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**TOWNSHIP OF LEEDS AND THE THOUSAND ISLANDS**

**Escott Waste Disposal Site  
2018 Annual Monitoring, Development and  
Operations Report**





## Appendix D-Monitoring and Screening Checklist General Information and Instructions

**General Information: The checklist is to be completed, and submitted with the Monitoring Report.**

**Instructions:** A complete checklist consists of:

- (a) a completed and signed checklist, including any additional pages of information which can be attached as needed to provide further details where indicated.
- (b) completed contact information for the Competent Environmental Practitioner (CEP)
- (c) self-declaration that CEP(s) meet(s) the qualifications as set out below and in Section 1.2 of the Technical Guidance Document.

**Definition of Groundwater CEP:**

For groundwater, the CEP must have expertise in hydrogeology and meet one of the following:

- (a) the person holds a licence, limited licence or temporary licence under the *Professional Engineers Act*; or
- (b) the person holds a certificate of registration under the *Professional Geoscientists Act, 2000* and is a practicing member, temporary, member or limited member of the Association of Professional Geoscientists of Ontario. O. Reg. 66/08, s. 2..

**Definition of Surface water CEP:**

A CEP for surface water assessments is a scientist, professional engineer or professional geoscientist as described in (a) and (b) above with demonstrated experience and post-secondary education, either a diploma or degree, in hydrology, aquatic ecology, limnology, aquatic biology, physical geography with specialization in surface water, and/or water resource management.

The type of scientific work that a CEP performs must be consistent with that person's education and experience. If an individual has appropriate training and credentials in both groundwater and surface water and is responsible for both areas of expertise, the CEP may then complete and validate both sections of the checklist.

<b>Monitoring Report and Site Information</b>	
<b>Waste Disposal Site Name</b>	Escott Waste Disposal Site
<b>Location (e.g. street address, lot, concession)</b>	Lot 8, 9, and 10, Broken Front Concession in the Township of Leeds and the Thousand Islands
<b>GPS Location (taken within the property boundary at front gate/ front entry)</b>	442424.05 N, 755638.79 W
<b>Municipality</b>	Township of Leeds and the Thousand Islands
<b>Client and/or Site Owner</b>	The Corporation of the Township of Leeds and the Thousand Islands
<b>Monitoring Period (Year)</b>	2018
This Monitoring Report is being submitted under the following:	
<b>Environmental Compliance Approval Number:</b>	A441703
<b>Director's Order No.:</b>	NA
<b>Provincial Officer's Order No.:</b>	NA
<b>Other:</b>	NA

<b>Report Submission Frequency</b>	<input checked="" type="radio"/> <b>Annual</b> <input type="radio"/> <b>Other</b>		
<b>The site is:</b> <b>(Operation Status)</b>	<input checked="" type="radio"/> <b>Open</b> <input type="radio"/> <b>Inactive</b> <input type="radio"/> <b>Closed</b>		
<b>Does your Site have a Total Approved Capacity?</b>	<input type="radio"/> <b>Yes</b> <input checked="" type="radio"/> <b>No</b>		
<b>If yes, please specify Total Approved Capacity</b>	40,000	Units	Cubic Metres
<b>Does your Site have a Maximum Approved Fill Rate?</b>	<input type="radio"/> <b>Yes</b> <input checked="" type="radio"/> <b>No</b>		
<b>If yes, please specify Maximum Approved Fill Rate</b>	NA	Units	
<b>Total Waste Received within Monitoring Period (Year)</b>	927	Units	Cubic Metres
<b>Total Waste Received within Monitoring Period (Year) Methodology</b>	Difference between volumes from annual surveys.		
<b>Estimated Remaining Capacity</b>	2,442	Units	Cubic Metres
<b>Estimated Remaining Capacity Methodology</b>	Approved capacity minus current waste volume as determined by survey.		
<b>Estimated Remaining Capacity Date Last Determined</b>	December, 2018		
<b>Non-Hazardous Approved Waste Types</b>	<input checked="" type="checkbox"/> Domestic <input type="checkbox"/> Industrial, Commercial & Institutional (IC&I) <input type="checkbox"/> Source Separated Organics (Green Bin) <input type="checkbox"/> Tires	<input type="checkbox"/> Contaminated Soil <input type="checkbox"/> Wood Waste <input type="checkbox"/> Blue Box Material <input type="checkbox"/> Processed Organics <input checked="" type="checkbox"/> Leaf and Yard Waste	<input type="checkbox"/> Food Processing/Preparation Operations Waste <input type="checkbox"/> Hauled Sewage Other: <input type="text"/>
<b>Subject Waste Approved Waste Classes: Hazardous &amp; Liquid Industrial</b> <i>(separate waste classes by comma)</i>			
<b>Year Site Opened</b> <i>(enter the Calendar Year only)</i>	<input type="text"/>	<b>Current ECA Issue Date</b>	October 4, 2004
<b>Is your Site required to submit Financial Assurance?</b>	<input type="radio"/> <b>Yes</b> <input checked="" type="radio"/> <b>No</b>		
<b>Describe how your Landfill is designed.</b>	<input checked="" type="radio"/> <b>Natural Attenuation only</b> <input type="radio"/> <b>Fully engineered Facility</b> <input type="radio"/> <b>Partially engineered Facility</b>		
<b>Does your Site have an approved Contaminant Attenuation Zone?</b>	<input type="radio"/> <b>Yes</b> <input checked="" type="radio"/> <b>No</b>		

<p><b>If closed, specify C of A, control or authorizing document closure date:</b></p>	<p>Amended ECA A441703 dated October 4, 2004</p>
<p><b>Has the nature of the operations at the site changed during this monitoring period?</b></p>	<p> <input type="radio"/> Yes  <input checked="" type="radio"/> No         </p>
<p><b>If yes, provide details:</b></p>	<p>Type Here</p>
<p><b>Have any measurements been taken since the last reporting period that indicate landfill gas volumes have exceeded the MOE limits for subsurface or adjacent buildings? (i.e. exceeded the LEL for methane)</b></p>	<p> <input type="radio"/> Yes  <input checked="" type="radio"/> No         </p>



## Groundwater WDS Verification:

Based on all available information about the site and site knowledge, it is my opinion that:

### Sampling and Monitoring Program Status:

<p>1) The monitoring program continues to effectively characterize site conditions and any groundwater discharges from the site. All monitoring wells are confirmed to be in good condition and are secure:</p>	<p><input type="radio"/> Yes</p> <p><input checked="" type="radio"/> No</p>	<p>Permission for additional monitoring locations has been received and implementation will begin in 2019.</p>
<p>2) All groundwater, leachate and WDS gas sampling and monitoring for the monitoring period being reported on was successfully completed as required by Certificate(s) of Approval or other relevant authorizing/control document (s):</p>	<p><input checked="" type="radio"/> Yes</p> <p><input type="radio"/> No</p> <p><input type="radio"/> Not Applicable</p>	<p>If no, list exceptions below or attach information.</p>

Groundwater Sampling Location	Description/Explanation for change (change in name or location, additions, deletions)	Date
Type Here	Type Here	Select Date

3) a) Is landfill gas being monitored or controlled at the site?	<input checked="" type="radio"/> Yes <input type="radio"/> No	
<b>If yes to 3(a), please answer the next two questions below.</b>		
b) Have any measurements been taken since the last reporting period that indicate landfill gas is present in the subsurface at levels exceeding criteria established for the site?	<input type="radio"/> Yes <input checked="" type="radio"/> No	
c) Has the sampling and monitoring identified under 3(a) for the monitoring period being reported on was successfully completed in accordance with established protocols, frequencies, locations, and parameters developed as per the Technical Guidance Document , or MECP concurrence.	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Applicable	If no, list exceptions below or attach additional information.
<b>Groundwater Sampling Location</b>	<b>Description/Explanation for change (change in name or location, additions, deletions)</b>	<b>Date</b>
Type Here	Type Here	Select Date
Type Here	Type Here	Select Date
Type Here	Type Here	Select Date
Type Here	Type Here	Select Date
4) All field work for groundwater investigations was done in accordance with standard operating procedures as established/outlined per the Technical Guidance Document (including internal/external QA/QC requirements) (Note: A SOP can be from a published source, developed internally by the site owner's consultant, or adopted by the consultant from another organization):	<input checked="" type="radio"/> Yes <input type="radio"/> No	See report for details.

## Sampling and Monitoring Program Results/WDS Conditions and Assessment:

<p>5) The site has an adequate buffer, Contaminant Attenuation Zone (CAZ) and/or contingency plan in place. Design and operational measures, including the size and configuration of any CAZ, are adequate to prevent potential human health impacts and impairment of the environment.</p>	<p><input type="radio"/> Yes</p> <p><input checked="" type="radio"/> No</p>	<p>Development of a CAZ for the Site is ongoing and will resume once additional investigation is complete. See report.</p>	
<p>6) The site meets compliance and assessment criteria.</p>	<p><input type="radio"/> Yes</p> <p><input checked="" type="radio"/> No</p>	<p>See previous comment and report for details.</p>	
<p>7) The site continues to perform as anticipated. There have been no unusual trends/ changes in measured leachate and groundwater levels or concentrations.</p>	<p><input checked="" type="radio"/> Yes</p> <p><input type="radio"/> No</p>	<p>See report for details.</p>	
<p>1) Is one or more of the following risk reduction practices in place at the site:</p> <p>(a) There is minimal reliance on natural attenuation of leachate due to the presence of an effective waste liner and active leachate collection/ treatment; or</p> <p>(b) There is a predictive monitoring program in-place (modeled indicator concentrations projected over time for key locations); or</p> <p>(c) The site meets the following two conditions (typically achieved after 15 years or longer of site operation):</p> <p><i>i.</i> The site has developed stable leachate mound(s) and stable leachate plume geometry/concentrations; and</p> <p><i>ii.</i> Seasonal and annual water levels and water quality fluctuations are well understood.</p>	<p><input type="radio"/> Yes</p> <p><input checked="" type="radio"/> No</p>	<p>Note which practice(s):</p>	<p><input type="checkbox"/> (a)</p> <p><input type="checkbox"/> (b)</p> <p><input type="checkbox"/> (c) As discussed in report.</p>
<p>9) Have trigger values for contingency plans or site remedial actions been exceeded (where they exist):</p>	<p><input type="radio"/> Yes</p> <p><input type="radio"/> No</p> <p><input checked="" type="radio"/> Not Applicable</p>	<p>Trigger development in progress, see report.</p>	



## Groundwater CEP Declaration:

I am a licensed professional Engineer or a registered professional geoscientist in Ontario with expertise in hydrogeology, as defined in Appendix D under Instructions. Where additional expertise was needed to evaluate the site monitoring data, I have relied on individuals who I believe to be experts in the relevant discipline, who have co-signed the compliance monitoring report or monitoring program status report, and who have provided evidence to me of their credentials.

I have examined the applicable Certificate of Approval and any other environmental authorizing or control documents that apply to the site. I have read and followed, as deemed appropriate for this Site in my professional judgement, the Monitoring and Reporting for Waste Disposal Sites Groundwater and Surface Water Technical Guidance Document (MOE, 2010, or as amended), and associated monitoring and sampling guidance documents, as amended from time to time. I have reviewed all of the data collected for the above-referenced site for the monitoring period(s) identified in this checklist. Except as otherwise agreed with the ministry for certain parameters, all of the analytical work has been undertaken by a laboratory which is accredited for the parameters analyzed to ISO/IEC 17025:2005 (E)- General requirements for the competence of testing and calibration laboratories, or as amended from time to time by the ministry.




The completion of this Checklist is a requirement of the MECP. As always, we rely upon the MECP to undertake a complete review the report(s) provided regarding the waste disposal site/landfill, and provide their comments and acceptance of our interpretation, conclusions and recommendations. The Checklist should in no way supersede the MECP's responsibility to undertake their complete review of our report(s) to ensure Site compliance with environmental regulations, standards and/or approvals. If any exceptions or potential concerns have been noted in the questions in the checklist attached to this declaration, it is my opinion that these exceptions and concerns are minor in nature and will be rectified for the next monitoring/reporting period. Where this is not the case, the circumstances concerning the exception or potential concern and my client's proposed action have been documented in writing to the Ministry of the Environment District Manager in a letter from me dated:

Select Date

## Recommendations:

### Based on my technical review of the monitoring results for the waste disposal site:

<p><input type="radio"/> <b>No changes to the monitoring program are recommended</b></p> <p><input checked="" type="radio"/> <b>The following change(s) to the monitoring program is/are recommended:</b></p>	<p>Permission for additional monitoring locations has been received and implementation will begin in 2019.</p>
<p><input type="radio"/> <b>No Changes to site design and operation are recommended</b></p> <p><input checked="" type="radio"/> <b>The following change(s) to the site design and operation is/ are recommended:</b></p>	<p>Development of a CAZ for the Site is ongoing and will resume once additional investigation is complete.</p>

<b>Name:</b>	John Pyke		
<b>Seal:</b>	Add Image		
<b>Signature:</b>		<b>Date:</b>	March 29, 2019
<b>CEP Contact Information:</b>	John Pyke		
<b>Company:</b>	Malroz Engineering Inc.		
<b>Address:</b>	308 Wellington St., 2nd Floor, Kingston ON		
<b>Telephone No.:</b>	613-548-3446 ext. 34	<b>Fax No. :</b>	Type Here
<b>E-mail Address:</b>	pyke@malroz.com		
<b>Co-signers for additional expertise provided:</b>			
<b>Signature:</b>		<b>Date:</b>	Select Date
<b>Signature:</b>		<b>Date:</b>	Select Date

## Surface Water WDS Verification:

Provide the name of surface water body/bodies potentially receiving the WDS effluent and the approximate distance to the waterbody (including the nearest surface water body/bodies to the site):

<b>Name (s)</b>	Unnamed creek, marshland
<b>Distance(s)</b>	north of the Site, south of the Site, see report for additional informaiton.

Based on all available information and site knowledge, it is my opinion that:

### Sampling and Monitoring Program Status:

<b>1) The current surface water monitoring program continues to effectively characterize the surface water conditions, and includes data that relates upstream/background and downstream receiving water conditions:</b>	<input checked="" type="radio"/> Yes <input type="radio"/> No	See report for discussion.
<b>2) All surface water sampling for the monitoring period being reported was successfully completed in accordance with the Certificate(s) of Approval or relevant authorizing/control document(s) (if applicable):</b>	<input type="radio"/> Yes <input checked="" type="radio"/> No <b>Not applicable (No C of A, authorizing / control document applies)</b>	If no, specify below or provide details in an attachment.

Surface Water Sampling Location	Description/Explanation for change (change in name or location, additions, deletions)	Date
SW3, SW8, HBO, HBI, SW8	Not sampled due to dry conditions, see report for details.	May 2018
SW3, SW8, HBI	Not sampled due to dry conditions, see report for details	November 2018
Type Here	Type Here	Select Date



<p>3) a) Some or all surface water sampling and monitoring program requirements for the monitoring period have been established outside of a ministry C of A or authorizing/control document, or MECP concurrence.</p>	<p><input type="radio"/> Yes  <input checked="" type="radio"/> No  <input type="radio"/> Not Applicable</p>	
<p><b>b) If yes, all surface water sampling and monitoring identified under 3 (a) was successfully completed in accordance with the established program from the site, including sampling protocols, frequencies, locations and parameters) as developed per the Technical Guidance Document:</b></p>	<p><input type="radio"/> Yes  <input type="radio"/> No  <input checked="" type="radio"/> Not Applicable</p>	<p>If no, specify below or provide details in an attachment.</p>
<p><b>Surface Water Sampling Location</b></p>	<p><b>Description/Explanation for change (change in name or location, additions, deletions)</b></p>	<p><b>Date</b></p>
<p>Type Here</p>	<p>Type Here</p>	<p>Select Date</p>
<p>4) <b>All field work for surface water investigations was done in accordance with standard operating procedures, including internal/external QA/QC requirements, as established/outlined as per the Technical Guidance Document, MOE 2010, or as amended. (Note: A SOP can be from a published source, developed internally by the site owner's consultant, or adopted by the consultant from another organization):</b></p>	<p><input checked="" type="radio"/> Yes  <input type="radio"/> No</p>	<p>See report for discussion.</p>

## Sampling and Monitoring Program Results/WDS Conditions and Assessment:

5) The receiving water body meets surface water-related compliance criteria and assessment criteria: i.e., there are no exceedances of criteria, based on MECP legislation, regulations, Water Management Policies, Guidelines and Provincial Water Quality Objectives and other assessment criteria (e.g., CWQGs, APVs), as noted in Table A or Table B in the Technical Guidance Document (Section 4.6):

- Yes  
 No

**If no, list parameters that exceed criteria outlined above and the amount/percentage of the exceedance as per the table below or provide details in an attachment:**

Parameter	Compliance or Assessment Criteria or Background	Amount by which Compliance or Assessment Criteria or Background Exceeded
e.g. Nickel	e.g. C of A limit, PWQO, background	e.g. X% above PWQO
See report for discussion.		
6) In my opinion, any exceedances listed in Question 5 are the result of non-WDS related influences (such as background, road salting, sampling site conditions)?	<input checked="" type="radio"/> Yes <input type="radio"/> No	If yes, specify (Type Here): See report for discussion.

<p>7) All monitoring program surface water parameter concentrations fall within a stable or decreasing trend. The site is not characterized by historical ranges of concentrations above assessment and compliance criteria.</p>	<p><input checked="" type="radio"/> Yes</p> <p><input type="radio"/> No</p>	<p>See report for information</p>
<p>8) For the monitoring program parameters, does the water quality in the groundwater zones adjacent to surface water receivers exceed assessment or compliance criteria (e.g. , PWQOs, CWQGs, or toxicity values for aquatic biota (APVs)):</p>	<p><input type="radio"/> Yes</p> <p><input type="radio"/> No</p> <p><input checked="" type="radio"/> Not Known</p> <p><input type="radio"/> Not Applicable</p>	<p>See report for discussion. Additional investigation is currently being implemented.</p>
<p>9) Have trigger values for contingency plans or site remedial actions been exceeded (where they exist):</p>	<p><input type="radio"/> Yes</p> <p><input type="radio"/> No</p> <p><input checked="" type="radio"/> Not Applicable</p>	<p>See report for discussion.</p>



## Surface Water CEP Declaration:

I, the undersigned hereby declare that I am a Competent Environmental Practitioner as defined in Appendix D under Instructions, holding the necessary level of experience and education to design surface water monitoring and sampling programs, conduct appropriate surface water investigations and interpret the related data as it pertains to the site for this monitoring period.

I have examined the applicable Certificate of Approval and any other environmental authorizing or control documents that apply to the site. I have read and followed, as deemed appropriate for this Site in my professional judgement, the Monitoring and Reporting for Waste Disposal Sites Groundwater and Surface Water Technical Guidance Document (MECP, 2010, or as amended) and associated monitoring and sampling guidance documents, as amended from time to time. I have reviewed all of the data collected for the above-referenced site for the monitoring period(s) identified in this checklist. Except as otherwise agreed with the ministry for certain parameters, all of the analytical work has been undertaken by a laboratory which is accredited for the parameters analysed to ISO/IEC 17025:2005 (E)- General requirements for the competence of testing and calibration laboratories, or as amended from time to time by the ministry.

The completion of this Checklist is a requirement of the MECP. As always, we rely upon the MOE to undertake a complete review the report(s) provided regarding the waste disposal site/landfill, and provide their comments and acceptance of our interpretation, conclusions and recommendations. This Checklist should in no way supersede the MECP responsibility to undertake their complete review of our report(s) to ensure compliance with environmental regulations, standards and approvals.


If any exceptions or potential concerns have been noted in the questions in the checklist attached to this declaration, it is my opinion that these exceptions and concerns are minor in nature or will be rectified for future monitoring events. Where this is not the case, the circumstances concerning the exception or potential concern and my client's proposed action have been documented in writing to the Ministry of the Environment District Manager in a letter from me dated:

Select Date

## Recommendations:

### Based on my technical review of the monitoring results for the waste disposal site:

<p><input checked="" type="radio"/> <b>No Changes to the monitoring program are recommended</b></p> <p><input type="radio"/> <b>The following change(s) to the monitoring program is/are recommended:</b></p>	<p>See report for discussion on evaluation of dry conditions.</p>
<p><input checked="" type="radio"/> <b>No changes to the site design and operation are recommended</b></p> <p><input type="radio"/> <b>The following change(s) to the site design and operation is/are recommended:</b></p>	<p>See report for discussion.</p>

<b>CEP Signature</b>		
<b>Relevant Discipline</b>	Geoscientist with relevant experience and training.	
<b>Date:</b>	March 29, 2019	
<b>CEP Contact Information:</b>	John Pyke	
<b>Company:</b>	Malroz Engineering Inc.	
<b>Address:</b>	308 Wellington St., 2nd Floor, Kingston ON	
<b>Telephone No.:</b>	613-548-3446 ext. 34	
<b>Fax No. :</b>	Type Here	
<b>E-mail Address:</b>	pyke@malroz.com	
<b>Save As</b>		<b>Print Form</b>

### NOTICE TO READER

This document has been prepared by Malroz Engineering Inc. (*Malroz*) on behalf of the Township of Leeds and the Thousand Islands (TLTI), in fulfilment of Condition 52 of Amended Provisional Certificate of Approval (CofA) No. A441703.

*Malroz* has relied upon TLTI staff to provide historic data upon which the current data interpretation and conceptual understanding of the site are partially based. *Malroz* accepts no responsibility for the integrity of the data provided by TLTI or for missing data. Any third party use or reliance of this report, or decisions made based on this report, are the responsibilities of the third party. *Malroz* accepts no responsibility for damages suffered by any third party as a result of decisions made or actions taken based on the contents of this report.

This document has been prepared for TLTI for submission to the Ministry of Environment, Conservation and Parks (MECP) as required by the CofA. Unauthorized re-use of this document for any other purpose, or by third parties without the express written consent of *Malroz* shall be at such party's sole risk.

This page is an integral part of this document and must remain with it at all times.

Respectfully Submitted,

MALROZ ENGINEERING INC.



per: Camille Malcolm, M.Sc., G.I.T.  
Environmental Geoscientist



and: John Pyke, P.Geo.,  
Project Manager



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## 1.0 Introduction

The Escott waste disposal site (the Site) operates under amended provisional Certificate of Approval (CofA) No. A441703, issued by the Ministry of Environment, Conservation and Parks (MECP) and dated October 4, 2004 (see Appendix C). The Site is located on part of Lots 8, 9, and 10 Broken Front Concession in the Township of Leeds and the Thousand Islands (TLTI) (Figure 1, Appendix A). In accordance with the CofA, an Annual Monitoring Report (AMR) is to be completed each year.

*Malroz* was retained by TLTI to conduct the semi-annual monitoring of the groundwater and surface water, and report on the development and operations of the Site. This document presents our methodology, results and interpretation of these results with respect to the CofA. This report was prepared on behalf of the TLTI, using data collected by *Malroz* and available information provided by TLTI staff.

### 1.1 Ownership and Key Personnel

The Site is owned and maintained by the Corporation of the Township of Leeds and the Thousand Islands. Key contacts for the Site are as follows:

Municipal Contact

Adam Goheen

Director of Operations

1233 Prince Street, P.O. Box 280

Lansdowne, Ontario, K0E 1L0

613-659-2415 ext. 213

[agoheen@townshipleeds.on.ca](mailto:agoheen@townshipleeds.on.ca)

Environmental Professional Contact

John Pyke, P.Geo.

Project Manager

308 Wellington St.

Kingston, Ontario, K7K 7A8

613-548-3446 ext. 34

[pyke@malroz.com](mailto:pyke@malroz.com)

## 2.0 Background

The geology, hydrogeology and hydrology of the Site are described in this section, based on our review of collected data including site observations and previous reports on investigations at the Site.



## **2.1 Geological Setting**

Based on geological maps of the region, the geological setting at the Site consists of Precambrian metasedimentary rocks, including: paragneiss, pelitic and psammo-pelitic schists and gneisses (Hewitt, 1964). The bedrock is considerably folded at the Site, dipping northwest by 70 degrees (Hewitt, 1964). The bedrock to the northwest of the Site (at Escott centre) consists of Precambrian granitic gneiss, while bedrock southeast of the Site (Highway 401) is quartzite (Hewitt, 1964). Borehole logs from the Site suggest that bedrock is between 0.46 and 7.62 metres below grade (mbg), with increased depth to bedrock in the field north of the waste mound (Appendix D). Bedrock outcrops are visible in the southern portion of the Site, by BW3 (Figure 2, Appendix A).

Based on the borehole logs, the overburden at the Site consists of brown, silty clay underlain by a greyish sandstone (Appendix D). These are likely glacial-lacustrine deposits (Hewitt, 1964).

The borehole logs for bedrock monitoring well BW1 suggest that the bedrock encountered consists of a red granite (Appendix D). This is inconsistent with the OGS regional map by Jupe and Jackson (Hewitt, 1964). However, it is possible that the bedrock has not been eroded down to the metasedimentary (older) unit across the Site, due to the structural folding in the area, resulting in the younger granite being exposed at surface. Such small inconsistencies are generally not included in a map of larger scale (1:126,720), such as OGS map No. 2054. The borehole log for BW1 also suggests that a thin (~2.4 metres) sandstone unit overlies the granite, which is consistent with the literature: Precambrian granitic is overlain by Ordovician sandstone and dolomite from the Beekmantown, Potsdam, or Nepean Formations (Hewitt, 1964).

## **2.2 Hydrogeologic Setting**

Based on Malroz site observations and descriptions by previous consultants, the hydrogeological setting at the site is separated into two zones: in the overburden and bedrock. The vertical relationship between the bedrock and overburden zones has not been fully characterized. Proximal overburden and bedrock wells, located to the southwest of the waste mound, suggest a zone of recharge. To the north of the waste mound, proximal overburden and bedrock wells do not show distinct recharge or discharge.

Groundwater elevations suggest that overburden groundwater flows northeastwards off the waste mound (Figure 3a, Appendix A). However, limited data is available to the immediate south, east and west of the waste mound. According to the previous

consultant, the overburden zone is not used as a source of potable water in the vicinity of the Site, and there are no reported uses of the overburden zone as a source of agricultural water in the vicinity of the Site (Day, 2015). The agricultural field north of the waste fill area is reportedly tile-drained (draining towards the northeast) and discharges at Hickenbottom outlet which, in turn, drains into the wetland that feeds La Rue Mills Creek (Day, 2015).

Based on the monitoring results from 2018, bedrock groundwater flows northward, across a shallow gradient, through the site (Figure 3b, Appendix A). Two residential properties are within 500 m of the Site: the first is located 300 m southwest and the other is 500 m south (Jp2g, 2013). A residential bedrock well was formerly sampled as part of the monitoring program at the residence 300 m southwest of the Site (then known as the ‘MacDonald residence’).

### **2.3 Surface Water Features**

Based on site observations and previous reports, there appears two creeks running parallel (SW-NE) to the Site and on either side of the Site. The creek to the North of the Site is manmade and maintained for the purpose of draining excess water from adjacent agricultural fields (Day, 2015). The North Creek passes under Rockport Road via a culvert located at SW4, and low flow conditions have been observed historically (SW4).

The creek to the South of the Site passes through the wetland area located beyond the forest to the East-Southeast of the Site. The South creek also passes under Rockport road via a culvert near SW7. The South Creek comprises a larger area than the North creek, however, lentic flow conditions have been observed historically (SW7). The previous consultant reported that although the South Creek is not anthropogenic, it is periodically cleaned to ensure positive drainage (Day, 2015). *Malroz* is not aware of any such activities taking place at the South Creek. The previous consultant also noted the presence of beaver populations and multiple active and inactive beaver dams along the Creek (Day, 2015).

Based on site observations, water tends to pond behind the recycling bin (to the southwest of the active waste mound), and along the south side of the entrance road by the brush pile (refer to Appendix E). A small ditch is located along the northern edge of the waste mound and discharges at Hickenbottom Inlet. Evidence of seeps have been reported at the Inlet historically (Day, 2015).

During periods of high precipitation, a pond is present in the south portion of the Site, around OW6 and OW7, and reportedly drains towards SW1 (Day, 2015). SW1 and SW2

have been inactive stations since 2016: SW1 due to repeated dry conditions and SW2 was removed as it was filled and regraded in 2015 (Day, 2015).

## **2.4 2018 MECP Correspondence**

The MECP provided comments on the 2017 AMR in a memorandum dated August 16, 2018 (Appendix F). The reviewer provided the following recommendations:

- i. Condition 56 of the ECA requires that a closure plan be prepared at least 2 years prior to reaching final capacity or when the site reaches 90 percent of its approved capacity, whichever comes first. The Escott WDS is estimated to have used more than 90 percent of its capacity during 2017, and as such, a closure plan should already have been submitted and the site is currently in non-compliance with condition 56 of the ECA. The owner of the site should be required to prepare and submit a closure plan for the site.
- ii. The groundwater monitoring program conducted in 2017 generally complies with the approved monitoring program; however, greater effort/care should be taken in future years to identify and monitor and sample all monitoring wells included in the monitoring program.
- iii. Adequate background monitoring wells exist at the site; however, future reports should provide a discussion of background groundwater quality.
- iv. The list of LIPs provided by Malroz includes only a portion of the LIPs associated with the site.
- v. A leachate plume is present in the overburden and bedrock units and is extending off-site and remains undelineated toward the northeast
- vi. The Escott WDS is in non-conformance with Guideline B-7 as a result of RUL exceedances at overburden (OW11/OW11R1) and bedrock (BR3) compliance monitoring wells located at the northeastern property boundary.
- vii. Contingency action is required to address Guideline B-7 non-conformance at the site. The owner of the site should be required to develop and implement an action plan. The action plan should include a timeline and should be provided for my review and approval prior to implementation.
- viii. Malroz indicates that monitoring well OW11 was located in 2017 despite that it was previously reported that this monitoring well was decommissioned and replaced. No recommendations have been provided with respect to OW11. It is my recommendation that this monitoring well be assessed and if it is suspected to be compromised/damaged it should be decommissioned.
- ix. A MECP Surface Water Scientist should continue to be consulted with respect to surface water management associated with this site.
- x. Malroz recommends that groundwater monitoring continue to be conducted twice per year (spring and fall) with no changes to the monitoring program

recommended, with the exception that VOC monitoring will be reduced to every two (2) years and will only be conducted at monitoring wells OW14 and BW1, as per my previous recommendation.

- xi. The current report contains only the 2017 monitoring data. Future monitoring reports should include all current and historical monitoring data. This request was made in my previous review; however, it has not been addressed.
- xii. The geological and hydrogeological descriptions provided in the current report consist of quoted interpretations and descriptions provided in previous reports. The referenced material is professional interpretation of site observations, site conditions, and readily available information. Future monitoring reports should provide unique interpretations for these sections prepared by the authors of the report.
- xiii. Future monitoring reports should provide an assessment and discussion of vertical gradients.
- xiv. The current report was not accompanied by a completed monitoring and screening checklist. A completed and signed checklist should be submitted with all future reports.

In an email dated August 24, 2018, the MECP noted that information related to Condition 52 of the ECA was missing from the AMR and was to be submitted before September 30, 2018. The questions and submitted responses are included in Appendix F.

An updated surface water and groundwater monitoring program was sent to the MECP on September 28, 2018. In an email dated November 2, 2018, the MECP provided the following comments regarding the proposed program:

- xv. The proposed monitoring frequency (spring and fall) is adequate.
- xvi. The proposed parameters are acceptable; however the list of VOC parameters to be analyzed was not provided. VOC analysis should be conducted for a robust list of parameters consistent with those assessed during 2017. A superscript 1 was present after the VOC monitoring details in the provided table, indicating that a foot note should exist; however, no footnote was provided.
- xvii. The township may wish to consider a reduction in the list of trace metals analyzed at the site in the future; however, this should be done in consultation with the MECP groundwater and surface water reviewers based on leachate characteristics associated with the site.
- xviii. The proposed monitoring well locations are acceptable, however, monitoring well BW4 should be added to the list. It is not clear why this monitoring well has been omitted.

- xix. The provided monitoring table does not mention groundwater elevation monitoring. Groundwater elevation monitoring should be conducted twice per year (spring and fall) in association with each groundwater monitoring event.
- xx. In addition, since OW11 was not included in the proposed groundwater monitoring program (but monitored in 2017), please confirm that OW11 will either be maintained for future use or abandoned in accordance with Regulation 903.

In an email to the MECP dated September 28, 2018, *Malroz* requested copies of several documents relating to the Escott WDS. The following documents were provided by the MECP on October 24, 2018:

- Application for Approval of Waste Disposal Site Amendment for Changes in Operations, and Expansion of Site Ward 3 (Escott) Waste Disposal Site A441073, Trow Associates, July 14, 2004. (MOE Ref. # 9969-5WVJDB)
- Draft Amended Provisional Certificate of Approval Ward 3 (Escott) Waste Disposal Site A441073, Trow Associates, September 28, 2004. (MOE Ref. # 9969-5WVJDB)
- Application for Approval of Waste Disposal Site Amendment for Changes in Operations, and Expansion of Site Ward 3 (Escott) Waste Disposal Site A441073, Trow Associates, June 22, 2004. (MOE Ref. # 9969-5WVJDB)
- Ward 3 (Escott) Waste Disposal Site A441703 Proposed Expansion, Trow Associates, February 18, 2004. [sent via parcel]

*Malroz* recommended to the MECP, in an email dated November 8, 2018, that monitoring well OW11 should be abandoned in accordance to Regulation 903, citing damage to the well's seal. A replacement well (OW11R1) has already been installed and will remain on the monitoring program.

Surface water comments related to the 2017 AMR were provided on March 21, 2019. The following comments and recommendations were provided:

- The Escott WDS is a natural attenuation landfill site that has been in operation since at least 1982. The site is approved to receive solid, non-hazardous waste and various recyclables. The site has approximately three years of site life remaining.
- Surface water results suggest that the landfill is not impacting the north stream or south stream at this time. Landfill leachate has been detected in the Hickenbottom drain, but parameter concentrations are still within the range characteristic of natural surface waters.
- Surface water results were difficult to discern due to sediment entrainment in the samples. Samples should only be collected if there is adequate flow at the station,

- or alternative sampling methods are employed (i.e. use of a peristaltic pump, field filter).
- Malroz Engineering provided and updated surface water monitoring plan for the site. I have no objections to the proposed program, except:
    - SW3 can be removed from the program as the drainage ditch on the southeast site of the mound has been filled in; and,
    - Trace metals antimony, beryllium, molybdenum, selenium, strontium, thallium, tin, titanium, tungsten, and vanadium can be removed.
  - In the next annual monitoring report:
    - The coordinates of all surface water monitoring stations (sampled or not) should be included;
    - Field sheets and photos of all surface water monitoring stations should be provided; and,
    - Water quality in the downgradient monitoring wells (e.g. OW4, OW11) should be compared to surface water criteria (i.e. PWQOs and CWQGs)

Due to the timing of these comments, where the comments have not been addressed in the 2018 field program, they will be addressed in the 2019 program, where possible.

*Malroz* met with the MECP on March 21, 2019 to review action items for the Site. The following tasks and action were discussed:

- i. The revised sampling and monitoring program is complete and will be submitted to the MECP separately.
- ii. The proposed additional delineation plan was submitted to the TLTI in 2018 and permission to drill from the landowner was preliminarily received on March 5, 2019.
- iii. The Closure Plan is currently being developed.
- iv. An assessment of needed ECA amendments has begun and will continue following the receipt of MECP technical review of the proposed revised sampling and monitoring program.

### **3.0 Development and Operations**

#### **3.1 Waste Disposal Site Description**

The Site has an approved waste volume of 40,000 m<sup>3</sup> and is actively landfilling non-hazardous waste materials from within Ward 3, Front of Escott in TLTI. Agricultural and forested land are proximal to the Site. The current Site property boundary and fill area is shown on Figure 2 (Appendix B).



We understand there have been no changes in Site operations (CofA 52(f)) during 2018.

### **3.2 Site Access**

The Escott WDS is located on part of Lots 8, 9, 10, Broken Front Concession, in the Township of Leeds and the Thousand Islands (former Township of Front of Escott). The site is located approximately 0.5 km north of Highway 401 and approximately 2.3 km northwest of the St. Lawrence River. Geodetic coordinates for the Site benchmark are as follows (2013 Site survey):

Zone:	NAD 83, 18T
Easting:	0424873.3 m (+/- 0.5 m)
Northing:	4917507.5 m (+/- 0.5 m)

Escott WDS can be accessed by Escott/Rockport Road via either County Road 2 or the Thousand Islands Parkway.

### **3.3 Service Area**

The waste disposal site services residents of Ward 3 in the TLTI. It is one of three active waste disposal sites serving TLTI (along with Lansdowne and Lyndhurst/Briar Hill Landfills).

### **3.4 Hours of Operation**

Hours of operation are as follows

Tuesday	8:30 a.m. - 4:45 p.m.
Saturday	8:30 a.m. - 4:45 p.m.

The entrance and exit gates are locked and no waste is received at the Site during non-operating hours. The Site was supervised by a site attendant during operating hours. A program is in place to inspect incoming waste loads for compliance.

### **3.5 Waste Characteristics**

In accordance with the CofA, the Site is currently actively landfilling solid non-hazardous waste. The Site also accepts recycling materials, white goods, and metals only for bulking and subsequent transfer off-site. No liquid industrial or hazardous wastes are accepted at the Site. Site records report that 1 ton (metric) of mixed container waste was received at the Site over the monitoring period (Appendix G). We understand that recyclable material, metals, white goods and tires are transferred off-site for further processing.

Bins for recycling materials were maintained at the subject site during 2018. Removal and processing of the recycling materials was completed by Manco Recycling Systems.

Tires are not accepted at the Escott Site. Users are directed to the Lansdowne WDS where the tires are recycled. Any tires dumped at the gates of the Site are stockpiled and shipped to the Lansdowne WDS for recycling.

### **3.6 Phasing of Site Usage**

Cover material is not stockpiled at the Site. Material is brought to the Site during covering operations, placed on a compacted portion of the waste fill area and utilized within 48 hours.

Final cover was applied in 2017 at areas of the site that have reached the final elevation. The waste pile was contoured and side slopes were re-established to conform to final elevations. Additional cover will be applied to the Site as more areas reach their final grade.

### **3.7 Site Inspections**

Beginning in April 2018, Site Inspections are carried out during each day of operation (Tuesday and Saturdays) by the Site attendant (Appendix G). No erosion or leachate springs were reported in 2018. No vermin or vector outbreaks occurred in 2018, although observations of birds, cats, vultures and/or racoons were made on several occasions. Wind blown litter was also identified as a deficiency at the Site on several occasions: efforts to pick up windblown litter were noted. A backhoe was ordered to ‘dress’ garbage back off the road on May 15, 2018.

Escott WDS attendants refused loads of tree stumps, and construction material, as well as fully loaded double-axle loads of household or construction waste during 2018.

Ponding was reportedly often observed at the Site following a rain event. The entrance signage is beginning to show signs of degradation. *Malroz* also noted that signs at the Site do not direct vehicles to the working face, the recycling bins, and other disposal areas at the Site. We have provided this information to TLTI and recommend that this be addressed.

On a few occasions, waste was deposited at the bottom of the waste mound, rather than in the active waste disposal area, due to seasonally wet and muddy conditions (September 22, October 30, November 3, November 10, November 13). On September 29, it was noted that someone had deposited waste at the base of the hill off-hours.

*Malroz* undertook inspections on November 13, 2018 to ensure monitoring wells are adequately sealed at the surface, to measure landfill (methane) gas concentration, and to identify any additional problems with the operation of the Site (CofA 52 (i)). Results of the inspection by *Malroz* are included in Appendix D and discussed in Sections 4 and 5.

*Malroz* noted that monitoring wells OW8 and OW11 are still present at the Site and are recommended for abandonment. Replacement wells OW8R1 and OW11R1 have already been installed.

### **3.8 Record of Complaints**

The Site received one complaint in 2018 from a resident. The complaint was related to the height of bin being too large so as to make them inaccessible. A shorter, more accessible bin was provided.

### **3.9 Method of Waste Disposal**

The Escott Waste Disposal Site operates as an area fill site. On a bi-weekly basis, the waste is contoured, compacted and covered with sandfill (Appendix G). MANCO provides recycling bin rentals for the Site and provides pickup and processing services for recycling materials dropped off by TLTI residents.

The WDS relies on natural attenuation. There are no engineered systems for leachate collection or storm water management, other than a ditch located along the north-western edge of the waste mound. However, ponding along the ditch suggests that it may need re-grading. The Site has been approved to burn clean wood waste (CofA 23(b)), following the MECP's Guideline C-7 entitled "Burning at Landfill Sites". We understand, from discussion with TLTI personnel, that burning occurs once per month at the Site, weather permitting. Based on the attendant logs, no spills or emergencies occurred at the Site in 2018.

We understand that landfill gas migrating from the Site is not collected by an engineered gas system. In 2015, an elevated attendant's trailer was installed at the Site to ensure that gas does not accumulate within the enclosed space.

### **3.10 Record Keeping**

Field notes and Site records are maintained at the Township offices, 1233 Prince Street, Lansdowne, Ontario. We understand that TLTI has evaluated their record keeping practices and implemented a new log book system at the Site beginning in April 2018.

### **3.11 Remaining Site Capacity**

The maximum volumetric capacity approved for the Site is 40,000 m<sup>3</sup> as reported in the CofA Section 15. This volume includes the waste, daily cover and intermediate cover, but excludes final cover. The amount of daily cover and final cover are not calculated for this site, rather the total of waste and cover is used to calculate remaining volume (CofA 52 (a)).

The Site was surveyed by BluMetric Environmental Inc. (BluMetric) in December 2016. BluMetric determined the Site had a remaining capacity of 4,131 m<sup>3</sup>, based on a final capacity of 39,760 m<sup>3</sup> and excluding final cover. The reason for the discrepancy between the BluMetric final capacity and that stated in the CofA is unknown. *Malroz* accounted for this discrepancy in the 2016 AMR by adding 240 m<sup>3</sup> to the BluMetric measurements to be consistent with the CofA, and determined a remaining capacity of 4,371 m<sup>3</sup>.

In December 2018, *Malroz* conducted a capacity survey at the Site. The survey identified a total of 927 m<sup>3</sup> of waste was deposited between 2017 and 2018 surveys. Based on previous data presented in the 2017 AMR and the recent survey, the Site has an estimated remaining capacity of 2,442 m<sup>3</sup>. Based on the previous fill rate estimate of 946 m<sup>3</sup> (2017 AMR), the Site is expected to reach capacity in 2.6 years, or 2021.

Given the site has reached 90 percent of its capacity, a Site Closure Plan is now due. A draft Closure Plan is underway and is planned to be submitted in 2019 for review.

## **4.0 Description of Monitoring Program**

Groundwater and surface water monitoring are conducted on a semi-annual basis in the spring and fall, in accordance with the CofA. The current monitoring plan for the Site utilizes the Ontario Drinking Water Standards (ODWS) to assess groundwater conditions and Provincial Water Quality Objectives (PWQO) to assess surface water conditions. Field work for the 2018 monitoring programs was conducted in the spring (May 30) and fall (November 12). Groundwater and surface water programs are detailed below.

### **4.1 Groundwater Monitoring Program**

The 2018 groundwater monitoring program consisted of nine overburden monitoring wells and four bedrock wells. *Malroz* noted that monitoring well OW4 was sampled in 2017 and spring of 2018, despite having been reported as damaged in the summer of 2015 and discontinued from the sampling program in fall 2015 and 2016. We suggest that an investigation occur in 2019 to evaluate the integrity of OW4. As there have been no

apparent indicators to suggest that the well may be compromised, special attention should be given to the integrity of the seal and out-of-sight components.

Monitoring wells OW11R1, OW8R1 and BW4 were surveyed in 2018 to confirm groundwater elevations. Results from well inspections, monitoring and groundwater sampling are presented in Sections 5.0.

According to correspondence with the TLTI on March 5, 2019, permission for the drilling and installation of three new monitoring wells was given by the property owner of 297 Escott Rockport Rd. An agreement for access is in the process of being obtained.

#### **4.2 Surface Water Monitoring Program**

There are seven active surface water sampling stations located around the Site: SW3, SW4, SW5, SW7, SW8, HBO, HBI. The surface water monitoring program is detailed in Table 1, Appendix I. Results from surface water sampling are presented in section 5.

#### **4.3 Variations in Monitoring**

*Malroz* followed the groundwater and surface water programs as specified in the CofA with the following variations:

- The portion of the site inspection that included the active waste disposal area was not completed concurrently with the spring monitoring. A review of the monitoring program and schedule has been conducted to ensure that these items are captured at future events and was conducted at the fall event.
- Surface water stations SW3, SW8 and HBI were not sampled in the fall due to dry conditions.

#### **4.4 Data Quality Evaluation**

Samples were collected using laboratory supplied sample bottles containing preservatives appropriate for each parameter. Samples were submitted to Caduceon Laboratories (*Caduceon*) for analysis. *Caduceon* is a Canadian Association for Laboratory Accreditation (CALA) accredited laboratory that uses *MECP*-recognized methods to conduct laboratory analyses. *Caduceon* reports that they are accredited to conduct the analyses completed for this investigation. Laboratory Certificates of Analysis are provided in Appendix J.

### **5.0 Discussion of Results**

Results of the 2018 groundwater and surface water programs are presented in this section. Results from well inspections are presented in Table 1 and groundwater monitoring results are

presented in Table 2 (Appendix E). Results of groundwater analyses are presented in Tables 3, 4 & 5 and reasonable use limit (RULs) calculations are presented in Table 6 (Appendix E). Results of surface water analyses are presented in Table 7 (Appendix E). Observed results have been compared to relevant criteria and any observed exceedances are highlighted to allow for visual interpretation.

## 5.1 Well Inspection

A well inspection was undertaken by *Malroz* during the 2017 sampling events. The well inspection included a visual inspection of accessible portions of the well piezometer, casing, cap, lock, and well seal. Wells were assigned one of the following conditions:

- Good – the well is in good condition with no maintenance required.
- Fair – exhibits some minor deficiencies, however well integrity is not compromised.
- Poor – well integrity is compromised and the well requires maintenance or abandonment.

Results of the well inspections are summarized in Table 1 (Appendix B). Monitoring wells BW2 and BW4 are recommended for maintenance at the spring event in accordance with the recommendations in Table 1. During the fall monitoring and sampling program, *Malroz* noted that both monitoring wells OW11 and OW8 are still present on site. As these wells have already been replaced, we recommend that they be abandoned in accordance with O. Reg. 903 in 2019.

## 5.2 Landfill Gas and Water Level Monitoring

Results from groundwater monitoring are presented in Table 2 (Appendix B). Methane concentrations received no response, with the following exceptions:

- OW4 was reported at <1% LEL in the fall
- OW12 was reported at <1% LEL in the fall
- OW14 was reported at <1% LEL in the fall
- BW4 was reported at <1% LEL in the fall

OW14 is a leachate well located adjacent to the southern side of the waste fill area. BW4, OW4, and OW12 are located north of the waste fill area.

Groundwater elevation contours for the Site are presented in Figure 3a and 3b (Appendix A). Groundwater elevation data indicates a north to north easterly flow in the overburden and a northerly flow in the bedrock, consistent with historical results.

### 5.3 Overburden Groundwater Summary

Overburden groundwater analyses are presented in Tables 3a and 3b (Appendix B). The background groundwater quality in the overburden has historically been characterized by monitoring well OW8R1, installed in 2015 to replace background well OW8. Results indicate elevated hardness in the background, in exceedance of the ODWS criterion. Based on historical results and other related chemical parameters, we believe that the field pH measurements in the fall are not reliable due to an error in instrument calibration. As such, the fall field pH measurements were not considered as part of the groundwater quality evaluation.

The following parameters are used as leachate indicators (LIPs) at the Site, according to Schedule A of the CofA: alkalinity, ammonia, BOD, chloride, conductivity, DOC, hardness, TKN, pH, sodium, sulphate, TDS, aluminum, iron, and manganese. In the effort to make the analysis more concise, a reduced list of LIPs was generated by comparing historical results for leachate and background wells (Table 8, Appendix B). The following parameters are proposed as LIPs, since they historically show the greatest difference between background and leachate concentrations: ammonia, chloride, iron, and manganese.

Monitoring well OW14 has historically been used to be used to characterize the leachate at the Site. OW14 exceeded the ODWS criteria for the following parameters during the spring and fall sampling events: alkalinity, DOC, hardness, TDS, iron, and manganese. A uranium exceedance was also reported during the fall sampling event, however, this exceedance is consistent with historical results and below the historic maximum (Appendix K). It is also possible that the uranium is derived from the bedrock, as concentrations between 3.01 and 25.00 ug/L are reported in the Precambrian basement in Gananoque area (Hamilton, 2015).

Concentrations of leachate indicators at OW3 suggest some leachate impact, however, concentrations are much lower than downgradient well OW11R1. Considering monitoring well OW3 is screened from about 1.4-3.4 mbg and that OW11R1 is screened from 4.0 – 5.5 mbg (Appendix D), this may indicate that the leachate is migrating primarily in the deeper overburden.

Downgradient well OW11R1 shows some evidence of leachate impact, with elevated concentrations of LIPs when compared to background, during both spring and fall 2018. Concentrations of leachate indicators decreased at OW11R1 when compared to leachate monitoring well OW14, suggesting attenuation is occurring (Appendix L).



Concentrations of leachate indicators in wells OW5 and OW12 were near background levels during both the summer and fall, indicating little leachate impact to the northeast of the waste mound. Small increases in concentrations of chloride, sulphate, and sodium were observed at OW12 during the spring and/or fall events when compared to the background. Small increases in concentrations of DOC, chloride, sulphate, iron and manganese were observed at OW5 in the spring. However, these increases are comparable to background when considering leachate concentrations. During the fall sampling event, only chloride and sulphate showed small increases in concentration when compared to the background.

Exceedances of ODWS criteria were noted during 2018, however, most are aesthetic or operational objectives (Table 3, Appendix B). Exceedances of the ODWS chemical standards were reported for nitrate at OW3 and uranium at OW14 in November 2018. As noted above, concentrations of uranium in exceedance of ODWS criteria may be related to the regional bedrock. The November concentration for nitrate at OW3 is significantly variable from the spring event and from historic results, and as such, may be anomalous.

#### **5.4 Bedrock Groundwater Summary**

Bedrock groundwater analyses are presented in Table 4 (Appendix B).

Bedrock groundwater quality at the Site is characterized by wells BW1, BW2, BW3 and BW4. Well BW3 has been historically used to characterize the background quality at the Site. The following ODWS exceedances were observed at BW3 in the spring and/or fall 2017: DOC and hardness.

BW1 was used to monitor leachate within the bedrock. BW1 exhibits elevated levels of LIPs, several of which exceed the ODWS criteria. The concentrations of LIPs at BW1 are comparable to overburden leachate well OW14, and elevated when compared to the proximal overburden well (OW3).

Bedrock wells BW2 and BW4 are located downgradient from the waste mound. BW4 results show elevated concentrations of LIPs, during both sampling events in 2018, when compared to background. When compared to leachate concentrations (BW1), a notable decrease in concentrations of LIPs is observed at BW4, suggesting attenuation is occurring in the bedrock groundwater as it migrates northwards from the waste mound.

Results of VOC analyses for wells BW1, BW3 and BW4 are provided in Table 5, Appendix B. The VOC analyses were reported below the method detection limit for each parameter, with the exception of 1,1-dichloroethane at BW1 and BW4. As there is no ODWS criterion for 1,1-dichloroethane, the results were compared to O. Reg. 153/04

Table 1: Full Depth Background Site Condition Standards for All Types of Property Use (Table 5, Appendix B). The results observed in 2018 met the standard.

The following parameters showed exceedances of ODWS criteria at one or more location during 2018: alkalinity, DOC, hardness, TDS, iron, and manganese. These parameters represent aesthetic or operational objectives.

### 5.5 Reasonable Use Policy

The Reasonable Use Policy was used to assess compliance of the groundwater quality at the Site with MOECC Guideline B-7 “Incorporation of the Reasonable Use Concept into MOEE Groundwater Management Activities”. Reasonable Use Limits (RULs) were calculated for the analyzed parameters using background groundwater concentrations and corresponding drinking water criteria (see Table 6, Appendix B).

Monitoring wells OW11R1, OW3 and OW12, as well as BW2 and BW4, were identified as compliance wells for overburden and bedrock groundwater (respectively). RULs were calculated using background wells OW8/OW8R1 and BW3. It is notable that there are no reports of domestic wells downgradient, within 500 m of the Site.

The following exceedances of RULs were reported in 2018:

<u>Parameter</u>	<u>Spring</u>	<u>Fall</u>
DOC	OW11R1, BW2, BW4	OW3, OW11R1, OW12, BW2, BW4
Hardness	OW3, OW11R1, OW12, BW4	OW3, OW11R1, OW12, BW4
Nitrate	none	OW3
Aluminum	BW4	BW4
Iron	BW4	OW11R1, BW4
Manganese	OW11R1, BW4	OW11R1, BW2, BW4
Uranium	OW11R1, BW4	OW11R1, BW4

Exceedances of RULs suggest that the Site is non-compliant with MOECC Guideline B-7. However, the absence of domestic wells downgradient and within 500 m of the Site indicates that, at this time, our understanding is that the Site does not pose a threat to human health. Hardness, DOC, aluminum and manganese are operational or aesthetic objectives. Exceedances of RULs for hardness and aluminum may be influenced by non leachate factors such as background contributions from the bedrock and/or soils. The uranium exceedance may be influenced by bedrock composition, as mentioned above. Exceedances of RUL for iron and manganese may be leachate related, however other leachate indicators meet the RULs, suggesting elevated metals at BW4 and OW11R1 may not be leachate related. Results show that attenuation is occurring between the waste mound and the compliance wells.

Additional groundwater investigation is planned for 2019 to further characterize groundwater conditions. An action plan was submitted to TLTI on April 10, 2018. We understand from recent correspondence that access to third party lands has recently been provided and written access consent is in the process of being obtained to allow for the action plan implementation.

## **5.6 Trends in Groundwater Analyses**

A summary of historic groundwater analyses at the Site for selected LIPs has been prepared and is included as Appendix L. The LIPs summarised include ammonia, chloride, iron, and manganese. The following observations were made:

- Chloride appears to be attenuating between OW14 and OW11R1.
- Ammonia concentrations are variable in both background and leachate wells. Concentrations decrease between leachate (OW14) and downgradient well OW11R1. Ammonia concentrations at OW3 have been comparable to background since 2009.
- With the exceptions of two spikes in concentrations in 2004 and 2006, iron appears to show an overall decreasing trend in leachate-impacted well OW11R1.
- With the exception of two spikes in concentration in 2004 and 2006, manganese appears stable in background and leachate-impacted wells.

In general, the plume shows evidence of stability, particularly among metal elements.

## **5.7 Surface Water Summary**

Surface water analysis was completed using the Provincial Water Quality Objectives (PWQO) and the Table A and B criteria as described in the *MOECC* 2010 guidance document for Monitoring and Reporting for Waste Disposal Sites. The Table A, Aquatic Protection Values (APVs), of the *MOECC* landfill guidance document (2010) reportedly represent the lowest chronic concentration for which adverse effects have been noted in the literature. The Table B, Alternative Review Criteria, are based on selected 2007 Canadian Water Quality Guidelines (CWQGs) and have a similar intent to Table A criteria. The CWQGs have been developed for the protection of marine and freshwater species. Differences between the Table A and Table B criteria for certain parameters (i.e. zinc, chloride) may be due to differences in literature cited that relate to the scope of protection (freshwater species only versus freshwater and marine species). The PWQO, Table A and Table B values may also vary as a result of the age of the criteria. The Table A (2010) and Table B (2007) values are often based on scientific literature that is more recent than the PWQO (1994).

For PWQO parameters which do not have a Table A or Table B criteria, the objective is a numerical value representing a chronic concentration which, if exceeded, would pose a potential threat to the survival of some forms of aquatic organisms. Total phosphorus is an exception as the maximum concentration has been defined with the intent of preventing nuisance aquatic plant growth.

The surface water monitoring program at the Site is characterized by seven sampling stations: SW3, SW4, SW5, SW7, SW8, HBO and HBI. SW3, SW8, HBO and HBI were dry during the spring sampling event, while SW3, SW8, and HBI were dry during the fall sampling event. Coordinates of surface water stations are detailed below. Results of the surface water analyses are presented in Table 7 (Appendix B).

There are three main surface water features in the area of the Site. For the purposes of describing the chemical character of each surface water feature, the following section will interpret the north stream, south stream and Hickenbottom stream separately.

Station	UTMs (NAD 83, Zone 18T)	
	Northing (m)	Easting (m)
HBI	4917689	425012
HBO	4917819	425308
SW-3	-	-
SW-4	4917533	424500
SW-5	4917954	425046
SW-7	4916892	424861
SW-8	4917335	424883

South Stream

The south stream is approximately 375 meters south of the waste pile. The flow direction of the stream is to the northeast. Sampling stations SW7 and SW8 are located along this stream. SW7 is used to characterize the background due to its up-stream location. It should be noted that SW7 is also located next to the main road (Escott Rockport Road).

The background surface water has historically exhibited elevated levels of iron, copper and total phosphorous.

Station SW8 was dry during both sampling events in 2018.

#### North Stream

The north stream is located approximately 75 m from the edge of the waste pile. Sampling stations SW4 and SW5 are located along this stream, and SW4 is used to characterize the background due to its up-stream location. As with SW7, SW4 is located next to the main road. Background quality of the north stream showed elevated total phosphorous, cadmium, iron, vanadium, and zinc.

Results downstream at SW5 displayed slightly higher concentrations of some LIPs when compared to background during the spring event. These include ammonia, iron, and manganese. However, the concentrations of these parameters decreased in the fall. Given this station has not shown evidence of leachate in the past, we continue to believe that there is not a significant leachate influence at the stream. Elevated LIPs observed in the spring could be related to agricultural activities and runoff in the area. Further monitoring of potential trends will be evaluated in 2019.

#### Hickenbottom Stream

Hickenbottom Inlet (HBI) is located northeast of the waste fill area and is upstream of the tile that drains the agricultural field north of the Site. Hickenbottom Outlet (HBO) is located northeast of the Site in an agricultural field, where the drainage tile discharges into a manmade ditch that flows towards La Rue Mills Creek.

Dry conditions were reported at HBI during both sampling events. During the fall, HBO exhibited elevated levels of hardness, alkalinity, conductivity, and TDS when compared to backgrounds. However, given no metal or other LIPs were elevated, we suggest that these parameters indicate a non-leachate related influence to surface water quality.

## **6.0 Conclusions & Recommendations**

The Escott WDS is an active site currently accepting non-hazardous solid waste. A Closure Plan is currently being completed for the Site, and the estimated life span is approximately 2.6 years.

Water level monitoring results indicate a general northeasterly groundwater flow direction in the overburden and a general northerly flow direction in the bedrock. Groundwater analyses indicate that leachate is migrating towards the overburden well OW11R1 and bedrock well BW4. Attenuation appears to be occurring.

MECP Guideline B-7 has been applied to the Site. Results indicate that wells OW11R1 and BW4 have exceeded the RULs for a number of parameters, suggesting the site does not conform to MECP Guideline B-7 along the northern property boundary. Some RUL exceedances were also observed at wells OW3, OW12 and BW2. With the exception of iron and manganese, these parameters likely indicate impacts that are not related to leachate. Additional groundwater investigation is planned for 2019 to further characterize groundwater conditions. Based on these results and that there are no identified domestic wells downgradient and within 500 m of the Site, we believe there is currently no threat to human health from the leachate at Escott WDS.

Surface water stations in our opinion do not show significant evidence of leachate impact.

The following recommendations are offered:

1. Monitoring should continue twice per year in conformance with the CofA.
2. Reduce VOC analyses to every two (2) years at the spring event, at monitoring wells OW14 and BW1, as recommended by the MECP (next sampling will occur in 2020).
3. Evaluate integrity of monitoring well OW4 to determine whether a replacement well is required.
4. Remove BOD and TKN as leachate indicator parameters.
5. Prepare and submit a Site Closure Plan as per Section 56 of the CofA (in progress).
6. Abandon OW8 and OW11 in accordance with O. Reg. 903.
7. Evaluate re-grading of entrance road near brush pile and active filling area to better manage storm water.
8. Evaluation of surface water station location, if additional dry conditions are encountered during sampling in 2019.
9. Repair degraded signage at the Site and obtain necessary signs and labelling to ensure compliance with condition 28 of the CofA.
10. Develop and submit a trigger mechanism for the Site once additional drilling program is completed.
11. *Malroz* also noted that, based on historic analyses, there appears to be little evidence of leachate impact to the south of the landfill. As such, evaluation with the MECP of the need to continue sampling monitoring well OW7 should be considered. A revised monitoring and sampling program are proposed in Table 1 for technical support review, Appendix I.

## 7.0 References

Malroz Engineering (2016) Annual Monitoring, Development and Operations Report, submitted to the Ministry of Environment and Climate Change (now MECP) on June 2017

Day, A. (2015) Annual Groundwater and Surface Water Monitoring Report for Escott WDS (ECA No. 441703), Township of Leeds and the Thousand Islands.

Hamilton, S.M. (2015) Ambient groundwater geochemistry data for southern Ontario, 2007-2014, Ontario Geological Survey, Miscellaneous release data 283 (revised).

Hewitt, D.F. (1964) *Geological notes for maps Nos. 2053 and 2054 Madoc-Gananoque Area*, Ministry of Natural Resources, GC 12, 33p (reprinted 1974). Accompanied by Maps 2053 and 2054, scale 1:126,720.

Jp2g Consultants Inc. (2013) 2012 Annual Report Escott Waste Disposal Site, prepared for the Township of Leeds and the Thousand Islands, March 2013.

Ontario Drinking Water Standards (ODWS) from Ontario Regulation 169/03 of the Safe Drinking Water Act (2002). Last amendment: O. Reg. 373/15.

Provincial Water Quality Objectives (PWQO) from the Ministry of Environment and Energy's Water Management Policies & Guidelines, July 1994.

Technical Guidance Document: Monitoring and Reporting for Waste Disposal Sites Groundwater and Surface Water. Ministry of the Environment, November 2010.



Appendix A  
Figures



**Legend**

 approximate property boundary

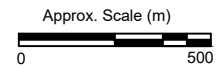
Note: Figure based on Malroz field observations and Google Earth imagery

Rev	Date	Description	By	Chkd
0	19/01/14	issued in final	ZL	JMP

**Site Location Plan**

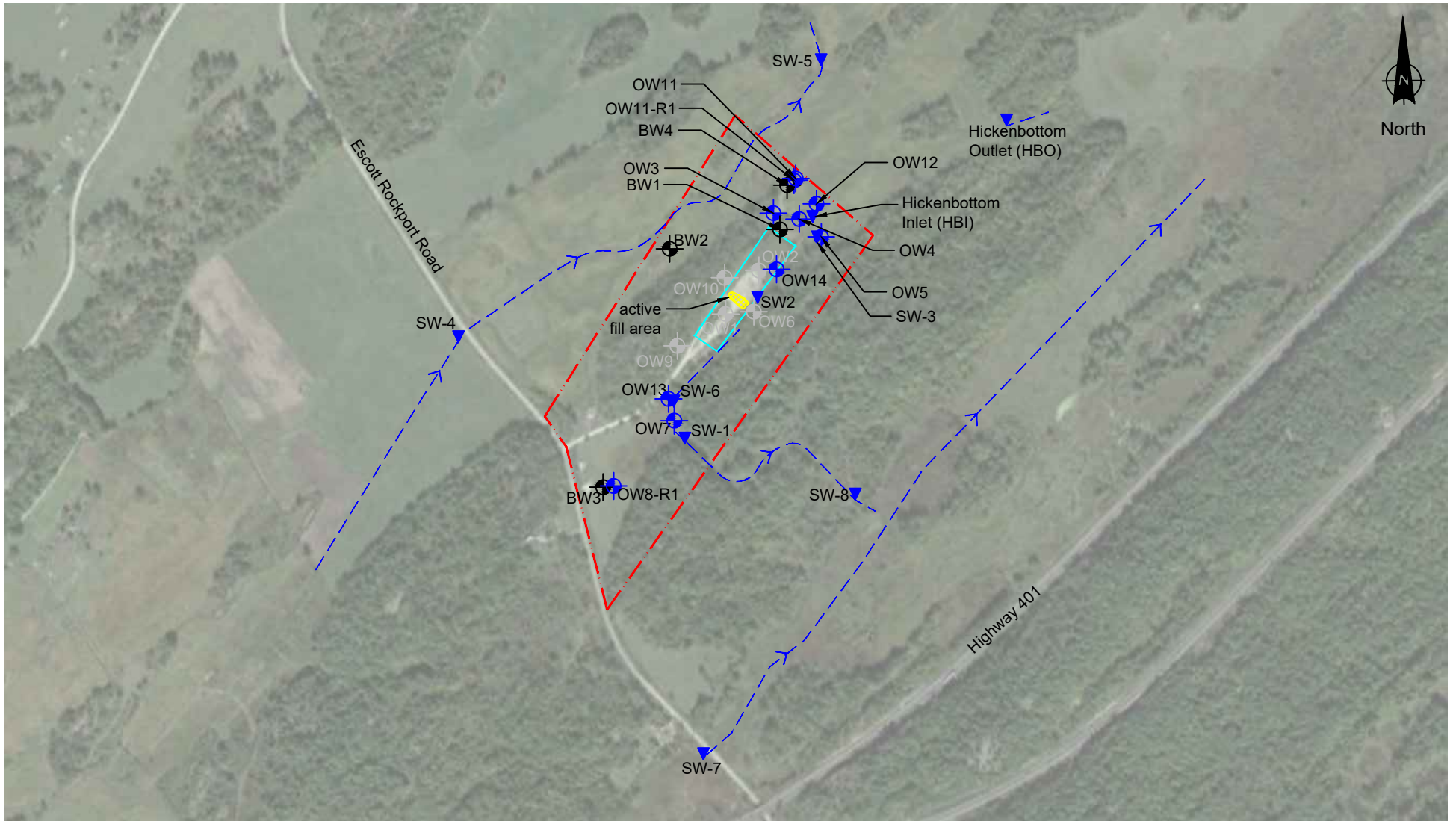
2018 Annual Monitoring Report  
 Escott Waste Disposal Site  
 Township of Leeds and the Thousand Islands

File: 1038-112.00



**Figure 1**





**Legend**

- approximate property boundary
- approximate boundary of current and historical waste fill area
- surface water with flow direction
- ▼ SW-6 surface water sample station
- BW1 bedrock monitoring well location
- OW11 overburden monitoring well location
- OW1 former monitoring well

Note: Figure based on Malroz field observations and Google Earth imagery

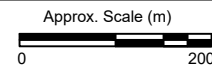
0	19/02/08	issued in final	ZL	MW
Rev	Date	Description	By	Chkd

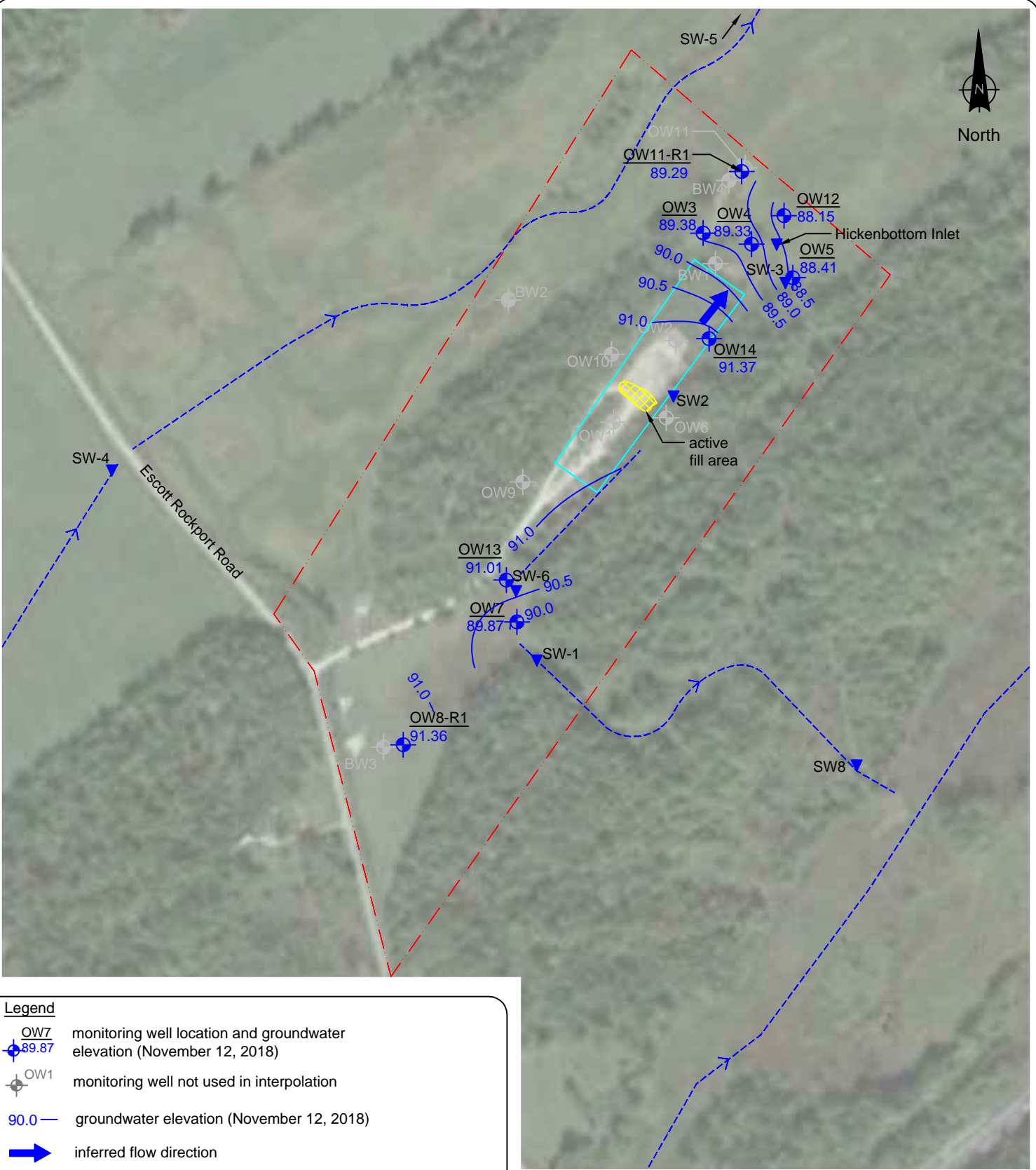
**Site Plan**

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Figure  
**2**





**Legend**

- monitoring well location and groundwater elevation (November 12, 2018)
- monitoring well not used in interpolation
- groundwater elevation (November 12, 2018)
- inferred flow direction
- surface water with flow direction
- approximate boundary of current and historical waste fill area
- approximate property boundary

Note: figure based on Malroz field observations and Google Earth imagery

### Inferred Shallow Groundwater Contours

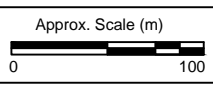
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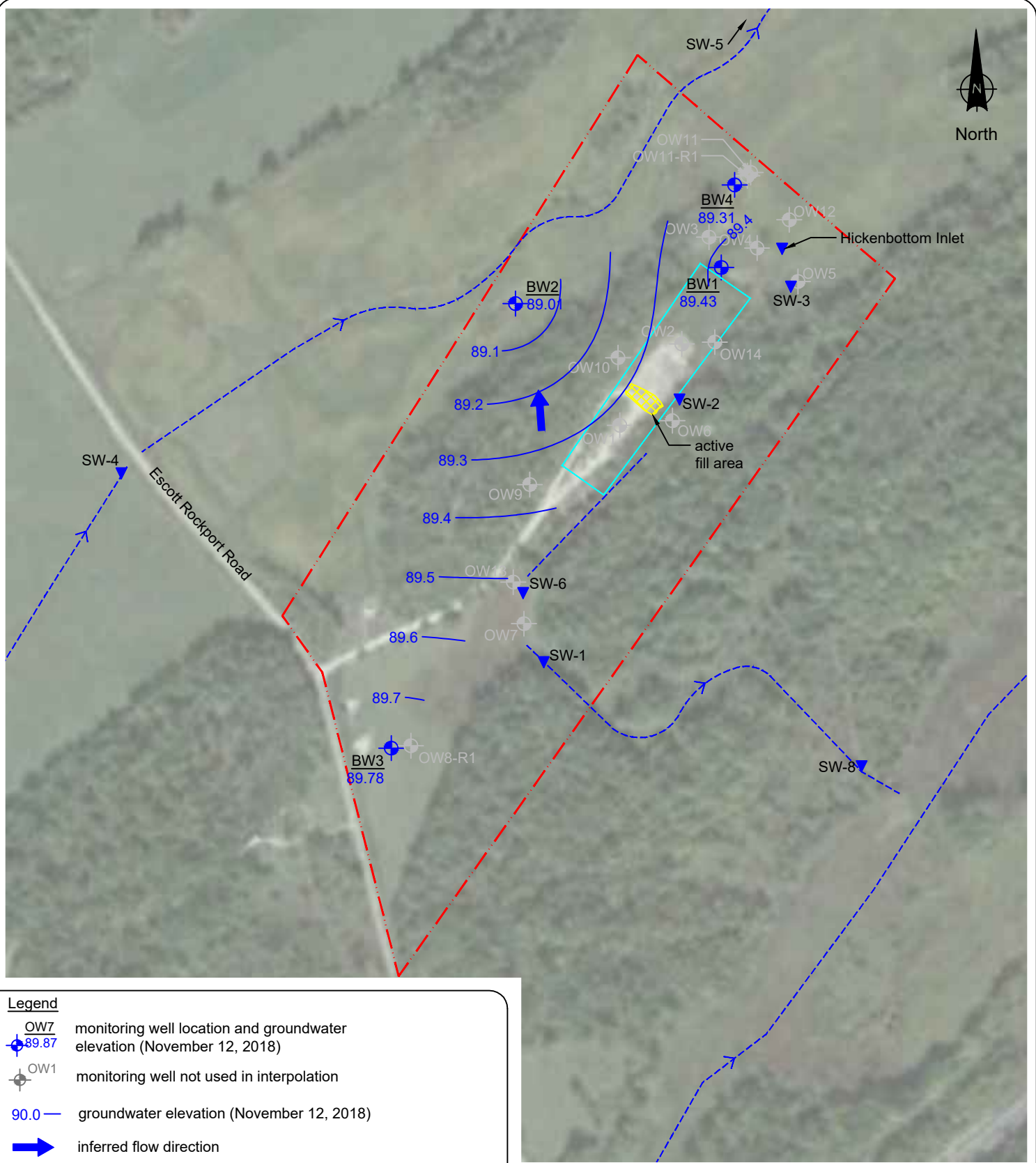
Figure  
**3a**










Rev	Date	Description	By	Chkd
0	19/02/08	issued in final	ZL	MW







**Legend**

-  **OW7** monitoring well location and groundwater elevation (November 12, 2018)
-  **OW1** monitoring well not used in interpolation
-  **90.0** groundwater elevation (November 12, 2018)
-  inferred flow direction
-  surface water with flow direction
-  approximate boundary of current and historical waste fill area
-  approximate property boundary

Note: figure based on Malroz field observations and Google Earth imagery

**Inferred Bedrock Groundwater Contours**

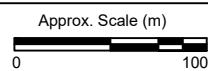
2018 Annual Monitoring Report  
Escott Waste Disposal Site  
Township of Leeds and the Thousand Islands

File: 1038-112.00

Figure  
**3b**



Rev	Date	Description	By	Chkd
0	19/02/08	issued in final	ZL	MW



Appendix B  
Tables

**Table 1**  
**Well Inspection**

Well ID	Well Type	Well Construction	Well Integrity			Well Observations	Recommended Repairs
	Protective casing	Material	Locked	Capped	Condition <sup>A</sup>	Remarks	
BW1	Steel Monument	2" Schedule 40 PVC	N <sup>B</sup>	J-Plug	good	-	
BW2	Steel Monument	2" Schedule 40 PVC	N <sup>B</sup>	J-Plug	fair	piezometer is loose	cement to stabilize
BW3	Steel Monument	2" Schedule 40 PVC	Y	J-Plug	good	-	
BW4	Steel Monument	2" Schedule 40 PVC	Y	J-Plug	good	water around well base	seal with bentonite
OW11	Steel Monument	2" Schedule 40 PVC	Y	J-Plug	poor	-	abandon
OW11R1	Steel Monument	2" Schedule 40 PVC	Y	J-Plug	good	-	
OW12	Steel Monument	2" Schedule 40 PVC	Y	J-Plug	good	-	
OW13	Steel Monument	2" Schedule 40 PVC	Y	J-Plug	good	-	
OW14	Steel Monument	2" Schedule 40 PVC	Y	Slip Cap	good	-	
OW3	none	2" Schedule 40 PVC	Y	no <sup>B</sup>	good	no casing	
OW4	none	2" Schedule 40 PVC	Y	J-Plug	good	no casing	
OW5	none	1" Schedule 40 PVC	N <sup>B</sup>	no <sup>B</sup>	good	no casing	
OW8	none	1" Schedule 40 PVC	N	J-Plug	poor	-	abandon
OW8R1	Steel Monument	2" Schedule 40 PVC	Y	J-Plug	good		

Notes:

- Well inspection completed on May 30 and November 12, 2018
- A Well conditions ranked as:
  - good (no maintenance required),
  - fair (minor maintenance required),
  - poor (requires maintenance or abandonment)
  - not measured/not observed
- B Wells were locked and capped (with j-plug or pre-existing cap) on November 12-13, 2018

Data Input: CMM  
 Data checked: JMP

**Table 2**  
**Groundwater Monitoring Results**

Location	DTW (mbTOP)	DTB (mbTOP)	Groundwater elevation (masl)	Methane Concentration (%LEL)	Purge Water Observations		
					Colour	Sediment	Odour
<b>May 30, 2018</b>							
BW1	2.00	22.77	89.39	nr	clear	none	none
BW2	0.94	8.50	88.88	nr	clear	none	none
BW3	2.87	20.10	90.09	nr	clear	none	none
BW4	0.89	10.70	89.26	nr	cloudy	none	none
OW3	1.64	4.61	89.15	nr	brown	lots	none
OW4	1.87	2.94	89.17	nr	cloudy	trace	none
OW5	0.58	5.63	90.42	nr	cloudy	some	none
OW7	1.65	3.88	91.34	nr	-	-	-
OW8R1	1.46	3.73	91.23	nr	grey	some	none
OW11R1	1.06	6.14	89.05	nr	brown	lots	none
OW12	2.00	5.57	87.74	nr	grey	some	none
OW13	1.31	7.04	91.24	nr	grey	some	none
OW14	3.68	9.40	91.47	nr	grey	some	musty
<b>November 12, 2018</b>							
BW1	1.96	23.22	89.43	nr	clear	none	none
BW2	0.81	8.40	89.01	nr	clear	none	none
BW3	3.18	19.94	89.78	nr	clear	none	none
BW4	0.79	10.66	89.31	<1	clear	some	none
OW3	1.41	4.07	89.38	nr	brown	abundant	none
OW4	1.71	2.96	89.33	<1	-	-	-
OW5	2.59	5.53	88.41	-	grey	abundant	none
OW7	3.12	3.85	89.87	nr	-	-	-
OW8R1	1.55	3.74	91.36	nr	brown	lots	none
OW11R1	0.79	6.12	89.29	nr	grey	abundant	none
OW12	1.59	5.43	88.15	<1	grey-brown	trace	none
OW13	1.54	7.02	91.01	nr	grey	abundant	none
OW14	3.78	9.37	91.37	<1	grey	trace	sulfur

Notes:

LEL denotes lower explosive limit  
 nr indicates no response  
 DTW depth to water  
 DTB depth to well bottom  
 - denotes no data available or no observations; well OW7 is monitored for groundwater elevation only  
 masl meters above mean sea level  
 mbTOP denotes meters below top of piezometer

Data Input: CMM

Data Check: AP



**Table 3a**  
**Overburden Groundwater Analysis Results (May)**

		May Sampling									ODWS	RULs <sup>2</sup>
		Overburden Wells										
Well ID	Sample ID	OW3	OW4	OW5	OW8R1	OW11R1	OW12	OW13	OW14			
Parameter	Units	RL	18-May-30	18-May-30	18-May-30	18-May-30	18-May-30	18-May-30	18-May-30	18-May-30		
Alkalinity as CaCO3	mg/L	5	310	422	242	354	339	373	402	1000	30-500 <sup>OG</sup>	450
Ammonia-N	mg/L	0.01	0.08	0.03	0.02	0.01	0.81	0.02	0.09	0.91		
Biochemical Oxygen Demand	mg/L	2	<	<	<	<	6	<	3	<		
Chemical Oxygen Demand	mg/L	5	111	25	8	<	54	30	38	71		
Dissolved Organic Carbon	mg/L	0.2	2.5	4.7	5.7	2.6	5.3	2.7	4.3	8.8	5 <sup>AO</sup>	3.5
Conductivity	µmho/cm	1	683	932	456	636	765	639	697	2040		
Hardness as CaCO3	mg/L	1	340	513	237	318	352	328	345	1140	80-100 <sup>LA</sup>	248
pH	pH Units	-	8.05	7.95	8.16	7.96	7.88	8.25	8.18	7.65	6.5-8.5 <sup>OG</sup>	
Phenols	mg/L	0.001	<	<	<	<	<	<	<	<		
Total Phosphorus	mg/L	0.01	11.1	0.56	0.39	0.10	13.6	0.76	2.46	2.95		
Total Dissolved Solids	mg/L	3	355	495	236	330	400	332	362	1130	500 <sup>AO</sup>	460
Total Suspended Solids	mg/L	3	21200	660	460	95	14000	800	3000	1300		
Total Kjeldahl Nitrogen-N	mg/L	0.1	1.1	0.4	0.3	0.2	2.7	0.3	0.4	1.6		
Chloride	mg/L	0.5	20.9	41.0	1.2	0.7	25.1	1.8	1.7	81.2	250 <sup>AO</sup>	125.9
Nitrate-N	mg/L	0.05	0.11	<	<	0.22	0.17	0.07	0.07	<	10.0	2.6
Nitrite-N	mg/L	0.05	<	<	<	<	<	<	<	<	1.0	0.3
Sulphate	mg/L	1	38	41	10	7	38	16	9	114	500 <sup>AO</sup>	260
Mercury	mg/L	0.00002	<	<	<	<	<	<	<	<	0.001	0.0003
Aluminum	mg/L	0.01	0.05	0.11	0.05	0.05	0.06	0.03	0.04	0.09	0.1 <sup>OG</sup>	0.12
Antimony	mg/L	0.0001	<	<	<	<	0.0002	<	<	<	0.006	
Arsenic	mg/L	0.0001	0.0007	0.0003	0.0005	0.0001	0.0005	0.0007	0.0020	0.0024	0.01 <sup>^</sup>	0.0030
Barium	mg/L	0.001	0.116	0.225	0.084	0.055	0.157	0.126	0.231	0.369	1.0	0.314
Beryllium	mg/L	0.0001	<	<	<	<	<	<	<	<		
Boron	mg/L	0.005	0.020	2.41	0.013	0.010	0.255	0.058	0.035	0.114	5.0	1.26
Cadmium	mg/L	0.000015	<	<	<	<	<	<	<	<	0.005	0.0013
Calcium	mg/L	0.02	77.0	113	55.4	72.3	85.6	42.2	48.9	162		
Chromium	mg/L	0.001	<	<	<	0.001	<	<	<	<	0.05	0.013
Cobalt	mg/L	0.0001	<	<	<	<	0.0008	<	0.0002	0.004		
Copper	mg/L	0.0001	0.0004	0.0011	0.0007	0.0006	0.0004	0.0005	0.0007	<	1 <sup>AO</sup>	0.5
Iron	mg/L	0.005	<	0.067	0.005	<	0.083	<	0.005	2.16	0.3 <sup>AO</sup>	0.220
Lead	mg/L	0.00002	<	0.00004	0.00004	<	0.00008	<	0.00004	<	0.010	0.0034
Magnesium	mg/L	0.02	35.8	56.0	24.0	33.3	33.5	54.2	54.3	179		
Manganese	mg/L	0.001	0.004	0.004	0.008	<	0.218	<	0.025	0.651	0.05 <sup>AO</sup>	0.058
Molybdenum	mg/L	0.0001	0.0009	0.0011	0.0013	0.0011	0.0012	0.0057	0.0034	0.0040		
Nickel	mg/L	0.0001	0.0005	0.0016	0.0006	0.0003	0.0031	0.0003	0.0007	0.0092		
Potassium	mg/L	0.1	1.3	2.0	1.3	0.4	4.2	2.3	2.5	4.0		
Silicon	mg/L	0.01	8.85	10.7	8.99	7.74	6.77	5.95	12.5	12.6		
Silver	mg/L	0.0001	<	<	<	<	<	<	<	<		
Sodium	mg/L	0.2	8.8	29.8	5.8	13.1	20.3	21.5	18.9	47.3	200 <sup>AO</sup>	108
Strontium	mg/L	0.001	0.321	0.616	0.132	0.246	1.32	0.964	0.671	1.02		
Thallium	mg/L	0.00005	<	<	<	<	<	<	<	<		
Tin	mg/L	0.05	<	<	<	<	<	<	<	<		
Titanium	mg/L	0.005	<	0.009	<	<	<	<	<	<		
Tungsten	mg/L	0.01	<	<	<	<	<	<	0.01	0.01		
Uranium	mg/L	0.00005	0.00068	0.00038	0.00049	0.00113	0.00936	0.00397	0.00063	0.0151	0.02	0.0060
Vanadium	mg/L	0.005	<	0.035	<	<	<	<	<	<		
Zinc	mg/L	0.005	<	0.005	<	<	<	<	<	<	5 <sup>AO</sup>	2.5
pH(field)	pH Units	-	7.33	-	7.54	7.32	6.95	7.62	7.30	6.78	6.5-8.5 <sup>OG</sup>	
Temperature (field)	° Celcius	-	10.55	-	14.08	10.32	12.27	11.53	13.00	15.40	15 <sup>AO</sup>	
Dissolved Oxygen (field)	mg/L	-	5.30	-	5.40	7.76	5.85	5.83	4.95	0.00		
Conductivity (field)	mS/cm	-	0.676	-	0.492	0.653	0.773	0.691	0.707	2.19		
Unionized Ammonia (Calculated)	mg/L	0.001	<	<	<	<	0.002	<	<	0.002		

**Notes:**

- "-" denotes not analyzed
- "RL" denotes reporting limit
- "<" denotes results below reporting limit
- "OW#" denotes overburden groundwater monitoring well
- ^ effective January 1, 2018 standard for Arsenic is 0.01 mg/L, prior to January 1, 2018 standard is 0.025 mg/L
- 1 Unionized Ammonia calculated using field parameters for pH and temperature
- 2 Reasonable Use Limits calculated using background concentrations from OW8 and OW8R1

- shading indicates concentration exceeds the Ontario Drinking Water Standards (2018)
- AO indicates aesthetic objective
- OG indicates operational objective
- groundwater samples analyzed for metals were field filtered using 0.45 micron filters
- shading indicates parameters exceeding guideline criteria
- compliance parameter exceeds the reasonable use limit at compliance well

Data Input: CM  
Checked: ZL

**Table 3b**  
**Overburden Groundwater Analysis Results (November)**

		November Sampling								ODWS	RULs <sup>2</sup>
		Overburden Wells									
Well ID	Sample ID	OW3	OW5	OW8R1	OW11R1	OW12	OW13	OW14			
Parameter	Units	RL	18-W022	18-W021	18-W027	18-W019	18-W020	18-W026	18-W024		
			18-Nov-12	18-Nov-12	18-Nov-12	18-Nov-12	18-Nov-12	18-Nov-12	18-Nov-12		
Alkalinity as CaCO <sub>3</sub>	mg/L	5	250	239	351	353	346	369	969	30-500 <sup>OG</sup>	450
Ammonia-N	mg/L	0.01	0.17	0.08	0.05	0.82	0.05	0.13	1.54		
Biochemical Oxygen Demand	mg/L	3	3	4	3	9	4	7	6		
Chemical Oxygen Demand	mg/L	5	128	5	<	108	50	79	27		
Dissolved Organic Carbon	mg/L	0.2	5.9	2.8	3.8	8.9	4.0	12.0	12.0	5 <sup>AO</sup>	3.5
Conductivity	µmho/cm	1	662	478	673	843	669	717	2040		
Hardness as CaCO <sub>3</sub>	mg/L	1	337	251	353	407	347	371	1130	80-100 <sup>OG</sup>	248
pH	pH Units	-	7.84	8.01	7.86	7.74	8.13	8.00	7.50	6.5-8.5 <sup>OG</sup>	
Phenols	mg/L	0.002	0.008	0.002	<	0.005	0.002	<	0.003		
Total Phosphorus	mg/L	0.01	17.4	0.38	0.63	1.56	2.04	5.38	0.87		
Total Dissolved Solids	mg/L	10	344	247	350	445	347	372	1130	500 <sup>AO</sup>	460
Total Suspended Solids	mg/L	3	27800	270	720	20500	2000	7500	7400		
Total Kjeldahl Nitrogen-N	mg/L	0.1	1.5	0.2	0.3	2.9	0.4	0.7	2.1		
Chloride	mg/L	0.5	13.1	1.9	1.5	29.0	3.0	3.4	78.4	250 <sup>AO</sup>	125.9
Nitrate-N	mg/L	0.05	10.3	0.11	0.34	0.06	0.22	0.1	0.07	10.0	2.6
Nitrite-N	mg/L	0.05	<	<	<	<	<	<	<	1.0	0.3
Sulphate	mg/L	1	31	10	7	40	12	10	82	500 <sup>AO</sup>	260
Mercury	mg/L	0.00002	<	<	<	<	<	<	<	0.001	0.0003
Aluminum	mg/L	0.01	0.05	0.05	0.05	0.07	0.03	0.05	0.09	0.1 <sup>OG</sup>	0.12
Antimony	mg/L	0.00002	0.00004	<	<	0.00005	0.00005	0.00003	0.00004	0.006	
Arsenic	mg/L	0.0001	0.0005	0.0004	<	0.0010	0.0008	0.0017	0.0034	0.01 <sup>^</sup>	0.0030
Barium	mg/L	0.001	0.089	0.086	0.064	0.204	0.130	0.232	0.468	1.0	0.314
Beryllium	mg/L	0.002	<	<	<	<	<	<	<		
Boron	mg/L	0.005	0.008	0.007	0.006	0.273	0.067	0.026	0.172	5.0	1.26
Cadmium	mg/L	0.000015	<	<	<	<	<	<	<	0.005	0.0013
Calcium	mg/L	0.02	79.5	59.3	81.6	103	44.9	62.7	171		
Chromium	mg/L	0.001	<	0.002	0.002	<	<	0.001	0.002	0.05	0.013
Cobalt	mg/L	0.0001	0.0002	0.0001	0.0001	0.0012	<	0.0003	0.0030		
Copper	mg/L	0.0001	0.0019	0.0005	0.0005	0.0002	0.0004	0.0004	0.0003	1 <sup>AU</sup>	0.5
Iron	mg/L	0.005	<	<	<	0.633	<	0.008	3.02	0.3 <sup>MW</sup>	0.220
Lead	mg/L	0.00002	0.00002	<	<	0.00004	<	0.00002	<	0.010	0.0034
Magnesium	mg/L	0.02	33.6	24.9	36.3	36.3	57.0	52.1	171		
Manganese	mg/L	0.001	0.001	0.007	<	0.322	<	0.032	0.614	0.05 <sup>AO</sup>	0.058
Molybdenum	mg/L	0.01	<	<	<	<	<	<	<		
Nickel	mg/L	0.01	<	<	<	<	<	<	<		
Potassium	mg/L	0.1	0.9	1.5	0.5	4.6	2.7	2.6	5.2		
Silicon	mg/L	0.01	7.74	9.78	9.28	7.89	7.20	11.8	13.3		
Silver	mg/L	0.0001	<	<	<	<	<	<	<		
Sodium	mg/L	0.2	8.5	5.9	13.1	20.5	22.3	19.0	47.8	200 <sup>AO</sup>	108
Strontium	mg/L	0.001	0.290	0.147	0.279	1.56	1.04	0.632	1.06		
Thallium	mg/L	0.00005	<	<	<	<	<	<	<		
Tin	mg/L	0.05	<	<	<	<	<	<	<		
Titanium	mg/L	0.005	<	<	<	<	<	<	<		
Tungsten	mg/L	0.01	<	<	<	<	<	<	0.04		
Uranium	mg/L	0.00005	0.00157	0.00054	0.00128	0.0119	0.00415	0.00125	0.0213	0.02	0.0060
Vanadium	mg/L	0.005	<	<	<	<	<	<	<		
Zinc	mg/L	0.005	<	<	<	<	<	<	<	5 <sup>AO</sup>	2.5
pH(field)	pH Units	-	8.86	8.65	8.96	8.33	9.06	8.94	8.04	6.5-8.5 <sup>OG</sup>	
Temperature (field)	° Celcius	-	9.95	10.28	10.01	10.16	10.61	9.26	10.12	15 <sup>AO</sup>	
Dissolved Oxygen (field)	mg/L	-	8.55	4.26	8.27	6.15	6.01	6.07	0.69		
Conductivity (field)	mS/cm	-	0.675	0.499	0.688	0.299	0.705	0.742	2.01		
Unionized Ammonia (Calculated) <sup>1</sup>	mg/L	0.01	0.02	0.01	0.01	0.03	0.01	0.02	0.03		

Data Input: RF  
Data Check: MW

**Notes:**

- "-" denotes not analyzed
- "RL" denotes reporting limit
- "<" denotes results below reporting limit
- "OW#" denotes overburden groundwater monitoring well
- ^ effective January 1, 2018 standard for Arsenic is 0.01 mg/L, prior to January 1, 2018 standard is 0.025 mg/L
- 1 Unionized Ammonia calculated using field parameters for pH and temperature
- 2 Reasonable Use Limits calculated using background concentrations from OW8 and OW8R1

- shading indicates concentration exceeds the Ontario Drinking Water Standards (2018)
- AO indicates aesthetic objective OG indicates operational objective
- groundwater samples analyzed for metals were field filtered using 0.45 micron filters
- shading indicates parameters exceeding guideline criteria
- compliance parameter exceeds the reasonable use limit at compliance well

**Table 4**  
**Bedrock Groundwater Analysis Results**

Parameter	Units	Bedrock Wells								ODWS	MOE Typical Leachate Characteristics	RUL <sup>2</sup>	
		May Sampling				November Sampling							
		Well ID	BW1	BW2	BW3	BW4	BW1	BW2	BW3				BW4
		Sample ID	18-W002	18-W001	18-W012	18-W004	18-W025	18-W023	18-W028				18-W018
RL	18-May-30	18-May-30	18-May-30	18-May-30	18-Nov-12	18-Nov-12	18-Nov-12	18-Nov-12					
Alkalinity as CaCO <sub>3</sub>	mg/L	5	709	143	331	366	959	162	324	355	30-50 <sup>OG</sup>	300 - 2000	427
Ammonia-N	mg/L	0.01	2.74	0.05	0.02	1.12	3.64	0.06	0.05	0.85		5 - 100	
Biochemical Oxygen Demand	mg/L	2	<	<	<	4	4	3	3	4		50 - 4000	
Chemical Oxygen Demand	mg/L	5	31	18	<	16	42	<	<	9		150 - 6000	
Dissolved Organic Carbon	mg/L	0.2	7.4	3.8	8.2	6.8	14.9	5.6	4.6	6.1	5 <sup>AO</sup>	4 - 500	3.6
Conductivity	umho/cm	1	1800	355	667	829	2250	364	716	852			
Hardness as CaCO <sub>3</sub>	mg/L	1	893	158	334	380	1130	174	365	414	80-100 <sup>OG</sup>	400 - 2000	232
pH	pH Units	-	7.66	8.20	8.03	7.80	7.42	8.03	7.90	7.73	6.5-8.5 <sup>OG</sup>	6 - 7	
Phenols	mg/L	0.001	<	<	<	<	0.004	<0.002	0.003	0.003			
Total Phosphorus	mg/L	0.01	<	<	0.06	0.06	0.03	0.02	<	0.05			
Total Dissolved Solids	mg/L	3	988	183	346	437	1250	187	372	450	500 <sup>AO</sup>		453
Total Suspended Solids	mg/L	3	8	3	<	50	18	10	3	64		1 - 100	
Total Kjeldahl Nitrogen-N	mg/L	0.1	2.9	0.1	0.2	1.3	4.6	0.2	0.1	1.0		20 - 2500	134
Chloride	mg/L	0.5	96.4	4.6	16.2	30.1	126	4.5	21.4	29.8	250 <sup>AO</sup>	<1 - 0.5	2.7
Nitrate-N	mg/L	0.05	<	<	0.47	<	0.06	<	0.51	<	10.0	<1	0.4
Nitrite-N	mg/L	0.05	<	<	<	<	<	<	<	<	1.0	<1	0.4
Sulphate	mg/L	1	182	14	15	93	149	13	18	42	500 <sup>AO</sup>	<1 - 300	260
Mercury	mg/L	0.00002	<	<	<	<	<	<	<	<	0.001	<1 - 300	0.00028
Aluminum	mg/L	0.01	0.10	0.04	0.05	0.07	0.12	0.03	0.05	0.07	0.1 <sup>OG</sup>	<0.01 - 2	0.06
Antimony	mg/L	0.0001	<	<	<	0.00005	0.00003	<0.00002	<0.00002	<0.00002	0.006	<0.01 - 2	0.06
Arsenic	mg/L	0.0001	0.0017	0.0005	0.0001	0.0005	0.0019	0.0004	<	0.0005	0.01 <sup>^</sup>	0.01 - 0.04	0.0017
Barium	mg/L	0.001	0.300	0.046	0.138	0.140	0.405	0.060	0.153	0.144	1.0	0.1 - 2	0.361
Beryllium	mg/L	0.0001	<	<	<	<	<0.002	<0.002	<0.002	<0.002			
Boron	mg/L	0.005	0.409	0.050	0.025	0.285	0.790	0.056	0.018	0.275	5.0	0.5 - 10	1.27
Cadmium	mg/L	0.000015	<	<	<	<	<	<	<	<	0.005	<0.01	0.0013
Calcium	mg/L	0.02	206	45.7	74.3	92.3	260	52.1	82.3	104		100 - 1000	
Chromium	mg/L	0.001	0.002	<	0.05	<	<	<	<	0.003	0.05	<0.01 - 0.5	0.015
Cobalt	mg/L	0.0001	0.0096	<	<	0.0009	0.0123	0.0001	0.0001	0.0008		0.08 - 0.1	
Copper	mg/L	0.0001	0.0009	0.0004	0.0013	0.0004	0.0016	0.0002	0.0014	0.0002	1 <sup>AO</sup>	<0.008 - 1	0.5
Iron	mg/L	0.005	1.97	0.027	<	0.378	3.23	0.068	0.020	0.393	0.3 <sup>AO</sup>		0.170
Lead	mg/L	0.00002	0.00004	<	<	0.00029	0.00007	<	0.00009	0.00018	0.010		0.0026
Magnesium	mg/L	0.02	91.9	10.7	36.0	36.3	117	10.6	38.8	37.5			
Manganese	mg/L	0.001	2.94	0.015	<	0.349	3.72	0.035	<	0.349	0.05 <sup>AO</sup>		0.028
Molybdenum	mg/L	0.0001	0.0024	0.0019	0.0016	0.0011	<0.01	<0.01	<0.01	<0.01			
Nickel	mg/L	0.0002	0.0093	0.0003	<	0.0031	0.01	<0.01	<0.01	<0.01			
Potassium	mg/L	0.1	5.5	2.2	2.1	4.2	6.5	2.5	2.1	4.3			
Silicon	mg/L	10	11.0	4.78	8.18	7.23	12.2	5.37	8.40	7.74			
Silver	mg/L	0.0001	<	<	<	<	<	<	<	<			
Sodium	mg/L	0.2	60.4	7.9	12.8	22.4	81.5	5.7	13.3	20.5	200 <sup>AO</sup>		106
Strontium	mg/L	0.001	1.10	1.08	0.320	1.30	1.48	1.11	0.370	1.52			
Thallium	mg/L	0.00005	<	<	<	0.00007	<	<	<	0.00006			
Tin	mg/L	0.05	<	<	<	<	<	<	<	<			
Titanium	mg/L	0.005	<	<	<	<	<	<	<	<			
Tungsten	mg/L	0.01	<	<	<	<	0.02	<	<	<			
Uranium	mg/L	0.00005	0.0100	0.00680	0.00395	0.00845	0.0139	0.00590	0.00479	0.0123	0.02		0.0083
Vanadium	mg/L	0.005	<	<	<	<	<	<	<	<			
Zinc	mg/L	0.005	<	<	<	<	<	<	<	<	5 <sup>AO</sup>		2.5
pH(field)	pH Units	-	6.87	7.56	7.00	6.83	7.98	9.06	8.68	8.13	6.5-8.5 <sup>OG</sup>	6 - 7	
Temperature (field)	° Celsius	-	10.70	12.20	11.48	11.25	8.84	10.48	8.82	9.75	15 <sup>AO</sup>		
Dissolved Oxygen (field)	mg/L	-	3.11	6.17	4.86	3.84	1.68	3.42	0.54	3.17			
Conductivity (field)	mS/cm	-	2.00	0.416	0.692	0.866	2.25	0.376	0.742	0.863			
Unionized Ammonia (Calculated) <sup>1</sup>	mg/L	0.01	<	<	<	<	0.06	0.01	<	0.02			

**Notes:**

- "-" denotes not analyzed
- "RL" denotes reporting limit
- "<" denotes results below reporting limit
- "<e" denotes elevated reporting limit due to laboratory variance
- "BW#" denotes bedrock groundwater monitoring well
- "^" effective January 1, 2018 standard for Arsenic is 0.01 mg/L, prior to January 1, 2018 standard is 0.025 mg/L
- 1 Unionized Ammonia calculated using field parameters for pH and temperature
- 2 Reasonable Use Limits calculated using background concentrations from BW3
- denotes concentration exceeds the Reasonable Use Limit at compliance well

shading indicates concentration exceeds the Ontario Drinking Water Standards (2018)

<sup>AO</sup> indicates aesthetic objective    <sup>OG</sup> indicates operational objective  
groundwater samples analyzed for metals were field filtered using 0.45 micron filters

Data Input: RF  
Data Check: MW

**Table 5**  
**Groundwater Analysis Results (VOCs)**

Parameter	Units	Well ID Sample ID RL	Bedrock Wells			Ontario Drinking Water Standards
			May Sampling			
			BW1	BW3	BW4	
			18-W002 May 30 2018	18-W012 May 30 2018	18-W004 May 30 2018	
Acetone	ug/L	2	<	<	<	
Benzene	ug/L	0.5	<	<	<	1
Bromobenzene	ug/L	0.1	<	<	<	
Bromodichloromethane	ug/L	0.1	<	<	<	
Bromoform	ug/L	0.1	<	<	<	
Bromomethane	ug/L	0.3	<	<	<	
Carbon Tetrachloride	ug/L	0.2	<	<	<	2
Chlorobenzene	ug/L	0.2	<	<	<	80
Chloroethane	ug/L	0.1	<	<	<	
Chloroform	ug/L	0.3	<	<	<	
Chloromethane	ug/L	0.3	<	<	<	
2-Chlorotoluene	ug/L	0.2	<	<	<	
4-Chlorotoluene	ug/L	0.2	<	<	<	
Dibromochloromethane	ug/L	0.1	<	<	<	
Dichlorodifluoromethane	ug/L	1	<	<	<	
Ethylene dibromide (dibromoethane, 1,2-)	ug/L	0.1	<	<	<	
Dibromomethane	ug/L	1	<	<	<	
1,2-Dichlorobenzene	ug/L	0.1	<	<	<	200
1,3-Dichlorobenzene	ug/L	0.1	<	<	<	
1,4-Dichlorobenzene	ug/L	0.2	<	<	<	5
1,1-Dichloroethane	ug/L	0.1	0.4	<	0.2	0.5 <sup>A</sup>
1,2-Dichloroethane	ug/L	0.1	<	<	<	5
1,1-Dichloroethylene	ug/L	0.1	<	<	<	14
cis-1,2-Dichloroethylene	ug/L	0.1	<	<	<	
trans-1,2-Dichloroethylene	ug/L	0.1	<	<	<	
1,2-Dichloropropane	ug/L	0.1	<	<	<	
cis-1,2-Dichloroethylene	ug/L	0.1	<	<	<	
trans-1,2-Dichloroethylene	ug/L	0.1	<	<	<	
1,2-Dibromo-3-Chloropropane	ug/L	1	<	<	<	
1,3-Dichloropropane	ug/L	0.2	<	<	<	
2,2-Dichloropropane	ug/L	0.2	<	<	<	
1,1-Dichloropropene	ug/L	0.2	<	<	<	
Ethylbenzene	ug/L	0.5	<	<	<	140
Hexachlorobutadiene	ug/L	1	<	<	<	
Hexane	ug/L	1	<	<	<	
Isopropylbenzene	ug/L	0.2	<	<	<	
4-Isopropyltoluene	ug/L	0.4	<	<	<	
Methyl Ethyl Ketone (2-Butanone)	ug/L	1	<	<	<	
Methyl Butyl Ketone (2-Hexanone)	ug/L	10	<	<	<	
Methyl Isobutyl Ketone	ug/L	1	<	<	<	
Methyl tert-butyl ether	ug/L	1	<	<	<	
Methylene Chloride	ug/L	0.3	<	<	<	
Naphthalene	ug/L	0.7	<	<	<	
n-Butylbenzene	ug/L	0.7	<	<	<	
n-Propylbenzene	ug/L	0.4	<	<	<	
sec-Butylbenzene	ug/L	0.5	<	<	<	
Styrene	ug/L	0.5	<	<	<	
tert-Butylbenzene	ug/L	0.1	<	<	<	
1,1,1,2-Tetrachloroethane	ug/L	0.1	<	<	<	
1,1,2,2-Tetrachloroethane	ug/L	0.4	<	<	<	
Tetrachloroethylene	ug/L	0.2	<	<	<	10
Toluene	ug/L	0.5	<	<	<	60
1,1,1-Trichloroethane	ug/L	0.1	<	<	<	
1,1,2-Trichloroethane	ug/L	0.1	<	<	<	
Trichloroethylene	ug/L	0.1	<	<	<	5
Trichlorofluoromethane	ug/L	0.1	<	<	<	
1,3,5-Trimethylbenzene	ug/L	0.6	<	<	<	
1,2,3-Trichlorobenzene	ug/L	0.2	<	<	<	
1,2,4-Trichlorobenzene	ug/L	0.2	<	<	<	
1,2,3-Trichloropropane	ug/L	0.2	<	<	<	
1,2,4-Trimethylbenzene	ug/L	2	<	<	<	
Vinyl Chloride	ug/L	0.2	<	<	<	1
m/p-Xylene	ug/L	0.4	<	<	<	
o-Xylene	ug/L	0.1	<	<	<	
Xylenes, total	ug/L	0.4	<	<	<	90

**Notes:**

"-" denotes not analyzed

"<" denotes results below reporting limit

"BW###" denotes groundwater monitoring well

"RL" denotes reporting limit

exceedance of Ontario Drinking Water Standards (2011)

A Standard from O.Reg. 153/04, Table 1: Full Depth Background Site Condition Standards (all types of property uses)

Data Input: MC

Data Check: ZL

**Table 6**  
**Reasonable Use Limits**

Parameter	Units	ODWS Concentration Limit (C <sub>r</sub> )	Constant (x)	Bedrock Wells		Overburden Wells	
				BW3 mean Background Concentration 2006-2018 (C <sub>b</sub> )	Reasonable Use Limit (C <sub>m</sub> )	OW8 mean Background Concentration 2006-2018 (C <sub>b</sub> )	Reasonable Use Limit (C <sub>m</sub> )
Alkalinity	mg/L	500	0.5	355	427	399	450
DOC	mg/L	5	0.5	2	3.6	2	3.5
Hardness	mg/L	100	0.5	364	232	396	248
Total Dissolved Solids	mg/L	500	0.5	407	453	421	460
Chloride	mg/L	250	0.5	18.6	134	1.7	126
N - Nitrate	mg/L	10	0.25	0.28	2.7	0.18	2.6
N - Nitrite	mg/L	1	0.25	0.21	0.4	0.06	0.3
Sulphate	mg/L	500	0.5	20.4	260	19.5	260
Mercury	mg/L	0.001	0.25	0.000044	0.00028	0.000039	0.00028
Aluminum	mg/L	0.1	0.5	0.0112	0.06	0.143	0.12
Arsenic	mg/L	0.006	0.25	0.000328	0.0017	0.00198	0.0030
Barium	mg/L	1	0.25	0.148	0.361	0.086	0.314
Boron	mg/L	5	0.25	0.0206	1.27	0.0075	1.26
Cadmium	mg/L	0.005	0.25	0.00005	0.0013	0.00004	0.0013
Chromium	mg/L	0.05	0.25	0.0029	0.015	0.0013	0.013
Copper	mg/L	1	0.5	0.00134	0.5	0.00151	0.5
Iron	mg/L	0.3	0.5	0.0392	0.170	0.140	0.220
Lead	mg/L	0	0.25	0.00007	0.00255	0.0012	0.00338
Manganese	mg/L	0.05	0.5	0.0059	0.028	0.0651	0.058
Sodium	mg/L	200	0.5	12.8	106	15.4	108
Uranium	mg/L	0.02	0.25	0.00439	0.0083	0.00134	0.0060
Zinc	mg/L	5	0.5	0.0062	2.5	0.0081	2.5

$$C_m = C_b + x(C_r - C_b)$$

**Notes:** C<sub>b</sub> = background concentration  
 x = constant; 0.5 non health parameter, 0.25 for health parameter  
 C<sub>r</sub> = max conc. acceptable in water (Ontario Drinking Water Standard)  
 C<sub>m</sub> = max degradation

**Table 7**  
**2018 Surface Water Analysis Results**

Parameter	Units	Station ID Sample ID Flow Conditions RL	May Sampling						November Sampling						Provincial Water Quality Objectives	Table B: Canadian Water Quality Guidelines	Table A: Aquatic Protection Values		
			SW3	SW4	SW7	SW5	SW8	HBO	HBI	SW3	SW4	SW7	SW5	SW8				HBO	HBI
			dry	18-W014 lotic	18-W015 lotic	18-W005 lotic	dry	dry	dry	dry	18-W030 lotic	18-W029 lotic	18-W017 lotic	dry				18-W016 lotic	dry
Hardness as CaCO3	mg/L	1		161	104	203								290					
Alkalinity as CaCO3	mg/L	5		167	105	187								226					
Ammonia-N	mg/L	0.01		0.05	0.03	0.09								0.03					
Unionized Ammonia-N (Lab)	mg/L	0.01		<	<	<								<			0.100		
Biochemical Oxygen Demand	mg/L	2		<	2	<								4					
Chemical Oxygen Demand	mg/L	5		35	39	49								11					
Dissolved Organic Carbon	mg/L	0.2		10.4	13.2	15.3								7.4					
Conductivity	µmho/cm	1		369	447	393								551					
pH	pH Units	-		7.83	7.69	7.93								7.92					
Phenols	mg/L	0.001		<	<	<								0.003			6.0-9.0		
Total Phosphorus	mg/L	0.01		0.14	0.11	0.28								0.05			0.04 <sup>4</sup>		
o-Phosphate	mg/L	0.01		0.05	0.04	0.08								0.03					
Total Dissolved Solids	mg/L	3		190	231	203								286					
Total Suspended Solids	mg/L	3		10	6	38								14					
Total Kjeldahl Nitrogen-N	mg/L	0.1		0.9	0.8	1.2								0.6					
Chloride	mg/L	0.5		12.1	77.7	9.9								6.9			128 <sup>Proposed</sup>		
Nitrate-N	mg/L	0.05		<	<	0.12								7.10			180		
Nitrite-N	mg/L	0.05		<	<	<								<			2.9		
Sulphate	mg/L	1		8	1	4								34			0.06		
Mercury	mg/L	0.00002		<	<	<								<			100		
Aluminum	mg/L	0.01		<	0.01	0.02								0.05			0.002		
Antimony	mg/L	0.0001		0.0004	<	<								<			0.075 <sup>5</sup>		
Arsenic	mg/L	0.0001		0.0006	0.0004	0.0009								0.002			0.02		
Barium	mg/L	0.001		0.045	0.03	0.066								0.085			0.005		
Beryllium	mg/L	0.0001		<	<	<								< 0.002			0.150		
Boron	mg/L	0.005		0.020	0.016	0.029								0.085			2.300		
Cadmium	mg/L	0.000015		0.000015	<	0.000066								< 0.002			0.0002		
Calcium	mg/L	0.02		40.2	27.5	50.8								0.054			0.2		
Chromium	mg/L	0.001		<	<	0.002								0.00036			1.5		
Cobalt	mg/L	0.0001		0.0015	0.0001	0.0012								0.001			0.000017 <sup>6</sup>		
Copper	mg/L	0.0001		0.0015	0.0005	0.0074								0.0065			0.00021		
Iron	mg/L	0.005		0.163	0.728	2.31								0.3			3.550		
Lead	mg/L	0.00002		<	0.00003	0.00084								0.00034			0.00021		
Magnesium	mg/L	0.02		14.6	8.62	18.5								30.7			0.0021		
Manganese	mg/L	0.001		0.075	0.082	0.543								0.010			0.04		
Molybdenum	mg/L	0.0001		0.0013	0.0003	0.0015								< 0.01			0.025		
Nickel	mg/L	0.0002		0.0022	0.0011	0.0039								0.0019			0.1		
Potassium	mg/L	0.1		1.5	0.6	1.4								1.2			0.0001		
Selenium	mg/L	0.001		<	<	<								<			0.0003		
Silicon	mg/L	0.01		3.48	1.41	5.71								7.29			0.03		
Silver	mg/L	0.0001		<	<	<								<			0.006		
Sodium	mg/L	0.2		9.2	41.8	10.1								12.0			0.002		
Strontium	mg/L	0.001		0.2	0.175	0.262								0.451			0.03		
Thallium	mg/L	0.00005		<	<	<								<			0.006		
Tin	mg/L	0.05		<	<	<								<			0.014		
Titanium	mg/L	0.005		<	<	0.069								0.022			0.0089		
Tungsten	mg/L	0.01		<	<	<								<			1.000		
Uranium	mg/L	0.00005		0.00255	0.00017	0.00235								0.00506			0.030		
Vanadium	mg/L	0.005		<	<	<								0.065			0.089		
Zinc	mg/L	0.005		0.011	<	0.029								0.014			0.089		
pH(field)	pH Units	-		7.30	7.05	7.48								8.48			6.0-9.0		
Temperature (field)	° Celsius	-		26.43	29.01	19.16								11.13					
Dissolved Oxygen (field)	mg/L	-		5.51	3.89	3.29								10.40					
Conductivity (field)	mS/cm	-		0.400	0.471	0.309								0.504					
Unionized Ammonia (Calculated) <sup>1</sup>	mg/L	0.01		<	<	<								<			0.100		

**Notes:**

- "-" denotes not analyzed
- "RL" denotes reporting limit
- "<" denotes result below reporting limit
- "SW ###" denotes surface water station ID
- "<##" denotes elevated reporting limit due to laboratory variance
- 1 Unionized Ammonia calculated using field parameters for pH and temperature
- 2 PWQO for minimum DO concentration set at conservative value based on highest temperature and warm water biota
- DO criteria: 0°C-5°C = ≥7mg/L, 5°C-10°C = ≥6mg/L, 10°C-15°C = ≥5mg/L, 20°C-25°C = ≥4mg/L
- 3 Alkalinity should not be decreased by more than 25% of the natural concentration
- 4 Table A and Table B standards apply only to Phenol
- 5 Aluminum standard for PWQO is pH dependent
- 6 Beryllium criteria: <75 mg/L Hardness = 0.011 mg/L, >75 mg/L Hardness = 1.1 mg/L

- 7 Cadmium criteria: 0-100 mg/L Hardness = 0.0001 mg/L, >100 mg/L Hardness = 0.0005 mg/L
- 8 Chromium reported as total, published standards are for chromium VI (0.001 mg/L) and chromium III (0.0089 mg/L)
- 9 Copper criteria: 0-20 mg/L Hardness = 0.001 mg/L, >20 mg/L Hardness = 0.005 mg/L
- 10 Lead criteria: <30 mg/L Hardness = 0.001 mg/L, 30 to 80 mg/L Hardness = 0.003 mg/L, >80 mg/L Hardness = 0.005 mg/L
- Metals are reported as "total" with the exception of Aluminum and Mercury (reported as dissolved)
- Shading indicates parameters exceeding guideline criteria
- denotes concentration exceeds the PWQO criteria
- denotes concentration exceeds the CWQO criteria
- denotes concentration exceeds the APV criteria
- black, bold and underlined denotes RL greater than criteria
- denotes background surface water station

Data Input: RF  
Data Check: MW

**Table 8**  
**Leachate Indicator Parameter Rationale (Overburden)**

Leachate Indicator	Units	Groundwater				
		ODWS	RUL	Background Concentration <sup>A</sup>	Leachate Concentration <sup>B</sup>	Difference (L/B)
Alkalinity	mg/L	30-500	450	415	974	2
Ammonia	mg/L			0.05	0.6	12
Chloride	mg/L	250	125.9	1.75	78.0	45
Conductivity	uS/cm			761	1830	2
Iron	mg/L	0.3	0.22	0.06	2.8	45
DOC	mg/L	5	3.5	1.80	7.1	4
pH	-	6.5-8.5		7.79	7.4	1
Hardness	mg/L	80 -100	248.2	400.00	1040.0	3
Manganese	mg/L	0.05	0.058	0.02	0.6	30
Aluminum	mg/L	0.1	0.12	0.06	0.0	0
Sodium	mg/L	200	108	17.50	46.7	3
TKN	mg/L			0.57	1.2	2
Total Dissolved Solids	mg/L	500	460	438	1010	2
Sulphate	mg/L	500	259.8	28	53.0	2
BOD	mg/L			1.0	4.5	5

<sup>A</sup> The background GW concentration is the median concentration at OW8 between 2001 and 2013 and OW8R1 in 2015

Inp. CMM

<sup>B</sup> The GW leachate concentration is the median concentration at OW14 between 2011 and 2015

Chk. JMP

L/B Leachate concentration/Background concentration

Historical non-detects were incorporated into the median calculation as half the value of the detection limit

Parameters proposed as leachate indicators, based on a factor difference between leachate and background of at least 10 and presence of official standards (ODWS)

Appendix C  
Certificate of Approval No. A441703





Ontario

Ministry of the Environment  
Ministère de l'Environnement

AMENDED PROVISIONAL CERTIFICATE OF APPROVAL  
WASTE DISPOSAL SITE  
NUMBER A441703

The Corporation of the Township of Leeds and the Thousand Islands  
PO Box 129  
Lansdowne, Ontario  
K0E 1L0

Site Location: Ward 3 (Escott) Landfill Site  
Lot 9, 10, Concession Broken Front Concession  
Leeds and the Thousand Islands Township, United Counties of Leeds and Grenville

*You have applied in accordance with Section 27 of the Environmental Protection Act for approval of:*

a 1 hectare landfilling area and a transfer station for recyclable materials, white goods, scrap metal and tires, within a 15.1 hectare site

*For the purpose of this Certificate of Approval and the terms and conditions specified below, the following definitions apply:*

- a. "Owner" means The Corporation of the Township of Leeds and the Thousand Islands;
- b. "Ministry" means the Ministry of the Environment;
- c. "Director" means the one or more persons who from time to time are so designated for the purpose of Section 37 of the Environmental Protection Act ;
- d. "Regional Director" means the Director, Eastern Region, Ministry of the Environment;
- e. "Certificate" means this Provisional Certificate of Approval No. A441073, as amended from time to time, including all schedules attached to and forming part of this Certificate;
- f. "Site" means Ward 3 (Escott) Waste Disposal Site with its associated buildings and storage facilities located on Lot 9, 10, Concession Broken Front Concession, Leeds and the Thousand Islands Township, United Counties of Leeds and Grenville;
- g. "EPA " mean the Environmental Protection Act , R.S.O. 1990, C. E-19 as amended;
- h. "O.Reg. 558" means Ontario Regulation 558/00 issued to amend O.Reg. 347;
- i. "O.Reg. 347" means Ontario Regulation 347 (General-Waste Management Regulation), R.R.O. 1990, as amended;

- j. “summer season” means the time period between May 1 to October 31;
- k. “winter season” means the time period between November 1 to April 31;
- l. “District Manager” means the District Manager, Kingston District Office, Eastern Region; and
- m. “white goods which contain refrigerants” means white goods which contain, or may contain refrigerants, and which include, but are not restricted to refrigerators, freezers and air-conditioning systems.

*You are hereby notified that this approval is issued to you subject to the terms and conditions outlined below:*

## TERMS AND CONDITIONS

### **GENERAL**

1. This Certificate revokes all previously issued Provisional Certificates of Approval issued under Part V of the EPA for this Site. The approval given herein including the terms and conditions set out replaces all previously issued approvals and related terms and conditions under Part V of the EPA for this Site.
2. The Site shall be developed, operated and maintained in accordance with all of the plans and specifications in the documents listed in Schedule "A". Should there be discrepancies between the documents listed in Schedule "A" and the conditions in this Certificate, the conditions shall take precedence. Should there be discrepancies between the documents listed in Schedule "A", the document bearing the most recent date shall take precedence.
3. Requirements specified in this Certificate are minimum requirements and do not abrogate the need to take all reasonable steps to avoid violating the provisions of other applicable legislation. The Owner shall ensure compliance with all the terms and conditions of this Certificate. Any noncompliance constitutes a violation of the EPA and is grounds for enforcement.
4. The requirements of this Certificate are severable. If any requirements of this Certificate to any circumstances is held invalid, the application of such requirement to other circumstances and the remainder of this Certificate shall not be affected thereby.
5. The Owner shall ensure that all communications/correspondence made pursuant to this Certificate includes reference to this Certificate number.

## **NOTIFICATION OF CHANGES**

6. The Owner shall notify the Director in writing of any of the following changes within thirty (30) days of the change occurring:
  - (a) change of Owner or Operator of the Site or both;
  - (b) change of address or address of the new Owner;
  - (c) change of partners where the Owner or Operator is or at any time becomes a partnership, and a copy of the most recent declaration filed under the Business Names Act , 1991 shall be included in the notification to the Director;
  - (d) any change of name of the corporation where the Owner or Operator is or at any time becomes a corporation, and a copy of the most current "Initial Notice or Notice of Change" (Form 1 or 2 of O. Reg. 182, Chapter C-39, R.R.O. 1990 as amended from time to time), filed under the Corporations Information Act shall be included in the notification to the Director; and
  - (e) change in directors or officers of the corporation where the Owner or Operator is or at any time becomes a corporation, and a copy of the most current "Initial Notice or Notice of Change" as referred to in 6(d), supra.
7. In the event of any changes in ownership of the Site, the Owner shall notify, in writing, the succeeding owner of the existence of this Certificate, and a copy of such written notice shall be forwarded to the Director and the District Manager.

## **INSPECTIONS**

8. The Owner shall allow Ministry personnel, or a Ministry authorized representative(s), upon presentation of credentials, to:
  - (a) carry out any and all inspections authorized by Sections 156, 157 or 158 of the EPA , Sections 15, 16 or 17 of the Ontario Water Resources Act , R.S.O. 1990, or Sections 19 or 20 of the Pesticides Act , R.S.O. 1990, as amended from time to time, of any place to which this Certificate relates, and  
  
without restricting the generality of the foregoing to:
    - (b) (i) enter upon the premises or the location where the records required by the conditions of this Certificate are kept;
    - (ii) have access to and copy, at any reasonable time, any records required by the conditions of this Certificate;

- (iii) inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations required by the conditions of this Certificate, and
- (iv) sample and monitor, at reasonable times, for the purposes of assuring compliance with the conditions of this Certificate.

### **RELEASE OF INFORMATION**

9. (a) The Owner shall, forthwith upon request of the Director, District Manager, or Provincial Officer (as defined in the *EPA* ), furnish any information requested by such persons with respect to compliance with the Certificate, including but not limited to, any records required to be kept under this Certificate; and
- (b) In the event, the Owner provides the Ministry with information, records, documentation or notification in accordance with this Certificate (for the purposes of this Condition referred to as "Information"),
- (i) the receipt of Information by the Ministry;
  - (ii) the acceptance by the Ministry of the Information's completeness or accuracy; or
  - (iii) the failure of the Ministry to prosecute the Owner, or to require the Owner to take any action, under this Certificate or any statute or regulation in relation to the Information.

shall not be construed as an approval, excuse or justification by the Ministry of any act omission of the Owner relating to the Information, amounting to noncompliance with this Certificate or any statute or regulation.

10. Any information relating to this Certificate and contained in Ministry files may be made available to the public in accordance with the provisions of the *Freedom of Information and Protection of Privacy Act* , R.S.O. 1990, C.F-31.

### **CERTIFICATE OF PROHIBITION**

11. Pursuant to Section 197 of the *EPA* , neither the Owner nor any person having an interest in the property that the Site is on, shall deal with the property in any way without first giving a copy of this Certificate to each person acquiring an interest in the property as a result of the dealing.

12. The Owner shall:
- (a) within sixty (60) days of the date of this Certificate, submit to the Director for the Director's signature two copies of a completed Certificate of Prohibition containing a registerable description of the property that the Site is on, in accordance with Form 1 of Ontario Regulation 14/92 and
  - (b) within ten (10) calendar days of receiving the Certificates of Prohibition signed by the Director, register the Certificate of Prohibition in the appropriate Land Registry Office on title to the property that the Site is on and shall submit to the Director immediately following registration the duplicate registered copy.

### **SERVICE AREA**

13. The approved service area for the Site is only **Ward 3, Front of Escott**, of the Township of Leeds and the Thousand Islands.

### **WASTE TYPES**

14. (a) Only solid non-hazardous waste shall be accepted at the Site for landfilling.
- (b) Only recyclable wastes, white goods, metals and tires shall be accepted at the Site for bulking and subsequent transfer off-site for further processing.
- (c) No liquid industrial wastes or hazardous wastes as defined under O.Reg. 347 and O.Reg. 558 shall be accepted at the Site.

### **SITE CAPACITY**

15. The total waste disposal volume of the Site, including the waste, daily cover and intermediate cover, but excluding final cover, is 40,000 cubic metres. This capacity includes the existing and proposed waste to be landfilled.

### **WASTE PLACEMENT**

16. In the areas not previously used for landfilling, no waste shall be placed lower than 0.5 metre below the existing ground.
17. Disposal of waste shall only occur within the areas as delineated on Drawing No. OP-1, entitled "Operations/Development Plan" dated December 16, 2003.
18. Drawing showing final contours shall be revised each year and submitted with the Annual Report required by Condition 52, to reflect the degree of excavation in the fill area not used for trenching and the amount of the final cover stripped from the existing trenches.

## **DAILY AND INTERIM COVER**

19. (a) Daily and interim cover material shall consist of a permeable material and it shall be applied in accordance with Item 4 of Schedule "A". Crushed glass may be mixed with the soil to be used for daily and interim covers.
- (b) The Owner shall keep records of the cover application activities in accordance with Condition 50.
- (c) Daily cover and interim cover shall be applied as follows:
- (i) At least once bi-weekly during the summer season, at end of the working day, the entire working face shall be covered with a minimum thickness of 150 mm of daily cover.
  - (ii) At least once monthly during the winter season, at end of the working day, the entire working face shall be covered with a minimum thickness of 150 mm of daily cover.
  - (iii) In areas where landfilling has been temporarily discontinued for six (6) months or more, a minimum thickness of 300 mm of interim cover shall be placed.
- (d) The frequency of application and the cover thickness in subsections (i), (ii) and (iii) are minimum requirements, and may have to be increased if environmental adverse effects have been found to occur.

## **OPERATIONAL ISSUES**

20. (a) The normal operating hours of the Site shall be as follows:
- Tuesdays: 8:30 a.m. - 4:45 p.m.  
Saturdays: 8:30 a.m. - 4:45 p.m.
- (b) The Owner may provide alternative hours of operation providing that they are correctly posted at the Site gate, that suitable public notice is given of any change and that there are no objections or complaints from the public regarding the hours of operation.
21. The Owner shall ensure that all loads of waste are properly inspected by trained Site personnel prior to acceptance at the Site and that the vehicles are directed to the appropriate areas for disposal or transfer of the waste. The Owner shall notify the District Manager, in writing, of load rejections at the Site within three (3) days from their occurrence.
22. Waste shall be deposited in a manner that minimizes the exposure area at the landfill working face and shall be compacted before cover material is applied.

23. (a) The Owner shall ensure that no burning of waste is taking place at the Site.
- (b) The Owner shall ensure that burning of clean wood waste approved to take place at the Site, is done in accordance with the Ministry's Guideline C-7, entitled "Burning at Landfill Sites", dated April 1994, and updated from time to time.
24. The Owner shall ensure that no scavenging is taking place at the Site.
25. The Owner shall ensure that all buildings at the Site are free of any possible landfill gas accumulation. If necessary, the Owner shall provide adequate ventilation systems to relieve landfill gas accumulations in the buildings at the Site.
26. The access road and on-site roads shall be provided and maintained so that vehicles hauling waste to and from the Site may travel readily and safely on any operating day.

### **SIGNS**

27. The Owner shall maintain a sign at the main entrance/exit to the Site on which the following information is legibly displayed:
  - (a) name of the Site and Owner;
  - (b) this Certificate number;
  - (c) normal hours of operation;
  - (d) allowable and prohibited waste types;
  - (e) telephone number to which complaints may be directed;
  - (f) twenty-four hour emergency telephone number (if different from above);
  - (g) a warning against unauthorized access; and
  - (h) a warning against dumping outside the Site.
28. The Owner shall install and maintain signs at the Site to direct vehicles to the working face, the recycling bins and the other disposal or storage areas designated for wastes requiring special handling procedures.

### **SITE SECURITY**

29. The Owner shall maintain a fence around the Site and the entrance/exit gate to provide control of the Site access.
30. During nonoperating hours, the Owner shall ensure that the Site entrance/exit gate is locked and the Site is secured against access by unauthorized persons.
31. No waste shall be received at the Site except during the operating hours when the Site is under the supervision of trained Site personnel.

## **SURFACE WATER MANAGEMENT**

32. Temporary berms and ditches shall be constructed around the active waste disposal area, as necessary, to prevent extraneous surface water from contacting the active working face.

## **BIRD, ANIMAL, VECTOR AND VERMIN CONTROL**

33. Scavenging birds and animals shall be adequately controlled at the Site to prevent any adverse effects.
34. Vector and vermin shall be adequately controlled at the Site using a licensed exterminator to prevent any adverse effects.

## **LITTER CONTROL**

35. The Owner shall take all practical steps to prevent the escape of litter from the Site. Regular pick-up of litter at the Site and along the access road in the vicinity of the Site shall be carried out. Litter fencing shall be erected around the working area of the landfill as required.

## **DUST CONTROL**

36. The Owner shall control fugitive dust emissions from the on-site sources including, but not be limited to the on-site roads, stockpiled cover material and closed landfill areas. If necessary, the major sources of dust shall be treated with water and/or dust suppression materials to minimize the overall dust emissions from the Site.
37. The Owner shall ensure that reasonable efforts are made to keep the access road used by vehicles to leave the Site, free of waste or excess mud or dirt.

## **NOISE**

38. Noise from or related to the operation of the landfill shall be kept to a minimum and in any event, the Owner shall comply with the criteria set out in the Ministry's guideline entitled "Noise Guidelines for Landfill Sites".

## **TRAFFIC CONTROL**

39. The Owner shall post visible signs along the traffic route providing clear directions to the Site.

## **VISUAL SCREENING**

40. The Owner shall maintain adequate screening of the waste disposal activities undertaken at the Site from the traffic on Escott Road and the surrounding properties.



## **ENVIRONMENTAL MONITORING**

41. (a) Groundwater and surface water monitoring shall be undertaken in accordance with the monitoring programs included in Item 1 of Schedule "A".
- (b) Within twelve (12) months from the date of this Certificate, the Owner shall submit to the District Manager a proposal for additional bedrock monitoring wells.
- (c) No changes to the groundwater and surface water monitoring programs shall be implemented prior to receiving a written approval from the District Manager.

## **GROUNDWATER WELLS/MONITORS**

42. The Owner shall ensure that all groundwater monitoring wells which form part of the monitoring program are properly capped, locked and protected from damage.
43. Where landfilling is to proceed around monitoring wells, suitable extensions shall be added to the wells, and the wells shall be properly re-secured.
44. Any groundwater monitoring wells included in the on-going monitoring program that are damaged shall be assessed, repaired, replaced or decommissioned by the Owner, as required.
  - (a) The Owner shall repair or replace any monitoring well which is destroyed or in any way made to be inoperable for sampling such that no more than one regular sampling event is missed.
  - (b) All monitoring wells which are no longer required as part of the groundwater monitoring program, and have been approved by the Director for abandonment, shall be decommissioned by the Owner, as required, in accordance with **Ontario Regulation 903**, that will prevent contamination through the abandoned well. A report on the decommissioning of the well shall be included in the annual monitoring report for the period during which the well was decommissioned.

## **INSPECTIONS**

45. (a) The Owner shall ensure that monthly Site inspections, are undertaken by trained Site personnel.
- (b) The areas to be inspected shall include, but not be limited to the following:
  - (i) condition of the active disposal areas, the recyclable bins, the tire pile, the white goods pile and the scrap metal pile;
  - (ii) condition of the surface water drainage works;

- (iii) presence of any ponded water at the Site;
  - (iv) condition of the on-site roads for evidence of excessive erosion and fugitive dust emissions;
  - (v) presence of litter at the Site's perimeter and litter fences;
  - (vi) condition of the intermediate cover and of the final cover;
  - (vii) presence of birds, vector, vermin and animals;
  - (viii) condition of the on-site facilities, the fence, the gate and its lock and the signs required by this Certificate;
  - (ix) condition of the groundwater monitoring wells required for the groundwater monitoring program approved by this Certificate;
  - (x) amount of the cover material to ensure that sufficient daily cover is available at all times that the Site is in operation; and
  - (xi) presence of leachate springs.
- (c) Records of inspections shall be created in accordance with Condition 49.

## **TRAINING**

46. All operators of the Site shall be trained in the following areas:
- (a) terms, conditions and operating requirements of this Certificate;
  - (b) operation and management of the landfill and the other waste storage areas as described in the documents in Schedule "A" attached to this Certificate unless otherwise required by the conditions of this Certificate;
  - (c) outline of the responsibilities of the operators of the Site;
  - (d) any environmental concerns pertaining to wastes being handled at the Site;
  - (e) proper inspection, receiving and recording procedures and the activities to be undertaken during and after a load rejection;
  - (f) occupational health and safety concerns pertaining to the wastes to be handled at the Site;
  - (g) relevant environmental legislation and regulations, including but not limited to the EPA and O. Reg. 347; and

- (h) operation of equipment and procedures to be followed in the event of an emergency situation.

## **RECORDS KEEPING**

- 47. (a) The Owner shall retain all documentation listed in Schedule “A” for as long as this Certificate is valid.
- (b) The Owner shall retain at the Site or at the municipal office, all records required by this Certificate, for a minimum of two (2) years from the date of their creation.
- (c) The Owner shall retain the employee training records for as long as the employee is working at the Site.
- (d) The Owner shall make all of the documents and records required by this Certificate available for inspection upon request by the staff of the Ministry.

## **COMPLAINTS**

- 48. The Owner shall record the name and address of complaint, and the date, time and nature of complaint and the actions taken to address the cause of the complaint, in a log book or a computer file.

## **INSPECTIONS**

- 49. The Owner shall establish and maintain a written record of the Site inspections as required by Condition 45. This record shall be in the form of a log or a dedicated electronic file and it shall include, as a minimum, the following information:
  - (a) date and time of inspection;
  - (b) name, title and signature of trained personnel conducting the inspection;
  - (c) a listing of all the areas inspected and any deficiencies observed; and
  - (d) recommendations for remedial action and the completion date of such action.

## **COVER APPLICATION**

- 50. The Owner shall establish and maintain a written record of the cover application activities as required by Condition 19. This record shall be in the form of a log or a dedicated electronic file and it shall include, as a minimum, the following information:
  - (a) date and time of cover application; and
  - (b) type of cover and thickness applied.

## WHITE GOODS

51. The Owner shall establish and maintain a written record of the white goods handling activities as required by Condition 57. This record shall be in the form of a log or a dedicated electronic file and it shall include, as a minimum, the following information:

- (a) date of the record;
- (b) types, quantities and source of white goods which contain refrigerants received;
- (c) details on removal of refrigerants as required by Ontario Regulation 189; and
- (d) the quantities and destination of the white goods and/or refrigerants transferred.

## ANNUAL REPORT

52. The Owner shall prepare and submit an Annual Report to the District Manager by March 30 of the year following the calendar year covered by the report which shall include at a minimum, the following:

- (a) calculations of the volume of waste landfilled, the daily and interim covers, the final cover and the overall volume of the Site capacity used during the reporting period;
- (b) a comparison of the actual capacity used to the estimates of the capacity estimated;
- (c) an estimate of the remaining Site life;
- (d) updated drawing to show the proposed final contours of the finished waste mound;
- (e) amount of the recyclable materials, metals, white goods and tires transferred off-site for further processing
- (f) any changes in operations, equipment, or procedures used at the Site, any operating problems encountered and corrective actions taken;
- (g) details on the monitoring program undertaken, outlining monitor locations, analytical parameters sampled, and frequency of sampling;
- (h) an analysis and interpretation of the surface water and groundwater monitoring data, a review of the adequacy of the monitoring program, conclusions of the monitoring data, and recommendations for any changes that may be necessary;
- (i) summary of inspections undertaken at the Site;
- (j) summary of any public complaints received and the responses made;

- (k) a discussion of cover stockpile activities including use, timing, locations and erosion protection;
  - (l) status update on the final cover placement, and seeding activities undertaken in the closed sections of the landfill;
  - (m) updated drawing to show the proposed final contours of the finished waste mound;
  - (n) a statement as to compliance with all conditions of this Certificate and the other relevant Ministry's groundwater and surface water requirements;
  - (o) recommendations respecting any proposed changes in the operation of the Site; and
  - (p) any other information that the Regional Director or the District Manager may require.
53. The frequency or timing of the submission of the Annual Report from Condition 52 may be changed with the written approval from the District Manager.

### **EMERGENCY SITUATIONS**

54. Any spills, fires or other emergency situations shall be forthwith reported directly to the Ministry's Spills Action Centre (1-800-268-6060) and shall be cleaned up immediately.

In addition, the Owner shall submit, to the District Manager a written report within three (3) days of any spill or incident, outlining the nature of the incident, remedial measures taken and the measures taken to prevent future occurrences at the Site.

55. The Owner shall ensure that adequate fire fighting and contingency spill clean-up equipment is available and that the emergency response personnel are familiar with the use of such equipment and its location(s).

### **LANDFILL CLOSURE**

56. At least two (2) years prior to the anticipated date of closure of the landfill at this Site or the date when 90 per cent of the total waste disposal volume is reached, whichever occurs first, the Owner shall submit to the Director for approval, with a copy to the District Manager, a detailed Site Closure Plan pertaining to the termination of the landfilling operations at the Site, post-closure inspection, maintenance and monitoring and the end use. The plan shall include, but not be limited to the following:
- (a) plan showing Site appearance after closure;
  - (b) description of the proposed end use for the Site;

- (c) descriptions of the procedures for closure of the Site, including but not be limited to, the following:
  - (i) advance notification of the public of the Site closure;
  - (ii) posting a sign at the Site entrance indicating the landfill is closed and identifying any alternative waste disposal arrangements;
  - (iii) completion, inspection and maintenance of the final cover and landscaping;
  - (iv) Site security after landfill closure;
  - (v) removal of unnecessary landfill-related structures, buildings and facilities; and
  - (vi) final construction of any necessary control, treatment, disposal and monitoring facilities for ground and surface water and for landfill gas.
- (d) description of the procedures for post-closure care of the Site, including:
  - (i) operation, inspection and maintenance of the control, treatment, disposal and monitoring facilities for leachate, groundwater, surface water and landfill gas, if applicable;
  - (ii) record keeping and reporting; and
  - (iii) complaint contact and response procedures.
- (e) an assessment of the adequacy of and need to implement the contingency plans; and
- (f) an estimate of the contaminating life span of the Site, based on the results of the monitoring programs to-date.

### **WHITE GOODS HANDLING**

57. With respect to accepting white goods containing refrigerants, the Owner shall ensure that:
- (a) all white goods which contain refrigerants which have not been tagged by a licensed technician to verify that the equipment no longer contains refrigerants, are stored in a separate area in an upright position; and
  - (b) white goods which contain refrigerants received on-site shall be shipped off-site in order to have the refrigerants removed by a licensed technician in accordance with Ontario Regulation 189; or
  - (c) the refrigerant is removed on-site from white goods by a licensed technician, in accordance with Ontario Regulation 189, prior to shipping white goods off-site; and
  - (d) records of white goods handling shall be created in accordance with Condition 51.

## SCHEDULE "A"

1. Application for a Certificate of Approval for a Waste Disposal Site, signed by Paula A. Formanek, Trow Associates Inc., and dated February 19, 2004, and the supporting documentation prepared by Trow Associates Inc. consisting of the following documents:
  - (a) Report entitled "Ward 3 (Escott) Waste Disposal Site A441073 Proposed Expansion", dated February 18, 2004, prepared by Trow Associates Inc., excluding Section 5.16, entitled "Triggering Mechanisms and Contingency Measures - Leachate Migration" and excluding Section 5.6, entitled "Final Grading, Cover Systems and Source of Materials"
  - (b) Drawing No. SP-1, entitled "Site Plan" dated December 16, 2003
  - (c) Drawing No. EC-1, entitled "Existing Conditions" dated December 16, 2003
  - (d) Drawing No. OP-1, entitled "Operations/Development Plan" dated December 16, 2003
  - (e) Drawing No. PFC-1, entitled "Proposed Pre-Aerial Fill Contours" dated June 21, 2004
  - (f) Drawing No. SECT-1, entitled "Cross Sections" dated December 16, 2003
  
2. Letter dated January 29, 2004 from John Trudgen, Clerk-Administrator, The Township of Leeds and the Thousand Islands, to Director, Environmental Assessment and Approvals Branch, Ministry of Environment, providing the authorization for Trow Associates Inc. to act as the Township's agent.
  
3. Letter dated June 22, 2004 from Paula A. Formanek, Trow Associates Inc., to Margaret Wojcik, Ministry of Environment, providing the following additional information:
  - permeability of the daily and interim cover
  - permeability of the final cover over the existing trenches
  - frequency of the daily cover application
  - description of the alternative daily/interim cover
  - specifications relating to burning of clean wood waste
  - clarification of the existing capacity of the waste landfilled to-date
  - details of the public consultation
  
4. Letter dated July 14, 2004 from Paula A. Formanek, Trow Associates Inc., to Margaret Wojcik, Ministry of Environment, providing the following additional information:
  - timing of the final cover application
  - procedures for compaction of waste and placement of daily cover
  - days and hours of operation of the waste disposal site
  - agreement to 300 mm interim cover thickness
  - frequency of daily cover application during winter months

- proposal for ensuring hydraulic conductivity continuity between the existing and the new waste
- minimum slope for top of the waste mound
- further clarification related to the existing capacity of the waste landfilled to-date

5. Letter dated September 28, 2004 from Paula A. Formanek, Trow Associates Inc., to Margaret Wojcik, Ministry of Environment, providing the following additional information:

- confirmation of the daily cover application frequency
- confirmation of the site area

*The reasons for the imposition of these terms and conditions are as follows:*

1. Conditions 1, 3-7, inclusive and 10 are included to clarify the legal rights and responsibilities of the Owner.
2. Condition 2 is included to ensure that the Site is operated in accordance with the application and supporting documentation submitted by the Owner, and not in a manner which the Director has not been asked to consider.
3. Conditions 8 and 9 are included to ensure that the appropriate Ministry staff have ready access to information and the operations of the Site, which are approved under this Certificate. Condition 8 is supplementary to the powers of entry afforded a Provincial Officer pursuant to the EPA , the Ontario Water Resources Act , and the Pesticides Act , as amended.
4. Conditions 11 and 12 are included, pursuant to subsection 197(1) of the EPA , to ensure that any persons having an interest in the site are aware that the land has been approved and used for the purposes of waste disposal.
5. Conditions 13 and 14 are included to specify the approved areas from which waste may be accepted at the Site and the types of waste that may be accepted for disposal at the Site, based on the Owner's application and supporting documentation.
6. Conditions 15, 16, 17 and 18 are included to specify restrictions on the extent of landfilling at this Site based on the Owner's application and supporting documentation. These limits define the approved volumetric capacity of the Site. Condition 16 is also included to specify restrictions on the extent of landfilling within the fill area to maintain a vertical separation between the groundwater table and the waste.
7. Condition 19 is included to specify the requirement of daily or interim cover applications to control potential nuisance effects, to facilitate vehicle access on the Site and to ensure an acceptable Site appearance.



8. Condition 20 is included to specify the hours of operation for the landfill Site and a mechanism for amendment of the hours of operation.
9. Condition 21 is included to require inspections that would ensure that only approved waste types are accepted at the Site and that the Ministry is notified of any attempts to dispose off unacceptable wastes.
10. Condition 22 is included to require waste compaction to maximize the capacity of the Site and to provide environmental benefits associated with greater compaction of waste.
11. Condition 23(a) is included to prohibit burning of waste at the Site because of concerns with air emissions, smoke and other nuisance effects and the potential fire hazard. Condition 23(b) is included to control burning of wood products at the Site, to minimize potential environmental adverse effects.
12. Condition 24 is included to ensure protection of public health and safety, and minimization of potential damage to environmental controls, monitoring and other works at the Site due to uncontrolled removal of materials from waste at the Site.
13. Condition 25 is included to ensure that all buildings and structures at the Site are free of any landfill gas accumulation, which due to a methane gas component may be explosive and thus create a danger to any persons at the Site.
14. Condition 26 is included to require reasonable maintenance of the on-site roads to ensure safe delivery of waste to the working face or to and from the other waste types storage areas.
15. Conditions 27 and 28 are included to ensure that the users of the Site are fully aware of important information and restrictions related to the Site operations as specified by this Certificate.
16. Conditions 29, 30 and 31 are included to ensure that the Site access and integrity are controlled by preventing unauthorized access when the Site is closed and no Site attendant is on duty.
17. Condition 32 is included to ensure that drainage onto or leaving the Site does not adversely affect Site operations or create a nuisance or a hazard to the health and safety of the environment.
18. Conditions 33 - 40, inclusive, and 57 are included to ensure that the Site is designed and operated in a way that does not result in a hazard or nuisance to the natural environment or any persons.
19. Condition 41 is included to provide information that demonstrates that the Site is performing as designed and the impacts on the natural environment are within the Ministry's limits. Condition 41(b) is also included to require the Owner to install additional bedrock wells to delineate the leachate impacts in the bedrock unit.

20. Conditions 42, 43 and 44 are included to ensure the integrity of the groundwater monitoring network so that accurate monitoring results are achieved and the natural environment is protected.
21. Condition 45 is included to ensure that regular inspections are conducted at the Site, to verify that the Site is operated in accordance to this Certificate and in a manner that would not result in a hazard or nuisance to the natural environment or any persons.
22. Condition 46 is included to ensure that the Site is operated and supervised by properly trained staff in a manner which does not result in a hazard or nuisance to the natural environment or any persons.
23. Conditions 47 - 53, inclusive, are included to ensure that information pertaining to Site development, operations and monitoring data is documented and any possible improvements to Site design, operations or monitoring programs are identified. Condition 48 is also included to ensure that any complaints related to Site operations are addressed in a timely manner and actions are taken to prevent similar complaints from occurring again. Condition 52 is also included to provide the Ministry with a concise and organized tool to review the Site activities and the effectiveness of the design and to verify compliance with the conditions of this Certificate and other relevant Ministry's requirements.
24. Condition 54 is included to ensure that incidents of spills are reported to the Ministry to ensure public health and safety and environmental protection.
25. Condition 55 is included to ensure that the Owner is prepared to handle emergency situations that may arise at the Site and that staff and equipment are available to handle such situations.
26. Condition 56 is included to ensure that final closure of the Site is completed in an aesthetically pleasing manner and to ensure long-term protection of the natural environment.

**This Provisional Certificate of Approval revokes and replaces Certificate(s) of Approval No. A441703 issued on May 11, 1982**

*In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990, Chapter E-19, as amended, you may by written notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act, provides that the Notice requiring the hearing shall state:*

1. The portions of the approval or each term or condition in the approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

*The Notice should also include:*

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the waste disposal site is located;

*And the Notice should be signed and dated by the appellant.*

*This Notice must be served upon:*

The Secretary\*  
Environmental Review Tribunal  
2300 Yonge St., 12th Floor  
P.O. Box 2382  
Toronto, Ontario  
M4P 1E4

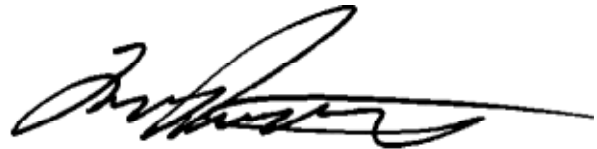
AND

The Director  
Section 39, *Environmental Protection Act*  
Ministry of Environment and Energy  
2 St. Clair Avenue West, Floor 12A  
Toronto, Ontario  
M4V 1L5

**\* Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or [www.ert.gov.on.ca](http://www.ert.gov.on.ca)**

*The above noted waste disposal site is approved under Section 39 of the Environmental Protection Act.*

DATED AT TORONTO this 4th day of October, 2004



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Ian Parrott, P.Eng.  
Director  
Section 39, *Environmental Protection Act*

MW/

c: District Manager, MOE Kingston - District  
Paula Formanek, Trow Associates Inc.

Appendix D  
Borehole Logs

Project: MK 14517 A  
 Ward 3 Waste Disposal Site  
 Client: Township of Leeds and Thousand Islands  
 Location: L:9 / C:BF / T:Front of Escott

**Well ID: OW-1**

Engineer: SW

SUBSURFACE PROFILE				WELL CONSTRUCTION DETAILS	
Depth	Symbol	Description	Depth/Elev.	Well Profile	Remarks
0		Ground Surface	0		
0			0		Flush Mount Well Box
1		<b>Cover Material</b>			
2		Clay			
3		Tan color			Clay Seal (Bentonite HolePlug)
4		Very Dry	1.52		
5			-1.52		
6		<b>Landfill</b>			
7		Household refuse			
8		Black color			
9		Partly saturated			
10					
11					
12					
13					00 Silica Sand
14					
15					
16			4.88		
17			-4.88		
18		<b>Clay</b>			
19		Massive structure			
20		Light brown color			
21		Saturated	6.25		
22			-6.25		
23		Bedrock Refusal			
24					
25					
26					
27					

Drilled By: G.E.T. Drilling Drill Date: 9 May 2001 Drill Method: Solid Stem Auger Hole Size: 125 mm	TROW-OMM Consulting Engineers #210 - 4 Cataraqi Street Kingston, Ontario, K7K 1Z7 T (613)542-1253 F (613)547-3767	Well Diameter: 51 mm Well Material: S40 PVC Screen: #10
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Project: MK 14517 A

Well ID: OW-2

Ward 3 Waste Disposal Site

Client: Township of Leeds and Thousand Islands

Location: L:9 / C:BF / T:Front of Escott

Engineer: SW

SUBSURFACE PROFILE				WELL CONSTRUCTION DETAILS	
Depth	Symbol	Description	Depth/Elev.	Well Profile	Remarks
0		Ground Surface	0		
0			0		Flush Mount Well Box
1		<b>Soil Cover Material</b> Clay Tan color Very Dry			Clay Seal (Bentonite HolePlug)
2					
3					
4					
5					
6					
7					
8			2.44		
8		<b>Landfill</b> Household refuse Black color Partly saturated	-2.44		00 Silica Sand
9					
10					
11					
12					
13					
14			6.1		
14		<b>Native Clay</b> Massive structure Light brown color Saturated	-6.1		
15					
16					
17			7.62		
18		Bedrock Refusal	-7.62		
19					
20					
21					
22					
23					
24					
25					
26					
27					

Drilled By: G.E.T. Drilling Drill Date: 9 May 2001 Drill Method: Solid Stem Auger Hole Size: 125 mm	TROW-OMM Consulting Engineers #210 - 4 Cataraqui Street Kingston, Ontario, K7K 1Z7 T (613)542-1253 F (613)547-3767	Well Diameter: 51 mm Well Material: S40 PVC Screen: #10
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Project: MK 14517 A

Ward 3 Waste Disposal Site

Client: Township of Leeds and Thousand Islands

Location: L:9 / C:BF / T:Front of Escott

Well ID: OW-3

Engineer: SW

SUBSURFACE PROFILE				WELL CONSTRUCTION DETAILS	
Depth	Symbol	Description	Depth/Elev.	Well Profile	Remarks
0		Ground Surface	0		
0			0		Piezometer Stick-Up
1		<b>Native Material</b> Clay Tan color Very Dry			Clay Seal (Bentonite HolePlug)
2					
3					
4				1.37	
5		<b>Clay</b> Massive structure Brown color Saturated	-1.37		00 Silica Sand
6					
7					
8					
9					
10				3.4	
11		<b>Bedrock Refusal</b>	-3.4		
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					

Drilled By: G.E.T. Drilling  
 Drill Date: 9 May 2001  
 Drill Method: Solid Stem Auger  
 Hole Size: 125 mm

TROW-OMM Consulting Engineers  
 #210 - 4 Cataraqui Street  
 Kingston, Ontario, K7K 1Z7  
 T (613)542-1253 F (613)547-3767

Well Diameter: 51 mm  
 Well Material: S40 PVC  
 Screen: #10

Project: MK 14517 A

**Well ID: OW-4**

Ward 3 Waste Disposal Site

Client: Township of Leeds and Thousand Islands

Location: L:9 / C:BF / T:Front of Escott

Engineer: SW

SUBSURFACE PROFILE				WELL CONSTRUCTION DETAILS	
Depth	Symbol	Description	Depth/Elev.	Well Profile	Remarks
0		Ground Surface	0		
0			0		Piezometer Stick-Up
1		<b>Native Material</b> Clay Tan color Very Dry			Clay Seal (Bentonite HolePlug)
2					
3					
4				1.37	
5		<b>Clay</b> Massive structure Brown color Saturated			00 Silica Sand
6					
7					
8				-1.37	
9		Bedrock Refusal			
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
2.74			2.74		
-2.74			-2.74		

Drilled By: G.E.T. Drilling Drill Date: 9 May 2001 Drill Method: Solid Stem Auger Hole Size: 125 mm	TROW-OMM Consulting Engineers #210 - 4 Cataraqui Street Kingston, Ontario, K7K 1Z7 T (613)542-1253 F (613)547-3767	Well Diameter: 51 mm Well Material: S40 PVC Screen: #10
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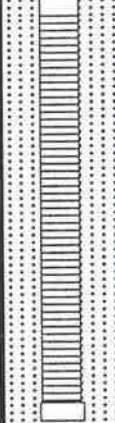

Project: MK 14517 A  
 Ward 3 Waste Disposal Site

**Well ID: OW-5**

Client: Township of Leeds and Thousand Islands

Location: L:9 / C:BF / T:Front of Escott

Engineer: SW

SUBSURFACE PROFILE				WELL CONSTRUCTION DETAILS	
Depth	Symbol	Description	Depth/Elev.	Well Profile	Remarks
0		Ground Surface	0		
0			0		Piezometer Stick-Up
1		<b>Native Material</b> Clay Tan color Very Dry	1.52		Clay Seal (Bentonite HolePlug)
2					
3					
4					
5		<b>Clay</b> Massive structure Brown color Saturated	-1.52		00 Silica Sand
6					
7					
8					
9					
10					
11					
12					
13					
14					
15		Bedrock Refusal	4.72		
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					

Drilled By: G.E.T. Drilling  
 Drill Date: 9 May 2001  
 Drill Method: Hollow Stem Hammer  
 Hole Size: 51 mm

TROW-OMM Consulting Engineers  
 #210 - 4 Cataraqui Street  
 Kingston, Ontario, K7K 1Z7  
 T (613)542-1253 F (613)547-3767

Well Diameter: 26 mm  
 Well Material: S40 PVC  
 Screen: #10

Project: MK 14517 A

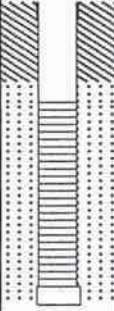
Well ID: OW-6

Ward 3 Waste Disposal Site

Client: Township of Leeds and Thousand Islands

Location: L:9 / C:BF / T:Front of Escott

Engineer: SW

SUBSURFACE PROFILE				WELL CONSTRUCTION DETAILS	
Depth	Symbol	Description	Depth/Elev.	Well Profile	Remarks
0		Ground Surface	0		
0			0		Piezometer Stick-Up Clay Seal (Bentonite HolePlug)
1		<b>Native Material</b> Clay Tan color Very Dry			
2					
3					
4					1.37
5		<b>Silty Clay</b> Massive structure Brown color Saturated Sand lenses 1.8-2.3m	-1.37		00 Silica Sand
6					
7				2.29	
8		Bedrock Refusal	-2.29		
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					

Drilled By: G.E.T. Drilling

Drill Date: 10 May 2001

Drill Method: Hollow Stem Hammer

Hole Size: 51 mm

TROW-OMM Consulting Engineers

#210 - 4 Cataraqui Street

Kingston, Ontario, K7K 1Z7

T (613)542-1253 F (613)547-3767

Well Diameter: 26 mm

Well Material: S40 PVC

Screen: #10

Project: MK 14517 A

Ward 3 Waste Disposal Site

Client: Township of Leeds and Thousand Islands

Location: L:9 / C:BF / T:Front of Escott

**Well ID: OW-7**

Engineer: SW

SUBSURFACE PROFILE				WELL CONSTRUCTION DETAILS	
Depth	Symbol	Description	Depth/Elev.	Well Profile	Remarks
0		Ground Surface	0		
0			0		Piezometer Stick-Up Clay Seal (Bentonite HolePlug)
1		<b>Native Material</b> Clay Tan color Very Dry	1.45		00 Silica Sand
2					
3		<b>Silty Clay</b> Massive structure Brown color Saturated	-1.45		
4					
5					
6					
7		Bedrock Refusal	-3.05		
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					

Drilled By: G.E.T. Drilling  
 Drill Date: 10 May 2001  
 Drill Method: Hollow Stem Hammer  
 Hole Size: 51 mm

TROW-OMM Consulting Engineers  
 #210 - 4 Cataraqui Street  
 Kingston, Ontario, K7K 1Z7  
 T (613)542-1253 F (613)547-3767

Well Diameter: 26 mm  
 Well Material: S40 PVC  
 Screen: #10



Project: MK 14517 A

Ward 3 Waste Disposal Site

Client: Township of Leeds and Thousand Islands

Location: L:9 / C:BF / T:Front of Escott

Well ID: OW-8

Engineer: SW

SUBSURFACE PROFILE				WELL CONSTRUCTION DETAILS	
Depth	Symbol	Description	Depth/Elev.	Well Profile	Remarks
0		Ground Surface	0		
0			0		Piezometer Stick-Up
1		<b>Native Material</b> Clay Tan color Very Dry			Clay Seal (Bentonite HolePlug)  00 Silica Sand
2					
3					
4					
5				1.83	
6		<b>Silty Clay</b> Massive structure Brown color Saturated	-1.83		
7					
8					
9					
10		Bedrock Refusal	3.05		
11				-3.05	
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					

Drilled By: G.E.T. Drilling  
 Drill Date: 10 May 2001  
 Drill Method: Hollow Stem Hammer  
 Hole Size: 51 mm

TROW-OMM Consulting Engineers  
 #210 - 4 Cataraqui Street  
 Kingston, Ontario, K7K 1Z7  
 T (613)542-1253 F (613)547-3767

Well Diameter: 26 mm  
 Well Material: S40 PVC  
 Screen: #10

Project: MK 14517 A  
 Ward 3 Waste Disposal Site

**Well ID: OW-9**

Client: Township of Leeds and Thousand Islands

Location: L:9 / C:BF / T:Front of Escott

Engineer: SW

SUBSURFACE PROFILE				WELL CONSTRUCTION DETAILS	
Depth	Symbol	Description	Depth/Elev.	Well Profile	Remarks
0		Ground Surface	0		
0			0		Piezometer Stick-Up
1		<b>Native Material</b>			
2		Clay			Clay Seal (Bentonite HolePlug)
3		Tan color			
3		Very Dry	1.22		
4			-1.22		
5		<b>Silty Clay</b>			
6		Massive structure			00 Silica Sand
7		Brown color			
8		Saturated	2.74		
9			-2.74		
10		Bedrock Refusal			
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					

Drilled By: G.E.T. Drilling Drill Date: 10 May 2001 Drill Method: Hollow Stem Hammer Hole Size: 51 mm	TROW-OMM Consulting Engineers #210 - 4 Cataraqui Street Kingston, Ontario, K7K 1Z7 T (613)542-1253 F (613)547-3767	Well Diameter: 26 mm Well Material: S40 PVC Screen: #10
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Project: MK 14517 A

**Well ID: OW-10**

Ward 3 Waste Disposal Site

Client: Township of Leeds and Thousand Islands

Location: L:9 / C:BF / T:Front of Escott

Engineer: SW

SUBSURFACE PROFILE				WELL CONSTRUCTION DETAILS	
Depth	Symbol	Description	Depth/Elev.	Well Profile	Remarks
0		Ground Surface	0		
0			0		Piezometer Stick-Up
1		<b>Native Material</b> Clay Tan color Very Dry			Clay Seal (Bentonite HolePlug)
2					
3					
4					
5			1.52		
6		<b>Silty Clay</b> Massive structure Brown color Saturated	-1.52		00 Silica Sand
7					
8					
9					
10		Bedrock Refusal	2.82		
10			-2.82		
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					

Drilled By: G.E.T. Drilling  
 Drill Date: 10 May 2001  
 Drill Method: Hollow Stem Hammer  
 Hole Size: 51 mm

TROW-OMM Consulting Engineers  
 #210 - 4 Cataraqui Street  
 Kingston, Ontario, K7K 1Z7  
 T (613)542-1253 F (613)547-3767

Well Diameter: 26 mm  
 Well Material: S40 PVC  
 Screen: #10





**Trow Associates Inc.**  
 210 The Woolen Mill  
 4 Cataraqui Street  
 Kingston, Ontario

**Project No.:** MK14517-C

**Monitoring Well: OW-11**

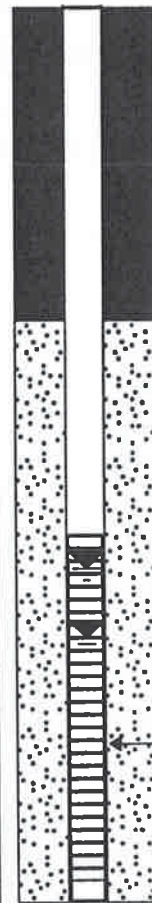
**Project:** Escott Waste Disposal Site

**Client:** Township of Leeds and Thousand Islands

**Location:** 227 Escott Rockport, Mallorytown, ONT

**Logged by:** L. Frink

SUBSURFACE PROFILE				SAMPLE		Well Completion Details	Comments
Depth	Symbol	Description	Depth/Elev.	Moisture	Recovery		
0		Ground Surface					
0		<b>CLAYEY SILT</b> Dark brown with rootlets	0.25	D	70%		Piezometer
1		<b>SILTY CLAY</b> Fine, dark brown	0.61	D	100%		1.37 m Benseal
2		<b>SILTY CLAY</b> Mottled dark brown and grey					
3							
4				D	100%		
5							
6							
7			2.26				
8		<b>SILTY CLAY</b> Mottled medium brown to grey					
9							
10				W	100%		Water level Between 2.44 & 2.74 m
11			3.48				Slot Size 10 Screen
12		<b>CLAYEY SILT</b> Fine-mottled medium brown to grey					
13				W	100%		Refusal @ 3.89 m
14			4.22				
15		<b>SILTY CLAY</b> Mottled medium brown and grey	4.45	W	100%		Possible cave in at bottom of hole
16		End of Borehole					



**Drilled By:** G.E.T. Drilling

**Drill Method:** Jack Hammer

**Drill Date:** July 29, 2003

**Hole Size:** 50 mm

**Datum:** 89.462

**Sheet:** 1 of 1



**Trow Associates Inc.**  
 210 The Woolen Mill  
 4 Cataraqi Street  
 Kingston, Ontario

**Project No.:** MK14517-C

**Monitoring Well: OW-12**

**Project:** Escott Waste Disposal Site

**Client:** Township of Leeds and Thousand Islands

**Location:** 227 Escott Rockport, Mallorytown. ONT

**Logged by:** L. Frink

SUBSURFACE PROFILE				SAMPLE		Well Completion Details	Comments
Depth	Symbol	Description	Depth/Elev.	Moisture	Recovery		
0		Ground Surface					
0		<b>Clayey Silt</b> Traces of sand. Dark brown	0.41	D	60 %		Piezometer
1		<b>Silty Clay</b> Mottled medium brown to grey					1.52 m Benseal
2							
3							
4							
5							
6				D			
7							
8							
9							
10			3.10				Sand Pack
11		<b>Clayey Silt</b> Medium brown to mottled grey	3.38	M			Water @ 2.74 m
12		<b>Silty Clay</b> Mottled medium brown and grey	3.66	M			Slot Size 10 Screen
13		<b>Silty Clay</b> Grey	3.96	M			Refusal @ 3.96 m
14		End of Borehole					
15							
16							

**Drilled By:** G.E.T. Drilling

**Hole Size:** 50 mm

**Drill Method:** Jack Hammer

**Datum:** 88.912

**Drill Date:** July 29, 2003

**Sheet:** 1 of 1





**Trow Associates Inc.**  
 210 The Woolen Mill  
 4 Cataraqui Street  
 Kingston, Ontario

**Project No.:** MK14517-C

**Monitoring Well: OW-13**

**Project:** Escott Waste Disposal Site

**Client:** Township of Leeds and Thousand Islands

**Location:** 227 Escott Rockport, Mallorytown, ONT

**Logged by:** L. Frink

SUBSURFACE PROFILE				SAMPLE		Well Completion Details	Comments
Depth	Symbol	Description	Depth/Elev.	Moisture	Recovery		
0		Ground Surface	0.00				Piezometer  1.1 m Benseal  Gravel/Sand Pack  Slot Size 10 Screen  Water @ 3.35 m  Sand Pack  Refusal @ 4.27 m  Possible cave in at bottom of hole
0		<b>Topsoil</b> Black decomposed material	0.20	D	100 %		
1		<b>Silty Clay</b> Black	0.71	D	100 %		
2		<b>Silty Clay</b> Mottled grey to dark brown					
3		<b>Silty Clay</b> Mottled medium brown and grey	2.29	D	100 %		
4							
5							
6							
7		<b>Silty Clay- Trace Silt</b> Mottled medium brown to grey	4.57	M	100 %		
8							
9							
10							
11			4.57				
12							
13			4.57				
14							
15		End of Borehole					
16							

**Drilled By:** G.E.T Drilling

**Hole Size:** 50 mm

**Drill Method:** Jack Hammer

**Datum:** 90.557

**Drill Date:** July 29, 2003

**Sheet:** 1 of 1



**Trow Associates Inc.**  
 210 The Woolen Mill  
 4 Cataraqui Street  
 Kingston, Ontario

**Project No.:** MK14517-C

**Monitoring Well: BW-1**

**Project:** Escott Waste Disposal Site

**Client:** Township of Leeds and Thousand Islands

**Location:** 227 Escott Rockport, Mallorytown, ONT

**Logged by:** L.Frink

SUBSURFACE PROFILE				SAMPLE		Well Completion Details	Comments
Depth	Symbol	Description	Depth/Elev.	Moisture	Recovery		
-3		Ground Surface	0.00			<p>Piezometer stick-up 1.07 m            Steel Casing            Bentonite            Gravel and Bentonite Mix            Bentonite            Sand Pack            Water @ 19.81 m            Slot Size 10 Screen            Bottom of hole @ 21.95 m</p>	
2	[Symbol]	Silty Clay Brown.	2.13				
7	[Symbol]	Sandstone Brown.	2.74				
12	[Symbol]	Sandstone Red.	3.66				
17	[Symbol]	Sandstone Grey/Red	4.57				
22	[Symbol]	Granite Red.					
27	[Symbol]						
32	[Symbol]						
37	[Symbol]						
42	[Symbol]						
47	[Symbol]						
52	[Symbol]		16.76				
57	[Symbol]	Granite Gray.	18.59				
62	[Symbol]	Granite Red.					
67	[Symbol]						
72	[Symbol]		21.95				
77		End of Borehole					

**Drilled By:** Knox Well Drilling

**Hole Size:** 50 mm

**Drill Method:** Rotary Percussion

**Datum:** 90.87 m

**Drill Date:** Aug. 29, 2003

**Sheet:** 1 of 1



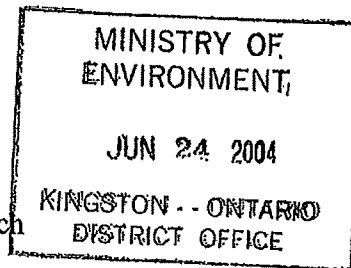
## Trow Associates Inc.

315 The Woolen Mill, 4 Cataraqui Street  
Kingston, Ontario K7K 1Z7  
kingston@trow.com / www.trow.com

Telephone: (613) 542-1253 / Facsimile: (613) 547-3767

Reference: 14517-X

Ms. Margaret Wojcik, P. Eng.  
Ministry of the Environment  
Environmental Assessment and Approvals Branch  
2 St. Clair Avenue West, Floor 12A  
Toronto, Ontario  
M4V 1L5



June 22, 2004

Via Facsimile  
416-314-8452  
& Regular Mail

**Application for Approval of Waste Disposal Site  
Amendment for Changes in Operations, and Expansion of Site  
Ward 3 (Escott) Waste Disposal Site A441073  
Leeds and the Thousand Island Township  
United Counties of Leeds and Grenville  
MOE Reference Number: 9969-5WVJDB**

Dear Ms. Wojcik:

Thank you for your correspondence dated May 4, 2004 concerning the above noted application. The purpose of this letter is to provide the additional information requested. The information is provided in the same order as requested in your May 4 correspondence.

1. We agree with your comment; interim cover should be comprised of permeable material. The plans in the report will be revised to specify this (see note No. 4 on Dwg. OP-1).
2. We agree with your comment. As much of the existing impermeable cover as possible will be removed and will be stockpiled. The stockpile area(s) have been identified on Dwg. OP-1.
3. We collected four (4) samples of the existing cover across the site to verify the permeability. A grain size analysis identified three (3) of the four (4) samples as a silty clay with some or a trace of sand, and gravel or trace of gravel. The fourth sample was found to be a gravelly sand with some silt and trace of clay. Therefore, this material is a till and is not suitable to be used as an interim cover. Accordingly, the existing cover will be removed, stockpiled and used as final cover (see # 2 above).
4. Specifications for stripping and stockpiling the existing cover and post-stripping contours are as follows:

---

Brampton (Greater Toronto-Head Office)+Barrie+Cambridge+Cornwall+Dorval (Greater Montreal)  
+Hamilton+Iqaluit+Kamloops+London+Markham+North Bay+Orillia+Ottawa+Simcoe+  
Sudbury+Tallahassee+Thunder Bay+Vancouver+Welland+Windsor



- a) Strip the existing cover as aerial filling progresses. For example, strip the existing cover at south limit and utilize to create perimeter berms. Perimeter berms will eventually cover and encapsulate the sides of the above-grade landfill.
- b) Continue as the existing landfill is exposed.
- c) Cover any exposed waste with a 150 mm minimum or more of permeable material to establish a working surface.

The final contours as shown in our report are based on minimum 4:1 slopes; they will not change. However, the volume estimates will change due to the final cover being removed from the calculation (see # 12 below).

5. A track front-end loader will be used for waste compaction.
6. During the months of May through to the end of September, waste will be covered with an interim cover material weekly, on Tuesdays, as a minimum, with additional applications as required. Furthermore, stockpiled interim cover material will be applied at any time that site conditions warrant. (Please note: the landfill is open only on Tuesdays and Saturdays.)
7. We agree with your comment. Interim cover needs to be applied in landfilled areas not in use for more than six (6) months. 150 mm of material will be put in place. This will be noted on the site plan.
8. Yes, we would like to have the option to use shredded glass mixed with soil as an interim cover.
9. The municipality would like to continue to burn brush and wood on-site. The brush and wood burning area is shown on the site plan. The following are proposed specifications relating to the burning of brush and clean wood:
  - The piles of clean wood and brush to be burned will be no larger than 4.0 metres by 3.0 metres in area, and 2.0 metres high;
  - The burning will be initiated with paper;
  - The burning location is shown on Dwg. OP-1;
  - Areas designated for burning shall be cleared of vegetation;
  - Burning shall be permitted in small piles only subject to weather conditions;
  - All fires will be completely extinguished before the end of the work day;
  - Fires will not be started using flammable liquids such as petroleum products and/or rubber;
  - After each burning event the fire pit shall be cleaned out and ashes properly disposed;
  - All necessary fire fighting equipment shall be placed within or in the close vicinity of the burning area including a soil stockpile for emergency extinguishing of the fire; and,
  - Each burning event shall be supervised and immediately extinguished if supervision is no longer available.

10. Settling ponds (i.e., siltation control traps) are proposed to settle out sediments by capturing surface run-off and temporarily detaining it. Surface run-off will be contaminated by sediment not leachate. Perimeter lift initiating berms will contain any precipitation falling on the refuse. The remaining potential avenue for the contamination of surface runoff is via seepage which is expected to occur at most small landfills where leachate is controlled by natural attenuation.
11. We believe that it is actually Section 53 of the OWRA. An application will be made when the works are needed.
12. a) We included final cover material in all calculations previously submitted.
  - b) The volume of in-place waste is 3.0 metres deep and includes final cover material, which ranges from 0.6 to 2.1 metres in thickness. If 0.6 metres are subtracted, this leaves 2.4 metres of waste. Accordingly, the statement that "overflowing has occurred" should be retracted.
  - c) The volume of material that can be added by aerial filling is limited by the following criteria:
    - i) 4:1 side slopes and footprint area/configuration (long and narrow); and
    - ii) the amount of cover material that can be salvaged and re-used.

Assuming there is 2.4 metres of landfill over 0.7 hectares, including in-situ native soils between trenches, then there is approximately 16,800 m<sup>3</sup> of material in place. This leaves a maximum 23,200 m<sup>3</sup> space available (40,000 m<sup>3</sup> - 16,800 m<sup>3</sup>) for additional landfill including daily and interim cover. Some of this available space is already consumed by existing final cover material, and some is lost to accommodate 750 mm of final cover over the aerial fill within the final contours.

In effect, there is only 12,500 m<sup>3</sup> of space available above existing grade, excluding final cover.

This space can be increased by the amount of existing cover material salvaged. (It is not possible to fit 40,000 m<sup>3</sup> of waste, plus 750 mm final cover, within the existing footprint due to its elongated configuration and existing ground elevations. To accommodate 40,000 m<sup>3</sup>, the footprint area must increase or the amount of existing cover material salvaged must be increased.)

It is impractical to recover all of the final cover material that has been placed. For volume calculations, we previously assumed 50 percent could be salvaged (5,000 m<sup>3</sup>). This would produce an available volume of 17,500 m<sup>3</sup> for waste and interim cover.

The final volume encapsulated within the landfill footprint at 4:1 final slopes will consist of 16,800 m<sup>3</sup> of waste (including in-situ soils) placed by burial, plus approximately 5,000 m<sup>3</sup> of unsalvageable final cover material, plus 5,000 m<sup>3</sup> of waste and interim cover space made available by removing 5,000 m<sup>3</sup> of existing final cover, plus 12,500 m<sup>3</sup> of space obtained for

waste and interim cover by filling aerially, plus 7,500 m<sup>3</sup> of final cover material to cap the landfill. The total amount of material encapsulated, including final cover and in-situ soil wedges, will be approximately 46,800 m<sup>3</sup>. There will be a net of 39,300 m<sup>3</sup> of waste, interim cover and unsalvageable burial method cover, plus 7,500 m<sup>3</sup> is final cover beneath the contours shown on Dwg OP-1. The final volume will reflect the amount of existing cover that can be salvaged up to a total volume of 40,000 m<sup>3</sup> excluding final capping material.

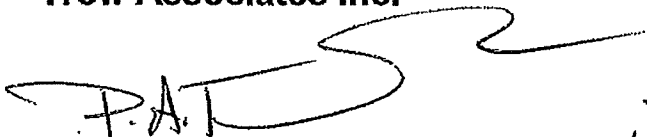
If the 2.4 metres depth of approved landfill, or 7,200 m<sup>3</sup> volume, within the un-excavated footprint area of 0.3 ha is considered, then the expansion would be equal to the above 12,500 m<sup>3</sup> plus salvaged cover ( $\pm 5,000$  m<sup>3</sup>) or 17,500 m<sup>3</sup> minus 7,200 m<sup>3</sup>, or approximately 10,300 m<sup>3</sup>.

13. As per your recommendation, we contacted Mr. Peter Taylor, Senior Environmental Officer, Ministry of Environment in Kingston regarding details on a suitable public consultation program for this proposal. It was agreed that an Open House be held to communicate the proposal to the public. The Open House was scheduled for June 3, 2004 at 3:00 p.m. with a second session at 6:30 p.m. However, the notice was only partially printed by the newspaper. Nevertheless, the Open House was held anyway because a large sign with the notice was also posted at the landfill, informing the public of the proposal with an invitation to the Open House. Two (2) people attended the Open House on June 3, 2004. A second Open House was held on June 11, 2004 at 3:00 p.m. with an evening session at 7:00 p.m. This notice was successfully advertised in the Gananoque Reporter on June 9, 2004 (proof of notice attached). A large sign was again posted at the landfill to advise the public on the proposal with an invitation to the Open House. There were no public attendees at the June 11, 2004 Open House.

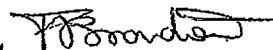
Trusting that the above is satisfactory. However, please do not hesitate to contact the undersigned if you have any questions.

Yours truly,

**Trow Associates Inc.**



Paula A. Formanek, M. Sc. (Eng.), P. Geo. Sr. Hydrogeologist  
Branch Manager



Jamieson S. Gourley, P.Eng.  
Senior Engineer

Attachments:

cc: Peter Taylor, Senior Environmental Officer, Ministry of the Environment, Kingston, Ontario

E:\Projects\14000\14500\14517 Escott Landfill\14517X - Extra Work (C of A)\Correspondence\040616-letter-Margaret Wojcik-CofA application.doc



**Trow Associates Inc.**  
 315 The Woolen Mill  
 4 Cataraqui Street  
 Kingston, Ontario

**Project No.:** MK14517

**Monitoring Well: BW-3**

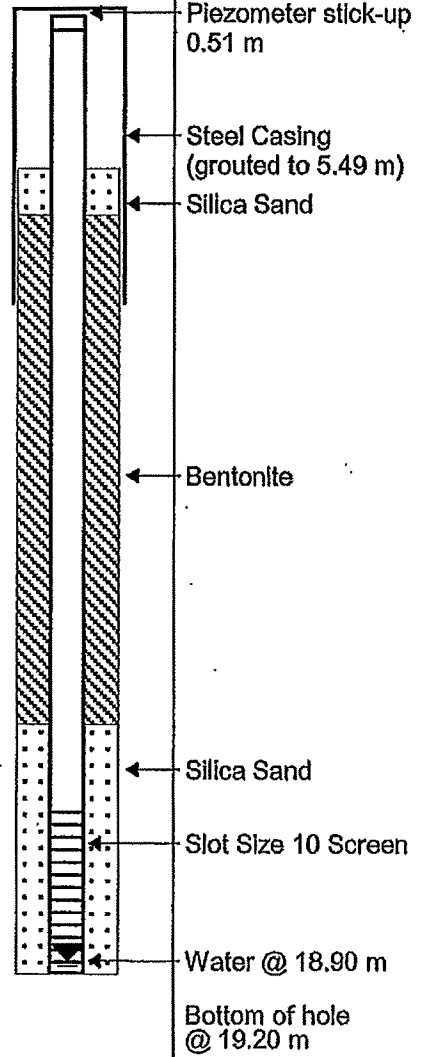
**Project:** Escott Waste Disposal Site

**Client:** Township of Leeds and the Thousand Islands

**Location:** 227 Escott-Rockport Road, Rockport, Ontario

**Logged by:** T. Virtue

SUBSURFACE PROFILE				SAMPLE		Well Completion Details	Comments
Depth	Symbol	Description	Depth/Elev.	Moisture	Recovery		
-3		Ground Surface	0.00				
2		<i>Clay</i> Brown					
7							
12		<i>Sandstone</i> Grey	5.18				
17			6.40				
22		<i>Sandstone</i> Greyish Red					
27							
32		<i>Granite</i> Red	12.80				
37			13.41				
42		<i>Granite</i> Reddish Grey					
47			15.55				
52		<i>Granite</i> Red					
57			18.90				
62		<i>Granite</i> Reddish Grey	18.90				
67			19.20				
72		End of Borehole					



**Drilled By:** Knox Well Drilling

**Hole Size:** 50 mm

**Drill Method:** Rotary Percussion

**Datum:**

**Drill Date:** October 4, 2005

**Sheet:** 1 of 1



**Project No.:** MK14517

**Monitoring Well: BW-2**

**Project:** Escott Waste Disposal Site

**Client:** Township of Leeds and the Thousand Islands

**Location:** 227 Escott-Rockport Road, Rockport, Ontario

**Logged by:** T. Virtue

**Trow Associates Inc.**  
315 The Woolen Mill  
4 Cataraqui Street  
Kingston, Ontario

SUBSURFACE PROFILE				SAMPLE		Well Completion Details	Comments
Depth	Symbol	Description	Depth/Elev.	Moisture	Recovery		
ft   m -3   -1		Ground Surface	0.00				Piezometer stick-up 0.91 m  Steel casing grouted to 3.05 m  Bentonite  Water level 2.42 m at time of drilling  Silica Sand  Slot Size 10 Screen  Bottom of hole at 7.92 m
2		Clay Brown. Dry.	0.46				
		Granite Red/White					
7							
12		Granite Red	3.66				
17			4.88				
22							
27		End of Borehole	7.92				

**Drilled By:** Jack Knox Well Drilling

**Hole Size:** 50 mm

**Drill Method:** Air Percussion

**Datum:**

**Drill Date:** August 28, 2006

**Sheet:** 1 of 1



Appendix E  
Site Photos



Surface Water Location: SW4  
12-Nov-2018



Surface Water Location: SW5  
30-May-2018



Surface Water Location: SW7  
30-May-2018



Surface Water Location: SW8  
12-Nov-2018



Surface Water Location: HBI  
12-Nov-2018



Surface Water Location: HBO  
12-Nov-2018



Well ID: OW3  
12-Nov-2018



Well ID: OW5  
12-Nov-2018





Well ID: OW8R1  
12-Nov-2018



Well ID: OW11R1  
12-Nov-2018



Well ID: OW12  
12-Nov-2018



Well ID: OW13  
12-Nov-2018



Well ID: OW14  
12-Nov-2018



Well ID: BW1  
12-Nov-2018



Well ID: BW2  
12-Nov-2018



Well ID: OW11R1 (front),  
OW11(middle), BW4 (back)  
12-Nov-2018



Entrance signage  
12-Nov-2018



Brush pile and ponded water  
12-Nov-2018



Ponded water at entrance  
12-Nov-2018



Plastic recycling bin and wind-blown waste  
12-Nov-2018





Paper and cardboard recycling bin  
12-Nov-2018



Cardboard and organic  
recycling bins  
12-Nov-2018



Scrap metal bin  
12-Nov-2018



Attendants shed  
12-Nov-2018



Wind-blown waste along west  
property line  
12-Nov-2018



Active filling area  
12-Nov-2018



Appendix F  
MECP Correspondence



MEMORANDUM

August 16, 2018

TO: Nathalie Matthews  
Senior Environmental Officer  
Kingston District Office  
Eastern Region

FROM: Shawn Trimper  
Hydrogeologist  
Technical Support Section  
Eastern Region

RE: 2017 Annual Monitoring Report  
Escott Waste Disposal Site  
Part of Lots 8, 9, and 10, Concession BF, Geo. Township of Escott  
Township of Leeds and the Thousand Islands  
Environmental Compliance Approval No. A441703

---

The Ministry of the Environment, Conservation and Parks (MECP) Kingston District Office (KDO) provided the report titled "Escott Waste Disposal Site, 2017 Annual Monitoring, Development, and Operations Report" dated March 2018 and completed by Malroz Engineering Inc. (Malroz). I have reviewed the aforementioned report and offer the following comments for your consideration.

Environmental Compliance Approval (ECA)

The Escott Waste Disposal Site (WDS) is owned and operated by The Corporation of the Township of Leeds and the Thousand Islands (the township) and is licensed under ECA No. A441703. The site is located on Part of Lots 8, 9, 10, Concession Broken Front, Geographic Township of Escott. The site is approved for the operation of a 1.0 hectare landfill area within a total site area of 15.1 hectares. It is understood that the site began operations in 1980. The site is a natural attenuating (unlined) site. The site is currently licensed to receive domestic and non-hazardous solid waste, and, acts as a transfer station for recyclable materials, metals, white goods and tires. Landfilling is currently conducted using the "area fill" method; however, the "trench and fill" method was historically used (until circa 2004).

The site has an approved volumetric capacity of 40,000 cubic metres (m<sup>3</sup>). It is estimated that 3,369m<sup>3</sup> of capacity remained at the end of 2017, and based on the recent fill rate, the site is projected to reach final capacity in 2020.

Malroz indicates that a Closure Plan is required to be prepared and submitted to the MECP prior to December 2018 (within 2 years of reaching capacity). However, condition 56 of the ECA actually requires a closure plan to be prepared at least 2 years prior to reaching final capacity or when the site reaches 90 percent of its approved capacity, whichever comes first. As such, a closure plan is already required to have been submitted, and as such, the site is in non-compliance with condition 56 of the ECA.

## Physical Setting

The site is located in a rural area just east of Escott Rockport Road and approximately 900 metres south of Holland Road North. Surrounding land use is generally agricultural with sparse residential development present in the area. Adjacent properties to the north and west of the site generally consist of farmland.

A small wetland pocket is located on the southeast portion of the site. A large wetland complex is located approximately 300m to the southeast of the site and extends northeast along the north side of the 401 towards La Rue Creek. A perennial stream flows in a north-easterly direction across the agricultural fields located to the west and north of the site. The agricultural field located immediately north of the site is tile drained. The tile drainage outlet is located northeast of the site and drains to a large wetland area located east of the site.

## Geology

The fill area is located between two southwest-northeast trending Precambrian bedrock ridges. Overburden thickness is estimated to be approximately 7.5m between the ridges and is reported to be absent along the bedrock ridges. Overburden is composed of silts and clays with intermittent sand lenses. A sandstone layer is observed above the Precambrian bedrock in some low lying areas and is up to 7m thick. The Precambrian bedrock is described as heavily glaciated and composed of granite and gneiss.

## Hydrogeology

Two distinct hydrogeological units are identified at the site: the overburden unit; and, the bedrock unit.

Groundwater flow within the overburden unit is highly influenced by local topography and conditions. Shallow groundwater is expected to be intercepted by the tile drainage to the north of the site, and as such, the tile drainage has the potential to influence shallow groundwater flow. The presence of bedrock ridges to the northwest and southeast of the fill area prevent groundwater flow in the overburden unit from occurring in these directions. Groundwater and leachate mounding within the waste mound also has the potential to result in localised flow in the vicinity of the mound toward the southwest. Based on groundwater elevations measured in the fall of 2017, groundwater flow in the overburden unit has been interpreted to be toward the north and northeast, and is consistent with previous years.

Additional bedrock monitoring wells have been installed in the bedrock unit in recent years and has resulted in an improved understanding of groundwater flow within this hydrogeological unit. Based on groundwater elevation measured in the fall of 2017, the direction of groundwater flow within the bedrock unit is interpreted to be toward the north.

No discussion of vertical gradients is provided in the report; however, based on my assessment, upward gradients (downward flow) are present. Leachate impacts have also been identified within the bedrock unit, and confirm that the overburden and bedrock are hydraulically connected.

### Groundwater Monitoring Program (2017)

Groundwater monitoring was conducted in 2017 as per the approved groundwater monitoring program with the following exception:

- The spring monitoring event was conducted during the summer due to delays.
- Monitoring wells OW3 and OW4 were not sampled during the summer monitoring event due to issues locating and/or identifying the monitoring wells.

### Background Groundwater Quality

Background groundwater quality is currently assessed in the overburden and bedrock unit based on groundwater quality at monitoring wells OW8R1 and BW3, respectively. These monitoring wells are located hydraulically up-gradient of the site.

Background water quality in both units is characterized by low concentrations of most parameters with the exception of hardness which typically exceeds the Ontario Drinking Water Standards (ODWS). However, the current report provides no discussion of background groundwater quality.

### Leachate

Leachate is characterised based on groundwater quality at overburden and bedrock monitoring wells OW14 and BW1, respectively. These monitoring wells are located in at the toe of the waste mound. Malroz indicates that leachate is characterised by elevated concentrations of ammonia, conductivity, chloride, boron, iron, and manganese.

The list of leachate indicator parameters (LIPs) provided by Malroz includes only a partial list of LIPs associated with the site.

### Down-gradient Groundwater Quality

A leachate plume has been identified in the overburden and bedrock units and is extending toward the northeast. Leachate impacts are present in overburden and bedrock monitoring wells OW11-R1 and BR3, respectively. LIP concentrations appear to decrease with distance indicating that impacts are attenuating. No monitoring wells are located down-gradient of these monitoring wells and are located in the vicinity of the northeastern property boundary. As such, the extent of leachate impacts have not been delineated toward the northeast and are expected to extend off-site in this direction in the overburden and bedrock units.

Volatile organic compounds (VOCs) have been monitored at the site in recent years and do not currently pose a concern.

## Regulatory Evaluation

MOECC Guideline B-7 applies to all operating WDS and those WDS closed after 1986, thus Guideline B-7 applies to the Escott WDS.

A guideline B-7 was provided in the 2017 AMR. Reasonable Use Limits (RUL) were calculated for relevant parameters for the overburden and bedrock units, based on the water quality at background monitoring wells OW8 and BW3, respectively.

The following RUL exceedances were reported at compliance monitoring locations in 2017:

- Overburden:
  - OW11/OW11R
    - hardness, dissolved organic carbon (DOC), total dissolved solids (TDS), iron, manganese, uranium
  - OW12
    - Hardness
- Bedrock:
  - BW4: hardness, DOC, TDS, iron, manganese, uranium

Malroz indicates that those RUL exceedances for DOC, iron, and manganese are landfill related and concludes that the site is in non-conformance with Guideline B-7.

## Trigger Mechanisms and Contingency Plans

Malroz concludes that the site is in non-conformance with Guideline B-7; however, no recommendations are provided with respect to contingency action. Malroz indicated in the 2016 AMR that an action plan would be provided in conjunction with the 2017 AMR; however, this was not completed.

Contingency action is required to address Guideline B-7 non-conformance at the site. The owner of the site should be required to develop and implement an action plan. The action plan should include a timeline and should be provided for my review and approval prior to implementation.

## Groundwater – Surface Water Interaction

The primary direction of groundwater movement within the shallow overburden unit is to the northeast and the potential exists for leachate impacted groundwater to discharge to the stream located to the north of the site. Leachate impacts in the overburden and bedrock remain un-delineated and potential risks to this receiver cannot be determined at this time.

Leachate impacts have been confirmed beneath the agricultural property located northeast of the site and the tile drainage system installed on this property has the potential to intercept shallow leachate impacted groundwater resulting in the discharge of leachate impacted groundwater to surface water.

The potential also exists for leachate impacted groundwater to also discharge to the low lying wetland area to the southeast of the waste mound; however, leachate impacts are not currently interpreted to be present in this area.

A MECP Surface Water Scientist should continue to be consulted with respect to surface water management associated with this site.

### Water Supply Wells

The nearest domestic well is located approximately 350m west of the fill area at 224 Escott Rockport Road. Water supply at this home is obtained from a private domestic well completed in the bedrock unit. This domestic well was included in the monitoring program from 2001 until 2012. This well is interpreted to be up-gradient of the site. Monitoring well BW3 is completed to bedrock and is located between the site and the well and acts as a sentinel well. BW3 is the background bedrock monitoring well and is not impacted by leachate.

A small number of additional homes and farming properties are located at greater distances to the north of the site along Escott Rockport Road and are expected to utilize private water supply wells for domestic and agricultural purposes.

I conclude that the site is not currently expected to present a risk to domestic supply wells and domestic well sampling is not required at this time.

### Landfill Gas

It has been previously reported that landfill gas is not expected to be a concern at the site due to its small size and remote location. Landfill gas screening was conducted in monitoring wells in association with the groundwater sampling program during 2017. Landfill gas was not identified at concentrations of concern during 2017.

### Recommended Groundwater Monitoring Program (2018)

Malroz recommends that groundwater monitoring continue to be conducted twice per year (spring and fall). No changes to the monitoring well network or parameter list are proposed, with the exception that VOC monitoring will be reduced to every two (2) years and will only be conducted at monitoring wells OW14 and BW1, as per my previous recommendation.

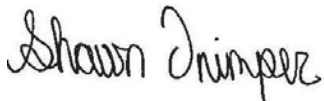
I have no concerns with the proposed groundwater monitoring program; however, I note that the monitoring well network and parameter list has changed in recent years, and it should be ensured that the requirements of the ECA are followed with respect to amending the monitoring program.

Malroz also indicates that monitoring well OW11 was located in 2017 despite that it was previously reported that this monitoring well was decommissioned and replaced. No recommendations have been provided with respect to OW11. It is my recommendation that this monitoring well be assessed and if it is suspected to be compromised/damaged it should be decommissioned.

## Conclusions and Recommendations

- The Escott WDS is an operating natural attenuation waste disposal site.
- Condition 56 of the ECA requires that a closure plan to be prepared at least 2 years prior to reaching final capacity or when the site reaches 90 percent of its approved capacity, whichever comes first. The Escott WDS is estimated to have used more than 90 percent of its capacity during 2017, and as such, a closure plan should already have been submitted and the site is currently in non-compliance with condition 56 of the ECA. The owner of the site should be required to prepare and submit a closure plan for the site.
- The groundwater monitoring program conducted in 2017 generally complies with the approved monitoring program; however, greater effort/care should be taken in future years to identify and monitor and sample all monitoring wells included in the monitoring program.
- Adequate background monitoring wells exist at the site; however, future reports should provide a discussion of background groundwater quality.
- The list of LIPs provided by Malroz includes only a portion of the LIPs associated with the site.
- A leachate plume is present in the overburden and bedrock units and is extending off-site and remains undelineated toward the northeast
- Guideline B-7 applies to operating WDS and those closed after 1986, thus Guideline B-7 applies to the Escott WDS.
- A Guideline B-7 assessment was provided in the report.
- The Escott WDS is in non-conformance with Guideline B-7 as a result of RUL exceedances at overburden (OW11/OW11R1) and bedrock (BR3) compliance monitoring wells located at the northeastern property boundary.
- Contingency action is required to address Guideline B-7 non-conformance at the site. The owner of the site should be required to develop and implement an action plan. The action plan should include a timeline and should be provided for my review and approval prior to implementation.
- Malroz indicates that monitoring well OW11 was located in 2017 despite that it was previously reported that this monitoring well was decommissioned and replaced. No recommendations have been provided with respect to OW11. It is my recommendation that this monitoring well be assessed and if it is suspected to be compromised/damaged it should be decommissioned.
- A MECP Surface Water Scientist should continue to be consulted with respect to surface water management associated with this site.

- Malroz recommends that groundwater monitoring continue to be conducted twice per year (spring and fall) with no changes to the monitoring program recommended, with the exception that VOC monitoring will be reduced to every two (2) years and will only be conducted at monitoring wells OW14 and BW1, as per my previous recommendation.
- The current report contains only the 2017 monitoring data. Future monitoring reports should include all current and historical monitoring data. This request was made in my previous review; however, it has not been addressed.
- The geological and hydrogeological descriptions provided in the current report consist of quoted interpretations and descriptions provided in previous reports. The referenced material is professional interpretation of site observations, site conditions, and readily available information. Future monitoring reports should provide unique interpretations for these sections prepared by the authors of the report.
- Future monitoring reports should provide and assessment and discussion of vertical gradients.
- The current report was not accompanied by a completed monitoring and screening checklist. A completed and signed checklist should be submitted with all future reports.



Shawn Trimper, P.Eng.  
ST

ec: Peter Taylor  
Greg Faaren  
Roberto Sacilotto

c: Laurel Rudd  
File GW LG LT 01 02 CBF (Escott WDS; ECA No. A441703)  
SAT/ID# 3561-AXGRNE



## Camille Malcolm

---

**From:** David Malcolm  
**Sent:** Friday, September 28, 2018 4:58 PM  
**To:** 'Nathalie Matthews'  
**Cc:** Albert Paschkowiak; Camille Malcolm; agoheen@townshipleeds.on.ca  
**Subject:** Escott WDS - Response to 2017 AMR review comments  
**Attachments:** 1038\_999\_T1 - GW monitoring and GW SW description.pdf

**Categories:** No action required

Hello Nathalie,

Please find below our response to your review of the Escott waste disposal site. Our comments are in red. We are still awaiting a few items from the WDS superintendent, and will forward them to you as soon as they are available.

1. An updated drawing showing the proposed final contours of the finished waste mound (required by condition 52d of the ECA);  
A figure displaying the proposed final contours has been developed. Due to the size, the figure can be downloaded via [this link](#). BluMetric completed the survey in December 2016.
2. The amount of recyclable materials, metals, white goods and tires transferred off site (condition 52e);  
The amount of recyclable materials transferred from the site is described in section 3.5 of the 2017 Annual Monitoring, Development & Operations Report. White goods are transferred to the Lansdowne landfill which are then serviced by Porter's Refrigeration Heating and Cooling. At present, neither landfill records the exact type or amount of material transferred. We understand that the operator will maintain a record of white goods received at the site going forward.
3. Summary of the 2017 inspections undertaken at the site (ie. monthly inspections required by condition 45 and 49);  
Site Inspections are summarized in section 3.7 of the 2017 Annual Monitoring, Development & Operations Report. Inspections are based on items listed in section 45 of the ECA, and, to our knowledge, are maintained in accordance with section 49 of the ECA. (Awaiting inspection sheets from superintendent and will forward them as soon as possible)
4. A statement regarding compliance with all conditions of the ECA and other relevant Ministry's groundwater and surface water requirements (condition 52n);  
In relation to groundwater and surface water requirements, the 2017 Annual Monitoring, D&O Report identifies that the monitoring program is undertaken in accordance with the ECA. We understand the Township is working to resolve aspects of the ECA described in your comments as being in non-compliance.
5. Recommendations on any proposed changes in the operation of the site (condition 52o);  
Recommendations are provided in section 6.0 of the 2017 Annual Monitoring, D&O Report. The only recommendation pertaining to the operation of the site was to prepare and submit a closure plan in accordance with section 56 of the ECA, which has been initiated.
6. Copies of the 2017 records required by condition 19b and 50 of the ECA;  
The records documenting cover application have been requested from the site operator and will be provided to you when we receive them. (Awaiting documents from superintendent and will forward them as soon as possible)

7. Copies of the 2017 records required by condition 51 of the ECA;  
Township staff reported that Escott landfill does not accept or retain appliances containing refrigerant on-site. Small appliances formerly containing refrigerant and received as scrap metal are transferred by staff to the Lansdowne Landfill. Appliances found abandoned on Township property and containing refrigerant are sent to Porters Refrigeration for removal of refrigerant. Other appliances are transferred to Lansdowne for disposal as scrap metal.
8. The anticipated date for completing and submitting an application for amending the ECA to reflect the additional land purchased east of the waste disposal site;  
We are not aware of purchases of adjacent land(s) east of Escott Waste Disposal Site. An evaluation of and recommendations to purchase lands will be assessed as part of the groundwater investigation delineating potential leachate impacts east of the site (see item 11).
9. The steps (with implementation schedule) which will be taken to address the non compliance with condition 56 of the ECA;  
A closure plan has been initiated.
10. The measures which will be taken to ensure that future monitoring will be conducted in accordance with condition 41a of the ECA;  
We understand that the groundwater monitoring program (2017) review conducted by Mr. Trimper and dated August 16, 2018 identified that the 2017 spring sampling event was delayed and that OW3 and OW4 were not sampled during the summer event. The spring sampling event in 2018 was conducted on-time and OW3 and OW4 were included in the sampling program.
11. A plan, with an implementation schedule, for addressing the site's non conformance with B7.  
A proposal to begin work to address the non-conformance was issued to the Township by memorandum on April 10, 2018. We are scheduled to initiate the work this fall.
12. An assessment of the construction of OW11. [Reason: It was the ministry's understanding, through discussions with Andrew Day, that the construction of OW11 was questionable.]  
According to Andrew Day in the 2013-2014 Monitoring Report, the surface seal on OW11 was indeed suspect. However, this well was replaced in 2015 with OW11R: the confirmation was provided in section 3.1.2 of the 2015 Monitoring Report, by Andrew Day. Well OW8 was also replaced at this time. No observation of adverse condition at well OWR11/OW11 has been made in the past year (refer to section 5.1 of the 2017 Monitoring, D&O Report).
13. A table which outlines the proposed groundwater monitoring program and reflects the reduction in VOC monitoring. [Reason: For the District Manager's consideration/approval per condition 41c of the ECA].  
Per your request we have attached a revised table outlining the groundwater and surface water monitoring program at the Escott Landfill.
14. Written confirmation that future reports will include:
  - a. All information required by condition 52 of the ECA; We can confirm that future Monitoring, O&D reports will endeavor to address the conditions outlined in section 52 of the ECA.
  - b. A discussion on background groundwater quality of the area; Background quality will be discussed in the 2018 AMR.
  - c. All LIPs; The 2018 AMR will discuss all the LIPs included in the current suite of analyses. The report will elaborate on LIPs that are relevant to the site based on their concentrations in the background and leachate monitors.

- d. All historical monitoring data; We can confirm that available historical monitoring data will be appended to future Monitoring, O&D reports.
- e. The author's own interpretation of the geological and hydrogeological descriptions of the site; The 2018 AMR will include an assessment of the hydrogeology of the site based on available information.
- f. An assessment and discussion of vertical gradients; Malroz has proposed a drill plan that will facilitate the evaluation of the vertical relationship between aquifers at the Site. The work is scheduled to the fall.
- g. A completed and signed monitoring and screening checklist. As requested we will provide this with future reports.

Please do not hesitate to contact us should you have any further questions or concerns.

Thank you,

## Camille Malcolm

---

**From:** Matthews, Nathalie (MECP) <Nathalie.Matthews@ontario.ca>  
**Sent:** Friday, November 02, 2018 3:24 PM  
**To:** 'Adam Goheen'; David Malcolm  
**Cc:** Albert Paschkowiak; Trimper, Shawn (MECP); Rudd, Laurel (MECP)  
**Subject:** Escott WDS GW and SW monitoring programs  
**Attachments:** 1038\_999\_T1 - GW monitoring and GW SW description Sept 2018.pdf

Adam and Dave,

The attached proposed groundwater monitoring program for the Escott WDS was reviewed by our hydrogeologist and the following comments with respect to groundwater monitoring are offered:

- The proposed monitoring frequency (spring and fall) is adequate.
- The proposed parameters are acceptable; however the list of VOC parameters to be analyzed was not provided. VOC analysis should be conducted for a robust list of parameters consistent with those assessed during 2017. A superscript 1 was present after the VOC monitoring details in the provided table, indicating that a foot note should exist; however, no footnote was provided.
- The township may wish to consider a reduction in the list of trace metals analyzed at the site in the future; however, this should be done in consultation with the MECP groundwater and surface water reviewers based on leachate characteristics associated with the site.
- The proposed monitoring well locations are acceptable, however monitoring well BW4 should be added to the list. It is not clear why this monitoring well has been omitted.
- The provided monitoring table does not mention groundwater elevation monitoring. Groundwater elevation monitoring should be conducted twice per year (spring and fall) in association with each groundwater monitoring event.

Please address the comments noted above and/or resubmit a revised groundwater monitoring program for the District Manager's consideration.

In addition, since OW11 was not included in the proposed groundwater monitoring program (but monitored in 2017), please confirm that OW11 will either be maintained for future use or abandoned in accordance with Regulation 903.

Comments on the surface water monitoring program will be provided once completed.

**Nathalie Matthews, Provincial Officer** 📞 613.548.6917 or 800.267.0974, ext. 2674  
Ministry of the Environment, Conservation and Parks - Kingston District Office  
1259 Gardiners Road, Unit 3, Kingston, ON K7P 3J6 (Mailing Address: PO Box 22032, Kingston, ON K7M 8S5)  
Spills Action Centre: 800.268.6060 | Pollution Hotline (anonymous): 866.MOE.TIPS | [www.ontario.ca/ministry-environment](http://www.ontario.ca/ministry-environment)

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**Ministry of the  
Environment,  
Conservation and Parks**  
Eastern Region  
1259 Gardiners Road, Unit 3  
Kingston ON K7P 3J6  
Phone: 613.549.4000  
or 800.267.0974

**Ministère de l'Environnement,  
de la Protection de la nature  
et des Parcs**  
Région de l'Est  
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Kingston (Ontario) K7P 3J6  
Tél: 613 549-4000  
ou 800 267-0974



MEMORANDUM

January 15, 2019

TO: Nathalie Matthews  
Senior Environmental Officer  
Kingston District Office  
Eastern Region

FROM: Sarah Baxter  
Surface Water Specialist  
Technical Support Section  
Eastern Region

RE: Escott Waste Disposal Site  
2017 Annual Monitoring Report  
Township of Leeds and the Thousand Islands; County of  
Leeds and Grenville  
Provisional Environmental Compliance Approval #A441703  
IDS #3572-B5UNGP

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I have reviewed:

- *“Escott Waste Disposal Site, 2017 Annual Monitoring, Development and Operations Report”* dated March 2018 and prepared by Malroz Engineering Inc.;
- *“Table 1, Escott Landfill Monitoring Plan”*, dated September 2018 and prepared by Malroz Engineering.

The following comments, relative to surface water impact concerns, are provided for your consideration.

**Background**

The Escott Waste Disposal Site (WDS) has been operating as a natural attenuation landfill since at least 1982 when Provincial Environmental Compliance Approval (PECA) #A441703 was first issued. The site is owned and operated by the Township.

The WDS has a 1 hectare fill area within a 15.1 hectare property. The site is approved to receive solid, non-hazardous waste as well as white goods, metal, tires, and other recyclables (i.e. paper, plastic, aluminum cans). Clean wood is burnt on site.

The PECA was most recently updated and amended in 2004.

According to a 2017 survey by Malroz Engineering, the landfill has approximately 3 years of site life remaining. The report indicates a closure plan is forthcoming.

## Site Description

The Escott WDS is located on Lots 8-10, Concession Broken Front, Geographic Township of Escott, in the Township of Leeds and the Thousand Islands. The site is situated approximately 0.5 kilometres north of Highway 401 and 2.3 kilometres north of the St. Lawrence River. The site is accessed via the east side of Escott/Rockport Road.

The WDS is situated in the Upper St. Lawrence-1000 Islands tertiary watershed and is mostly surrounded by forest and agricultural fields. An agricultural drain is located north of the site (i.e. north stream). The precursor of LaRue Mills Creek is situated south of the site (i.e. south stream) and is surrounded by the LaRue Mills Creek Provincially Significant Wetland Complex. The Hickenbottom Drain originates just east of the mound and collects runoff from the WDS and tile drainage from the neighbouring fields. All three surface water features flow eastward/northeastward and eventually reach LaRue Mills Creek.

The site is situated between two bedrock ridges that trend southwest-northeast. Precambrian granite outcrops are prevalent. The overburden ranges from 0 to 7.5 metres in thickness and is composed of silts and clays with some fine sand lenses. Organic deposits exist in the low-lying areas. The bedrock is Precambrian granite. Interpreted groundwater flow in the overburden is towards the northeast, towards the Hickenbottom drain.

Malroz characterizes the leachate as having elevated ammonia, conductivity, chloride, boron, iron and manganese. As inferred from overburden wells OW8 (background) and OW14 (leachate), the leachate may also be characterized as having elevated alkalinity, barium, calcium, dissolved organic carbon (DOC), hardness, magnesium, potassium, sodium, sulphate, total dissolved solids (TDS), total Kjeldahl nitrogen (TKN) and uranium.

## Surface Water Monitoring Program

Seven surface water monitoring stations exist at the Escott WDS:

- SW3 – drainage ditch on southeast side of mound, draining to Hickenbottom Drain (downgradient);
- SW4 – north stream at Escott/Rockport Road (background);
- SW5 – north stream northeast of landfill site (downgradient);
- SW7 – south stream at Escott/Rockport Road (background);
- SW8 – drainage ditch south of mound, draining to south stream (downgradient);
- HBI – Hickenbottom Drain inlet (background); and,
- HBO – Hickenbottom Drain outlet (downgradient).

Surface water samples were collected on August 1 and November 13. Samples were not collected from HBI and SW3 in August or SW3 in November due to dry conditions. Flow characteristics, field observations, or station photographs were not included in the annual report.

## **Results**

### North Stream

Provincial Water Quality Objective (PWQO) exceedances were recorded at downstream SW5 for aluminum, cobalt, iron, phenols and phosphorus. These exceedances were mirrored at background station SW4, suggesting they are not landfill related.

Concentrations of most leachate parameters were similar upstream and downstream of the mound, suggesting the WDS is not having an adverse impact on the north stream at this time.

### South Stream

The PWQO for phenols was exceeded at downstream SW8. The phenol concentration also exceeded the PWQO at background SW7, suggesting the exceedance is not landfill related.

A number of metals (i.e. aluminum, cobalt, iron, zinc) and total phosphorus exceeded their respective PWQOs at downstream SW8. It is difficult to discern if these exceedances are landfill related or due to sediment entrainment in the sample; the total suspended solids concentrations of the samples were 298 mg/L in August and 492 mg/L in November.

Concentrations of most leachate parameters were similar upstream and downstream of the mound, suggesting the WDS is not having an adverse impact on the south stream at this time.

### Hickenbottom Drain

PWQO exceedances were recorded at downstream HBO for aluminum and total phosphorus. These exceedances were mirrored at background station HBI, suggesting they are not landfill related.

Iron exceeded its PWQO at HBI and HBO, however, the exceedance at downstream HBO was at levels known to cause impairment to aquatic organisms. It is unclear if this high iron concentration is from the landfill, or due to sediment entrainment in the sample; the total suspended solids concentration at HBO in November was 576 mg/L.

PWQO exceedances for boron, cobalt and zinc were recorded at the Hickenbottom Drain outlet, but may also be due to the high sediment concentration in the sample.

Concentrations of most leachate parameters were elevated above background levels at downstream HBO. With the exception of chloride and TKN, concentrations of these parameters were still within the range characteristic of natural surface waters.

## **Monitoring Program Changes**

*"Table 1, Escott Landfill Monitoring Plan"* outlines the proposed surface water monitoring program for future sampling events. Surface water will continue to be sampled in the spring and fall for a robust parameter suite. The sampled stations will be SW3, SW4, SW5, SW7, SW8, HBI and HBO.




I have no objections to the proposed monitoring frequency. I will note that Laurel Rudd (March 30, 2016 memorandum) indicated that SW3 could be removed from the sampling program if the ditch on the southeast side of the mound was filled in and graded. I am of the same opinion if the ditch has been filled in. As well, I would have no objections to a reduction in the number of trace metals analyzed (i.e. antimony, beryllium, molybdenum, selenium, strontium, thallium, tin, titanium, tungsten, and vanadium).

### Conclusions and Recommendations

1. The Escott WDS is a natural attenuation landfill site that has been in operation since at least 1982. The site is approved to receive solid, non-hazardous waste and various recyclables. The site has approximately three years of site life remaining.
2. Surface water results suggest that the landfill is not impacting the north stream or south stream at this time. Landfill leachate has been detected in the Hickenbottom drain, but parameter concentrations are still within the range characteristic of natural surface waters.
3. Surface water results were difficult to discern due to sediment entrainment in the samples. Samples should only be collected if there is adequate flow at the station, or alternative sampling methods are employed (i.e. use of a peristaltic pump, field filter).
4. Malroz Engineering provided an updated surface water monitoring plan for the site. I have no objections to the proposed program, except:
  - a. SW3 can be removed from the program if the drainage ditch on the southeast side of the mound has been filled in; and,
  - b. Trace metals antimony, beryllium, molybdenum, selenium, strontium, thallium, tin, titanium, tungsten, and vanadium can be removed.
5. In the next annual monitoring report:
  - a. The coordinates of all surface water monitoring stations (sampled or not) should be included;
  - b. Field sheets and photos of all surface water monitoring stations should be provided; and,
  - c. Water quality in the downgradient monitoring wells (e.g. OW4, OW11) should be compared to surface water criteria (i.e. PWQOs and CWQGs).

If you have any questions regarding the above comments, I would be pleased to discuss them with you.



Sarah Baxter, B.Sc.H.  
SB/dv

ec: V. Castro  
S. Trimper  
G. Faaren  
P. Taylor

c: File SW LG LT 03 06 (Escott Waste Disposal Site)

Appendix G  
Log Book and Waybills



DATE: April 17/18 TIME: 8:30 Am STAFF: Dustin Jackson

**DEFICIENCIES OBSERVED:**

	Yes / No	Description / Location
Ponded Water:	Yes / <input checked="" type="radio"/> No	
Windblown Litter:	<input checked="" type="radio"/> Yes / No	<u>Some base litter on the road</u>
Leachate Springs:	Yes / <input checked="" type="radio"/> No	
Animals:	<input checked="" type="radio"/> Yes / No	<u>1 cat and birds</u>
Other:	Yes / No	

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

Picked up the wind blown litter.

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION
	<u>/</u>	
	<u>/</u>	
	<u>/</u>	
	<u>/</u>	

**OTHER COMMENTS / OBSERVATIONS**

\_\_\_\_\_

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)
	<u>/</u>			
	<u>/</u>			
	<u>/</u>			
	<u>/</u>			

**TOTAL COUNT OF HOUSEHOLD USERS:** 25

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: Dustin Jackson

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: April 21 / 18 TIME: 8:30 Am STAFF: Amy Pappewell

**DEFICIENCIES OBSERVED:**

Ponded Water:	Yes / <input checked="" type="radio"/> No	_____
Windblown Litter:	<input checked="" type="radio"/> Yes / No	<u>Some loose litter</u>
Leachate Springs:	Yes / <input checked="" type="radio"/> No	_____
Animals:	<input checked="" type="radio"/> Yes / No	<u>Birds &amp; raccoons</u>
Other:	Yes / <input checked="" type="radio"/> No	_____

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

pick up litter / stay on top of bins full/empty

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION
/		
/		
/		
/		

**OTHER COMMENTS / OBSERVATIONS**

\_\_\_\_\_

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)
/				
/				
/				
/				

**TOTAL COUNT OF HOUSEHOLD USERS:** 94

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: Amy Pappewell

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: April 24/18 TIME: 830 AM STAFF: Amy Bopplavell

**DEFICIENCIES OBSERVED:**

Ponded Water:	Yes / <input checked="" type="radio"/> No	_____
Windblown Litter:	<input checked="" type="radio"/> Yes / No	<u>Some</u>
Leachate Springs:	Yes / <input checked="" type="radio"/> No	_____
Animals:	<input checked="" type="radio"/> Yes / No	<u>Birds and coons</u>
Other:	Yes / <input checked="" type="radio"/> No	_____

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

Pick up litter

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION
<del> </del>	<del> </del>	<del> </del>
<del> </del>	<del> </del>	<del> </del>
<del> </del>	<del> </del>	<del> </del>

**OTHER COMMENTS / OBSERVATIONS**

\_\_\_\_\_

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)
<del> </del>	<del> </del>	<del> </del>	<del> </del>	<del> </del>
<del> </del>	<del> </del>	<del> </del>	<del> </del>	<del> </del>
<del> </del>	<del> </del>	<del> </del>	<del> </del>	<del> </del>

**TOTAL COUNT OF HOUSEHOLD USERS:** 74

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes / No

DETAILS: Bins + Pickup

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: Amy Bopplavell

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_







DATE: April 28/18 TIME: 8:30 AM STAFF: Amy Popplavell

**DEFICIENCIES OBSERVED:**

	Yes / No	Description / Location
Ponded Water:	<input checked="" type="radio"/> Yes / <input type="radio"/> No	<u>rain</u>
Windblown Litter:	<input checked="" type="radio"/> Yes / <input type="radio"/> No	<u>loose litter</u>
Leachate Springs:	<input type="radio"/> Yes / <input type="radio"/> No	
Animals:	<input type="radio"/> Yes / <input type="radio"/> No	<u>birds</u>
Other:	<input type="radio"/> Yes / <input type="radio"/> No	

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

pick up loose litter. fixer drainage

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION
<u>1:40 pm</u>	<u>?</u>	<u>Ex lg tree stumps</u>

**OTHER COMMENTS / OBSERVATIONS**

\_\_\_\_\_

\_\_\_\_\_

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** 108

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes /  No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:**  Yes /  No

DETAILS: bins pickup

**APPLICATION OF DUST SUPPRESSANT:**  Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes /  No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:**  Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: [Signature]

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: Tues May 1<sup>st</sup> / 18 TIME: 8:30 AM STAFF: DUSTIN JACKSON

**DEFICIENCIES OBSERVED:**

Ponded Water:	Yes / <input checked="" type="radio"/> No	_____
Windblown Litter:	Yes / <input checked="" type="radio"/> No	_____
Leachate Springs:	Yes / <input checked="" type="radio"/> No	_____
Animals:	<input checked="" type="radio"/> Yes / <input checked="" type="radio"/> No	<u>Birds, cats</u>
Other:	Yes / <input checked="" type="radio"/> No	_____

Description / Location

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** 47

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: Dustin Jackson

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: May 5 / 18 TIME: 8:35 Am STAFF: Amy Poplewell

**DEFICIENCIES OBSERVED:**

Ponded Water:	Yes / <input checked="" type="radio"/> No	_____
Windblown Litter:	<input checked="" type="radio"/> Yes / No	_____
Leachate Springs:	Yes / <input checked="" type="radio"/> No	_____
Animals:	<input checked="" type="radio"/> Yes / No	<u>Birds coops + cats</u>
Other:	Yes / <input checked="" type="radio"/> No	_____

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

pick up litter.

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**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

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**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** 99

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:**  Yes / No

DETAILS: Bins + Pick up

**APPLICATION OF DUST SUPPRESSANT:**  Yes / No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:**  Yes / No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: Amy Poplewell

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: May 8/18 TIME: 8:20 AM STAFF: Amy Popplewell

**DEFICIENCIES OBSERVED:**

Ponded Water:	Yes / <input checked="" type="radio"/> No	_____
Windblown Litter:	<input checked="" type="radio"/> Yes / No	_____
Leachate Springs:	Yes / <input checked="" type="radio"/> No	_____
Animals:	<input checked="" type="radio"/> Yes / No	<u>Vultures</u>
Other:	Yes / <input checked="" type="radio"/> No	_____

Description / Location

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

Pick up litter

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** \_\_\_\_\_

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: 48

**DESCRIPTION OF LITTER CONTROL:**  Yes / No

DETAILS: Box a Pickup

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: overall Fair condition

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: [Signature]

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: May 12, 2018 TIME: 17:20 STAFF: JIM BYFORKI

**DEFICIENCIES OBSERVED:**

Ponded Water:	Yes / <input checked="" type="radio"/> No	_____
Windblown Litter:	<input checked="" type="radio"/> Yes / No	_____
Leachate Springs:	Yes / <input checked="" type="radio"/> No	_____
Animals:	Yes / <input checked="" type="radio"/> No	_____
Other:	Yes / No	_____

Description / Location

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)
815	E. BONELLO	MISC. (ANNEXTY)	1/2 TON LOAD	YES
925	ART MORROW	HOUSEHOLD GARBAGE	1/2 TON LOAD	YES
1109	ART MORROW	HOUSEHOLD GARBAGE	1/2 TON LOAD	YES
1232	ART MORROW	HOUSEHOLD GARBAGE	1/2 of 1/2 TON LOAD	YES

**TOTAL COUNT OF HOUSEHOLD USERS:** 115

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

**SIGNATURE:** \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: May 15, 2018 TIME: 16:35 STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

	Yes / No	Description	Location
Ponded Water:	<input checked="" type="radio"/> Yes / <input type="radio"/> No	<u>RAIN - WILL RUN OFF ON ITS OWN</u>	
Windblown Litter:	<input checked="" type="radio"/> Yes / <input type="radio"/> No	<u>PICK UP AS TIME PERMITS</u>	
Leachate Springs:	Yes / <input checked="" type="radio"/> No		
Animals:	Yes / <input checked="" type="radio"/> No		
Other:	Yes / No		

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

ORDERED BACKHOE TO DRESS GARBAGE BACK OFF ROAD

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** 39 (RAINY DAY)

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes /  No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:**  Yes /  No

DETAILS: PICKING UP WIND BLOWN LITTER

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes /  No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: MAY 19, 2018 TIME: 16:24 STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Ponded Water:	Yes / <input checked="" type="radio"/> No	_____
Windblown Litter:	<input checked="" type="radio"/> Yes / No	_____
Leachate Springs:	Yes / <input checked="" type="radio"/> No	_____
Animals:	Yes / <input checked="" type="radio"/> No	_____
Other:	Yes / No	_____

Description / Location

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

RAIN AFTER 11:00 AM

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)
9:40	ART MORROW	HOUSEHOLD	1/2 TON TRUCKLOAD	YES
11:10	ART MORROW	HOUSEHOLD	1/2 TRUCK 1/2 LOAD	YES

**TOTAL COUNT OF HOUSEHOLD USERS:** 94

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

**SIGNATURE:** \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: MAY 22, 2018 TIME: 16:30 STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Ponded Water:	Yes / <input checked="" type="radio"/> No	
Windblown Litter:	<input checked="" type="radio"/> Yes / No	<u>ALONG FENCE LINE</u>
Leachate Springs:	Yes / <input checked="" type="radio"/> No	
Animals:	Yes / <input checked="" type="radio"/> No	
Other:	Yes / No	

Description / Location

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)
<u>8:38</u>	<u>ART MORROW</u>	<u>CONSTRUCTION</u>	<u>1/2 TON TRUCK</u>	<u>YES</u>

**TOTAL COUNT OF HOUSEHOLD USERS:** ~~48~~ 51

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: MAY 26, 2018 TIME: 10:37 STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Description / Location

Ponded Water: Yes /  No  
 Windblown Litter:  Yes / No ALONG FENCE LINE  
 Leachate Springs: Yes /  No  
 Animals: Yes /  No  
 Other: Yes /  No

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)
940	ART MORROW	HOUSEHOLD WASTE	1/2 TON TRUCK LOAD	YES
1120	ART MORROW	HOUSEHOLD WASTE	1/2 TON TRUCK LOAD	YES
2X 1140 <sup>1223</sup>	ED HUCK MARINE	WOOD PALLETS	6 YRS (ON TRAILER)	YES
1307	ART MORROW	HOUSEHOLD WASTE	1/2 TON TRUCK LOAD	YES

**TOTAL COUNT OF HOUSEHOLD USERS:** 89

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: May 29, 2018 TIME: 1640 STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Description / Location

- Ponded Water: Yes /  No
- Windblown Litter:  Yes / No
- Leachate Springs: Yes /  No
- Animals: Yes /  No
- Other: Yes /  No

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION
1157	PRECISION BUILDERS	DOUBLE AXLE TRAKER - CONSTRUCTION MATERIAL

**OTHER COMMENTS / OBSERVATIONS**

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** 48

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes / No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: JUNE 2, 2018 TIME: 14:36 STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Ponded Water: Yes /  No  
 Windblown Litter:  Yes / No  
 Leachate Springs: Yes /  No  
 Animals: Yes /  No  
 Other: Yes /  No

Description / Location

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

ESCOTT **WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)
3X 943	ART MORROW	HOUSEHOLD	1/2 of 1/2 TON P/U	YES
1057	MCCULLY TREE SERVICE	WOOD CHIPS	4 3/4 YARDS	YES

**TOTAL COUNT OF HOUSEHOLD USERS:** 89

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

**SIGNATURE:** \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: JUNE 5, 2018 TIME: \_\_\_\_\_ STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

	Yes / No	Description / Location
Ponded Water:	<input checked="" type="radio"/> Yes / <input type="radio"/> No	<u>RAINED</u>
Windblown Litter:	<input checked="" type="radio"/> Yes / <input type="radio"/> No	<u>ALONG FENCES</u>
Leachate Springs:	Yes / <input checked="" type="radio"/> No	_____
Animals:	Yes / <input checked="" type="radio"/> No	_____
Other:	Yes / <input checked="" type="radio"/> No	_____

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

\_\_\_\_\_  
\_\_\_\_\_

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

\_\_\_\_\_  
\_\_\_\_\_

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** 49

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes /  No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes /  No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: JUNE 9 2018 TIME: 16:46 STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Ponded Water:	Yes / <input checked="" type="radio"/> No	_____
Windblown Litter:	<input checked="" type="radio"/> Yes / No	_____
Leachate Springs:	Yes / <input checked="" type="radio"/> No	_____
Animals:	Yes / <input checked="" type="radio"/> No	_____
Other:	Yes / No	_____

Description / Location

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

ESCOTT **WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)
9:48	ART MORROW	HOUSEHOLD WASTE	1/2 of 1/2 TON	YES
10:28	"	"	"	"
11:59	"	"	"	"

**TOTAL COUNT OF HOUSEHOLD USERS:** 79

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

**SIGNATURE:** \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: JUNE 12, 2018 TIME: \_\_\_\_\_ STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Description / Location

- Ponded Water: Yes /  No \_\_\_\_\_
- Windblown Litter:  Yes / No \_\_\_\_\_
- Leachate Springs: Yes /  No \_\_\_\_\_
- Animals: Yes /  No \_\_\_\_\_
- Other: Yes /  No \_\_\_\_\_

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

\_\_\_\_\_  
\_\_\_\_\_

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

\_\_\_\_\_  
\_\_\_\_\_

ESCOTT **WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** 53

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No  
IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No  
DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No  
DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No  
DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No  
If YES, Complaint File Number (s): \_\_\_\_\_

**SIGNATURE:** \_\_\_\_\_

OFFICE USE:  
Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: JUNE 16, 2018 TIME: \_\_\_\_\_ STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Ponded Water:	<input checked="" type="radio"/> Yes / <input type="radio"/> No	<u>AFTER RAIN</u>
Windblown Litter:	<input checked="" type="radio"/> Yes / <input type="radio"/> No	_____
Leachate Springs:	Yes / <input checked="" type="radio"/> No	_____
Animals:	Yes / <input checked="" type="radio"/> No	_____
Other:	Yes / No	_____

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

\_\_\_\_\_  
\_\_\_\_\_

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

\_\_\_\_\_  
\_\_\_\_\_

ESCOTT **WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** 91

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes /  No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes /  No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: JUNE 19, 2018 TIME: \_\_\_\_\_ STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Description / Location

- Ponded Water: Yes /  No \_\_\_\_\_
- Windblown Litter:  Yes / No \_\_\_\_\_
- Leachate Springs: Yes /  No \_\_\_\_\_
- Animals: Yes /  No \_\_\_\_\_
- Other: Yes / No \_\_\_\_\_

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

\_\_\_\_\_  
\_\_\_\_\_

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

\_\_\_\_\_  
\_\_\_\_\_

ESCOTT **WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** 51

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes / No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

**SIGNATURE:** \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: JUNE 23, 2018 TIME: \_\_\_\_\_ STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Ponded Water:	Yes / <input type="radio"/> No	_____
Windblown Litter:	<input checked="" type="radio"/> Yes / No	_____
Leachate Springs:	Yes / <input type="radio"/> No	_____
Animals:	Yes / <input type="radio"/> No	_____
Other:	Yes / No	_____

Description / Location

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

ESCOTT **WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)
943	ART MORROW	HOUSEHOLD WASTE	1/2 TRUCK LOAD	YES
1113	ART MORROW	HOUSEHOLD WASTE	1/2 TRUCK LOAD	YES
1229	ART MORROW	HOUSEHOLD WASTE	1/2 TRUCK LOAD	YES

**TOTAL COUNT OF HOUSEHOLD USERS:** 82

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes / No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: JUNE 26, 2018 TIME: \_\_\_\_\_ STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Description / Location

- Ponded Water: Yes /  No \_\_\_\_\_
- Windblown Litter:  Yes / No \_\_\_\_\_
- Leachate Springs: Yes /  No \_\_\_\_\_
- Animals: Yes /  No \_\_\_\_\_
- Other: Yes / No \_\_\_\_\_

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

ESCOTT **WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** 52

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No  
IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes / No  
DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No  
DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No  
DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes / No  
If YES, Complaint File Number (s): \_\_\_\_\_

**SIGNATURE:** \_\_\_\_\_

OFFICE USE:  
Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: JUNE 30, 2018 TIME: 16:41 STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Ponded Water:	<input checked="" type="radio"/> Yes / <input type="radio"/> No	<u>RAIN</u>
Windblown Litter:	<input checked="" type="radio"/> Yes / <input type="radio"/> No	
Leachate Springs:	Yes / <input checked="" type="radio"/> No	
Animals:	Yes / <input checked="" type="radio"/> No	
Other:	Yes / <input checked="" type="radio"/> No	

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

WARD 3 **WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)
935	ART MORROW	HOUSEHOLD TRASH	3/4 of 1/2 TON TRUCK	YES
1118	ART MORROW	HOUSEHOLD TRASH	LOAD of 1/2 TRUCK	YES
1203	ART MORROW	HOUSEHOLD TRASH	3/4 of 1/2 TON TRUCK	YES

**TOTAL COUNT OF HOUSEHOLD USERS:** 103

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes /  No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes /  No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

**SIGNATURE:** \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





Township of  
**Leeds and the  
Thousand Islands**

1233 Prince Street, P.O. Box 280  
Lansdowne, ON K0E 1L0

ESCOTT

**WASTE DISPOSAL SITE  
DAILY INSPECTION FORM**

DATE: JULY 3, 2018 TIME: 16:38 STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Description / Location

Ponded Water: Yes /  No

Windblown Litter:  Yes / No

Leachate Springs: Yes /  No

Animals: Yes /  No

Other: Yes /  No

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

WARD 3 **WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** 1165

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: JULY 7, 2018 TIME: \_\_\_\_\_ STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Ponded Water:	Yes / <input checked="" type="radio"/> No	_____
Windblown Litter:	<input checked="" type="radio"/> Yes / No	_____
Leachate Springs:	Yes / <input checked="" type="radio"/> No	_____
Animals:	Yes / <input checked="" type="radio"/> No	_____
Other:	Yes / No	_____

Description / Location

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)
945	ART MORROW	HOUSEHOLD	1/2 TON TRUCK LOAD	YES
1119	ART MORROW	HOUSEHOLD	"	YES
1300	ART MORROW	HOUSEHOLD	1/2 of 1/2 TON	YES

**TOTAL COUNT OF HOUSEHOLD USERS:** 100

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes / No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes / No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: JULY 10, 2018 TIME: \_\_\_\_\_ STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Ponded Water: Yes /  No

Windblown Litter:  Yes / No

Leachate Springs: Yes /  No

Animals:  Yes / No

Other: Yes /  No

Description / Location

RAIN IN PM

RACOONS, CATS

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

Waste 3 **WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** 48

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: July 14, 2018 TIME: \_\_\_\_\_ STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Description / Location

- Ponded Water: Yes / No \_\_\_\_\_
- Windblown Litter:  Yes /  No \_\_\_\_\_
- Leachate Springs: Yes /  No \_\_\_\_\_
- Animals: Yes /  No \_\_\_\_\_
- Other: Yes /  No \_\_\_\_\_

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** 84

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes /  No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes /  No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: JULY 17, 2018 TIME: \_\_\_\_\_ STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Ponded Water:	Yes / <input checked="" type="radio"/> No	_____
Windblown Litter:	<input checked="" type="radio"/> Yes / No	_____
Leachate Springs:	Yes / <input checked="" type="radio"/> No	_____
Animals:	Yes / <input checked="" type="radio"/> No	_____
Other:	Yes / No	_____

Description / Location

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** 68

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes / No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: JULY 21, 2018 TIME: 1637 STAFF: JIM BYRDE

**DEFICIENCIES OBSERVED:**

Description / Location

Ponded Water: Yes /  No

Windblown Litter:  Yes / No

Leachate Springs: Yes /  No

Animals:  Yes / No

CATS, RACCOON

Other: Yes / No

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

Waste 3 **WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)
953	ART MORROW	HOUSEHOLD WASTE	1/2 TON TRUCK LOAD	YES
1130	ART MORROW	- " -	- " -	YES
1310	ART MORROW	- " -	- " -	YES

**TOTAL COUNT OF HOUSEHOLD USERS:** 93 ~~94~~ LATE 96

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No  
IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No  
DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No  
DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No  
DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes / No  
If YES, Complaint File Number (s): \_\_\_\_\_

**SIGNATURE:** \_\_\_\_\_

OFFICE USE:  
Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_









DATE: July 28/18 TIME: 8:20 AM STAFF: Amy Pappaswell

**DEFICIENCIES OBSERVED:**

Description / Location

- Ponded Water: Yes /  No
- Windblown Litter:  Yes / No around fence
- Leachate Springs: Yes /  No
- Animals:  Yes / No Birds
- Other: Yes /  No

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** \_\_\_\_\_

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: 93

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: Amy Pappaswell

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: JULY 31, 2018 TIME: 1640 STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Description / Location

Ponded Water: Yes /  No

Windblown Litter:  Yes / No

Leachate Springs: Yes /  No

Animals: Yes /  No

Other: Yes / No

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

WARD 3

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** 58

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: August 4, 2018 TIME: 16:31 STAFF: JIM BYRD

**DEFICIENCIES OBSERVED:**

Description / Location

- Ponded Water: Yes /  No
- Windblown Litter:  Yes / No
- Leachate Springs: Yes /  No
- Animals:  Yes / No TURKEY VULTURES
- Other: Yes / No

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION
<u>929</u>		

**OTHER COMMENTS / OBSERVATIONS**

WARD 3

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)
<u>929</u>	<u>ART MORROW</u>	<u>HOUSEHOLD WASTE</u>	<u>1/2 TON LOAD</u>	<u>YES</u>
<u>1143</u>	<u>ART</u>	<u>- " -</u>	<u>- " -</u>	<u>- " -</u>
<u>1148</u>	<u>?</u>	<u>CONSTRUCTION</u>	<u>1/2 TON</u>	<u>- " -</u>
<u>1253</u>	<u>ART</u>	<u>HOUSEHOLD</u>	<u>1/2 TON</u>	<u>- " -</u>

**TOTAL COUNT OF HOUSEHOLD USERS:** 87

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes / No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes / No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





ESCOTT

DATE: AUGUST 4, 2018 TIME: 16:40 STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

	Yes / No	Description / Location
Ponded Water:	<input checked="" type="radio"/> Yes / <input type="radio"/> No	<u>AFTER RAIN</u>
Windblown Litter:	<input checked="" type="radio"/> Yes / <input type="radio"/> No	<u>ALONG FENCES</u>
Leachate Springs:	Yes / <input checked="" type="radio"/> No	
Animals:	<input checked="" type="radio"/> Yes / <input type="radio"/> No	<u>VULTURES, COONS</u>
Other:	Yes / <input checked="" type="radio"/> No	

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

WARD 3

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)
<u>953</u>	<u>ART MORROW</u>	<u>HOUSEHOLD</u>	<u>1/2 TON</u>	<u>YES</u>
<u>1223</u>	<u>ART MORROW</u>	<u>"</u>	<u>"</u>	<u>"</u>
<u>1321</u>	<u>ART MORROW</u>	<u>"</u>	<u>"</u>	<u>"</u>

**TOTAL COUNT OF HOUSEHOLD USERS:** 94

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes /  No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:**  Yes /  No

DETAILS: MANUAL PICKUP

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes /  No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes / No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





ESCOTT

DATE: AUGUST 7, 2018 TIME: 16:45 STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Ponded Water:  Yes /  No  
Windblown Litter:  Yes /  No  
Leachate Springs:  Yes /  No  
Animals:  Yes /  No  
Other:  Yes /  No

Description / Location

PODDLES RAIN

VULTURES

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

WARD 3

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** 56

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes /  No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes /  No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





Township of  
**Leeds and the  
Thousand Islands**

1233 Prince Street, P.O. Box 280  
Lansdowne, ON K0E 1L0

**WASTE DISPOSAL SITE  
DAILY INSPECTION FORM**

DATE: Aug 14 / 18 TIME: 8:20 Am STAFF: Amy Pogdewell

**DEFICIENCIES OBSERVED:**

Description / Location

- Ponded Water: Yes /  No
- Windblown Litter:  Yes / No Everywhere
- Leachate Springs: Yes /  No
- Animals:  Yes / No Birds & coons
- Other: Yes /  No

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

place is a mess!

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** 44

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:** Yes /  No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: [Signature]

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





ESCOTT

DATE: AUGUST 18, 2018 TIME: 16:45 STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Ponded Water:	<input checked="" type="radio"/> Yes / <input type="radio"/> No	<u>IN BURN AREA</u>
Windblown Litter:	<input checked="" type="radio"/> Yes / <input type="radio"/> No	
Leachate Springs:	Yes / <input checked="" type="radio"/> No	
Animals:	Yes / <input checked="" type="radio"/> No	
Other:	Yes / <input checked="" type="radio"/> No	

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

WARD 3

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)
945	ART MORROW	HOUSEHOLD	1/2 TON	YES
1123	"	"	"	"
1250	"	"	"	"

**TOTAL COUNT OF HOUSEHOLD USERS:** 93

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes /  No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes /  No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





Township of  
**Leeds and the  
Thousand Islands**

1233 Prince Street, P.O. Box 280  
Lansdowne, ON K0E 1L0

ESCOTT

**WASTE DISPOSAL SITE  
DAILY INSPECTION FORM**

DATE: AUGUST 21, 2018 TIME: 16:33 STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

	Yes / No	Description / Location
Ponded Water:	Yes / <input checked="" type="radio"/> No	<u>PONDING AFTER RAIN</u>
Windblown Litter:	<input checked="" type="radio"/> Yes / No	
Leachate Springs:	Yes / <input checked="" type="radio"/> No	
Animals:	<input checked="" type="radio"/> Yes / No	<u>CATS</u>
Other:	Yes / <input checked="" type="radio"/> No	

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** 55

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes / No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





Township of  
**Leeds and the  
Thousand Islands**

1233 Prince Street, P.O. Box 280  
Lansdowne, ON K0E 1L0

ESCOTT

**WASTE DISPOSAL SITE  
DAILY INSPECTION FORM**

DATE: AUGUST 25, 2008 TIME:                      STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Description / Location

Ponded Water: Yes /  No

Windblown Litter:  Yes / No

Leachate Springs: Yes /  No

Animals:  Yes / No VULTURES

Other: Yes / No

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

WARP 3'

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)
1050	AET MORROW	HOUSEHOLD	1/2 TON	YES
1120	"	"	"	"
1230	"	"	"	"

**TOTAL COUNT OF HOUSEHOLD USERS:** 9100

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

**SIGNATURE:** \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: AUGUST 28, 2008 TIME: 16:37 STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Ponded Water:	<input checked="" type="radio"/> Yes / <input type="radio"/> No	<u>AFTER RAIN</u>
Windblown Litter:	<input checked="" type="radio"/> Yes / <input type="radio"/> No	
Leachate Springs:	Yes / <input checked="" type="radio"/> No	
Animals:	<input checked="" type="radio"/> Yes / <input type="radio"/> No	<u>VULTURES</u>
Other:	Yes / <input type="radio"/> No	

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

WARD 3

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** 49 50

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes /  No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes /  No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





Township of  
**Leeds and the  
Thousand Islands**

1233 Prince Street, P.O. Box 280  
Lansdowne, ON K0E 1L0

ES20TT

**WASTE DISPOSAL SITE  
DAILY INSPECTION FORM**

DATE: SEPTEMBER 1 TIME: 16:40 STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Ponded Water:	Yes / <input checked="" type="radio"/> No	_____
Windblown Litter:	<input checked="" type="radio"/> Yes / No	_____
Leachate Springs:	Yes / <input checked="" type="radio"/> No	_____
Animals:	Yes / <input checked="" type="radio"/> No	_____
Other:	Yes / No	_____

Description / Location

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

WARD 3

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)
943	ART MORROW	HOUSEHOLD WASTE	1/2 TON TRUCK	YES
1109	"	"	1/2 of 1/2 TON TRK	"
1250	"	"	1/2 TON TRK	"

**TOTAL COUNT OF HOUSEHOLD USERS:** 96

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes / No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





ESOTT

DATE: SEP 4, 2018 TIME: 16:40 STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Description / Location

- Ponded Water: Yes /  No
- Windblown Litter:  Yes / No
- Leachate Springs: Yes /  No
- Animals:  Yes / No DAT
- Other: Yes / No

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

WARD 3

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** 53

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

**SIGNATURE:** \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





Township of  
**Leeds and the  
Thousand Islands**

1233 Prince Street, P.O. Box 280  
Lansdowne, ON K0E 1L0

ESCOTT

**WASTE DISPOSAL SITE  
DAILY INSPECTION FORM**

DATE: SEP 8, 2018 TIME: \_\_\_\_\_ STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Ponded Water:	Yes / <input checked="" type="radio"/> No	_____
Windblown Litter:	<input checked="" type="radio"/> Yes / No	_____
Leachate Springs:	Yes / <input checked="" type="radio"/> No	_____
Animals:	Yes / <input checked="" type="radio"/> No	_____
Other:	Yes / <input checked="" type="radio"/> No	_____

Description / Location

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

WARD 3

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)
949	ART MORROW	HOUSEHOLD WASTE	1/2 of 1/2 TON	Yes
1002	PARWELL NOLAN	HOUSEHOLD CLEANUP	1/2 TON TRAILER	Yes
1123	ART MORROW	HOUSEHOLD WASTE	1/3 OF 1/2 TON	YES
1249	"	"	1/2 T	YES

**TOTAL COUNT OF HOUSEHOLD USERS:** 117

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: \_\_\_\_\_ TIME: \_\_\_\_\_ STAFF: \_\_\_\_\_

**DEFICIENCIES OBSERVED:**

Ponded Water:  Yes /  No

Windblown Litter:  Yes /  No

Leachate Springs:  Yes /  No

Animals:  Yes /  No

Other:  Yes /  No

Description / Location

AFTER RAIN  
HEAVY WINDS SATURDAY LITTER ALONG ROADWAY

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

WARD 3

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** 45

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes /  No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes /  No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: SEPT 15, 2018 TIME: 1 STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Ponded Water:	Yes / <input checked="" type="radio"/> No	_____
Windblown Litter:	<input checked="" type="radio"/> Yes / No	_____
Leachate Springs:	Yes / <input checked="" type="radio"/> No	_____
Animals:	Yes / <input checked="" type="radio"/> No	_____
Other:	Yes / No	_____

Description / Location

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

WARD 3

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)
943	ART MORROW	HOUSEHOLD	1/2 of 1/2 TON	YES
1120	"	"	" "	YES
1218	"	"	" "	YES

**TOTAL COUNT OF HOUSEHOLD USERS:** 87

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: SEPT 18, 2008 TIME: 17:01 STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Description / Location

Ponded Water: Yes /  No

Windblown Litter:  Yes / No

EDGE OF BINS + ROADSIDE

Leachate Springs: Yes /  No

Animals: Yes /  No

Other: Yes /  No

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

WARD 3

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** 41

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:**  Yes / No

DETAILS: PICKED UP LITTER ALONG EDGE OF BINS

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: SEPT 22, 2018 TIME: \_\_\_\_\_ STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Ponded Water:	<input checked="" type="radio"/> Yes / <input type="radio"/> No	<u>RAIN</u>	Description / Location
Windblown Litter:	<input checked="" type="radio"/> Yes / <input type="radio"/> No	_____	_____
Leachate Springs:	Yes / <input checked="" type="radio"/> No	_____	_____
Animals:	Yes / <input checked="" type="radio"/> No	_____	_____
Other:	Yes / <input type="radio"/> No	_____	_____

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

WARD 3

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)
<u>950</u>	<u>ART MORROW</u>	<u>HOUSEHOLD</u>	<u>1/2 of 1/2 TON</u>	<u>YES</u>
<u>1129</u>	<u>"</u>	<u>"</u>	<u>1/3 of "</u>	<u>"</u>

**TOTAL COUNT OF HOUSEHOLD USERS:** 85

**AREA OF WASTE DISPOSAL:** All waste sent to active face: Yes /  No  
 IF NO: Waste Sent To: BOTTOM RIGHT SIDE HW

**DESCRIPTION OF LITTER CONTROL:** Yes /  No  
 DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No  
 DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes /  No  
 DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No  
 If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:  
 Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





K5V8J1

**WASTE DISPOSAL SITE  
DAILY INSPECTION FORM**

DATE: SEPT 25, 2018 TIME: 1630 STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Ponded Water:	<input checked="" type="radio"/> Yes / <input type="radio"/> No	<u>RAIN</u>	Description / Location
Windblown Litter:	<input checked="" type="radio"/> Yes / <input type="radio"/> No		
Leachate Springs:	Yes / <input checked="" type="radio"/> No		
Animals:	Yes / <input checked="" type="radio"/> No		
Other:	Yes / <input type="radio"/> No		

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

\_\_\_\_\_  
\_\_\_\_\_

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** 31

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes /  No  
IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No  
DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No  
DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes /  No  
DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No  
If YES, Complaint File Number (s): \_\_\_\_\_

**SIGNATURE:** \_\_\_\_\_

OFFICE USE:  
Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: SEPT. 29, 2018 TIME: \_\_\_\_\_ STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Ponded Water:  Yes /  No RAIN Description / Location \_\_\_\_\_  
 Windblown Litter:  Yes /  No \_\_\_\_\_  
 Leachate Springs: Yes /  No \_\_\_\_\_  
 Animals: Yes /  No \_\_\_\_\_  
 Other: Yes /  No \_\_\_\_\_

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

WARD 3

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)
<u>950</u>	<u>ART MORROW</u>	<u>HOUSEHOLD</u>	<u>1/2 of 1/2 ton</u>	<u>YES</u>

**TOTAL COUNT OF HOUSEHOLD USERS:** 86

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes /  No  
 IF NO: Waste Sent To: \_\_\_\_\_  
OFF HOURS SOMEONE DUMPED A LOAD AT BOTTOM

**DESCRIPTION OF LITTER CONTROL:** Yes /  No  
 DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No  
 DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes /  No  
 DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No  
 If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





Township of  
**Leeds and the  
Thousand Islands**

1233 Prince Street, P.O. Box 280  
Lansdowne, ON K0E 1L0

ESCOTT

**WASTE DISPOSAL SITE  
DAILY INSPECTION FORM**

DATE: OCT 2 / 18 TIME: 16:39 STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Ponded Water:	<input checked="" type="radio"/> Yes / <input type="radio"/> No	_____
Windblown Litter:	<input checked="" type="radio"/> Yes / <input type="radio"/> No	_____
Leachate Springs:	Yes / <input checked="" type="radio"/> No	_____
Animals:	Yes / <input checked="" type="radio"/> No	_____
Other:	Yes / No	_____

Description / Location

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION
10:50	LIGHTHOUSE	FULLY LOADED DOUBLE AXLE TRAILER

**OTHER COMMENTS / OBSERVATIONS**

WARD 3

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** 36

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes /  No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes /  No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes / No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: OCT 6, 2018 TIME: 16:45 STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Ponded Water: Yes /  No  
 Windblown Litter:  Yes / No  
 Leachate Springs: Yes /  No  
 Animals: Yes /  No  
 Other: Yes / No

Description / Location  
RAIN ALL DAY - AFTERNOON PONDED

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

WARD 3, **WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)
9:59	ART MORROW	HOUSEHOLD WASTE	1/2 of 1/2 TON	YES
11:30	"	"	"	YES
12:55	"	"	"	YES

**TOTAL COUNT OF HOUSEHOLD USERS:** 78

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes / No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: Oct 13, 2018 TIME: 16:42 STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Description / Location

Ponded Water: Yes /  No

Windblown Litter:  Yes / No

Leachate Springs:  Yes / No

Animals: Yes /  No

Other: Yes / No

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)
938	ART MORROW	HOUSEHOLD	1/2 TON LOAD	YES
1137	"	"	1/2 TON LOAD	YES

**TOTAL COUNT OF HOUSEHOLD USERS:** 76

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes / No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: Oct 16, 2018 TIME: 16:40 STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Ponded Water:	Yes / <input checked="" type="radio"/> No	_____
Windblown Litter:	<input checked="" type="radio"/> Yes / No	_____
Leachate Springs:	Yes / <input checked="" type="radio"/> No	_____
Animals:	Yes / <input checked="" type="radio"/> No	_____
Other:	Yes / No	_____

Description / Location

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

WARD 3

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** 42

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes / No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: OCT 20, 2018 TIME: 16:54 STAFF: JIM BYFORD /

**DEFICIENCIES OBSERVED:**

Description / Location

Ponded Water:  Yes /  No

Windblown Litter:  Yes /  No

Leachate Springs: Yes /  No

Animals: Yes /  No

Other: Yes /  No

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION
8:50	? Old ESCOTT SCHOOL	VERY LARGE DOUBLE AXLE OF CONSTRUCTION MATERIAL

**OTHER COMMENTS / OBSERVATIONS**

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)
9:45	ART MORROW	HOUSEHOLD	1/2 of 1/2 TON	YES
10:50	"	"	"	"
12:50	"	"	"	"

**TOTAL COUNT OF HOUSEHOLD USERS:** \_\_\_\_\_

**AREA OF WASTE DISPOSAL:**

All waste sent to active face: Yes / No

IF NO: Waste Sent To: 85

**DESCRIPTION OF LITTER CONTROL:**

Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:**

Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**

Yes /  No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:**

Yes / No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: Oct 23/18 TIME: 8:45 am STAFF: Amy Papplaw

**DEFICIENCIES OBSERVED:**

Description / Location

- Ponded Water: Yes /  No
- Windblown Litter:  Yes / No
- Leachate Springs: Yes /  No
- Animals:  Yes / No
- Other: Yes /  No

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** 42

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To:  

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS:  

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS:  

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS:  

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s):  

SIGNATURE: *Amy Papplaw*

OFFICE USE:

Date Reviewed:   Reviewer:   File Number:





DATE: Oct 20, 2018 TIME: 16:54 STAFF: Jim Byford

**DEFICIENCIES OBSERVED:**

Description / Location

Ponded Water:  Yes /  No

Windblown Litter:  Yes /  No

Leachate Springs: Yes /  No

Animals: Yes /  No

Other: Yes /  No

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION
8:50	? Old ESCOTT SCHOOL	VERY LARGE DOUBLE AXLE OF CONSTRUCTION MATERIAL

**OTHER COMMENTS / OBSERVATIONS**

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)
9:45	ART MORROW	HOUSEHOLD	1/2 of 1/2 TON	YES
10:50	"	"	"	"
12:50	"	"	"	"

**TOTAL COUNT OF HOUSEHOLD USERS:** \_\_\_\_\_

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes /  No

IF NO: Waste Sent To: 85

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes /  No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: Oct 20, 2018 TIME: \_\_\_\_\_ STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Ponded Water: Yes /  No  
 Windblown Litter:  Yes / No  
 Leachate Springs: Yes /  No  
 Animals: Yes /  No  
 Other: Yes /  No

Description / Location

PONDED WATER AFTER RAIN IN P.M.  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

\_\_\_\_\_  
 \_\_\_\_\_

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

\_\_\_\_\_  
 \_\_\_\_\_

WARD 3

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)
9:50	ART MORROW	HOUSEHOLD	1/2 of 1/2 ton	YES
11:20	"	"	"	"
12:45	"	"	"	"

**TOTAL COUNT OF HOUSEHOLD USERS:** 86

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes / No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: Oct 30, 2018 TIME: 16:39 STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Ponded Water:	<input checked="" type="radio"/> Yes / <input type="radio"/> No	<u>RAIN</u>
Windblown Litter:	<input checked="" type="radio"/> Yes / <input type="radio"/> No	
Leachate Springs:	Yes / <input checked="" type="radio"/> No	
Animals:	Yes / <input checked="" type="radio"/> No	
Other:	Yes / No	

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

WARD 3 **WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** 44

**AREA OF WASTE DISPOSAL:** All waste sent to active face: Yes /  No  
 IF NO: Waste Sent To: BOTTOM OF HILL - TOO MUDDY

**DESCRIPTION OF LITTER CONTROL:** Yes /  No  
 DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No  
 DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No  
 DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes / No  
 If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:  
 Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





Township of  
**Leeds and the  
Thousand Islands**

1233 Prince Street, P.O. Box 280  
Lansdowne, ON K0E 1L0

ESCOTT **WASTE DISPOSAL SITE  
DAILY INSPECTION FORM**

DATE: Nov/3, 2018 TIME: \_\_\_\_\_ STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Ponded Water:  Yes /  No

Windblown Litter:  Yes /  No

Leachate Springs: Yes /  No

Animals: Yes /  No

Other: Yes /  No

Description / Location  
RAIN ALL WEEK

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

WARD 3

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)
952	ART MORROW	HOUSEHOLD WASTE	1/2 of 1/2 ton	YES
1055	"	"	"	YES
1230	"	"	"	YES

**TOTAL COUNT OF HOUSEHOLD USERS:** 70

**AREA OF WASTE DISPOSAL:** All waste sent to active face: Yes /  No

IF NO: Waste Sent To: SECOND AREA STARTED BECAUSE OF SLIPPERY HILL

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes /  No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: Nov 6, 2018 TIME: 16:35 STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Ponded Water:	<input checked="" type="radio"/> Yes / <input type="radio"/> No	<u>RAIN</u>
Windblown Litter:	<input checked="" type="radio"/> Yes / <input type="radio"/> No	_____
Leachate Springs:	Yes / <input checked="" type="radio"/> No	_____
Animals:	Yes / <input checked="" type="radio"/> No	_____
Other:	Yes / <input checked="" type="radio"/> No	_____

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

\_\_\_\_\_  
\_\_\_\_\_

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

\_\_\_\_\_  
\_\_\_\_\_

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** 39

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes /  No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes /  No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

**SIGNATURE:** \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





DATE: Nov 10, 2018

TIME: 16:35

STAFF: JIM BYFORD

**DEFICIENCIES OBSERVED:**

Ponded Water:  Yes /  No

Windblown Litter:  Yes /  No

Leachate Springs:  Yes /  No

Animals:  Yes /  No

Other:  Yes /  No

RAIN Description / Location

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)
10:10	ART MORROW	HOUSEHOLD	1/2 of HALF TON	YES
11:30	"	"	1/2 of	YES
12:15	"	"	3/4 of	YES

**TOTAL COUNT OF HOUSEHOLD USERS:**

80

**AREA OF WASTE DISPOSAL:**

All waste sent to active face: Yes /  No

IF NO: Waste Sent To: BASE OF HILL - TOO MUDDY

**DESCRIPTION OF LITTER CONTROL:**

Yes /  No

DETAILS: Too Windy

**APPLICATION OF DUST SUPPRESSANT:**

Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**

Yes /  No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:**

Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

OFFICE USE:

Date Reviewed: \_\_\_\_\_

Reviewer: \_\_\_\_\_

File Number: \_\_\_\_\_





DATE: Nov 13, 2018 TIME: \_\_\_\_\_ STAFF: Jim & Amy

**DEFICIENCIES OBSERVED:**

Ponded Water:	<input checked="" type="radio"/> Yes / <input type="radio"/> No	<u>RAIN</u>	Description / Location
Windblown Litter:	<input checked="" type="radio"/> Yes / <input type="radio"/> No	_____	_____
Leachate Springs:	Yes / <input checked="" type="radio"/> No	_____	_____
Animals:	Yes / <input checked="" type="radio"/> No	_____	_____
Other:	Yes / <input type="radio"/> No	_____	_____

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

WARD 3

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** 32

**AREA OF WASTE DISPOSAL:** All waste sent to active face: Yes /  No

IF NO: Waste Sent To: WASTE TO BOTTOM OF HILL MUDDY SLIPPERY

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes /  No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: [Signature]

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_

613-449-2566





DATE: 17 Nov/18 TIME: 8:10 AM STAFF: Amy Popplewell

**DEFICIENCIES OBSERVED:**

Description / Location

- Ponded Water: Yes /  No
- Windblown Litter:  Yes / No
- Leachate Springs: Yes /  No
- Animals:  Yes / No
- Other: Yes /  No

**RECOMMENDED ACTIONS / ACTIONS TAKEN:**

**REJECTED LOADS:**

TIME	HAULER NAME	REASON FOR REJECTION

**OTHER COMMENTS / OBSERVATIONS**

**WASTE DISPOSAL SITE DAILY INSPECTION FORM**

**COMMERCIAL HAULER OR LARGE LOADS**

Time	Hauler	Material	Quantity (estimate volume & weight)	Visual Check (Yes/No)

**TOTAL COUNT OF HOUSEHOLD USERS:** 84

**AREA OF WASTE DISPOSAL:** All waste sent to active face:  Yes / No

IF NO: Waste Sent To: \_\_\_\_\_

**DESCRIPTION OF LITTER CONTROL:** Yes /  No

DETAILS: \_\_\_\_\_

**APPLICATION OF DUST SUPPRESSANT:** Yes /  No

DETAILS: \_\_\_\_\_

**DAILY INSPECTION FORM COMPLETED:**  Yes / No

DETAILS: \_\_\_\_\_

**COMPLAINTS RECEIVED:** Yes /  No

If YES, Complaint File Number (s): \_\_\_\_\_

SIGNATURE: Amy Popplewell

OFFICE USE:

Date Reviewed: \_\_\_\_\_ Reviewer: \_\_\_\_\_ File Number: \_\_\_\_\_





INVOICE NO.	DATE	AMOUNT	INVOICE NO.	DATE	AMOUNT
2158	2/13/17	\$1,810.26			
Sandfill to Escott & Lansdowne Dump					

**Total: \$1,810.26**

Terms
Due on receipt

Serviced	Description	Qty	Rate	Amount
1/17/2017	Sandfill to Escott Dump - 2 loads @ \$189.00 per load	34	11.11765	378.00
1/17/2017	Sandfill to Lansdowne Dump - 2 loads @ \$153.00 per load	136	9.00	1,224.00

<b>Sales Tax Summary</b>		<b>Subtotal</b>	\$1,602.00
HST (ON)@13.0%	208.26	<b>Sales Tax Total</b>	\$208.26
Total Tax	208.26	<b>Total</b>	\$1,810.26
Thank you for your business		<b>Payments/Credits</b>	\$0.00
Interest is charged at 2 % per month, 24% per annum on invoices over 30 days.		<b>Balance Due</b>	\$1,810.26

INVOICE NO.	DATE	AMOUNT	INVOICE NO.	DATE	AMOUNT
2161	2/28/17	\$1,810.26			
Sandfill to Escott & Lansdowne					

**Total: \$1,810.26**

Terms
Due on receipt

Serviced	Description	Qty	Rate	Amount
1/31/2017	Sandfill to Escott Dump	40	9.45	378.00
1/31/2017	Sandfill to Lansdowne Dump	160	7.65	1,224.00
Approval #1 _____ # 62				
Approval #2 <i>Jane Best</i>				
Acct # _____				
Sub-Acct # 10-410-4300-		6270		

<b>Sales Tax Summary</b>		<b>Subtotal</b>	\$1,602.00
HST (ON)@13.0%	208.26	<b>Sales Tax Total</b>	\$208.26
Total Tax	208.26	<b>Total</b>	\$1,810.26
Thank you for your business		<b>Payments/Credits</b>	\$0.00
Interest is charged at 2 % per month, 24% per annum on invoices over 30 days.		<b>Balance Due</b>	\$1,810.26



INVOICE NO.	DATE	AMOUNT	INVOICE NO.	DATE	AMOUNT
2164	3/07/17	\$1,810.26			
Sandfill to Escott & Lansdowne					
2166	3/07/17	\$1,810.26			
Sandfill to Escott & Lansdowne					

Total: \$3,620.52

Terms
Due on receipt



Serviced	Description	Qty	Rate	Amount
2/11/2017	Sandfill to Escott Dump	2	189.00	378.00
2/14/2017	Sandfill to Lansdowne Dump	8	153.00	1,224.00
Approval #1 _____ Approval #2 <i>James E. Tully</i> Acct # <i>CEH</i> Sub-Acct # <u>10-410-4300-6270</u>				

Sales Tax Summary		Subtotal	\$1,602.00
HST (ON)@13.0%	208.26	Sales Tax Total	\$208.26
Total Tax	208.26	Total	\$1,810.26
Thank you for your business		Payments/Credits	\$0.00
Interest is charged at 2 % per month, 24% per annum on invoices over 30 days.		Balance Due	\$1,810.26

INVOICE NO.	DATE	AMOUNT	INVOICE NO.	DATE	AMOUNT
2170	4/18/17	\$1,810.26			
Sandfill to Escott & Lansdowne					
2171	4/18/17	\$1,810.26			
Sandfill to Escott & Lansdowne					

**Total: \$3,620.52**

Terms
Due on receipt

Serviced	Description	Qty	Rate	Amount
3/14/2017	Sandfill to Escott Dump	40	9.45	378.00
3/14/2017	Sandfill to Lansdowne Dump	160	7.65	1,224.00
	Approval #1 			
	Approval #2 			
	Acct # _____			
	Sub-Acct # 10-410-4300-6320			

Sales Tax Summary		Subtotal	\$1,602.00
HST (ON)@13.0%	208.26	Sales Tax Total	\$208.26
Total Tax	208.26	Total	\$1,810.26
Thank you for your business		Payments/Credits	\$0.00
Interest is charged at 2 % per month, 24% per annum on invoices over 30 days.		Balance Due	\$1,810.26





INVOICE NO.	DATE	AMOUNT	INVOICE NO.	DATE	AMOUNT
2181	5/16/17	\$1,810.26			
Sandfill to Escott & Lansdowne					

**Total: \$1,810.26**

Terms
Due on receipt

Serviced	Description	Qty	Rate	Amount
4/24/2017	Sandfill to Escott Dump	40	9.45	378.00
4/25/2017	Sandfill to Lansdowne Dump	160	7.65	1,224.00
Approval #1 <u><i>[Signature]</i></u> Approval #2 <u><i>James L. Turk</i></u> Acct # _____ Sub-Acct # <u>10-410-4300-6270</u>				

Sales Tax Summary		Subtotal	Amount
HST (ON)@13.0%	208.26		\$1,602.00
Total Tax	208.26		
		<b>Sales Tax Total</b>	\$208.26
		<b>Total</b>	\$1,810.26
Thank you for your business		<b>Payments/Credits</b>	\$0.00
Interest is charged at 2 % per month, 24% per annum on invoices over 30 days.		<b>Balance Due</b>	\$1,810.26

INVOICE NO.	DATE	AMOUNT	INVOICE NO.	DATE	AMOUNT
2181	5/16/17	\$1,810.26			
Sandfill to Escott & Lansdowne					

**Total: \$1,810.26**

Terms

Due on receipt


Serviced	Description	Qty	Rate	Amount
4/24/2017	Sandfill to Escott Dump	40	9.45	378.00
4/25/2017	Sandfill to Lansdowne Dump	160	7.65	1,224.00
Approval #1 <u><i>[Signature]</i></u> Approval #2 <u><i>James L. Tull</i></u> Acct # _____ Sub-Acct # <u>10-410-4300-6270</u>				

<b>Sales Tax Summary</b>		<b>Subtotal</b>	\$1,602.00
HST (ON)@13.0%	208.26	<b>Sales Tax Total</b>	\$208.26
Total Tax	208.26	<b>Total</b>	\$1,810.26
Thank you for your business		<b>Payments/Credits</b>	\$0.00
Interest is charged at 2 % per month, 24% per annum on invoices over 30 days.		<b>Balance Due</b>	\$1,810.26



INVOICE NO.	DATE	AMOUNT	INVOICE NO.	DATE	AMOUNT
2185	6/16/17	\$1,805.74			
Sandfill to Escott & Lansdowne					
					<b>Total:</b>
					<b>\$1,805.74</b>

Terms
Due on receipt

Serviced	Description	Qty	Rate	Amount
5/22/2017	Sandfill to Escott Dump	40	9.35	374.00
5/22/2017	Sandfill to Lansdowne Dump	160	7.65	1,224.00
Approval #1  Approval #2 <u>James E. Turley</u> Acct # _____ Sub-Acct # <u>10-710-4300-6270</u>				

Sales Tax Summary			
HST (ON)@13.0%	207.74	<b>Subtotal</b>	\$1,598.00
Total Tax	207.74	<b>Sales Tax Total</b>	\$207.74
		<b>Total</b>	\$1,805.74
Thank you for your business  Interest is charged at 2 % per month, 24% per annum on invoices over 30 days.		<b>Payments/Credits</b>	\$0.00
		<b>Balance Due</b>	\$1,805.74

INVOICE NO.	DATE	AMOUNT	INVOICE NO.	DATE	AMOUNT
2191	7/05/17	\$1,900.66			
Sandfill to Escott, Lansdowne & Grindings					
<b>Total:</b>					<b>\$1,900.66</b>

Terms
Due on receipt



Serviced	Description	Qty	Rate	Amount
6/5/2017	Sandfill to Escott Dump	40	9.35	374.00
6/5/2017	Sandfill to Lansdowne Dump	160	7.65	1,224.00
6/5/2017	12T of Grindings @ \$7.00	12	7.00	84.00

<b>Sales Tax Summary</b>		<b>Subtotal</b>	\$1,682.00
HST (ON)@13.0%	218.66	<b>Sales Tax Total</b>	\$218.66
Total Tax	218.66	<b>Total</b>	\$1,900.66
Thank you for your business		<b>Payments/Credits</b>	\$0.00
Interest is charged at 2 % per month, 24% per annum on invoices over 30 days.		<b>Balance Due</b>	\$1,900.66

INVOICE NO.	DATE	AMOUNT	INVOICE NO.	DATE	AMOUNT
2194	7/18/17	\$1,810.26			
Sandfill to Escott & Lansdowne					
2195	7/18/17	\$1,805.74			
Sandfill to Lansdowne & Escott					

Total: \$3,616.00

Terms
Due on receipt

Serviced	Description	Qty	Rate	Amount
6/17/2017	Sandfill to Escott Dump	40	9.45	378.00
6/17/2017	Sandfill to Lansdowne Dump	160	7.65	1,224.00
Approval #1  Approval #  Acct # _____ Sub-Acct # 10-410-4300-6270				

<b>Sales Tax Summary</b>		<b>Subtotal</b>	\$1,602.00
HST (ON)@13.0%	208.26	<b>Sales Tax Total</b>	\$208.26
Total Tax	208.26	<b>Total</b>	\$1,810.26
Thank you for your business		<b>Payments/Credits</b>	\$0.00
Interest is charged at 2 % per month, 24% per annum on invoices over 30 days.		<b>Balance Due</b>	\$1,810.26



INVOICE NO.	DATE	AMOUNT	INVOICE NO.	DATE	AMOUNT
2200	7/27/17	\$1,805.74			
Sandfill to Escott & Lansdowne					

Total: \$1,805.74



Terms
Due on receipt

Serviced	Description	Qty	Rate	Amount
5/27/2017	Sandfill to Escott Dump	40	9.35	374.00
5/27/2017	Sandfill to Lansdowne Dump	160	7.65	1,224.00
Approval #1 _____ Approval #2 _____ Acct # <u>10-410-4300-6270</u> Sub-Acct # _____				

Sales Tax Summary			
HST (ON)@13.0%	207.74	<b>Subtotal</b>	\$1,598.00
Total Tax	207.74	<b>Sales Tax Total</b>	\$207.74
		<b>Total</b>	\$1,805.74
Thank you for your business		<b>Payments/Credits</b>	\$0.00
Interest is charged at 2 % per month, 24% per annum on invoices over 30 days.		<b>Balance Due</b>	\$1,805.74

INVOICE NO.	DATE	AMOUNT	INVOICE NO.	DATE	AMOUNT
2201	9/15/17	\$1,805.74			
Sandfill to Escott (40) & Lansdowne (160)					
2203	9/15/17	\$1,805.74			
Sandfill to Escott (40) and Lansdowne (160)					
<b>Total:</b>					<b>\$3,611.48</b>


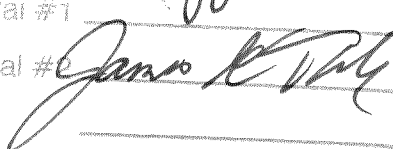
Terms
Due on receipt

Serviced	Description	Qty	Rate	Amount
7/31/2017	Sandfill to Escott Dump	40	9.35	374.00
7/31/2017	Sandfill to Lansdowne Dump	160	7.65	1,224.00
Approval #1  Approval #2  Acct # _____ Sub-Acct # <u>10-410-4300-6270</u>				

<b>Sales Tax Summary</b>		<b>Subtotal</b>	\$1,598.00
HST (ON)@13.0%	207.74	<b>Sales Tax Total</b>	\$207.74
Total Tax	207.74	<b>Total</b>	\$1,805.74
Thank you for your business		<b>Payments/Credits</b>	\$0.00
Interest is charged at 2 % per month, 24% per annum on invoices over 30 days.		<b>Balance Due</b>	\$1,805.74

INVOICE NO.	DATE	AMOUNT	INVOICE NO.	DATE	AMOUNT
2212	10/16/17	\$1,805.74			
Sandfill @ Escott & Lansdowne Waste Sites					
2218	10/16/17	\$1,805.74			
Sandfill @ Escott & Lansdowne Waste Sites					
<b>Total:</b>					<b>\$3,611.48</b>

Due on receipt
----------------



Serviced	Description	Qty	Rate	Amount
9/12/2017	Sandfill to Escott Dump	40	9.35	374.00
9/12/2017	Sandfill to Lansdowne Dump	160	7.65	1,224.00
Approval #1  Approval #  Acct # _____ Sub-Acct # <u>10-410-4300-6270</u>				

Sales Tax Summary		Subtotal	\$1,598.00
HST (ON)@13.0%	207.74	Sales Tax Total	\$207.74
Total Tax	207.74	Total	\$1,805.74
Thank you for your business  Interest is charged at 2 % per month, 24% per annum on invoices over 30 days.		Payments/Credits	\$0.00
		<b>Balance Due</b>	<b>\$1,805.74</b>



INVOICE NO.	DATE	AMOUNT	INVOICE NO.	DATE	AMOUNT
2225	10/26/17	\$1,805.74			
Sandfill @ Escott & Lansdowne Waste Sites					
2233	10/26/17	\$1,805.74			
Sandfill @ Escott & Lansdowne Waste Sites					
<b>Total:</b>					<b>\$3,611.48</b>

Terms
Duc on receipt


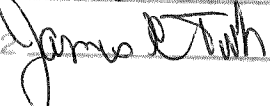
Serviced	Description	Qty	Rate	Amount
8/22/2017	Sandfill to Escott Dump	40	9.35	374.00
8/22/2017	Sandfill to Lansdowne Dump	160	7.65	1,224.00
Approval #1 				
Approval #2 				
Acct # _____				
Sub-Acct # 10-410-4300-6270				

<b>Sales Tax Summary</b>		<b>Subtotal</b>	\$1,598.00
HST (ON)@13.0%	207.74	<b>Sales Tax Total</b>	\$207.74
Total Tax	207.74	<b>Total</b>	\$1,805.74
Thank you for your business		<b>Payments/Credits</b>	\$0.00
Interest is charged at 2 % per month, 24% per annum on invoices over 30 days.		<b>Balance Due</b>	\$1,805.74

INVOICE NO.	DATE	AMOUNT	INVOICE NO.	DATE	AMOUNT
2238	11/07/17	\$1,805.74			
Sandfill @ Escott & Lansdowne Waste Sites					

Total: \$1,805.74

Terms
Due on receipt

Serviced	Description	Qty	Rate	Tax	Amount
10/23/2017	Sandfill to Escott Dump	40	9.35	H	374.00
10/23/2017	Sandfill to Lansdowne Dump	160	7.65	H	1,224.00
Approval #1  Approval #2  Acct # _____ Sub-Acct # 10-410-4300-6270					

<b>Sales Tax Summary</b>		<b>Subtotal</b>	\$1,598.00
HST (ON)@13.0%	207.74	<b>Sales Tax Total</b>	\$207.74
Total Tax	207.74	<b>Total</b>	\$1,805.74
Thank you for your business		<b>Payments/Credits</b>	\$0.00
Interest is charged at 2 % per month, 24% per annum on invoices over 30 days.		<b>Balance Due</b>	\$1,805.74





INVOICE NO.	DATE	AMOUNT	INVOICE NO.	DATE	AMOUNT
2257	12/15/17	\$1,805.74			
Sandfill @ Escott & Lansdowne Waste Sites					
<b>Total:</b>					<b>\$1,805.74</b>

Due on receipt

Serviced	Description	Qty	Rate	Tax	Amount
12/4/2017	Sandfill to Escott Dump	40	9.35	H	374.00
12/4/2017	Sandfill to Lansdowne Dump	160	7.65	H	1,224.00
Approval #1 <u><i>[Signature]</i></u> Approval #2 <u><i>James [Signature]</i></u> Acct # <u>10-410-4300-6270</u> Sub-Acct # _____					

<b>Sales Tax Summary</b>		<b>Subtotal</b>	\$1,598.00
HST (ON)@13.0%	207.74	<b>Sales Tax Total</b>	\$207.74
Total Tax	207.74	<b>Total</b>	\$1,805.74
Thank you for your business		<b>Payments/Credits</b>	\$0.00
Interest is charged at 2 % per month, 24% per annum on invoices over 30 days.		<b>Balance Due</b>	\$1,805.74

INVOICE NO.	DATE	AMOUNT	INVOICE NO.	DATE	AMOUNT
2248	12/20/17	\$1,805.74			
Sandfill @ Escott & Lansdowne Waste Sites					

**Total: \$1,805.74**

Terms
Duc on receipt

Serviced	Description	Qty	Rate	Tax	Amount
11/20/2017	Sandfill to Escott Dump	40	9.35	H	374.00
11/20/2017	Sandfill to Lansdowne Dump	160	7.65	H	1,224.00

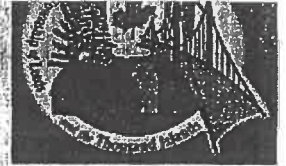
Approval #1 DD  
 Approval #2 James [Signature]  
 Acct # \_\_\_\_\_  
 Sub-Acct # 10-410-4300-6270

Sales Tax Summary			
HST (ON)@13.0%	207.74	<b>Subtotal</b>	\$1,598.00
Total Tax	207.74	<b>Sales Tax Total</b>	\$207.74
		<b>Total</b>	\$1,805.74
Thank you for your business		<b>Payments/Credits</b>	\$0.00
Interest is charged at 2 % per month, 24% per annum on invoices over 30 days.		<b>Balance Due</b>	\$1,805.74

Appendix H  
Malroz Site Inspection



# WARD 3 (ESCOTT) WASTE DISPOSAL SITE A441073 MONTHLY SITE INSPECTION REPORT



Date of Inspection \_\_\_\_\_ (d/m/y)

Please check "✓" the boxes and fill in the blanks. Use the "Notes" area for additional information or clarification.

**1. Condition of the active disposal area, the recyclable bins, the tire bins, the white good bins, the scrap metal bins, and the brush and stump pile:**

- a) In which area of the site is disposal taking place? *central*
- b) Did attendant routinely supervise waste disposal? Yes  No
- c) Was any hazardous or liquid industrial waste disposed? Yes  No
- d) Are recyclable materials and other goods being placed into correct bins? Yes  No
- e) How full are the recycling bins? *3/4 - full*
- f) Are brush and stumps being segregated and stockpiled? Yes  No
- g) Has there been any burning of brush and stumps this month? Yes  No
- h) If yes, was the burning supervised? Yes  No

Notes:

*along south side of entrance road (beside brush) every 2<sup>nd</sup> week, too wet this month*

**Overall Rating:**

Satisfactory  Unsatisfactory

**2. Condition of the surface water drainage works:**

- a) Are all ditches, swales, sediment control ponds, and rock check dams in working order? Yes  No   
If no, please explain.
- b) Is there any ponded water at the site? Yes  No   
If yes, please explain.  
*along south side of entrance road (beside brush) along foot of waste pile (S.W.)*
- c) Are any of the siltation control traps (ponds) full? Yes  No   
If yes, please explain.
- d) Was any cleaning of sediment accumulated in the ponds conducted this month? Yes  No

Notes:

**Overall Rating:**

Satisfactory  Unsatisfactory

**3. Condition of the on-site roads:**

- a) Is there any evidence of excessive erosion on the on-site road? Yes  No   
If yes, please explain.
- b) Is there excessive dust? Yes  No
- c) Has dust suppressant been used this month? Yes  No

Notes:

**Overall Rating:**

Satisfactory  Unsatisfactory

4. Presence of litter at the site's perimeter and litter fences:

- a) Is there any evidence of wind-blown litter or accidentally dropped litter from waste hauling vehicles? Yes  No
- b) If yes, this litter needs to be picked up. Has this or will this be done in the near future? Yes  No
- c) Has a litter fence been installed? Yes  No

Notes:

Overall Rating:

Satisfactory  Unsatisfactory

5. Condition of the intermediate cover and final cover:

- a) Is there evidence of any erosion in the existing landfill cover? Yes  No
- b) Are any repairs needed to the existing landfill cover? Yes  No

Notes:

Overall Rating:

Satisfactory  Unsatisfactory

6. Presence of birds, vector, vermin and animals:

Which of the following was observed on site: birds  rats  flies  other animals  cats

Notes:

Overall Rating:

Satisfactory  Unsatisfactory

7. Condition of the on-site facilities, the fence, the gate and its lock and the signage:

- a) Is the attendants' shelter in good condition? Yes  No
- b) Is the outhouse being cleaned and pumped out on a regular basis? 2 weeks Yes  No
- c) Is the perimeter fence in good condition? Yes  No
- d) Is the entry gate in good condition? Yes  No
- e) Is the lock on the gate operational and in good condition? Yes  No
- f) Is proper signage for the landfill posted? Yes  No

Notes: sign starting to peel

Overall Rating:

Satisfactory  Unsatisfactory

8. Condition of the groundwater monitoring wells required for the groundwater monitoring program:

- a) Can all monitoring wells be located? Yes  No  If no, please specify.
- b) Do all wells have proper well caps? Yes  No  If no, please specify. ows=no cap -> 1
- c) Do any monitoring wells need repair? Yes  No  If yes, please specify.

Notes:

Overall Rating:

Satisfactory  Unsatisfactory

9. Available amount of cover material to ensure sufficient daily cover activities at all times when the site is in operation:

- a) Is there a stockpile of daily cover material on site? Yes  No   
If no, please explain where and how material is obtained.

Notes:

brought in every 2 weeks

Overall Rating:

Satisfactory  Unsatisfactory

Presence of leachate springs:

- a) Are leachate springs evident anywhere on site? Yes  No   
If yes, please indicate where.

Notes:

Overall Rating:

Satisfactory  Unsatisfactory

Name of Inspector: \_\_\_\_\_  
(Please print)

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Appendix I  
Groundwater and Surface Water Monitoring Program



**Table 1**  
**Groundwater and Surface Water Monitoring Program for Escott WDS**

Frequency	Spring and Fall		Spring and Fall	
Program	Groundwater		Surface Water	
<b>Lab</b>	Alkalinity N - Ammonia BOD COD DOC Conductivity Hardness pH Phenols Phosphorus (total) TDS TSS N - Total Kjeldahl Chloride N - Nitrate N - Nitrite Sulphate Mercury Aluminum Antimony Arsenic Barium Beryllium Boron  VOCs <sup>1</sup> Acetone Benzene Bromodichloromethane Bromoform Bromomethane Carbon Tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane Dibromochloromethane Dichlorodifluoromethane Ethylene dibromide 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,1-Dichloroethane 1,2-Dichloroethane 1,1-Dichloroethylene cis-1,2-Dichloroethylene trans-1,2-Dichloroethylene 1,2-Dichloroethylene, total 1,2-Dichloropropane cis-1,3-Dichloropropylene	Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Molybdenum Nickel Potassium Selenium Silicon Silver Sodium Strontium Thallium Tin Titanium Tungsten Uranium Vanadium Zinc  trans-1,3-Dichloropropylene 1,3-Dichloropropene, total Ethylbenzene Hexane Methyl Ethyl Ketone Methyl Butyl Ketone Methyl Isobutyl Ketone Methyl tert-butyl ether Methylene Chloride Styrene 1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane Tetrachloroethylene Toluene 1,1,1-Trichloroethane 1,1,2-Trichloroethane Trichloroethylene Trichlorofluoromethane 1,3,5-Trimethylbenzene Vinyl Chloride m/p-Xylene o-Xylene Xylenes, total	Alkalinity N - Ammonia BOD COD DOC Conductivity Hardness pH Phenols Phosphorus (total) Phosphorus, dissolved TDS TSS N - Total Kjeldahl Chloride N - Nitrate N - Nitrite Sulphate Mercury Aluminum Antimony Arsenic Barium Beryllium Boron Cadmium	Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Molybdenum Nickel Potassium Selenium Silicon Silver Sodium Strontium Thallium Tin Titanium Tungsten Uranium Vanadium Zinc
<b>Field</b>	pH Temperature Dissolved Oxygen Conductivity	N-NH3 unionized (Calc) Groundwater Elevation Photographs	pH Temperature Dissolved Oxygen Conductivity	N-NH3 unionized (Calc) Photographs GPS coordinates
<b>Locations</b>	OW3 OW5 OW8R1 OW11R1 OW12 OW13	OW14 BW1 BW2 BW3 BW4 OW7 (monitoring only)	HBI HBO SW-3 SW-4 SW-5 SW-7	SW-8

Notes

<sup>1</sup> VOC analysis will occur every two years, starting in 2019, at monitoring wells OW14 and BW1

Appendix J  
Laboratory Certificates of Analyses

**C.O.C.: G78607**

**REPORT No. B18-15181 (i)**

**Rev. 2**

**Report To:**

**Malroz Engineering Inc.**  
308 Wellington Street, 2nd Floor  
Kingston ON K7K 7A8 Canada  
**Attention:** Ben Clock

**Caduceon Environmental Laboratories**

285 Dalton Ave  
Kingston Ontario K7K 6Z1  
Tel: 613-544-2001  
Fax: 613-544-2770

DATE RECEIVED: 31-May-18

JOB/PROJECT NO.: Escott

DATE REPORTED: 28-Jan-19

P.O. NUMBER:

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

Parameter	Units	R.L.	Client I.D.		18-W001	18-W002	18-W003	18-W004
			Reference Method	Date/Site Analyzed	B18-15181-1	B18-15181-2	B18-15181-3	B18-15181-4
			Date Collected		30-May-18	30-May-18	30-May-18	30-May-18
Alkalinity(CaCO3) to pH4.5	mg/L	5	SM 2320B	06-Jun-18/O	143	709	339	366
pH @25°C	pH Units		SM 4500H	06-Jun-18/O	8.20	7.66	7.88	7.80
Conductivity @25°C	µmho/cm	1	SM 2510B	06-Jun-18/O	355	1800	765	829
Chloride	mg/L	0.5	SM4110C	04-Jun-18/O	4.6	96.4	25.1	30.1
Nitrite (N)	mg/L	0.05	SM4110C	04-Jun-18/O	< 0.05	< 0.05	< 0.05	< 0.05
Nitrate (N)	mg/L	0.05	SM4110C	04-Jun-18/O	< 0.05	< 0.05	0.17	< 0.05
Sulphate	mg/L	1	SM4110C	04-Jun-18/O	14	182	38	93
BOD(5 day)	mg/L	2	SM 5210B	01-Jun-18/K	< 2	< 2	6	4
Total Suspended Solids	mg/L	3	SM2540D	05-Jun-18/K	3	8	14000	50
Phosphorus-Total	mg/L	0.01	E3199A.1	06-Jun-18/K	< 0.01	< 0.01	13.6	0.06
Total Kjeldahl Nitrogen	mg/L	0.1	E3199A.1	06-Jun-18/K	0.1	2.9	2.7	1.3
Ammonia (N)-Total	mg/L	0.01	SM4500-NH3-H	04-Jun-18/K	0.05	2.74	0.81	1.12
Total Dissolved Solids	mg/L	3	SM 2540D	07-Jun-18/O	183	988	400	437
Dissolved Organic Carbon	mg/L	0.2	EPA 415.1	06-Jun-18/O	3.8	7.4	5.3	6.8
Phenolics	mg/L	0.001	MOEE 3179	06-Jun-18/O	< 0.001	< 0.001	< 0.001	< 0.001
COD	mg/L	5	SM 5220D	06-Jun-18/O	18	31	54	16
Hardness (as CaCO3)	mg/L	1	SM 3120	11-Jun-18/O	158	893	352	380
Aluminum	mg/L	0.01	SM 3120	11-Jun-18/O	0.04	0.10	0.06	0.07
Antimony	mg/L	0.0001	EPA 200.8	05-Jun-18/O	< 0.0001	< 0.0001	0.0002	< 0.0001
Arsenic	mg/L	0.0001	EPA 200.8	05-Jun-18/O	0.0005	0.0017	0.0005	0.0005
Barium	mg/L	0.001	SM 3120	11-Jun-18/O	0.046	0.300	0.157	0.140
Beryllium	mg/L	0.0001	EPA 200.8	05-Jun-18/O	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Boron	mg/L	0.005	SM 3120	11-Jun-18/O	0.050	0.409	0.255	0.285
Cadmium	mg/L	0.000015	EPA 200.8	05-Jun-18/O	< 0.000015	< 0.000015	< 0.000015	< 0.000015
Calcium	mg/L	0.02	SM 3120	11-Jun-18/O	45.7	206	85.6	92.3
Chromium	mg/L	0.001	EPA 200.8	05-Jun-18/O	< 0.001	0.002	< 0.001	< 0.001
Cobalt	mg/L	0.0001	EPA 200.8	05-Jun-18/O	< 0.0001	0.0096	0.0008	0.0009

R.L. = Reporting Limit

Test methods are modified from specified reference method unless indicated by an \*

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Michelle Dubien  
Lab Manager

The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.



C.O.C.: G78607

REPORT No. B18-15181 (i)

Rev. 2

**Report To:**

**Malroz Engineering Inc.**  
308 Wellington Street, 2nd Floor  
Kingston ON K7K 7A8 Canada  
**Attention:** Ben Clock

**Caduceon Environmental Laboratories**

285 Dalton Ave  
Kingston Ontario K7K 6Z1  
Tel: 613-544-2001  
Fax: 613-544-2770

DATE RECEIVED: 31-May-18

JOB/PROJECT NO.: Escott

DATE REPORTED: 28-Jan-19

P.O. NUMBER:

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

Parameter	Units	R.L.	Reference Method	Date/Site Analyzed	Client I.D.	18-W001	18-W002	18-W003	18-W004
					Sample I.D.	30-May-18	30-May-18	30-May-18	30-May-18
Copper	mg/L	0.0001	EPA 200.8	05-Jun-18/O	B18-15181-1	0.0004	0.0009	0.0004	0.0004
Iron	mg/L	0.005	SM 3120	11-Jun-18/O	B18-15181-2	0.027	1.97	0.083	0.378
Lead	mg/L	0.00002	EPA 200.8	05-Jun-18/O	B18-15181-3	< 0.00002	0.00004	0.00008	0.00029
Magnesium	mg/L	0.02	SM 3120	11-Jun-18/O	B18-15181-4	10.7	91.9	33.5	36.3
Manganese	mg/L	0.001	SM 3120	11-Jun-18/O		0.015	2.94	0.218	0.349
Mercury	mg/L	0.00002	SM 3112 B	13-Jun-18/O		< 0.00002	< 0.00002	< 0.00002	< 0.00002
Molybdenum	mg/L	0.0001	EPA 200.8	05-Jun-18/O		0.0019	0.0024	0.0012	0.0011
Nickel	mg/L	0.0002	EPA 200.8	05-Jun-18/O		0.0003	0.0093	0.0031	0.0031
Potassium	mg/L	0.1	SM 3120	11-Jun-18/O		2.2	5.5	4.2	4.2
Silicon	mg/L	0.01	SM 3120	11-Jun-18/O		4.78	11.0	6.77	7.23
Silver	mg/L	0.0001	EPA 200.8	05-Jun-18/O		< 0.0001	< 0.0001	< 0.0001	< 0.0001
Sodium	mg/L	0.2	SM 3120	11-Jun-18/O		7.9	60.4	20.3	22.4
Strontium	mg/L	0.001	SM 3120	11-Jun-18/O		1.08	1.10	1.32	1.30
Thallium	mg/L	0.00005	EPA 200.8	05-Jun-18/O		< 0.00005	< 0.00005	< 0.00005	0.00007
Tin	mg/L	0.05	SM 3120	11-Jun-18/O		< 0.05	< 0.05	< 0.05	< 0.05
Titanium	mg/L	0.005	SM 3120	11-Jun-18/O		< 0.005	< 0.005	< 0.005	< 0.005
Tungsten	mg/L	0.01	SM 3120	11-Jun-18/O		< 0.01	< 0.01	< 0.01	< 0.01
Uranium	mg/L	0.00005	EPA 200.8	05-Jun-18/O		0.00680	0.0100	0.00936	0.00845
Vanadium	mg/L	0.005	SM 3120	11-Jun-18/O		< 0.005	< 0.005	< 0.005	< 0.005
Zinc	mg/L	0.005	SM 3120	11-Jun-18/O		< 0.005	< 0.005	< 0.005	< 0.005

1. Revised to convert reporting units for metals to mg/L and to include additional metals.



R.L. = Reporting Limit

Test methods are modified from specified reference method unless indicated by an \*

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Michelle Dubien  
Lab Manager

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C.O.C.: G78607

REPORT No. B18-15181 (i)

Rev. 2

**Report To:**

**Malroz Engineering Inc.**  
308 Wellington Street, 2nd Floor  
Kingston ON K7K 7A8 Canada  
**Attention:** Ben Clock

**Caduceon Environmental Laboratories**

285 Dalton Ave  
Kingston Ontario K7K 6Z1  
Tel: 613-544-2001  
Fax: 613-544-2770

DATE RECEIVED: 31-May-18

JOB/PROJECT NO.: Escott

DATE REPORTED: 28-Jan-19

P.O. NUMBER:

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

Client I.D.	18-W006	18-W007	18-W008	18-W009
Sample I.D.	B18-15181-5	B18-15181-6	B18-15181-7	B18-15181-8
Date Collected	30-May-18	30-May-18	30-May-18	30-May-18

Parameter	Units	R.L.	Reference Method	Date/Site Analyzed				
Alkalinity(CaCO3) to pH4.5	mg/L	5	SM 2320B	06-Jun-18/O	373	310	242	422
pH @25°C	pH Units		SM 4500H	06-Jun-18/O	8.25	8.05	8.16	7.95
Conductivity @25°C	µmho/cm	1	SM 2510B	06-Jun-18/O	639	683	456	932
Chloride	mg/L	0.5	SM4110C	04-Jun-18/O	1.8	20.9	1.2	41.0
Nitrite (N)	mg/L	0.05	SM4110C	04-Jun-18/O	< 0.05	< 0.05	< 0.05	< 0.05
Nitrate (N)	mg/L	0.05	SM4110C	04-Jun-18/O	0.07	0.11	< 0.05	< 0.05
Sulphate	mg/L	1	SM4110C	04-Jun-18/O	16	38	10	41
BOD(5 day)	mg/L	2	SM 5210B	01-Jun-18/K	< 2	< 2	< 2	< 2
Total Suspended Solids	mg/L	3	SM2540D	05-Jun-18/K	800	21200	460	660
Phosphorus-Total	mg/L	0.01	E3199A.1	06-Jun-18/K	0.76	11.1	0.39	0.56
Total Kjeldahl Nitrogen	mg/L	0.1	E3199A.1	06-Jun-18/K	0.3	1.1	0.3	0.4
Ammonia (N)-Total	mg/L	0.01	SM4500-NH3-H	04-Jun-18/K	0.02	0.08	0.02	0.03
Total Dissolved Solids	mg/L	3	SM 2540D	07-Jun-18/O	332	355	236	495
Dissolved Organic Carbon	mg/L	0.2	EPA 415.1	06-Jun-18/O	2.7	2.5	5.7	4.7
Phenolics	mg/L	0.001	MOEE 3179	06-Jun-18/O	< 0.001	< 0.001	< 0.001	< 0.001
COD	mg/L	5	SM 5220D	06-Jun-18/O	30	111	8	25
Hardness (as CaCO3)	mg/L	1	SM 3120	11-Jun-18/O	328	340	237	513
Aluminum	mg/L	0.01	SM 3120	11-Jun-18/O	0.03	0.05	0.05	0.11
Antimony	mg/L	0.0001	EPA 200.8	05-Jun-18/O	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Arsenic	mg/L	0.0001	EPA 200.8	05-Jun-18/O	0.0007	0.0007	0.0005	0.0003
Barium	mg/L	0.001	SM 3120	11-Jun-18/O	0.126	0.116	0.084	0.225
Beryllium	mg/L	0.0001	EPA 200.8	05-Jun-18/O	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Boron	mg/L	0.005	SM 3120	11-Jun-18/O	0.058	0.020	0.013	2.41
Cadmium	mg/L	0.000015	EPA 200.8	05-Jun-18/O	< 0.000015	< 0.000015	< 0.000015	< 0.000015
Calcium	mg/L	0.02	SM 3120	11-Jun-18/O	42.2	77.0	55.4	113
Chromium	mg/L	0.001	EPA 200.8	05-Jun-18/O	< 0.001	< 0.001	< 0.001	< 0.001
Cobalt	mg/L	0.0001	EPA 200.8	05-Jun-18/O	< 0.0001	< 0.0001	< 0.0001	< 0.0001



R.L. = Reporting Limit

Test methods are modified from specified reference method unless indicated by an \*

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Michelle Dubien  
Lab Manager

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C.O.C.: G78607

REPORT No. B18-15181 (i)

Rev. 2

**Report To:**

**Malroz Engineering Inc.**  
308 Wellington Street, 2nd Floor  
Kingston ON K7K 7A8 Canada  
**Attention:** Ben Clock

**Caduceon Environmental Laboratories**

285 Dalton Ave  
Kingston Ontario K7K 6Z1  
Tel: 613-544-2001  
Fax: 613-544-2770

DATE RECEIVED: 31-May-18

JOB/PROJECT NO.: Escott

DATE REPORTED: 28-Jan-19

P.O. NUMBER:

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

Client I.D.	18-W006	18-W007	18-W008	18-W009
Sample I.D.	B18-15181-5	B18-15181-6	B18-15181-7	B18-15181-8
Date Collected	30-May-18	30-May-18	30-May-18	30-May-18

Parameter	Units	R.L.	Reference Method	Date/Site Analyzed				
Copper	mg/L	0.0001	EPA 200.8	05-Jun-18/O	0.0005	0.0004	0.0007	0.0011
Iron	mg/L	0.005	SM 3120	11-Jun-18/O	< 0.005	< 0.005	0.005	0.067
Lead	mg/L	0.00002	EPA 200.8	05-Jun-18/O	< 0.00002	< 0.00002	0.00004	0.00004
Magnesium	mg/L	0.02	SM 3120	11-Jun-18/O	54.2	35.8	24.0	56.0
Manganese	mg/L	0.001	SM 3120	11-Jun-18/O	< 0.001	0.004	0.008	0.004
Mercury	mg/L	0.00002	SM 3112 B	13-Jun-18/O	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Molybdenum	mg/L	0.0001	EPA 200.8	05-Jun-18/O	0.0057	0.0009	0.0013	0.0011
Nickel	mg/L	0.0002	EPA 200.8	05-Jun-18/O	0.0003	0.0005	0.0006	0.0016
Potassium	mg/L	0.1	SM 3120	11-Jun-18/O	2.3	1.3	1.3	2.0
Silicon	mg/L	0.01	SM 3120	11-Jun-18/O	5.95	8.85	8.99	10.7
Silver	mg/L	0.0001	EPA 200.8	05-Jun-18/O	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Sodium	mg/L	0.2	SM 3120	11-Jun-18/O	21.5	8.8	5.8	29.8
Strontium	mg/L	0.001	SM 3120	11-Jun-18/O	0.964	0.321	0.132	0.616
Thallium	mg/L	0.00005	EPA 200.8	05-Jun-18/O	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Tin	mg/L	0.05	SM 3120	11-Jun-18/O	< 0.05	< 0.05	< 0.05	< 0.05
Titanium	mg/L	0.005	SM 3120	11-Jun-18/O	< 0.005	< 0.005	< 0.005	0.009
Tungsten	mg/L	0.01	SM 3120	11-Jun-18/O	< 0.01	< 0.01	< 0.01	< 0.01
Uranium	mg/L	0.00005	EPA 200.8	05-Jun-18/O	0.00397	0.00068	0.00049	0.00038
Vanadium	mg/L	0.005	SM 3120	11-Jun-18/O	< 0.005	< 0.005	< 0.005	0.035
Zinc	mg/L	0.005	SM 3120	11-Jun-18/O	< 0.005	< 0.005	< 0.005	0.005

1. Revised to convert reporting units for metals to mg/L and to include additional metals.



R.L. = Reporting Limit

Test methods are modified from specified reference method unless indicated by an \*

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Michelle Dubien  
Lab Manager

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C.O.C.: G78607

REPORT No. B18-15181 (i)

Rev. 2

**Report To:**

**Malroz Engineering Inc.**  
 308 Wellington Street, 2nd Floor  
 Kingston ON K7K 7A8 Canada  
**Attention:** Ben Clock

**Caduceon Environmental Laboratories**

285 Dalton Ave  
 Kingston Ontario K7K 6Z1  
 Tel: 613-544-2001  
 Fax: 613-544-2770

DATE RECEIVED: 31-May-18

JOB/PROJECT NO.: Escott

DATE REPORTED: 28-Jan-19

P.O. NUMBER:

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

Client I.D.	18-W010	18-W011	18-W012	18-W013
Sample I.D.	B18-15181-9	B18-15181-10	B18-15181-11	B18-15181-12
Date Collected	30-May-18	30-May-18	30-May-18	30-May-18

Parameter	Units	R.L.	Reference Method	Date/Site Analyzed				
Alkalinity(CaCO3) to pH4.5	mg/L	5	SM 2320B	06-Jun-18/O	1000	402	331	354
pH @25°C	pH Units		SM 4500H	06-Jun-18/O	7.65	8.18	8.03	7.96
Conductivity @25°C	µmho/cm	1	SM 2510B	06-Jun-18/O	2040	697	667	636
Chloride	mg/L	0.5	SM4110C	04-Jun-18/O	81.2	1.7	16.2	0.7
Nitrite (N)	mg/L	0.05	SM4110C	04-Jun-18/O	< 0.05	< 0.05	< 0.05	< 0.05
Nitrate (N)	mg/L	0.05	SM4110C	04-Jun-18/O	< 0.05	0.07	0.47	0.22
Sulphate	mg/L	1	SM4110C	04-Jun-18/O	114	9	15	7
BOD(5 day)	mg/L	2	SM 5210B	01-Jun-18/K	< 2	3	< 2	< 2
Total Suspended Solids	mg/L	3	SM2540D	05-Jun-18/K	1300	3000	< 3	95
Phosphorus-Total	mg/L	0.01	E3199A.1	06-Jun-18/K	2.95	2.46	0.06	0.10
Total Kjeldahl Nitrogen	mg/L	0.1	E3199A.1	06-Jun-18/K	1.6	0.4	0.2	0.2
Ammonia (N)-Total	mg/L	0.01	SM4500-NH3-H	04-Jun-18/K	0.91	0.09	0.02	0.01
Total Dissolved Solids	mg/L	3	SM 2540D	07-Jun-18/O	1130	362	346	330
Dissolved Organic Carbon	mg/L	0.2	EPA 415.1	06-Jun-18/O	8.8	4.3	8.2	2.6
Phenolics	mg/L	0.001	MOEE 3179	06-Jun-18/O	< 0.001	< 0.001	< 0.001	< 0.001
COD	mg/L	5	SM 5220D	06-Jun-18/O	71	38	< 5	< 5
Hardness (as CaCO3)	mg/L	1	SM 3120	11-Jun-18/O	1140	345	334	318
Aluminum	mg/L	0.01	SM 3120	11-Jun-18/O	0.09	0.04	0.05	0.05
Antimony	mg/L	0.0001	EPA 200.8	05-Jun-18/O	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Arsenic	mg/L	0.0001	EPA 200.8	05-Jun-18/O	0.0024	0.0020	0.0001	0.0001
Barium	mg/L	0.001	SM 3120	11-Jun-18/O	0.369	0.231	0.138	0.055
Beryllium	mg/L	0.0001	EPA 200.8	05-Jun-18/O	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Boron	mg/L	0.005	SM 3120	11-Jun-18/O	0.114	0.035	0.025	0.010
Cadmium	mg/L	0.000015	EPA 200.8	05-Jun-18/O	< 0.000015	< 0.000015	< 0.000015	< 0.000015
Calcium	mg/L	0.02	SM 3120	11-Jun-18/O	162	48.9	74.3	72.3
Chromium	mg/L	0.001	EPA 200.8	05-Jun-18/O	< 0.001	< 0.001	0.050	0.001



R.L. = Reporting Limit

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Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Michelle Dubien  
 Lab Manager

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**C.O.C.: G78607**

**REPORT No. B18-15181 (i)**

**Rev. 2**

**Report To:**

**Malroz Engineering Inc.**  
 308 Wellington Street, 2nd Floor  
 Kingston ON K7K 7A8 Canada  
**Attention:** Ben Clock

**Caduceon Environmental Laboratories**

285 Dalton Ave  
 Kingston Ontario K7K 6Z1  
 Tel: 613-544-2001  
 Fax: 613-544-2770

DATE RECEIVED: 31-May-18  
 DATE REPORTED: 28-Jan-19  
 SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: Escott  
 P.O. NUMBER:  
 WATERWORKS NO.

<b>Client I.D.</b>	18-W010	18-W011	18-W012	18-W013
<b>Sample I.D.</b>	B18-15181-9	B18-15181-10	B18-15181-11	B18-15181-12
<b>Date Collected</b>	30-May-18	30-May-18	30-May-18	30-May-18

Parameter	Units	R.L.	Reference Method	Date/Site Analyzed				
Cobalt	mg/L	0.0001	EPA 200.8	05-Jun-18/O	0.0040	0.0002	< 0.0001	< 0.0001
Copper	mg/L	0.0001	EPA 200.8	05-Jun-18/O	< 0.0001	0.0007	0.0013	0.0006
Iron	mg/L	0.005	SM 3120	11-Jun-18/O	2.16	0.005	< 0.005	< 0.005
Lead	mg/L	0.00002	EPA 200.8	05-Jun-18/O	< 0.00002	0.00004	< 0.00002	< 0.00002
Magnesium	mg/L	0.02	SM 3120	11-Jun-18/O	179	54.3	36.0	33.3
Manganese	mg/L	0.001	SM 3120	11-Jun-18/O	0.651	0.025	< 0.001	< 0.001
Mercury	mg/L	0.00002	SM 3112 B	13-Jun-18/O	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Molybdenum	mg/L	0.0001	EPA 200.8	05-Jun-18/O	0.0040	0.0034	0.0016	0.0011
Nickel	mg/L	0.0002	EPA 200.8	05-Jun-18/O	0.0092	0.0007	< 0.0002	0.0003
Potassium	mg/L	0.1	SM 3120	11-Jun-18/O	4.0	2.5	2.1	0.4
Silicon	mg/L	0.01	SM 3120	11-Jun-18/O	12.6	12.5	8.18	7.74
Silver	mg/L	0.0001	EPA 200.8	05-Jun-18/O	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Sodium	mg/L	0.2	SM 3120	11-Jun-18/O	47.3	18.9	12.8	13.1
Strontium	mg/L	0.001	SM 3120	11-Jun-18/O	1.02	0.671	0.320	0.246
Thallium	mg/L	0.00005	EPA 200.8	05-Jun-18/O	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Tin	mg/L	0.05	SM 3120	11-Jun-18/O	< 0.05	< 0.05	< 0.05	< 0.05
Titanium	mg/L	0.005	SM 3120	11-Jun-18/O	< 0.005	< 0.005	< 0.005	< 0.005
Tungsten	mg/L	0.01	SM 3120	11-Jun-18/O	0.01	0.01	< 0.01	< 0.01
Uranium	mg/L	0.00005	EPA 200.8	05-Jun-18/O	0.0151	0.00063	0.00395	0.00113
Vanadium	mg/L	0.005	SM 3120	11-Jun-18/O	< 0.005	< 0.005	< 0.005	< 0.005
Zinc	mg/L	0.005	SM 3120	11-Jun-18/O	< 0.005	< 0.005	< 0.005	< 0.005

1. Revised to convert reporting units for metals to mg/L and to include additional metals.



Michelle Dubien  
 Lab Manager

R.L. = Reporting Limit

Test methods are modified from specified reference method unless indicated by an \*

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

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C.O.C.: G78607

REPORT No. B18-15181 (ii)

Rev. 2

**Report To:**

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 308 Wellington Street, 2nd Floor  
 Kingston ON K7K 7A8 Canada  
**Attention:** Ben Clock

**Caduceon Environmental Laboratories**

285 Dalton Ave  
 Kingston Ontario K7K 6Z1  
 Tel: 613-544-2001  
 Fax: 613-544-2770

DATE RECEIVED: 31-May-18  
 DATE REPORTED: 28-Jan-19  
 SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: Escott  
 P.O. NUMBER:  
 WATERWORKS NO.

<b>Client I.D.</b>	18-W002	18-W004	18-W012	
<b>Sample I.D.</b>	B18-15181-2	B18-15181-4	B18-15181-11	
<b>Date Collected</b>	30-May-18	30-May-18	30-May-18	

Parameter	Units	R.L.	Reference Method	Date/Site Analyzed				
Acetone	µg/L	2	EPA 8260	01-Jun-18/O	< 2	< 2	< 2	
Benzene	µg/L	0.5	EPA 8260	01-Jun-18/O	< 0.5	< 0.5	< 0.5	
Bromobenzene	µg/L	0.1	EPA 8260	01-Jun-18/O	< 0.1	< 0.1	< 0.1	
Bromodichloromethane	µg/L	0.1	EPA 8260	01-Jun-18/O	< 0.1	< 0.1	< 0.1	
Bromoform	µg/L	0.1	EPA 8260	01-Jun-18/O	< 0.1	< 0.1	< 0.1	
Bromomethane	µg/L	0.3	EPA 8260	01-Jun-18/O	< 0.3	< 0.3	< 0.3	
Carbon Tetrachloride	µg/L	0.2	EPA 8260	01-Jun-18/O	< 0.2	< 0.2	< 0.2	
Chloroethane	µg/L	0.1	EPA 8260	01-Jun-18/O	< 0.1	< 0.1	< 0.1	
Chloroform	µg/L	0.3	EPA 8260	01-Jun-18/O	< 0.3	< 0.3	< 0.3	
Chloromethane	µg/L	0.3	EPA 8260	01-Jun-18/O	< 0.3	< 0.3	< 0.3	
Chlorotoluene,2-	µg/L	0.2	EPA 8260	01-Jun-18/O	< 0.2	< 0.2	< 0.2	
Chlorotoluene,4-	µg/L	0.2	EPA 8260	01-Jun-18/O	< 0.2	< 0.2	< 0.2	
Dibromo-3-Chloropropane, 1,2-	µg/L	1	EPA 8260	01-Jun-18/O	< 1	< 1	< 1	
Dibromochloromethane	µg/L	0.1	EPA 8260	01-Jun-18/O	< 0.1	< 0.1	< 0.1	
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/L	0.1	EPA 8260	01-Jun-18/O	< 0.1	< 0.1	< 0.1	
Dibromomethane	µg/L	1	EPA 8260	01-Jun-18/O	< 1	< 1	< 1	
Dichlorobenzene,1,2-	µg/L	0.1	EPA 8260	01-Jun-18/O	< 0.1	< 0.1	< 0.1	
Dichlorobenzene,1,3-	µg/L	0.1	EPA 8260	01-Jun-18/O	< 0.1	< 0.1	< 0.1	
Dichlorobenzene,1,4-	µg/L	0.2	EPA 8260	01-Jun-18/O	< 0.2	< 0.2	< 0.2	
Dichlorodifluoromethane	µg/L	1	EPA 8260	01-Jun-18/O	< 1	< 1	< 1	
Dichloroethane,1,1-	µg/L	0.1	EPA 8260	01-Jun-18/O	0.4	0.2	< 0.1	
Dichloroethane,1,2-	µg/L	0.1	EPA 8260	01-Jun-18/O	< 0.1	< 0.1	< 0.1	
Dichloroethene, 1,1-	µg/L	0.1	EPA 8260	01-Jun-18/O	< 0.1	< 0.1	< 0.1	
Dichloroethene, cis-1,2-	µg/L	0.1	EPA 8260	01-Jun-18/O	< 0.1	< 0.1	< 0.1	
Dichloroethene, trans-1,2-	µg/L	0.1	EPA 8260	01-Jun-18/O	< 0.1	< 0.1	< 0.1	



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Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Michelle Dubien  
 Lab Manager

The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.



C.O.C.: G78607

REPORT No. B18-15181 (ii)

Rev. 2

**Report To:**

**Malroz Engineering Inc.**  
308 Wellington Street, 2nd Floor  
Kingston ON K7K 7A8 Canada  
**Attention:** Ben Clock

**Caduceon Environmental Laboratories**

285 Dalton Ave  
Kingston Ontario K7K 6Z1  
Tel: 613-544-2001  
Fax: 613-544-2770

DATE RECEIVED: 31-May-18  
DATE REPORTED: 28-Jan-19  
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: Escott  
P.O. NUMBER:  
WATERWORKS NO.

<b>Client I.D.</b>	18-W002	18-W004	18-W012
<b>Sample I.D.</b>	B18-15181-2	B18-15181-4	B18-15181-11
<b>Date Collected</b>	30-May-18	30-May-18	30-May-18

Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Dichloromethane (Methylene Chloride)	µg/L	0.3	EPA 8260	01-Jun-18/O	< 0.3	< 0.3	< 0.3
Dichloropropane,1,2-	µg/L	0.1	EPA 8260	01-Jun-18/O	< 0.1	< 0.1	< 0.1
Dichloropropane,1,3-	µg/L	0.2	EPA 8260	01-Jun-18/O	< 0.2	< 0.2	< 0.2
Dichloropropane,2,2-	µg/L	0.2	EPA 8260	01-Jun-18/O	< 0.2	< 0.2	< 0.2
Dichloropropene, cis-1,3-	µg/L	0.1	EPA 8260	01-Jun-18/O	< 0.1	< 0.1	< 0.1
Dichloropropene, trans-1,3-	µg/L	0.1	EPA 8260	01-Jun-18/O	< 0.1	< 0.1	< 0.1
Dichloropropene,1,1-	µg/L	0.2	EPA 8260	01-Jun-18/O	< 0.2	< 0.2	< 0.2
Ethylbenzene	µg/L	0.5	EPA 8260	01-Jun-18/O	< 0.5	< 0.5	< 0.5
Hexachlorobutadiene	µg/L	1	EPA 8260	01-Jun-18/O	< 1	< 1	< 1
Hexane	µg/L	1	EPA 8260	01-Jun-18/O	< 1	< 1	< 1
Isopropylbenzene	µg/L	0.2	EPA 8260	01-Jun-18/O	< 0.2	< 0.2	< 0.2
Isopropyltoluene,4-	µg/L	0.4	EPA 8260	01-Jun-18/O	< 0.4	< 0.4	< 0.4
Methyl Butyl Ketone	µg/L	10	EPA 8260	01-Jun-18/O	< 10	< 10	< 10
Methyl Ethyl Ketone	µg/L	1	EPA 8260	01-Jun-18/O	< 1	< 1	< 1
Methyl Isobutyl Ketone	µg/L	1	EPA 8260	01-Jun-18/O	< 1	< 1	< 1
Methyl-t-butyl Ether	µg/L	1	EPA 8260	01-Jun-18/O	< 1	< 1	< 1
Monochlorobenzene (Chlorobenzene)	µg/L	0.2	EPA 8260	01-Jun-18/O	< 0.2	< 0.2	< 0.2
Naphthalene	µg/L	0.7	EPA 8260	01-Jun-18/O	< 0.7	< 0.7	< 0.7
n-Butylbenzene	µg/L	0.7	EPA 8260	01-Jun-18/O	< 0.7	< 0.7	< 0.7
n-Propylbenzene	µg/L	0.4	EPA 8260	01-Jun-18/O	< 0.4	< 0.4	< 0.4
sec-Butylbenzene	µg/L	0.5	EPA 8260	01-Jun-18/O	< 0.5	< 0.5	< 0.5
Styrene	µg/L	0.5	EPA 8260	01-Jun-18/O	< 0.5	< 0.5	< 0.5
tert-Butylbenzene	µg/L	0.1	EPA 8260	01-Jun-18/O	< 0.1	< 0.1	< 0.1
Tetrachloroethane,1,1,1,2-	µg/L	0.1	EPA 8260	01-Jun-18/O	< 0.1	< 0.1	< 0.1
Tetrachloroethane,1,1,2,2-	µg/L	0.4	EPA 8260	01-Jun-18/O	< 0.4	< 0.4	< 0.4



R.L. = Reporting Limit

Test methods are modified from specified reference method unless indicated by an \*

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Michelle Dubien  
Lab Manager

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C.O.C.: G78607

REPORT No. B18-15181 (ii)

Rev. 2

**Report To:**

**Malroz Engineering Inc.**  
 308 Wellington Street, 2nd Floor  
 Kingston ON K7K 7A8 Canada  
**Attention:** Ben Clock

**Caduceon Environmental Laboratories**

285 Dalton Ave  
 Kingston Ontario K7K 6Z1  
 Tel: 613-544-2001  
 Fax: 613-544-2770

DATE RECEIVED: 31-May-18  
 DATE REPORTED: 28-Jan-19  
 SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: Escott  
 P.O. NUMBER:  
 WATERWORKS NO.

<b>Client I.D.</b>	18-W002	18-W004	18-W012	
<b>Sample I.D.</b>	B18-15181-2	B18-15181-4	B18-15181-11	
<b>Date Collected</b>	30-May-18	30-May-18	30-May-18	

Parameter	Units	R.L.	Reference Method	Date/Site Analyzed				
Tetrachloroethylene	µg/L	0.2	EPA 8260	01-Jun-18/O	< 0.2	< 0.2	< 0.2	
Toluene	µg/L	0.5	EPA 8260	01-Jun-18/O	< 0.5	< 0.5	< 0.5	
Trichlorobenzene,1,2,3-	µg/L	0.2	EPA 8260	01-Jun-18/O	< 0.2	< 0.2	< 0.2	
Trichlorobenzene,1,2,4-	µg/L	0.2	EPA 8260	01-Jun-18/O	< 0.2	< 0.2	< 0.2	
Trichloroethane,1,1,1-	µg/L	0.1	EPA 8260	01-Jun-18/O	< 0.1	< 0.1	< 0.1	
Trichloroethane,1,1,2-	µg/L	0.1	EPA 8260	01-Jun-18/O	< 0.1	< 0.1	< 0.1	
Trichloroethylene	µg/L	0.1	EPA 8260	01-Jun-18/O	< 0.1	< 0.1	< 0.1	
Trichlorofluoromethane	µg/L	0.1	EPA 8260	01-Jun-18/O	< 0.1	< 0.1	< 0.1	
Trichloropropane,1,2,3-	µg/L	0.2	EPA 8260	01-Jun-18/O	< 0.2	< 0.2	< 0.2	
Trimethylbenzene,1,2,4-	µg/L	2	EPA 8260	01-Jun-18/O	< 2	< 2	< 2	
Trimethylbenzene,1,3,5-	µg/L	0.6	EPA 8260	01-Jun-18/O	< 0.6	< 0.6	< 0.6	
Vinyl Chloride	µg/L	0.2	EPA 8260	01-Jun-18/O	< 0.2	< 0.2	< 0.2	
Xylene, m,p-	µg/L	0.4	EPA 8260	01-Jun-18/O	< 0.4	< 0.4	< 0.4	
Xylene, m,p,o-	µg/L	0.4	EPA 8260	01-Jun-18/O	< 0.4	< 0.4	< 0.4	
Xylene, o-	µg/L	0.1	EPA 8260	01-Jun-18/O	< 0.1	< 0.1	< 0.1	



Michelle Dubien  
 Lab Manager

R.L. = Reporting Limit

Test methods are modified from specified reference method unless indicated by an \*

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

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**C.O.C.: G82060**

**REPORT No. B18-34924**

**Rev. 2**

**Report To:**

**Malroz Engineering Inc.**  
308 Wellington Street, 2nd Floor  
Kingston ON K7K 7A8 Canada

**Attention:** Camille Malcolm

**Caduceon Environmental Laboratories**

285 Dalton Ave  
Kingston Ontario K7K 6Z1  
Tel: 613-544-2001  
Fax: 613-544-2770

DATE RECEIVED: 12-Nov-18

JOB/PROJECT NO.: 1038-Escott

DATE REPORTED: 08-Feb-19

P.O. NUMBER:

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

Parameter	Units	R.L.	Reference Method	Date/Site Analyzed	Client I.D.	18-W022	18-W021	18-W027	18-W019
					Sample I.D.	18-W022	18-W021	18-W027	18-W019
Date Collected					12-Nov-18	12-Nov-18	12-Nov-18	12-Nov-18	12-Nov-18
Alkalinity(CaCO3) to pH4.5	mg/L	5	SM 2320B	14-Nov-18/O	250	239	351	353	
pH @25°C	pH Units		SM 4500H	14-Nov-18/O	7.84	8.01	7.86	7.74	
Conductivity @25°C	µmho/cm	1	SM 2510B	14-Nov-18/O	662	478	673	843	
Chloride	mg/L	0.5	SM4110C	14-Nov-18/O	13.1	1.9	1.5	29.0	
Nitrite (N)	mg/L	0.05	SM4110C	14-Nov-18/O	< 0.05	< 0.05	< 0.05	< 0.05	
Nitrate (N)	mg/L	0.05	SM4110C	14-Nov-18/O	10.3	0.11	0.34	0.06	
Sulphate	mg/L	1	SM4110C	14-Nov-18/O	31	10	7	40	
BOD(5 day)	mg/L	3	SM 5210B	14-Nov-18/K	3	4	3	9	
Total Suspended Solids	mg/L	3	SM2540D	13-Nov-18/K	27800	270	720	20500	
Phosphorus-Total	mg/L	0.01	E3199A.1	14-Nov-18/K	17.4	0.38	0.63	1.56	
Total Kjeldahl Nitrogen	mg/L	0.1	E3199A.1	14-Nov-18/K	1.5	0.2	0.3	2.9	
Ammonia (N)-Total	mg/L	0.01	SM4500-NH3-H	15-Nov-18/K	0.17	0.08	0.05	0.82	
Total Dissolved Solids	mg/L	3	SM 2540D	15-Nov-18/O	344	247	350	445	
Dissolved Organic Carbon	mg/L	0.2	EPA 415.1	14-Nov-18/O	5.9	2.8	3.8	8.9	
Phenolics	mg/L	0.002	MOEE 3179	15-Nov-18/K	0.008	0.002	< 0.002	0.005	
COD	mg/L	5	SM 5220D	15-Nov-18/O	128	5	< 5	108	
Hardness (as CaCO3)	mg/L	1	SM 3120	20-Nov-18/O	337	251	353	407	
Aluminum	mg/L	0.01	SM 3120	20-Nov-18/O	0.05	0.05	0.05	0.07	
Antimony	mg/L	0.00002	EPA 200.8	15-Nov-18/O	0.00004	< 0.00002	< 0.00002	0.00005	
Arsenic	mg/L	0.0001	EPA 200.8	15-Nov-18/O	0.0005	0.0004	< 0.0001	0.0010	
Barium	mg/L	0.001	SM 3120	20-Nov-18/O	0.089	0.086	0.064	0.204	
Beryllium	mg/L	0.002	SM 3120	20-Nov-18/O	< 0.002	< 0.002	< 0.002	< 0.002	
Boron	mg/L	0.005	SM 3120	20-Nov-18/O	0.008	0.007	0.006	0.273	
Cadmium	mg/L	0.000015	EPA 200.8	15-Nov-18/O	< 0.000015	< 0.000015	< 0.000015	< 0.000015	
Calcium	mg/L	0.02	SM 3120	20-Nov-18/O	79.5	59.3	81.6	103	
Chromium	mg/L	0.001	EPA 200.8	15-Nov-18/O	< 0.001	0.002	0.002	< 0.001	
Cobalt	mg/L	0.0001	EPA 200.8	15-Nov-18/O	0.0002	0.0001	0.0001	0.0012	



R.L. = Reporting Limit

Test methods are modified from specified reference method unless indicated by an \*

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Michelle Dubien  
Lab Manager

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C.O.C.: G82060

REPORT No. B18-34924

Rev. 2

**Report To:**

**Malroz Engineering Inc.**  
308 Wellington Street, 2nd Floor  
Kingston ON K7K 7A8 Canada

**Attention:** Camille Malcolm

**Caduceon Environmental Laboratories**

285 Dalton Ave  
Kingston Ontario K7K 6Z1  
Tel: 613-544-2001  
Fax: 613-544-2770

DATE RECEIVED: 12-Nov-18

JOB/PROJECT NO.: 1038-Escott

DATE REPORTED: 08-Feb-19

P.O. NUMBER:

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

<b>Client I.D.</b>	18-W022	18-W021	18-W027	18-W019
<b>Sample I.D.</b>	B18-34924-1	B18-34924-2	B18-34924-3	B18-34924-4
<b>Date Collected</b>	12-Nov-18	12-Nov-18	12-Nov-18	12-Nov-18

Parameter	Units	R.L.	Reference Method	Date/Site Analyzed				
Copper	mg/L	0.0001	EPA 200.8	15-Nov-18/O	0.0019	0.0005	0.0005	0.0002
Iron	mg/L	0.005	SM 3120	20-Nov-18/O	< 0.005	< 0.005	< 0.005	0.633
Lead	mg/L	0.00002	EPA 200.8	15-Nov-18/O	0.00002	< 0.00002	< 0.00002	0.00004
Magnesium	mg/L	0.02	SM 3120	20-Nov-18/O	33.6	24.9	36.3	36.3
Manganese	mg/L	0.001	SM 3120	20-Nov-18/O	0.001	0.007	< 0.001	0.322
Mercury	mg/L	0.00002	SM 3112 B	20-Nov-18/O	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Molybdenum	mg/L	0.01	SM 3120	20-Nov-18/O	< 0.01	< 0.01	< 0.01	< 0.01
Nickel	mg/L	0.01	SM 3120	20-Nov-18/O	< 0.01	< 0.01	< 0.01	< 0.01
Potassium	mg/L	0.1	SM 3120	20-Nov-18/O	0.9	1.5	0.5	4.6
Silicon	mg/L	0.01	SM 3120	20-Nov-18/O	7.74	9.78	9.28	7.89
Silver	mg/L	0.0001	EPA 200.8	15-Nov-18/O	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Sodium	mg/L	0.2	SM 3120	20-Nov-18/O	8.5	5.9	13.1	20.5
Strontium	mg/L	0.001	SM 3120	20-Nov-18/O	0.290	0.147	0.279	1.56
Thallium	mg/L	0.00005	EPA 200.8	15-Nov-18/O	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Tin	mg/L	0.05	SM 3120	20-Nov-18/O	< 0.05	< 0.05	< 0.05	< 0.05
Titanium	mg/L	0.005	SM 3120	20-Nov-18/O	< 0.005	< 0.005	< 0.005	< 0.005
Tungsten	mg/L	0.01	SM 3120	20-Nov-18/O	< 0.01	< 0.01	< 0.01	< 0.01
Uranium	mg/L	0.00005	EPA 200.8	15-Nov-18/O	0.00157	0.00054	0.00128	0.0119
Vanadium	mg/L	0.005	SM 3120	20-Nov-18/O	< 0.005	< 0.005	< 0.005	< 0.005
Zinc	mg/L	0.005	SM 3120	20-Nov-18/O	< 0.005	< 0.005	< 0.005	< 0.005

1. Revised to include antimony



R.L. = Reporting Limit

Test methods are modified from specified reference method unless indicated by an \*

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Michelle Dubien  
Lab Manager

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**C.O.C.: G82060**

**REPORT No. B18-34924**

**Rev. 2**

**Report To:**

**Malroz Engineering Inc.**  
 308 Wellington Street, 2nd Floor  
 Kingston ON K7K 7A8 Canada

**Attention:** Camille Malcolm

**Caduceon Environmental Laboratories**

285 Dalton Ave  
 Kingston Ontario K7K 6Z1  
 Tel: 613-544-2001  
 Fax: 613-544-2770

DATE RECEIVED: 12-Nov-18

JOB/PROJECT NO.: 1038-Escott

DATE REPORTED: 08-Feb-19

P.O. NUMBER:

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

Parameter	Units	R.L.	Reference Method	Date/Site Analyzed	Client I.D.	18-W020	18-W026	18-W024	18-W025
					Sample I.D.	12-Nov-18	12-Nov-18	12-Nov-18	12-Nov-18
Alkalinity(CaCO3) to pH4.5	mg/L	5	SM 2320B	14-Nov-18/O	B18-34924-5	346	369	969	959
pH @25°C	pH Units		SM 4500H	14-Nov-18/O	B18-34924-6	8.13	8.00	7.50	7.42
Conductivity @25°C	µmho/cm	1	SM 2510B	14-Nov-18/O	B18-34924-7	669	717	2040	2250
Chloride	mg/L	0.5	SM4110C	14-Nov-18/O	B18-34924-8	3.0	3.4	78.4	126
Nitrite (N)	mg/L	0.05	SM4110C	14-Nov-18/O		< 0.05	< 0.05	< 0.05	< 0.05
Nitrate (N)	mg/L	0.05	SM4110C	14-Nov-18/O		0.22	0.10	0.07	0.06
Sulphate	mg/L	1	SM4110C	14-Nov-18/O		12	10	82	149
BOD(5 day)	mg/L	3	SM 5210B	14-Nov-18/K		4	7	6	4
Total Suspended Solids	mg/L	3	SM2540D	13-Nov-18/K		2000	7500	7400	18
Phosphorus-Total	mg/L	0.01	E3199A.1	14-Nov-18/K		2.04	5.38	0.87	0.03
Total Kjeldahl Nitrogen	mg/L	0.1	E3199A.1	14-Nov-18/K		0.4	0.7	2.1	4.6
Ammonia (N)-Total	mg/L	0.01	SM4500-NH3-H	15-Nov-18/K		0.05	0.13	1.54	3.64
Total Dissolved Solids	mg/L	3	SM 2540D	15-Nov-18/O		347	372	1130	1250
Dissolved Organic Carbon	mg/L	0.2	EPA 415.1	14-Nov-18/O		4.0	12.0	12.0	14.9
Phenolics	mg/L	0.002	MOEE 3179	15-Nov-18/K		0.002	< 0.002	0.003	0.004
COD	mg/L	5	SM 5220D	15-Nov-18/O		50	79	27	42
Hardness (as CaCO3)	mg/L	1	SM 3120	20-Nov-18/O		347	371	1130	1130
Aluminum	mg/L	0.01	SM 3120	20-Nov-18/O		0.03	0.05	0.09	0.12
Antimony	mg/L	0.00002	EPA 200.8	15-Nov-18/O		0.00005	0.00003	0.00004	0.00005
Arsenic	mg/L	0.0001	EPA 200.8	15-Nov-18/O		0.0008	0.0017	0.0034	0.0019
Barium	mg/L	0.001	SM 3120	20-Nov-18/O		0.130	0.232	0.468	0.405
Beryllium	mg/L	0.002	SM 3120	20-Nov-18/O		< 0.002	< 0.002	< 0.002	< 0.002
Boron	mg/L	0.005	SM 3120	20-Nov-18/O		0.067	0.026	0.172	0.790
Cadmium	mg/L	0.000015	EPA 200.8	15-Nov-18/O		< 0.000015	< 0.000015	< 0.000015	< 0.000015
Calcium	mg/L	0.02	SM 3120	20-Nov-18/O		44.9	62.7	171	260
Chromium	mg/L	0.001	EPA 200.8	15-Nov-18/O		< 0.001	0.001	0.002	< 0.001
Cobalt	mg/L	0.0001	EPA 200.8	15-Nov-18/O		< 0.0001	0.0003	0.0030	0.0123



R.L. = Reporting Limit

Test methods are modified from specified reference method unless indicated by an \*

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Michelle Dubien  
 Lab Manager

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**C.O.C.: G82060**

**REPORT No. B18-34924**

**Rev. 2**

**Report To:**

**Malroz Engineering Inc.**  
 308 Wellington Street, 2nd Floor  
 Kingston ON K7K 7A8 Canada

**Attention:** Camille Malcolm

**Caduceon Environmental Laboratories**

285 Dalton Ave  
 Kingston Ontario K7K 6Z1  
 Tel: 613-544-2001  
 Fax: 613-544-2770

DATE RECEIVED: 12-Nov-18

JOB/PROJECT NO.: 1038-Escott

DATE REPORTED: 08-Feb-19

P.O. NUMBER:

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

<b>Client I.D.</b>	18-W020	18-W026	18-W024	18-W025
<b>Sample I.D.</b>	B18-34924-5	B18-34924-6	B18-34924-7	B18-34924-8
<b>Date Collected</b>	12-Nov-18	12-Nov-18	12-Nov-18	12-Nov-18

Parameter	Units	R.L.	Reference Method	Date/Site Analyzed				
Copper	mg/L	0.0001	EPA 200.8	15-Nov-18/O	0.0004	0.0004	0.0003	0.0016
Iron	mg/L	0.005	SM 3120	20-Nov-18/O	< 0.005	0.008	3.02	3.23
Lead	mg/L	0.00002	EPA 200.8	15-Nov-18/O	< 0.00002	0.00002	< 0.00002	0.00007
Magnesium	mg/L	0.02	SM 3120	20-Nov-18/O	57.0	52.1	171	117
Manganese	mg/L	0.001	SM 3120	20-Nov-18/O	< 0.001	0.032	0.614	3.72
Mercury	mg/L	0.00002	SM 3112 B	20-Nov-18/O	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Molybdenum	mg/L	0.01	SM 3120	20-Nov-18/O	< 0.01	< 0.01	< 0.01	< 0.01
Nickel	mg/L	0.01	SM 3120	20-Nov-18/O	< 0.01	< 0.01	< 0.01	0.01
Potassium	mg/L	0.1	SM 3120	20-Nov-18/O	2.7	2.6	5.2	6.5
Silicon	mg/L	0.01	SM 3120	20-Nov-18/O	7.20	11.8	13.3	12.2
Silver	mg/L	0.0001	EPA 200.8	15-Nov-18/O	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Sodium	mg/L	0.2	SM 3120	20-Nov-18/O	22.3	19.0	47.8	81.5
Strontium	mg/L	0.001	SM 3120	20-Nov-18/O	1.04	0.632	1.06	1.48
Thallium	mg/L	0.00005	EPA 200.8	15-Nov-18/O	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Tin	mg/L	0.05	SM 3120	20-Nov-18/O	< 0.05	< 0.05	< 0.05	< 0.05
Titanium	mg/L	0.005	SM 3120	20-Nov-18/O	< 0.005	< 0.005	< 0.005	< 0.005
Tungsten	mg/L	0.01	SM 3120	20-Nov-18/O	< 0.01	< 0.01	0.04	0.02
Uranium	mg/L	0.00005	EPA 200.8	15-Nov-18/O	0.00415	0.00125	0.0213	0.0139
Vanadium	mg/L	0.005	SM 3120	20-Nov-18/O	< 0.005	< 0.005	< 0.005	< 0.005
Zinc	mg/L	0.005	SM 3120	20-Nov-18/O	< 0.005	< 0.005	< 0.005	< 0.005

1. Revised to include antimony



R.L. = Reporting Limit

Test methods are modified from specified reference method unless indicated by an \*

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Michelle Dubien  
 Lab Manager

The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.



C.O.C.: G82060

REPORT No. B18-34924

Rev. 2

**Report To:**

**Malroz Engineering Inc.**  
308 Wellington Street, 2nd Floor  
Kingston ON K7K 7A8 Canada

**Attention:** Camille Malcolm

**Caduceon Environmental Laboratories**

285 Dalton Ave  
Kingston Ontario K7K 6Z1  
Tel: 613-544-2001  
Fax: 613-544-2770

DATE RECEIVED: 12-Nov-18

JOB/PROJECT NO.: 1038-Escott

DATE REPORTED: 08-Feb-19

P.O. NUMBER:

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

<b>Client I.D.</b>	18-W023	18-W028	18-W018
<b>Sample I.D.</b>	B18-34924-9	B18-34924-10	B18-34924-11
<b>Date Collected</b>	12-Nov-18	12-Nov-18	12-Nov-18

Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Alkalinity(CaCO3) to pH4.5	mg/L	5	SM 2320B	14-Nov-18/O	162	324	355
pH @25°C	pH Units		SM 4500H	14-Nov-18/O	8.03	7.90	7.73
Conductivity @25°C	µmho/cm	1	SM 2510B	14-Nov-18/O	364	716	852
Chloride	mg/L	0.5	SM4110C	14-Nov-18/O	4.5	21.4	29.8
Nitrite (N)	mg/L	0.05	SM4110C	14-Nov-18/O	< 0.05	< 0.05	< 0.05
Nitrate (N)	mg/L	0.05	SM4110C	14-Nov-18/O	< 0.05	0.51	< 0.05
Sulphate	mg/L	1	SM4110C	14-Nov-18/O	13	18	42
BOD(5 day)	mg/L	3	SM 5210B	14-Nov-18/K	3	3	4
Total Suspended Solids	mg/L	3	SM2540D	13-Nov-18/K	10	3	64
Phosphorus-Total	mg/L	0.01	E3199A.1	14-Nov-18/K	0.02	< 0.01	0.05
Total Kjeldahl Nitrogen	mg/L	0.1	E3199A.1	14-Nov-18/K	0.2	0.1	1.0
Ammonia (N)-Total	mg/L	0.01	SM4500-NH3-H	15-Nov-18/K	0.06	0.05	0.85
Total Dissolved Solids	mg/L	3	SM 2540D	15-Nov-18/O	187	372	450
Dissolved Organic Carbon	mg/L	0.2	EPA 415.1	14-Nov-18/O	5.6	4.6	6.1
Phenolics	mg/L	0.002	MOEE 3179	15-Nov-18/K	< 0.002	0.003	0.003
COD	mg/L	5	SM 5220D	15-Nov-18/O	< 5	< 5	9
Hardness (as CaCO3)	mg/L	1	SM 3120	20-Nov-18/O	174	365	414
Aluminum	mg/L	0.01	SM 3120	20-Nov-18/O	0.03	0.05	0.07
Antimony	mg/L	0.00002	EPA 200.8	15-Nov-18/O	0.00003	< 0.00002	< 0.00002
Arsenic	mg/L	0.0001	EPA 200.8	15-Nov-18/O	0.0004	< 0.0001	0.0005
Barium	mg/L	0.001	SM 3120	20-Nov-18/O	0.060	0.153	0.144
Beryllium	mg/L	0.002	SM 3120	20-Nov-18/O	< 0.002	< 0.002	< 0.002
Boron	mg/L	0.005	SM 3120	20-Nov-18/O	0.056	0.018	0.275
Cadmium	mg/L	0.000015	EPA 200.8	15-Nov-18/O	< 0.000015	< 0.000015	< 0.000015
Calcium	mg/L	0.02	SM 3120	20-Nov-18/O	52.1	82.3	104
Chromium	mg/L	0.001	EPA 200.8	15-Nov-18/O	< 0.001	< 0.001	0.003



R.L. = Reporting Limit

Test methods are modified from specified reference method unless indicated by an \*

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Michelle Dubien  
Lab Manager

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C.O.C.: G82060

REPORT No. B18-34924

Rev. 2

**Report To:**

**Malroz Engineering Inc.**  
 308 Wellington Street, 2nd Floor  
 Kingston ON K7K 7A8 Canada

**Attention:** Camille Malcolm

**Caduceon Environmental Laboratories**

285 Dalton Ave  
 Kingston Ontario K7K 6Z1  
 Tel: 613-544-2001  
 Fax: 613-544-2770

DATE RECEIVED: 12-Nov-18

JOB/PROJECT NO.: 1038-Escott

DATE REPORTED: 08-Feb-19

P.O. NUMBER:

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

<b>Client I.D.</b>	18-W023	18-W028	18-W018
<b>Sample I.D.</b>	B18-34924-9	B18-34924-10	B18-34924-11
<b>Date Collected</b>	12-Nov-18	12-Nov-18	12-Nov-18

Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Cobalt	mg/L	0.0001	EPA 200.8	15-Nov-18/O	0.0001	0.0001	0.0008
Copper	mg/L	0.0001	EPA 200.8	15-Nov-18/O	0.0002	0.0014	0.0002
Iron	mg/L	0.005	SM 3120	20-Nov-18/O	0.068	0.020	0.393
Lead	mg/L	0.00002	EPA 200.8	15-Nov-18/O	< 0.00002	0.00009	0.00018
Magnesium	mg/L	0.02	SM 3120	20-Nov-18/O	10.6	38.8	37.5
Manganese	mg/L	0.001	SM 3120	20-Nov-18/O	0.035	< 0.001	0.349
Mercury	mg/L	0.00002	SM 3112 B	20-Nov-18/O	< 0.00002	< 0.00002	< 0.00002
Molybdenum	mg/L	0.01	SM 3120	20-Nov-18/O	< 0.01	< 0.01	< 0.01
Nickel	mg/L	0.01	SM 3120	20-Nov-18/O	< 0.01	< 0.01	< 0.01
Potassium	mg/L	0.1	SM 3120	20-Nov-18/O	2.5	2.1	4.3
Silicon	mg/L	0.01	SM 3120	20-Nov-18/O	5.37	8.40	7.74
Silver	mg/L	0.0001	EPA 200.8	15-Nov-18/O	< 0.0001	< 0.0001	< 0.0001
Sodium	mg/L	0.2	SM 3120	20-Nov-18/O	5.7	13.3	20.5
Strontium	mg/L	0.001	SM 3120	20-Nov-18/O	1.11	0.370	1.52
Thallium	mg/L	0.00005	EPA 200.8	15-Nov-18/O	< 0.00005	< 0.00005	0.00006
Tin	mg/L	0.05	SM 3120	20-Nov-18/O	< 0.05	< 0.05	< 0.05
Titanium	mg/L	0.005	SM 3120	20-Nov-18/O	< 0.005	< 0.005	< 0.005
Tungsten	mg/L	0.01	SM 3120	20-Nov-18/O	< 0.01	< 0.01	< 0.01
Uranium	mg/L	0.00005	EPA 200.8	15-Nov-18/O	0.00590	0.00479	0.0123
Vanadium	mg/L	0.005	SM 3120	20-Nov-18/O	< 0.005	< 0.005	< 0.005
Zinc	mg/L	0.005	SM 3120	20-Nov-18/O	< 0.005	< 0.005	< 0.005

1 Revised to include antimony



R.L. = Reporting Limit

Test methods are modified from specified reference method unless indicated by an \*

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Michelle Dubien  
 Lab Manager

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**C.O.C.: G78606**

**REPORT No. B18-15188**

**Rev. 2**

**Report To:**

**Malroz Engineering Inc.**  
 308 Wellington Street, 2nd Floor  
 Kingston ON K7K 7A8 Canada  
**Attention:** Albert Paschkowiak

**Caduceon Environmental Laboratories**

285 Dalton Ave  
 Kingston Ontario K7K 6Z1  
 Tel: 613-544-2001  
 Fax: 613-544-2770

DATE RECEIVED: 31-May-18

JOB/PROJECT NO.: Escott

DATE REPORTED: 29-Jan-19

P.O. NUMBER:

SAMPLE MATRIX: Surface Water

WATERWORKS NO.

<b>Client I.D.</b>	18-W005	18-W014	18-W015	
<b>Sample I.D.</b>	B18-15188-1	B18-15188-2	B18-15188-3	
<b>Date Collected</b>	30-May-18	30-May-18	30-May-18	

Parameter	Units	R.L.	Reference Method	Date/Site Analyzed				
Alkalinity(CaCO3) to pH4.5	mg/L	5	SM 2320B	06-Jun-18/O	187	167	105	
pH @25°C	pH Units		SM 4500H	06-Jun-18/O	7.93	7.83	7.69	
Conductivity @25°C	µmho/cm	1	SM 2510B	06-Jun-18/O	393	369	447	
Chloride	mg/L	0.5	SM4110C	04-Jun-18/O	9.9	12.1	77.7	
Nitrite (N)	mg/L	0.05	SM4110C	04-Jun-18/O	< 0.05	< 0.05	< 0.05	
Nitrate (N)	mg/L	0.05	SM4110C	04-Jun-18/O	0.12	< 0.05	< 0.05	
Sulphate	mg/L	1	SM4110C	04-Jun-18/O	4	8	1	
BOD(5 day)	mg/L	2	SM 5210B	01-Jun-18/K	< 2	< 2	2	
Total Suspended Solids	mg/L	3	SM2540D	05-Jun-18/K	38	10	6	
o-Phosphate (P)	mg/L	0.01	PE4500-S	14-Jun-18/K	0.08	0.05	0.04	
Phosphorus-Total	mg/L	0.01	E3199A.1	06-Jun-18/K	0.28	0.14	0.11	
Total Kjeldahl Nitrogen	mg/L	0.1	E3199A.1	06-Jun-18/K	1.2	0.9	0.8	
Ammonia (N)-Total	mg/L	0.01	SM4500-NH3-H	04-Jun-18/K	0.09	0.05	0.03	
Ammonia (N)-unionized	mg/L	0.01	CALC	04-Jun-18/K	< 0.01	< 0.01	< 0.01	
Total Dissolved Solids	mg/L	3	SM 2540D	07-Jun-18/O	203	190	231	
Dissolved Organic Carbon	mg/L	0.2	EPA 415.1	06-Jun-18/O	15.3	10.4	13.2	
Phenolics	mg/L	0.001	MOEE 3179	06-Jun-18/O	< 0.001	< 0.001	< 0.001	
COD	mg/L	5	SM 5220D	06-Jun-18/O	49	35	39	
Hardness (as CaCO3)	mg/L	1	SM 3120	11-Jun-18/O	224	198	135	
Aluminum	mg/L	0.01	SM 3120	20-Jun-18/O	0.02	< 0.01	0.01	
Antimony	mg/L	0.0001	EPA 200.8	04-Jun-18/O	< 0.0001	0.0004	< 0.0001	
Arsenic	mg/L	0.0001	EPA 200.8	04-Jun-18/O	0.0009	0.0006	0.0004	
Barium	mg/L	0.001	SM 3120	11-Jun-18/O	0.066	0.045	0.030	
Beryllium	mg/L	0.0001	EPA 200.8	04-Jun-18/O	< 0.0001	< 0.0001	< 0.0001	
Boron	mg/L	0.005	SM 3120	11-Jun-18/O	0.029	0.020	0.016	
Cadmium	mg/L	0.000015	EPA 200.8	04-Jun-18/O	0.000066	0.000015	< 0.000015	
Calcium	mg/L	0.02	SM 3120	11-Jun-18/O	50.8	40.2	27.5	



R.L. = Reporting Limit

Test methods are modified from specified reference method unless indicated by an \*

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Michelle Dubien  
 Lab Manager

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C.O.C.: G78606

REPORT No. B18-15188

Rev. 2

**Report To:**

**Malroz Engineering Inc.**  
 308 Wellington Street, 2nd Floor  
 Kingston ON K7K 7A8 Canada  
**Attention:** Albert Paschkowiak

**Caduceon Environmental Laboratories**

285 Dalton Ave  
 Kingston Ontario K7K 6Z1  
 Tel: 613-544-2001  
 Fax: 613-544-2770

DATE RECEIVED: 31-May-18

JOB/PROJECT NO.: Escott

DATE REPORTED: 29-Jan-19

P.O. NUMBER:

SAMPLE MATRIX: Surface Water

WATERWORKS NO.

<b>Client I.D.</b>	18-W005	18-W014	18-W015
<b>Sample I.D.</b>	B18-15188-1	B18-15188-2	B18-15188-3
<b>Date Collected</b>	30-May-18	30-May-18	30-May-18

Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Chromium	mg/L	0.001	EPA 200.8	04-Jun-18/O	0.002	< 0.001	< 0.001
Cobalt	mg/L	0.0001	EPA 200.8	04-Jun-18/O	0.0012	0.0015	0.0001
Copper	mg/L	0.0001	EPA 200.8	04-Jun-18/O	0.0074	0.0015	0.0005
Iron	mg/L	0.005	SM 3120	11-Jun-18/O	2.31	0.163	0.728
Lead	mg/L	0.00002	EPA 200.8	04-Jun-18/O	0.00084	< 0.00002	0.00003
Magnesium	mg/L	0.02	SM 3120	11-Jun-18/O	18.5	14.6	8.62
Manganese	mg/L	0.001	SM 3120	11-Jun-18/O	0.543	0.075	0.082
Mercury	mg/L	0.00002	SM 3112 B	13-Jun-18/O	< 0.00002	< 0.00002	< 0.00002
Molybdenum	mg/L	0.0001	EPA 200.8	04-Jun-18/O	0.0015	0.0013	0.0003
Nickel	mg/L	0.0002	EPA 200.8	04-Jun-18/O	0.0039	0.0022	0.0011
Potassium	mg/L	0.1	SM 3120	11-Jun-18/O	1.4	1.5	0.6
Selenium	mg/L	0.001	EPA 200.8	04-Jun-18/O	< 0.001	< 0.001	< 0.001
Silicon	mg/L	0.01	SM 3120	11-Jun-18/O	5.71	3.48	1.41
Silver	mg/L	0.0001	EPA 200.8	04-Jun-18/O	< 0.0001	< 0.0001	< 0.0001
Sodium	mg/L	0.2	SM 3120	11-Jun-18/O	10.1	9.2	41.8
Strontium	mg/L	0.001	SM 3120	11-Jun-18/O	0.262	0.200	0.175
Thallium	mg/L	0.00005	EPA 200.8	04-Jun-18/O	< 0.00005	< 0.00005	< 0.00005
Tin	mg/L	0.05	SM 3120	11-Jun-18/O	< 0.05	< 0.05	< 0.05
Titanium	mg/L	0.005	SM 3120	11-Jun-18/O	0.069	< 0.005	< 0.005
Tungsten	mg/L	0.01	SM 3120	11-Jun-18/O	< 0.01	< 0.01	< 0.01
Uranium	mg/L	0.00005	EPA 200.8	04-Jun-18/O	0.00235	0.00255	0.00017
Vanadium	mg/L	0.005	SM 3120	11-Jun-18/O	< 0.005	< 0.005	< 0.005
Zinc	mg/L	0.005	SM 3120	11-Jun-18/O	0.029	0.011	< 0.005

1. Revised to convert reporting units for metals to mg/L and to include additional metals



Michelle Dubien  
 Lab Manager

R.L. = Reporting Limit

Test methods are modified from specified reference method unless indicated by an \*

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

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C.O.C.: G82058

REPORT No. B18-34911

Rev. 1

**Report To:**

**Malroz Engineering Inc.**  
308 Wellington Street, 2nd Floor  
Kingston ON K7K 7A8 Canada

**Attention:** Camille Malcolm

**Caduceon Environmental Laboratories**

285 Dalton Ave  
Kingston Ontario K7K 6Z1  
Tel: 613-544-2001  
Fax: 613-544-2770

DATE RECEIVED: 12-Nov-18

JOB/PROJECT NO.: 1038-Escott

DATE REPORTED: 28-Jan-19

P.O. NUMBER:

SAMPLE MATRIX: Surface Water

WATERWORKS NO.

Client I.D.	18-W030	18-W017	18-W029	18-W016
Sample I.D.	B18-34911-1	B18-34911-2	B18-34911-3	B18-34911-4
Date Collected	12-Nov-18	12-Nov-18	12-Nov-18	12-Nov-18

Parameter	Units	R.L.	Reference Method	Date/Site Analyzed				
Alkalinity(CaCO3) to pH4.5	mg/L	5	SM 2320B	13-Nov-18/O	121	108	92	226
pH @25°C	pH Units		SM 4500H	13-Nov-18/O	7.69	7.72	7.68	7.92
Conductivity @25°C	µmho/cm	1	SM 2510B	13-Nov-18/O	343	335	458	551
Chloride	mg/L	0.5	SM4110C	13-Nov-18/O	16.3	12.9	78.3	6.9
Nitrite (N)	mg/L	0.05	SM4110C	13-Nov-18/O	< 0.05	< 0.05	< 0.05	< 0.05
Nitrate (N)	mg/L	0.05	SM4110C	13-Nov-18/O	0.79	1.48	< 0.05	7.10
Sulphate	mg/L	1	SM4110C	13-Nov-18/O	28	38	14	34
BOD(5 day)	mg/L	3	SM 5210B	14-Nov-18/K	6	5	5	4
Total Suspended Solids	mg/L	3	SM2540D	13-Nov-18/K	4	6	< 3	14
o-Phosphate (P)	mg/L	0.01	PE4500-S	15-Nov-18/K	0.07	0.08	0.02	0.03
Phosphorus-Total	mg/L	0.01	E3199A.1	14-Nov-18/K	0.10	0.13	0.03	0.05
Total Kjeldahl Nitrogen	mg/L	0.1	E3199A.1	14-Nov-18/K	0.8	1.0	0.6	0.6
Ammonia (N)-Total	mg/L	0.01	SM4500-NH3-H	15-Nov-18/K	0.04	0.10	0.04	0.03
Ammonia (N)-unionized	mg/L	0.01	CALC	15-Nov-18/K	< 0.01	< 0.01	< 0.01	< 0.01
Total Dissolved Solids	mg/L	3	SM 2540D	15-Nov-18/O	176	172	251	286
Dissolved Organic Carbon	mg/L	0.2	EPA 415.1	15-Nov-18/O	13.5	15.8	11.4	7.4
Phenolics	mg/L	0.002	MOEE 3179	15-Nov-18/K	< 0.002	0.003	< 0.002	0.003
COD	mg/L	5	SM 5220D	15-Nov-18/O	31	36	37	11
Hardness (as CaCO3)	mg/L	1	SM 3120	19-Nov-18/O	185	188	130	290
Aluminum	mg/L	0.01	SM 3120	19-Nov-18/O	0.05	0.05	0.03	0.05
Antimony	mg/L	0.0001	EPA 200.8	15-Nov-18/O	0.0003	< 0.0001	< 0.0001	< 0.0001
Arsenic	mg/L	0.0001	EPA 200.8	15-Nov-18/O	0.0003	0.0003	0.0002	0.0002
Barium	mg/L	0.001	SM 3120	19-Nov-18/O	0.082	0.087	0.038	0.085
Beryllium	mg/L	0.002	SM 3120	19-Nov-18/O	< 0.002	< 0.002	< 0.002	< 0.002
Boron	mg/L	0.005	SM 3120	19-Nov-18/O	0.008	0.010	0.007	0.054
Cadmium	mg/L	0.00015	EPA 200.8	15-Nov-18/O	0.000028	0.000061	0.000020	0.000036
Calcium	mg/L	0.02	SM 3120	19-Nov-18/O	46.0	45.6	33.3	65.7



R.L. = Reporting Limit

Test methods are modified from specified reference method unless indicated by an \*

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Michelle Dubien  
Lab Manager

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C.O.C.: G82058

REPORT No. B18-34911

Rev. 1

**Report To:**

**Malroz Engineering Inc.**  
 308 Wellington Street, 2nd Floor  
 Kingston ON K7K 7A8 Canada

**Attention:** Camille Malcolm

**Caduceon Environmental Laboratories**

285 Dalton Ave  
 Kingston Ontario K7K 6Z1  
 Tel: 613-544-2001  
 Fax: 613-544-2770

DATE RECEIVED: 12-Nov-18

JOB/PROJECT NO.: 1038-Escott

DATE REPORTED: 28-Jan-19

P.O. NUMBER:

SAMPLE MATRIX: Surface Water

WATERWORKS NO.

Parameter	Units	R.L.	Client I.D.		18-W030	18-W017	18-W029	18-W016
			Reference Method	Date/Site Analyzed	B18-34911-1	B18-34911-2	B18-34911-3	B18-34911-4
			Date Collected		12-Nov-18	12-Nov-18	12-Nov-18	12-Nov-18
Chromium	mg/L	0.001	EPA 200.8	15-Nov-18/O	0.001	0.002	< 0.001	0.001
Cobalt	mg/L	0.0001	EPA 200.8	15-Nov-18/O	0.0004	0.0004	0.0002	0.0003
Copper	mg/L	0.0001	EPA 200.8	15-Nov-18/O	0.0041	0.0107	0.0056	0.0065
Iron	mg/L	0.005	SM 3120	19-Nov-18/O	0.616	1.00	0.243	0.405
Lead	mg/L	0.00002	EPA 200.8	15-Nov-18/O	0.00029	0.00082	0.00028	0.00034
Magnesium	mg/L	0.02	SM 3120	19-Nov-18/O	17.1	17.9	11.3	30.7
Manganese	mg/L	0.001	SM 3120	19-Nov-18/O	0.014	0.016	0.012	0.010
Mercury	mg/L	0.00002	SM 3112 B	20-Nov-18/O	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Molybdenum	mg/L	0.01	SM 3120	19-Nov-18/O	< 0.01	< 0.01	< 0.01	< 0.01
Nickel	mg/L	0.0002	EPA 200.8	15-Nov-18/O	0.0015	0.0027	0.0013	0.0019
Potassium	mg/L	0.1	SM 3120	19-Nov-18/O	3.8	4.7	2.7	1.2
Selenium	mg/L	0.001	EPA 200.8	15-Nov-18/O	< 0.001	< 0.001	< 0.001	< 0.001
Silicon	mg/L	0.01	SM 3120	19-Nov-18/O	5.81	6.81	6.03	7.29
Silver	mg/L	0.0001	EPA 200.8	15-Nov-18/O	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Sodium	mg/L	0.2	SM 3120	19-Nov-18/O	12.3	10.4	50.6	12.0
Strontium	mg/L	0.001	SM 3120	19-Nov-18/O	0.241	0.245	0.209	0.451
Thallium	mg/L	0.00005	EPA 200.8	15-Nov-18/O	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Tin	mg/L	0.05	SM 3120	19-Nov-18/O	< 0.05	< 0.05	< 0.05	< 0.05
Titanium	mg/L	0.005	SM 3120	19-Nov-18/O	0.035	0.059	< 0.005	0.022
Tungsten	mg/L	0.01	SM 3120	19-Nov-18/O	< 0.01	< 0.01	< 0.01	< 0.01
Uranium	mg/L	0.00005	EPA 200.8	15-Nov-18/O	0.00205	0.00191	0.00065	0.00506
Vanadium	mg/L	0.005	SM 3120	19-Nov-18/O	0.086	0.066	0.086	0.065
Zinc	mg/L	0.005	SM 3120	19-Nov-18/O	0.039	0.034	0.010	0.014
pH	pH Units		Client Supplied Data	13-Nov-18	6.88	8.34	8.64	8.48



Michelle Dubien  
 Lab Manager

R.L. = Reporting Limit

Test methods are modified from specified reference method unless indicated by an \*

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.



C.O.C.: G82058

REPORT No. B18-34911

Rev. 1

**Report To:**

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DATE RECEIVED: 12-Nov-18

JOB/PROJECT NO.: 1038-Escott

DATE REPORTED: 28-Jan-19

P.O. NUMBER:

SAMPLE MATRIX: Surface Water

WATERWORKS NO.

			Client I.D.	18-W030	18-W017	18-W029	18-W016	
			Sample I.D.	B18-34911-1	B18-34911-2	B18-34911-3	B18-34911-4	
			Date Collected	12-Nov-18	12-Nov-18	12-Nov-18	12-Nov-18	
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed				
Temperature	°C		Client Supplied Data	13-Nov-18	6.89	6.75	4.84	11.1

1 Revised to convert reporting units for metals to mg/L



Michelle Dubien  
 Lab Manager

R.L. = Reporting Limit

Test methods are modified from specified reference method unless indicated by an \*

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

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Appendix K  
Historical Analyses















Appendix L  
Historical Trends

