Memo

Date:	Thursday, August 18, 2022
To:	Lori Myott, Lansing Board of Water & Light
From:	Lara Zawaideh, HDR Michigan, Inc.
Subject:	Erickson Power Station CCR Unit Determination of SSLs per §257.95(g)

1.0 Introduction

The U.S. Environmental Protection Agency's (EPA's) final Coal Combustion Residuals (CCR) Rule establishes a comprehensive set of requirements for the management and disposal of CCR (or coal ash) in landfills and surface impoundments by electric utilities. Erickson Power Station, owned by Lansing Board of Water & Light (BWL) and located in Delta Township, Michigan has one CCR unit subject to the CCR Rule composed of three surface impoundments: the Forebay, Retention Basin, and Clear Water Pond. The CCR unit operation and groundwater monitoring are described further in the Erickson Station Groundwater Monitoring System Certification (HDR 2020).

The objective of this memorandum is to document the identification of statistically significant increases (SSIs) over background water quality at the CCR units at the Erickson Power Station. As stated in the memo *Erickson Power Station CCR Unit Groundwater Protection Standards and Determination of SSLs per §257.95(g)*, posted November 23, 2020, GPS values were calculated upon completion of eight rounds of background sampling, initial detection monitoring, as well as subsequent assessment monitoring. The monitoring well network has expended into 2022, wells installed since the establishment of the GPS values (November 2020) are subject to eight rounds of background monitoring. Groundwater monitoring has been conducted to collect eight rounds of background sampling was completed in February 2022 for monitoring wells MW-7, MW-8, MW-9, and MW-10, installed in June 2021, as specified under CCR Rule Part §257.94.

2.0 Identification of Statistically Significant Levels

In accordance with CCR Rule §257.95(e), downgradient well concentrations from the February 2022 assessment monitoring sample event were compared against background values, and some concentrations were found to be above background values. In accordance with CCR Rule §257.95(f), detected Appendix IV COI concentrations in downgradient wells were compared against GPS and were found to exceed GPS. Therefore, following CCR Rule §257.95(g), downgradient well concentrations were statistically evaluated to determine "if one or more constituents in Appendix IV to this part are detected at statistically significant levels above the groundwater protection standard."

To determine if an exceedance of a GPS was statistically significant, the 95% lower confidence limit (95LCL) was calculated for each of the downgradient wells that have at least eight sample events (MW-2, MW-5, MW-6, MW-7, MW-8, MW-9, and MW-10) for each of the detected Appendix IV COIs. The data set used to calculate the lower confidence limit (LCL) included all Appendix IV results from samples collected at these wells since the establishment of the groundwater monitoring system. The LCL results that exceeded their respective GPS for the first time are provided in Table 1. Wells MW-2, MW-5, and MW-6 had previously been determined to have SSLs of lithium over GPS. Monitoring wells MW-7, MW-8, MW-9, and MW-10 were installed in June 2021 and sampled on a five-week frequency. The February 2022 sample event was the 8th sample event for these wells therefore the first sample event where statistical comparison to GPS could be completed. Downgradient well MW-7 was determined to have LCLs for lithium and molybdenum that exceed the GPS.

Table 1. New SSLs for Appendix IV Groundwater Quality Constituents following the February 2022 Assessment Monitoring Event

Appendix IV Constituent	Lithium	Molybdenum
Units	mg/l	mg/l
GPS	0.040	0.100
MW-7	0.0928[1]	0.267[1]

[1]95% Adjusted Gamma LCL