



March 2, 2023

Mr. Frank Gross, C.Tech.
Manager of Transportation & Waste
County of Oxford
21 Reeve Street
Woodstock, ON N4S 7Y3

**Subject: Executive Summary - 2022 Operations and Monitoring Report
Oxford County Waste Management Facility, Salford**

Dear Sir:

INTRODUCTION

WSP Canada Inc. (WSP) was retained by the County of Oxford (County) to prepare the 2022 Operations and Monitoring Report for their Oxford County Waste Management Facility. At the request of the County, WSP has prepared this letter as an executive summary of the report.

BACKGROUND

The Oxford County Waste Management Facility (site) is located on Part of Lots 11 and 12, Concession II near the village of Salford in the Township of South-West Oxford. The site is active and has received domestic and commercial solid waste, brush, non-hazardous solid industrial and other waste limited to sewage sludge and non-hazardous industrial sludges for on-site disposal since mid-June 1986.

During 2022, the site operated in compliance with regulatory requirements of Amended Environmental Compliance Approval No. A070808 issued November 7, 2013 (Waste ECA), and Certificate of Approval No. 4504-74CKZ2 for sewage works issued July 3, 2007 (Surface Water CofA).

SUMMARY

Site operations during 2022 were similar to previous years. There was little to no change to the site facilities, access, incoming waste controls, and equipment. The labour force was similar to 2021. The total waste quantity received at the Site in 2022 was approximately 80,222 tonnes, of which approximately 33,235 tonnes was diverted from the landfill and sent out for recycling. The remaining site capacity available for landfilling is estimated to be in the order of 2.40 million cubic metres, which represents approximately 28 to 33 years of additional waste capacity. In 2022, landfilling activities continued in Cell 4.

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The 2022 annual monitoring program included groundwater monitoring from on-Site monitoring wells and private domestic wells, surface water and leachate quality sampling, and combustible gas monitoring. The monitoring program was completed in accordance with the requirements of the Waste ECA and Surface Water CofA.

In 2022, groundwater elevations measured in the observation wells were within or similar to their respective historic ranges. The overburden groundwater elevations indicate that a mound exists in the northwest fill area (Cells 1 and 2). The leachate mound in the northwest fill area is inferred to be approximately 8.7 m higher than overburden groundwater elevations to the north at fractured till well 531R and approximately 4.2 m higher than the groundwater elevations to the northwest at upper till well 193. The leachate mound induces localized radial flow away from the fill areas. However, the LCS intercepts the radial flow from the leachate mound(s) and influences the overburden flow pattern. Notwithstanding the leachate mounding, groundwater flow in the shallow overburden is influenced by a groundwater divide, and is inferred to flow in a northwesterly to northeasterly direction in the northern portion of the site, and in a south to southwesterly direction in the southern portion of the site.

The 2022 groundwater/leachate quality sample results were generally consistent with historical results. Leachate influences were not observed in the groundwater quality at the site boundaries. Elevated chloride concentrations were observed in several wells in the Upper Till near the western end of the cut-off wall and near the site access road. The elevated chloride concentrations in these wells may be related to leachate influences or influences from seasonal road salt applications. However, the influences are localized and do not extend to the property boundary.

Groundwater quality at the property boundary complied with the Guideline B-7 criteria in 2022. Isolated exceedances that were observed were not related to landfill influences. Chloride concentrations at the property boundary wells complied with the specified trigger level (75% of the Guideline B-7 criteria).

The 2022 groundwater quality in the private domestic wells monitored was generally consistent with historic results. There has not been much overall change in the groundwater quality in the wells over the years. No impairment of water quality attributable to the landfill was observed.

In 2022, surface water samples were collected quarterly from stations 971 (SW1), 974 (SW4), 977 (SW7), 978 (SW8), and 979 (SW9). A sample was unable to be collected from station 979 in October 2022 or from station 974 in March, August and October 2022, due to dry conditions. The 2022 surface water chemical results were generally consistent with historic results. The results indicate that surface water quality in the Hooper Drain and in the wet area on the west property boundary was not impacted by surface water runoff from the landfill during 2022.

Combustible gas monitoring was completed at the site on a weekly to monthly basis. Combustible gas was not detected in the scalehouse, barn shop and storage, Coverall building, HHW building, transfer station building, the former office, the Waste Management and Education Centre, or gas probes GW3 and GW5 during 2022. There were no methane gas concentrations that exceeded the trigger levels in property boundary gas probes or habitable enclosed structures on-site, as specified in Condition 5.4 of the Waste ECA.

The 2022 chemical results of the leachate samples collected from manhole MH16 were consistent with historic results. Leachate collected in the LCS typically complied with the County Sewer Use By-Law guidelines in 2022, with the exception of concentrations of chloride in January, February, June, July, October, November and December.



RECOMMENDATIONS

Based on the findings of the 2022 monitoring program, the following recommendations are provided for consideration.

- Monitoring should be continued at the site, as summarized in Section 10.0 of the 2022 Operations and Monitoring Report;
- In the winter months, it is recommended that snow removed from the access road and entrance to the Site be piled in a location away from the adjacent groundwater monitoring wells at the north end of the Site; and
- Staff training on the portable landfill gas instrument should be continued.

Yours truly,

A handwritten signature in black ink, appearing to read 'Albert Siertsema', with a stylized flourish at the end.

Albert Siertsema, P.Eng., PMP
Project Engineer
Earth & Environment

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