



WATERLOO BARRIER® LANDFILL CUT-OFF WALL

BARRIE, ONTARIO

Case History, No. 58

November, 2019

Problem

Like many other areas, the city of Barrie, Ontario has several non-engineered “historic waste sites.” A recent study concluded that risk of exposure to methane gas is low, however additional precautionary measures were recommended to protect neighbouring properties. The waste site seen in Figure 1 was in operation from 1960-1964. Due to its proximity to residential buildings, it was selected as a primary candidate for additional engineering controls.

Solution

The City of Barrie elected to use a Waterloo Barrier® cutoff wall to stop the flow of the gas and combined it with a passive ventilation system to safely expel the gas a safe distance away from adjacent homes. The quick and clean installation, along with the very low permeability offered by the system (10^{-7} cm/s), made the Waterloo Barrier® the ideal control to help protect neighbouring properties. Additionally, it required minimal disturbance to the ground surface and eliminated the need for unnecessary excavations and waste disposal.

As the transport of onsite gases below ground occurs mainly above the water table, the sheet piling only had to extend a few meters below the soil to cut off the unwanted migration.

The unique grouting technique seen in figure 2, creates a tight seal along the full length of the sheet pile interlock. This helps prevent the flow of the gasses, and directs them safely to the new, more efficient, passive ventilation system.



Figure 1 – Property Boundary Cutoff Wall



Figure 2 – Grout Tremmie Line

SITE SUMMARY

Barrier: 450 sq. meters of Waterloo Barrier® WZ75

Depth: 1 to 2.4 meters

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