



PROBLEM

The Tay Township Landfill Site in the County of Simcoe was used for the disposal of household waste in the late 1960's and early 1970's. The site is licensed for stump and brush disposal. The County required a plan for site closure to comply with regulatory guidelines.

APPROACH

The first step was to determine if the site had any negative effects on the groundwater and surface water resources and to address combustible gas issues. Test pits were excavated to determine stratigraphy and for monitor installations. Water samples were collected and analysed for inorganic chemistry the results of which were used for an assessment of compliance with reasonable use criteria. In addition combustible gas was measured at monitor locations. Based on the results, a closure plan was prepared.

PARAMETER	ODWO Objective		Reference Concentration	Criteria for Reasonable Use	BH4	BH5
	MAC	AO				
Chloride		250	3	126	9.8	15.5
Sulphate		500	40	270	20	82
Nitrate+Nitrite (as N)	10	0	<0.05	2.49	0.05	0.15
Sodium		200	17.8	108.9	8.5	21.8
Iron		0.3	4.00	*4.00	0.64	2.01
Magnesium		0.05	0.35	*0.35	0.07	0.39
Copper		1.0	0.01	0.51	<0.01	<0.01
Zinc		5.0	0.02	2.51	0.02	0.03
Total Organic Carbon (as C)		5.0	12	3.1	1.5	2.6

NOTES:

1. ODWO = Ontario Drinking Water Objectives.
2. MAC = Maximum Acceptable Concentration.
3. AO = Aesthetic Objective.
4. Reference concentration on chemistry results for reference monitor BH1.
5. Shaded values exceed criteria for reasonable use.
6. * = Criteria for reasonable use exceeds Ontario Drinking Water Objectives.
7. All units are mg/L.

SOLUTION

It was concluded as shown on the table that water quality essentially complied with regulatory guidelines. Combustible gas levels were acceptable. The plan therefore focused on site grading, cover and vegetation. Additional water monitoring was required for confirmatory purposes.