



**Conservation and Climate**

Environmental Stewardship Division  
Environmental Approvals Branch  
1007 Century Street, Winnipeg, Manitoba R3H 0W4  
T 204 945-8321 F 204 945-5229

**FILE NO.: 5890.00**

June 12, 2020

Don Sawatsky  
4259 Portage Avenue  
Headingley, MB R4H 1C

Dear Don Sawatsky:

Enclosed is **Environment Act Licence No. 3328** issued to **6843191 Manitoba Ltd.** (O/A Meadowbrook Village) for construction, expansion, operation, and maintenance of the Development being a wastewater collection system, a forcemain, two lift stations, and a three-cell wastewater treatment lagoon located on portions of NE 32 10-18 WPM in the Rural Municipality of Cornwallis. The treated effluent from the wastewater treatment lagoon will be discharged into the Glen Lea Golf Course reservoirs for golf course irrigation purposes and any additional treated wastewater will be discharged into the Assiniboine River via ditches and Willow Creek.

In addition to the enclosed Licence requirements, please be informed that all other applicable federal, provincial and municipal regulations and by-laws must be complied with. A Notice of Alteration must be filed with the Director for approval prior to any alteration to the Development as licensed.

If you have any questions on this matter, please contact Kristy Forrestall, District Supervisor, at 204-573-0518 or [Kristy.Forrestall@gov.mb.ca](mailto:Kristy.Forrestall@gov.mb.ca). Please note that for Clauses 44-46 of the Licence, the designated Environment Officer of the Approvals Branch is Asit Dey, who may be contacted at [Asit.Dey@gov.mb.ca](mailto:Asit.Dey@gov.mb.ca) or 204-794-3389.

Pursuant to Section 27 of the Environment Act, this licensing decision may be appealed by any person who is affected by the issuance of this Licence to the Minister of Conservation and Climate within 30 days of the date of the Licence.

Sincerely,

*Original Signed by*

Shannon Kohler,  
Director  
The Environment Act

cc: Tim Prawdzik/Kristy Forrestall: Environmental Compliance and Enforcement  
Siobhan Burland Ross/Asit Dey: Environmental Approvals  
Public Registries

**NOTE:** Confirmation of receipt of this Licence No. 3328 (by the Licensee only) is required by the Director of Environmental Approvals. Please acknowledge receipt by signing in the space below and email a copy of this letter to [asit.dey@gov.mb.ca](mailto:asit.dey@gov.mb.ca) by June 26, 2020.

LICENCE

File No. : 5890.00

Licence No. / Licence n° 3328

Issue Date / Date de délivrance June 12, 2020

In accordance with The Environment Act (C.C.S.M. c. E125)  
Conformément à la Loi sur l'environnement (C.P.L.M. c. E125)

Pursuant to Section 11(1) / Conformément au Paragraphe 11(1)

THIS LICENCE IS ISSUED TO: / CETTE LICENCE EST DONNÉE À:

6843191 MANITOBA LTD. (O/A MEADOWBROOK (LLP)); "the Licensee"

for the construction, expansion, operation, and maintenance of the Development being a wastewater collection system, a forcemain, two lift stations, and a three-cell wastewater treatment lagoon with a (230-day) hydraulic storage capacity of 43, 781 cubic metres (190.4 cubic metres per day average) during Phase I Development and 56, 994 cubic metres (247.8 cubic metres per day average) during Phase II Development, located on portions of NE 33-10-18 WPM in the Rural Municipality of Cornwallis, and with discharge of treated effluent from the wastewater treatment lagoon into the Glen Lea Golf Course reservoirs for golf course irrigation purposes and with the discharge of any additional treated wastewater into Willow Creek through a natural drainage ditch and a roadside ditch, and eventually into the Assiniboine River, in accordance with the proposal filed under The Environment Act on March 29, 2017, an amendment to the Environment Act Proposal submitted February 14, 2020, and additional information submitted April 13, 2020 and subject to the following specifications, limits, terms and conditions.

DEFINITIONS

In this Licence,

"**accredited laboratory**" means an analytical facility accredited by the Standards Council of Canada (SCC), or accredited by another accrediting agency recognized by Manitoba Conservation and Climate to be equivalent to the SCC, or be able to demonstrate, upon request, that it has the quality assurance/quality control (QA/QC) procedures in place equivalent to accreditation based on the international standard ISO/IEC 17025, or otherwise approved by the Director;

"**affected area**" means a geographical area, excluding the property of the Development;

"**approved**" means approved by the Director or an assigned Environment Officer in writing;

"**appurtenances**" means machinery, appliances, or auxiliary structures attached to a main structure to enable it to function, but not considered an integral part of it;

"**ASTM**" means the American Society for Testing and Materials;

"**base**" means the exposed and finished elevation of the bottom of any cell of the wastewater treatment lagoon;

"**bioassay**" means a method of determining toxic effects of industrial wastes and other wastewaters by using viable organisms;

"**biosolids**" means accumulated organic solids, resulting from wastewater treatment processes, that have received adequate treatment to permit the material to be recycled;

"**bentonite**" means specially formulated standard mill grade sodium bentonite conforming to American Petroleum Institute Specification 13-A;

"**day**" means any 24-hour period;

"**Director**" means an employee so designated pursuant to The Environment Act;

"**effluent**" means treated wastewater flowing or pumped out of the wastewater treatment lagoon;

"**Environment Officer**" means an employee so designated pursuant to The Environment Act;

"**fecal coliform**" means aerobic and facultative, Gram-negative, nonspore-forming, rod-shaped bacteria capable of growth at 4-56°C, and associated with fecal matter of warm-blooded animals;

"**five-day biochemical oxygen demand (BOD<sub>5</sub>)**" means that part of the oxygen demand usually associated with biochemical oxidation of organic matter within 5 days at a temperature of 20°C;

"**five-day carbonaceous biochemical oxygen demand (CBOD<sub>5</sub>)**" means that part of the oxygen demand usually associated with biochemical oxidation of carbonaceous organic matter within five days at a temperature of 20°C, excluding the oxygen demand usually associated with the biochemical oxidation of nitrogenous organic matter;

"**flooding**" means the flowing of water onto lands, other than waterways, due to the overtopping of a waterway or waterways;

"**grab sample**" means a quantity of wastewater taken at a given place and time;

"**groundwater feature**" means a sinkhole, a spring or a well other than a monitoring well;

"**high water mark**" means the line on the interior surface of the primary and secondary cells which is normally reached when the cell is at the maximum allowable liquid level or the line of the exterior of the perimeter dykes which is reached during local flooding;

**"hydraulic conductivity"** means the quantity of water that will flow through a unit cross-sectional area of a porous material per unit of time under a hydraulic gradient of 1.0;

**"influent"** means water, wastewater, or other liquid flowing into a wastewater treatment facility;

**"in-situ"** means on the site;

**"low water mark"** means the line on the interior surface of the primary and secondary cells which is normally reached when the cell is discharged;

**"MPN Index"** means the most probable number of coliform organisms in a given volume of wastewater which, in accordance with statistical theory, would yield the observed test result with the greatest frequency;

**"odour nuisance"** means a continuous or repeated odour, smell or aroma, in an affected area which is offensive, obnoxious, troublesome, annoying, unpleasant or disagreeable to a person:

- (a) residing in an affected area;
- (b) working in an affected area; or
- (c) present at a location in an affected area which is normally open to members of the public;

if the odour, smell or aroma

- (d) is the subject of at least two written complaints, received by the Director in a form satisfactory to the Director and within a 90-day period, from 5 different persons falling within clauses (a), (b) or (c), who do not live in the same household; or
- (e) is the subject of at least one written complaint, received by the Director in a form satisfactory to the Director, from a person falling within clauses (a), (b) or (c) and the Director is of the opinion that if the odour, smell or aroma had occurred in a more densely populated area there would have been at least 5 written complaints received within a 90-day period, from 5 different persons who do not live in the same household;

**"operator"** means the company or person who is responsible for the day-to-day maintenance and operation of the Development;

**"Phase I Development"** means the Development operating with a primary cell and the Secondary Cell No. 1 as identified in Schedule A to this Licence, which are designed to treat a maximum organic loading of 61.2 kg BOD<sub>5</sub>/day and a maximum hydraulic loading capacity of 43, 781 cubic metres over 230 days of storage period for a total design population of 610;

**"Phase II Development"** means the Development operating with a primary cell and two secondary cells (Secondary Cells Nos. 1 and 2) as identified in Schedule A to this Licence, which are designed to treat a maximum organic loading of 61.2 kg BOD<sub>5</sub>/day and a maximum hydraulic loading capacity of 56, 994 cubic metres over 230 days of storage period for a total design population of 795;

"**primary cell**" means the first in a series of cells of the wastewater treatment lagoon system and which is the cell that receives the untreated wastewater;

"**record drawings**" means engineering drawings complete with all dimensions which indicate all features of the wastewater disposal system as it has actually been built;

"**riprap**" means small, broken stones or boulders placed compactly or irregularly on dykes or similar embankments for protection of earthen surfaces against wave action or current;

"**secondary cell**" means a cell of the wastewater treatment lagoon system which is the cell that receives partially treated wastewater from the primary cell;

"**sludge**" means accumulated solid material containing large amounts of entrained water, which has separated from wastewater during processing;

"**sludge solids**" means solids in sludge;

"**SAR**" means sodium adsorption ratio;

"**sodium adsorption ratio**" means the dimensionless value where:

$$\text{SAR} = \frac{0.044 \times \text{Sodium concentration}}{\sqrt{(0.025 \times \text{Calcium concentration}) + (0.041 \times \text{Magnesium concentration})}}$$

"**Standard Methods for the Examination of Water and Wastewater**" means the most recent edition of Standard Methods for the Examination of Water and Wastewater published jointly by the American Public Health Association, the American Waterworks Association and the Water Environment Federation;

"**surface watercourse**" means the channel in or bed on which surface water flows or stands, but does not include

- (a) a dugout, drain, reservoir, intermittent slough, drainage ditch, or intermittent stream that
  - (i) is completely surrounded by private land controlled by the owner or operator of an agricultural operation; and
  - (ii) has no outflow going beyond the private land;
- (b) an in-field ephemeral drain; or
- (c) the golf course reservoirs and the ditch connected to the lagoon as identified in Schedule A and B to this Licence.

"**total coliform**" means a group of aerobic and facultative anaerobic, Gram-negative, nonspore-forming, rod-shaped bacteria, that ferment lactose with gas and acid formation within 48 hours at 35°C, and inhabit predominantly the intestines of man or animals, but are occasionally found elsewhere and include the sub-group of fecal coliform bacteria;

**"total residual chlorine"** means the sum of free chlorine and combined chlorine, including inorganic chloramines;

**"wastewater"** means the spent or used water of a community or industry which contains dissolved and suspended matter;

**"wastewater collection system"** means the sewer and pumping system used for the collection and conveyance of domestic, commercial and industrial wastewater;

**"waste disposal ground"** means an area of land designated by a person, municipality, provincial government agency, or crown corporation for the disposal of waste and approved for use in accordance with Manitoba Regulation 37/2016, or any future amendments thereto, or a Licence pursuant to the Environment Act; and

**"wastewater treatment lagoon"** means the component of this development which consists of an impoundment into which wastewater is discharged for treatment and storage.

### GENERAL TERMS AND CONDITIONS

This Section of the Licence contains requirements intended to provide guidance to the Licencee in implementing practices to ensure that the environment is maintained in such a manner as to sustain a high quality of life, including social and economic development, recreation and leisure for present and future Manitobans.

#### Retain Copy of Licence

1. The Licencee shall at all times maintain a copy of this licence at the Development or at the premises from which the Development's operations are managed.

#### Wastewater Sources

2. The Licencee shall direct all wastewater generated within Meadowbrook Village toward the wastewater treatment lagoon or other approved wastewater treatment facilities.

#### Future Sampling

3. In addition to any of the limits, terms and conditions specified in this Licence, the Licencee shall, upon the request of the Director:
  - a) sample, monitor, analyze and/or investigate specific areas of concern regarding any segment, component or aspect of pollutant storage, containment, treatment, handling, disposal or emission systems, for such pollutants or ambient quality, aquatic toxicity, leachate characteristics and discharge or emission rates, for such duration and at such frequencies as may be specified;
  - b) determine the environmental impact associated with the release of any pollutant(s) from the Development;
  - c) conduct specific investigations in response to the data gathered during environmental monitoring programs; or

- d) provide the Director, within such time as may be specified, with such reports, drawings, specifications, analytical data, descriptions of sampling and analytical procedures being used, bioassay data, flow rate measurements and such other information as may from time to time be requested.

#### **Reporting Format**

4. The Licencee shall submit all information required to be provided to the Director or Environment Officer under this Licence, in written and electronic format, in such form (including number of copies), and of such content as may be required by the Director or Environment Officer, and each submission shall be clearly labelled with the Licence Number and File Number associated with this Licence.

#### **Respecting Odour Nuisance**

5. The Licencee shall not cause or permit an odour nuisance to be created as a result of the construction, operation or alteration of the Development and shall take such steps as the Director may require to eliminate or mitigate an odour nuisance.
6. The Licencee shall maintain a log of odour complaints including mitigation measures adopted to address the odour complaints and shall make the odour complaint log available to an Environment Officer upon request.

#### **Equipment Breakdown or Process Upset**

7. The Licencee shall, in the case of physical or mechanical equipment breakdown or process upset where such breakdown or process upset results or may result in the release of a pollutant in an amount or concentration, or at a level or rate of release, that causes or may cause a significant adverse effect, immediately report the event by calling Manitoba Conservation and Climate's 24-hour environmental accident reporting line at 204-944-4888 (toll-free 1-855-944-4888). The report shall indicate the nature of the event, the time and estimated duration of the event and the reason for the event.
8. The Licencee shall, following the reporting of an event pursuant to Clause 7:
  - a) identify the repairs required to the mechanical equipment;
  - b) undertake all repairs to minimize unauthorized discharges of a pollutant;
  - c) complete the repairs in accordance with any written instructions of the Director; and
  - d) submit a report to the Director about the causes of breakdown and measures taken, within one week of the repairs being done.

#### **Future Studies**

9. The Licencee shall actively participate in any future watershed-based management study, plan and/or nutrient reduction program, approved by the Director, for Willow Creek and associated waterways and watersheds.

**SPECIFICATIONS, LIMITS, TERMS AND CONDITIONS**

**Respecting Construction - General**

10. The Licencee shall notify the assigned Environment Officer not less than two weeks prior to:
  - a) beginning construction of the Phase I and/or Phase II Development. The notification shall include the intended starting date(s) of construction and the name(s) of the contractor(s) responsible for the construction; and
  - b) discharging the effluent from the wastewater treatment lagoon. The notification shall include the discharge method (i.e., discharging to surface watercourse and/or spray irrigation) to be used during each discharge campaign.
  
11. The Licencee shall:
  - a) conduct all ditch related work activities during no flow or dry conditions and not during the April 1 to June 15 fish spawning and incubation period;
  - b) not construct the wastewater treatment lagoon or wastewater collection system during periods of heavy rain;
  - c) place and/or isolate all dredged and construction material where it will not erode into any watercourse;
  - d) implement effective long-term sediment and erosion control measures to prevent soil-laden runoff, and/or silt from entering any watercourse during construction and until vegetation is established;
  - e) routinely inspect all erosion and sediment control structures and immediately complete any necessary maintenance or repair;
  - f) revegetate soil exposed during the construction of the Development with native or introduced grasses or legumes. Native species shall be used to revegetate areas where native species existed prior to construction; and
  - g) use rock that is free of silt and clay for riprap.
  
12. The Licencee shall, during construction of the Development, operate, maintain and store all material and equipment in a manner that prevents any deleterious substances (fuel, oil, grease, hydraulic fluids, coolant, paint, uncured concrete and concrete wash water, etc.) from entering the wastewater treatment lagoon, the discharge route and associated watercourses, and have an emergency spill kit for in-water use available on site during construction.
  
13. The Licencee shall dispose of non-reusable construction debris from the Development at a waste disposal ground.
  
14. The Licencee shall locate all fuel storage and equipment servicing areas established for the construction and operation of the Development a minimum distance of 100 metres from any waterbody, and shall comply with the requirements of Manitoba Regulation 188/2001 respecting Storage and Handling of Petroleum Products and Allied Products or any future amendment thereof.



15. The Licencee shall, during construction and maintenance of the Development, prevent the introduction and spread of foreign aquatic and terrestrial biota by cleaning equipment prior to its delivery to the site of the Development.
16. The Licencee shall install and maintain a fence around the wastewater treatment lagoon to limit access. The fence shall be a minimum of 1.2 meters high and have a locking gate, which shall be locked at all times except to allow access to the wastewater treatment lagoon.

#### **Respecting Phase I Development of the wastewater treatment lagoon**

17. The Licencee shall:
  - a) on or before October 31, 2021, complete the construction and commissioning of the Phase I Development; and
  - b) submit a progress report every six months until successful commissioning of the Phase I Development of the wastewater treatment lagoon to the designated Environment Officer for review and approval.

#### **Respecting Heritage Resources**

18. The Licencee shall comply with the requirements of The Heritage Resources Act and, if heritage resources are encountered during the construction of the Development, suspend construction and immediately notify the Historic Resources Branch.

#### **Respecting Construction – Continuous Clay Soil Liners**

19. The Licencee shall, prior to the construction of the dykes for the cells of the wastewater treatment lagoon:
  - a) remove all organic material from the area where the wastewater treatment lagoon will be constructed; or
  - b) remove all organic material down to a depth to the top of the liner material and for a width of 2.0 metres from the area where the surface liner will be constructed.
20. The Licencee shall construct and maintain the cells of the wastewater treatment lagoon as shown on Schedule A to this Licence with a continuous liner under all interior surfaces of the cells in accordance with the following specifications:
  - a) the liner shall be made of clay;
  - b) the liner shall be at least one (1) metre in thickness;
  - c) the liner shall have a hydraulic conductivity of  $1.0 \times 10^{-7}$  centimetres per second or less at all locations; and
  - d) the liner shall be constructed to an elevation of 2.5 metres above the base of any cell.

#### **Respecting Wastewater Treatment Facility Classification**

21. The Licencee shall obtain and maintain classification of the Development pursuant to Manitoba Regulation 77/2003 respecting Water and Wastewater Facility Operators or any future amendment thereof and maintain compliance with all requirements of the

regulation including, but not limited to, the preparation and maintenance of a Table of Organization, Emergency Response Plan and Standard Operating Procedures.

### **Respecting Certified Operators**

22. The Licencee shall carry out the operation of the Development with individuals properly certified to do so pursuant to Manitoba Regulation 77/2003 respecting Water and Wastewater Facility Operators or any future amendment thereof.

### **Respecting Operation**

23. The Licencee shall operate and maintain the wastewater treatment lagoon in such a manner that:
- a) the organic loading on the primary cell, as indicated by the five-day biochemical oxygen demand, is not in excess of 56 kilograms per hectare per day;
  - b) the depth of liquid in the primary and the secondary cells does not exceed 1.5 metres; and
  - c) a 1.0 metre freeboard is maintained in the primary and the secondary cells at all times.

### **Respecting Operation – Wastewater Treatment Lagoon**

24. The Licencee shall, during the Phase I and Phase II Development, not discharge effluent from the wastewater treatment lagoon:
- a) where the organic content of the effluent, as indicated by the five day carbonaceous biochemical oxygen demand, is in excess of 25 milligrams per litre;
  - b) where the total suspended solids content of the effluent is in excess of 25 milligrams per litre, unless the exceedance is caused by algae;
  - c) where the fecal coliform content of the effluent, as indicated by the MPN index, is in excess of 200 per 100 millilitres of sample;
  - d) where the ionized ammonia content of the effluent is in excess of 1.25 milligrams per litre, expressed as nitrogen (N), at 15°C ±1°C;
  - e) where conductivity of the effluent is in excess of 1500 microsiemens per centimeter;
  - f) between the 1st day of November of any year and the 15th day of June of the following year unless in compliance with Clause 27;
  - g) when flooding from any cause is occurring along the effluent drainage route; or
  - h) when the discharge of effluent would cause or contribute to flooding in or along the effluent drainage route.
25. The Licencee shall, during the Phase I and Phase II Development when the effluent is not used for irrigating the Glen Lea Golf Course, not discharge the effluent from the wastewater treatment lagoon where the total phosphorus content of the effluent is in excess of 1.0 milligrams per litre.
26. The Licencee shall discharge the wastewater treatment lagoon over at least a two-week period, while accelerating discharge as necessary to maintain normal operation of the wastewater treatment lagoon.

**Respecting Irrigation of the Glen Lea Golf Course**

27. The Licencee shall not discharge effluent from the wastewater treatment lagoon by spray irrigation between the 15<sup>th</sup> day of October of any year and the 15<sup>th</sup> day of May of the follow year.
28. The Licencee shall:
- a) prior to commissioning of the Phase I Development, prepare and execute a comprehensive and enforceable Wastewater Services Agreement with the Glen Lea Golf Course, acceptable to the Director, to address the use of treated wastewater generated from the Meadowbrook Village Wastewater treatment lagoon in accordance with Clause 29 of this Licence.
  - b) provide the Director with a copy of the Wastewater Services Agreement upon being signed by both parties; and
  - c) provide the Director with a copy of any future revised Wastewater Services Agreement.
29. The Wastewater Services Agreement as required by Clause 28 a) of this Licence shall address but not be limited to the following:
- a) installation and maintenance of an effective controlled outlet at the outfall of Reservoir No 3. as identified in Schedule B to this Licence;
  - b) closing of the controlled outlet located at the outfall of Reservoir No 3. as identified in Schedule B to this Licence such that there is no escape of effluent into the natural drain originating from the outfall of Reservoir No. 3;
  - c) golf course irrigation procedures including but not limited to the following:
    - i) closing the golf course to the public during the irrigation operation;
    - ii) using only low angle spray nozzles;
    - iii) installing and maintaining permanent signs at all access points to the golf course advising of the use of treated effluent for irrigation;
    - iv) installing, maintaining, and spacing no further than 15 metres apart around the perimeter of all reservoirs, as identified in Schedule B to this Licence, permanent signs advising of the use of treated effluent in the above stated reservoirs;
    - v) carrying out irrigation operations only when weather conditions and irrigation spray locations are such that the effluent will not be carried onto public roadways or onto neighbouring private properties;
    - vi) disposing of all effluent onto the Glen Lea Golf Course for irrigation purposes only;
    - vii) not applying effluent to the Glen Lea Golf Course for more than 10 continuous hours in any 24 hour period;
    - viii) reducing the gross depth of effluent applied during any application of effluent so that ponding or surface runoff does not occur;
    - ix) if wind causes the effluent to drift within the restricted zones as outlined in Clause 29 x) of this Licence, stopping the spray irrigation until the wind conditions subside; and
    - x) not discharging effluent by spray irrigation:
      1. within 15 metres of a groundwater feature covered by permanent vegetation or 20 metres of a groundwater feature without any permanent vegetation;

2. between the water's edge and the high water mark of a wetland, bog, marsh or swamp other than a major wetland bog, marsh or swamp;
  3. within 30 metres of a lake or reservoir designated as vulnerable except the golf course reservoirs;
  4. within 15 metres of a lake or reservoir, not designated as vulnerable except the golf course reservoirs;
  5. within 15 metres of a river, creek or stream designated as vulnerable;
  6. within 3 metres of a river, creek or stream not designated as vulnerable, a 3rd order drain or higher, a major wetland, bog, marsh or swamp, a constructed retention; or
  7. where there is escape of treated effluent from the property boundary; and
- d) irrigation of the golf course in accordance with the Nutrient Management Regulation and inclusion of nutrients in the treated effluent in the nutrient management plan.

#### **Respecting Disinfection – General**

30. The Licencee shall, when chlorine is used as a disinfecting agent:
- a) notify the Director in advance;
  - b) dechlorinate effluent prior to discharge;
  - c) obtain grab samples prior to and daily during the discharge period and have them analyzed for total residual chlorine; and
  - d) not discharge effluent where the concentration of the total residual chlorine is in excess of 0.02 milligram per litre.

#### **Respecting Maintenance**

31. The Licencee shall, if in the opinion of the Environment Officer, significant erosion of the interior surfaces of the dykes occurs, repair the dyke to the satisfaction of the Environment Officer. Upon approval of the Environment Officer, install riprap as necessary. The riprap shall be placed on the interior dyke surfaces from 0.6 metres above the high water mark to the bottom of the dykes to protect the dykes from wave action.
32. The Licencee shall provide and maintain a grass cover on the dykes of the wastewater treatment lagoon and shall regulate the growth of the vegetation so that the height of the vegetation does not exceed 0.3 metres on all dykes.
33. The Licencee shall annually remove by mechanical methods all reeds, rushes and trees located above the low water mark in every cell of the wastewater treatment lagoon.
34. The Licencee shall implement an ongoing program to remove burrowing animals from the site of the wastewater treatment lagoon.

## **MONITORING AND REPORTING**

### **General**

35. The Licencee shall, unless otherwise specified in this Licence:
- carry out all preservations and analyses on liquid samples in accordance with the methods prescribed in Standard Methods for the Examination of Water and Wastewater or in accordance with an equivalent preservation and analytical methodology approved by the Director;
  - carry out all sampling of, and preservation and analyses on, soil, compost, and air samples in accordance with methodologies approved by the Director;
  - have all analytical determinations undertaken by an accredited laboratory; and
  - report the results to the Director, in writing and in an electronic format acceptable to the Director, within 60 days of the samples being taken.

### **Respecting Monitoring**

36. The Licencee shall, prior to each effluent discharge campaign, obtain grab samples of the treated wastewater and have them analyzed for:
- the organic content as indicated by the five-day carbonaceous biochemical oxygen demand and expressed as milligrams per litre;
  - the total suspended solids content expressed as milligrams per litre;
  - the fecal coliform content as indicated by the MPN index and expressed as MPN per 100 millilitres per sample;
  - the total phosphorus content expressed as milligrams per litre;
  - the conductivity expressed in microsiemens per centimeter; and
  - the unionized ammonia nitrogen expressed as milligrams per litre.

### **Respecting Monitoring and Reporting – SAR**

37. The Licencee shall conduct a monitoring program for the Sodium Adsorption Ratio of effluent, prior to each discharge from the wastewater treatment lagoon, for a minimum of three years.
38. The Licence shall, prior to each effluent discharge campaign, obtain grab samples of the treated wastewater and have them analyzed for:
- total calcium;
  - total magnesium; and
  - total sodium.
39. The Licencee shall, not less than 30 days after the results of the sample analysis are available, submit to the Director the results of the monitoring program carried out pursuant to Clause 37 of this Licence.

### **Respecting Operating Depth and Freeboard Non-Compliance Events**

40. The Licencee shall immediately notify the Director each time the operating depth of any cell of the wastewater treatment lagoon does not comply with the maximum operating

depth and minimum freeboard requirements for that cell as specified in Clause 23 of this Licence.

41. The Licencee shall, if reporting is required pursuant to Clause 40 of this Licence in two consecutive years:
- a) engage the services of a qualified consultant, acceptable to the Director, to undertake an investigation of the wastewater treatment lagoon and related infrastructure, to determine the ability or inability of the existing system to meet the hydraulic loading capacity of the community. The investigation shall include but not be necessarily limited to:
    - i) diagnosis of the cause(s) of the recent exceedances of maximum operating depth;
    - ii) sources of infiltration into the wastewater system including the municipal infrastructure;
    - iii) current hydraulic loading of the system;
    - iv) lack of storage capacity due to sludge build-up within existing cells;
    - v) the organic loading on the primary cell in terms of the five day biochemical oxygen demand; and
    - vi) operating procedures;
  - b) provide to the Director, within four months of the notification given pursuant to Clause 40 of this Licence, an engineering report describing in detail the results and observations concluded by virtue of the investigation; and
  - c) provide to the Director, within four months of the report provided pursuant to sub-Clause b) of this section, a remedial action plan in the form of a detailed engineering report describing recommended modifications, repairs or upgrading works to overcome excessive hydraulic loading of the system.

#### **Respecting Records Maintenance and Reporting**

42. The Licencee shall during each year maintain the following records and retain them for a minimum period of five calendar years:
- a) reports of visual inspections conducted a minimum of once per month;
  - b) wastewater sample dates;
  - c) original copies of laboratory analytical results of the sampled wastewater;
  - d) a summary and discussion of laboratory analytical results;
  - e) cell isolation dates (i.e., valve operation records);
  - f) effluent discharge dates;
  - g) estimated effluent discharge volumes;
  - h) a statement whether the effluent was used for golf course irrigation purposes;
  - i) volumes, dates, and times of irrigation applications;
  - j) maintenance and repairs;
  - k) expansions to the collection system with associated capacity assessment;
  - l) updated organization charts identifying all certified operators, including backup operators; and
  - m) a summary of any wastewater collection system overflows sanitary sewer overflows / combined sewer overflows.
43. The Licencee shall submit an annual report to the Environment Officer by February 28 of the following year including all records required by Clause 42 of this Licence.

**Respecting Soil Liner Sampling, Testing and Reporting**

44. The Licencee shall arrange with the designated Environment Officer a mutually acceptable time and date for any required soil sampling between the 15<sup>th</sup> day of May and the 15<sup>th</sup> day of October of any year, unless otherwise approved by the Environment Officer.
45. The Licencee shall take and test undisturbed soil samples, in accordance with Schedule C attached to this Licence, from the liner of the wastewater treatment lagoon; the number and location of samples and test methods to be specified by the designated Environment Officer up to a maximum of 30 samples.
46. The Licencee shall, not less than 2 weeks before the cells of the wastewater treatment lagoon as indicated on Schedule A to this Licence is placed in operation, submit for the approval of the Environment Officer the results of the tests carried out pursuant to Clause 45 of this Licence.

**Respecting Initial Characterization**

47. The Licencee shall, during the first year of operation of the Development following the issuance of this licence that a discharge must occur, obtain and analyze grab samples of the effluent during each effluent discharge campaign and report the results of the analysis in accordance with Schedule D attached to this Licence.

**Respecting Record Drawings**

48. The Licencee shall:
  - a) prepare "record drawings" for the Development and shall label the drawings "record drawings" and
  - b) provide to the Director, within four months of the approved commissioning of each phase of the Development (that is, Phase I and Phase II), two sets of "record drawings" of the Development.

**Respecting Decommissioning of the Existing Cells**

49. The Licencee shall, on or before June 30, 2021, submit a detailed decommissioning plan for the existing wastewater treatment lagoon currently operating under the authority of Environment Act Licence No. 2441 to the Director of the Environmental Approvals Branch for review and approval. The decommissioning plan shall also include an assessment of options for the beneficial reuse of biosolids and sludge solids, details of sampling and analysis of results, and proposed actions relative to the ultimate disposal of biosolids and sludge solids.

**REVIEW AND REVOCATION**

- A. If, in the opinion of the Director, the Licencee has exceeded or is exceeding or has or is failing to meet the specifications, limits, terms, or conditions set out in this Licence, the Director may, temporarily or permanently, revoke this Licence.
- B. If the Licencee has not commenced construction of the Development within three years of the date of this Licence, the Licence is revoked.
- C. If, in the opinion of the Director, new evidence warrants a change in the specifications, limits, terms or conditions of this Licence, the Director may require the filing of a new proposal pursuant to Section 11 of The Environment Act.

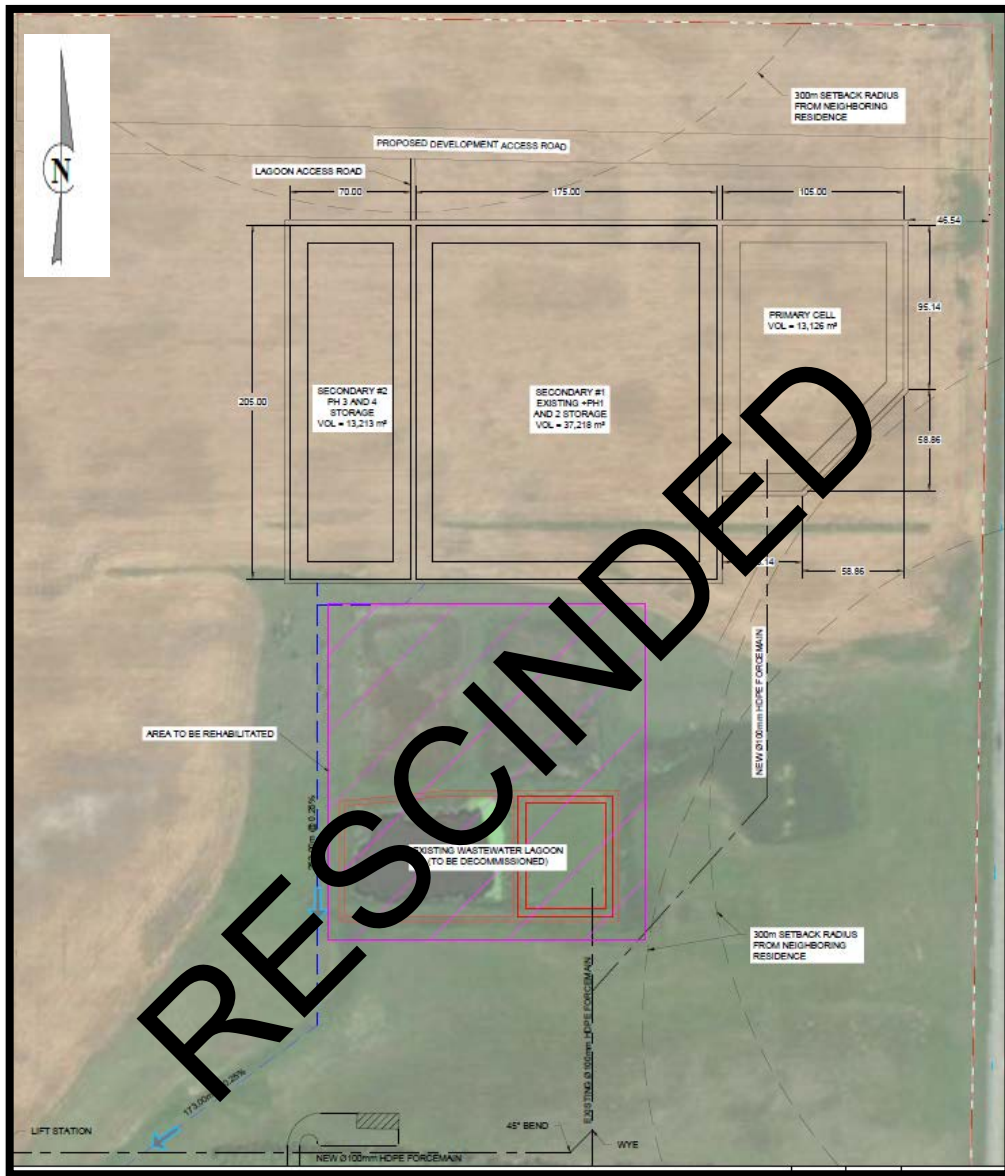
*Original Signed by*

Shannon Koller,  
Director  
The Environment Act

**RESCINDED**

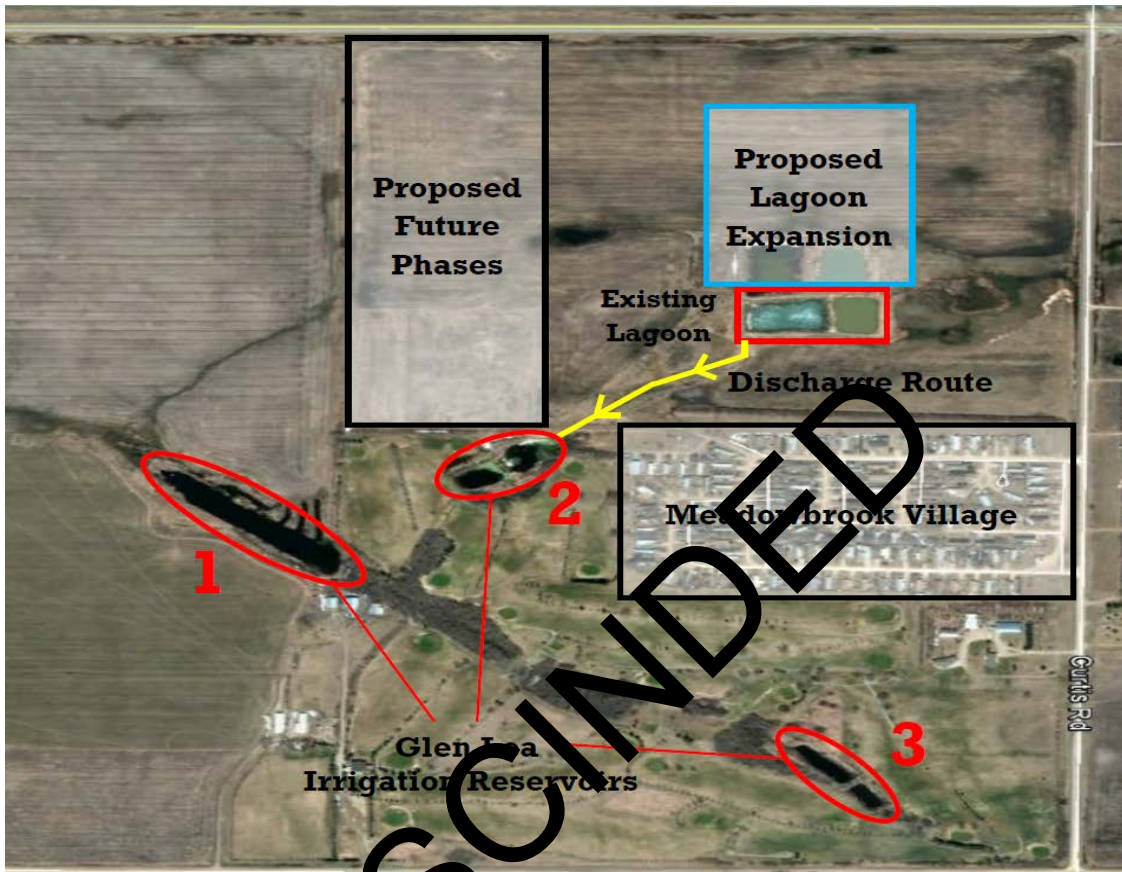


**Schedule A to Environment Act Licence No. 3328**  
Cell identifications relative to Clauses 20 and 46



**Schedule B to Environment Act Licence No. 3328**

Discharge Route Identification pursuant to Clauses 29 a), b, and c-iv)



**RESCINDED**

**Schedule C to Environment Act Licence No. 3328**

Liner sampling and testing requirements pursuant to Clause 45

Soil Sampling:

1. The Licencee shall provide a drilling rig, acceptable to the designated Environment Officer, to extract soil samples from the liner, which is not placed or found at the surface of the lagoon structure. This includes all wastewater treatment lagoons constructed with clay cutoffs at the interior base of the dyke or with a clay cutoff in the centre of the dyke. The drill rig shall have the capacity to drill to the maximum depth of the clay cutoff plus an additional 2 metres. The drill rig shall be equipped with both standard and hollow stem augers. The minimum hole diameter shall be 5 inches.
2. For lagoon liners placed or found at the surface of the lagoon structure, the Licencee shall provide a machine, acceptable to the designated Environment Officer, capable of pressing a sampling tube into the liner in a straight line motion along the centre axis line of the sample tube and without sideways movement.
3. Soil samples shall be collected and shipped in accordance with ASTM Standard D 1587 (Standard Practice for Thin-Walled Tube Sampling of Soils), D 4220 (Standard Practice for Preserving and Transporting Soil Samples) and D 3350 (Standard Practice for Ring-Lines Barrel Sampling of Soils). Thin-walled tubes shall meet the stated requirements including length, inside clearance ratio and corrosion protection. An adequate venting area shall be provided through the sampling head.
4. At the time of sample collection, the designated Environment Officer shall advise the Licencee as to the soil testing method that must be used on each sample. The oedometer method may be used for a sample where the Environment Officer determines that the soil sample is taken from an undisturbed clay soil which has not been remoulded and which is homogeneous and unweathered. The triaxial test shall be used for all samples taken from disturbed and remoulded soils or from non homogenous and weathered soils.
5. The Licencee shall provide a report on the collection of soil samples to the designated Environment Officer and to the laboratory technician which includes but is not limited to the following: a plot plan indicating all drill holes, onsite visual observations, sample location, depth or elevation of sample, length of advance of the sample tube, length of soil sample contained in the tube after its advancement, the soil test method specified by the Environment Officer for each soil sample and all necessary instructions from the site engineer to the laboratory technician.
6. All drill and sample holes shall be sealed with bentonite pellets after the field drilling and sampling has been completed.

Soil Testing Methods:

1. Triaxial Test Method

- a) The soil samples shall be tested for hydraulic conductivity using ASTM D 5084 (Standard Test Method for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter).
- b) Soil specimens shall have a minimum diameter of 70 mm (2.75 inches) and a minimum height of 70 mm (2.75 inches). The soil specimens shall be selected from a section of the soil sample which contains the most porous material based on a visual inspection. The hydraulic gradient shall not exceed 30 during sample preparation and testing. Swelling of the soil specimen should be controlled to adjust for the amount of compaction measured during sample collection and extraction from the tube and the depth or elevation of the sample. The effective stress used during saturation or consolidation of the sample shall not exceed 40 kPa (5.7 psi) or the specific stress level, that is expected in the field location where the sample was taken, whichever is greater.
- c) The complete laboratory report, as outlined in ASTM D 5084, shall be supplied for each soil sample collected in the field.

2. Oedometer Test Method

- a) The soil samples shall be tested for hydraulic conductivity using ASTM D 2435 (Standard Test Method for One-Dimensional Consolidation Properties of Soils).
- b) Soil specimens shall have a minimum diameter of 50 mm (2 inches) and a minimum height of 20 mm (0.8 inches). The soil specimens shall be selected from a section of the soil sample which contains the most porous material based on a visual inspection. The soil specimen shall be taken from an undisturbed soil sample. The soil specimen shall be completely saturated.
- c) The complete laboratory report, as outlined in ASTM D 2435, shall be supplied for each soil sample collected in the field.

## Schedule D to Environment Act Licence No. 3328

Initial characterization of wastewater pursuant to Clause 47

Facility Size: Very Small (<500 m<sup>3</sup>/day)

Facility Type: Facultative wastewater treatment lagoon – intermittent discharge

### Effluent Sampling:

During the first year of operation:

1. Obtain a representative grab sample of the discharging effluent near the beginning of the discharge period and near the end of the discharge period (i.e., two samples for each discharge event); and
2. Determine the temperature of each sample at the time of sampling.

### Effluent Analysis:

1. For each grab sample, have the grab sample analysed for:
  - a) the organic content as indicated by the five-day biochemical oxygen demand and expressed as milligrams per litre;
  - b) the organic content as indicated by the five-day carbonaceous biochemical oxygen demand and expressed as milligrams per litre;
  - c) the total suspended solids content expressed as milligrams per litre;
  - d) the *Escherichia coli* (*E. Coli*) content as indicated by the MPN index and expressed as MPN per 100 milliliters per sample;
  - e) the fecal coliform content as indicated by the MPN index and expressed as MPN per 100 milliliters per sample;
  - f) the total coliform content as indicated by the MPN index and expressed as MPN per 100 milliliters per sample;
  - g) if chlorine was used as a disinfecting agent, total residual chlorine expressed as milligrams per litre;
  - h) total ammonia nitrogen expressed as milligrams per litre;
  - i) nitrate-nitrite nitrogen expressed as milligrams per litre;
  - j) total Kjeldahl nitrogen (TKN) expressed as milligrams per litre;
  - k) dissolved phosphorus expressed as milligrams per litre;
  - l) total phosphorus expressed as milligrams per litre; and
  - m) pH.

### Effluent Reporting:

1. For each grab sample, report the results to the Director, in writing or in an electronic format acceptable to the Director within 60 days of the sampling date. The report shall include the sampling date, sample temperature, the dates of the effluent discharge, and copies of the laboratory analytical results of the sampled effluent.