Executive Summary

The Smith waste disposal site is on Lot 20, Concession VIII, in the geographic Township of Smith, in the amalgamated Township of Selwyn, in the County of Peterborough. The waste disposal site operates under Environmental Compliance Approval No. A340109, amended on October 11, 2013. The purpose of this report is to document the results of the groundwater, surface water, and leachate monitoring programs and the operation and development of the waste disposal site in 2018.

Groundwater flow beneath the site in the till overburden is to the west and northwest with a small component to the southwest and to the northwest in the bedrock aquifer. The conceptual model for the site indicates leachate impacted groundwater discharges into the low-lying areas and wetlands (i.e., Snelgrove Brook Wetland Complex) located west and northwest of the site in the direction of groundwater flow. Snelgrove Brook flows through this discharge area and is monitored regularly for evidence of impacts on and down-gradient of the Site.

The Smith waste disposal site is interpreted to be located at the edge of a local recharge area with a corresponding localized discharge area located in the Provincially Significant Snelgrove Brook Wetland Complex to the west and northwest of the site. The presence of upward gradients to the west and northwest in the predominant direction of horizontal groundwater flow suggests that potentially impacted groundwater will discharge to surface down-gradient of the site. A leachate plume is evident beneath and down-gradient of the waste pile. Due to natural attenuation, the concentrations of parameters in the groundwater decrease with distance from the waste disposal area. Landfilling operations at the site are not impacting adjacent local domestic drinking water supplies.

Vertical gradients across the site confirm the hydrogeological conceptual model of the site. A downward gradient is present between the till and the bedrock throughout the site and upward vertical gradients predominate between the till and the overlying peat/sand unit.

Despite exceedances of the groundwater trigger criteria at well BH2-76D in 2018, the trigger was not initiated as the elevated concentrations were not attributed to site impacts. The Smith waste disposal site was in compliance with the Reasonable Use Concept.
The surface water quality downstream of the Smith waste disposal site continued to show no evidence of impact from the waste disposal operations. No surface water triggers were activated in 2018; therefore, no control measures were required.

A total of 230.86 tonnes of recyclable materials were collected at the Site in 2018. Materials included: blue box recyclables, household batteries, municipal hazardous special waste, scrap metal and white goods, and waste electrical and electronic equipment. A total of 2,530 tires were collected at the Site in 2018.

Following a topographic survey completed in December 2018, it was determined that approximately 7,960 m$^3$ of capacity was used since October 2017. The total remaining capacity was approximately 118,870 m$^3$. Based on an average annual fill rate of 7,615 m$^3$, the remaining Site life is approximately 16 years. Actual site life is dependent on the annual fill rate and cover and compaction methods.

Recommendations have been provided by Cambium Inc. regarding the future operation of the Smith waste disposal site and work to be completed in 2019.

Respectfully submitted,

Cambium Inc.

For
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