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APPROVAL

Province of Nova Scotia Environment Act, S.N.S. 1994-95, c.1 s.1

APPROVAL HOLDER: HALIFAX REGIONAL MUNICIPALITY, MIRROR NOVA
SCOTIA LIMITED

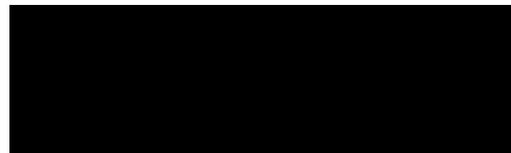
SITE PID: 00624973

APPROVAL NO: 2008-065580-07

EXPIRY DATE: July 2, 2022

Pursuant to Part V of the Environment Act, S.N.S. 1994-95, c.1 s.1 as amended from time to time, approval is granted to the Approval Holder subject to the Terms and Conditions attached to and forming part of this Approval, for the following activity:

Municipal - Solid Waste - Municipal Solid Waste Landfill
Amendment to Enable Removal of Requirement for FEP/WSF, but Require
Maintenance of this Equipment for Potential Re-activation



Administrator: Tanya M Farrell

Effective Date: March 22, 2022

The Minister's powers and responsibilities under the Act with respect to this Approval have been delegated to the Administrator named above. Therefore, any information or notifications required to be provided to the Minister under this Approval can be provided to the Administrator unless otherwise advised in writing.

TERMS AND CONDITIONS OF APPROVAL

Nova Scotia Department of Environment and Climate Change

Approval Holder: HALIFAX REGIONAL MUNICIPALITY, MIRROR NOVA SCOTIA LIMITED

Project: Otter Lake Solid Waste Processing Facility

Site:

PID	Civic #	Street Name	Street Type	Community	County
00624973					

Approval No: 2008-065580-07

File No: 94400-30-BED-2008-065580

Grid Reference: Easting - 441,500, Northing - 4,940,500

Reference Documents

- Application submitted August 26, 2021 and attachments.
- Dillon Consulting Ltd. Public Consulting Summary, submitted 2022-Jan-24.

1. Definitions

- Act means Environment Act, Chapter 1 of the Acts of 1994-95, and includes, unless the context otherwise requires, all regulations made pursuant to the Act.
- Active transfer area means the areas used for stockpiles, storage, separation, processing, and loading.
- Acutely lethal in relation to effluent means that the effluent at 100% concentration kills, during a 96-hour period, more than 50% of the rainbow trout subjected to it, utilizing the 96-Hour Acute Toxicity of Effluent to Rainbow Trout Reference Method EPS-1/RM/13.
- Administrator means a person appointed by the Minister for the purpose of this Act, and includes an acting administrator.
- Approval means an Approval issued pursuant to this Act with respect to an activity.

- f. Associated Works means any building, machinery, equipment, device, tank, system, stockpile, and related infrastructure, including all piping, valves, instrumentation, controls, etc., required for the operation of the Facility.
- g. Compostable wastes means food wastes, perishables, corrugated cardboard, newsprint, leaf/yard wastes, and all other organic wastes listed in Schedule “B”— Designated Materials Banned from Destruction or Disposal in Landfills and Incinerators in the Solid Waste-Resource Management Regulations, as amended from time to time.
- h. Department means the Nova Scotia Department of Environment and Climate Change, and the contact for the Department for this approval is:
Nova Scotia Department of Environment and Climate Change
Central Region, Bedford Office
30 Damascus Road, Suite 115
Bedford, Nova Scotia B4A 0C1

Phone: (902) 424-7773
Fax: (902) 424-0597
- i. Disturbed Area means any area on the Site that has been stripped of vegetation and is susceptible to erosion.
- j. Extension means an increase in size, volume or other physical dimensions of an activity such that the increase may cause an adverse effect if not properly mitigated.
- k. Facility means the Otter Lake Solid Waste Management Facility at 600 Otter Lake Drive, Otter Lake, Halifax Regional Municipality, PID # 00624973, including the Front End Processing Facility (FEP), Waste Stabilization Facility (WSF), Waste Transfer Station, Residue Disposal Facility (RDF), and associated works.
- l. FEP means Front End Processing Facility, which is included within the "Facility".
- m. Grab sample means an individual sample collected in less than 30 minutes and which is representative of the substance sampled.
- n. Industrial waste means a waste specified under an approval issued by NSE to an industrial activity.
- o. Inspector means a person appointed pursuant to Section 21 of the Act.
- p. Minister means the Minister of Environment, and may include any person appointed as a designate of the Minister.

- q. Modification means a change to an activity that may cause an adverse effect if not properly mitigated and includes, but is not limited to, the expansion of the same process, addition of product lines and replacement of equipment with different technology other than that presently in use.
- r. NSE means Nova Scotia Environment.
- s. Quarter means any of the four periods of three months that begin on the first day of January, April, July, and October.
- t. RDF means Residue Disposal Facility, which is included within the Facility.
- u. Site means the lands where an activity or proposed activity will take place.
- v. Special Waste means the types of waste identified in Section 2.2.2 of the Operations Manual for Otter Lake Solid Waste Management Facility.
- w. Standard means a standard, policy, code, guideline, protocol or other rule in relation to a designated activity that, by reason of its establishment or adoption by regulation or as a condition of an approval or certificate of qualification, becomes a mandatory requirement for participation in that designated activity.
- x. Water Resource means all fresh and marine waters comprising all surface water, groundwater, and coastal water.
- y. Watercourse means the bed and shore of every river, stream, lake, creek, pond, spring, lagoon or other natural body of water, and the water therein, within the jurisdiction of the Province, whether it contains water or not, and all groundwater.
- z. Wetland means land commonly referred to as a marsh, swamp, fen or bog that either periodically or permanently has a water table at, near or above the land's surface or that is saturated with water, and sustains aquatic processes as indicated by the presence of poorly drained soils, hydrophytic vegetation and biological activities adapted to wet conditions.
- aa. WSF means Waste Stabilization Facility, which is included within the Facility.

2. Scope

- a. This Approval (the "Approval") relates to the Approval Holder(s) and their application and supporting documentation, as listed in the reference documents above, to construct, operate and/or reclaim the Facility, situated at or near Otter Lake Waste Processing Facility (the "Site"). Additional Reference Documents include, but are not limited to:

- i. Site Diagrams prepared by Dillon Consulting Ltd. Project 11-4873 dated February 2017: (a) Figure 2-1 "Site Location and Surface Water Sampling"; and (b) Figure 2-2 "Monitoring Locations and Site Details".
- ii. Certificate of Insurance with "Certain Underwriters at Lloyds".
- iii. Letter from Dillon Consulting Limited to Mirror Nova Scotia Ltd. dated Feb. 2, 2017, stating that Construction of Cell 7A was completed in general conformance with the requirements of the drawings and specifications.
- iv. Operations and Maintenance Manual for Front End Processing, Waste Stabilization Facility, Residual Disposal Facility and Transfer Station & Operation of Cell 7A, prepared by Mirror NS, dated February 2017.
- v. Environmental Management Plan and Contingency Plan for Otter Lake Solid Waste Management Facility, prepared by Mirror NS, issued July 1998, reviewed February 2017.
- vi. Site License Agreement between HRM and Mirror Nova Scotia.
- vii. Application to Close Cell 6, received May 26, 2017, including but not limited to Proof of Insurance Certificate, detailed drawings, and technical specifications.
- viii. HRM Front End Processing & Waste Stabilization Facility - Construction Application Support Document - dated August 1997.
- ix. Operations Plan for the FEP and WSF dated Apr. 17, 2000 as submitted by HRM and as may be revised from time to time.
- x. Operations Plan for the RDF dated August 2012 as submitted by HRM and as may be revised from time to time.
- xi. HRM - Cell 2 - Application dated June 28, 1999.
- xii. HRM Front End Processing Expansion - Application dated January 24, 2000.
- xiii. HRM - Application for approval of Cell 3 construction, dated May 11, 2001.
- xiv. HRM - Application for approval of Cell 4 construction, dated February 3, 2005.
- xv. HRM - Application for approval of Cell 4 operation, dated May 11, 2006.
- xvi. HRM - Application for approval of Cell 5 operation, dated 2008/10/12.

- xvii. Letter from Dillon Consulting to Mirror Nova Scotia, dated December 17, 2008, stating that Cell 5 is completed and ready to receive waste.
- xviii. HRM - Application for amendment of approval to include Cell 6, dated August 24, 2012.
- xix. Letter from Dillon Consulting to Mirror Nova Scotia, dated September 21, 2012, stating that Cell 6 is completed and ready to receive waste.
- b. This Approval, 2008-065580-07, supersedes the previous approval (number 2008-065580-06), which is now null and void.
- c. It is the Approval Holder(s)' responsibility to ensure applicable legislation, approvals and codes of practice are met for all other aspects of the operation of the Facility.
- d. This Approval is restricted to the installation and operation of the Facility only. No other alteration or infill of a watercourse or water resource is permitted by this Approval. Works associated with the alteration or infill of a watercourse or water resource will require separate Approval from the Department.
- e. The Site and/or Facility shall not exceed the area as outlined in the application and supporting documentation.
- f. This Approval does not apply to the electrical, roadways, and structural components of the project.
- g. Halifax Regional Municipality and Mirror Nova Scotia Limited are jointly and severally subject to, bound by, and required to comply with, the Terms and Conditions of this Approval.

3. General

- a. The Approval Holder(s) shall construct, operate and reclaim the Facility in accordance with the following provisions:
 - i. Environment Act S.N.S. 1994-1995, c.1, s.1 as amended from time to time
 - ii. Regulations pursuant to the above Act, as amended from time to time
 - iii. Any standard adopted by the Department, as amended from time to time, which includes but is not limited to the following:
 - (a) Municipal Solid Waste Guidelines;
 - (b) Nova Scotia Environment Guidelines for Siting and Operation of Waste Transfer Stations;

- (c) Standard EPS 1/RM/13: Environment Canada Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout, Second Edition, 2000;
 - (d) Nova Scotia Environment and Labour Guidelines for the disposal of Contaminated Soils in Landfills;
 - (e) Nova Scotia Environment and Labour Construction and Demolition Debris Disposal Site Guidelines;
 - (f) Nova Scotia Standards for the Construction and Installation for Petroleum Storage Tank Systems; and
 - (g) Nova Scotia Department Erosion and Sedimentation Control Handbook for Construction Sites.
- b. No authority is granted by this Approval to enable the Approval Holder(s) to construct or operate the Facility on lands which are not in the control or ownership of the Approval Holder(s). It is the responsibility of the Approval Holder(s) to ensure that such a contravention does not occur.
- c. If there is a discrepancy between the reference documents and the terms and conditions of this Approval, the terms and conditions of this Approval shall apply.
- d. Any request for renewal or extension of this Approval is to be made in writing, to the Department, at least ninety (90) days prior to the Approval expiry.
- e. This Approval is not transferable without the consent of the Minister.
- f. The Minister may modify, amend or add conditions to this Approval at any time pursuant to Section 58 of the Act.
 - i. If the Minister determines that there has been non-compliance with any or all of the terms and conditions contained in this Approval, the Minister may cancel or suspend the Approval pursuant to subsections 58A(1) and 58A(2) of the Act, until such time as the Minister is satisfied that all terms and conditions have been met
 - ii. If the Minister cancels or suspends this Approval, the Approval Holder(s) remains subject to the penalty provisions of the Act and regulations
- g. The Approval Holder(s) shall notify the Department prior to any proposed extensions or modifications to the Facility, including, but not limited to, the active area, operating area, processing changes or waste disposal practices which are not granted under this Approval. An amendment to this Approval may be required before implementing any change.

- h. Extensions or modifications to the Facility may be subject to the Environmental Assessment Regulations. Written approval from the Minister may be required before implementing a change.
- i. Pursuant to Section 60 of the Act, the Approval Holder(s) shall submit to the Minister any new and relevant information respecting any adverse effect that actually results, or may potentially result, from any activity to which the Approval relates and that comes to the attention of the Approval Holder(s) after the issuance of the Approval.
- j. The Approval Holder(s) shall immediately notify the Department of any incidents of non-compliance with this Approval.
- k. The Approval Holder(s) shall bear all expenses incurred in carrying out the environmental monitoring required under the terms and conditions of this Approval.
- l. Unless specified otherwise in this Approval, all samples required to be collected by this Approval shall be collected, preserved and analysed, by qualified personnel, in accordance with recognized industry standards and procedures.
- m. Unless written authorization is received otherwise from the Minister, all samples required by this Approval shall be analysed by a laboratory that meets the requirements of the Department's Policy on Acceptable Certification of Laboratories as amended from time to time.
- n. The Approval Holder(s) shall ensure that this Approval, or a copy, is kept on Site at all times and that personnel directly involved in the Facility operation are made fully aware of the terms and conditions which pertain to this Approval.
- o. Upon any changes to the Registry of Joint Stock Companies information, the Approval Holder(s) shall provide a copy to the Department.

4. Particulate Emissions (Dust)

- a. Particulate emissions shall not contribute to an ambient concentration of total suspended particulate matter that exceed the following limits (in micrograms per cubic metre of air) at or beyond the Site property boundaries:
 - i. Daily Average (24 hr.) 120 μm^3
 - ii. Annual Geometric Mean 70 μm^3
- b. The use of oil as a dust suppressant is prohibited.
- c. Monitoring of ambient total suspended particulate matter shall be conducted at the request of the Department. The location of the monitoring station(s) for

suspended particulate matter will be established by a qualified person retained by the Approval Holder(s) and submitted to the Department for approval; this may include point(s) beyond the property boundary of the Site.

- d. When requested, ambient total suspended particulate matter shall be measured in accordance with EPA standard; EPA/625/R-96/010a; Sampling of Ambient Air for Total Suspended Particulate Matter (SPM) and PM10 shall be done using a High Volume (HV) Sampler.

5. Sound Levels

- a. Sound levels measured at the Site property boundaries shall not exceed the following equivalent sound levels (Leq):
 - i. 65 dBA 0700-1900 hours
 - ii. 60 dBA 1900-2300 hours
 - iii. 55 dBA 2300-0700 hours
- b. Monitoring of sound levels shall be conducted at the request of the Department. The location of the monitoring station(s) for sound will be established by a qualified person retained by the Approval Holder(s) and submitted to the Department for approval, this may include point(s) beyond the property boundary of the Site.

6. Air Emissions

- a. The Approval Holder(s) shall ensure that air emissions from the Facility do not contribute to a non-compliance with the maximum permissible ground level concentrations specified in Schedule "A" of the Air Quality Regulations, presented in Appendix "A". In the event of an exceedance, the Approval Holder(s) shall notify the Administrator immediately.
- b. Where the Approval Holder(s) are contributing to non-compliance with the Schedule "A" concentrations, the Approval Holder(s) shall submit to the department within thirty (30) days a proposed Corrective Action Plan.
- c. The Approval Holder(s) shall implement the Corrective Action Plan required as per the above Condition, which may include ambient air monitoring, air modelling or risk assessment studies, upon written approval of said Plan by NSE.
- d. Numerical or quantitative limits on odour shall be established at the discretion of the Department if odour impacts beyond the property boundaries are deemed to be excessive.

- e. The Approval Holder(s) shall have standard procedures to address odour complaints associated with the Facility that include:
 - i. Immediately investigate the cause of the complaint and undertake immediate and appropriate action, if necessary, to correct the problem;
 - ii. Record(s) of all odour complaints that documents the date, time, name, address and telephone number of the individual lodging the complaint, as well as any cause of the odour and the action taken to correct the problem;
 - iii. The wind direction, wind speed, temperature, humidity and other atmospheric conditions at the time of the occurrence which resulted in a complaint; and
 - iv. Records referenced in this section shall be made available to the Department upon request.
- f. The Approval Holder(s) shall be required to submit a plan to reduce or cease odour generation upon the request of the Department.

Additional Requirements when FEP/WSF in Use

- g. When the WSF portion of the Facility is in use, the receiving, the active stabilization and the finished product areas shall be vented to a biofilter and maintained under negative pressure as specified in the approved design while feedstocks are in the WSF and during active stabilization.
- h. The Approval Holder(s) shall monitor and record the following biofilter performance parameters on a weekly basis:
 - i. Pressure on all ventilation/aeration lines discharging to the biofilter, via pressure gauge or amperage draw on fans, as appropriate;
 - ii. Temperature of each section of biofilter medium servicing each ventilation/aeration line;
 - iii. Moisture content of each section of biofilter medium servicing each ventilation/ aeration line;
 - iv. pH of each section of biofilter medium servicing each ventilation/ aeration line; and,
 - v. Any other tests that the Department may deem necessary.
- i. Within thirty (30) days of receipt of monitoring results as specified in Condition h) that fail to meet industry standards, the Approval Holder(s) shall submit to the Department a Corrective Action Plan.

- j. The Approval Holder(s) shall implement the Corrective Action Plan as required in Condition i), upon written approval of said Plan by the Department.
- k. Records of biofilter performance shall be made available to the Department upon request.

7. Surface Water

- a. The Site shall be developed and maintained to prevent surface water contaminants from being discharged into a watercourse, wetland, water resource, or beyond the property boundary, in excess of the following criteria:
 - i. Total Suspended Solids, Clear Flows (Normal Background Conditions):
 - (a) Maximum increase of 25 mg/l from background levels for any short term exposure (24 hour or less);
 - (b) Maximum average increase of 5 mg/l from background levels for longer term exposure (inputs lasting between 24 hours and 30 days).
 - ii. Total Suspended Solids, High Flow (Spring Freshets and Storm Events):
 - (a) Maximum increase of 25 mg/l from background levels at any time when background levels are between 25 mg/l and 250 mg/l.
 - (b) Maximum increase of 10% over background levels when background is >250 mg/l.
 - iii. pH (Outfall):
 - (a) Maximum 5 to 9 in grab sample;
 - (b) Maximum 6 to 9 as a Monthly Arithmetic Mean.
 - iv. Petroleum Hydrocarbon:
 - (a) Nova Scotia Environment Tier 1 Environmental Quality Standards for Surface Water - Petroleum Hydrocarbons (PHC) Parameters.
 - v. Carbonaceous Biological Oxygen Demand - 5 day (CBOD5)
 - (a) Maximum 10 mg/L in grab sample;
 - (b) Maximum 5 mg/L as a Quarterly Arithmetic Mean.
 - vi. Toxicity
 - (a) Non-acutely lethal.

- vii. The parameter groups indicated in Appendix "B".
- b. Unless approved otherwise, the Approval Holder(s) shall monitor surface water at the locations, frequency and for the parameter groups indicated in Appendix "B", with reference to the Site Diagrams prepared by Dillon Consulting Ltd. Project 11-4873 dated February 2017 included as reference documents to this application, specifically:
 - i. Figure 2-1 "Site Location and Surface Water Sampling" and
 - ii. Figure 2-2 "Monitoring Locations and Site Details".
- c. The Approval Holder(s) shall not move, relocate or otherwise alter the location of the sampling stations without written permission from the Administrator.
- d. Following a review of any of the analytical results, or upon receipt of a complaint, NSE may alter the monitoring frequencies, monitoring locations, discharge limits and parameters for analyses or require other remedial action.
- e. Non-compliance of the effluent discharge limits shall be immediately reported to the Department by filing a notice of non-compliance in a form acceptable to the Department, and the Approval Holder(s) shall immediately take all measures to ensure that there is no release of substance off-site.
- f. No authority is granted by this Approval to enable the Approval Holder(s) to discharge surface water onto adjoining lands without the authorization of the affected landowner(s). It is the responsibility of the Approval Holder(s) to ensure authorizations are current and valid.
- g. The Approval Holder(s) shall immediately contact the Department should sulphide bearing material be encountered on the Site. Within seventy-two (72) hours, the Approval Holder(s) shall provide to the Department planned remedial measures in conformance with the Sulphide Bearing Material Disposal Regulations.
- h. All surface water runoff that may be impacted by petroleum hydrocarbons from the Site shall be collected and directed to an oil/water separator for treatment prior to discharge.
- i. Chemical flocculents are to be approved by the NSE prior to their use. Chemical flocculents approved to date include:
 - i. Klairaid CDP1335C;
 - ii. Sternpac;
 - iii. Millennium 235; and

- iv. MWML 430.
- j. Environmental impacts on watercourses, water resources or groundwater quality or quantity which are attributed to the operation of the Facility or activities occurring on the Site shall be remediated to the satisfaction of the Department at the Approval Holder(s)' expense.
- k. Erosion and sedimentation control devices are to be installed and maintained as required such that watercourses or water resources on the Site, adjacent to the Site, and downstream of the Site are protected from the release of silt or sediment. It is recommended to follow control measures as outlined in the "Erosion and Sedimentation Control Handbook for Construction Sites". The Act prohibits release of a material that may cause an adverse effect.
- l. Grubbings and excavated material from the daily cover borrow area shall be stored or disposed of in a manner that will not result in sedimentation of adjacent or downstream watercourses or water resources.
- m. All disturbed areas and/or areas exposed during operation of the Facility shall be stabilized immediately.
- n. All surface waters from the borrow area, and any water containing sediment, shall be directed to the sedimentation ponds.
- o. All erosion and sedimentation control measures shall be inspected daily and maintained as necessary.
- p. Until the intermediate cover is established, the Approval Holder(s) shall inspect the daily cover periodically to ensure that the thickness, slopes and surfaces are maintained to minimize erosion.
- q. Areas of the RDF that will not be used in the next six months shall be covered with an intermediate soil cover and be stabilized to prevent erosion.
- r. The soil borrow area of the Site shall be progressively reclaimed and rehabilitated by grading, contouring, and revegetating disturbed land.

8. Environmental Management Plan

- a. The Approval Holder(s) shall develop an Environmental Management Plan that shall include, but not be limited to; process and site description, environmental controls, groundwater and surface water monitoring requirements, acceptable standard operating procedures for the handling of waste dangerous goods, including valving and venting, and a contingency plan:

- i. The contingency plan shall meet the minimum requirements of the Department's "Contingency Planning Guidelines", as amended from time to time, and shall include:
 - (a) General procedures for routine operations (equipment break-down, upset conditions, maintenance, etc.) or major emergencies within the Facility;
 - (b) A plan for dealing with wastes that are not approved for disposal at the Facility or which pose an environmental or health risk; and
 - (c) A plan for dealing with emergency issues including but not limited to fires, explosions, spills and releases.
- ii. The Approval Holder(s) shall ensure that the contingency plan for the Facility is reviewed and updated on a yearly basis. The Approval Holder(s) shall document what modifications were made to the plan and how the plan was communicated to their staff.
- iii. A copy of the contingency plan is to be maintained on Site at all times and is to be available for review immediately upon request by the Department.
- iv. All employees shall be apprised of the contingency plan and shall be trained in the implementation of the contingency plan.
- b. The Facility shall be operated in accordance with this Approval and the Environmental Management Plan.
- c. The Approval Holder(s) shall maintain an up to date copy of the Environmental Management Plan described herein. The Environmental Management Plan shall be made available to the Department upon request.
- d. The Department reserves the right to require modifications to the Environmental Management Plan at any time.
- e. The Approval Holder(s) shall review the Environmental Management Plan annually, when process changes are made, and when there are changes to legislation which may warrant plan revisions.
- f. Dates of reviews, modifications and reasons for any modifications shall be recorded within the Environmental Management Plan, and reported in the Annual Report.

9. Groundwater

- a. Upon direction from the Department, the Approval Holder(s) shall replace or remediate at their expense any water supply which has been lost, damaged or whose quality has been affected as a result of the operation of the Facility.
- b. The Approval Holder(s) shall notify the Department prior to excavating below the water table. An amendment to this approval shall be required before excavating below the water table.
- c. Unless otherwise approved by the Administrator in writing, the Approval Holder(s) shall monitor and sample groundwater at the locations, frequency and for the parameter groups indicated in Appendix "D", with reference to the Site Diagrams prepared by Dillon Consulting Ltd. Project 11-4873 dated February 2017 included as reference documents to this application, specifically:
 - i. Figure 2-1 "Site Location and Surface Water Sampling" and
 - ii. Figure 2-2 "Monitoring Locations and Site Details".
- d. The Approval Holder(s) shall install a new groundwater monitoring well pair approximately 10 m to the southeast of MW05-29C. One of the new wells shall be screened at the water table and one shall be screened in a shallow fractured zone in bedrock (granite). These wells shall be labeled MW17-29A and MW17-29B, respectively. These wells shall be installed and operational by September 1, 2017. The well-log record shall be submitted to the Department by September 14, 2017.
- e. Groundwater sampling shall be conducted by a qualified person using accepted environmental consulting industry standards.
- f. Groundwater monitoring results shall be compared to appropriate criteria for both potential impacts to human health and potential impacts to ecological receptors. Any exceedance of the comparator(s) shall be further evaluated in the annual report, including trend analysis, to determine if there is evidence of impacts to groundwater as a result of Facility operations which could cause an adverse effect. Any reference to natural background as a reason for exceedances of comparators shall be evaluated with reference to site-specific background and/or baseline values and using trend analysis. General reference to common Nova Scotia background conditions is not sufficient to justify an exceedance of a comparator or standard.
- g. The Approval Holder(s) shall immediately report to the Department any significant changes in groundwater quality/quantity. Water level drops greater than 3 metres from baseline conditions shall be considered significant.

- h. The Approval Holder(s) shall maintain all monitoring wells located on the Site in good working order, such that they can be used to obtain samples as required by the terms and conditions of this Approval.
- i. In the event that any monitoring well identified on Dillon Consulting Ltd. Figure 2-1 "Site Location and Surface Water Sampling" and/or Figure 2-2 "Monitoring Locations and Site Details" should become destroyed, or damaged such that sampling from this well is no longer possible, the Approval Holder(s) shall install a replacement well(s), such that the number and general location of monitoring wells at the locations specified does not decrease. The replacement well(s) shall be installed under the supervision of a registered qualified person. The numbering of the replacement well(s) shall remain the same as the well(s) being replaced, except for the 'year' designation (e.g., a replacement for MW05-01A drilled in 2017 would be labelled MW17-01A). Any wells replaced during an operating year will be reported in that year's Annual Report.
- j. Should a monitoring well become damaged to the point of destruction, the Approval Holder(s) shall have the well decommissioned in a manner that prevents the ingress of surface water into the subsurface and the vertical migration of any contamination within the well, and is acceptable to the Department. The Approval Holder(s) shall complete any reinstatement or repair to a damaged/destroyed monitoring well within 90 days of identifying that damage has occurred.
- k. The Approval Holder(s) shall be required to conduct additional water monitoring or take remedial actions pursuant to the Contaminated Sites Regulations and as directed by the Department.
- l. The Department reserves the right to modify the monitoring station locations, parameters and frequency, and to require remedial measures depending on the information obtained.
- m. Without requiring an amendment to this Approval, within thirty (30) days of receipt of written notice by the Department, the Approval Holder(s) shall comply with any direction provided to modify the groundwater monitoring program.

10. Spills and Releases

- a. Spills or releases shall be reported in accordance with the Act and the Environmental Emergency Regulations.
- b. Spills or releases shall be cleaned up in accordance with the Act and the Contaminated Sites Regulations.

11. Operation

- a. The Approval Holder(s) shall accept, sort, process, and dispose of at the Facility only municipal solid waste as defined under the Solid Waste-Resource Management Regulations. No other material/waste is to be accepted at the Facility unless approved by the Administrator.
- b. Special waste shall be reported to the Department within twenty-four (24) hours of being identified at the facility. The Approval Holder(s) shall obtain written approval from the Department prior to disposal of any special waste.
- c. The Approval Holder(s) shall ensure access to and exit from the Facility is controlled during hours of operation and that access is restricted at all times when the Site is not supervised.
- d. The Approval Holder(s) shall maintain legible signage at the entrance to the Facility indicating the Facility name, the days and hours of operation, the list of acceptable/unacceptable waste, emergency contact persons and telephone numbers.
- e. No liquid waste shall be accepted at the Facility unless otherwise approved in writing by the Department.
- f. The Approval Holder(s) shall ensure the receipt of material at the Facility is supervised at all times by Facility employees.
- g. The Approval Holder(s) shall inspect all loads to ensure the material does not contain material banned by the Solid Waste-Resource Management Regulations. Banned material shall be removed from the waste stream and processed/disposed of at an appropriate facility.
- h. The Approval Holder(s) shall control vectors, such as insects, rodents and birds, at the Facility. If vector control measures employed by the Approval Holder(s) are deemed to be inadequate by the Department, additional control measures or changes to the operation of the Facility may be required for implementation.
 - i. The Approval Holder(s) shall inspect the Facility as part of the daily operating procedure, maintain good housekeeping practices and take appropriate action to eliminate vector problems.
 - ii. The Approval Holder(s) shall ensure that the use and handling of pesticides is in accordance with the Pesticide Regulations made pursuant to the Environment Act.
- i. The Approval Holder(s) shall ensure that litter at the Facility is controlled.
- j. The burning of material on the Site is prohibited.

- k. Stockpiles of recyclable materials shall be minimized on Site; in no case shall materials be stored on Site for a period in excess of 30 days without prior approval of the Administrator, in writing.
- l. The only feedstocks that are permitted to be stored on the Site and outside the Facility buildings are bulking agents used in the stabilization process such as untreated wood, wood chips, bark, sawdust, straw, hay mulch, etc.
- m. All bulking agents such as chipped wood, bark and sawdust, etc. that are stored outside the Facility buildings shall remain covered from the weather elements by tarpaulins or equivalent while in storage.
- n. The material placed in the RDF shall be covered on a daily basis.
- o. The Approval Holder(s) shall use natural soil, rock, processed construction and demolition debris mix, or plastic tarps/sheeting as a regular daily cover material for the RDF.
- p. The Department may limit the proportion of, or ban completely, any component of the construction and demolition debris used for daily cover.
- q. Subject to the previous Condition, processed construction and demolition debris mix used for daily cover shall be subject to the following:
 - i. Inert material only, such as wood, gypsum board, furniture, concrete, brick, mortar, etc., shall be utilized in the manufacture of the processed construction and demolition debris mix.
 - ii. The processed construction and demolition debris mix shall be tested to confirm compliance with the leachate requirements in attachment C of the "Nova Scotia Environment Guidelines for Disposal of Contaminated Solids in Landfills", as amended from time to time, prior to utilization in the RDF.
 - iii. The testing specified in ii) above must be conducted on each 500 tonnes of material supplied to the Facility.
 - iv. Records of such testing as well as the quantity of material received and utilized as daily cover must be submitted to the Department with the annual report.
 - v. The processed construction and demolition debris mix must be stored so that any runoff from the storage area is directed to the sedimentation ponds located on Site.
- r. The use of any other material as daily cover will require prior written approval of the Department.

- s. The Facility shall be operated by trained employees who through their education and experience have the capability to safely handle the equipment and dangerous goods and waste dangerous goods associated with the Facility.
- t. The Facility shall have sufficient trained employees on duty at all times to ensure the safe operation of the Facility and its processes.
- u. The Approval Holder(s) shall ensure that all petroleum storage systems and related infrastructures are constructed, operated and maintained in accordance with the Petroleum Management Regulations and the Nova Scotia Standards for the Construction and Installation for Petroleum Storage Tank Systems (1997 edition or most recent version).
- v. The Approval Holder(s) shall ensure that all petroleum storage tanks are registered with the Department as per the Petroleum Management Regulations.
- w. The Approval Holder(s) shall institute an inspection program for tanks, pipelines and systems, in accordance with industry standards that are acceptable to the Department. This inspection program shall verify that the Facility is in compliance with this Approval.
- x. Temporary storage of asbestos on the Site shall be in a manner that is approved by the Department.
- y. Asbestos waste handling/disposal/processing/storage is not included in this Approval, except as required for its removal from the waste stream from the RDF tipping face or the Waste Transfer Station.
 - i. The disposal of any asbestos waste shall be at an asbestos disposal facility that has been approved by the Department.
- z. Sewage sludge handling/disposal/processing/storage is not included in this Approval.
- aa. The handling, treatment and disposal of ozone depleting substances will adhere to the Ozone Layer Protection Regulations.
- ab. The Facility shall have adequate security to prevent illegal dumping and vandalism.

Additional Requirements when FEP/WSF in Use

- ac. The Approval Holder(s) shall not store material in the Front End Processor building for more than 48 hours.
- ad. Materials encountered during the FEP sorting process or the Waste Transfer sorting process that are banned under the Solid Waste - Resource Management

Regulations shall be removed from the waste stream and directed to an appropriate facility.

- i. Notwithstanding the above, the following material may go to the Waste Stabilization Facility (WSF) subject to the conditions specified:
 - (a) Dead Animals under 25 kilograms in weight encountered in the Front End Processing Facility.
- ae. Dangerous goods and waste dangerous goods including household hazardous wastes encountered during the FEP sorting process or encountered during the inspection, sorting or transfer process of the Waste Transfer Station area shall be removed from the waste stream, and either returned to the generator or directed to an appropriate facility for disposal as approved by the Department.
- af. No industrial waste as defined in the Nova Scotia Environment Guidelines for the Siting and Operation of Waste Transfer Stations, as amended from time to time shall be accepted at the FEP portion of the Facility unless otherwise approved in writing by the Department. All industrial waste deemed acceptable to accept at the Waste Transfer Portion of the Facility must be processed through the Waste Transfer Portion of the Facility only.
- ag. All putrescible organic feedstock must be incorporated into the WSF within 48 hours of being delivered to the WSF portion of the Facility.
- ah. The Approval Holder(s) shall operate the WSF portion of the Facility in a manner as outlined in the Operations and Maintenance Manual, which stabilizes putrescible organic materials and destroys pathogens.
- ai. The stabilized product from the WSF shall be disposed of in the RDF. The stabilized material shall not be used for any other purpose without prior written approval from the Administrator.
- aj. Testing of the quality of the stabilized product from the WSF portion of the Facility shall be as required by the Department.
- ak. Asbestos waste handling/disposal/processing/storage is not included in this Approval, except as required for its removal from the waste stream in the FEP or the Waste Transfer Station.
 - i. The disposal of any asbestos waste shall be at an asbestos disposal facility that has been approved by the Department.
- al. Used oil handling/disposal/processing/storage is not included in this Approval, except as required for its removal from the waste stream in the FEP or the

Waste Transfer Station and its handling/temporary storage in the household hazardous waste processing area.

12. Performance Targets

- a. The Performance Targets for this Facility include:
 - i. Compostable waste shall not exceed ten percent (10%) of total amount of municipal solid waste landfilled, by mass;
 - ii. White Goods and bulky wastes that can be recycled and that can be safely removed from the solid waste delivery vehicle or the RDF tipping face shall be removed and stored in accordance with the approved Operations and Maintenance Manual;
 - iii. Dangerous/Waste Dangerous Goods/Household Hazardous Wastes that are visible and can be safely removed from the solid waste delivery vehicle or the RDF tipping face shall be removed and stored in accordance with the approved Operations and Maintenance Manual.
- b. As per Condition 3.a.iii), the Approval Holder(s) shall operate the facility in accordance with any new Standard adopted by the Department regarding compliance with landfill disposal of banned materials.

13. Site Specific Conditions

- a. Prior to the discontinuation of use of the FEP and WSF, the Approval Holder(s) shall submit to the Department a Compliance Plan detailing how the facility will achieve its Performance Targets, complete with milestone dates, as stated in Section 12, on or before July 02, 2022, or as amended in writing by the Administrator.
 - i. At the direction of the Department, the Approval Holder(s) shall revise the Compliance Plan until accepted by the Department.
 - ii. The FEP and WSF shall continue to be required components of the operation of this Facility until written notification is received by the Approval Holder(s) from the Department confirming acceptance of the Compliance Plan.
- b. Prior to the acceptance of the Compliance Plan by the Department, with the exception of Industrial/Commercial/Institutional (ICI) waste that is taken to the Waste Transfer Station area of the facility, all municipal solid waste shall be processed through the FEP, with all organic material being sent to the WSF prior to delivery to the RDF, unless written authorization for alternate procedures are obtained from the Administrator.

- i. Notwithstanding the above, the following material may go directly to the Residual Disposal Facility (RDF) subject to the conditions specified:
 - (a) Inert Material
 - (1) Inert material such as wood, gypsum board, furniture, construction debris, etc., that has been separated from other wastes in the public drop off area, or loads with only inert material as confirmed by inspection prior to transfer to the Residual Disposal Facility.
 - (2) Any inert material that may produce a leachate must be stored until it is tested to confirm compliance with the “Nova Scotia Department of the Environment Guidelines for Disposal of Contaminated Solids in Landfills”. Records of such testing must be submitted to the Department with the annual report.
 - (b) Sharps Encountered/Distributed in Mixed Waste Loads in FEP Facility or the Waste Transfer Station
 - (1) All sharps shall be separated, to the extent possible, from other wastes in the FEP Facility receiving area or the Waste Transfer Station, and only that material necessary for the separation of the sharps is to go directly to the Residual Disposal Facility.
 - (c) Contaminated Soils/Solids
 - (1) All contaminated soils/solids shall be tested to confirm compliance with the “Nova Scotia Department of the Environment Guidelines for Disposal of Contaminated Soils in Landfills”, prior to disposal in the Residual Disposal Facility.
 - (2) Records of such testing as well as the generator of the material, the location of the source and the quantity involved must be submitted to the Department with the annual report, as per Condition 15(c).
 - (d) Soiled Diapers/Sanitary Napkins
 - (1) Dedicated loads of soiled diapers and/or sanitary napkins.
 - (2) Soiled diapers and/or sanitary napkins shall be separated to the extent possible from other wastes in the FEP receiving area. Only

that material necessary for the separation of the diapers/napkins is to go directly to the RDF.

- c. After the Compliance Plan is accepted by the Department, the Approval Holder(s) may bypass the FEP and WSF and direct all incoming solid waste delivery vehicles to the RDF tipping face, but the FEP and WSF machinery shall be maintained and remain in place, in the event that reactivation be required.
- d. The Approval Holder(s) shall fully implement the accepted Compliance Plan.
- e. The Approval Holder(s) shall conduct Performance Audits of the incoming Municipal Solid Waste, noting specifically the volumes at the RDF tipping face, to track compliance with the Facility's Performance Targets and Compliance Plan.
 - i. The Approval Holder(s) shall conduct Performance Audits at a minimum frequency of once per quarter.
 - ii. The Approval Holder(s) shall conduct the first Performance Audit within ninety (90) days of the effective day of this approval.
 - iii. As per Condition 3.j.) the Approval Holder(s) shall immediately notify the Department of a non-compliance determination from a Performance Audit.
 - iv. At the direction of the Department, the Approval Holder(s) shall retain the services of a third-party to conduct the Performance Audits.
- f. If a Performance Audit determines non-compliance with the Performance Targets or the Compliance Plan, the Approval Holder(s) shall develop an Enhanced Diversion Plan.
 - (a) The Enhanced Diversion Plan shall be submitted to the Department within six (6) months of the non-compliant Performance Audit.
 - (b) At the direction of the Department, the Approval Holder(s) shall revise the Enhanced Diversion Plan until accepted by the Department.
- g. The Approval Holder(s) shall fully implement the accepted Enhanced Diversion Plan.
- h. The Approval Holder(s) shall maintain the FEP and WSF in working condition, such that these portions of the equipment shall be operational within fourteen (14) days, should re-activation be required.
- i. The Approval Holder(s) shall test the FEP and WSF equipment to ensure it is maintained in working order in accordance with the recommended timeframes

and procedures of the manufacturer's guidelines and specifications.

14. Reporting

- a. The Approval Holder(s) shall provide an annual report summarizing the monitoring and requirements of the terms and conditions of this Approval for the previous calendar year. This report shall be submitted to the Department on or before April 30 of each year. The report shall be submitted in hard copy and digital format.
- b. The assessment of the surface water data shall be conducted by a qualified consultant and shall include analysis relative to all previous monitoring data and baseline sampling for significant water quality trends. The report shall include written analysis and graphical presentation of any significant trends or anomalous results which could be related to landfill operations. The report shall include recommendations on any remedial action which should be considered to ensure protection of potential human or ecological receptors.
- c. The groundwater monitoring analysis in the annual report shall be prepared by or under the direction of a Professional Hydrogeologist licensed to practice in Nova Scotia by the Association of Professional Geoscientists of Nova Scotia (APGNS) or the Association of Professional Engineers of Nova Scotia (APENS) and shall include, but is not limited to, the following information: a review of field methodologies, including sampling techniques; a description of the groundwater monitoring network; a review of the current groundwater monitoring program and recommendations for modifications, as applicable; current and historical static water elevation data in tabular format; groundwater gradients and flow direction; current and historical groundwater quality including an analysis of spatial and temporal trends with comparison to applicable guidelines and historical (baseline) data in tabular format; laboratory certificates of analysis; and the identification of any adverse impacts to groundwater as a result of site activities and associated recommendations, as applicable. Any reference to natural background as a reason for exceedances of comparators shall be evaluated with reference to site-specific background and/or baseline values and using trend analysis. General reference to common Nova Scotia background conditions is not sufficient to justify an exceedance of a comparator or standard.
- d. The annual report shall summarize the following:
 - i. Monitoring analysis of:
 - (a) Air emissions;
 - (b) Surface water;

- (c) Sediment;
 - (d) Groundwater; and
 - (e) Leachate.
- ii. Inventory of dangerous/ waste dangerous goods which have been stored at the Facility over the past operating year and specifying what remains as of December 31 of that operating year, as per Section 11(2) of the Dangerous Goods Management Regulations;
 - iii. Analysis of solid waste handled, recorded by month and in tonnes as applicable:
 - (a) Quantity, type, source, and carrier of waste received;
 - (b) Quantity and type of banned materials removed from the FEP, RDF tipping face, and Waste Transfer Station;
 - (c) Quantity of material handled at each portion of the Facility, (FEP, WSF, Waste Transfer Station and RDF); and
 - (d) Contaminated soils/solids disposed of in the RDF, including compliance testing, quantity, the generator, and the location of the source of the material.
 - iv. Summary table and discussion of Performance Audits, including discussion of progress towards Compliance Plan(s) and/or Enhanced Diversion Plan(s);
 - v. Quantity, type and location of any stockpiled materials, including daily, intermediate and final cover, feedstocks, etc., including summary of construction and demolition debris mix used as daily cover on the RDF, including compliance testing, quantity received and quantity used;
 - vi. Details of any spills or releases at the Facility;
 - vii. Any complaints and measures taken to resolve the complaints;
 - viii. Updates to Operations & Maintenance Manual, Environmental Management Plan, and Contingency Plan documents, which shall include the dates of reviews, modifications and reasons for any modifications;
 - ix. Any violations of the conditions of this Approval and actions taken by the Approval Holder(s) to correct those violations;

- x. Recommendations assembled by the Site Professional(s), the Engineer(s), the Hydrogeologist(s), and any other consultant(s) or author(s) contributing to the Annual Report; and
 - xi. Comments from the Approval Holder(s) reporting whether each recommendation from Condition ix., above, was accepted, what action has been taken, or justification of why the recommendation has not been accepted.
- e. Any operational difficulties with potential environmental implications and noncompliance with the terms and conditions of the approval shall be immediately reported to the Department. The nature of the operational difficulty as well as the mitigation measures taken shall be included in the annual report.

15. Records

- a. The Approval Holder(s) shall maintain at the Facility an operating record continually updated in such a way that the information, including monitoring and sampling results, can immediately be sent to the Department upon request. This operating record shall include:
 - i. Quantity, type, source, and carrier of waste received;
 - ii. Quantity and type of banned materials removed from the FEP, Waste Transfer Station, and the RDF tipping face;
 - iii. Estimated quantity and type of banned materials not removed the tipping face of the RDF, based upon Performance Audits;
 - iv. Quantity of material handled at each portion of the Facility, including:
 - (a) FEP;
 - (b) WSF;
 - (c) Waste Transfer Station; and
 - (d) RDF;
 - v. Quantity, type and location of any stockpiled materials, including daily, intermediate and final cover, feedstocks, etc.;
 - vi. Quantity of leachate generated at the Site and transported off site for treatment, and the volume sent to the WSF and/or biofilter.
 - vii. Up-to-date inventory of dangerous/ waste dangerous goods which are stored at the Facility, which shall consist of informational requirements of Section 11(2) of the Dangerous Goods Management Regulations;

- viii. Surface water monitoring results;
 - ix. Groundwater monitoring results;
 - x. Details of any spills or releases at the Facility;
 - xi. Any complaints and measures taken to resolve the complaints;
 - xii. Complete records of inspections, maintenance, repairs and any incidents of emergency response, including testing of the FEP and WSF when in stand-by mode;
 - xiii. Records of any violations of the conditions of this Approval and actions taken by the Approval Holder(s) to correct those violations.
 - xiv. Training certifications for all staff as completed/achieved/received; and
 - xv. Any other information requested by the Department.
- b. The information required under Condition 15. a. shall be kept for a minimum of five years and shall be available for inspection by an Inspector, except for information required under Condition a.vi11. and Condition a. ix. and Condition a. x. that shall be kept for the life of the facility and shall be available for inspection by an Inspector.

16. Closure Plan

- a. The Approval Holder(s) shall submit a detailed closure plan to the Department for approval at least ninety (90) days prior to the scheduled closure date of each component of the Facility. This closure plan shall include but is not limited to the following items:
- i. Constructing and maintaining a capping system;
 - ii. Constructing and maintaining a surface water management system;
 - iii. Maintaining the leachate management system;
 - iv. Maintaining the post-closure groundwater and surface water monitoring programs;
 - v. The method and practices for the handling and disposal of all products and waste materials on Site;
 - vi. Removal of material stored onsite (e.g. stockpiles);
 - vii. The methods and practices to determine if there is any contamination on the Site and the means of remediation; and

- viii. Decommissioning/removal of buildings and auxiliaries.
- b. The Closure Plan shall be implemented by the Approval Holder(s) upon written approval by the Department.

17. Leachate Management

- a. All contaminated process wastewater/leachate shall be collected for reuse and/or treatment.
- b. All water that comes in contact with the waste in the transfer station shall be considered leachate.
- c. All drainage and liquid waste from the WSF building area is to be directed to the leachate holding tank.
- d. All water that comes in contact with the waste in the RDF shall be considered leachate and shall be collected and stored in the leachate storage tank for eventual treatment.
- e. The Approval Holder(s) shall minimize the volume of contaminated process wastewater/leachate discharged from the Facility by recycling treated or untreated wastewater back to the WSF stabilization process and biofilter.
- f. The leachate shall be absorbed in the solid waste or other absorbent material and be directed to disposal as solid waste at an approved municipal solid waste landfill site or be collected and transported to an off-site treatment facility that has received approval from the Department for the treatment of leachate.
- g. Equipment that has been in contact with municipal solid waste shall be washed/cleaned inside the buildings or in the RDF and the drainage collected and treated as leachate.
- h. All contaminated process wastewater/leachate collected at the Facility shall be transported to a Halifax Regional Municipality treatment facility that has received approval from the Department for the treatment of leachate generated at the Site. Should a leachate treatment facility no longer be available to accept leachate from this facility, the Approval Holder(s) shall notify the Department immediately.
- i. The quantity of leachate generated at the Site and transported off site for treatment shall be measured and recorded.
- j. Unless approved otherwise by the Administrator, the drainage system under the RDF liner system shall be conducted at the frequency and for the parameter groups as indicated in Appendix "E".

- k. The used oil holding tank at the maintenance building shall be inspected regularly, as per Industry standards. The liquid from the holding tank shall be disposed of through the services of a licenced used oil collector. The Department shall be advised in writing of the collector and final treatment for this liquid as part of the annual report.
- l. The Approval Holder(s) shall maintain no more than 300 mm head on the RDF liner system. The liner is only to be used to store leachate in emergency cases. The Approval Holder(s) shall inform the Department in advance of operating conditions that may require the liner system in the RDF to be used for storage capacity.
- m. The Approval Holder(s) shall conduct a visual inspection every two (2) years of the RDF leachate collection system using a remote video camera or another method approved by the Department. The findings shall form part of the annual report for the year of inspection.
- n. The Approval Holder(s) shall submit for approval to the Department a yearly update on the long term management plan to deal with the leachate produced at the Facility during the operating life of the facility and the post closure phase of the operation.

18. Dangerous Goods/Waste Dangerous Goods

- a. The storage and handling of dangerous/waste dangerous goods/household hazardous waste shall meet the requirements of the Dangerous Goods Management Regulations. The date of removal of these materials from the municipal solid waste shall be clearly labelled on the storage containers.
- b. Storage of dangerous/waste dangerous goods/household hazardous waste on Site shall not exceed fourteen (14) days without prior written approval of the Administrator.
- c. The disposal of dangerous/waste dangerous goods/household hazardous waste shall be in a manner approved by the Department.
- d. The transportation of dangerous/waste dangerous goods/household hazardous waste shall meet the requirements of the Transportation of Dangerous Goods (Canada) Regulations, including packaging, labelling and manifesting. It is the responsibility of the Approval Holder(s) to ensure compliance with this regulation.
- e. All dangerous/waste dangerous goods and/or household hazardous wastes tipped into the RDF shall be removed from the disposal cell and transported to processing/storage area inside of the Facility.

- i. The handling/processing and storage of the dangerous/waste dangerous goods and/or household hazardous waste must take place in designated areas. The areas must be clearly marked.
- f. All loading and unloading of dangerous/waste dangerous goods/household hazardous waste shall be completed within the designated receiving areas of the Facility, once transported from the tipping face.
- g. Incompatible dangerous/waste dangerous goods/household hazardous waste shall not be transported from the tipping face at the same time.
- h. Incompatible dangerous/waste dangerous goods/household hazardous waste shall not be loaded or unloaded in the receiving area at the same time.
- i. The handling/processing of dangerous/waste dangerous goods/household hazardous waste shall not take place during inclement weather unless the materials removed from the tipping face are immediately covered under a tarpaulin or placed within an enclosed vehicle, the processing area is covered and surface runoff is directed away from the area. Any water which accumulates on the impermeable surface shall be collected, and treated as waste dangerous goods if contaminated or leachate if uncontaminated.
- j. Door openings shall be provided with sills, ramps, catch basins or in the case of a receiving area for the storage facility, a temporary berm where necessary, to prevent accidental spillage of dangerous/waste dangerous goods/household hazardous waste into the Environment.
- k. The area(s) being utilized for the preparation/handling/processing/storage/loading/unloading of dangerous/waste dangerous goods/household hazardous waste shall be lined with an impermeable surface.
- l. The dangerous/waste dangerous goods/household hazardous waste storage areas shall be constructed of impervious or liquid tight materials where the outside walls meet the floor and shall extend up the wall(s) for the required bermed height/volume as necessary for containment, as per Condition 18. q.
- m. All dangerous/waste dangerous goods/household hazardous waste shall be handled in a manner which safely minimizes generation of vapour to the atmosphere at the Facility and at the Site.
- n. Dangerous/waste dangerous goods/household hazardous waste shall be segregated to prevent contact between incompatible materials.
- o. The Approval Holder(s) shall not mix or dilute dangerous/waste dangerous goods/ household hazardous waste with uncontaminated material(s).

- i. Any materials identified on the tipping face of the RDF that has come in contact with dangerous/waste dangerous goods/household hazardous waste shall be considered dangerous/waste dangerous goods/household hazardous waste and removed from the landfill cell, handled, stored, and disposed of, accordingly.
- p. Individual storage areas for liquid dangerous/waste dangerous goods/household hazardous waste, or compatible groups, shall have secondary containment to meet the specifications of Condition 16. p. Secondary containment shall be constructed such that potential spills of dangerous goods do not come in contact with or pass under incompatible materials.
- q. All containers or tanks holding liquid dangerous/waste dangerous goods/household hazardous waste with a volume greater than 20 litres shall be completely surrounded by secondary containment sized to contain 110% of the volume of the largest tank or container in the specifically contained area or 100% of the volume of the largest tank or container plus 10% of the aggregate capacity of all other containers or tanks in the contained area, whichever is greater.
- r. The secondary containment area(s) shall be inspected at least yearly in the case of permanent containment and prior to use in the case of temporary or mobile containment. The secondary containment area(s) shall be repaired or replaced as required. A log book or record shall be available for inspection by the Department at all times and shall be maintained on Site detailing the following:
 - i. Date of inspection;
 - ii. Deficiencies or required corrections/repairs; and
 - iii. Date of repair.
- s. Portable secondary containment units shall be employed during the handling/processing of the dangerous/waste dangerous goods/household hazardous waste.
- t. All liners shall be protected from physical damage such as cuts, abrasions, etc. Liners shall be inspected monthly and repaired or replaced as required.
- u. All dangerous/waste dangerous goods/household hazardous waste that are handled by the Facility shall be stored in drums, containers or tanks composed of materials which are compatible with the goods stored therein and authorized by the original manufacturer.
- v. All storage racks, vehicles, ventilation ducts and containers associated with flammable dangerous/waste dangerous goods/household hazardous waste or

products shall be electrically grounded to prevent build up of static electric charges.

- w. All containers of dangerous/waste dangerous goods/household hazardous waste shall be stored in an upright position and/or in accordance with the manufacturers specifications. Drums shall be stacked no higher than two drums in height.
- x. Sufficient aisle space shall be provided between the containers/drums to allow the unobstructed movement of persons, transfer equipment, fire protection equipment, spill control equipment, and decontamination equipment to any part of the Facility.
- y. Drums used to temporary store dangerous/waste dangerous goods/household hazardous waste shall be located on pallets and in such a manner to enable inspection from all sides, and shall be protected from the elements/weather.
- z. The Approval Holder(s) shall ensure that all storage areas, containers, tanks, and drums containing products and dangerous/waste dangerous goods/household hazardous waste are labelled to clearly identify their contents.
- aa. The Approval Holder(s) shall provide adequate security to prevent unrestricted access to the storage/processing areas.
- ab. A trained employee of the Facility shall be present during all dangerous/waste dangerous goods/household hazardous waste handling operations and shall be capable of immediately stopping the transfer if a problem occurs. Only personnel trained in the handling of waste dangerous goods shall be utilized for the handling/processing of the dangerous/waste dangerous goods/household hazardous waste.
- ac. Contaminated material from the processing of dangerous/waste dangerous goods/household hazardous waste such as contaminated disposable coveralls, gloves, boots, etc, shall be collected and treated as waste dangerous goods.
- ad. Any liquid or solid material resulting from a spill or release is to be collected and treated as waste dangerous goods, placed in the appropriate drum and stored or disposed of as appropriate.
- ae. All aboveground bulk tank storage vessels exceeding 4000 litres in capacity shall operate with visual and audible high level alarms.
- af. Bulk storage tanks shall be equipped with emergency shut-off valves to permit the immediate shutdown of transfer operations in the event of an uncontrolled release.

- ag. All transfer pumps located within the Facility shall be connected to a central switch or panel allowing for immediate shutdown during emergencies.
- ah. All washing of potentially contaminated vehicles or equipment shall be carried out within the storage building only.
- ai. The Approval Holder(s) shall not transfer or repackage flammable liquids inside the building of the Facility without receiving prior approval of the Department.
- aj. The Approval Holder(s) shall ensure that all transfer operations of flammable goods occur on the Site and within full secondary containment which meets the specifications of Condition 18. q.
- ak. The Approval Holder(s) shall maintain an up-to-date inventory of dangerous/waste dangerous goods which are stored at the Facility. The inventory shall consist of informational requirements of the Dangerous Goods Management Regulations.

Additional Requirements when FEP/WSF in Use

- al. All dangerous/waste dangerous goods/household hazardous waste shall be removed in the FEP.

19. Operations and Maintenance Manual

- a. The Approval Holder(s) shall develop an “Operations and Maintenance Manual” for the Facility in accordance with the Guidelines for the Siting and Operation of Waste Transfer Stations.
- b. The Approval Holder(s) shall ensure that the “Operations and Maintenance Manual” for the Facility is reviewed and updated on a yearly basis in accordance with the Nova Scotia Environment Guidelines for the Siting and Operation of Waste Transfer Stations, as amended from time to time.
- c. A copy of the “Operations and Maintenance Manual” is to be maintained on site at all times, and shall be available to the Department immediately upon request. All employees shall be apprised of the requirements in this Manual.
- d. It is the Approval Holder(s)' responsibility to ensure all employees comply with the requirements of “Operations and Maintenance Manual”.
- e. The Approval Holder(s) shall designate in writing, to the Department, one contact for each of the Approval Holder(s), and inform the Department of any change in designates in writing, within 5 days of the change.
- f. Dates of reviews, modifications and reasons for any modifications shall be recorded within the Operations and Maintenance Manual, and reported in the

Annual Report.

20. Community Liaison Committee

- a. A Community Liaison Committee/Community Monitoring Committee shall be maintained for the duration of the Approval.
- b. The Approval Holders shall maintain a communication link to the local community primarily through the Community Liaison Committee/Community Monitoring Committee. A list of current members as well as any revisions or changes to the membership of the committee shall be forwarded to the Department within thirty (30) days of the revision or change.
- c. At the request of the Administrator, members of the Community Liaison Committee/ Community Monitoring Committee, representatives from the regulatory agencies, the design consultant, the operator, and the Approval Holder(s) shall assemble as a Technical Steering Committee to review the operations of the Facility and shall recommend in writing to the Administrator any recommended changes to the annual monitoring program for the Facility.
- d. The Administrator shall approve, reject or modify the yearly monitoring program recommended by the Technical Steering Committee.
- e. The Approval Holder(s) are responsible for implementing, on an annual basis, the Monitoring Program as approved by the Administrator. Any existing approved Monitoring Program is to remain in effect until a revised program is approved.

APPENDIX “A” - MAXIMUM PERMISSIBLE GROUND LEVEL CONCENTRATIONS

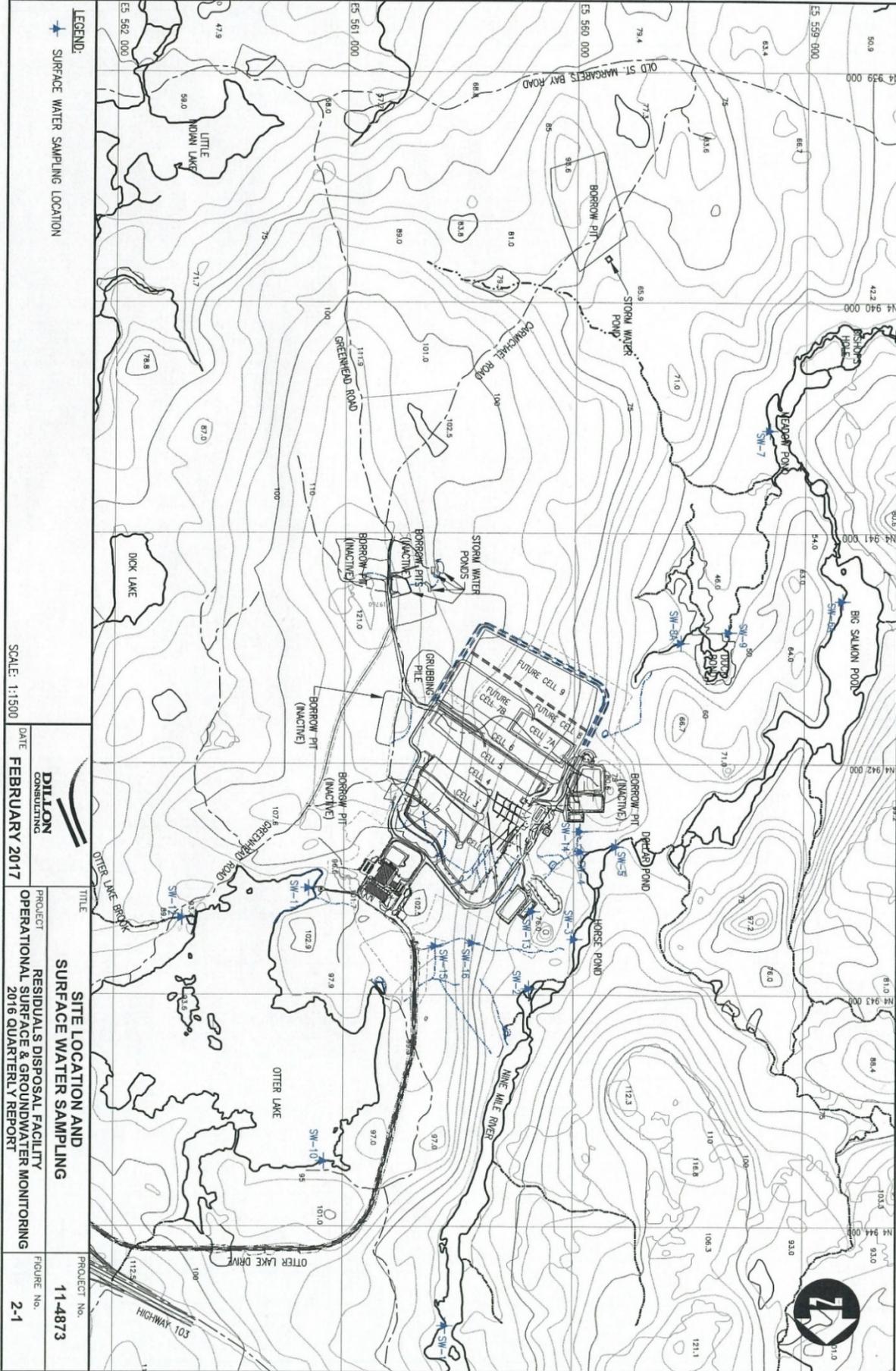
CONTAMINANT	AVERAGING PERIOD	MAXIMUM PERMISSIBLE GROUND LEVEL CONCENTRATION	
		ug/m ³	pphm
Carbon Monoxide (CO)	1 hour	34 600	3000
	8 hours	12 700	1100
Hydrogen Sulphide (H ₂ S)	1 hour	42	3
	24 hours	8	0.6
Nitrogen Dioxide (NO ₂)	1 hour	400	21
	annual	100	5
Ozone (O ₃)	1 hour	160	8.2
Sulphur Dioxide (SO ₂)	1 hour	900	34
	24 hours	300	11
	annual	60	2
Total Suspended Particulate (TSP)	24 hours	120	-
	annual	70*	-

* - geometric mean
 ug/m³ - micrograms per cubic metre
 pphm - parts per hundred million

APPENDIX “B” - SURFACE WATER SAMPLING REQUIREMENTS

Station ID #	Status	Sampling Frequency	Analysis	Location
SW-1	Up-gradient	Annually	GC, M, TSS for each event	Nine Mile River
SW-2	Up-gradient	Quarterly	GC, M, TSS, CBOD ₅ /BOD for each event	Nine Mile River
SW-3	Down-gradient	Quarterly	GC, M, TSS, for each event VOCs, PAHs, TPH/BTEX one event only Toxicity, one event every six months	Nine Mile River downstream of drainage from North Sedimentation Pond
SW-4	Facility Discharge Water	Quarterly	GC, M, TSS, for each event VOCs, PAHs, TPH/BTEX one event only Toxicity, one event every six months	Drainage from South Sedimentation Pond
SW-5	Down-gradient	Quarterly	GC, M, TSS for each event	Nine Mile River
SW-6A	Down-gradient	Annually	GC, M, TSS for each event	Nine Mile River
SW-7	Down-gradient	Quarterly	GC, M, TSS for each event	Nine Mile River
SW-8A	Down-gradient	Quarterly	GC, M, TSS for each event Toxicity, for one event every six months	Duck Pond
SW-9	Down-gradient	Annually	GC, M, TSS for each event	Duck Pond
SW-10	Down-gradient, outside RDF watershed	Annually	GC, M, TSS for each event	Otter Lake
SW-11	Down-gradient, outside RDF watershed	Annually	GC, M, TSS for each event	Otter Lake
SW-13	On-Site	Quarterly (note: more frequent as part of operations)	pH and TSS either weekly or during rain events (part of operations) GC, M, TSS, CBOD ₅ /BOD for each event	North Sedimentation Pond
SW-14	On-Site	Quarterly (note: more frequent as part of operations)	pH and TSS either weekly or during rain events (part of operations) GC, M, TSS, CBOD ₅ /BOD for each quarterly event	South Sedimentation Pond
SW-15	On-Site	Quarterly (note: more frequent as part of operations)	pH and TSS either weekly or during rain events (part of operations) GC, M, TSS, CBOD ₅ /BOD for each quarterly event	Ditch (FEP)
SW-16	Down-gradient	Quarterly	GC, M, TSS for each event VOCs, PAHs, TPH/BTEX on one event	Down-gradient of FEP ditch

GC General Inorganic Chemistry Scan CBOD₅ Carbonaceous Biochemical Oxygen Demand - 5-day
M Metals VOCs Volatile Organic Compounds (modified EPA 624 Scan)
TSS Total Suspended Solids PAHs Polycyclic Aromatic Hydrocarbons (priority pollutants, part of an EPA 625 Scan)
BOD Biochemical Oxygen Demand TPH/BTEX Petroleum Hydrocarbon Components (Atlantic RBCA Analysis)



LEGEND:
 * SURFACE WATER SAMPLING LOCATION

SCALE: 1:1500

<p>DILLON CONSULTING</p>	TITLE	PROJECT No.
	<p>SITE LOCATION AND SURFACE WATER SAMPLING</p>	<p>RESIDUALS DISPOSAL FACILITY OPERATIONAL SURFACE & GROUNDWATER MONITORING 2016 QUARTERLY REPORT</p>
<p>DATE: FEBRUARY 2017</p>		<p>FIGURE No. 2-1</p>

APPENDIX “C” - SEDIMENT SAMPLING REQUIREMENTS

ID #	@ Station ID #	Status	Minimum Sampling Frequency	Analysis Parameters	Location
SED-3	SW-3	Down-gradient	Annually	M	Nine Mile River downstream of drainage from North Sedimentation Pond
SED-4	SW-4	Facility Discharge Water	Annually	M	Drainage from South Sedimentation Pond
SED-15	SW-15	On-Site	Annually	M	Ditch (FEP)

Notes: M Metals

APPENDIX “D” - GROUNDWATER SAMPLING REQUIREMENTS

Well ID #	Aquifer	Sampling Frequency	Analysis	Location
MW96-1B	Bedrock (Granite)	Quarterly	GC, M	Perimeter well, down gradient of Cells 1&2
MW97-2B1	Bedrock (Granite)	Quarterly	GC, M, VOCs, PAHs, TPH/BTEX (Sept Only)	Perimeter well, down gradient of Cells 1&2
MW96-3A	Till	Quarterly	GC, M *For 3A only - VOCs, PAHs, TPH/BTEX (Sept Only)	Nested perimeter wells, down gradient of Cells 1&2 and Cell 3
MW96-3B	Bedrock (Granite)			
MW96-3C	Bedrock (Granite - Deep)			
MW96-4B	Bedrock (Granite)	Quarterly	GC, M	Perimeter well, down gradient of Cell 4 and adjacent to leachate holding tank
MW96-5A	Till	Quarterly	GC, M *For 5B only - VOCs, PAHs, TPH/BTEX (Sept Only)	Nested perimeter wells, down gradient of Cell 5 and up gradient of South Sedimentation Ponds
MW96-5B	Bedrock (Granite)			
MW96-5C	Bedrock (Granite - Deep)			
MW96-7A	Till	Annually	GC, M	Nested perimeter wells, down gradient of future cells and south of borrow area
MW96-7B	Bedrock (Granite)			
MW96-7C	Bedrock (Granite - Deep)			
MW96-8A	Till	Annually	GC, M	Nested perimeter wells, down gradient of future cells
MW96-8B	Bedrock (Granite)			
MW96-8C	Bedrock (Granite - Deep)			
MW96-9A	Till	Annually	GC, M For 9A only - VOCs, PAHs, TPH/BTEX (Sept Only)	Nested perimeter wells, southwest of Cells 1&2, cross gradient of future cells
MW96-9B	Bedrock (Granite)			
MW96-10B	Bedrock (Granite)	Annually	GC, M	Nested perimeter wells, southwest of Cells 1&2, cross gradient of future cells
MW96-10C	Bedrock (Granite - Deep)			
MW96-11B	Bedrock (Granite)	Annually	GC, M for each event	Perimeter well, south corner of landfill and up gradient of future cells

Well ID #	Aquifer	Sampling Frequency	Analysis	Location
MW96-12B	Bedrock (Granite)	Annually	GC, M for each event	Perimeter well, southeast corner of landfill and up gradient of future cells
MW01-15B	Bedrock (Granite)	Annually	GC, M * For 15B only - VOCs, PAHs, TPH/BTEX (Sept Only)	Nested perimeter wells, east of Cell 2 and up gradient of landfill
MW01-15C	Bedrock (Granite - Deep)			
MW96-16A	Till	Quarterly	GC, M *For 16B only - VOCs, PAHs, TPH/BTEX one event (Sept.)	Nested perimeter wells, northeast corner of the landfill, topographically up gradient of the FEP compound
MW96-16B	Bedrock (Granite)			
MW96-17A	Bedrock (Granite)	Quarterly	GC, M *For 17B only - VOCs, PAHs, TPH/BTEX (Sept. Only)	Nested perimeter wells, cross gradient between Cells 1&2 and the FEP compound
MW96-17B	Bedrock (Granite)			
MW96-18B	Bedrock (Granite)	Quarterly	GC, M	Nested perimeter wells, cross gradient between Cells 1&2 and the FEP compound
MW96-18C	Bedrock (Granite - Deep)	Annually		
MW96-19A	Bedrock (Till)	Quarterly	GC, M	Nested perimeter wells, north corner of the landfill (Cells 1&2) and down gradient of the FEP compound
MW96-19B	Bedrock (Granite)	Annually		
MW96-20A	Bedrock (Till)	Quarterly	GC, M *For 20A only - VOCs, PAHs, TPH/BTEX (Sept. Only)	Nested perimeter wells, down gradient of Cells 1&2 and Cell 3
MW96-20B	Bedrock (Granite)			
MW96-21B	Bedrock (Granite)	Quarterly	GC, M	Down gradient between North Sedimentation Ponds and Nine Mile River
MW96-22A	Till	Quarterly	GC, M *For 22A only - VOCs, PAHs, TPH/BTEX (Sept. Only)	Nested wells, down gradient between North Sedimentation Ponds and Nine Mile River
MW97-22B	Bedrock (Granite)			
MW97-23A1	Till	Quarterly	GC, M VOCs, PAHs, TPH/BTEX (Sept. Only)	Down gradient between South Sedimentation Ponds and borrow pit area
MW97-24A	Till	Quarterly	GC, M *For 24B only - VOCs, PAHs, TPH/BTEX (Sept. Only)	Nested wells west of the North Sedimentation Ponds and grubbing area
MW97-24B	Bedrock (Granite)			

Well ID #	Aquifer	Sampling Frequency	Analysis	Location
MW97-25B	Bedrock (Granite)	Quarterly	GC, M	Well northwest of the North Sedimentation Ponds and grubbing area
MW01-26B	Bedrock (Granite)	Annually	GC, M	Along Greenhead Road and up gradient of borrow pit area
MW01-27B	Bedrock (Granite)	Annually	GC, M	Along Greenhead Road and up gradient of borrow pit area
MW05-28B	Bedrock (Granite)	Quarterly	GC, M PAHs, TPH/BTEX (Sept. Only) VOCs,	Perimeter well, down gradient of landfill and adjacent to leachate holding tank
MW05-29C	Bedrock (Granite - Deep)	Quarterly	GC, M	Perimeter well, down gradient of future cells and south of borrow area
MW08-30B	Shallow Till/Bedrock (Granite)	Quarterly	GC, M PAHs, TPH/BTEX (Sept. Only) VOCs,	Down gradient of Cell 6 and up gradient of South Sedimentation Ponds
MW12-31B	Bedrock (Granite)	Annually	GC, M	Nested perimeter wells, up gradient of Cell 6 and future cells
MW12-31C	Bedrock (Granite - Deep)			
MW95-2A	Bedrock (Granite)	Annually	GC, M for each event	Nested wells up gradient of Cell 5
MW95-2B	Till			
MW95-4A	Bedrock (Granite)	Quarterly	GC, M 4B only - VOCs, PAHs, TPH/BTEX (Sept. Only) *For	Nested perimeter wells north/cross gradient of Cells 1&2 and down gradient of the FEP compound
MW95-4B	Till			
*MW17-29A	Till	Quarterly	GC, M	Perimeter well, down gradient of future cells and south of borrow area
*MW17-29B	Bedrock (Granite)			

Notes:

GC General Inorganic Chemistry Scan

M Metals

TSS Total Suspended Solids

VOCs Volatile Organic Compounds (modified EPA 624 Scan)

PAHs Polycyclic Aromatic Hydrocarbons (priority pollutants, part of an EPA 625 Scan)

TPH/BTEX Petroleum Hydrocarbon Components (Atlantic RBCA Analysis)

APPENDIX “E” - LEACHATE AND UNDERDRAIN SAMPLING REQUIREMENTS

LOCATION	Sampling Frequency	Analysis
Underdrain Samples – Cell 1/2, Cell 3, Cell 4, Cell 5, Cell 6, and Cell 7.	Quarterly	GC, M
	September only	VOCs, PAHs, TPH/BTEX
Leachate Collection Tank	Quarterly	GC, M and TSS
	September only	VOCs, PAHs, TPH/BTEX
Leak Detection Sump Cell 1/2, Cell 3, Cell 4, Cell 5, Cell 6, and Cell 7.	Monthly	GC parameters chloride, sodium and CBOD ₅ monthly as part of operations
	Quarterly	GC, M for each event
	September only	VOCs, PAHs, TPH/BTEX

Notes:

GC General Inorganic Chemistry Scan
M Metals
TSS Total Suspended Solids

CBOD₅ Carbonaceous Biochemical Oxygen Demand - 5-day
VOCs Volatile Organic Compounds (modified EPA 624 Scan)
PAHs Polycyclic Aromatic Hydrocarbons (priority pollutants, part of an EPA 625 Scan)
TPH/BTEX Petroleum Hydrocarbon Components (Atlantic RBCA Analysis)