

**Preliminary Design Development Phase
CIP Wet Lagoon Closure Program
2008/2009**

Preliminary Scope Statement

The Landfill Facility Design: Establish post closure landfill performance objectives and establish interactive design characteristics and controls to achieve performance objectives. Performance objectives to be defensible, approvable and protective of human and ecological health. Facility design characteristics to meet the intent of O.Reg. 232/98.

- a) **Risk Evaluation (Human Health and Ecological):** Identify contaminants of concern (COC), establish conceptual site model, establish post closure exposure pathways, identify risk factors and determine acceptable compliance concentrations for each of the COC's for input into the surface water and leachate management plans.

- b) **Leachate Management Plan:** Develop a design strategy to control leachate generation and migration. Based on results of risk evaluation, develop attenuation levels required to achieve compliance concentrations protective of / from adjacent lands/waterways.

- c) **Surface Water Management Plan:** Develop an approach to control surface water runoff and run-on, establish required assimilation levels and evaluate the concentration of COC's in surface water at compliance point through predictive modelling, and develop suitable contingencies.

- d) **Buffer Zone Assessment:** Determine the minimum buffer zone width on all sides of the landfill required to implement closure works, post closure care, and contingency measures. Input size and location of buffer zones into leachate and surface water management plans.

- e) **Compliance Criteria:** Establish compliance locations and site specific compliance criteria based on results of risk evaluation, leachate and surface water management plans and assessments, obtain concurrence from MOE technical and approval staff on performance objectives (compliance criteria) and control mechanisms.

Waste Relocation Methods and Means: Determine and evaluate practical approaches to implement relocation, consolidation and stabilization of waste and sludge within the designed facility, and evaluate through predictive modelling potential nuisance and health impacts from COC.

- a) **Waste and Sludge Excavation and Landfilling:** Determine practical approaches to excavate waste and sludge and evaluate geotechnical characteristics of excavated waste and determine methods to consolidate and stabilize waste. Consolidation and stabilization may include measures in addition to dewatering.
- b) **Sludge Dewatering:** Determine and evaluate practical approaches to dewater sludge, and determine and evaluate methods to handle wastewater.
- c) **Air Emissions / Sediment Controls:** Evaluate air emissions anticipated during excavation of waste, dewatering, other potential consolidation and stabilization activities and land filling through predictive modeling, identify and evaluate mitigation measures for unacceptable emissions, and determine needs and methods for control of sediment off site to adjacent water bodies.

Preliminary Design Report (including Pilot Test Design) and Part V CofA

Application: Prepare a preliminary design report that outlines the proposed facility design and pilot tests to be implemented for waste relocation. Preliminary design report to provide sufficient detail to clearly outline performance objectives, design features and compliance evaluation mechanisms such that MOE approval is attainable. Complete and submit Part V CofA Amendment Application and supporting documentation to MOE EAA Branch.

MOE Approval and Permits: Support Part V Application through response to MOE comments on application and supporting documentation, and in consultation with MOE determine additional permit requirements.

Ongoing Environmental Monitoring: Perform routine site monitoring and maintenance of site to determine if conditions change at site. Evaluate risks and / or action required if change occurs.

*Prepared by
Christine Skirth, C.E.T.
Conestoga-Rovers & Associates
October 2008*