**AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL**
NUMBER 2219-B9YRXS
Issue Date: April 11, 2019

Algoma Orchards Ltd.
201 Regional Road 42
Clarington, Ontario
L1B 1L9

**Site Location:** 201 Regional Road 42
Clarington Municipality, Regional Municipality of Durham
L1B 1L9

*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:*

upgrade of existing sewage works for the collection, transmission, treatment and disposal of the mixture of domestic sewage (11,505 L/day) from the facility factory, office and retail store and Reverse Osmosis system reject water (15,000 L/day), consisting of the following:

**PROPOSED WORKS**

Upgrade of the two (2) existing subsurface disposal systems to a new subsurface disposal system with a new maximum daily flow of 33,600 L/day, consisting of the following:

- decommissioning the existing Septic Bed #1 (including the septic tank, pump chamber, and leaching bed) and the existing Septic Bed #2 (including pump chamber and leaching bed, but Septic Tank #2 will remain and be reused by the new leaching bed system);
- one (1) sanitary sewage lift station, consisting of one (1) Brooklin Concrete Products 364 L (or approved equivalent) pump chamber base followed by five (5) 0.75 m precast well tiles and one (1) 0.45 m precast well tile to grade complete with sealed joint, with a total volume capacity of 3,800 L and a working volume of 1,100 L, equipped with two (2) submersible effluent pumps rated at 198 L/min at TDH of 6.0 m and one (1) Duplex Demand Control Panel, pumping raw sanitary sewage via 50 mm forcemain to the septic tank as described below;
- two (2) septic tanks (ST No.1 and ST No.2) in series with a total capacity of 118,000 L, including a two compartment precast tank (ST No.1) with a working volume of 91,000 L and an existing two compartment precast septic tank (ST No.2) with a working capacity of 27,000 L, with an effluent filter installed at the outlet of ST No.2, receiving sanitary sewage from the lift station and RO reject water by gravity and discharging by gravity to the effluent dosing pump tank as described below;
- one (1) Armtec Brooklin (or approved equivalent) one compartment precast pump tank with a working volume of 9,000 L, equipped two (2) floor mounted self-priming

centrifugal pumps (DP1 and DP2), with DP1 rated 192 L/min at 9.3 m TDH dosing to the new leaching bed South Cells 1 and 2, and DP2 rated 192 L/min at 10.2 m TDH dosing to the new leaching bed North Cells 3 and 4 via a 76 mm forcemain;
- one fully raised absorption trench leaching bed equipped with two (2) splitter boxes and four (4) distribution boxes, consisting of four (4) cells (South Cells 1 and 2, North Cells 3 and 4), each cell with fourteen (14) runs of 30 m long absorption trenches for a total length of 1680 m of 75 mm diameter perforated distribution pipe, spaced 1.6 m apart from centre to centre, installed in a 300 mm septic stone extending 150 mm below the distribution pipe and 75 mm above the distribution pipe within trenches installed over a minimum 900 mm thick imported septic sand layer (having a T-time of 6 - 10 min/cm) so that the bottom of the absorption trenches is at least 900 mm at all points above the high groundwater table, rock or soil with a percolation time more than 50 min/cm, equipped with minimum 250 mm thick sand mantle extending a minimum of 24.4 m west of the distribution pipes, with a total contact area of 8,474 $m^2$ and the entire bed covered with 150 mm of imported sand fill and topped with 150 mm of seeded top soil with a percolation rate of less than 20 min/cm;

**PREVIOUS WORKS**

**Leaching Bed #1**

- existing leaching bed #1 having a 30,000 L septic tank which receives sanitary sewage from the facility factory, office and retail store, with septic tank effluent being pumped to a raised leaching bed (1 m above existing grade) with fill bed and and mantle areas of 1,620 square metres and encompassing 18 runs of 30 m PVC piping (a total of 540 m), with the leaching bed composed of imported fill with a corresponding mantle measuring 15 m by 36 m; **(To be removed)**

**Leaching Bed #2**

- existing leaching bed #2 having a 27,000 L septic tank which receives reject water from Reverse Osmosis system, with septic tank effluent being pumped to a raised leaching bed (0.9 m above existing grade) with fill bed area of 1,500 square metres and and a mantle area of 540 square metres and encompassing 15 runs of 30 m PVC piping (a total of 450 m), with the distributing pipe system set atop of drain stone; **(To be removed except Septic Tank #2)**

**Process Grey Water Treatment System**

- two (2) 44,000 L precast storage tanks (Storage Tanks No.1 and No.2) installed below grade, equipped with two (2) 3 hp pumps with a rate of approximately 130 L/min, receiving facility process grey water and pumping it to the pre-filter as described below;
- a pre-filter consisting of a 1.2 m diameter vibrating stainless steel mesh screen followed by a 0.4 m diameter 140-micron filter, discharge flow by gravity to the aerobic bioreactor as described below;
- an aerobic bioreactor comprised of a 46,900 L steel tank, AFC coarse bubble diffusers and coagulant/nutrients/bacteria injection system, discharging effluent to bioreactor membrane tank No.1 and bioreactor membrane tank No.2 (pumped from membrane tank No.1 with a 3 hp centrifugal pump) as described below;
- bioreactor membrane tank No.1 including a steel bioreactor membrane tank with a

volume of 11,340 L containing two (2) BIO-CEL-BC100F-C25-UP150 submerged flat plate ultrafiltration membranes (or approved equivalent) operating at 30 L/min with progressive cavity pump No.1 (0.5 hp Liberty APM44 or approved equivalent), receiving aerobic bioreactor effluent and discharging into a 100 L PVC permeate storage tank (permeate tank No.1);
- bioreactor membrane tank No.2 including a steel bioreactor membrane tank with a volume of 12,000 L containing one (1) BIO-CEL-BC400 submerged flat plate ultrafiltration membranes (or approved equivalent) operating at 45 L/min with progressive cavity pump No.2 (2.0 hp Liberty APM56 or approved equivalent), receiving aerobic bioreactor effluent and discharging into a 500 L PVC permeate storage tank (permeate tank No.2);
- one (1) 500 L plastic permeate storage tank No.3, receiving flow from permeate storage tank No.1 and permeate storage No.2 by gravity, with effluent pumped at a rate of 19 L/min by a 0.5 hp centrifugal pump to the sediment filters and water softeners as described below;
- one (1) 5 micron string sediment filter, filtering the permeate water and discharging flow to the parallel Klenzoid KS050-16DE water softeners, with the effluent from the water softeners passing through two (2) 5 micron string sediment filters in series;
- one (1) reverse osmosis system with a capacity of 38 L/min and equipped with a Filmtec XLE-4040 membrane, receiving filtered and conditioned water from the sediment filters and water softeners, with product water directed to a 200 L plastic clean water storage tank and reject water directed to the existing leaching bed #2; **(To be re-directed to the proposed new leaching bed)**
- one (1) Excalibur UVD240 (or approved equivalent) ultraviolet disinfection system, providing disinfection to the RO product water pumped by a 0.5 hp centrifugal pump and discharging to the product water holding tank as described below;
- one (1) 15,000 L stainless steel water holding tank for the storage of disinfected product water, equipped with chlorine dosing to maintain pH between 6.5 and 7.5, recycling the water for facility operations (i.e. apple rinse and flume water);
Including all other controls, electrical equipment, instrumentation, piping, valves and appurtenances essential for the proper operation of the aforementioned sewage works. all in accordance with the submitted supporting documents listed in Schedule A.

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

"Approval" means this entire document including the application and any supporting documents listed in any schedules in this Approval;
"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;
"District Manager" means the District Manager of the York-Durham District Office of the Ministry *;*

"EPA" means the *Environmental Protection Act* , R.S.O. 1990, c.E.19, as amended;
"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;
"Owner" means Algoma Orchards Ltd. and its successors and assignees;
"OWRA" means the *Ontario Water Resources Act* , R.S.O. 1990, c. O.40, as amended;
“Previous Works” means those portions of the Works included in the Approval that have been approved or constructed previously;
"Proposed Works" means those portions of the Works included in the Approval that are under construction or to be constructed;
"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

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) Except as otherwise provided by these terms and conditions, the Owner shall design, construct, operate and maintain the Works in accordance with 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, and where there is a conflict between the documents in the Schedule A, the document bearing the most recent date shall prevail.

(4) 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.

(5) This Approval is granted based upon a review of the Works in the context of its effect on the environment, its process performance and general principles of wastewater engineering. The review did not include a consideration of the architectural, mechanical, electrical or structural components and minor details of the Works except to the extent necessary to review the Works.

(6) This Approval only pertains to approval required under OWRA S.53 and does not include Air, Noise, Waste, Renewable Energy and other media approvals that may be required under other sections of the EPA or the Green Energy Act or other Federal or Provincial regulations for any portion of the Works.

2. EXPIRY OF APPROVAL

(1) The approval issued by 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

(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 or operating authority;
b. change of Owner or operating authority or both, including address of new Owner or operating authority, or both;
c. change of partners where the Owner or operating authority 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*; and
d. change of name of the corporation where the Owner or operating authority is or at any time becomes a corporation, and a copy of the “Initial Return” or “Notice of Change” filed under the *Corporations Information Act, R.S.O. 1990, c. C.39*, shall be included in the notification to the District Manager.

(2) In the event of any change in ownership of the Works, 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.

(3) The Owner shall ensure that all communications made pursuant to this condition refer to the Environmental Compliance number at the top of this Approval.

4. CONSTRUCTION

(1) The Owner shall ensure that the construction of the works is supervised by a Licensed Installer as defined in the *Ontario Building Code* or a Professional Engineer, as defined in the *Professional Engineers Act .*

(2) Upon construction of the Works, the Owner shall prepare a statement, certified by a Licensed Installer or 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 and staff of the local municipality.

5. EFFLUENT 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 below as effluent parameters are not exceeded in the effluent (to be reused as process water) being discharged from the Reverse Osmosis system.

| **Effluent Objectives<br>- Outlet of the Reverse Osmosis System** | |
|---|---|
| **Effluent Parameter** | **Concentration Objectives**<br>(milligrams per litre unless otherwise indicated) |
| *CBOD5* | 10 |
| Total Suspended Solids | 10 |
| Total Ammonia Nitrogen | 5 |
| Nitrate + Nitrite as Nitrogen | 10 |
| E. *coli* | 100 |

6. OPERATIONS AND MAINTENANCE

(1) The Owner shall prepare an Operations Manual within six (6) months of the start up of the Works, that includes, but is not necessarily limited to, the following information:

(a) operating procedures for routine operation of the Works;
(b) procedures for the inspection and calibration of monitoring equipment;
(c) inspection programs, including frequency of inspection, for the Works and the methods or tests employed to detect when maintenance is necessary.
(d) repair and maintenance programs, including the frequency of repair and maintenance for the sewage Works;
(e) contingency plans and procedures for dealing with equipment breakdowns, potential spills and any other abnormal situations, including notification of the District Manager; and
(f) complaint procedures for receiving and responding to public complaints.

(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 ensure that at all times, the Works and related equipment and appurtenances which are installed or used to achieve compliance with this Approval are

properly operated and maintained.
(4) For the process grey water treatment system, the Owner shall sign a Service and Maintenance Agreement with the manufacturer or approved agent of the manufacturer. The maintenance agreement must be retained at the site for as long as the Works are in operation, kept current and made available for inspection by the Ministry staff.
(5) The Owner shall ensure that the septic tank(s) is pumped out every 3-5 years or when the tank is 1/3 full of solids and the effluent filter(s) is cleaned out at minimum once a year (or more often if required).
(6) The Owner shall ensure that grass-cutting is maintained regularly over the subsurface disposal bed(s), and that adequate steps are taken to ensure that the area of the underground works is protected from vehicle traffic.
(7) The Owner shall ensure that the drainage operations in the subsurface disposal bed on the property are observed on a monthly basis for breakouts and results recorded in a log book.
(8) The Owner shall ensure that in the event a breakout is observed from the subsurface disposal bed, the discharge to the bed is immediately discontinued and the incident immediately reported verbally to the District Manager, followed by a written report within one (1) week. The Owner shall also ensure that during the time remedial actions are taking place the discharge from the Works is collected and disposed off-site through a licensed waste hauler to an approved waste disposal site.
(9) The Owner, prior to the start-up of the Works, shall test the proposed effluent dosing pumps installed upstream of the leaching bed to verify capacity and pump(s) running time as per this Approval , so the Works will operate within the rated capacity approved by this Approval.
(10) 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.
(11) The Owner shall maintain a logbook to record the results of Operation and Maintenance activities specified in the above subclauses, and shall keep the logbook at the site and make it available for inspection by the Ministry staff.
7. MONITORING AND RECORDING
The Owner shall, upon commencement of operation of the Works, carry out the following monitoring program:
(1) 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.
(2) Samples shall be collected at the following sampling points, at the frequency specified, by means of the specified sample type and analyzed for each parameter listed and all results recorded:

| **Process Grey Water Treatment System Effluent Monitoring** - (at the outlet of RO system for treated process water to be reused) | |
|---|---|
| **Frequency** | Once a month during the months of May, July, August and October |
| **Sample Type** | Grab |

| | |
|---|---|
| **Parameters** | CBOD5,Total Suspended Solids, Total Phosphorus, pH, Total Ammonia Nitrogen, Nitrate and Nitrite, Total Coliform and *E. coli* |
| **Leaching Bed Influent Monitoring** - (at the outlet of ST #2 or Pumping tank) | |
| **Frequency** | Once a month during the months of May, July, August and October |
| **Sample Type** | Grab |
| **Parameters** | CBOD5,Total Suspended Solids, Total Phosphorus, pH, Total Ammonia Nitrogen, Nitrate and Nitrite |

(3) 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;
(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.
(d) for any parameters not mentioned in the documents referenced in (a), (b) and (c), the written approval of the District Manager shall be obtained prior to sampling.

(4) The temperature and pH of the effluent from the Works shall be determined in the field at the time of sampling for Total Ammonia Nitrogen.
(5) The Owner shall measure and record the daily volume of effluent being discharged from the two sewage treatment trains.
(6) 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) One week prior to the start up of the operation of the Proposed 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 to the District manager, a performance report, on an annual basis, within ninety (90) days following the end of the period being reported upon. 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 and a comparison to the effluent objectives outlined in Condition 5, including an overview of the success and adequacy of the Works;
(b) a tabulation of the daily volumes of effluent disposed through the sewage treatment systems during the reporting period;
(c) a description of efforts made and results achieved in meeting the Effluent Objectives of Condition 5;

(d) a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the Works; and

(e) a description of any operating problems encountered and corrective actions taken.
(f) a summary and interpretation of all flow data and results achieved in meeting the maximum daily flows for each sewage Works as approved under this Approval.

(g) a summary of any complaints received during the reporting period and any steps taken to address the complaints;
(h) a summary of all spill or abnormal discharge events; and
(i) 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 imposed 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 constructed in accordance with the approval and that record drawings of the Works "as Constructed" are maintained for future references.

5. Condition 5 is imposed to establish non-enforceable effluent quality objectives which the Owner is obligated to use best efforts to strive towards on an ongoing basis. These objectives are to be used as a mechanism to trigger corrective action proactively and voluntarily before environmental impairment occurs and before the compliance limits of Condition 7 are exceeded.

6. Condition 6 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 a 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.

7. Condition 7 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 specified in the Approval and that the Works does not cause any impairment to the receiving watercourse.

8. Condition 8 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. Environmental Compliance Approval Application for Industrial Sewage Works , submitted by Cambium Inc., dated January 2. 2019 and received at the Ministry on January 30, 2019.

2. Algoma Orchards Ltd. Sewage Works Environmental Compliance Approval Report, along with drawings, dated January 21, 2019, and prepared by Cambium Inc.
3. Technical Memorandum titled Bioreactor and Reverse Osmosis Wastewater System Description, dated March 1, 2019, and prepared by Cambium Inc.

**Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 5738-8DVQ79 issued on March 10, 2011**

*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, S.O. 1993, c. 28 (Environmental Bill of Rights), the Environmental Commissioner, within 15 days after receipt of this Notice, require a hearing by the Tribunal. The Environmental Commissioner 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.

*Pursuant to subsection 139(3) of the Environmental Protection Act, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.*

*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 Environmental Commissioner
1075 Bay Street, Suite 605
Toronto, Ontario
M5S 2B1

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* www.ebr.gov.on.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 11th day of April, 2019

Youssouf Kalogo, P.Eng.
Director
appointed for the purposes of Part II.1 of the *Environmental Protection Act*

YZ/
c: District Manager, MECP York-Durham District Office
Stew Dolstra, Cambium Inc.