



Project Title: Crane Mountain Landfill

Client: Fundy Region Solid Waste Commission

Project Description:

GEMTEC Limited has been involved with the geotechnical assessment, the geotechnical design and management of the Crane Mountain Landfill in Saint John, New Brunswick since 1997.

The pre-design work included a site selection process where approximately 150 potential sites were assessed for geotechnical conditions, environmental screening, accessibility, hydrogeology and socio-economic factors. Based on this extensive review an appropriate site was selected using a number of constraint criteria including setback from roads, streams, property lines, etc.

Once a site was selected (Crane Mountain) the group became involved first as the Project Management Consultant (PMC) in 1996, then as the designer in 1998. The groups mandate beginning in 1998 and continuing has included the assessment, design and/or management of a number of separate contracts including:

- Geotechnical Assessment
- Hydrogeological Assessment
- Waste Containment Cells
- Highway Interchange
- Access Roads
- Cover Systems
- Erosion Control Structures
- Constructed Wetlands
- Landfill Gas Collection System

- Leachate Lagoons and Pump Stations
- Stormwater Management
- Groundwater Monitoring Systems

The most significant challenge at this site has been to deliver a cost acceptable project given the constraints with procuring approved materials. The most important component of a landfill system is a clayey soil barrier. Unfortunately there are only two approved borrow pits in the area, both owned and operated by local contractors. To avoid issues associated with lack of competition, the construction of landfill cells has been broken into several contracts where the supply of separate materials (including clay, drainage stone, borrow, etc.) are provided under separate contracts. While this approach is challenging in terms of managing and coordinating contractors (up to four contractors involved with the same project) it provides a more competitive environment resulting in cost effective solutions for the client.

Other design and construction challenges include:

- Ensuring compliance with the site Certificate of Approval to Operate
- Maintaining strict quality control during construction of cell liner
- Surface water management for 6 – 8 hectares of exposed soil