AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 0512-BQDSBX
Issue Date: November 13, 2020

Darling International Canada Inc.
485 Pinebush Road
Cambridge, Ontario
N1T 0A6

Site Location: Rothsay - Moorefield
Lot 8,9, Concession 13
Mapleton Township, County of Wellington
N0G 2K0

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:

expansion of existing sewage works for the collection, transmission, treatment and disposal of sanitary sewage, process wastewater, and stormwater from the rendering facility, and effluent being discharged to Moorefield Creek or being disposed through land application (spray irrigation), consisting of the following:

PROPOSED WORKS

Process Wastewater Treatment

expansion of process wastewater treatment system with an increased rated capacity of 1,800 m³/day, having two (2) parallel trains of biological treatment units with the flexibility of operating one (1) train or both trains in parallel, discharging treated effluent via the existing effluent storage lagoon and polishing system to Moorefield Creek or via land application with spray irrigation, consisting of the following:

Membrane Bio-reactors Upgrade

- Upgrade of the two (2) existing membrane bio-reactors operating in parallel, each with an increased rated capacity of 1,800 m^3/day and equipped with membrane modules, equipped with return activated sludge (RAS) pumps with a total capacity of 9,000 m^3/day, and membrane chemical cleaning system including air blowers and air scour diffusers;

Decommissioning

- Demolish the optional rotary drum sludge thickener (residuals management system);

- Demolish the mixed liquor recycle (MLR) heat exchanger providing heat to the biological treatment system;

PREVIOUS WORKS

Process Wastewater Treatment

A process wastewater treatment system with a rated capacity of 1,300 m^3/day, having two (2) parallel trains of biological treatment units with the flexibility of operating one (1) train or both trains in parallel, discharging treated effluent via the existing effluent storage lagoon and polishing system to Moorefield Creek or via land application with spray irrigation, consisting of the following:

Pre-Treatment System

- One (1) rotary screen;

- One (1) lift station tank having a capacity of 14 m^3;

- Two (2) centrifugal screened effluent pumps;

- Two (2) large flow equalization tanks each having an inside diameter of 7.32 m and a sidewall depth of 6.10 m;

- Two (2) 7.5 hp mixers;

- Two (2) centrifugal DAF feed pumps;

- One (1) Dissolved Air Flotation (DAF) unit having an area of 27.9 m^2;

Biological Treatment System

A 1,300 m^3/day Rated Capacity biological treatment system using the Bardenpho treatment process, having two (2) parallel trains of treatment units with the flexibility of operating one (1) train or both trains in parallel, discharging treated effluent to the existing effluent storage and polishing lagoon system, consisting of the following:

- Biological System Feed Tank - One (1) lift station consisting of one (1) 24 m^3 capacity tank equipped with three (3) 800 - 1,300 m^3/day capacity pumps operating on alternating demand control;

- One (1) 1,136 m^3 capacity circular tank (Diversion Basin #1) made from the modification of an existing aeration tank to be used as an emergency diversion basin;

- One (1) 208 m^3 capacity biological treatment system Inlet Tank equipped with baffles, mechanical mixing, and two (2) adjustable overflow weir gates for dividing flow between the two (2) biological treatment system trains;

- Two (2) Primary Anoxic Tanks, each with 750 m^3 storage capacity and equipped with floating surface mixers and adjustable weir gates for controlling water levels;

- Two (2) Aeration Tanks, each with 3,000 m^3 storage capacity and equipped with fine bubble diffuser grids and adjustable weir gates for controlling water levels;

- Three (3) mixed liquor recycle (MLR) pumps each with 6,500 m^3/day capacity directing mixed liquor from the aeration tanks to the inlet tank (three duty);

- Two (2) Secondary Anoxic Tanks, each with 750 m^3 storage capacity and equipped with floating surface mixers and adjustable weir gates for controlling water levels;

- Two (2) Re-Aeration Tanks, each with 160 m^3 storage capacity and equipped with fine bubble diffuser grids and adjustable weir gates for controlling water levels;

- Two (2) Membrane Bio-Reactors operating in parallel, each with a rated capacity of 1,300 m^3/day and equipped with membrane modules, return activated sludge (RAS) pumps with a total capacity of 9000 m^3/day, and membrane chemical cleaning system including air blowers and air scour diffusers;

- Two (2) 140 m^3/day capacity waste activated sludge (WAS) pumps directing WAS to the existing WAS dewatering system;

- One (1) caustic storage tank equipped with three (3) 7,000 L/day caustic dosing pumps (two duty, one standby);

- One (1) supplemental carbon storage tank equipped with three (3) 4,000 L/day supplemental carbon dosing pumps (two duty, one standby);

- Two (2) 190 L/day coagulant dosing pumps (one duty, one standby, as needed) for adding coagulant to the Inlet Tank;

<u>Effluent Storage System</u>

- Three (3) seasonal storage lagoons (Lagoons 1, 2 and 3 as described below) followed by seasonal disposal by spray irrigation on company-owned lands;

- Lagoon 1 with storage capacity of approximately 90,922 m^3, with an approximate average depth of 5.5 m, and surface aeration to mix lagoon;

- Lagoon 2 with storage capacity of approximately 113,652 m³, with an approximate average depth of 5.4 m and aerators to mix lime into the lagoon to facilitate ammonia removal.

- Lagoon 3 with storage capacity of approximately 159,113 m³, with an approximate average depth of 4.5 m, which will be used for storing effluent from the existing process wastewater biological treatment system as well as the existing sanitary treatment system. Breakpoint chlorination can also occur in Lagoon 3, as described below;

- One (1) liquid sodium hypochlorite addition and mixing facility consisting of batch wise addition of hypochlorite, mixing and/or pumping equipment to reduce ammonia in the wastewater in Lagoon #3 until breakpoint chlorination is reached;

- One (1) dechlorination chemical (sodium bisulphite, sodium metabisulphite or other chemical) addition and mixing facility consisting of batch wise addition of dechlorination chemical, mixing and/or pumping equipment to remove excess free chlorine, if any, in the wastewater in Lagoon #3;

- One (1) acid or caustic addition and mixing facility consisting of the addition of acid or caustic, mixing and/or pumping equipment for pH adjustment of the wastewater in Lagoon #3, as needed, prior to discharge;

Effluent Polishing and Discharge System

A 3,936 m^3/day Rated Capacity polishing treatment system for the treatment of effluent from Lagoon #3 prior to being discharged to Moorefield Creek including the following:

- One (1) valve to regulate lagoon discharges;

- One (1) lagoon effluent pipeline from lagoon # 3, discharging to the polishing system feed pumps and/or direct discharge;

- Two (2) 3,936 m^3/day @ 11 m TDH capacity polishing feed pumps directing stored effluent to the polishing Dissolved Air Floatation (DAF);

- One (1) 3,936 m^3/day capacity (DAF) equipped with two (2) 135 m^3/day capacity float transfer pumps, air compressor, tube flocculator, DAF recycle pumps, and skimmer mechanism;

- One (1) optional 3,936 m^3/day capacity effluent disk filter, complete with two (2) filter backwash pumps, discharging to the discharge retention tank;

- One (1) coagulant storage tank equipped with two (2) 400 L/day coagulant dosing pumps;

- One (1) polymer blending, aging, storage and dosage system with a 2,000 L/day polymer dosing capacity;

- One (1) off-specification effluent storage tank equipped with a pump for re-directing

off-specification effluent back to the lagoons;

- One (1) discharge retention tank with a capacity of 45.4 cubic metres providing effluent flow damping and control, and discharging to a Parshall flume complete with an ultrasonic level flow measuring device;

- One (1) 600 mm manhole from which the effluent flows to the pipe as described below;

- One (1) underground discharge pipe with a 300 mm internal diameter having an approximate length of 275 metres which flows to the retention tank as described below;

- A drainage ditch lined with rip rap stone next to the pipe outlet over an area covering approximately 15 metres long by 2.7 metres wide, before reaching Moorefield Creek;

- A discharge outfall to Moorefield Creek located at the County Road 7 bridge adjacent to the Rothsay property;

- A stream gauge located on Moorefield Creek and upstream of the Rothsay Plant discharge (the flow rate in Moorefield Creek is measured at Water Survey of Canada's Station No. 02GA042, located upstream of the Rothsay discharge);

Land Application System

One (1) spray irrigation system restricted to a maximum of 90,922 m^3 per year, all of which must meet the maximum criteria for ammonia, total oxygen demand and hydrogen sulphide as specified in the effluent criteria.

Residuals Management System

- Two (2) DAF float storage tanks;

- Two (2) WAS storage tanks;

- Two (2) 120 m^3/day Centrifuges piped to process any combination of DAF Float, and/or WAS able to have temperature adjustment and chemical conditioning on as needed basis;

- One (1) recovered grease storage tank;

- Two (2) dewatered solids holding bins;

- Two (2) 150 m^3/day centrifuge(s) to process any combination of polishing DAF float, or WAS;

- One (1) WAS centrate tank to re-direct centrate from the WAS/polishing float centrifuges to the Biological Treatment System; and

- All chemical dosing systems as required to ensure proper performance and operation of the DAF,

and all centrifuges.

Scrubber Venturi Recycle Effluent

- One (1) curb containment system for the bypass sump in the processing plant's skimmer area;

- One (1) water recycling system from the A and C Venturi air scrubber to Lagoon No. 1, where it is stored, and recycled back to the Venturi for scrubbing purposes;

Sanitary Sewage Treatment

An existing sanitary sewage treatment system with a rated capacity of 13,000 L/day, servicing employees of Moorefield Plant, discharging to an existing effluent storage lagoon (Lagoon No. 3), consisting of the following:

- One (1) 4.5 m^3 storage capacity holding tank (Rear Holding Tank), one (1) 5.5 m^3 storage capacity holding tank (Front Holding Tank), and one (1) 3.5 m^3 storage capacity holding tank (WWTP Holding Tank), all discharging by gravity to the septic tank described below;

- One (1) 29.0 m^3 septic tank discharging by gravity to an equalization tank described below;

- One (1) 13.0 m^3 storage capacity flow equalization tank equipped with two (2) 450 L/min capacity submersible dosing pumps operating on alternating duplex mode discharging to the Waterloo Biofilter System described below;

- One (1) Waterloo Biofilter System, Model SC-20, consisting of a modified shipping container filled with approximately 26.7 m^3 of polyurethane foam medium, equipped with two (2) 125 scfm maximum capacity centrifugal fans, discharging by gravity to a UV disinfection system feed tank described below;

- One (1) 5.4 m^3 capacity UV disinfection system feed tank equipped with two (2) 170 L/min capacity submersible pumps dosing effluent to a UV disinfection system described below;

- One (1) 95 m^3/day capacity UV disinfection system (Trojan Model UV 3000 PTP) consisting of one (1) bank containing two (2) high intensity UV lamps, designed for 30,000 uWs/cm2 at UV transmittance of 65%, discharging by gravity to an effluent disposal tank described below;

- One (1) 5.4 m^3 storage capacity effluent disposal tank equipped with two (2) 210 L/min capacity submersible effluent disposal pumps operating on an alternating duplex mode, discharging effluent to the existing Lagoon No. 3;

Stormwater Management Works

Existing stormwater management facility for the collection, transmission, and disposal of stormwater run-off from a total of 7.78 ha drainage area out of a total of 14.8 ha drainage area, designed to attenuate post-development stormwater run-off peak flows from storm events with up to 1:100 year return frequency to or below pre-development levels, consisting of the following:

- One (1) stormwater interceptor with a total volumetric capacity of 7.5 m^3, discharging through a 450 mm diameter pipe to the existing stormwater ditch on-site;

- Collection and discharge of stormwater from the roof-top of the truck storage building, discharging to the existing 600 mm diameter pipe to be discharging to the roadside ditch along County of Wellington Road #7;

- A 150 mm diameter drainage pipe that accepts overflow from the adjacent wetland and discharges through a 600 mm diameter drainage pipe to the roadside ditch along County of Wellington Road #7;

- One (1) stormwater collection manhole to accumulate flow from the biofilter building weeping tiles, equipped with a submersible pump with integral level control. Collected water to be pumped through a 100 mm diameter drainage pipe to the on-site drainage ditch;

- A 300 mm diameter drainage pipe to discharge the stormwater run-off from the Biofilter building roof-top to the on-site drainage ditch;

- An on-site drainage ditch for conveying the stormwater run-off collected from the collection manhole, the Biofilter building roof-top, and the overland run-off flow from the surrounding area of the Biofilter building, to the dry detention pond through the 130-m vegetated open channel;

- One (1) approximately 130 m long vegetated open channel with a minimum depth of 2.0 m, bottom width of 1.0 m, and side slopes of 3H:1V, discharging to a dry detention pond described below;

- One (1) dry detention pond with a total storage capacity of 2,634 m^3 (at elevation of 418.7 m masl) having an approximate bottom length of 60 m, a bottom width of 25 m, a depth of 1.40 m, and side slopes of 3H:1V, equipped with an outlet structure consisting of a 600 diameter orifice plate, a sluice gate valve, a 30 m long 750 mm diameter storm sewer, and a rip-rap lined outlet, discharging through one (1) 120 m long vegetated swale to an existing roadside ditch along Country Road No. 7, and ultimately to Moorefield Creek;

- One (1) precast concrete oil and sediment separator (Stormceptor STC 4000 or equivalent) located north of the dry detention pond, designed to service a total drainage area of 2.8 ha providing stormwater quality control (Level 2 protection), discharging to a dry detention pond described below;

- One (1) emergency spillway lined with a rip-rap having a maximum bottom width of 10.0 m, maximum height of 1.0 m, and side slopes of 3H:1V, discharging through a vegetated swale to an existing roadside ditch along Country Road No. 7, and ultimately to Moorefield Creek;

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 Average Concentration" means the arithmetic mean of the Monthly Average Concentrations of a contaminant in the effluent calculated for any particular calendar year;

2. "Annual Average Loading" means the value obtained by multiplying the Annual Average Concentration of a contaminant by the Average Daily Flow over the same calendar year;

3. "Approval" means this entire document and any schedules attached to it, and the application;

4. "Average Daily Flow" means the cumulative total sewage flow to the sewage works during a calendar year divided by the number of days during which sewage was flowing to the sewage works that year;

5. "BOD5" (also known as $TBOD_5$) means five day biochemical oxygen demand measured in an unfiltered sample and includes carbonaceous and nitrogenous oxygen demand;

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

7. "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.

8. "District Manager" means the District Manager of the Guelph District Office;

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

10. “Equivalent Equipment" means a substituted equipment that meets the required quality and performance standards of the named equipment;

11. "Limited Operational Flexibility” (LOF) means the Modifications that the Owner is permitted to make to the Works under this Approval;

12. "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;

13. "Modifications" means any addition, replacement, alteration, expansion or optimization for the Works as specified under Limited Operational Flexibility;

14. "Notice of Modifications" means the form entitled "Notice of Modifications to Sewage Works";

15. "Owner" means Darling International Canada Inc. and its successors and assignees;

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

17. "Previous Works" means those portions of the sewage works previously constructed and approved under an Approval;

18. "Rated Capacity" means the Average Daily Flow for which the Works are approved to handle;

19. "Regional Director" means the Regional Director of the West Central Region of the Ministry;

20. "Substantial Completion" has the same meaning as "substantial performance" in the Construction Lien Act; and

21. "Works" means the sewage works described in the Owner's application and this Approval and includes Previous 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 conditions herein and shall take all reasonable measures to ensure any such person complies with the same.

(2) 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.

(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.

(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.

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 four (4) 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. UPON THE SUBSTANTIAL COMPLETION OF THE PROPOSED WORKS

(1) Upon the Substantial Completion of the Proposed 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 personnel.

(2) Within one (1) year of the Substantial Completion of the Proposed Works, a set of as-built drawings showing the works "as constructed" shall be prepared. These drawings shall be kept up to date through revisions undertaken from time to time and a copy shall be retained at the Works for the operational life of the Works.

5. EFFLUENT OBJECTIVES

(1) The Owner shall use best efforts to design, construct and operate the Works such that the concentrations of the materials named below as effluent parameters are achieved in the effluent from the Works (process wastewater treatment system and sanitary sewage treatment system).

Effluent Parameter	**Monthly Average Concentration Objective** (milligrams per litre unless otherwise indicated)
CBOD5	15.0
Total Suspended Solids	15.0
Total Phosphorus	0.3
Nitrate as N *NOTE 1	15.0

***NOTE 1:** The effluent objectives for Nitrate as N shall be reassessed within five (5) years of the issuance date of this Approval once sufficient data has been collected as per Condition 8.

(2) The Owner shall use best efforts to:

a. maintain the pH of the effluent from the Works within the range of 6.0 - 7.5, inclusive, at all times;

b. operate the works within its Rated Capacity.

c. ensure that the effluent from the Works 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.

(3) The Owner shall make an assessment of the issues and recommendation of pro-active actions when any of the objectives are not achieved consistently and include the assessment and pro-active actions in the annual report to the District Manager.

6. EFFLUENT LIMITS

(1) The Owner shall design and construct the proposed works and operate and maintain the Works such that the concentrations of the materials named below as effluent parameters are not exceeded in the effluent from the Works (process wastewater treatment system and sanitary sewage treatment system).

Effluent Parameter	**Maximum Concentration** (milligrams per litre unless otherwise indicated)	**Maximum Waste Loading** (kilograms per year unless otherwise indicated)	**Flow Limit (Ratio of Stream to Effluent Flow)**
Column 1	Column 2	Column 3	Column 4
CBOD5	15.0	-	-
Total Suspended Solids	25.0	-	-
Total Phosphorus	0.5	357	-
Total Ammonia Nitrogen			
November	2.4	-	6:1
December	13.4	-	3:1
January	19.0	-	3:1
February	16.2	-	3:1
March	15.4	-	3:1
April	13.1	-	3:1
pH of the effluent maintained between 6.0 to 7.5, inclusive, at all times			

(2) For the purposes of determining compliance with and enforcing subsection (1):

(a) The Monthly Average Concentration of a parameter named in Column 1 of subsection (1) shall not exceed the corresponding maximum concentration set out in Column 2 of subsection (1).

(b) The Annual Average Loading of a parameter named in Column 1 of subsection (1) shall not exceed the corresponding maximum waste loading set out in Column 3 of subsection (1).

(c) The ratio of the effluent discharge flow rate to Moorefield Creek flow rate for each month listed in Column 1 of subsection (1) under Total Ammonia Nitrogen shall not exceed the corresponding ratio as set out in Column 4 of subsection (1).

(d) The pH of the effluent shall be maintained within the limits outlined in subsection (1), at all times.

(3) The Owner shall discharge treated effluent to the approved location in Moorefield Creek, which complies with the effluent limits set in subsection (1) **only** in the months of **November, December, January, February, March, and April**.

(4) The Owner shall not discharge any wastewater at any time that the receiver's stream flow rate falls below 0.03 m^3 per second.

(5) The Owner shall discharge effluent through the Spray Irrigation System, restricted to a maximum of 90,922 m^3/year, all of which shall comply with the effluent limits for the Spray Irrigation System outlined in below table.

Effluent Parameter	Monthly Average Concentration Limit
Total Ammonia Nitrogen	20 mg/L
Hydrogen Sulphide	0.136 mg/L
Total Oxygen Demand load	141.8 kg/day
pH of the effluent maintained between 7.0 to 8.5, inclusive, at all times	

(6) The waste loading of Total Oxygen Demand (TOD) shall be calculated using the following formula:

$TOD = (4.57 \text{ X } TKN) + (2 \text{ x } CBOD_5)$

where: TOD = Total Oxygen Demand in kg/day
TKN = Total Kjeldahl Nitrogen in kg/day
$CBOD_5$ = 5-day Carbonaceous biochemical oxygen demand in kg/day

7. OPERATION AND MAINTENANCE

(1) The Owner shall exercise due diligence in ensuring 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 funding, adequate operator staffing and training, including training in all procedures and other requirements of this Approval and the OWRA and regulations, adequate laboratory facilities, process controls and alarms and the use of process chemicals and other substances used in the Works.

(2) The Owner shall prepare the operations manual for the Works within six (6) months of Substantial Completion of the Proposed Works, that includes, but not necessarily limited to, the following information:

a. operating procedures for routine operation of the Works;

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. a spill prevention control and counter measures 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 followup actions taken.

(3) 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.

(4) The Owner shall provide for the overall operation of the Works (**Sanitary Sewage Treatment System and Lagoon No. 3**) with an operator who holds a licence that is applicable to that type of facility and that is of the same class as or higher than the class of the facility in accordance with Ontario Regulation 129/04.

(5) The Owner shall ensure that the design volume of the **stormwater management works** is maintained at all times.

(6) The Owner shall inspect the **stormwater management works** at least twice a year and, if necessary, clean and maintain the Works to prevent the excessive build-up of sediments and/or vegetation.

(7) 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.

8. SPECIAL OPERATIONS - SPRAY IRRIGATION

(1) The Owner shall ensure that spray irrigation of effluent is only conducted on those areas designated and approved for that purpose.

(2) Spray irrigation shall be only operated during frost-free and rain-free days of the year generally occurring between May 1st and October 31st of each year.

(4) The Owner shall ensure that the spray irrigation system is operated such that:

a) effluent is applied only on the approved spray irrigation fields with an application rate less than 50 m^3 per hectare per application;

b) the application of effluent to the approved spray irrigation area is carried out in a manner that maximizes evapotranspiration and allows the soil to dry out periodically;

c) the effluent spray irrigation system is operated in a manner that precludes the sprayed effluent ponding, run-off, and aerosol drift beyond the limits of the spray irrigation field at all times;

d) whenever ponding or run-off of sprayed effluent occurs, the application of effluent to the affected area of the spray irrigation field is immediately terminated, and adequate time is allowed before resumption of the application of effluent to that area for the area to dry to a degree that

would preclude immediate recurrence of ponding or run-off;

(5) No spray irrigation is to take place:

a) on frozen ground or during a period outside of the specified Spray Irrigation Season;

b) with the occurrence of rainfall, aerosol drift off the property or surface ponding;

c) when the ground is saturated, when wind speed exceeds fifteen (15) kilometres per hour and or precipitation is expected for that day of spraying, in which event, spraying should not resume as long as surface ponding exists;

d) within 30 metres of any surface watercourse or drain;

9. 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) For the purposes of this condition, the following definitions apply:

a. Weekly means once each week;

(3) Samples shall be collected at the following sampling points and analyzed for at least the following parameters at the frequency specified, by means of the specified sample type and all results recorded:

Effluent Monitoring Sample Location: sewage treatment plant effluent prior to discharge to Moorefield Creek effluent discharge point	
Frequency	Weekly (once per week) during the effluent discharge period (November, December, January, February, March and April)
Sample Type	Grab
Parameters	CBOD5, Total Suspended Solids, pH, Temperature, Total Phosphorus, Total Ammonia Nitrogen, Total Kjeldahl Nitrogen, Nitrate as N, Nitrite as N, Hydrogen Sulphide, and Dissolved Oxygen

Land Application Effluent Monitoring Sample Location: Effluent Discharge	
Frequency	Weekly (once per week) while land application is occurring (i.e. May, June, July, August, September and October)
Sample Type	Grab
Parameters	Flow (average daily flow and volume/day), pH, Temperature, Total Ammonia Nitrogen, Hydrogen Sulphide, $CBOD_5$ Total Kjeldahl Nitrogen, and Total Oxygen Demand (calculated)

Moorefield Creek Sampling Sample Points: 1. Wellington County Road 7 Bridge 2. Station 2A (approximately 500 m downstream of the existing effluent discharge point)	
Frequency	Weekly (once per week) during the effluent discharge period (November, December, January, February, March, and April)
Sample Type	Grab (To be taken on the same day when effluent discharge is sampled)
Parameters	CBOD5, Total Suspended Solids, pH, Temperature, Total Phosphorus, Total Ammonia Nitrogen, Total Kjeldahl Nitrogen, Nitrate as N, Nitrite as N, and Dissolved Oxygen

(4) 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" (20th edition), as amended from time to time by more recently published editions; and

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

(5) The temperature and pH of the effluent from the works shall be determined in the field at the time of sampling for total ammonia. The concentration of un-ionized ammonia shall be calculated using the total ammonia concentration, pH and temperature using the methodology stipulated in "Ontario's Provincial Water Quality Objectives" dated July 1994, as amended, for ammonia (un-ionized).

(6) A continuous flow measuring device(s) shall be installed and maintained to measure the flow rate of the effluent from the sewage works, with an accuracy to within plus or minus 15 per cent of the actual flow rate for the entire design range of the flow measuring device and the Owner shall measure, record and calculate the flow rate for each effluent stream on each day of sampling.

(7) The Owner shall use data of the receiver's stream (Moorefield Creek) flow rate from the existing Water Survey of Canada's Station No. 02GA042 upstream from the effluent discharge point and use this data to measure, record, and calculate the flow rate of the creek for estimating compliance with these effluent limits.

(8) The Owner shall measure and record the **daily** flow rate of effluent discharge and the flow rate of Moorefield Creek during any effluent discharge period and use the recoded daily data to adjust the effluent discharge rate to ensure the appropriate stream to effluent flow ratio outlined under Condition 6(1) is complied with.

(9) The Owner shall prepare a summary report of the effluent discharge monitoring data for the parameters listed in Condition 9 (3) at the end of the effluent discharge period and submit the report with the annual report required under Condition 10 (4) to the District Manager, to a person designated by the Clerk of Mapleton Township, and the Grand River Conservation Authority.

(10) The Owner shall notify the District Manager and the Grand River Conservation Authority two (2) business days prior to commencement of and within ten (10) business days at the completion of any effluent discharge to Moorefield Creek.

(11) The Owner shall retain for a minimum of **three (3) years** from the date of their creation, all records and information related to or resulting from the monitoring activities required by this Approval.

10. 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) The Owner shall report to the District Manager or designate, any exceedance of any parameter specified in Condition 6 orally, as soon as reasonably possible, and in writing within seven (7) days of the exceedance.

(3) In addition to the obligations under Part X of the *Environmental Protection Act* , the Owner shall, within ten (10) working days of the occurrence of any reportable spill as defined in Ontario Regulation 675/98, bypass or 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.

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

(5) The Owner shall prepare a performance report on an annual basis and submit to the District Manager by April 30 of the calendar year following the period being reported upon. The reports shall contain, but shall not be limited to, the following information:

a. a statement of the effectiveness of the treatment works based on the monitoring results, its interpretation and any other relevant information pertaining the process wastewater and stormwater systems, including the following indicators;

b. a summary and interpretation of all monitoring data and a comparison to the effluent limits outlined in Condition 6, including an overview of the success and adequacy of the sewage works;

c. a summary of any significant operating problems encountered as identified in the daily log, the results of the investigation concerning the operational problems and corrective actions taken;

d. a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the sewage works;

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

f. a summary of the monthly effluent quantity being discharged in the reporting period;

g. a summary of the calibration and maintenance carried out on all effluent monitoring equipment;

h. a description of efforts made and results achieved in meeting the Effluent Objectives of Condition 5.

i. a schedule of any implementation plan for any outstanding work required as a result of the investigation concerning operational problems and recommended actions;

j. Residuals Management System Report, including but not limited to, a quantification record of DAF float concentrate and any other waste being disposed of off-site, its moisture content, approximate volume and final disposal site location; and

k. a summary of the daily record of treated effluent discharge flows and volumes with respect to the receiver's stream flow.

l. a copy of all Notice of Modifications submitted to the District Manager, with a status report on the implementation of Limited Operational Flexibility;

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

11. LIMITED OPERATIONAL FLEXIBILITY

(1) The Owner may make modifications to the Works in accordance with the Terms and Conditions of this Approval and subject to the Ministry's "Limited Operational Flexibility Criteria for Modifications to Sewage Works ", included under Schedule B of this Approval, as amended.

(2) Sewage works under Limited Operational Flexibility shall adhere to the design guidelines contained within the Ministry's publication "Design Guidelines for Sewage Works 2008", as amended.

(3) The Owner shall ensure at all times, that the Works, related equipment and appurtenances which are installed or used to achieve compliance are operated in accordance with all Terms and Conditions of this Approval.

(4) For greater certainty, the following are not permitted as part of Limited Operational Flexibility:

a. Modifications to the Works that result in an increase of the approved Rated Capacity of the Works;

b. Modifications to the Works that may adversely affect the approved effluent quality criteria or the location of the discharge/outfall;

c. Modifications to the treatment process technology of the Works, or modifications that involve construction of new reactors (tanks) or alter the treatment train process design;

d. Modifications to the Works approved under s.9 of the EPA; and

e. Modifications to the Works pursuant to an order issued by the Ministry.

(5) Implementation of Limited Operational Flexibility is not intended to be used for piecemeal measures that result in major alterations or expansions.

(6) If the implementation of Limited Operational Flexibility requires changes to be made to the Emergency Response, Spill Reporting and Contingency Plan, the Owner shall, provide a revised copy of this plan to the local fire services authority prior to implementing Limited Operational Flexibility.

(7) For greater certainty, any modification made under the Limited Operational Flexibility may only be carried out after other legal obligations have been complied with, including those arising from the Environmental Protection Act, Niagara Escarpment Planning and Development Act, Oak Ridges Moraine Conservation Act, Lake Simcoe Protection Act and Greenbelt Act.

(8) At least thirty (30) days prior to implementing Limited Operational Flexibility, the Owner shall complete a Notice of Modifications describing any proposed modifications to the Works and submit it to the District Manager.

(9) The Owner shall not proceed with implementation of Limited Operational Flexibility until the District Manager has provided written acceptance of the Notice of Modifications or a minimum of thirty (30) days have passed since the day the District Manager acknowledged the receipt of the Notice of Modifications.

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 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.

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 updated and 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 6 are exceeded.

6. Condition 6 is imposed to ensure that the effluent discharged from the Works meets the Ministry's effluent quality requirements thus minimizing environmental impact on the receiver and to protect water quality, fish and other aquatic life in the receiving water body.

7. Condition 7 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 and made available to the Ministry. 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.

8. Condition 8 is included to ensure that the Works are operated in a manner that minimizes any off property impacts from the spray irrigation operation.

9. Condition 9 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 that the Works does not cause any impairment to the receiving watercourse.

10. Condition 10 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.

11. Condition 11 is included to ensure that the Works are operated in accordance with the application and supporting documentation submitted by the Owner, and not in a manner which the Director has not been asked to consider. These Conditions are also included to ensure that a Professional Engineer has reviewed the proposed modifications and attests that the modifications are in line with that of Limited Operational Flexibility, and provide assurance that the proposed modifications comply with the Ministry's requirements stipulated in the Terms and Conditions of this Approval, MOE policies, guidelines, and industry engineering standards and best management practices.

Schedule 'A'

1. Applications for Approval for Industrial Sewage Works submitted by Greg Harmer, Wood Environment & Infrastructure Solutions, dated April 9, 2020 and received on May 14, 2020.

2. Preliminary Design Report - Production Throughput Increases Wastewater Treatment System Evaluation, dated April, 2020.

Schedule 'B'

Limited Operational Flexibility Criteria for Modifications to Sewage Works

The Modifications to sewage works approved under an Environmental Compliance Approval (ECA) that are permitted under the Limited Operational Flexibility, are outlined below. For clarity proposes, Modifications of equipment **does not** include process equipment where treatment unit operations occur, including but not limited to: screens, grit separators, blowers, oxygen diffusers, sludge thickeners and dewatering equipment, UV systems, chlorine contact tanks, bio-disks, digester gas handling systems, and process reactors.

Modifications of sewage works that are exempt from section 53 of the OWRA by O. Reg. 525/98 including minor maintenance and/or repair activities will continue to be exempt and are not required to follow the notification process under this Limited Operational Flexibility.

The following sewage works are permitted under Limited Operational Flexibility, and as per the conditions in the Approval:

1.0 Sewage Pumping Stations

1.1 Alter pumping capacity by adding or replacing equipment where new equipment is located within an existing sewage treatment plant site or an existing sewage pumping station site, where the facility rated capacity is not exceeded and while maintaining the existing flow process and/or treatment train, if applicable.

1.2 Replacing existing minor equipment with Equivalent equipment of different make and model, provided that there are no treatment process changes as a result of the replacement.

2.0 Inlet Works

2.1 Replacing existing minor equipment with Equivalent equipment of different make and model.

3.0 Sewage Treatment Process

3.1 Install or replace instrumentation or chemical dosage equipment for operational or maintenance purposes including replacing chemicals for pH adjustment or coagulants (non-toxic polymers) provided that there are no Modifications of treatment processes or other Modifications that may alter the intent of operations and may have negative impacts on Works' effluent quantity and quality.

3.2 Expansion of buffer zone between a sanitary sewage lagoon facility or land treatment area and adjacent uses where the buffer zone is entirely on the proponent’s land.

3.3 Optimize existing sanitary sewage lagoons with the purpose to increase efficiency of treatment operations provided that existing sewage treatment plant rated capacity is not exceeded and where no land acquisition is required.

3.4 Replacing existing minor equipment with Equivalent equipment of different make and model, provided that there are no treatment process changes as a result of the replacement.

3.5 No Modifications are allowed for equipment approved under section9 of the EPA.

4.0 **Sewage Treatment Process Outfall**

4.1 Replacement of discharge pipe with similar pipe size provided that the outfall location is not changed.

5.0 **Sanitary Sewers**

5.1 Pipe relining and replacement with similar pipe size to the approved site location's existing sanitary sewers and forcemains sewage collection system. The sewer main addition, modification, replacement and extensions **do not** include **combined sewers**.

5.2 Sanitary gravity sewers and forcemains within the approved site location.

5.3 No Modifications are allowed for sanitary sewers with a nominal diameter greater than 1,200mm and sanitary pipe twining.

6.0 **Pilot Systems**

6.1 Installation of pilot systems for new or existing technologies provided that:

a) any effluent from the pilot system is discharged to the inlet of the main sewage treatment plant or hauled off-site for proper disposal,
b) any effluent from the pilot system discharged to the inlet of the main sewage treatment plant does not significantly alter the composition/concentration of the influent sewage to be treated in the downstream process; and that it does not add any inhibiting substances to the downstream process, and
c) the pilot system's duration be of up to a maximum of **two years**; and a report with results is submitted to the Director and District Manager **three months** after completion of the pilot project.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 5283-AR7Q4D issued on October 13, 2017.

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. 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 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**

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

DATED AT TORONTO this 13th day of November, 2020

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

YZ/
c: District Manager, MECP Guelph District Office
Greg Harmer, Wood Environment and Infrastructure Solutions, A Division of Wood Canada Limited