

Hydrogeology Report must be amended as follows for the Agency to continue its review:

- 1.7.14** The permit application states that if any inadvertent leakage occurs that it will be minimal and would flow into the Sugar Creek. The permit application must provide data that substantiates this statement in a form that acknowledges and evaluates all possible human or ecological receptors and evaluates whether the constituents from the CCR are able to reach those receptors above accepted criteria based on known contaminant transport data available at the site.

Response

It appears the reference of inadvertent leakage was contained in Attachment 2 – CWLP 35 IAC 620 Ash Pond Assessment which is not part of the Hydrogeological Site Assessment and discusses inadvertent subsurface ash impoundment leakage of the ponds to groundwater. This report was written in 2010 at the request of Illinois EPA Bureau of Water Pollution Control to gauge compliance with 35 Ill. Adm. Code 620 groundwater quality standards. Subsequent investigations and reports detailed below provide assessments of impacts to human health and the environment.

Attachment 12 of the February 1, 2022 Closure Construction Permit Application characterizes impacts from the seepage of leachate to downgradient receptors. As characterized in Attachment 12, there are no receptors within the Sugar Creek basin within 3,400 feet of the CCR surface impoundments. Closure in place with a final cover system does not pose a risk to human health or the environment. The groundwater contaminant transport model demonstrates that concentrations detected above groundwater protection standards (GWPSs) will be limited in extent.

Such evaluation can be complex; however, this specific issue was addressed in the December 2014 USEPA document titled. Human and Ecological Risk Assessment of Coal Combustion Residuals¹. This document identified potential risks to human and ecological receptors from leaching of chemical constituents from CCR waste into surrounding environmental media. Risks to human health resulted from ingestion of ground water and fish, while risks to ecological receptors resulted from exposure to surface water. However, considerable dilution and attenuation would occur before constituent concentrations reach downgradient private wells and surface water bodies. As stated above, there are no receptors in the vicinity of the impoundments.

- 1.7.15** The permit application states that the Lakeside Ash Pond base is at 535-feet asml and the Dallman Ash Pond base is at 533-feet asml. The FEMA flood insurance map indicates that flood zone AE encompasses the entirety of the Lakeside Ash Pond and the Dallman Ash Pond and is at an elevation of 546-feet asml and 545-feet asml, respectively. The permit application must provide the following:

- o Boring logs or survey reports that verify the total depths of the ponds,
- o Regular, temporal, or seasonal changes to the groundwater levels in relation to surface water levels in Lake Springfield,
- o Events that would cause the flood plain to be inundated with flood waters, and
- o Yearly minimums and maximums for groundwater elevations at the Lakeside Ash Pond and the Dallman Ash Pond.

¹ U.S. EPA. 2014. “Final Human and Ecological Risk Assessment of Coal Combustion Residuals.” RIN: 2050-AE81. Prepared by the EPA Office of Solid Waste and Emergency Response. Washington, DC. December.

Log No. 2021-100001
Operating and Construction Permit Applications
CWLP Lakeside and Dallman Ash Ponds

Response

As stated in the response to Comment 1.1.2, the FEMA flood insurance map is highly inaccurate. Any conclusions drawn based on the FEMA flood insurance map are suspect.

As part of the recent geotechnical investigations, CWLP advanced four borings in Lakeside Ash Pond and four borings in Dallman Ash Pond to confirm the bottom elevations of each impoundment. Borings L1, L3, L4 and L5 were advanced in Lakeside Ash pond where silty/clay materials were encountered at 534.5 feet msl, 530.5 feet msl, 553.0 feet msl and 530.0 feet msl, respectively. Borings D1, D2, D3 and D4 were advanced in Dallman Ash Pond where silty/clay materials were encountered at 526.0 feet msl, 523.0 feet msl, 526.2 feet msl and 529.5 feet msl respectively. A map depicting these locations and boring logs for these borings are provided in Appendix C of Attachment A.

Although monthly monitoring of groundwater elevations has been conducted since April 2021 per 35 Ill. Adm. Code 845.650(b)(2) and (3), the simultaneous recording of Sugar Creek did not begin until January 2023. Lake Springfield and Clarification Pond elevations were not collected until May 2023. Other historical elevations are available in the Annual Consolidated Reports for 2021 and 2022. Data for 2023 is provided below. It must be noted that the water levels within the impoundments may be below ground surface elevations of areas within the impoundments; i.e. the water levels are below grade. The Lakeside Ash Pond has been dry since October 2023. Available data for groundwater and surface water elevations for 2023 are as follows:

Log No. 2021-100001
Operating and Construction Permit Applications
CWLP Lakeside and Dallman Ash Ponds

| Unit | 27-Jan-23 | 16-Feb-23 | 29-Mar-23 | 12-Apr-23 | 30-May-23 | 15-Jun-23 | 6-Jul-23 | 31-Aug-23 | 16-Sep-23 | 26-Oct-23 | 27-Nov-23 | 27-Dec-23 |
|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|----------|-----------|-----------|-----------|-----------|-----------|
| Lakeside Ash Pond | 562.04 | 562 | 562.14 | 562.52 | 562.1 | 561.98 | 561.96 | 562.03 | 560.77 | NM | NM | NM |
| Dallman Ash Pond | 550.65 | 550.52 | 550.6 | 550.3 | 550.14 | 549.49 | 550.6 | 549.82 | 550.94 | 550.3 | 550.09 | 550.6 |
| Sugar Creek | NM | NM | NM | NM | 521.25 | 520.31 | 521.88 | 520.2 | 520.21 | 520.33 | 520.31 | 520.33 |
| Lake Springfield | NM | NM | NM | NM | 560.28 | 560.08 | 560.33 | 559.93 | 558.97 | 558.58 | 558.43 | 558.92 |
| Clarification Pond | NM | NM | NM | NM | 548.66 | 547.97 | 548.46 | 548.74 | 549.33 | 548.51 | 547.08 | 547.93 |
| RW3 | 528.52 | 529.21 | 529.86 | 529.68 | 529.24 | 528.22 | 527.43 | 527.35 | 526.66 | 526.63 | 526.8 | 527.46 |
| AP-1 | 525.48 | 526.15 | 526.63 | 525.45 | 525.28 | 524.31 | 525.18 | 524.24 | 523.88 | 523.95 | 524.16 | 524.64 |
| AP-2 | 529.2 | 528.85 | 529.51 | 528.86 | 527.99 | 527.32 | 527.53 | 527.77 | 527.08 | 527.4 | 527.64 | 528.71 |
| AP-3 | 525.93 | 526.31 | 526.52 | 525.77 | 525.74 | 525.33 | 524.69 | 524.41 | 525.24 | 525.31 | 525.31 | 525.81 |
| AP-4 | 549.23 | 550.01 | 549.88 | 546.14 | 547.03 | 546.83 | 546.71 | 546.17 | 545.25 | 544.87 | 544.95 | 545.18 |
| AP-5 | 569.03 | 568.43 | 570.86 | 570.85 | 570.33 | 569 | 569.82 | 568.88 | 566.63 | 565.73 | 565.16 | 566.1 |
| AP-6 | 529.87 | 530 | 530.71 | 529.03 | 528.71 | 527.58 | 526.98 | 526.95 | 526.24 | 526.4 | 526.32 | 526.93 |
| AP-7 | NM | 525.54 | 528.75 | 527.43 | 527.71 | 527.71 | 526.57 | 526.15 | 525.75 | 525.44 | 525.33 | 525.56 |
| AP-8 | 532 | 532 | 533.21 | 535.95 | 535.38 | 533.99 | 533.56 | 533.4 | 532.42 | 532.23 | 532.77 | 533.72 |
| AP-9 | NM | 529.27 | 529.34 | 525.07 | 524.94 | 523.74 | 524.72 | 523.61 | 523.19 | 523.33 | 523.65 | 524.48 |
| AP-10 | NM | 534.82 | 535.01 | 534.45 | 533.74 | 532.44 | 532.54 | 532.29 | 531.29 | 530.93 | 531.67 | 532.67 |
| AP-11 | NM | 524.49 | 525.4 | 523.9 | 524.29 | 522.77 | 523.39 | 522.69 | 522.27 | 522.14 | 522.82 | 522.98 |
| AP-12 | NM | 524.49 | 526.14 | 525.64 | 525.68 | 523.58 | 523.97 | 522.66 | 522.42 | 522.16 | 522.72 | 523.03 |
| AP-13 | NM | 523.3 | 529.36 | 528.09 | 527.28 | 524.67 | 524.43 | 523.52 | 522.53 | 522.12 | 522.68 | 523.02 |
| AP-14 | NM | 538.58 | 538.23 | 537.2 | 537.66 | 537.23 | 538.12 | 537.57 | 536.41 | 535.88 | 536.52 | 537.56 |

The surface water level information along with the potentiometric surface data will be submitted to the Illinois EPA in the annual reports.

- 1.7.16** The hydrogeologic site characterization must address compliance with Sections 845.620(b)(2), 845.620(b)(6), 845.620(b)(11), 845.620(b)(13), 845.620(b)(15), and 845.620(b)(18) to demonstrate that floodplain inundation will not result in a release of CCR to Sugar Creek or other surface water bodies, public lands, or private lands.

Response

CWLP believes it has generally complied with the cited provisions. Based on the wording, it appears Illinois EPA means inundation of the floodplain as a result of surface water overbank flooding of Sugar Creek or other adjacent surface water bodies and the resultant impact of such flooding on the existing in-place CCR and the potential for redistribution of the CCR within the floodplain. The comment implies that floodplain inundation will occur.

As stated above, the FEMA Flood Insurance map is in error. While FEMA map shows there is

Log No. 2021-100001
Operating and Construction Permit Applications
CWLP Lakeside and Dallman Ash Ponds

inundation during the 100-year storm event, the topographic information used in derivation of the flood elevations was highly inaccurate. There is no surface water inundation. In addition, CWLP updated its inflow design report in the 2023 Annual Consolidated Report to demonstrate that the ash ponds are designed and operated to contain a 1,000 year storm (previous demonstrations studied a 100 year storm). Attachment 5 of the 2023 Annual Consolidated Report also provides the Engineer Certification for the updated Inflow Design Flood Control System Plan.

Season fluctuations of the potentiometric surfaces as well as surface water body elevations were addressed in response to Comment 1.7.15 above. The hydrogeologic setting and potential migration pathways were discussed in detail in the Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures provided in Appendix C to Attachment A of this document.

- 1.7.17** The climate aspects of the site including precipitation data, seasonal groundwater increases and decreases, and hydrologic effects of the Lake Springfield dam must be provided.

Response

CWLP is unsure of the regulatory citation for this information and requests additional clarification.

As documented in the 2024 Inflow Design Flood Control System Plan included as part of the Annual Consolidated Report, the impoundments are built in a manner in which there is no surficial flow of storm water into the impoundments during precipitation events. Therefore, only precipitation falling directly on the impoundments would be the precipitation entering the impoundments. The facility receives approximately 40 inches of precipitation annually according to the National Weather Service web site <https://www.weather.gov/ilx/spi2023>.

Seasonal groundwater increases and decreases are provided above and on the potentiometric surface maps prepared for the Annual Consolidated Reports on our public web page at www.cwlp.com/IllinoisCCRCCompliance.aspx. The CCR surface impoundments are separated from the hydraulic effects due to varying surface water elevations of Lake Springfield and by the presence of the Spaulding Dam.

- 1.7.18** Any potential migration pathways near both impoundments that have the potential for the CCR constituents listed in Section 845.600(a)(1) to leave the property or waste boundary.

Response

This is a reiteration of the requirement of 35 IAC 845.620(b)(11) - Identification of potential migration pathways. The pathways for migration have been identified as the basal sand/bedrock interface and where encountered the shallow intermittent silty/sandy intervals which is adequately monitored by the existing groundwater monitoring well network.

A significant amount of additional data were obtained as part of the geotechnical investigation and well installations that occurred within the impoundments and along the periphery of the impoundments. The hydrogeologic report contained within the original application has been updated to include the new information (Hydrogeologic Report, Groundwater Monitoring Program and Statistical Procedures) and is provided in Appendix C of Attachment A to this