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Staff Report PW2023-016

Title of Report: **PW2023-016 Dundalk Transfer Station and Closed Landfill Site Biennial Operations and Monitoring Report 2021/2022**
Department: **Public Works**
Branch: **Waste Resources and Diversion Management**
Council Date: **April 5, 2023**

Recommendation:
Be it resolved that Council receive Staff Report PW2023-016 for information.

Background:
The Biennial Operations and Monitoring Report (2021/2022) Dundalk Transfer Station and Closed Landfill Site have been compiled by GM BluePlan Engineering as per Environmental Compliance Approval (ECA) Number A262302. The report has also been submitted to Mr. Scott Gass, the District Manager at the Ministry of Environment, Conservation and Parks (MECP), Owen Sound District Office.

Staff Comments:
Dundalk Transfer Station and Landfill Reports:
The Biennial Operations and Monitoring Report (2021/2022) Dundalk Transfer Station and Closed Landfill Site Report, Sections 11 and 12, Conclusions and Recommendations respectively, (Attachment #1).

Conclusions:

- The groundwater flow within the shallow overburden is generally to the southwest with a radial flow pattern inferred to exist in the vicinity of the fill area. The groundwater table intersects ground surface to the south and west of the landfill within the wetland area downgradient of the landfill draining generally to the south across the southwestern portion of the site.

- A portion of the groundwater recharge from the landfill footprint may migrate down into the hardpan, but with the overburden thickness greater than 24 meters, it is reasonable to expect that there would be limited impacts to the deeper groundwater system, which is supported with the data collected from monitoring well DL3D.

- Leachate production via groundwater migration through the base of the landfill pile is likely occurring, indicating that the landfill may not be passed its peak contaminating period.

- Elevated concentrations of sodium and chloride in the shallow groundwater

in the southeast of the fill area and impacts noted at the surface water monitoring location of SW4 suggesting road salt application impacts.

•Monitoring well MW2 located directly downgradient of the fill area, is approximately 10 metres from the compliance limit. Elevated leachate indicator parameters at this monitoring location have several Reasonable Use Criteria (RUC) exceedances noted. The localized shallow groundwater migration to the west will be limited within the wetland groundwater flow system.

- Methane gas has been historically measured at DL5R-04, within the landfill mound which is considered to be limited to the bottom of the refuse pile to the water table bordered by wetlands and saturated soil conditions and the risk for off-site methane gas migration is low. Methane gas measurements from the 6 gas probes installed in June 2014 indicate the risk for off-site methane gas migration is considered to be low and confirms the methane gas migration off-site to the northeast is not occurring.

- Transfer station buildings are adequately ventilated, and Township staff use a handheld gas detector to measure readings prior to entering buildings at the site.

Recommendations:

- Schedule C as amended in June 2018 of the ECA for water quality monitoring parameters should continue annually from the 3 surface water sampling locations SW2, SW3 and SW4 and 9 groundwater monitoring parameters at locations for well nest DL3S/ID and wells DL2, DL4, DL5R-04, MW-1, MW-2, and MW -3. Once every 4 years groundwater samples from background well nest DL1S/D and sampling from the background wells will be required in 2025.

- Visual inspections of the site and water quality and gas monitoring programs be continued onsite.

- Water levels in the gas probes to be measured after the landfill gas measurements are completed.

- The landfill gas monitoring program continue to include DL5R-04 and gas probes GP1 through GP6.

Financial Implications:
The operating budget includes sampling and monitoring for landfill sites.

Communications & Community Action Plan Impact:
Goal 5 - Upgrading our "Hard Services"

Action 5:
The residents and businesses of Southgate recognize our linear services - roads, bridges, water and sewer works, for example - to be a fundamental purpose of municipal government. This infrastructure needs to be serviceable and sustainable so that our businesses and communities can thrive and grow.

Strategic Initiatives:
5-B - The Township will have adopted a long-term asset management plan for the timely repair, replacement, and expansion of the Township's infrastructure, facilities, and other assets.

Concluding Comments:
Staff recommends that Council receive Staff Report PW2023-016 for information.

Respectfully Submitted,

Dept. Head: ***Original Signed By***
Jim Ellis, Public Works Manager

CAO Approval: ***Original Signed By***
Dina Lundy, CAO

Attachments:

Attachment # 1 Dundalk Landfill Site Monitoring Report 2021/2022, Section 11 & 12, Conclusions & Recommendations, and Dundalk Site Plan