

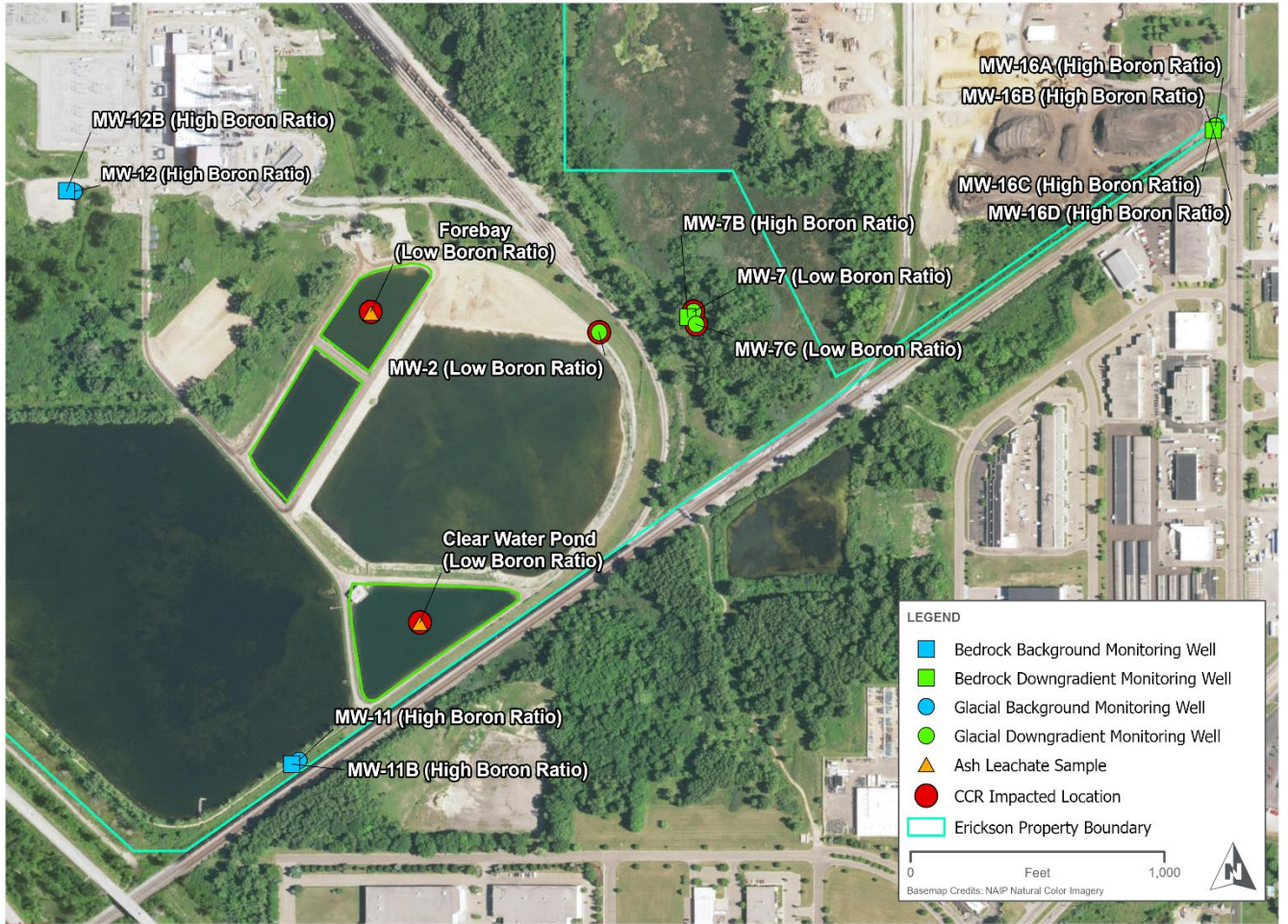
Isotope Study

BWL performed sampling in March 2023 to investigate if isotopic data could differentiate boron originating from the Erickson ash impoundments compared to naturally occurring boron in the bedrock aquifer. This study focused on boron's two isotopes $\delta_{11}\text{B}$ (Boron 11), $\delta_{10}\text{B}$ (Boron 10) at the Erickson site and analyzed concentrations relative to each other (ratio) at each sample location.

BWL collected water samples on site at background wells (upstream of the impoundments), downstream wells that are known to be impacted by ash (i.e., previous sampling shows constituents above site specific standards), downstream wells that are not impacted by ash (no constituents above standards), and directly from the impoundments (ash leachate).

The analysis indicated the higher ratio concentrations of Boron 11 to Boron 10 aligned with background and unimpacted well locations and lower ratio concentrations of Boron 11 aligned with ash-impacted locations. This is consistent with another study on boron isotope characteristics that show ash leachate has a lower Boron 11 to Boron 10 ratio. In other words, it appears boron that is naturally occurring can be distinguished from boron that originates from coal ash at the Erickson site and further supports that boron in the bedrock aquifer is likely naturally occurring. For more information please see *2023 Semiannual Groundwater Monitoring Report* at lbwl.com/ccr, "EGLE Annual and Semiannual Groundwater Monitoring Reports."

Sample Location	Impacted or Unimpacted by coal ash	High/Low Ratio $\delta_{11}\text{B}/\delta_{10}\text{B}$
Ash Leachate from Forebay	Impacted	Low
Ash Leachate from Clearwater Pond	Impacted	Low
Upper aquifer monitoring well MW-2	Impacted	Low
Upper aquifer monitoring well MW-7	Impacted	Low
Upper aquifer monitoring well MW-7C	Impacted	Low
Upper aquifer monitoring well MW-7B	Not Impacted	High
Upper aquifer background well MW-11	Not impacted	High
Bedrock background well MW-11B	Not impacted	High
Upper aquifer background wells MW-12	Not impacted	High
Bedrock background well MW-12B	Not impacted	High
Upper Aquifer monitoring well MW-16A	Not impacted	High
Upper Aquifer monitoring well MW-16B	Not impacted	High
Bedrock monitoring well MW-16C	Not Impacted	High
Bedrock monitoring well MW-16D	Not Impacted	High



ERICKSON POWER STATION
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