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CITY OF MUSCATINE PRESS RELEASE

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COUNCIL HEARS GOOD NEWS ON LANDFILL GROUNDWATER IMPACT

Groundwater sampling reveals less contamination at Muscatine County Landfill

MUSCATINE, Iowa – Groundwater contamination is steady to declining in all areas of concern at the Muscatine County Landfill according to a report presented to the Muscatine City Council at its July 11 In-Depth session.

The 15-year effort by the Iowa Department of Natural Resources (DNR), the Muscatine County Solid Waste Management Agency, and the City of Muscatine to correct problems at the Muscatine County Landfill, specifically in the closed sections of the landfill, has taken significant positive steps in the last four years.

“The hiring of Barker Lemar, and especially Tim Buelow, to assist with the assessment of the Muscatine County Landfill has been very beneficial to the City, both environmentally and financially,” Gregg Mandsager, Muscatine City Administrator, said. “Tim is very knowledgeable, and a great resource as we work to meet the requirements of the Consent Order.”

Tim Buelow, P.E., of Barker Lemar Engineering Consultants, reported to the Council that three areas of groundwater impact were identified and sampling indicates that contaminate levels are steady to declining.

The contamination comes from the older section of the landfill, specifically Ravines 2-7, and not from any of the newer cells that have been developed. The primary source of the groundwater impact is from leachate (a liquid that is created when infiltrating water comes into contact with solid waste).

“It is very likely that the problems flow from the unlined areas that were developed years ago,” Buelow said. “Those areas are now closed but we are still dealing with the consequences of how waste was managed in the past.”

The DNR rewrote the groundwater protection rules in 2007 that expanded the parameters for groundwater sampling. Additional sampling that began in 2008 revealed more groundwater impact was present than previous sampling had indicated.

The DNR and the Muscatine County Solid Waste Management Agency entered into an Administrative Consent Order agreement on February 11, 2015, that established a timeline for addressing and correcting the issues at the landfill. That agreement was amended in April 2017 to establish a new timeline for completing plume delineation by Sept. 30, 2019, and completing the Assessment of Corrective Measures (ACM) report by Dec. 31, 2019.

The reason for the change in the timeline for completion of the ACM included updating background groundwater concentrations that resulted from an improved and more representative sampling technique implemented at the landfill – a DNR requirement.

“The DNR was concerned that previous sampling had sediment in the groundwater samples that could cause the appearance of increased concentrations of metals in groundwater,” Buelow said. “Changing to low flow sampling to get the sediment out of the water gave us a better indication of what those levels actually were. We found that concentrations were lower when the sediment was removed.”

Fourteen groundwater monitoring wells were installed from 2017 through early 2019 for plume bracketing or to acquire additional background data that would alleviate concerns with the representativeness of past data.

Three areas of groundwater impact were identified at the landfill including the East side, South side, and Southwest side. Results from the sampling indicated that the groundwater impact appears to be due from leachate migration on the East side, gas migration on the south side, and from historical overflows of the leachate storage tank located on the southwest side. Each area, however, has seen declining or steady concentration levels.

Buelow noted that the requirements of the Consent Order are almost exclusively associated with compliance to the regulations pertaining to groundwater. The culmination of those requirements and the Consent Order is the selection of a groundwater remedy.

One of those remedies may be natural attenuation at the South and Southwest locations. Natural attenuation relies on natural processes to clean up or attenuate pollution in soil and groundwater. Improving the final cover grading over Ravine 5 along with natural attenuation is a likely remedy for the East side.

The Muscatine City Council approved the contract with Barker Lemar Engineering Consultants to develop the ACM at the Council's July 18 meeting.

Once the ACM has been prepared and receives the approval of the DNR, a public meeting will be held followed by the selection of a remedy. The public meeting and selection will occur in 2020 or later depending on review and approval schedules.