

- a. Liner;
- b. Leachate collection system;
- c. Groundwater Collection Trench;
- d. Final Cover; and
- e. Stormwater Management System

- 4.2 (1) A final detailed design shall be prepared for each Major Work to be constructed at the Site consistent with the conceptual design of the Site as presented in the Supporting Documentation listed in Schedule "A". Any design optimization or modification shall be clearly identified, along with an explanation of the reasons for the change. The final detailed design of each Major Work shall be submitted to the Director for approval and copied to the District Manager.
- (2) Specifications and a detailed quality assurance/quality control program for construction of the Major Works, and provisions for quality assurance procedures, with respect to the liner, to be undertaken by an independent third-party consulting firm experienced in liner construction, reporting to the Ministry.

4.3 The final detailed design of each Major Work shall include the following:

- a. design drawings and specifications;
- b. a detailed quality assurance / quality control (QA/QC) program for construction of the major work; and
- c. details on the monitoring, maintenance, repair and replacement of the engineered components of the major work, if any.

4.4 Any design optimization or modification that is inconsistent with the conceptual design shall be clearly identified, along with an explanation of the reasons for the change.

4.5 Each major work shall be constructed in accordance with the approved final detailed design and the QA/QC procedures shall be implemented as proposed by the Owner. Any significant variances from the conceptual design for the Site as detailed in Schedule "A" shall be subject to approval by the Director.

4.6 As-built drawings for all Major Works shall be retained on Site and made available to Ministry staff for inspection.

Subsequent Stages

4.7 At least six (6) months prior to the anticipated completion of landfilling in each stage of the Site, a final detailed design for the subsequent stage shall be submitted to the Director. Any significant variances from the conceptual design for the Site as detailed in Schedule "A" shall be subject to approval by the Director.

4.8 No landfilling of wastes shall occur on any part of the liner until the Regional Director has received an inspection report from the independent third party referred to in Condition 4.2 (2), indicating that the part of the liner was constructed as required by this Approval. A copy of these inspection reports shall also be provided to the City and the CLC.

5.0 SITE OPERATIONS

Proper Operation

5.1 The Site shall be properly operated and maintained at all times. All waste shall be managed and disposed of in accordance with the EPA , Regulation 347, and the requirements of this Approval. At no time shall the discharge of a contaminant that causes or is likely to cause an adverse effect be permitted.

5.2 The Owner shall ensure that the Ministry's Guideline B-7, Reasonable Use Concept, is applied at the Site boundaries.

5.3 (1) The Owner shall ensure the operations, maintenance and procedures manual for the Site includes discussions on the following items:

- a. Health and safety;
- b. Operation and maintenance of the Site;
- c. Waste disposal area and development;
- d. Nuisance management;
- e. Leachate management;
- f. Landfill gas management;
- g. Surface water/Storm water management;
- h. Inspections and monitoring;
- i. Contingency plans and emergency procedures;
- j. Complaints; and,
- k. Reporting and record keeping.

(2) The operations and procedures manual shall be:

- a. retained at the Site;
- b. reviewed on an annual basis and updated by the Owner as required; and
- c. be available for inspection by Ministry staff.

(3) Where revisions to the Operations, Maintenance and Procedures Manual are necessary and/or desirable, the Owner shall submit the changes to the Director for approval after consultation with the CLC and the City. Approval by the Director is required prior to those changes being implemented. Should the provisions of this manual conflict with this Approval, the Owner shall operate the Site in accordance with this Approval.

Buffer

- 5.4 A minimum buffer area width of 30 m shall be maintained around the perimeter of the approved fill area. To minimize erosion, the buffer shall be maintained with healthy vegetative cover and/or other appropriate surface treatment.

Signage

- 5.5 The Owner shall place a sign which complies with local by-laws at the main entrance and exit to the Site which is legible from a distance not less than 25 m and on which is displayed in prominent letters the following information:
- a. the name of the Site and Owner ;
 - b. the number of the Approval;
 - c. the name of the Operator;
 - d. the normal hours of operation;
 - e. a warning against unauthorized access;
 - f. the telephone number to which complaints may be directed;
 - g. a twenty-four (24) hour emergency telephone number (if different from above); and
 - h. a warning against dumping outside the Site .

Hours of Operation

- 5.6 (1) Waste may be received at the Site between the hours of 7:00 a.m. and 5:00 p.m., Monday to Friday. The normal Site operating hours shall be 6:30 a.m. to 6:00 p.m. Monday to Friday. The Site shall be closed on weekends and statutory holidays.
- (2) Amendment to the hours of operation require approval by the Director prior to implementation.
- 5.7 Notwithstanding Condition 5.6, with prior written approval of the District Manager , the time periods may be extended to accommodate seasonal or unusual quantities of waste, construction activities or such factors as determined to be reasonable to the District Manager.
- 5.8 Upon reasonable notice to the District Manager, contingency actions may take place outside normal hours of operation. Emergency response may occur at any time as required.

Site Security

- 5.9 During non-operating hours, the Site entrance and exit gates will be locked or otherwise secured against access by unauthorized persons.
- 5.10 The Owner shall ensure that no queuing of waste vehicles will occur on public roadways.

- 5.11 The Owner shall monitor the weight of waste received for disposal by use of weigh scales. Where weigh scales are temporarily out of operation for maintenance or repair, estimates of waste volumes and density shall be used to estimate the weight of waste received for disposal. The weigh scales shall be installed prior to receiving of any waste. The weigh scale shall be recalibrated on an annual basis.
- 5.12
- a. No waste shall be accepted, landfilled or removed from the site unless a Site supervisor or trained designate is present and supervises the operation.
 - b. The Owner shall ensure that all Site operations employees have been adequately trained prior to acceptance of waste at the Site with respect to the following:
 - i. terms, conditions and operating requirements of this Approval;
 - ii. the operation and management of the Site with respect to the Operations and Maintenance Manual;
 - iii. relevant waste management regulations and legislation;
 - iv. environmental concerns related to the waste being handled at the Site;
 - v. occupational health and safety concerns pertaining to the waste being handled at the Site; and
 - vi. emergency procedures and contingency plans in cases of fire, off-site impacts and any other emergency situation.
 - c. The Site is deemed to be closed when a Site supervisor or trained designate is not present at the Site.
 - d. To assist the Site operating personnel, the Owner shall ensure that the Maintenance and Operations Manual, required by Condition No. 5.3, and all revisions is kept on Site at all times following commencement of landfilling.

Site Access

- 5.13 Access to the Site shall be via the existing Site entrance from Upper Centennial Parkway. Exit from the Site shall be from the existing Site exit onto First Road West southerly to Mud Street.
- 5.14 The Owner shall ensure that all trucks owned by the Owner, or related companies, use Upper Centennial Parkway as the primary haul route to and from the Site. The Owner shall use its best efforts to encourage independent carriers to also use Upper Centennial Parkway as the primary haul route, including the posting of signs at the entrance and exit. The Owner shall refuse access to the Site to trucks and/or carriers found to be in continuous non-compliance with this Condition. Where changes or upgrades to the local road network occur, and changes to the primary haul route are necessary or convenient, such changes shall be submitted to the Director for approval after consultation with the CLC and the City and prior to implementation.
- 5.15 The Owner shall keep First Road West used by trucks leaving the Site free of dirt and waste to

meet the requirements of the applicable roads authority.

- 5.16 Prior to a waste type being landfilled which is significantly different from a waste type landfilled in the West Quarry in the past, the Owner shall inform the Regional Director, the CLC and the City in writing of the new waste type proposed to be landfilled.

Vermin, Dust, Litter, Odour, Noise, Traffic

- 5.17 The Site shall be operated and maintained such that vermin, vectors, dust, litter, odour, noise and traffic do not create a nuisance.

Litter Control

- 5.18 The Owner shall take all practical steps to prevent off-site litter impacts from Site operations.

Noise

- 5.19 The landfill Site shall be required to operate within the noise level limits prescribed in the Ministry's document "Noise Guidelines for Landfill Sites".
- 5.20 The monitoring of sound levels of daily activity in the Site shall typically occur twice/ year and relate to periods of peak filling activity within 5 m of final contours of the Site. Monitoring shall be conducted at representative locations identified in Item 6 of Schedule "A". Where possible measurements shall be taken during neutral lapse conditions (cloudy day) under light winds for measurement of the sound to the south and southwest of the Site. Prevailing, light, southwesterly winds or neutral lapse (cloudy day) light wind conditions are preferred in the assessment of the noise affecting lands to the north of the Site. Measurements of the hourly Leq shall be carried out for five (5) representative hourly periods at each location between 0700 and 1900 hours. All measurements shall be attended and reported as per the MECP NPC 103 for Varying Sound, with the report identifying the source of sound heard at each location and its relative contribution to the total Leq.
- 5.21 The Site should be operated so as to not exceed predicted noise impact as set out in Item No. 6 of the attached Schedule "A", and in any event, noise generated by the operation of the Site shall not exceed the Ministry's landfill noise guidelines at any residence.
- 5.22 The Owner may apply to the Director for approval of an alternative method of noise attenuation that accounts for the actual nature and extent of development at that time. These alternatives shall be developed in consultation with the City and the CLC. The application must be supported by a noise impact assessment that demonstrates that the noise impacts associated with the alternative method will not exceed the noise impacts reported in Item 6 of Schedule "A". The Owner shall seek comment from the City and the CLC prior to submission to the Director for approval.
- 5.23 All on site equipment used during the start up, operation and closure of the Site which are of the

type described in Publication NPC-115 and Publication NPC-118 of the Ministry's Model Municipal Noise Control By-Law or which are capable of being used for similar applications shall comply with the noise emission standards contained therein.

- 5.24 The Owner shall comply with noise criteria in Ministry Guideline entitled "Noise Guidelines for Landfill Sites" dated October 1998 as amended from time to time and the Site shall comply with the limits set in Publication NPC-300.

Groundwater Trench

- 5.25 Prior to the discontinuation of pumping of the groundwater collection system, the Owner shall submit an application to the Director for approval of such action, following consultation with the CLC and the City. The application shall include technical justification for discontinuation of pumping of the groundwater collection system and an assessment of the impacts of allowing the groundwater to rebound including the impact on the hydraulic control layer and monitoring programs at the Site.

Surface Water

- 5.26 The Owner shall take all appropriate measures to minimize surface water from coming in contact with waste. Temporary berms and ditches shall be constructed around active waste disposal areas to prevent extraneous surface water from coming in contact with the active working face.

6.0 LANDFILL OPERATIONS

Waste Type

- 6.1 The waste to be received at the Site for final disposal is restricted to solid, non-hazardous commercial, institutional and industrial waste including petroleum contaminated soils.
- 6.2 No liquid industrial wastes, hazardous wastes, as defined under Regulation 347, or putrescible waste shall be disposed of in the waste disposal fill area of the Site. This includes: hazardous industrial wastes; hazardous waste chemicals; ignitable waste; corrosive waste; leachate toxic waste; acute hazardous waste chemicals or reactive waste; hauled sewage; domestic waste; and waste from the operation of a sewage works subject to the Ontario Water Resources Act where the works:
- i. is owned by a municipality;
 - ii. is owned by the Crown subject to an agreement with a municipality under the OWRA; or
 - iii. receives only waste similar in character to the domestic sewage from a household.

Disposal of Non-hazardous Incinerator Ash

- 6.3 Receipt and disposal of non-hazardous incinerator ash to the Site shall be done in accordance with the document entitled "Waste Control Procedures", detailed as part of Item 49 of Schedule "A".
- 6.4 The Owner shall develop, maintain on-site and implement a Dust Contingency program which details how the Owner will mitigate and minimize impacts from dust resulting from the disposal of deposits of non-hazardous incinerator ash.
- 6.5 The Owner shall ensure, through testing prescribed in Regulation 347 as amended from time-to-time performed by either the Owner or the generator, that all loads of incinerator ash received and disposed of at the site are non-hazardous.
- 6.6 Summarized results of the testing required as part of Condition 6.5 shall be included as part of the reports required under Condition 14.1.

Asbestos Waste

- 6.7 Any waste that is considered asbestos waste shall be handled in accordance with Section 17 of O. Reg. 347 as amended from time to time.
- 6.8 A suitable sized excavation for the asbestos waste shall be made by the Owner in a location away from the active landfilling face.
- 6.9 All asbestos waste shall be inspected to ensure that the asbestos waste is properly bagged or contained and free from puncture, tears or leaks.
- 6.10 The asbestos waste shall be placed in the excavation to avoid damage to the containers and to prevent dust and spillage.
- 6.11 Upon completion of the unloading and deposition of the asbestos in the excavation, at least 125 centimetres of cover or waste material shall be placed over the asbestos.
- 6.12 All asbestos waste shall be deposited to a level no higher than 1.25 metres below the general elevation of the disposal area to ensure that daily cover material removal in the future does not encounter the asbestos waste.

Capacity

- 6.13 The maximum volume of waste and cover materials, excluding final cover, which may be disposed at the Site is **10,180,000 m³**.
- 6.14 The annual tonnage of approved waste received at the Site for final disposal shall not exceed 750,000 tonnes in any consecutive twelve (12) month period, as calculated on a daily basis.

The maximum daily tonnage of approved waste received at the Site for final disposal shall not exceed 8,000 tonnes.

- 6.15 The maximum number of waste vehicles depositing waste at the Site shall not exceed 250 in any one operating day.

Waste Placement

- 6.16 No waste, including intermediate cover or final cover layer, shall be landfilled outside the limits of the base and final cover contours as shown in Item No. 57 in Schedule "A". No waste shall be disposed of within the buffer lands.

Landfilling of Sludge

- 6.17 A thickness of at least 2 metres of compacted waste and cover material shall be maintained between any landfilled sludge (solid non-hazardous as per Reg. 347) and the granular leachate collection layer.

Service Area

- 6.18 Only waste generated within the Province of Ontario may be received for disposal at this Site.

Waste Inspection

- 6.19 All loads of waste must be properly inspected by trained Site personnel prior to disposal at the Site and waste vehicles must be diverted to appropriate areas for waste disposal.

Burning Waste Prohibited

- 6.20 Burning of waste at the Site is prohibited.

Leachate Management

- 6.21
- a. No leachate and/or contaminated water collected at the Site shall be discharged to the natural environment except as outlined in Item No. 3 of the attached Schedule "A", Surface Water Impact Assessment report, providing the surface water trigger levels for the proposed contingency plans.
 - b. All collected leachate and/or contaminated water shall be discharged to the City sanitary sewer or an alternative acceptable to the Director.
 - c. If the Owner discharges leachate and/or contaminated water directly to the City sanitary sewer system then the Owner shall obtain, and maintain at all times, Agreements with the City which will specify the permissible quality and quantity of leachate that can be discharged to the City sanitary sewer system. These agreements shall also outline the

monitoring and reporting requirements to demonstrate compliance. A copy of these Agreements and any changes to these agreements as may occur from time to time, shall be provided to the Director, the CLC and the City prior to any discharge of leachate to the sanitary sewer system.

- 6.22 The Owner shall, during normal operations, limit dust impacts using the control measures as indicated in Item No. 7 of the Schedule "A" and in any event shall take all necessary steps as are reasonably necessary to limit dust impacts from the Site.
- 6.23 The Owner shall maintain a minimum of one watering truck at the Site for the purpose of mitigating dust impacts.
- 6.24 The Owner shall require all vehicles leaving the landfilling area of the Site to pass through a wheel washing facility.
- 6.25 The Owner shall ensure that an agreement in writing with the City is in place in case any discharge of leachate from the Site to the City's sanitary sewer occurs. The agreement shall include a development and implementation plan for a notification system under which the Owner will hold back the leachate at the Site during by-pass and upset events at the Woodward Avenue Waste Water Treatment Plant (WWTP).
- 6.26 The practice of recirculating leachate by spraying at the Site shall not be permitted.

Landfill Gas Collection

- 6.27 The Site is not required to collect landfill gas.

7.0 MAJOR WORKS AND CONSTRUCTION APPROVALS

- 7.1 Expansion of the Site shall proceed in 4 phases in accordance with Item 57 of Schedule "A". Approval of Phase 1 is hereby approved. Prior to proceeding with Phases 2-4, approval of the detailed design is required in accordance with Condition 4.

8.0 INSPECTIONS AND RECORDS

Daily Records

- 8.1 Daily records shall be maintained at the Site which shall include the following:
 - a. the date, time of arrival, name of hauler, vehicle license plate number, type, origin and quantity (by weight) of all waste received at the Site;
 - b. all complaints from the public received by the Owner and an indication of the action taken by the Owner in response;

- c. results of any tests done to determine the acceptability of waste at the Site;
- d. calculation of the total quantity (by weight) of waste received at the Site for each day; and
- e. a record of litter collection activities and site inspections.

8.2 The Owner shall maintain a written record of Site inspections at the Site. The record shall include the following:

- a. time and date of the inspection;
- b. name, title and signature of trained personnel conducting the inspection;
- c. listing of all general site areas, fencing, gates, systems inspected and deficiencies observed; and
- d. recommendations for remedial action and the date the remedial action, if necessary was completed.

Inspections

8.3 The Owner shall conduct inspections as outlined in Schedule "B".

Log Book

8.4 A record of the inspections shall be kept in a daily log book or a dedicated electronic file that includes:

- i. the name and signature of person that conducted the inspection;
- ii. the date and time of the inspection;
- iii. the list of any deficiencies discovered;
- iv. the recommendations for remedial action; and
- v. the date, time and description of actions taken.

8.5 A record shall be kept in a daily log book of all refusal of waste shipments, the reason(s) for refusal, and the origin of the waste, if known.

8.6 Site inspection records shall be kept in the form of a written log or a dedicated electronic file.

8.7 The Owner shall maintain on record at the Site for each client disposing of solid non-hazardous waste at the Site, a description of each type of solid non-hazardous waste received from the client and documentation to demonstrate that the Owner has taken reasonable care to ensure that waste classified as either hazardous or liquid industrial waste under O. Reg. 347 as amended from time to time, is not disposed of at the Site.

Record Retention

8.8 Except as authorized in writing by the Director, all records required by this Approval shall be retained at the Site for a minimum of two (2) years from their date of creation.

- 8.9 The Owner shall retain all documentation listed in Schedule "A" for as long as this Approval is valid.
- 8.10 All monthly Site inspection records are to be kept at the Site until they are included in the Annual Report.
- 8.11 The Owner shall retain employee training records as long as the employee is working at the Site.
- 8.12 The Owner shall make all of the above documents available for inspection upon request of Ministry staff.
- 8.13 The Owner shall retain, either on-Site or in another location and notify the District Manager of this location, copies of the annual reports referred to in the preceding condition and any associated documentation of compliance monitoring activities and shall continue to do so for a period of at least two (2) years after the closure of the Site.

9.0 TRAINING

Employees and Training

- 9.1 A training plan for all employees that operate any aspect of the Site shall be developed and implemented by the Operator . Only trained employees shall operate any aspect of the Site or carry out any activity required under this Approval . Employees must provide proof of training to the Ministry upon request. For the purpose of this Approval "trained" means knowledgeable either through instruction or practice in:
- a. the relevant waste management legislation including EPA, O. Reg. 347 and, regulations and guidelines;
 - b. major environmental and occupational health and safety concerns pertaining to the waste to be handled;
 - c. the proper handling of wastes;
 - d. the management procedures including the use and operation of equipment for the processes and wastes to be handled;
 - e. the emergency response procedures;
 - f. the specific written procedures for the control of nuisance conditions;
 - g. the terms, conditions and operating requirements of this Approval and
 - h. proper inspection, receiving and recording procedures and the activities to be undertaken during and after a load rejection.

10.0 COMPLAINTS PROCEDURES

10.1 If at any time, the Owner receives complaints regarding the operation of the Site , the Owner shall respond to these complaints as per the Standard Operating Procedure for the the Site.

11.0 EMERGENCY SITUATIONS

11.1 In the event of a reportable spill or discharge of a contaminant to the environment, Site staff shall contact the Ministry's Spills Action Centre (1-800-268-6060), the Ministry's District Office and the City's Spills Response Line (905-540-5188) forthwith.

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

12.0 MONITORING

Groundwater Monitors

12.1 The Owner shall ensure all groundwater monitoring wells are properly capped, locked and protected from damage.

12.2 In areas where landfilling is to proceed around monitoring wells, the wells must be decommissioned in accordance with O. Reg. 903 as amended from time to time.

12.3 Any groundwater monitoring wells included in the monitoring program shall be assessed, repaired, replaced or decommissioned as required.

12.4 The Owner shall repair or replace any monitoring well which is destroyed or in any way made inoperable for sampling within one year.

12.5 All monitoring wells that are no longer required as part of the groundwater monitoring program shall be decommissioned in accordance with good standard practice that will prevent contamination through the abandoned well and in accordance with O. Reg. 903. A report on the decommissioning shall be provided in the annual monitoring report for the period during which the well was decommissioned.

Environmental Monitoring

12.6 The Owner shall provide monitoring in accordance with the following:

- a. the performance of the engineered control systems of the Site in accordance with Schedule "B";
- b. leachate production and quality in accordance with Schedule "C";

- c. surface water flow and quality in accordance with Schedule "D";
- d. levels of landfill gases in accordance with Schedule "E";
- e. ground water in accordance with Schedule "F"; and
- g. noise levels as per the requirements set out in Condition 5.20.

12.7 All monitoring data will be made available to the CLC and the City as soon as practicable.

12.8 Any changes to the monitoring programs shall be done in consultation with the CLC and the City prior to being submitted to the Director for approval. Approval by the Director is required prior to those changes being implemented.

12.9 If it is determined by the Regional Director that noise and/or dust levels from on-Site operations or from transportation of waste to the Site must, in the opinion of the Director, be reduced or otherwise controlled to prevent adverse impacts to adjacent properties, the Owner shall implement contingency measures in accordance with the requirements of the Director, following consultation with the CLC and the City, where practicable.

Predictive Monitoring

12.10 In the event that the results of the monitoring programs listed in Schedules D or F are such that an off-site exceedance of the PWQO, ODWO or the Reasonable Use Guideline is predicted to occur, the Owner shall include in the annual monitoring report the following:

- a. the details of any such predicted off-site exceedance, including the assumptions upon which the prediction is based;
- b. a discussion of the modifications, if any, to intended operations which would be necessary to prevent the predicted off-site exceedance;
- c. a discussion of the modifications, if any, which should be made to the monitoring program; and
- d. a discussion of other mitigation measures, if any, which may be necessary to prevent off-Site impacts.

13.0 CONTINGENCY PLANS AND TRIGGER MECHANISMS

13.1 Contingency plans relating to ground water impacts and the triggering of such contingency plans shall be as described in Item Nos. 2 and 4 of the attached Schedule "A".

13.2 Contingency plans relating to surface water impacts and the triggering of such contingency plans shall be as described in Item No. 3 of the attached Schedule "A".

13.3 Contingency plans relating to landfill gas impacts and the triggering of such contingency plans shall be as described in Item Nos. 2 and 14 of the attached Schedule "A".

13.4 Any changes to the specific trigger levels for the ground water and surface water monitoring

programs shall be done in consultation with the CLC and the City prior to being submitted to the Director for approval. Approval by the Director is required prior to the implementation of these changes.

- 13.5 In the event that the results of the monitoring programs listed in Schedule D or F are such that an off-site exceedance of the PWQO, ODWO or the Reasonable Use Guideline has occurred as a result of the operation of the Site, the Owner shall notify the Director, the CLC and the City as soon as possible and specify the following:
- a. Details of the off-Site exceedance, including the confirmatory monitoring results and the potential off-Site impacts to surface water and ground water users;
 - b. the extent and timing of the contingency measures to be implemented;
 - c. modifications, if any, which should be made to the monitoring program; and
 - d. other mitigation measures, if any, which may be necessary to reduce or prevent off-Site impacts.

14.0 REPORTING

Annual Report

- 14.1 By **June 30th** of each year, an annual report on the use, operation, and monitoring of the Site during the previous calendar year shall be submitted to the District Manager. The report shall include the following:
- a. the results and an interpretive analysis of the results of all air, ground water, surface water, landfill gas, noise and leachate monitoring including:
 - i. the adequacy of the monitoring programs and recommendations for any modifications to programs as appropriate;
 - ii. the extent to which the monitoring results indicate compliance with the conditions of this Approval, PWQO, ODWO, the Reasonable Use Guideline and any other relevant statutes and guidelines;
 - iii. the trend of the monitoring results with respect to future compliance with the conditions of this Approval, PWQO, ODWO, the Reasonable Use Guideline and any other relevant statutes and guidelines;
 - iv. the current or expected future need to implement contingency plans and/or additional mitigation measures to ensure compliance with the Conditions of this Approval, PWQO, ODWO, the Reasonable Use Guideline and any other relevant statutes and guidelines; and
 - v. an impact assessment of the landfill approved under Approval No. A130404 (Closed Newalta (Stoney Creek)) on the Site.
 - b. Site plans showing:

- i. existing contours of the Site;
 - ii. areas of landfilling operation during the reporting period and areas of intended operation during the next reporting period;
 - iii. areas of excavation during the reporting period;
 - iv. the progress of final and interim cover application; and
 - v. previously existing Site works, works installed during the reporting period, and works planned for installation during the next reporting period.
- c. The results of on and off Site noise level measurements including a description of the operations at the Site at the time these measurements were conducted;
 - d. Calculations of the volume of waste, interim cover and final cover disposed or applied during the reporting period and a calculation of the total volume of Site capacity used during the reporting period;
 - e. A calculation of the remaining capacity of the Site and an estimate of the remaining Site life;
 - f. A summary of the quantity, source and types of waste received at the Site;
 - g. A discussion of any approved changes to the operation, equipment and/or procedures at the Site including their effects, if any, on the sound environment within the local community. If these changes resulted in an increase in noise levels a description of the mitigation measures which were taken to reduce the impacts and of the effectiveness of these measures are to be provided. Recommendations respecting any proposed changes in the operation, equipment and/or procedures at the Site and their effects, if any, on the sound environment within the local community with proposed mitigation measures;
 - h. A summary of any occurrences or incidents where this Approval was not complied with, the reasons for non-compliance and the measures to be implemented to ensure that future non-compliance does not occur;
 - i. A list of all complaints and a record of the Owner's responses to such complaints, including a list of complaints filed with Ministry and the City, where such information is reasonably available to the Owner;
 - j. A discussion of any operational problems encountered at the Site and the remedial measures taken including the control of dust and noise; and
 - k. Any other information with respect to this waste Site which the Regional Director may require from time to time.

15.0 SITE CLOSURE

Closure Plan

- 15.1 At least two (2) years prior to closure or when 90% of the Site capacity is reached, whichever comes first, the Owner shall submit to the Director for approval, with copies to the District Manager, a detailed Site closure plan pertaining to the termination of landfilling operations at this Site , post-closure inspection, maintenance and monitoring, and end use. The plan shall include the following:

- a. a plan showing Site appearance after closure;
- b. a description of the proposed end use of the Site ;
- c. a description of the procedures for closure of the Site, including:
 - i.) posting of a sign at the Site entrance indicating the landfill is closed and identifying any alternative waste disposal arrangements;
 - ii) completion, inspection and maintenance of the final cover and landscaping;
 - iii.) site security;
 - iv) removal of unnecessary landfill-related structures, buildings and facilities; and
 - v) final construction of any control, treatment, disposal and monitoring facilities for leachate, groundwater, surface water and landfill gas;
- d. a schedule indicating the time-period for implementing sub-conditions i) to vi) above.
- e. descriptions 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;
 - ii) record keeping and reporting; and
 - iii) complaint contact and response procedures;
- f. an assessment of the adequacy of and need to implement the contingency plans for leachate and methane gas; and
- g. an update of the cost estimates for financial assurance and the amount which has been provided to the Director to date.

15.2 The Closure Plan shall be designed in consultation with the CLC, the City and the Hamilton Region Conservation Authority prior to being submitted to the Director for approval.

15.3 The Site shall be closed in accordance with the closure plan as approved by the Director.

Schedule "A"

This Schedule "A" forms part of Environmental Compliance Approval No. A 181008.

1. The application for Approval of a Waste Disposal Site (Landfill) dated December 1, 1995 and supporting information.
2. The document entitled "Stoney Creek Regional Facility Environmental Assessment, Design and Operations Report" by GHD, dated July 2019.
3. The document entitled "Stoney Creek Regional Facility Environmental Assessment, Surface Water Detailed Impact Assessment Report" by GHD, dated January 2019.
4. The document entitled "Stoney Creek Regional Facility Environmental Assessment, Geology and Hydrogeology Detailed Impact Assessment Report" by GHD, dated January 2019.
5. The document entitled "Taro East Quarry Environmental Assessment, Waste Characterization Report" by Gartner Lee Limited, dated January 1995.
6. The document entitled "Stoney Creek Regional Facility Environmental Assessment, Noise Detailed Impact Assessment Report" by GHD, dated January 2019.
7. The document entitled "Stoney Creek Regional Facility Environmental Assessment, Air Quality and Odour Detailed Impact Assessment Report" by GHD, dated January 2019.
8. The document entitled "Stoney Creek Regional Facility Environmental Assessment, Land Use Impact Assessment" by GHD, dated January 2019.
9. The document entitled "Tender Documents for East Quarry Landfill Site, Phase 1A Base Liner and Leachate Collection System, Stoney Creek, Ontario" dated July 25, 1996 by Gartner Lee Limited including Addendum Nos. 1 dated August 2, 1996, No. 2 dated August 13, 1996, and No. 3 dated August 14, 1996
10. The set of drawings, Drawings No. 1 to 12, entitled "Contract No. ____, Taro Aggregates Ltd. Phase 1A - Base Liner and Leachate Collection System, East Quarry Landfill Site" dated July 1996 by Gartner Lee Limited.
11. The document entitled "East Quarry Landfill Site, Proposal for Construction and Testing of a Base Liner Test Pad" dated May 3, 1996 by Gartner Lee Limited.
12. The letter dated May 23, 1996 to Mr. John Kaasalainen of the Ministry of Environment and Energy, Approvals Branch, from Mark Sungaila of Gartner Lee Limited providing

additional information regarding the construction of the base liner test pad.

13. The letter dated May 28, 1996 to Mr. Wayne Jackman of Taro Aggregates Limited from Mr. Steven Usher of Gartner Lee Limited providing the predictive monitoring trigger levels for the proposed East Quarry Landfill.
14. The memorandum dated June 26, 1996 to Mr. Wayne Jackman of Taro Aggregates Limited from Mr. Mark Sungaila of Gartner Lee Limited providing the trigger levels for combustible gas contingencies.
15. The letter dated August 2, 1996 to Mr. John Kaasalainen of the Ministry of Environment and Energy, Approvals Branch, from Mr. Edward San of Gartner Lee Limited providing additional information for the Phase 1A final detailed design.
16. The letter dated August 14, 1996 to Mr. John Kaasalainen of the Ministry of Environment and Energy from Mr. Wayne Jackman of Taro Aggregates providing responses to the Ministry's review comments dated February 28, 1996.
17. The document entitled "Terrapure Environmental, Financial Assurance Estimate" dated May 1, 2019 by HDR Inc.
18. The document entitled "Response to Conditions 5.6 and 5.8, Simulation of Groundwater Flow at the Taro Aggregates Limited Properties, City of Stoney Creek, Ontario" dated August 1996 by Gartner Lee Limited.
19. The letter report to Mr. Wayne Jackman of Taro Aggregates Limited from Mr. Steven Usher of Gartner Lee Limited dated July 30, 1996 entitled "Taro East Quarry Landfill / EA Condition of Approval 5.9 / Long Term Impact of Dewatering".
20. Gartner Lee report titled "Technical Specifications for Taro East Landfill Site-Phase 3 Base Liner and Leachate Collection System, Stoney Creek, Ontario", dated March 10, 1999.
21. Addendum to the report mentioned in item 2 above dated March 19, 1999, from Mark Sungaila of Gartner Lee to A. Dominski, MOE.
22. Set of drawings, Drawings 1 to 14, titled "Philip Services Corp., Phase 3-Base Liner and Leachate Collection System, Taro East landfill", dated March 1999.
23. The letter dated June 27, 1997 to Mr. Wilfred Ng, Director, Approvals Branch Ministry of Environment and Energy from Mr. Wayne Jackman, Environmental Engineering Manager of Taro Aggregates Ltd. providing the details and design of the permanent on-site wheel wash facility.
24. Letter from Mark A. Sungaila, Gartner Lee Limited, to A. Dominski, Ontario Ministry of the Environment, dated March 6, 1998, requesting an amendment to the Certificate of

Approval, on behalf of Wayne Jackman of Philip Enterprises Inc., including the following supporting documentation:

- i) report entitled Taro East Landfill, Technical Specifications for Phase 1B Base Liner and Leachate Collection System, prepared by Gartner Lee Limited, and dated February 1998; and,
 - ii) set of drawings, Drawings Nos. 1 to 10, entitled Philip Services Corp., Phase 1B - Base Liner and Leachate Collection System, Taro East Landfill, prepared by Gartner Lee Limited, and dated March 1998.
25. Facsimile transmission from Mark A. Sungaila, Gartner Lee Limited, to Margaret Wojcik, Ontario Ministry of the Environment, dated May 12, 1998, providing Addenda No. 1 and No. 3 to the report submitted with the request for the amendment.
 26. Facsimile transmission from Mark A. Sungaila, Gartner Lee Limited, to Margaret Wojcik, Ontario Ministry of the Environment, dated May 13, 1998, providing Addendum No.4 to the report submitted with the request for the amendment.
 27. Facsimile transmission from Mark A. Sungaila, Gartner Lee Limited, to Margaret Wojcik, Ontario Ministry of the Environment, dated May 19, 1998, providing Addendum No.5 to the report submitted with the request for the amendment.
 28. Letter from Mark A. Sungaila, Gartner Lee Limited, to Margaret Wojcik, Ontario Ministry of the Environment, dated May 25, 1998, providing additional information on the design, construction and testing details on the Phase 1B base liner and including Addendum No.2 to the report submitted with the request for the amendment.
 29. Letter from Mark A. Sungaila, Gartner Lee Limited, to Margaret Wojcik, Ontario Ministry of the Environment, dated June 1, 1998, providing additional information on the design, construction and testing details on the Phase 1B base liner.
 30. Report entitled Taro East Quarry Landfill 1996 Phase 1A Liner and Leachate Collection System Construction Inspection Report, prepared by Gartner Lee Limited, and dated December 1996.
 31. Report entitled Taro East Landfill 1997 Phase 1A Liner and Leachate Collection System Construction Inspection Report, prepared by Gartner Lee Limited, and dated November 1997.
 32. Report entitled Taro East Landfill 1997 Phase 2 Liner and Leachate Collection System Construction Inspection Report, prepared by Gartner Lee Limited, and dated November 1997.
 33. Letter dated December 18, 2000 from Wayne Jackman, Environmental Engineering Manager, Philip Services Inc. to Mr. A. Dominski, P. Eng. Supervisor, Waste Unit,

Environmental Assessment and Approvals Branch, Ministry of the Environment, regarding approval of temporary leachate forcemain at the Taro East Landfill and the following attached documents:

- a) Letter dated November 21, 2000 from Chris Caers, M.E.Sc., P. Eng., Project Manager, Earth Tech Canada Inc. to Mr. Wayne Jackman, Philip Services Inc. regarding proposed leachate forcemain construction;
 - b) Drawing No. A4-90K46 -G1 - Taro Aggregates Ltd., City of Stoney Creek, West Quarry Landfill Temporary Forcemain, dated November, 2000, prepared by Earth Tech (Canada) Inc.;
 - c) Specifications for the Leachate Forcemain; and,
 - d) Drawing No. A1-90K46 -P2 - Taro West Landfill, Temporary Forcemain, dated November, 2000, prepared by Earth Tech (Canada) Inc.
34. Letter dated February 22, 2001 from Frank Falcone, C.E.T., Senior Technologist, Earth Tech Canada Inc. to George Lai, P. Eng. Environmental Assessment and Approvals Branch regarding Taro Landfill - Temporary Forcemain with the following Drawing:
- a) Drawing No. A1-90K46 -P2 - Taro West Landfill, Temporary Forcemain, dated November, 2000, revised December 1, 2000, signed February 22, 2001 by C.J.E. Caers, Earth Tech (Canada) Inc.
35. Fax dated March 1, 2001 from Karla Everard, Earth Tech (Canada) Inc. to George Lai, MOE regarding hydraulic calculations of the proposed leachate forcemain including the following documents:
- a) Memo dated January 3, 2001 from Everard to Frank Falcone regarding design flowrate of the proposed leachate forcemain; and,
 - b) Proposed leachate forcemain hydraulic analysis.
36. Technical Specifications for Taro East Landfill Site - Phase 1C and 3B Base Liner and Leachate Collection System, Stoney Creek, Ontario, dated January 2001.
37. Design Drawings for Phase 1C and 3B, numbered 1 to 22, dated January 2001.
38. Letter dated May 21, 2002 from Joe Stephenson, M.Eng., P.Eng., President and Andre Schnell, M.Eng., P.Eng., Senior Project Engineer, Hydromantis, Inc. to Mr. George W. Lai, M.Eng., P.Eng., Senior Engineer, Waste Unit, Certificate of Approval Section, Environmental Assessment and Approval Branch, Ontario Ministry of the Environment and Energy, regarding response to technical questions related to the report biotreatability study to assess potential impacts of the combined Taro East and West Landfill Leachate on the Woodward Avenue WWTP.
39. Letter dated March 8, 2002 from Mark. A. Sungaila, M.A.Sc., P.Eng., Senior

Environmental Engineer/Principal and Edward San, M.E.Sc., P.Eng., Senior Environmental Engineer/Principal to Mr. Andrzej Dominski, P.Eng. Supervisor, Waste Section, Environmental Assessment and Approvals Branch, MOE regarding final detailed design of Phase 6A base liner and leachate collection system, Taro East Landfill.

40. Technical Specifications for Taro East Landfill Site - Phase 6A Base Liner and Leachate Collection System, Stoney Creek, Ontario, dated March 2002, prepared by Gartner Lee Limited.
41. Letter dated May 7, 2002 from Mark. A. Sungaila, M.A.Sc., P.Eng., Senior Environmental Engineer/Principal and Edward San, M.E.Sc., P.Eng., Senior Environmental Engineer/Principal to Mr. George Lai, Environmental Assessment and Approvals Branch, Ontario Ministry of the Environment, regarding signing and stamping final detailed design for Phase 6A base liner and leachate collection system, Taro East Landfill (Provisional Certificate of Approval A181008).
42. Design Drawings entitled "Philip Services Inc., Phase 6A - Base Liner and Leachate Collection System, Taro East Landfill" are indexed as follows:
 - Drawing 1 - Existing conditions.
 - Drawing 2 - Facility Layout.
 - Drawing 3 - Site Preparation.
 - Drawing 4 - Groundwater Collection System and Details.
 - Drawing 5 - Grading Plan - Base Grading Layer.
 - Drawing 6 - Grading Plan - Secondary Liner.
 - Drawing 7 - Grading Plan - Hydraulic Control Layer.
 - Drawing 8 - Grading Plan - Primary Layer.
 - Drawing 9 - Grading Plan - Leachate Collection System.
 - Drawing 10 - Temporary Berm Layout.
 - Drawing 11 - Leachate Collection System and Details.
 - Drawing 12 - Sections - Temporary Berm Construction, Base Liner Construction, Connection to Existing Liner.
 - Drawing 13 - Connection Berm for Interim Waste Placement.
43. Gartner Lee Limited report titled "Imported Fine-Grained soil for Construction of Compacted Clay Liner at Taro East landfill", dated August 2002, which shall form part of Schedule "A" of the original Certificate of Approval.
44. November 2003 document by Gartner Lee titled "Detailed Design for Taro East Landfill Site-Phase 4 Groundwater Collection System and Engineered Side Wall Fill, Stoney Creek, Ontario", which forms part of Schedule "A".
45. Application for approval dated February 6, 2004, and the February 2004 report by Gartner Lee titled "Detail Design for Taro East Landfill Site-Phase 4 Base Liner and Leachate Collection System, Stoney Creek, Ontario", and associated drawings (No.1 to 28).

46. Application for approval dated November 23, 2005, and supporting information and documentation prepared by PSC Industrial Services Canada Inc.
47. Report and supporting documentation entitled "*Detailed Design for the Phase 5 and 6 Base Liner System and Leachate Collection System, Newalta Stoney Creek Landfill (Provisional Certificate of Approval A181008* " prepared for Newalta Industrial Services by Gartner Lee Limited dated March 2007.
48. Report and Drawings entitled "Detailed Design for the Stage 1 Final Cover, Newalta Stoney Creek Landfill (Provisional Certificate of Approval A181008)" prepared for Newalta Industrial Services by Gartner Lee Limited, dated June 2007.
49. Application for a Provisional Certificate of Approval for a Waste Disposal Site dated April 24, 2008, signed by Michael Jovanovic, Regional Manager, Newalta Industrial Services Inc., including all attached supporting information, cover letter, appendices, etc.
50. Report entitled "Detailed Design for the Stage 2 Final Cover, Newalta Stoney Creek Landfill, (Provisional Certificate of Approval A181008)", prepared by AECOM Canada Ltd., dated July 2010.
51. Report entitled "Detailed Design for the Phase 8 West Sidewall & Groundwater Collection System, Newalta Stoney Creek Landfill, including design drawings GW1 to GW5", prepared by AECOM, December 2010.
52. Report entitled "Detailed Design for the Phase 7 Base Liner and Leachate Collection System, Newalta Stoney Creek Landfill (Provisional Certificate of Approval A181008)" prepared by AECOM (Project No. 60213675), dated February 2012.
53. Detailed Design Drawings for Phase 7 Base Liner and Leachate Collection System as follows:
 - i. Cover Sheet entitled "Newalta Stoney Creek Landfill - Phase 7 Base Liner and Leachate Collection System" prepared by AECOM (Project No. 60213675), dated February 2012;
 - ii. Drawing No. LF-PH-7-001 - Existing Conditions - prepared by AECOM (Project No. 60213675), dated February 9, 2012;
 - iii. Drawing No. LF-PH-7-002 - Facility Layout - prepared by AECOM (Project No. 60213675), dated February 9, 2012;
 - iv. Drawing No. LF-PH-7-003 - Site Preparation - prepared by AECOM (Project No. 60213675), dated February 9, 2012;
 - v. Drawing No. LF-PH-7-004 - Groundwater Collection System and Details - prepared by AECOM (Project No. 60213675), dated April 24, 2012;
 - vi. Drawing No. LF-PH-7-005 - Grading Plan Base Grading Layer - prepared by AECOM (Project No. 60213675), dated February 9, 2012;
 - vii. Drawing No. LF-PH-7-006 - Grading Plan Secondary Liner - prepared by AECOM

- (Project No. 60213675), dated February 9, 2012;
- viii. Drawing No. LF-PH-7-007 - Grading Plan Hydraulic Control Layer - prepared by AECOM (Project No. 60213675), dated February 9, 2012;
 - ix. Drawing No. LF-PH-7-008 - Grading Plan Primary Liner - prepared by AECOM (Project No. 60213675), dated February 9, 2012;
 - x. Drawing No. LF-PH-7-009 - Grading Plan Leachate Collection System (Graded Filter) - prepared by AECOM (Project No. 60213675), dated February 9, 2012;
 - xi. Drawing No. LF-PH-7-010 - Grading Plan - temporary Berm and Final Grades at Limit of Landfill, Access Ramp Detail - prepared by AECOM (Project No. 60213675), dated February 9, 2012;
 - xii. Drawing No. LF-PH-7-011 - Leachate Collection System - prepared by AECOM (Project No. 60213675), dated February 9, 2012;
 - xiii. Drawing No. LF-PH-7-012 - Typical Details - Base Liner and Temporary Berm - prepared by AECOM (Project No. 60213675), dated February 9, 2012;
 - xiv. Drawing No. LF-PH-7-013 - Typical Details - Interim Temp. Berm and Connection Details to Existing Liner System - prepared by AECOM (Project No. 60213675), dated February 9, 2012;
 - xv. Drawing No. LF-PH-7-014 - Groundwater Collection System, Sidewall Construction Sections "E" and "F" - prepared by AECOM (Project No. 60213675), dated February 9, 2012;
 - xvi. Drawing No. LF-PH-7-015 - Sidewall Construction Section "G" and Details - prepared by AECOM (Project No. 60213675), dated April 24, 2012;
 - xvii. Drawing No. LF-PH-7-016 - Typical Details - Leachate Collection System Cleanout Structure Details - prepared by AECOM (Project No. 60213675), dated February 9, 2012;
 - xviii. Drawing No. LF-PH-7-017 - Typical Details - Leachate Collection System Cleanout Structure Details - prepared by AECOM (Project No. 60213675), dated February 9, 2012;
 - ixx. Drawing No. LF-PH-7-018 - Typical Details - Leachate Collection System Cleanout Structure Details - prepared by AECOM (Project No. 60213675), dated February 9, 2012;
 - xx. Drawing No. LF-PH-7-019 - Typical Details - Groundwater Collection System - Cleanout Structures CO-G10 and CO-G11 - prepared by AECOM (Project No. 60213675), dated February 9, 2012;
 - xxi. Drawing No. LF-PH-7-020 - Typical Details - Injection Wells W9 and W10 - prepared by AECOM (Project No. 60213675), dated February 9, 2012; and,
 - xxii. Drawing No. LF-PH-7-021 - Proposed Maximum Limit of Phase 7A Construction to be completed in Year 2012 - prepared by AECOM (Project No. 60213675) and dated April 24, 2012.
54. Drawing No. 3-R entitled "Base Grading Plan" prepared by AECOM (Project No. 60213675) dated January 14, 2013.
55. Environmental Compliance Approval Application signed by Lorenzo Alfano, Newalta dated November 15, 2012 for amending Conditions 23 and 25 of the ECA re: Changes to

service area and waste receiving rates.

56. Report entitled "Newalta Stoney Creek Landfill Reconfiguration Supporting Documentation" prepared for Newalta Corporation by AECOM (Project No. 60290994) dated August 2013.
57. Application to Amend Environmental Compliance Approval No. A181008, Terrapure Environmental Stoney Creek Regional Facility, signed by Lorenzo Alfano, dated July 11, 2019.
58. Memorandum from Ben Kempel/Brian Dermody, GHD to Jessica Foo, MECP, dated September 13, 2019 re: Recommended Surface Water Monitoring Program - Terrapure Environmental Stoney Creek Regional Facility (MECP Reference 5720-BE4NER).
59. Memorandum from Ben Kempel/Brian Dermody, GHD to Jessica Foo, MECP, dated September 17, 2019 re: Response to Comments Groundwater Technical Support - Terrapure Environmental Stoney Creek Regional Facility.
60. Memorandum from Brian Dermody, GHD to Jennifer Roth, City of Hamilton, dated October 27, 2019 re: Responses to City Review Comments - Terrapure Stoney Creek Regional Facility ECA Amendment Application.
61. Document entitled "Final Cover, Terrapure Stoney Creek Landfill", dated July 14, 2020" re: Technical Specifications and Drawings for final cover of the Terrapure Stoney Creek Regional Facility.

SCHEDULE "B"

This Schedule "B" forms part of the Approval.

Table B.1: Ground Water Perimeter Drain and Underdrain Operation, Inspection, and Maintenance Requirements

Frequency	Operation	Inspection	Maintenance
Daily	No active operational requirements; system operates by gravity flow and only when groundwater pumping station is in operation (refer to Table B.2)	<ul style="list-style-type: none"> • No specific daily requirements. 	No specific daily requirements, maintenance as needed
Monthly		No specific monthly requirements.	No specific monthly requirements, maintenance as needed.
Quarterly		Probe cleanouts for sediment accumulation.	No specific quarterly requirements, maintenance as needed. <ul style="list-style-type: none"> • Remove sediment as needed.
Annually		Video inspection of perimeter drain piping	Flush system piping as required based on inspection, other maintenance as needed.

Note: Ground water level and quality monitoring addressed in Schedule "C".

Table B.2: Groundwater Pumping Station Operation, Inspection, and Maintenance Requirements

Frequency	Operation	Inspection	Maintenance
Daily	Groundwater will be pumped from collection system as required. Once in operation, pumping station operates automatically with pumps activated by float controls. Once pumping cycle set at system start-up. No active operational requirements.	<ul style="list-style-type: none"> If in operation, check pump operation. 	No specific daily requirements, maintenance as needed.
Monthly		No specific monthly requirements.	No specific monthly requirements, maintenance as needed.
Quarterly		Inspect for sediment accumulation. <ul style="list-style-type: none"> Inspect pump switches, electrical systems and alarms. 	No specific quarterly requirements, maintenance as needed. <ul style="list-style-type: none"> Vacuum sediment, clean switch contacts and pumps as needed.
Annually		Remove pumps and inspect for wear.	No specific annual requirements, maintenance as needed.

Table B.3: Leachate Collection System Operation, Inspection, and Maintenance Requirements

Frequency	Operation	Inspection	Maintenance
Daily	No active operational requirements; system operates by gravity flow.	<ul style="list-style-type: none"> Measure leachate quantity being collected. 	No specific daily requirements, maintenance as needed.
Monthly		No specific monthly requirements.	No specific monthly requirements, maintenance as needed.
Quarterly		Probe cleanouts for sediment accumulation.	No specific quarterly requirements, maintenance as needed.
Annually		<p>Video inspection of all system piping upon completion of construction.</p> <ul style="list-style-type: none"> Once constructed, video inspection of main pipes and lateral pipes once every two years. 	Flush all collection system piping as required based on inspection, other maintenance as needed.

NOTE: Leachate quality, quantity and head monitoring addressed in Schedule "C".

Table B.4: Leachate Pumping Station and Gravity Sewer Operation, Inspection, and Maintenance Requirements

Frequency	Operation	Inspection	Maintenance
Daily	Pumping station operates automatically with pumps activated by float controls. Once pumping cycle set at system start-up, no active operational requirements.	<ul style="list-style-type: none"> • Check pump for proper operation. 	No specific daily requirements, maintenance as needed.
Monthly		Inspect pumping station for sediment accumulation. <ul style="list-style-type: none"> • Inspect gravity sewer for sediment accumulation. 	Vacuum sediment as needed, maintenance as needed.
Quarterly		Inspect pump switches, electrical systems and alarms.	No specific quarterly requirements, maintenance as needed.
Annually		Remove pumps and inspect for wear. <ul style="list-style-type: none"> • Video inspection of all gravity sewer piping upon completion of construction. • Once constructed video inspection of gravity sewer piping once every two years. 	Flush gravity sewer as required based on inspection, other maintenance as needed.

Table B.5: Hydraulic Control Layer Operation, Inspection, and Maintenance Requirements

Frequency	Operation	Inspection	Maintenance
Daily	Operation of water replacement system. ⁽¹⁾	<ul style="list-style-type: none"> When water replacement is occurring, ensure proper operation of injection/extraction wells. 	No specific daily requirements, maintenance as needed.
Monthly	No specific monthly requirements.	No specific monthly requirements.	No specific monthly requirements, maintenance as needed.
Quarterly	No specific quarterly requirements.	No specific quarterly requirements.	No specific quarterly requirements, maintenance as needed.
Annually	No specific annual requirements.	No specific annual requirements.	No specific annual requirements, maintenance as needed.

No active operational requirements until end of landfill operating period. Saturation of hydraulic control layer to begin starting once construction of liner has been completed. Frequency of replacement of water within hydraulic control layer to be determined based on water quality within layer. Water quality and head monitoring addressed in Schedule "C".

Table B.6: Gas Venting System Operation, Inspection, and Maintenance Requirements

Frequency	Operation	Inspection	Maintenance
Monthly	System is passive and has no active operational requirements.	<ul style="list-style-type: none"> No specific monthly requirements. 	No specific monthly requirements, maintenance as needed.
Annually		No specific annual requirements.	No specific annual requirements, maintenance as needed.

Table B.7: Final Cover Inspection and Maintenance Requirements

Frequency	Inspection	Maintenance
Semi-Annually	<ul style="list-style-type: none"> “Walk over” inspection for settlement occurrences, surface erosion and vegetation condition (semi-annually for the first two years following construction). 	No specific semi-annual requirements, maintenance as needed.
Annually	“Walk over” inspections annually after two years.	No specific annual requirements, maintenance as needed.

Table B.8: General Site Works Inspection and Maintenance Requirements

Frequency	Inspection	Maintenance
Weekly	<ul style="list-style-type: none"> Visual inspection of all fences, gates, visual screens, access roads, First Road West (for efficiency of sweeping) public warning signs, traffic signs. 	Maintenance/repair as needed.
Monthly (May to October only)	Visual inspection of sedimentation / retention ponds and perimeter ditches for vegetation condition and sediment accumulation (monthly for first year after construction).	Maintenance as needed (sediment removal, revegetation, erosion repairs).
Semi-Annually	Visual inspection of sedimentation/retention ponds and perimeter ditches for vegetation condition and sediment accumulation (semi-annually after first year following construction).	Maintenance as needed (sediment removal, revegetation, erosion repairs).

SCHEDULE "C"

This Schedule "C" forms part of the Approval.

ENVIRONMENTAL MONITORING

This program will be implemented sequentially as the development of the site progresses. The Short Term category corresponds to the period during the operating life, prior to the hydraulic control layer being surcharged. The Long Term category corresponds to the post closure period, once the hydraulic control is surcharged.

The following schedule examines each layer individually in terms of water quantity (levels and flow) and water quality (chemistry).

	Frequency
Atmospheric Conditions <u>Short and Long Term</u> Average temperature (min., mean, max.), precipitation and wind direction.	Daily
Waste Records of scale-house receipts of waste types.	Continuous
Airborne Dust PM ₁₀ Monitoring	Continuous
Leachate Collection Layer <u>Short and Long Term</u> 1 Levels - 16 of 44 cleanouts - diffusion test pad location (Short term only) 2 Flow - Leachate Collection System discharge point. 3 Quality - Discharge point (List C + BOD)	Quarterly Quarterly Daily Quarterly
Hydraulic Control Layer <u>Short Term</u> 1 Levels - sampler tube at diffusion test pad <u>Long Term</u> - 14 pump in/out locations around perimeter <u>Short Term</u> 2 Flow - visual observation of pumpout volumes <u>Long Term</u> - at each of 14 pump in/out locations as part of flushing cycle <u>Short Term</u> 3 Quality - from pumpout discharge (List A) - sampler tube at diffusion test pad (List B) <u>Long Term</u> - 14 pump in/out locations (List A)	Monthly Monthly for 2 years after surcharge, Quarterly thereafter Monthly or as needed Annually or as determined by performance testing As needed when flowing

	4 per year
Groundwater Collection System / Vinemount Flow Zone <u>Short and Long Term</u> 1 Levels - accessible perimeter cleanout locations - diffusion test pad location (Short term only) 2 Flow - Discharge, if pumping 3 Quality - Discharge, if pumping	Quarterly Monthly Quarterly (List B)
Primary and Secondary Liners <u>Short Term</u> 1 Quality - Electrical Conductivity at diffusion test pad	Quarterly

To avoid engineered perforations of the liner systems, which may become conduits for fluid movement and/or localized liner failure, groundwater monitors in the VFZ, UFZ, MFZ and LFZ will be restricted to the perimeter of the site (that is no groundwater monitors will exist under the liner).

List A: General: pH, Conductivity, Alkalinity, Phenols, TKN, NH₃ N, TOC

Major ions: Ca, Mg, Na, K, Cl, SO₄, F, NO₂N, NO₃N, Br,

PO₄

List B: List A + Metals: Al, BA, BE, B, Cd, Cr, Co, Cu, Pb, Fe, Mn, Mo, Ni, Si, Sr, Ti, V, Zn

List C: List B + Organic Analysis: Misa Groups 16, 17, 18, 19, 20, and 22.

SCHEDULE "D"

This Schedule "D" forms part of the Approval.

Surface Water Monitoring Program

Table D.1 Surface Water Monitoring Program

Stations	Spring Freshet (Feb-Apr)	Spring Rain (Apr-May)	Summer Dry (June-Aug)	Summer Rain (June-Sep)	Fall Rain (Oct-Dec)
TS-1	✓ ❖	✓	✓ ❖	✓	✓
TS-2	✓ ❖	✓	✓ ❖	✓	✓
T-1R	✓ ❖	✓	✓ ❖	✓	✓
T-3R*	✓ ❖	✓	✓ ❖	✓	✓
T-3A	✓ ❖	✓	✓ ❖	✓	✓
T-12	✓ ❖	✓	✓ ❖	✓	✓
T-13	✓	✓	✓	✓	✓
T-15	✓ ❖	✓	✓ ❖	✓	✓
T-30	✓	✓	✓	✓	✓
T-32	✓	✓	✓	✓	✓
North Sump	✓ ❖		✓ ❖		

Notes:

- * Sample when there is visible flow. Check on a weekly basis to get the monthly sample
- ✓ includes field measurements and water quality evaluation (full) parameters
- ❖ includes trace organic compounds

Table D.2 Surface Water Parameter List

<i>List ✓ : Field Measurements</i>	<i>List ✦ : Trace Organic Compounds</i>
pH dissolved oxygen water temperature conductivity stream flow (or water level)	MISA test groups 16, 17, 18, 19, 20, 22 Volatile organics, Semi-volatile organics Pesticides, Base/neutral extractables Acid extractables Chlorophenols
<i>List ✓ : Water Quality Evaluation (full)</i>	
total suspended solids pH and alkalinity hardness chloride nitrite total ammonia un-ionized ammonia (calculated) total phosphorus (0.030) copper (0.001) boron cadmium (0.00045) mercury (0.0002) chromium (0.1) iron (0.3) filtered total aluminum (0.075) arsenic (0.1) total phenols (4AAP) (0.001)	BODS dissolved organic carbon sulphate nitrate calcium magnesium sodium manganese lead (0.001) zinc (0.020) nickel (0.025) silver (0.0001) selenium (0.1) molybdenum (0.010) cobalt (0.1) beryllium vanadium

Note: Number in parenthesis is the minimum detection limit (in mg/L) which must be obtained in all cases. If it is not possible to achieve the stated detection limit then the lowest possible detection limit should be obtained.

SCHEDULE "E"

This Schedule "E" forms part of the Approval.

COMBUSTIBLE GAS MONITORING

As each phase of the landfill is constructed, the gas monitors should be installed in the buffer zone every 200 m around the perimeter of the landfill, into the water table in the Eramosa bedrock. Monitoring will include combustible gas concentrations in all monitors.

	Frequency
Monitoring	
Winter: First two years of landfill phase construction	Weekly
(After two years with no detection of combustible gas)	Monthly
Summer:	Once
Sampling	Four samples each location
Summer: Gas sampling (CO ₂ , CH ₄ , N ₂ , O ₂ , H ₂ S) within first year of phase completion	

SCHEDULE "F"

This Schedule "F" forms part of the Approval.

GROUND WATER MONITORING PROGRAM

Monitoring Well Nest	Flow Zone	Water Level Measurements		Sampling			Notes	
		Weekly	Monthly	Parameter List	Sample Collection Frequency			
14	I	LFZ	-	✓	A	Triannual		
29	II	VFZ	-	✓	-	-	Monitors will be decommissioned when liner construction reaches this location	
	III	UFZ	-	✓	-	-		
	I	UMFZ	-	✓	-	-		
	IV	LMFZ	-	✓	-	-		
30	II	Waste	-	✓	-	-		
	I	UFZ	-	✓	-	-		
31	II	Waste	-	✓	-	-		
	I	UFZ	-	✓	A	Triannual		
32	II	Waste	-	✓	-	-		
	I	VFZ	-	✓	-	-		
33	II	Waste	-	✓	A	Triannual		
	I	VFZ	-	✓	A	Triannual		
35	V	Overburden/Eramosa	-	✓	A	B	Triannual	Semi-annual
	VII	VFZ	-	✓	A	B	Triannual	Semi-annual
	IV	UFZ	-	✓	A	B	Triannual	Semi-annual
	VI	UMFZ	-	✓	A	B	Triannual	Semi-annual
	III	LFZ	-	✓	A	B	Triannual	Semi-annual

36	IVR	Overburden/Eramosa	-	✓	A	Triannual	Replacement well
	VR	VFZ	-	✓	A	Triannual	Replacement well
	IIIR	UFZ	-	✓	A	Triannual	Replacement well
	IR	UMFZ	-	✓	A	Triannual	Replacement well
	IIR	LFZ	-	✓	-	-	Replacement well

40	III	VFZ	-	✓	-	-			Monitors will be decommissioned when liner construction reaches this location
	IIR	UFZ	-	✓	-	-			
	I	UMFZ	-	✓	-	-			
41	III	Overburden/Eramosa	-	✓	A		Triannual		
	II	UMFZ	-	✓	A	B	Triannual	Semi-annual	
	I	LFZ	-	✓	A	B	Triannual	Semi-annual	
42	III	VFZ	-	✓	A		Triannual		
	II	UFZ	-	✓	A		Triannual		
	I	UMFZ	-	✓	A		Triannual		
43	II	LMFZ	-	✓	A		Triannual		
	I	LFZ	-	✓	A		Triannual		
44	II	LMFZ	-	✓	A	B	Triannual	Semi-annual	
	I	LFZ	-	✓	A	B	Triannual	Semi-annual	
45	II	LMFZ	-	✓	-	-			
	I	LFZ	-	✓	-	-			
46 R	IIIR	UFZ	-	✓	A		Triannual		Replacement well
	IIR	UMFZ	-	✓	A		Triannual		Replacement well
	IR	LFZ	-	✓	A		Triannual		Replacement well
47	IV	Overburden/Eramosa	-	✓	A	B	Triannual	Semi-annual	
	III	VFZ	-	✓	A	B	Triannual	Semi-annual	
	IIR	UFZ	-	✓	A	B	Triannual	Semi-annual	Replacement well
	I	UMFZ	-	✓	A	B	Triannual	Semi-annual	

48	IV	Overburden/Eramosa	-	✓	A		Triannual		Monitors will be decommissioned when liner construction reaches this location
	V	VFZ	-	✓	A		Triannual		
	III	UFZ	-	✓	-		-		
	II	UMFZ	-	✓	A		Triannual		
	I	LFZ	-	✓	A		Triannual		
49	IV	Overburden/Eramosa	-	✓	A		Triannual		
	V	VFZ	-	✓	A		Triannual		
	III	UFZ	-	✓	-		-		
	II	UMFZ	-	✓	A		Triannual		
	IR	LFZ	-	✓	-		-		
50	II	Overburden/Eramosa	-	✓	A		Triannual		
	I	UFZ	-	✓	-		-		
51	V	Overburden/Eramosa	-	✓	A	B	Triannual	Semi-annual	
	IV	VFZ	-	✓	A	B	Triannual	Semi-annual	
	VI	RS	-	✓	-		-		
52	III	Overburden/Eramosa	-	✓	A		Triannual		
	II	VFZ	-	✓	A		Triannual		
	I	UFZ	-	✓	-		-		
55	I	VFZ	-	✓	-		-		
		UFZ	-						
		UMFZ	-						
56	II	UFZ	-	✓	A		Triannual		
	I	UMFZ	-	✓	A		Triannual		
57	II	Waste	-	✓	-		-		
	IR	UFZ	-	✓	-		-		Replacement well

58	I	Waste	-	✓	A	B	Triannual	Semi-annual	
60	III	VFZ	-	✓	A		Triannual		
	II	UFZ	-	✓	A		Triannual		
	I	UMFZ	-	✓	A		Triannual		
	IV	LFZ	-	✓	A		Triannual		
61	III	VFZ	-	✓	A		Triannual		
	II	UFZ	-	✓	A		Triannual		
	I	UMFZ	-	✓	A		Triannual		
62	IV	UFZ	-	✓	A		Triannual		
	III	UMFZ	-	✓	A		Triannual		
	II	LMFZ	-	✓	A		Triannual		
	I	LFZ	-	✓	A		Triannual		
67	III	UFZ	-	✓	A		Triannual		
	II	UMFZ	-	✓	A		Triannual		
	I	LMFZ	-	✓	A		Triannual		
68	IV	VFZ	-	✓	A	B	Triannual	Semi-annual	
	III	UFZ	-	✓	A	B	Triannual	Semi-annual	
	II	UMFZ	-	✓	A	B	Triannual	Semi-annual	
	I	LFZ	-	✓	A	B	Triannual	Semi-annual	
72	III	UFZ	-	✓	A	B	Triannual	Semi-annual	
	II	UMFZ	-	✓	A	B	Triannual	Semi-annual	
	I	LFZ	-	✓	A	B	Triannual	Semi-annual	
75	IV	UFZ	-	✓	A		Triannual		
	III	UMFZ	-	✓	A		Triannual		
	II	LMFZ	-	✓	A		Triannual		
	I	LFZ	-	✓	A		Triannual		
76	III	LMFZ	-	✓	A	B	Triannual	Semi-annual	
	II	LFZ	-	✓	A	B	Triannual	Semi-annual	
	I	RS	-	✓	A	B	Triannual	Semi-annual	
77	V	Overburden/Eramosa	-	✓	A		Triannual		
	II	UMFZ	-	✓	A		Triannual		
	I	LFZ	-	✓	A		Triannual		

P1	III	UFZ	-	✓	A	Triannual	
	II	UMFZ	-	✓	A	Triannual	
	I	LFZ	-	✓	A	Triannual	
P2	II	UFZ	-	✓	A	Triannual	
	I	LFZ	-	✓	-	-	
P3	II	UFZ	-	✓	A	Triannual	
	III	UMFZ	-	✓	A	Triannual	
	I	LMFZ	-	✓	A	Triannual	
P4	IV	Eramosa	-	✓	A	Triannual	
	II	UFZ	-	✓	-	-	
	III	UMFZ	-	✓	-	-	
P5	IVRR	VFZ	-	✓	A	Triannual	Replacement well
	IIIR	UFZ	-	✓	A	Triannual	Replacement well
	IIR	UMFZ	-	✓	A	Triannual	Replacement well
	IR	LFZ	-	✓	A	Triannual	Replacement well
P6	IR	UFZ	-	✓	-	-	Replacement well
9	9-I	VFZ	-	✓	-	-	
P7	VIR	Overburden/Eramosa	-	✓	-	-	Replacement well
	IV	VFZ	-	✓	A	Triannual	
	III	UFZ	-	✓	A	Triannual	
	II	UMFZ	-	✓	A	Triannual	
	V	LMFZ	-	✓	-	-	
	IR	LFZ	-	✓	A	Triannual	Replacement well
P8	II	Overburden/Eramosa	-	✓	A	Triannual	
	I	UFZ	-	✓	A	Triannual	
P9	II	Overburden/Eramosa	-	✓	A	Triannual	
	IIIR	VFZ	-	✓	A	Triannual	Replacement well
	I	UFZ	-	✓	A	Triannual	

		Overburden/Eramo					
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P10	V	sa	-	✓	A	B	Triannual	Semi-annual	
	IV	VFZ	-	✓	A	B	Triannual	Semi-annual	
	III	UFZ	-	✓	A	B	Triannual	Semi-annual	
	II	UMFZ	-	✓	A	B	Triannual	Semi-annual	
	I	LFZ	-	✓	A	B	Triannual	Semi-annual	
P11	III	UFZ	-	✓	A	Triannual			
	II	UMFZ	-	✓	A	Triannual			
	I	LFZ	-	✓	A	Triannual			
P12	I	UFZ	-	✓	A	Triannual			
P14	I	UFZ	-	✓	A	Triannual			
P15	I	UFZ	-	✓	A	Triannual			
P16	I	UFZ	-	✓	A	Triannual			
P17	I	UFZ	-	✓	A	Triannual			
Shatter Trench	ST 1	UFZ	-	✓	A	Triannual			
Shatter Trench	ST1-II	UFZ	-	✓	-	-			
	ST 1-I	UMFZ	-	✓	-	-			
Shatter Trench	ST 2	UFZ	-	✓	A	Triannual			
Shatter Trench	ST 2-I	UFZ	-	✓	-	-			
	ST 2-II	UMFZ	-	✓	-	-			
Shatter Trench	M 5	UFZ	-	✓	-	-			
		UMFZ	-						
Shatter Trench	M 5a	UFZ	✓	-	-	-			
	M 5R	UMFZ	✓	-	-	-			

Lower Excavation	M4	VFZ	-	✓	A		Triannual	
		UFZ	-					
		UMFZ	-					
CW3, 5R, 16 (when operating)	CW16	VFZ	-	✓	A		Triannual	
	CW3, 5R	UFZ	-					
L1	L1	LFZ	-	✓	A		Triannual	
LS-1	LS-1	Waste	-	✓	A	B	Triannual	Semi-annual
LS-2	LS-2	Waste	-	✓	A	B	Triannual	Semi-annual
LS-3	LS-3	Waste	-	✓	A	B	Triannual	Semi-annual
Gas Monitors	G11	Overburden/Eramosa	-	✓	A		Triannual	
Gas Monitors	G13	Overburden/Eramosa	-	✓	A		Triannual	
Gas Monitors	G27	Overburden/Eramosa	-	✓	A		Triannual	

FREQUENCY AND PARAMETERS

Parameter List A Field Measurements: pH, water temperature, conductivity
Analytical Parameters: pH, conductivity, alkalinity, hardness, TDS, phenols, TKN, ammonia, DOC, calcium, fluoride, bromide, nitrate, nitrite, phosphate, sulphate, aluminum, barium, beryllium, boron, cadmium, chromium
Parameter List A to be sampled on triannual basis (spring, summer, fall)

Parameter List B Analytical Parameters: MISA Test Groups 16, 17, 18, 19, 20, 22
Volatile organics, semi-organics, pesticides, base/neutral extractables, acid extractables, chlorophenols
Parameter List B to be sampled on semi-annual basis (spring, fall)

Water levels are a requirement of Permit to Take Water

VFZ - Vinemount Flow Zone, UFZ - Upper Flow Zone, UMFZ - Upper Mid Flow Zone, LMFZ - Lower Mid Flow Zone, LFZ - Lower Flow Zone