



8.0 CONTINGENCY MEASURES AND TRIGGER MECHANISMS

The findings of the predictive modelling indicate that the CRRRC Site will not adversely affect groundwater and surface water. However, in the event that the results of the proposed monitoring program demonstrate unacceptable levels of contaminants in the groundwater at the points of compliance, or unexpected impacts to surface water, remedial actions will be implemented as required, in consultation with the MOECC. The contingency measures presented in this section are considered the most feasible options to mitigate unexpected Site impacts to groundwater and surface water resources.

8.1 Groundwater

In the event that monitoring results suggest leachate is unexpectedly getting into the groundwater system on-Site, the following contingency measures could be implemented. The intercepted leachate-impacted groundwater collected from the surficial silty sand layer in the LDSCS could be pumped for treatment and act as the secondary containment system for the landfill. At this time, additional groundwater monitoring wells could be installed between the sentinel monitoring wells (P1 series and P2 series) and the property boundary to evaluate site compliance.

Alternatively, or additionally, a series of purge wells through the cover of the landfill and into the granular blanket of the leachate collection system could be installed and leachate removal by pumping to leachate treatment. Typically, this type of a contingency is triggered by premature failure of the leachate collection system, such that a mound is formed within the landfill. The benefit of having purge wells installed into the leachate collection system is that leachate is contained within the landfill and collected prior to getting diluted with non-leachate-impacted groundwater. Details regarding purge well installation, such as the number and spacing, would be determined based on the area and level of leachate mound control required.

If, despite the presence of the LDSCS, it is necessary to cut off flow through any or all of the perimeter berm, surficial silty sand layer or silty layer, a low permeability cut-off barrier could be constructed. Options available for the barrier include a soil-bentonite wall constructed using the slurry trench method or an interlocking sheet pile wall (steel or PVC sheet piling). This would contain the leachate/groundwater within/close to the landfill on-Site, which would then continue to be removed from the leachate collection system.

MOECC approval to implement the proposed contingency measures would be obtained.

With regard to potential for failure of the liner systems associated with ponds in the leachate pre-treatment facility and primary reactor cells in the organics processing facility, materials would be removed and the liner repaired or replaced.

8.2 Surface Water

In the event that leachate-impacted water was to reach either stormwater management ponds or ditches, the source of the impact would be determined and then intercepted, as required. If necessary, the affected pond and/or ditches could then be emptied through a temporary pumping operation and the pumped water could be combined with the leachate and directed to the leachate pre-treatment facility.



8.3 Leachate Pre-Treatment Facility

The following table provides a summary of operational conditions that may be encountered at the leachate pre-treatment facility and contingency and/or maintenance options that could be undertaken.

Table 8: Leachate Pre-treatment Facility Contingencies

Operational Condition	Contingency Options
Higher Flows than Design	Treatment process can be operated at 1,200 m ³ /day with minimal effect on effluent quality.
Lower Flows than Design	Treatment process can be operated with fewer leachate digestion tanks operating to reduce flows. Alternatively, leachate digestion tanks and mixed liquor holding tanks can be operated at approximately 25% of their design flow without affecting system performance.
Higher metals loading than assumed or toxic constituents	Provision within the treatment building will be made to direct raw leachate from the initial equalization tank to the chemical mixing tank and clarifier before flowing through the biological treatment processes to remove excess metals.
Disruption to hauling treated liquid effluent	During normal operations, the effluent storage ponds or tanks will be kept at a minimum volume so that in the event of a disruption to the hauled effluent program, the operator has approximately two weeks of storage at the design flows to fix the issue. If the operator chooses, the flow rate through the treatment system can be temporarily reduced and leachate stored in the leachate storage ponds or tanks in order to gain greater than two weeks storage in the effluent storage ponds or tanks. Pumping from the leachate collection system beneath the landfill can be temporarily reduced or suspended.

Further, all MOECC and Sewer Use orders and issues of non-compliance related to leachate will be reported to the offices of the Mayor of Ottawa, east end Councillors and the Ottawa General Manager of Environmental Services within 24 hours of identification.