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Mahaska County Sanitary Landfill, Binns & Stevens MSWLF Unit - 62-SDP-01-74P - Response to DNR Comment Letter Regarding the 2025 Annual Water Quality Report

1 message

Ohrt, Nathan <NOhrt@scsengineers.com>

Tue, Mar 24, 2026 at 12:50 PM

To: "Smith, Mike" <mike.smith@dnr.iowa.gov>

Cc: Joe Farris <jfarris@mahaskacountysolidwaste.org>, Becky Jolly <becky.jolly@dnr.iowa.gov>

Good afternoon Mike-

In a comment letter dated March 23, 2026 (Doc #116556) regarding the 2025 Annual Water Quality Report for the Binns & Stevens MSWLF unit at the Mahaska County Sanitary Landfill (Doc #115980), the Iowa Department of Natural Resources stated the following:

Since the levels of cadmium at monitoring well MW-24 exceed both interwell and intrawell prediction limits, please initiate

assessment monitoring in accordance with 567 Iowa Administrative Code 113.10(6)"a". Please provide a schedule for initiation

of assessment monitoring.

The Binns & Stevens MSWLF unit was constructed in/near a historical surface coal mine and has been documented as influenced by acid mine drainage. An Alternative Source Demonstration, dated April 29, 2016 (Doc #86132) and approved on April 4, 2018 (Doc #92007), demonstrated that acid mine drainage was the primary source of elevated inorganic parameter concentrations measured at the Binns & Stevens MSWLF unit. The Alternative Source Demonstration stated the following:

Acid mine drainage results in low pH water with some or all of the following characteristics: increased total dissolved solids (TDS),

increased sulfate, increased calcium and magnesium, increased dissolved iron, aluminum, and manganese concentrations, and

little calcareous materials (EPA, 1994).

The monitoring wells at the Binns & Stevens MSWLF unit are sampled semi-annually for Appendix I, total suspended solids (TSS), alkalinity, aluminum, iron, and sulfate. A Mann-Kendall trend evaluation at 80% confidence ($\alpha=0.2$) was prepared and presented in Appendix G of the 2025 Annual Water Quality Report for the Binns & Stevens MSWLF unit. A positive Mann-Kendall statistic indicates an increasing trend, a negative Mann-Kendall statistic indicates a decreasing trend, and a trend can be calculated as statistically significant, either increasing or decreasing, by the trend evaluation. In monitoring well DW-24, iron and aluminum showed statistically significant increasing trends, and sulfate showed an increasing trend, although not statistically significant. pH did not have a trend indicated (Mann-

Kendall statistic of 0) – pH values in monitoring well DW-24 have ranged from 2.87 to 3.52 standard units in the 2021 through 2025 time period; these pH values are the lowest measured in the monitoring network. Alkalinity has not been detected in monitoring well DW-24 in the period of record dating to 2021, indicating little calcareous materials.

The EPA identified increasing concentrations of iron, aluminum, and sulfate, low pH, and the lack of calcareous materials as indicators of acid mine drainage, and that acid mine drainage near monitoring well DW-24 is leading to deteriorating groundwater conditions and may be contributing to the elevated cadmium concentrations. It is recommended that the acid mine drainage be identified as an alternative source, the indicated SSI for cadmium not be confirmed, and that monitoring well DW-24 continue in the detection monitoring program.

The March 23, 2026 comment letter also stated the following:

Please explain why leachate cleaning was not performed in 2025.

Leachate line cleaning was mistakenly not performed in 2025. It is scheduled to occur in April-May 2026.

If you have any questions regarding this response, please contact me at the number below. Thank you.

Nathan Ohrt

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