ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 3957-BQ2L4V
Issue Date: May 29, 2020

Sheik Halal Farms Inc.
4907 Forest Hill Dr
Mississauga, Ontario
L5M 5B1

Site Location: 193064 Amaranth-East Luther Townline, R. R. 4
Lot 1, Concession 32
Town of Grand Valley, County of Dufferin

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

industrial and domestic sewage treatment works and final subsurface disposal works, each rated at an average daily sewage flow rate of 45 m^3/day, for the Sheik Halal Farms located at 193064 Amaranth-East Luther Townline, R. R. 4, Lot 1, Concession 32, Town of Grand Valley, with a site area of 2.0 ha, comprising;

A. Process Wastewater Treatment System

Influent/Raw Sewage pumping
One (1) influent/raw sewage pumping station, located at the east side of the processing plant, receivng raw sewage from the facility washrooms and wastewater from poultry processing plant, designed for a peak flow rate of 6 litres per second, consisting of a 1200 mm diameter circular wet well , equipped with two submersible pumps, each rated at 3 litres per second at a Total Dynamic Head (TDH) of 7.6 metres, discharging to the grit removal system;

Pre-treatment (Screening and Grit Removal)
One (1) packaged single screening and grit removal system receiving the wastewater from the raw sewage pumping station, designed for a peak flow rate of 6 Litres per second, complete with gravity outlet to equalization tanks;

Equalization tanks
Two (2) precast concrete equalization tanks, each having a capacity of 50,000 Litres, receiving the wastewater flow from the screening equipment, complete with a submerged aeration grid composed of six course bubble diffusers for pre-aeration and provide a mixing action, pumping the effluent through

submerged pumps each rated at 1.1 Litres per second at 6.0 m TDH to a Dissolved Air Floatation unit;

Dissolved Air Floatation Unit (DAF) system

One packaged Dissolved Air Floatation Unit (DAF), system having a volume of 3.18 m^3, with approximate dimensions of 2.4 m x 6.1 m and 2.6 m side water depth, providing a total of 3 m^2 operating surface area and maximum flow rate of 4 m^3/hour, complete with DAF Primary Clarifier, equipped with two (2) centrifugal, regenerative turbine close coupled cast iron primary DAF recirculation pumps (one duty, one standby) and one (1) sludge transfer pump, having 1.0 L/sec capacity , discharging effluent to the bioreactor tank, and discharging sludge to a Membrane Bioreactor through a rotary fine screen;

Rotary Fine Screen

One (1) rotary brush Fine Screens, having 2 millimetre perforation, having a capacity of 30.3 m3/hour, discharging to a Membrane Bio-reactor;

Bioreactor Tank

one (1) prefabricated membrane bioreactor container tank, providing a volume of 100 m^3, equipped with 100 fine bubble diffusers for aeration, and dual DO/pH transmitters; complete with one (1) 5 HP aeration blower with a capacity of 200 $N.m^3$/hr at 300 mbar, complete with Two (2) biological wastewater feedpumps, one for duty and one for standby, each rated at 6 m^3/hour under a head of 7.6 m, pumping the aerated sewage from aeration tanks to the MBR;

Membrane Bioreactor System (MBR)

One (1) Membrane Bioreactor system designed for a volume of 60,000 Litre (effective volume of 51,000 Litres) receiving effluent from the DAF system designed for a hydraulic capacity of 30,300 Litres per hour, comprising of one prefabricated Packaged Membrane Bio Plant (Ultraclear Bioplant UC-P 50 / S E), for Biomass separation having an average capacity of 45 m^3/d, and a Membrane filtration cell for biomass separation and permeate disinfection with Immersed ultrafiltration (UF), Flat sheet Polyether Sulfone (PES) membranes with Nominal Pore Size 0.3-0.04 µm providing a total of 900 m^2 filter area with three modules, complete with Hydrostatic Level transmitter, discharging the treated effluent to a Treated Effluent Tank;

Treated Effluent Tank

One 50,000 Litres treated effluent tank, continuously receiving the treated effluent by gravity from Membrane Bioreactor complete with two pumps, each rated at 1.1 Litres per second under a TDH of 33 metre, pumping intermittently to the effluent valved manifold in the distribution houses of the two subsurface disposal beds through 38mm forcemains;

Distribution boxes

Two (2) Distribution Houses, one each located near each of the two disposal beds, 1500 mm x 1500 mm, receiving the sewage flow from the treated effluent tank through forcemain, pressure distributing timed dose of the effluent to the distribution piping at 1.1 Litres per second;

B. Subsurface Disposal Works

Shallow Buried Trench

two (2) proposed subsurface disposal beds designed as a shallow buried trenches fully raised constructed in imported soils, each bed consisting of four (4) cells, each cell having 6 runs of 28.1 m with a total length of 674.4 metre (each bed) pressurized distribution piping installed in imported sand fill with a percolation rate of 10 min/cm to an approximate depth of 1.0 m; each distribution pipe is a 25 mm dia PVC pipe with 3.0 mm dia orifice holes facing upward with every third orifice facing down and spaced equally at 1.0 metre on centre; each bed has a mantle extending 20 m from the last distribution piping in the direction of groundwater flow;

including all other mechanical system, and control system, piping, valves and appurtenances essential for the proper, safe and reliable operation of the Works in accordance with this Approval, in the context of process performance and general principles of wastewater engineering only;

all in accordance with the submitted supporting documents listed in Schedule A.

For the purpose of this environmental compliance approval, the following definitions apply:

1. "Approval" means this entire Approval document and any Schedules to it, including the application and Supporting Documentation;

2. "BOD_5" (also known as $TBOD_5$) means five day biochemical oxygen demand measured in an unfiltered sample and includes carbonaceous and nitrogenous oxygen demand;

3. "$CBOD_5$" means five day carbonaceous (nitrification inhibited) biochemical oxygen demand measured in an unfiltered sample;

4. "Director" means a person appointed by the Minister pursuant to Section 5 of the EPA for the purposes of Part II.I of the EPA;

5. "District Manager" means the District Manager of the London District Office;

6. "EPA" means the Environmental Protection Act, R.S.O. 1990, c.E.19, as amended;

7. "Ministry" means the ministry of the government of Ontario responsible for the EPA and OWRA and includes all officials, employees or other persons acting on its behalf;

8. "OBC" means the Ontario Building Code;

9. "Owner" means Sheik Halal Farms Inc. and its successors and assignees;

10. "OWRA" means the *Ontario Water Resources Act* , R.S.O. 1990, c. O.40, as amended;

11. "Rated Capacity" means design daily sewage flow for which the Works are approved to handle;

12. "Professional Engineer" means a person entitled to practice as a Professional Engineer in the Province of Ontario under a licence issued under the Professional Engineers Act;

13. "Supporting Documentation" means the documents listed in Schedule A of this Approval;

14. "Works" means the sewage works described in the Owner's application and this Approval.

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

TERMS AND CONDITIONS

GENERAL PROVISIONS

a. The Owner shall ensure that any person authorized to carry out work on or operate any aspect of the Works is notified of this Approval and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.

b. Except as otherwise provided by these conditions, the Owner shall design, build, install, operate and maintain the Works in accordance with the description given in this Approval, and the application for approval of the Works.

c. Where there is a conflict between a provision of any document in the schedule referred to in this Approval and the conditions of this Approval, the Conditions in this Approval shall take precedence, and where there is a conflict between the documents in the schedule, the document bearing the most recent date shall prevail.

d. Where there is a conflict between the documents listed in the submitted documents, and the application, the application shall take precedence unless it is clear that the purpose of the document was to amend the application.

e. The Conditions of this Approval are severable. If any Condition of this Approval, or the application of any requirement of this Approval to any circumstance, is held invalid or unenforceable, the application of such condition to other circumstances and the remainder of this Approval shall not be affected thereby.

2. EXPIRY OF APPROVAL

a. This Approval will cease to apply to those parts of the Works which have not been constructed within five (5) years of the date of this Approval.

3. CHANGE OF OWNER

a. The Owner shall notify the District Manager and the Director, in writing, of any of the following changes within thirty (30) days of the change occurring:

a. change of Owner;

b. change of address of the Owner;

c. change of partners where the Owner is or at any time becomes a partnership, and a copy of the most recent declaration filed under the *Business Names Act* , R.S.O. 1990, c.B17 shall be included in the notification to the District Manager;

d. change of name of the corporation where the Owner is or at any time becomes a corporation, and a copy of the most current information filed under the *Corporations Informations Act* , R.S.O. 1990, c. C39 shall be included in the notification to the District Manager;

b. In the event of any change in ownership of the Works, other than a change to a successor municipality, the Owner shall notify in writing the succeeding owner of the existence of this Approval, and a copy of such notice shall be forwarded to the District Manager and the Director.

4. CHANGES IN PROCESSES OR PROCESS MATERIALS

The Owner shall give written notice to the District Manager of any plans to change the processes or process materials in the Owner's enterprise serviced by the Works where the change may significantly alter the quantity or quality of the influent to, or effluent from the Works, and no such change(s) shall be made unless with the written concurrence of the District Manager and approval of the Director.

5. CONSTRUCTION

a. The Owner shall ensure that the design and construction of the Works is supervised by a Professional Engineer.

b. Upon construction of the Works, the Owner shall prepare a statement, certified by a Professional Engineer, that the Works are constructed in accordance with this Approval, and upon request, shall make the written statement available for inspection by Ministry staff.

c. Within **six (6) months** of the construction of the Works, a set of as-built drawings showing the Works "as constructed" shall be prepared. These drawings shall be kept up to date through revision undertaken from time to time and a copy shall be retained for the operational life of the Works.

6. DESIGN OBJECTIVES

1. The Owner shall use best efforts to design, construct and operate the Works with the objective that the concentrations of the materials named as effluent parameters in the Effluent Objectives Table listed in Schedule B are not exceeded in the effluent being discharged to the Subsurface Disposal System (Shallow Buried Trench).

2. The Owner shall design and undertake everything practicable to operate the Sewage Works such that Annual Average Daily Influent Flow to the Sewage works is within the Rated Capacity of the Sewage Works.

7. COMPLIANCE LIMITS

The Owner shall operate and maintain the Sewage Works such that compliance limits for the MBR Effluent parameters listed in the table(s) included in **Schedule C** are met.

8. OPERATIONS AND MAINTENANCE

1. The Owner shall prepare an operations manual within six (6) months of the completion of construction of the Proposed Works, that includes, but not necessarily limited to the following information:

    a. operating procedures for routine operation of all the Works;

    b. inspection programs, including frequency of inspection, for all the Works and the methods or tests employed to detect when maintenance is necessary;

    c. repair and maintenance programs, including the frequency of repair and maintenance for all the Works; copies of maintenance contracts for any routine inspections & pump-outs should be included for all the tanks and treatment units;

    d. procedures for the inspection and calibration of monitoring equipment;

    e. a spill prevention control and countermeasures plan, consisting of contingency plans and procedures for dealing with equipment breakdowns, potential spills and any other abnormal situations, including notification of the District Manager; and

    f. procedures for receiving, responding and recording public complaints, including recording any follow-up actions taken.

2. The Owner shall maintain the operations manual current and retain a copy at the location of the Works for the operational life of the Works. Upon request, the Owner shall make the manual available to Ministry staff.

3. The Owner shall prepare and make available for inspection by Ministry staff, a maintenance agreement with the manufacturer for the treatment process/technology and a complete set of "as constructed" drawings within one (1) year of Substantial Completion of the Works. The maintenance agreement and drawings must be retained at the site and kept current.

4. The Owner shall ensure that grass-cutting is maintained regularly over all the subsurface disposal beds, and the drainage operations in all beds are visually observed on a monthly basis. In the event a break-out is observed from a subsurface disposal bed, the Owner shall ensure that the sewage discharge to the bed is discontinued and the incident immediately reported verbally to the District Manager, followed by a written report within one (1) week. The Owner shall ensure that during the time remedial actions are taking place the sewage generated at the site shall not be allowed to discharge to a surface water body or to the environment, and safely collected and disposed off through a licensed waste hauler to an approved waste disposal site.

5. The Owner shall ensure that adequate steps are taken to ensure that the area of the Works are protected from all forms of vehicle traffic.

6. The Owner shall employ for the overall operation of the Works a person who possesses the level of training and experience sufficient to allow safe and environmentally sound operation of the Works.

9. MONITORING AND RECORDING

1. The Owner shall carry out the Influent Sewage Monitoring, Effluent Monitoring and Groundwater Monitoring Program as per **Schedule D** of this Approval.

2. For any change to the monitoring well location(s), included in the Schedule D - Groundwater Monitoring Table, the Owner shall obtain a written approval of the District Manager.

3. The Owner shall, upon commencement of operation of the Works, carry out the following monitoring program:

    a. All samples and measurements taken for the purposes of this Approval are to be taken at a time and in a location characteristic of the quality and quantity of the effluent stream over the time period being monitored.

    b. The Owner shall employ any measurement devices to accurately measure quantity of effluent being discharged from MBR to the subsurface disposal system, including but not limited to water/wastewater flow meters, event counters, running time clocks, or electronically controlled dosing, and shall record the daily volume of effluent being discharged to the subsurface disposal system.

    c. If any flow measuring devices are installed, the Owner shall ensure that the said flow measuring devices are calibrated at regular intervals not exceeding one year to ensure their accuracy to within plus or minus 15% of actual flow from 10% to 100% of sewage flow

range.

d. The methods and protocols for sampling, analysis and recording shall conform, in order of precedence, to the methods and protocols specified in the following:

a. the Ministry's Procedure F-10-1, “Procedures for Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works (Liquid Waste Streams Only), as amended from time to time by more recently published editions;

b. the Ministry's publication "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater" (January 1999), ISBN 0-7778-1880-9, as amended from time to time by more recently published editions; and

c. the publication "Standard Methods for the Examination of Water and Wastewater" (21st edition), as amended from time to time by more recently published editions.

e. The Owner shall retain for a minimum of five (5) years from the date of their creation, all records and information related to or resulting from the monitoring activities required by this Approval.

10. ODOUR COMPLAINTS

1. If at any time, the Owner receives complaints regarding the operation of the Site, the Owner shall respond to these complaints according to the following procedure:

2. The Owner shall record and number each complaint, either electronically or in a log book, and shall include the following information:

   (a) the nature of the complaint,

   (b) the name, address and the telephone number of the complainant if the complainant will provide this information;

   (c) the time and date of the complaint.

3. The Owner, upon notification of the complaint, shall initiate appropriate steps to determine all possible causes of the complaint, proceed to take the necessary actions to eliminate the cause of the complaint; and

4. The Owner shall complete and retain on-site a report written within one (1) week of the complaint date, listing the actions taken to resolve the complaint and any recommendations for remedial measures, and managerial or operational changes to reasonably avoid the recurrence of similar incidents.

11. Limited Operational Flexibility

1. The Owner may make pre-authorized modifications to the Process Wastewater Treatment System in accordance with the document "Limited Operational Flexibility - Protocol for Pre-Authorized Modifications to Municipal Sewage Works" (Schedule E), as amended, subject to the following:

    a. the modifications will not involve the addition of any new treatment process or the removal of an existing treatment process, including chemical systems, from the liquid or solids treatment trains as originally designed and approved.

    b. the scope and technical aspects of the modifications are in line with those delineated in Schedule E and conform with the Ministry's publication "Design Guidelines for Sewage Works 2008", as amended, Ministry's regulations, policies, guidelines, and industry engineering standards;

    c. the modifications shall not negatively impact on the performance of any process or equipment in the Works or result in deterioration in the Final Effluent quality;

    d. where the pre-authorized modification requires notification, a "Notice of Modifications to Sewage Works" (Schedule E), as amended shall be completed with declarations from a Professional Engineer and the Owner and retained on-site prior to the scheduled implementation date. All supporting information including technical memorandum, engineering plans and specifications, as applicable and appropriate to support the declarations that the modifications conform with LOF shall remain on-site for future inspection.

2. The following modifications are not pre-authorized under Limited Operational Flexibility:

    a. Modifications that involve addition or extension of process structures, tankages or channels;

    b. Modifications that involve relocation of the Final Effluent outfall or any other discharge location or that may require reassessment of the impact to the receiver or environment;

    c. Modifications that involve addition of or change in technology of a treatment process or that may involve reassessment of the treatment train process design;

    d. Modifications that require changes to be made to the emergency response, spill prevention and contingency plan; or

    e. Modifications that are required pursuant to an order issued by the Ministry.

12. REPORTING

1. One week prior to the start up of the operation of the Works, the Owner shall notify the District Manager (in writing) of the pending start up date.

2. In addition to the obligations under Part X of the *Environmental Protection Act* , the Owner shall, within 10 working days of the occurrence of any reportable spill as defined in Ontario Regulation 675/98, loss of any product, by-product, intermediate product, oil, solvent, waste material or any other polluting substance into the environment, submit a full written report of the occurrence to the District Manager describing the cause and discovery of the spill or loss, clean-up and recovery measures taken, preventative measures to be taken and schedule of implementation.

3. The Owner shall, upon request, make all manuals, plans, records, data, procedures and supporting documentation available to Ministry staff.

4. The Owner shall prepare and submit a performance report, on an annual basis, within ninety (90) days following the end of each operational season to the District Manager. The first such report shall cover the first annual period following the commencement of operation of the Works and subsequent reports shall be submitted to cover successive annual periods following thereafter. The reports shall contain, but shall not be limited to, the following information:

    a. a summary and interpretation of all monitoring data including an overview of the success and adequacy of the Works;

    b. a review and assessment of performance of sewage works, including treatment units and disposal beds;

    c. a description of any operating problems encountered and corrective actions taken at all sewage Works located at the property;

    d. a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of all Works located at the property;

    e. a summary of any effluent quality assurance or control measures undertaken in the reporting period;

    f. a summary and description of efforts made and results achieved in meeting the Effluent Objectives of Condition 6;

    g. a summary of all Notice of Modifications to Sewage Works completed under Paragraph 1.d. of Condition 11, including a report on status of implementation of all modification.

    h. a summary and interpretation of all flow data and results achieved in not exceeding the maximum daily flow discharged into the subsurface disposal system;

    i. a summary of any complaints received during the reporting period and any steps taken to address the complaints;

    j. a summary of all spill or abnormal discharge events;

k. a report on decommissioning of all components of the existing sewage works;

l. any other information the District Manager requires from time to time;

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

1. Condition 1 is included to ensure that the Works are built and operated in the manner in which they were described for review and upon which approval was granted. This condition is also included to emphasize the precedence of Conditions in the Approval and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review. The condition also advises the Owners their responsibility to notify any person they authorized to carry out work pursuant to this Approval the existence of this Approval.

2. Condition 2 is included to ensure that, when the Works are constructed, the Works will meet the standards that apply at the time of construction to ensure the ongoing protection of the environment.

3. Condition 3 is included to ensure that the Ministry records are kept accurate and current with respect to the approved works and to ensure that subsequent owners of the Works are made aware of the Approval and continue to operate the Works in compliance with it.

4. Condition 4 is included to ensure that the Works are operated in accordance with the information submitted by the Owner relating to the process and materials which are served by the Works, and to ensure that any contemplated changes in them which could potentially affect the characteristics of effluent from the Works will be properly reviewed and approved.

5. Condition 5 is included to ensure that the works are constructed, and may be operated and maintained such that the environment is protected and deterioration, loss, injury or damage to any person or property is prevented.

6. Condition 6 regarding design objectives is included to establish non-enforceable design objectives to be used as a mechanism to trigger corrective action proactively and voluntarily before environmental impairment occurs.

7. Condition 7 regarding compliance limits is included to ensure that the Final Effluent discharged from the Works to the environment meets the Ministry's effluent quality requirements.

8. Condition 8 is included to require that the Works be properly operated, maintained, and equipped such that the environment is protected. As well, the inclusion of an operations manual, maintenance agreement with the manufacturer for the treatment process/technology and a complete set of "as constructed" drawings governing all significant areas of operation, maintenance and repair is prepared, implemented and kept up-to-date by the owner and made available to the Ministry. Such information is an integral part of the operation of the Works. Its compilation and use should assist the Owner in staff training, in proper plant operation and in identifying and planning for contingencies during possible abnormal conditions. The

manual will also act as a benchmark for Ministry staff when reviewing the Owner's operation of the work.

9. Condition 9 regarding monitoring and recording is included to enable the Owner to evaluate and demonstrate the performance of the Works, on a continual basis, so that the Works are properly operated and maintained at a level which is consistent with the design objectives and compliance limits.

10. Condition 10 is included to ensure that all complaints from the public are addressed appropriately and recorded.

11. Condition 11 regarding Limited Operational Flexibility is included to ensure that the Works are constructed, maintained and operated in accordance with the Approval, and that any pre-approved modification will not negatively impact on the performance of the Works.

12. Condition 12 is included to provide a performance record for future references, to ensure that the Ministry is made aware of problems as they arise, and to provide a compliance record for all the terms and conditions outlined in this Approval, so that the Ministry can work with the Owner in resolving any problems in a timely manner.

Schedule A

1. Application for Approval of Municipal and Private Water and Sewage Works dated dated June 25, 2019 and received on July 2, 2019.

Schedule B

MBR Effluent Design Objectives

Concentration Objectives upon completion of construction of all Proposed MBR Works (measured at the Treated Effluent Tank downstream of MBR)

Final Effluent Parameter	**Calculation**	**Objective** (milligrams per litre unless otherwise indicated)
CBOD5	Monthly Effluent Concentration**	5.0 mg/L
Total Suspended Solids	Monthly Effluent Concentration**	5.0 mg/L
Total Phosphorus	Monthly Effluent Concentration**	6.0 mg/L
Total Inorganic Nitrogen***	Monthly Effluent Concentration**	1.0 mg/L
Total Coliform	Monthly Geometric Mean Density**	1000 CFU/100 mL
pH	Single Sample Result*	6.5 - 8.5 inclusive

*field measurement

**Monthly Average Effluent Concentration or Monthly Average Geometric Mean Density if more than one sample is taken in any month

*** Total Inorganic Nitrogen (Ammonia, Nitrate and Nitrite)

Schedule C

MBR Effluent Compliance Limits

Concentration Limits upon completion of construction of all Proposed MBR Works (measured at the Treated Effluent Tank downstream of MBR)

Final Effluent Parameter	**Calculation**	**Limit** (maximum unless otherwise indicated)
CBOD5	Monthly Effluent Concentration***	10.0 mg/L
Total Suspended Solids	Monthly Effluent Concentration***	10.0 mg/L
Total Phosphorus	Monthly Effluent Concentration***	10.0 mg/L
Total Inorganic Nitrogen**	Monthly Effluent Concentration***	2.5 mg/L
Total Coliform	Monthly Geometric Mean Density***	2000 CFU/100 mL
pH	Single Sample Result*	between 6.0 - 9.5 inclusive

* field measurement

** Total Inorganic Nitrogen (Ammonia, Nitrate and Nitrite)

***Monthly Average Effluent Concentration or Monthly Geometric Mean Density, if more than one sample is taken in any month

Schedule D

Monitoring Program

Influent Monitoring Table

Sampling Location	Raw Wastewater Lift Station
Frequency	Semi-Annualy (two times every 12 months)
Sample Type	Grab
Parameters	TBOD5, Total Suspended Solids, TKN, TP, Total Coliforms, Oil and Grease, Temperature, Flow rate

MBR Effluent Monitoring Table

Sampling Location	Treated Effluent Tank downstream of MBR
Frequency	Monthly*
Sample Type	Grab
Parameters	Total Suspended Solids, $CBOD_5$, Total Inorganic Nitrogen**, Total Phosphorous, Total Coliforms, Oil and Grease, pH, Flow rate

* Monthly means once every month
** Total Inorganic Nitrogen (Ammonia, Nitrate and Nitrite)

Groundwater Monitoring Table

Sampling Locations	MW1-20, MW2-20, MW3-20, MW2
Frequency	twice yearly in the spring and fall of each year
Sample Type	Grab
Parameters	Groundwater Level, Alkalinity, Total Inorganic Nitrogen*, $CBOD_5$, Total Phosphorous, Alkalinity, Speciated oil and grease, pH, TKN, Nitrate, Nitrites

* Total Inorganic Nitrogen (Ammonia, Nitrate and Nitrite)

Schedule E

Limited Operational Flexibility

Protocol for Pre-Authorized Modifications to Process Wastewater Treatment System

1. General

1. Pre-authorized modifications are permitted only where Limited Operational Flexibility has already been granted in the Approval and only permitted to be made at the pumping stations and sewage treatment plant in the Works, subject to the conditions of the Approval.

2. Where there is a conflict between the types and scope of pre-authorized modifications listed in this document, and the Approval where Limited Operational Flexibility has been granted, the Approval shall take precedence.

3. The Owner shall consult the District Manager on any proposed modifications that may fall within the scope and intention of the Limited Operational Flexibility but is not listed explicitly or included as an example in this document.

4. The Owner shall ensure that any pre-authorized modifications will not:

    a. adversely affect the hydraulic profile of the Sewage Treatment Plant or the performance of any upstream or downstream processes, both in terms of hydraulics and treatment performance;

    b. result in new Overflow or Bypass locations, or any potential increase in frequency or quantity of Overflow(s) or Bypass(es).

    c. result in a reduction in the required Peak Flow Rate of the treatment process or equipment as originally designed.

2. Modifications that do not require pre-authorization:

1. Sewage works that are exempt from Ministry approval requirements;

2. Modifications to the electrical system, instrumentation and control system.

3. Pre-authorized modifications that do not require preparation of "Notice of Modification to Sewage Works"

1. Normal or emergency maintenance activities, such as repairs, renovations, refurbishments and replacements with Equivalent Equipment, or other improvements to an existing approved piece of equipment of a treatment process do not require pre-authorization. Examples of these activities are:

a. Repairing a piece of equipment and putting it back into operation, including replacement of minor components such as belts, gear boxes, seals, bearings;

b. Repairing a piece of equipment by replacing a major component of the equipment such as motor, with the same make and model or another with the same or very close power rating but the capacity of the pump or blower will still be essentially the same as originally designed and approved;

c. Replacing the entire piece of equipment with Equivalent Equipment.

2. Improvements to equipment efficiency or treatment process control do not require pre-authorization. Examples of these activities are:

a. Adding variable frequency drive to pumps;

b. Adding on-line analyzer, dissolved oxygen probe, ORP probe, flow measurement or other process control device.

4. Pre-Authorized Modifications that require preparation of "Notice of Modification to Sewage Works"

1. Pumping Stations

a. Replacement, realignment of existing sewers including manholes, valves, gates, weirs and associated appurtenances provided that the modifications will not add new influent source(s) or result in an increase in flow from existing sources as originally approved.

b. Extension or partition of wetwell to increase retention time for emergency response and improve station maintenance and pump operation;

c. Replacement or installation of inlet screens to the wetwell;

d. Replacement or installation of flowmeters, construction of station bypass;

e. Replacement, reconfiguration and modifications to pump suctions and discharge pipings including valve, gates, motors, variable frequency drives and associated appurtenances to maintain firm pumping capacity or modulate the pump rate provided that the modifications will not result in a reduction in the firm pumping capacity or discharge head or an increase in the peak pumping rate of the pumping station as originally designed;

f. Replacement, realignment of existing forcemain(s) including valves, gates, and associated appurtenances provided that the modifications will not reduce the flow capacity or increase the total dynamic head and transient in the forcemain.

2. Sewage Treatment Plant

1. Sewers and appurtenances

    a. Replacement, realignment of existing sewers (including pipes and channels), including manholes, valves, gates, weirs and associated appurtenances within the a sewage treatment plant, provided that the modifications will not add new influent source(s) or result in an increase in flow from existing sources as originally approved and that the modifications will remove hydraulic bottlenecks or improve the conveyance of sewage into and through the Works.

2. Flow Distribution Chambers/Splitters

    a. Replacement or modification of existing flow distribution chamber/splitters or construction of new flow distribution chamber/splitters, including replacements or installation of sluice gates, weirs, valves for distribution of flows to the downstream process trains, provided that the modifications will not result in a change in flow distribution ratio to the downstream process trains as originally designed.

3. Preliminary Treatment System

    a. Replacement of existing screens and grit removal units with equipment of the same or higher process performance technology, including where necessary replacement or upgrading of existing screenings dewatering washing compactors, hydrocyclones, grit classifiers, grit pumps, air blowers conveyor system, disposal bins and other ancillary equipment to the screening and grit removal processes.

    b. Replacement of channel aeration systems, including air blowers, air supply main, air headers, air laterals, air distribution grids and diffusers.

4. Primary Treatment System

    a. Replacement of existing sludge removal mechanism, including sludge chamber;

    b. Replacement of scum removal mechanism, including scum chamber;

    c. Replacement of primary sludge pumps, scum pumps, provided that:the modifications will not result in a reduction in the firm pumping capacity or discharge head that the primary sludge pump(s) and scum pump(s) are originally designed to handle.

5. Secondary Treatment System

    1. Biological Treatment

        a. Conversion of complete mix aeration tank to plug-flow multi-pass aeration tank, including modifications to internal structural configuration;

        b. Addition of inlet gates in multi-pass aeration tank for step-feed operation mode;

        c. Partitioning of an anoxic/flip zone in the inlet of the aeration tank, including installation of submersible mixer(s);

        d. Replacement of aeration system including air blowers, air supply main, air headers, air laterals, air distribution grids and diffusers, provided that the modifications will not result in a reduction in the firm capacity or discharge pressure that the blowers are originally designed to supply or in the net oxygen transferred to the wastewater required for biological treatment as originally required.

    2. Secondary Sedimentation

        a. Replacement of sludge removal mechanism, including sludge chamber;

        b. Replacement of scum removal mechanism, including scum chamber;

        c. Replacement of return activated sludge pump(s), waste activated sludge pump(s), scum pump(s), provided that the modifications will not result in a reduction in the firm pumping capacity or discharge head that the activated sludge pump(s) and scum pump(s) are originally designed to handle.

6. Disinfection System

    1. UV Irradiation

        a. Replacement of UV irradiation system, provided that the modifications will not result in a reduction in the design capacity of the disinfection system or the radiation level as originally

designed.

2. Chlorination/Dechlorination and Ozonation Systems

    a. Extension and reconfiguration of contact tank to increase retention time for effective disinfection and reduce dead zones and minimize short-circuiting;

    b. Replacement of chemical storage tanks, provided that the tanks are provided with effective spill containment.

7. Supplementary Treatment Systems

    1. Chemical systems

        a. Replacement, relocation of chemical storage tanks for existing chemical systems only, provided that the tanks are sited with effective spill containment;

        b. Replacement of chemical dosing pumps provided that the modifications will not result in a reduction in the firm capacity that the dosing pumps are originally designed to handle.

        c. Relocation and addition of chemical dosing point(s) including chemical feed pipes and valves and controls, to improve phosphorus removal efficiency;

        d. Use of an alternate chemical provided that it is a non-proprietary product and is a commonly used alternative to the chemical approved in the Works, provided that the chemical storage tanks, chemical dosing pumps, feed pipes and controls are also upgraded, as necessary..

8. Sludge Management System

    1. Sludge Holding and Thickening

        a. Replacement of sludge holding tanks, sludge handling pumps, such as transfer pumps, feed pumps, recirculation pumps, provided that modifications will not result in reduction in the solids storage or handling capacities;

    2. Sludge Digestion

        a. Replacement of digesters, sludge handling pumps, such as transfer pumps, feed pumps, recirculation pumps, provided that modifications will not result in reduction in the solids storage or handling capacities;

        b. replacement of sludge digester covers.

    3. Sludge Dewatering and Disposal

a. Replacement of sludge dewatering equipment, sludge handling pumps, such as transfer pumps, feed pumps, cake pumps, loading pumps, provided that modifications will not result in reduction in solids storage or handling capacities.

9. Standby Power System

1. Replacement or installation of standby power system, including feed from alternate power grid, emergency power generator, fuel supply and storage systems, provided that the existing standby power generation capacity is not reduced.

3. Final Effluent Disposal Facilities

a. Replacement or realignment of the Final Effluent channel, sewer or forcemain, including manholes, valves and appurtenances from the end of the treatment train to the discharge outfall section, provided that the sewer conveys only effluent discharged from the Sewage Treatment Plant and that the replacement or re-aligned sewer has similar dimensions and performance criteria and is in the same or approximately the same location and that the hydraulic capacity will not be reduced.

This page contains an image of the form entitled "Notice of Modification to Sewage Works". A digital copy can be obtained from the District Manager.

Ontario

Ministry of the Environment, Conservation and Parks

Notice of Modification to Sewage Works

RETAIN COPY OF COMPLETED FORM AS PART OF THE ECA ON-SITE PRIOR TO THE SCHEDULED IMPLEMENTATION DATE.

Part 1 – Environmental Compliance Approval (ECA) with Limited Operational Flexibility

(Insert the ECA's owner, number and issuance date and notice number, which should start with "01" and consecutive numbers thereafter)

ECA Number	Issuance Date (mm/dd/yy)	Notice number (if applicable)

ECA Owner	Municipality

Part 2: Description of the modifications as part of the Limited Operational Flexibility

(Attach a detailed description of the sewage works)

Description shall include:
1. A detail description of the modifications and/or operations to the sewage works (e.g. sewage work component, location, size, equipment type/model, material, process name, etc.)
2. Confirmation that the anticipated environmental effects are negligible.
3. List of updated versions of, or amendments to, all relevant technical documents that are affected by the modifications as applicable, i.e. submission of documentation is not required, but the listing of updated documents is (design brief, drawings, emergency plan, etc.)

Part 3 – Declaration by Professional Engineer

I hereby declare that I have verified the scope and technical aspects of this modification and confirm that the design:
1. Has been prepared or reviewed by a Professional Engineer who is licensed to practice in the Province of Ontario;
2. Has been designed in accordance with the Limited Operational Flexibility as described in the ECA;
3. Has been designed consistent with Ministry's Design Guidelines, adhering to engineering standards, industry's best management practices, and demonstrating ongoing compliance with s.53 of the Ontario Water Resources Act; and other appropriate regulations.

I hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate

Name (Print)	PEO License Number

Signature	Date (mm/dd/yy)

Name of Employer

Part 4 – Declaration by Owner

I hereby declare that:
1. I am authorized by the Owner to complete this Declaration;
2. The Owner consents to the modification; and
3. This modifications to the sewage works are proposed in accordance with the Limited Operational Flexibility as described in the ECA.
4. The Owner has fulfilled all applicable requirements of the *Environmental Assessment Act*.

I hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate

Name of Owner Representative (Print)	Owner representative's title (Print)

Owner Representative's Signature	Date (mm/dd/yy)

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me, the Environmental Review Tribunal and in accordance with Section 47 of the Environmental Bill of Rights, 1993, the Minister of the Environment, Conservation and Parks, within 15 days after receipt of this Notice, require a hearing by the Tribunal. The Minister of the Environment, Conservation and Parks will place notice of your appeal on the Environmental Registry. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

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

The Notice should also include:

1. The name of the appellant;
2. The address of the appellant;
3. The environmental compliance approval number;
4. The date of the environmental compliance approval;
5. The name of the Director, and;
6. The municipality or municipalities within which the project is to be engaged in.

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

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

AND

The Minister of the Environment,
Conservation and Parks
777 Bay Street, 5th Floor
Toronto, Ontario
M7A 2J3

AND

The Director appointed for the purposes of
Part II.1 of the Environmental Protection Act
Ministry of the Environment,
Conservation and Parks
135 St. Clair Avenue West, 1st Floor
Toronto, Ontario
M4V 1P5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 326-5370 or www.ert.gov.on.ca**

This instrument is subject to Section 38 of the Environmental Bill of Rights, 1993, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek leave to appeal within 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry at https://ero.ontario.ca/ , you can determine when the leave to appeal period ends.

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 29th day of May, 2020

Fariha Pannu, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

KH/
c: District Manager, MECP Guelph District.
Dave Wilhelm, P.Eng., MTE Consultants Inc.