most recent reporting period. Due to the decrease in total lithium concentrations, resulting in the removal of the previously observed SSLs, further evaluation of the MNA groundwater remedy is not currently necessary.

MNA EVALUATIONS COMPLETED

A tiered evaluation was initiated in 2020 to evaluate the feasibility of MNA, in combination with source control measures, as a potential groundwater remedy for the observed lithium SSLs. Additional field efforts were completed in 2020 and 2021 to support the MNA evaluation. Three staff gauges (SG-1, SG-2, and SG-3) were installed in September 2020 and one piezometer (TPZ-169) was installed in February 2021 to further understand groundwater flow in the southwest corner of the Site. Groundwater elevations at these locations, in addition to eleven groundwater monitoring wells, were gauged monthly between September 2020 and September 2021. While additional efforts were planned to support the MNA evaluation, subsequent efforts were ceased as the lithium SSLs were no longer identified at the Site.

CONCLUSION

The initial constituent of concern, total lithium, has reduced below the GWPS and no SSLs have been identified in the last two consecutive semiannual groundwater monitoring events during the most recent reporting period. Therefore, further evaluation of MNA or other remedy options are not currently necessary for the Fly Ash Pond System. Lithium concentrations in groundwater will continue to be monitored in accordance with the CCR rule to confirm that lithium concentrations remain below the GWPS. The CMA will be revisited and MNA may be evaluated to address lithium SSLs or SSLs for other constituents if they are identified in the future.