Ontario

Ministry of the Environment, Conservation and Parks
Ministère de l'Environnement, de la Protection de la nature et des Parcs

ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 8528-CLLMQV
Issue Date: April 25, 2023

Great Lakes Greenhouses Inc.
834 Mersea Road 4
Leamington, Ontario N8H 3V6

Site Location: Great Lakes Greenhouses Complex

(1) 834 Mersea Road 4, Municipality of Leamington, County of Essex, Ontario, N8H 3V6
Legal Description: MERSEA CON NTR PT LOT 241 RP 12R27946 PARTS 1 5 7 12 AND 13, PIN: 75097-0628

(2) 828-836 Mersea Road 4, Municipality of Leamington, County of Essex, Ontario, N8H 3V6
Legal Description: MERSEA CON NTR PT LOTS 241 AND 242 RP 123190 PART 1 RP 12R7274 PARTS 1 TO 3 PT PART 4 RP 12R21151 PT PART 1 RP 12R22683 PT PART 3 RP, PIN: 75097-0629

(3) Mersea Road 4, Municipality of Leamington, County of Essex, Ontario, N8H 3V6
Legal Description: MERSEA CON NTR PT LOTS 241 AND 242 RP 12R24668 PARTS 3 TO 8 PT PARTS 9 TO 11, PIN: 75097-0625

(4) 824 Mersea Road 4, Municipality of Leamington, County of Essex, Ontario, N8H 3V6
Legal Description: CON NTR N PT LOT 242 RP 12R22683 PART 2, PIN: 75097-0491

(5) Mersea Road 4, Municipality of Leamington, County of Essex, Ontario, N8H 3V6
Legal Description: MERSEA CON NTR PT LOT 241 RP 12R27946 PARTS 6 8 9 TO 11 AND 15, PIN: 75097-0630

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:

establishment, usage and operation of Works, for the treatment of sanitary sewage from the employment population of greenhouse development located at above-mentioned location, including bunkhouses and office facilities, with staff residing on-site and off-site, and disposal of treated effluent directly to the Pelee Creek Municipal Drain via a Sewage Treatment Plant and Final Effluent disposal facilities, as follows:

Classification of Sewage Treatment Plant: Tertiary

Details of Service Area

- **Type of Occupancy**: Greenhouse Development
- **Type and Number of Units:**
  - Workers bunkhouses with communal kitchen facilities accommodating up to 325 seasonal employees living on-site;
  - Office buildings with up to 50 day-employees living off-site.

Design Capacity of Sewage Treatment Plant

Design Capacity with All Treatment Trains in Operation	**Upon Completion of Construction of All Proposed Works**
Maximum Daily Flow	100,000 litres per day

Influent and Imported Sewage

Receiving Location	**Types**
In Collection System	Domestic Sanitary Sewage
At Sewage Treatment Plant	None

PROPOSED WORKS

Sewage Collection System

Oil & Grease Interceptors: Oil and Grease Interceptors (OGI) as described below:

- **OGI 1:** One (1) 4,500 litre proposed tank, receiving sewage from bunkhouse 1 (BH1) and discharging effluent to an existing pump station 1 (PS1) having tank capacity of 3,600 litres;

- **OGI 2:** One (1) 3,600 litre existing septic tank with outlets configured for use as typical grease interreceptor tank, receiving sewage from bunkhouse 2 (BH2) and discharging effluent to a proposed duplex sewage pump station 2 (PS2) having tank capacity of 3,000 litres;

- **OGI 3 & 4:** Two (2) 4,500 litre existing septic tanks with outlets configured for use as typical grease interreceptor tank, receiving sewage from bunkhouse 3 (BH3) and discharging effluent to a proposed duplex sewage pump station 3 (PS3) having tank capacity of 18,200 litres;

- **OGI 5 & 6:** Two (2) 4,500 litre existing septic tanks with outlets configured for use as typical grease interreceptor tank, receiving sewage from bunkhouse 4 (BH4) and discharging effluent to a proposed duplex sewage pump station 3 (PS3) having tank capacity of 18,200 litres;

- **OGI 7 & 8:** Two (2) 6,500 litre existing septic tanks with outlets configured for use as typical grease interreceptor tank, receiving sewage from bunkhouse 5 (BH5) and discharging effluent to an existing pump station 4 (PS4) having pump capacity of 1,800 litres;

- **Additional proposed OGI(s):** Proposed 4,430 litre oil & grease interceptor(s) per 8-10 units for proposed bunkhouse complex, receiving wastewater from kitchen facilities within on-site workers bunkhouses and discharging effluent to a proposed duplex sewage pump station 5 (PS5) having tank capacity of 18,200 litres;

Pump Stations: Pump Stations (PS) as described below:

- **PS1:** One (1) 3,600 existing pump tank receiving effluent from OGI 1 and discharging effluent via a proposed 50 millimetre forcemain to Flow Equalization Pump Tank**;**

- **PS2:** One (1) 3,000 litre proposed duplex pump tank receiving effluent from OGI 2 and discharging effluent via a proposed 50 millimetre forcemain to Flow Equalization Pump Tank;

- **PS3:** One (1) 18,200 litre proposed duplex pump tank receiving effluent from OGI 3, OGI 4, OGI 5, OGI 6, PS4 & PS5, and discharging effluent via a proposed 50 millimetre forcemain to Flow Equalization Pump Tank**;**

- **PS4**: One (1) 1,800 litre existing pump tank receiving effluent from OGI 7 & OGI 8 and discharging effluent via a proposed 50 millimetre forcemain to PS3**;**

- **PS5:** One (1) 18,200 litres proposed duplex sewage pump tank, receiving domestic sewage and oil & grease interceptor effluent from the proposed bunkhouses and discharging via a proposed 50 millimetre forcemain to the PS3;

Sewage Treatment Plant - Moving Bed Biofilm Reactor (MBBR) Advanced Treatment System

Flow Equalization Pump Tank

- One (1) Flow Equalization Pump Tank with effective storage volume of 71,400 litres; equipped with high-level floats, external audible/visual warning alarms, current sensors and duplex BJM model SV400 vortex sewage pumps (or Equivalent Equipment), each rated at flowrate (Q) of 130 litres per minute at a Total Dynamic Head (TDH) of 4.5 metres and operating on a timer; receiving sewage from Pump Stations and internal pump systems via two (2) forcemains, and discharging effluent to the Primary Sludge Storage Tank at 4,170 litres every hour (approximately 100,000 litres per day) via a 50 millimetre forcemain;

Primary Treatment System

- Primary Sludge Storage Tank: One (1) Primary Sludge Storage Tank having a minimum effective storage volume of 62,000 litres; receiving effluent via a forcemain (c/w tee-baffle) from Flow Equalization Pump Tank, supernatant via a sewer (c/w tee-baffle) from Secondary Sludge Storage Tank, and nitrified recycling effluent via a forcemain from Aerobic Nitrification Bioreactor Tank; discharging effluent via sewer to Primary Clarification Tank;

- Primary Clarification Tank: One (1) Primary Clarification Tank having a minimum effective storage volume of 29,200 litres, receiving effluent via sewer (c/w tee-baffle) from Primary Sludge Storage Tank, and discharging effluent via sewer to Aerobic Carbon Reduction Bioreactor Tank;

- Secondary Sludge Storage Tank: One (1) Secondary Sludge Storage Tank having a minimum effective storage volume of 29,200 litres, receiving sludge via forcemains (c/w tee-baffle) from Secondary Clarification Tank and tertiary filter backwash, and discharging supernatant via sewer (c/w tee-baffle) to Primary Sludge Storage Tank;

- Sludge accumulated in the Primary Sludge Storage Tank, Primary Clarification Tank, and Secondary Sludge Storage Tank to be periodically transported for off-site disposal at an approved receiving facility;

Influent Flow Measurement and Sampling Point

- Influent flow measurement device(s) on the outlet forcemain from the Flow Equalization Pump Tank;

- Sampling of Influent from the forcemain at the inlet tee-baffle in the Primary Sludge Storage Tank during a pumping event from the Flow Equalization Pump Tank;

Secondary Treatment System

- Aerobic Carbon Reduction Bioreactor Tank: one (1) Aerobic Carbon Reduction Bioreactor Tank having a minimum effective storage volume of 28,400 litres, partially filled with 13,500 litres of plastic carrier media, equipped with Aeration Blowers in R1 Building Addition (regulated by a dissolved oxygen sensor), airlines/distributors, twenty (20) MRB20 fine-bubble diffuser, carbon vent, and ASI model DOGB-0003 (4-20mA) optical dissolved oxygen sensor, receiving effluent via sewer (c/w flap-baffle) from Primary Clarification Tank, and discharging by sewer (c/w slotted screen) to Aerobic Nitrification Bioreactor Tank;

- Aerobic Nitrification Bioreactor Tank: one (1) Aerobic Nitrification Bioreactor Tank having a minimum effective volume of 27,500 litres, partially filled with 13,500 litres of plastic carrier media, equipped with Aeration Blowers in R1 Building Addition (regulated by a dissolved oxygen sensor), airlines/distributors, twenty (20) MRB20 fine-bubble diffuser, carbon vent, and a Goulds model LSP0311F effluent recirculation pump (or Equivalent Equipment) rated at Q = 75 litres per minute at a TDH = 4.5 metres) operating on a timer, receiving effluent from Aerobic Carbon Reduction Bioreactor Tank via sewer, discharging effluent via forcemain (c/w check-valve and syphon-break) to Primary Sludge Storage Tank, and main outlet discharging by sewer (c/w slotted screen) to Phosphorous Reactor Tank;

- **Phosphorous Reactor Tank:** One (1) Phosphorous Reactor Tank having a minimum effective storage volume of 2,200 litres, receiving coagulant through injection line from R1 Building Addition directly to inlet tee-baffle, equipped with Goulds model LSP0311F 0.33 horsepower (HP) timed-dose pump (or Equivalent Equipment) for mixing, receiving effluent via sewer (c/w tee-baffle) from Aerobic Nitrification Bioreactor Tank, and discharging effluent via sewer (c/w tee-baffle) to Secondary Clarification Tank;

- **Secondary Clarification Tank**: One (1) Secondary Clarification Tank with no upper section partitions, having a minimum effective storage volume of 19,300 litres, complete with three (3) sloped-walled hoopers; equipped with four (4) Goulds model LSP0311F 0.33 HP timed-dose pumps (or Equivalent Equipment), c/w skimmer assembly over downstream hopper and sludge return outlet to discharge sludge via forcemain (c/w check-valve syphon break) to Secondary Sludge Storage Tank; receiving effluent via sewer (c/w tee baffle) from Phosphorous Reactor Tank, and discharging effluent via sewer (c/w multi-tee-baffle) to Effluent Pump Tank;

Effluent Pump Tank

- One (1) Effluent Pump Tank having a minimum effective storage volume of 25,000 litres, equipped with duplex Liberty model FL152M-2 1.5 HP rated at Q=300 litres per minutes at a TDH = 15 metres demand-dose pumps (or Equivalent Equipment), high-level floats, external audible/visual warning alarms, and current sensors, receiving effluent via sewer from Secondary Clarification Tank, and discharging effluent via forcemain to Backwash Tank via Tertiary Filtration Assembly, Flow Meter, and Disinfection Assembly in R1 Building Addition;

Backwash Tank

- One (1) Backwash Tank having a minimum effective storage volume of 7,600 litres; equipped with duplex Goulds model 13GS05421CLCV 0.5 HP rated at Q= 75 litres per minutes at a TDH = 20 metres timed-dose pumps (or Equivalent Equipment) for backwash, and tertiary filtration backwash outlet to discharge sludge via forcemain to Secondary Sludge Storage Tank via Tertiary Filtration Assembly in R1 Building Addition; receiving effluent via forcemain from Tertiary Filtration Assembly, Flow Meter, and Disinfection Assembly in R1 Building Addition, and discharging treated effluent via 150 millimetre outlet sewer to Pelee Creek Municipal Drain;

R1 Building Addition with Tertiary Treatment Systems

- **Aeration Blowers:** Two (2) FPZ model SCL R40-MD-4-3 NP 4 HP side-channel blowers (or Equivalent Equipment) for Aerobic Carbon Reduction and Nitrification Bioreactor Tanks;

- **Coagulant Injection:** ProMinent models CNPb-0704 and CNPb-1601 (or Equivalent Equipment) demand-dose metering pumps regulated by flow equalization pumps for Clariphos RE300 (or Equivalent Equipment) coagulant injection to Phosphorous Reactor Tank and upstream of Tertiary Filtration Assembly, c/w static mixer, coagulant storage tank (1,000 litres), and containment tank;

- **Tertiary Filtration Assembly:** NextSand model NS14F27NXT2-PS-4 pressurized sand filter assembly (four (4) units in parallel) or Equivalent Equipment, each unit rated at 49 litres per minute average and 79 litres per minute peak flow, located downstream of Effluent Pump Tank, complete with one (1) differential pressure switch for backwash initiation, four (4) sets of automatic isolator valves for treated water backwash, two (2) filter inlet/outlet pressure gauges, and miscellaneous piping;

- **Flow Meter:** One (1) Keyence model FD-Q50C magnetic flow meter (or Equivalent Equipment) located downstream of Tertiary Filtration Assembly, installed within the control shed in discharge piping, and interconnected with control panels;

- **Disinfection Assembly:** Viqua model E4+ 500 Watts ultraviolet disinfection assembly (or Equivalent Equipment), consisting of four (4) units in series for redundancy, located downstream of Flow Meter;

Final Effluent Sampling Point

- Sampling of Final Effluent downstream of the Disinfection Assembly;

Sludge Sampling Point

- Sampling of sludge from Primary and Secondary Sludge Storage Tanks (as a combined sample);

Final Effluent Disposal Facilities

- One (1) 150 millimetre diameter approximately 33 metres long outfall sewer discharging Final Effluent to the Pelee Creek Municipal Drain;

decommissioning of un-used Works;

including all other mechanical system, electrical system, instrumentation and control system, standby power system, piping, pumps, 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. "Annual Maximum Daily Influent Flow" means the maximum Influent collected in a single day during a calendar year;

2. "Approval" means this entire Environmental Compliance Approval and any Schedules attached to it;

3. "BOD5" (also known as TBOD5) means five day biochemical oxygen demand measured in an unfiltered sample and includes carbonaceous and nitrogenous oxygen demands;

4. "CBOD5" means five day carbonaceous (nitrification inhibited) biochemical oxygen demand measured in an unfiltered sample;

5. "Director" means a person appointed by the Minister pursuant to section 5 of the EPA for the purposes of Part II.1 of the EPA;

6. "District Manager" means the District Manager of the appropriate local district office of the Ministry where the Works is geographically located;

7. "*E. coli* " refers to coliform bacteria that possess the enzyme beta-glucuronidase and are capable of cleaving a fluorogenic or chromogenic substrate with the corresponding release of a fluorogen or chromogen, that produces fluorescence under long wavelength (366 nm) UV light, or color development, respectively. Enumeration methods include tube, membrane filter, or multi-well procedures. Depending on the method selected, incubation temperatures include 35.5 + 0.5 °C or 44.5 + 0.2 °C (to enumerate thermotolerant species). Depending on the procedure used, data are

reported as either colony forming units (CFU) per 100 mL (for membrane filtration methods) or as most probable number (MPN) per 100 mL (for tube or multi-well methods);

8. "EPA" means the *Environmental Protection Act* , R.S.O. 1990, c.E.19;

9. "Equivalent Equipment" means alternate piece(s) of equipment that meets the design requirements and performance specifications of the piece(s) of equipment to be substituted;

10. "Final Effluent" means effluent that is discharged to the environment through the approved effluent disposal facilities that are required to meet the compliance limits stipulated in the Approval for the Sewage Treatment Plant at the Final Effluent sampling point(s);

11. "grab sample" means an individual sample of at least 1000 millilitres collected in an appropriate container at a randomly selected time over a period of time not exceeding 15 minutes;

12. "Influent" means flows to the Sewage Treatment Plant from the collection system;

13. “Licensed Engineering Practitioner” means a person who holds a licence, limited licence or temporary licence under the PEA;

14. "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;

15. "Monthly Average Effluent Concentration" is the mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured during a calendar month;

16. "Monthly Geometric Mean Density" is the mean of all Single Sample Results of *E.coli* measurement in the samples taken during a calendar month, calculated and reported as per the methodology specified in Schedule D;

17. "Normal Operating Condition" means the condition when all unit process(es) in a treatment train is operating within its design capacity;

18. "Operating Agency" means the Owner, person or the entity that is authorized by the Owner for the management, operation, maintenance, or alteration of the Works in accordance with this Approval;

19. "Owner" means any person that is responsible for the establishment of the Works being approved by this Approval, and includes Owner’s Legal Name and its successors and assigns;

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

21. "PEA" means the *Professional Engineers Act,* R.S.O. 1990, c. P.28;

22. "Maximum Daily Flow" means the largest volume of flow to be received during a one-day period

for which the sewage treatment process unit or equipment is designed to handle;

23. "Primary Treatment System" means all facilities in the Sewage Treatment Plant associated with the primary sedimentation unit process and includes chemically enhanced primary treatment;

24. "Proposed Works" means those portions of the Works included in the Approval that are under construction or to be constructed;

25. "Secondary Treatment System" means all facilities in the Sewage Treatment Plant associated with biological treatment, secondary sedimentation and phosphorus removal unit processes;

26. "Sewage Treatment Plant" means all the facilities related to sewage treatment within the sewage treatment plant site excluding the Final Effluent disposal facilities;

27. "Single Sample Result" means the test result of a parameter in the effluent discharged on any day, as measured by a probe, analyzer or in a composite or grab sample, as required;

28. "Site" means the properties listed in the Site Location section of this Approval;

29. "Works" means the approved sewage Works, and includes Proposed Works.

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

TERMS AND CONDITIONS

1. GENERAL PROVISIONS

1. 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 terms and conditions herein and shall take all reasonable measures to ensure any such person complies with the same.

2. The Owner shall design, construct, operate and maintain the Works in accordance with the conditions of this Approval.

3. Where there is a conflict between a provision of any document referred to in this Approval and the conditions of this Approval, the conditions in this Approval shall take precedence.

2. CHANGE OF OWNER AND OPERATING AGENCY

1. 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 address of Owner;

b. change of Owner, including address of new 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. B.17* shall be included in the notification;

d. change of name of the corporation and a copy of the most current information filed under the *Corporations Information Act, R.S.O. 1990, c. C.39* shall be included in the notification.

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

   a. change of address of the Operating Agency;

   b. change of the Operating Agency, including address of the new Operating Agency.

3. In the event of any change in ownership of the Works, the Owner shall notify the succeeding owner in writing, of the existence of this Approval, and forward a copy of the notice to the District Manager.

4. The Owner shall ensure that all communications made pursuant to this condition refer to the number of this Approval.

3. CONSTRUCTION OF PROPOSED WORKS

1. All Proposed Works in this Approval shall be constructed and installed and must commence operation within **five (5) years** of issuance of this Approval, after which time the Approval ceases to apply in respect of any portions of the Works not in operation. In the event that the construction, installation and/or operation of any portion of the Proposed Works is anticipated to be delayed beyond the time period stipulated, the Owner shall submit to the Director an application to amend the Approval to extend this time period, at least six (6) months prior to the end of the period. The amendment application shall include the reason(s) for the delay and whether there is any design change(s).

2. Upon completion of construction of the Proposed Works, the Owner shall prepare and submit a written statement to the District Manager, certified by a Licensed Engineering Practitioner, that the Proposed Works is constructed in accordance with this Approval.

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

4. Within **one (1) year** of completion of construction of the Proposed Works, a set of record drawings of the Works shall be prepared or updated. These drawings shall be kept up to date through revisions undertaken from time to time and a copy shall be readily accessible for reference at the Works.

5. The Owner shall ensure that the treatment technologies are installed in accordance with the manufacturer's installation manual.

4. DESIGN OBJECTIVES

1. The Owner shall design and undertake everything practicable to operate the Sewage Treatment Plant in accordance with the following objectives:

    a. Final Effluent is essentially free of floating and settleable solids and does not contain oil or any other substance in amounts sufficient to create a visible film or sheen or foam or discolouration on the receiving waters.

    b. Annual Maximum Daily Influent Flow is within the Maximum Daily Flow of the Sewage Treatment Plant.

5. COMPLIANCE LIMITS

1. The Owner shall operate and maintain the Sewage Treatment Plant such that compliance limits for the Final Effluent parameters listed in the table included in **Schedule B** are met.

2. The Owner shall operate and maintain the Sewage Treatment Plant such that the Final Effluent is disinfected continuously year-round.

3. The Owner shall cease discharge of any non-compliant effluent to the receiver within 24 hours under the following conditions, until the treatment system returns to compliance.

    a. Upon request by the District Manager.

    b. Should the concentration of Total Ammonia Nitrogen (TAN) in the Final Effluent exceed 4.0 milligrams per litre during the summer (April 16 to October 15) or 6.0 milligrams per litre during the winter (October 16 to April 15) during the operational life of the Works, including start-up and commissioning, the Owner shall notify the District Manager pursuant to subsection 1 of Condition 8 and stop discharging to the receiver within 24 hours.

4. Under the cease-discharging conditions pursuant to above subsections 3.a. or 3.b., the Owner shall implement the contingency measures pursuant to subsection 2.f. of Condition 6, and ensure the non-compliant effluent be either recirculated through the treatment system for re-treatment for compliance, or be hauled off-site to an approved waste disposal site by a registered waste hauler.

5. Upon the sewage treatment system returning to compliance, the Owner shall ensure the District Manager be notified prior to discharge resumption.

6. OPERATION AND MAINTENANCE

1. The Owner shall ensure that, at all times, the Works and the related equipment and appurtenances used to achieve compliance with this Approval are properly operated and maintained. Proper operation and maintenance shall include effective performance, adequate staffing and training, including training in all procedures and other requirements of this Approval and the OWRA and relevant regulations made under the OWRA, process controls and alarms and the use of process chemicals and other substances used in the Works.

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

    a. operating procedures for the Works under Normal Operating Conditions;

    b. inspection programs, including frequency of inspection, for 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 the Works;

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

    e. operating procedures for the Works to handle situations outside Normal Operating Conditions and emergency situations such as a structural, mechanical or electrical failure, or an unforeseen flow condition;

    f. 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 Spills Action Centre (SAC) and District Manager;

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

3. The Owner shall maintain an up to date operations manual and make the manual readily accessible for reference at the Works for the operational life of the Works. Upon request, the Owner shall make the manual available to Ministry staff.

4. The Owner shall ensure that the Operating Authority fulfills the requirements under O. Reg. 129/04, as amended for the Works, including the classification of facilities, licensing of operators and operating standards.

5. The Owner shall ensure the oil and grease interceptors be cleaned out at least once per year, or more frequently as determined by the Works operator, for removal of fats, oil and grease from the kitchen wastewater prior to discharging the sewage to the septic tanks or other treatment

processes.

6. The Owner shall ensure that the Primary Sludge Storage Tank, and Secondary Sludge Storage Tank be inspected at least twice per year by a qualified person, and the sewage sludge accumulated in the tanks be periodically withdrawn at the frequency required to maintain efficiency of the treatment system.

7. The Owner shall have a valid written agreement with a hauler who is in possession of a Waste Management Systems Approval, for the treatment and disposal of the sludge generated from the Works, at all times during operation of the Works.

8. The Owner shall maintain a logbook to record the results of all inspections, repair and maintenance undertaken, calibrations, monitoring and spill response or contingency measures undertaken and shall make the logbook available for inspection by Ministry staff. The logbook shall include the following:

    a. the name of the operator making the entry; and

    b. the date and results of each inspection, repair, maintenance, calibration, monitoring, spill response and contingency measure.

9. The Owner shall, upon the construction, prepare and make available for inspection by Ministry staff, a maintenance agreement with the manufacturer for the treatment process/technology. The maintenance agreement must be retained at the site and kept current for the operational life of the Works.

10. 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 operation and maintenance activities required by this Approval.

7. MONITORING AND RECORDING

1. The Owner shall, upon commencement of operation of the Works, carry out a scheduled monitoring program of collecting samples at the required sampling points, at the frequency specified or higher, by means of the specified sample type and analyzed for each parameter listed in the tables under the monitoring program included in **Schedule C** and record all results, as follows:

    a. all samples and measurements are to be taken at a time and in a location characteristic of the quality and quantity of the sewage stream over the time period being monitored.

    b. definitions and preparation requirements for each sample type are included in document referenced in Paragraph 2.b.

c. definitions for frequency:

   i. Weekly means once every week;

   ii. Monthly means once every month;

   iii. Annually means once every year.

d. a schedule of the day of the week/month for the scheduled sampling shall be created. The sampling schedule shall be revised and updated every year through rotation of the day of the week/month for the scheduled sampling program, except when the actual scheduled monitoring frequency is three (3) or more times per week.

e. The measurement frequencies specified in **Schedule C** in respect to any parameter may, after **two (2) years** of monitoring in accordance with this Condition, be modified by the Director in writing.

2. The methods and protocols for sampling, analysis and recording shall conform, in order of precedence, to the methods and protocols specified in the following documents and all analysis shall be conducted by a laboratory accredited to the ISO/IEC:17025 standard or as directed by the District Manager:

   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;

   b. the Ministry's publication "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater Version 2.0" (January 2016), PIBS 2724e02, as amended;

   c. the publication "Standard Methods for the Examination of Water and Wastewater", as amended; and

   d. for any parameters not mentioned in the documents referenced in Paragraphs 2.a, 2.b and 2.c, the written approval of the District Manager shall be obtained prior to sampling.

3. The Owner shall monitor and record the flow rate and daily quantity using flow measuring devices or other methods of measurement as approved below calibrated to an accuracy within plus or minus 15 per cent (+/- 15%) of the actual flowrate of the following:

   a. Influent flow to the Sewage Treatment Plant by continuous flow measuring devices and instrumentations;

   b. Final Effluent discharged from the Sewage Treatment Plant by continuous flow measuring devices and instrumentations.

4. 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.

8. REPORTING

1. The Owner shall report to the District Manager orally as soon as possible any non-compliance with the compliance limits, and in writing within **seven (7) days** of non-compliance.

2. In addition to the obligations under Part X of the EPA and O. Reg. 675/98 (Classification and Exemption of Spills and Reporting of Discharges) made under the EPA, the Owner shall, within **fifteen (15) days** of the occurrence of any reportable spill as provided in Part X of the EPA and O. Reg. 675/98, submit a full written report of the occurrence to the District Manager describing the cause and discovery of the spill, clean-up and recovery measures taken, preventative measures to be taken and a 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 performance reports on a calendar year basis and submit to the District Manager by **March 31** of the calendar year following the period being reported upon. The reports shall contain, but shall not be limited to, the following information pertaining to the reporting period:

    a. a summary and interpretation of all Influent monitoring data, and a review of the historical trend of the sewage characteristics and flow rates;

    b. a summary and interpretation of all Final Effluent monitoring data, including concentration, flow rates and a comparison to the design objectives and compliance limits in this Approval, including an overview of the success and adequacy of the Works;

    c. a summary of any deviation from the monitoring schedule and reasons for the current reporting year and a schedule for the next reporting year;

    d. a summary of all operating issues encountered and corrective actions taken;

    e. a summary of all normal and emergency repairs and maintenance activities carried out on any major structure, equipment, apparatus or mechanism forming part of the Works;

    f. a summary of any effluent quality assurance or control measures undertaken;

    g. a summary of the calibration and maintenance carried out on all Influent and Final Effluent monitoring equipment to ensure that the accuracy is within the tolerance of that equipment as required in this Approval or recommended by the manufacturer;

    h. a summary of efforts made to achieve the design objectives in this Approval, including an assessment of the issues and recommendations for pro-active actions when any of the design objectives is not achieved more than 50% of the time in a year or there is an increasing trend in

deterioration of Final Effluent quality;

i. a tabulation of the volume of sludge generated, an outline of anticipated volumes to be generated in the next reporting period and a summary of the locations to where the sludge was disposed;

j. a summary of any complaints received and any steps taken to address the complaints;

k. a summary of all situations outside Normal Operating Conditions and spills within the meaning of Part X of EPA and abnormal discharge events;

l. any changes or updates to the schedule for the completion of construction and commissioning operation of major process(es) / equipment groups in the Proposed Works;

m. any other information the District Manager requires from time to time.

9. DECOMMISSIONING OF UN-USED WORKS

1. The Owner shall properly abandon any portion of unused existing Works, as directed below, and upon completion of decommissioning report in writing to the District Manager:

   a. any sewage pipes leading from building structures to unused Works components shall be disconnected and capped;

   b. any unused septic tanks, holding tanks and pump chambers shall be completely emptied of its content by a licensed hauler and either be removed, crushed and backfilled, or be filled with granular material;

   c. if the area of the existing leaching bed is going to be used for the purposes of construction of a replacement bed or other structure, all distribution pipes and surrounding material must be removed by a licensed hauler and disposed off site at an approved waste disposal site; otherwise the existing leaching bed may be abandoned in place after disconnecting, if there are no other plans to use the area for other purposes.

10. REGISTRATION ON TITLE REQUIREMENT

1. Pursuant to Section 197 of the *Environmental Protection Act,* prior to dealing with any of the properties comprising the Site in any way, the Owner shall provide a copy of this Approval and any amendments, to any person who will acquire an interest in the property as a result of the dealing.

2. Within sixty (60) calendar days of the issuance of this Approval, the Owner shall submit to the Director:

   a. a plan of survey including each property comprising the Site indicating where the sewage Works will

be located;

b. a completed Certificate of Requirement and its supporting documents containing a registerable description of each property comprising the Site.

3. Within fifteen (15) calendar days of receiving a Certificate of Requirement authorized by the Director, the Owner shall:

   a. register the Certificate of Requirement in the Land Titles Division of the Land Registry Office on the title to each property comprising the Site; and

   b. submit to the Director written verification that the Certificate of Requirement has been registered on title.

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

1. Condition 1 regarding general provisions is imposed to ensure that the Works are constructed and operated in the manner in which they were described and upon which approval was granted.

2. Condition 2 regarding change of Owner and Operating Authority is included to ensure that the Ministry records are kept accurate and current with respect to ownership and Operating Authority of the 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.

3. Condition 3 regarding construction of Proposed Works is included to ensure that the Works are constructed in a timely manner so that standards applicable at the time of Approval of the Works are still applicable at the time of construction to ensure the ongoing protection of the environment, and that prior to the commencement of construction of the portion of the Works that are approved in principle only, the Director will have the opportunity to review detailed design drawings, specifications and an engineer's report containing detailed design calculations for that portion of the Works, to determine capability to comply with the Ministry's requirements stipulated in the terms and conditions of the Approval, and also ensure that the Works are constructed in accordance with the Approval and that record drawings of the Works "as constructed" are updated and maintained for future references.

4. Condition 4 regarding design objectives is imposed to establish non-enforceable design objectives to be used as a mechanism to trigger corrective action proactively and voluntarily before environmental impairment occurs.

5. Condition 5 regarding compliance limits is imposed to ensure that the Final Effluent discharged from the Works to the environment meets the Ministry's effluent quality requirements.

6. Condition 6 regarding operation and maintenance is included to require that the Works be properly operated, maintained, funded, staffed and equipped such that the environment is

protected and deterioration, loss, injury or damage to any person or property is prevented. As well, the inclusion of a comprehensive operations manual governing all significant areas of operation, maintenance and repair is prepared, implemented and kept up-to-date by the Owner. Such a manual 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 Works.

7. Condition 7 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.

8. Condition 8 regarding reporting 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 this Approval.

9. Condition 9 is included to ensure that any components of un-used Works are properly decommissioned.

10. Condition 10 is included in order to require the Owner to give notice of this Approval to potential future owners of the property before the property is dealt with.

Schedule A

1. Application for Environmental Compliance Approval dated August 4, 2022 and received on August 17, 2022, submitted by Paul Dyck, President of Great Lakes Greenhouses Inc. for the proposed sewage treatment system, including the design report, final plans and specifications.

Schedule B

Final Effluent Compliance Limits

Effluent Parameter	Monthly Average Effluent Concentration*[1] Limits (milligrams per litre unless otherwise indicated)	
	Summer (April 16 to October 15)	Winter (October 16 to April 15)
Column 1	*Column 2*	*Column 3*
CBOD5	10.0	15.0
Total Suspended Solids (TSS)	10.0	15.0
Total Phosphorus (TP)	0.3	0.3
Total Ammonia Nitrogen (TAN)*[2]	2.0	3.0
E. coli.	100 CFU/100 millilitres*[3]	100 CFU/100 millilitres*[3]

Note*[1]: The limit of *E.coli.* is calculated as Monthly Geometric Mean Density specified in Schedule D.

Note*[2]: During the commissioning stage within **six (6) months** of the date of start-up, an interim compliance limit applies for the Total Ammonia Nitrogen (TAN) as: 4.0 milligrams per litre during Summer (April 16 to October 15), or 6.0 milligrams per litre during Winter (October 16 to April 15).

Note*[3]: If the MPN method is utilized for *E. coli* analysis, the limit shall be 100 MPN/100 millilitres.

Schedule C

Monitoring Program

Influent - Influent sampling point

Parameters	Sample Type	Minimum Frequency
BOD5	Grab	Monthly
Total Suspended Solids	Grab	Monthly
Total Phosphorus	Grab	Monthly
Total Ammonia Nitrogen	Grab	Monthly
Total Kjeldahl Nitrogen	Grab	Monthly
pH	Grab/Probe/Analyzer	Monthly

Final Effluent - Final Effluent sampling point

Parameters	Sample Type	Minimum Frequency
CBOD5	8 hour composite	Weekly
Total Suspended Solids	8 hour composite	Weekly
Total Phosphorus	8 hour composite	Weekly
Total Ammonia Nitrogen	8 hour composite	Weekly
Nitrate as Nitrogen	8 hour composite	Weekly
Nitrite as Nitrogen	8 hour composite	Weekly
E. coli	Grab	Weekly
pH*	Grab/Probe/Analyzer	Weekly
Temperature*	Grab/Probe/Analyzer	Weekly

*pH and temperature of the Final Effluent shall be determined in the field at the time of sampling for Total Ammonia Nitrogen.

Sludge/Biosolids

– Primary Sludge Storage Tank & Secondary Sludge Storage Tank, as one combined sample

Parameters	Sample Type	Minimum Frequency
Total Solids	Grab	Annually
Total Phosphorus	Grab	Annually
Total Ammonia Nitrogen	Grab	Annually
Nitrate as Nitrogen	Grab	Annually
Metal Scan - Arsenic - Cadmium - Cobalt - Chromium - Copper - Lead - Mercury - Molybdenum - Nickel - Potassium - Selenium - Zinc	Grab	Annually

Schedule D

Methodology for Calculating and Reporting Monthly Geometric Mean Density

Geometric mean is defined as the n^{th} root of the product of n numbers. In the context of calculating Monthly Geometric Mean Density for *E. coli*, the following formula shall be used:

$$\sqrt[n]{x_1 x_2 x_3 \cdots x_n}$$

in which,

"n" is the number of samples collected during the calendar month; and

"x" is the value of each Single Sample Result.

For example, four weekly grab samples were collected and tested for *E. coli* during the calendar month. The *E. coli* densities in the Final Effluent were found below:

Sample Number	*E. coli* Densities* (CFU/100 mL)
1	10
2	100
3	300
4	50

The Geometric Mean Density for these data:

$$\sqrt[4]{10 \times 100 \times 300 \times 50} = 62$$

*If a particular result is zero (0), then a value of one (1) will be substituted into the calculation of the Monthly Geometric Mean Density. If the MPN method is utilized for E. coli analysis, values in the table shall be MPN/100 mL.

In accordance with Section 139 of the *Environmental Protection Act,* you may by written notice served upon me, the Ontario Land 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 ("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:

Registrar*
Ontario Land Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5
OLT.Registrar@ontario.ca

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 Ontario Land Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349 or 1 (866) 448-2248, or www.olt.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 25th day of April, 2023

Fariha Pannu.

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

MS/
c: Area Manager, MECP Windsor Area Office
c: District Manager, MECP Sarnia District Office
David Morlock P. Eng., FlowSpec Engineering Ltd.