

# MALVERN REMEDIAL PROJECT

## LOW LEVEL RADIOACTIVE WASTE MANAGEMENT OFFICE, SCARBOROUGH



In the 1940s, a 10 ha farm in the northeast area of Scarborough, Ontario, was used for the illicit disposal of low-level radioactive wastes (radium and thorium). The area was subdivided in the 1970s and developed as part of the Malvern residential community. The presence of this waste was discovered in the early 1980s. In the late 1990s, DCS was retained as the prime consultant to provide all engineering services associated with the excavation, transport, sorting and storage of soil containing low-level radioactive contamination and reinstatement of the properties. The project was jointly funded by the Federal and Ontario governments through the Low Level Radioactive Waste Management Office (LLWRMO).

The assignment included a review of historical information and supplementing this with additional subsurface characterization data; determination of impacted soil quantities; development of quality assurance and quality control procedures; health and safety protocols; environmental and spill response plans; construction drawings, specifications, tender and contract documents for the excavation,

transportation, sorting and containment of waste in an interim secure storage facility. The assignment also included contract administration; project planning, budgeting, scheduling and cost control; provision of resident engineering services; site and worker health physics monitoring; and performance verification during and after the remediation construction activities.

The construction work included the removal and encapsulation of approximately 18,000 m<sup>3</sup> of contaminated soil from over 75 separate properties including public areas, private residences and roadways. The radioactive separation activities incorporated both manual and mechanized processing of soils using state-of-the-art technology to remove and concentrate radioactive particles for storage on the Chalk River, Ontario, waste repository. The secure interim storage facility for the processed soil consisted of a double HDPE-lined base and single HDPE cover, designed and constructed with a leak detection and leachate collection system.

## REMEDICATION DESIGN, CONTRACT DRAWINGS, SPECIFICATIONS, TENDERING, CONSTRUCTION OVERSIGHT AND POST-REMEDIATION REPORTING

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