

Preliminary Phase II Monitoring Summary Report

Site	Landfill Name	Landfill Type	Completed Monitoring Events	Future Monitoring Events	Next Monitoring Year #	Most Recent Overall Landfill Performance Rating ¹	Any Concerns Identified Related to Soil Sampling Results?	Any Concerns Identified Related to Groundwater Sampling Results?	Does Ground Temperature Data from Thermistors Indicate Frozen Conditions? ²	Notes/ Actions Taken/ Recommendations ³	# Soil Sampling Locations	# Monitoring Wells	# Wells In Good Condition ⁴	#Thermistors	# Thermistors in Good Condition
FOX-5 Broughton Island															
	Middle Site NHWL & Tier II	Non-Hazardous Waste/ Tier II Soil Disposal	Phase I 2007 2008 2009 2010 2012 Phase II 2014 2016	Phase II 2021 2031	15	Acceptable	No	No	Yes	Acceptable rating and soil/water results indicate landfill is performing as designed. Supplemental monitoring event was added in 2018 to finish incomplete work from 2016 event. Thermal performance should be evaluated in more detail in upcoming study. Datalogger in thermistor VT-12 requires replacement during next monitoring event. No other current recommendations for actions beyond scope of regular monitoring program. Monitoring well MW-7 sometimes dry/frozen.	5	5	4	4	3
	Main	Leachate Contained				Acceptable	No	No	Yes	Acceptable rating and soil/water results indicate landfill is performing as designed. Minor regrading undertaken in 2011 to improve landfill performance. Supplemental monitoring event was added in 2018 to finish incomplete work from 2016 event. Thermal performance should be evaluated in more detail in upcoming study. No other current recommendations for actions beyond scope of regular monitoring program. Monitoring wells MW-10, 11 and 14 sometimes dry/frozen; MW-12 regularly dry/frozen.	5	5	1	8	8
	Station Area	Non-Hazardous Waste				Acceptable	No	No	-	Acceptable rating and soil/water results indicate landfill is performing as designed. Minor regrading undertaken in 2011 to improve landfill performance. Supplemental monitoring event was added in 2018 to finish incomplete work from 2016 event. No current recommendations for actions beyond scope of regular monitoring program. Monitoring wells MW-18 sometimes dry/frozen.	5	5	4	-	-
Reference: "2016 FOX-5 Monitoring Report" (Golder, 2017) Report Signed and Stamped by Geotechnical Engineer Darrin Johnson, P.Eng. (ON, NU/NT)															
Reference: "2018 FOX-5 Technical Memorandum" (Golder, 2019) Memorandum Signed and Stamped by Geotechnical Engineer Darrin Johnson, P.Eng. (ON, NU/NT)															

Notes:

1. Acceptable landfill performance is defined as: "Noted features are of little consequence. The landfill is performing as designed. Minor deviations in environmental or physical performance may be observed, such as isolated areas of erosion, settlement."
2. Evaluation based on review of most recent ground temperature data.
3. As Phase II monitoring will not be completed until the 2030s, an assessment of how the landfills are expected to perform beyond Phase II has not yet been completed.
4. Includes all wells that are consistently sampled, including those with minor maintenance issues that do not interfere with the ability to collect samples.

Landfill Types:

- Leachate Contained

Existing landfills that were capped with gravel and provided with an impermeable membrane keyed into the permafrost to contain leachate; Membranes may cover the entire landfill surface or only the sides; and, Sufficient cover of granular material was placed to promote permafrost aggradation throughout the landfill contents.
- Non-Hazardous Waste

Landfills constructed during DEW Line Clean-Up to contain non-hazardous waste.
- Tier II Soil Disposal Facility

Landfills constructed during DEW Line Clean-Up to contain Tier II contaminated soils (as defined by the DEW Line Clean-Up Criteria); Constructed with an impermeable liner underneath and on top, as well as saturated granular fill berms keyed into the permafrost; and, Sufficient cover of granular material was placed to promote permafrost aggradation into the saturated berms and throughout the landfill contents.