Manitoba
Environment, Climate and Parks
Environmental Approvals Branch
1007 Century Street, Winnipeg MB R3H 0W4
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File No.: 70.10

July 13, 2022

Yasemin Keeler
Assistant Chief Administrative Officer
Municipality of Grassland
Box 399, Hartney MB R0M 0X0
acao@mglgov.ca

Dear Yasemin Keeler:

Re: Municipality of Grassland - Hartney Wastewater Treatment Lagoon Expansion and Biosolids Application - Environment Act Licence No. 3380

Please find enclosed Environment Act Licence No. 3380, issued to Municipality of Grassland. The licence is for the construction and operation of an expansion of the Hartney wastewater treatment lagoon, and the land application of biosolids from the present primary cell.

The municipality must comply with this licence as well as all other applicable federal, provincial, and municipal regulations and by-laws. A notice of alteration must be filed with the director for approval prior to any alteration to the development as licensed.

Any person affected by this decision may appeal to the Minister of Environment, Climate and Parks. To appeal, please send your reasons, in writing, to the Minister's attention by August 11, 2022.

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If you have any questions about this approval, please contact Kristy Forrestall, Acting Regional Supervisor, Environmental Compliance and Enforcement at Kristy.Forrestall@gov.mb.ca or 204-573-0518. With respect to clauses 16 and 18 – 21, the environment engineer of the approvals branch is Bruce Webb, at Bruce.Webb@gov.mb.ca or 204-945-7021.

Sincerely,

Original Signed By

James Capotosto
Director

c. Ryan Johnston - Burns Maendel Consulting Engineers Ltd.
Kristal Harman, Yvonne Hawryliuk, Kristy Forrestall - Environmental Compliance and Enforcement
Siobhan Burland Ross, Bruce Webb - Environmental Approvals
Public Registry

THE ENVIRONMENT ACT
LOI SUR L'ENVIRONNEMENT

Manitoba

LICENCE

File No.: 70.10

Licence No. / Licence n°: 3380
Issue Date / Date de délivrance : July 13, 2022

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:

MUNICIPALITY OF GRASSLAND; "the licensee"

for the expansion, land application of biosolids, and continued operation of the development being a wastewater collection system and a wastewater treatment lagoon serving the community of Hartney, with an average flow rate of 168 cubic metres per day and located in SW 21-6-23 WPM, in the Municipality of Grassland, with effluent being discharged to the Souris River in accordance with the proposal filed under The Environment Act on March 18, 2022, 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 Environment, Climate and Parks 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;

"approvals branch" means the Environmental Approvals Branch of Manitoba Environment, Climate and Parks, or any future branch responsible for issuing licences under The Environment Act;

"approved" means approved by the director or assigned environment officer in writing;

"aquifer" means a water saturated geologic unit that will yield water to wells or springs at a sufficient rate so that the wells or springs can serve as practical sources of water supply;

"ASAE" means the American Society of Agricultural Engineers;

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

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

"day" or "daily" 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 development;

"environment officer" means an employee so designated pursuant to The Environment Act;

"fecal coliform" means aerobic and facultative, Gram-negative, non-spore-forming, rod-shaped bacteria capable of growth at 44.5 ^{O}C, and associated with fecal matter of warm-blooded animals;

"first order waterway" means a drain or watercourse serving a watershed with a drainage area of up to one square mile;

"five-day biochemical oxygen demand (BOD_5)" means that part of the oxygen demand usually associated with biochemical oxidation of organic matter within 5 days at a temperature of 20^{O}C;

"five-day carbonaceous biochemical oxygen demand ($CBOD_5$)" 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;

"fourth order waterway" means a drain or watercourse formed at the point of confluence of at least two third order waterways and may have tributaries of the third order and lower;

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

"HDPE" means high density polyethylene;

"high water mark" means the line on the interior surface of the aerated cell 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;

"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;

"mil" means one thousandth of an inch;

"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 5 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 a person certified to operate the wastewater collection system and the wastewater treatment lagoon employed by the licensee to manage the functional day-to-day operation of the wastewater collection system and the wastewater treatment lagoon within the constraints of this licence;

"pollutant" means a pollutant as defined in The Environment Act;

"primary cell" means the first in a series of cells of a 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 development as it has actually been built;

"reference material" means soil or biosolids material which is used as a reference;

"reference value" means the value established by the agency that supplied the reference material;

"riprap" means small, broken stones or boulders placed compactly or irregularly on dykes or similar embankments for protection of earth 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;

"second order waterway" means a drain or watercourse servicing a watershed with a drainage area greater than one square mile or having a tributary or tributaries which are first order waterways;

"septage" means the sludge produced in individual on-site wastewater disposal systems such as septic tanks;

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

"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;

"third order waterway" means a drain or watercourse formed at the point of confluence of a least two second order waterways and may have tributaries of the second order and lower;

"total coliform" means a group of aerobic and facultative anaerobic, Gram-negative, non-spore 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, industrial and process wastewater;

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

"water table" means the upper surface of the zone of saturation of a water bearing geologic unit.

GENERAL TERMS AND CONDITIONS

This section of the licence contains requirements intended to provide guidance to the licensee 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.

1. The licensee 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.

2. The licensee shall direct all wastewater generated within the community of Hartney toward the wastewater treatment lagoon as shown in Schedule "A" attached to this licence or other approved wastewater treatment facilities.

3. In addition to any of the following specifications, limits, terms and conditions specified in this licence, the licensee shall, upon the request of the director:
   a) sample, monitor, analyze or investigate specific areas of concern regarding any segment, component or aspect of pollutant storage, containment, handling, treatment and disposal systems, for such pollutants, ambient quality, aquatic toxicity, seepage characteristics and discharge rates and for such duration and frequencies as may be specified;
   b) determine the environmental impact associated with the release of any pollutant 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, bioassay data, flow rate measurements and such other information as may from time to time be requested.

4. The licensee shall submit all information required to be provided to the director or environment officer under this licence, in writing, 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.

5. The licensee 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 licensee shall actively participate in any future watershed-based management study, plan or nutrient reduction program, approved by the director, for the Souris River and associated waterways and watersheds.

SPECIFICATIONS, LIMITS, TERMS AND CONDITIONS

Construction - General

7. The licensee shall notify the assigned environment officer prior to beginning construction of the development. The notification shall include the intended starting date of construction and the name of the contractor responsible for the construction.

8. The licensee 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 components of the development involving earthwork during periods of heavy rain;
   c) place and/or isolate all excavated 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.

9. The licensee shall dispose of non-reusable construction debris from the development at a waste disposal facility operating under the authority of a permit issued pursuant to the Waste Management Facilities Regulation, or any future amendment thereof, or a licence issued pursuant to The Environment Act.

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

11. The licensee 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 and complying with the requirements of the Aquatic Invasive Species Regulation, or any future amendment thereof.

12. The licensee shall locate 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 the Storage and Handling of Petroleum Products and Allied Products Regulation, or any future amendment thereof.

13. The licensee shall, during construction and maintenance of the development, operate, maintain and store all materials 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 watercourses, and have an emergency spill kit for in-water use available on site during construction.

14. The licensee shall install and maintain a fence around the wastewater treatment lagoon to control access. The fence shall be a minimum of 1.2 metres high and have locking gates, which shall be locked at all times except to allow access to the wastewater treatment lagoon.

15. The licensee shall construct and maintain an all-weather access road and a wastewater dumping station for truck-hauled wastewater. The dumping facility shall have a surface splash ramp with a smooth hard surface that can be easily washed free of solids.

Construction - HDPE Liner

16. The licensee shall construct and maintain a continuous liner within the wastewater treatment lagoon such that:
    a) the liner is constructed from HDPE geomembrane;
    b) the liner has a minimum thickness of 60 mils;
    c) all sections of the liner are joined by dual track seaming;
    d) the liner is installed in accordance with ASAE Standard EP340.2 for the Installation of Flexible Membrane Linings;

e) the liner is installed to a minimum elevation of 2.8 metres above the base of the liner in both the primary and secondary cells;
f) non-destructive test methods are used to test the integrity of:
   i) all field seams joining liner sections in accordance with ASTM Standard D 5820-95 (Reapproved 2006); and
   ii) all other field seams in accordance with ASTM Standard D 4437-99;
g) an installation report is prepared and submitted to the designated environment officer of the approvals branch for approval within 30 days of commencing the installation of the liner. The installation report shall include the test results, a discussion of the results, and a statement that the liner was installed in accordance with the manufacturer's requirements; and
h) the floor of the liner is covered with sand or other granular cover material to a minimum depth of 0.3 metres measured perpendicular to the surface of the liner.

17. The licensee shall construct and maintain an effective gas relief system under the liner for the primary and secondary cells.

18. The licensee shall notify the assigned environment officer of the approvals branch one week prior to commencing the installation of the liner and the gas relief system.

19. The licensee shall not cover the liner or use the primary and/or secondary cells until receiving the approval of the assigned environment officer of the approvals branch of the report submitted pursuant to sub-clause 16 g) of this licence.

20. The licensee shall complete the installation of the HDPE liner of the wastewater treatment lagoon between the 15th day of May and the 15th day of October of any year, unless otherwise approved by the environment officer of the approvals branch

Record Drawings

21. The licensee shall:
    a) prepare "record drawings" for the development and shall label the drawings "record drawings"; and
    b) provide to the designated environment officer of the approvals branch, within six months of the approval of the report submitted pursuant to sub-clause 16 g) of this licence, two electronic copies of "record drawings" of the development.

Breakdown or Process Upset Reporting

22. The licensee 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 the 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, estimated volume and estimated duration of the event and the reason for the event.

23. The licensee shall, following the reporting of an event pursuant to clause 22,
    a) identify the repairs required to the mechanical equipment;
    b) undertake all repairs to minimize unauthorized discharge of a pollutant;

c) complete the repairs in accordance with any written instructions of the director and/or the environment officer; and
d) submit a report to the director about the causes of breakdown and measures taken, within one week of the repairs being done.

Biosolids Application

24. The licensee shall, during all biosolids land application activities, comply with the requirements of the Nutrient Management Regulation or any future amendment thereof.

25. The licensee shall dispose of biosolids from the existing cells of the wastewater treatment lagoon by land application to E 22-6-23 W and SW 27-6-23 W, and maintain an agreement for this purpose with the owner of the land for the duration of the application program and follow-up soil monitoring.

26. The licensee shall:
    a) apply biosolids to the identified agricultural land by incorporating it into the soil a minimum of 15 centimetres below the soil surface within 48 hours of application; and
    b) complete the incorporation of the biosolids such that it is acceptable to an environment officer.

27. The licensee shall apply biosolids such that the amounts of residual nitrate-nitrogen in the 0 - 60 centimetres soil depth and Olsen-P phosphorus in the 0 - 1 centimetres soil depth do not exceed the limits of the most limiting Nutrient Management Zone, regardless of size, set forth in the Nutrient Management Regulation or any future amendment thereof.

28. The licensee shall not apply biosolids:
    a) between November 10th of any year and April 10th of the following year, unless otherwise authorized in writing by the director;
    b) to frozen soil;
    c) less than 300 metres from any occupied residence (other than the residence occupied by the owner of the land on which the biosolids are to be applied);
    d) less than 1 kilometre from a residential area;
    e) less than 8 metres from a major wetland, bog, marsh or swamp;
    f) less than 15 metres from a first order waterway;
    g) less than 30 metres from a second, third or fourth order waterway and less than 90 metres from any other waterway;
    h) less than 50 metres from any groundwater well; or
    i) on land that is subject to flooding.

29. The licensee shall not apply biosolids on land:
    a) with a depth of clay or clay till of less than 1.5 metres between the soil surface and the water table;
    b) within 100 metres of an identifiable boundary of an aquifer which is exposed to the ground surface;
    c) where, prior to the application of biosolids, the soil pH is less than 6.0;
    d) where the surface slope of the land is greater than five per cent;
    e) where, prior to the application of biosolids, the level of nitrate-nitrogen exceeds 100 kilograms per hectare in the upper 60 centimetres of the soil; or

f) where, prior to the application of biosolids, the concentration of sodium bicarbonate extractable phosphorous, as P, exceeds 60 micrograms per gram in the upper 15 centimetres of the soil.

30. The licensee shall not allow cattle to pasture on land on which biosolids have been applied, for a period of three years from the date of application of the biosolids. This requirement shall be included in any agreement between the licensee and the landowner.

31. The licensee shall, on all agricultural land onto which biosolids have been applied, plant one of the following crops at the commencement of the next growing season following such application and for a period of three years from the date of application of biosolids:
    a) a cereal crop;
    b) a forage crop;
    c) an oil seed crop;
    d) field peas; or
    e) lentils.

    This requirement shall be included in any agreement between the licensee and the landowner.

32. The licensee shall apply biosolids onto agricultural land such that the cumulative weight per hectare of each heavy metal in the soil, as calculated by adding the amount of each heavy metal in the biosolids applied to the background level of the same metal, does not exceed the following levels: *

Metal	**Kilogram per Hectare**
Arsenic	21.6
Cadmium	2.5
Chromium (total)	115.2
Copper	113.4
Lead	126
Mercury	11.9
Nickel	90
Zinc	360

***** Calculated values shall be based on a soil bulk density of 1200 kilograms per cubic metre and a soil depth of 15 centimetres. Analysis for heavy metals shall be carried out in accordance with Schedule “C” of this licence.

Maintenance

33. The licensee shall, if in the opinion of the environment officer, significant erosion of the interior surfaces of the dykes occurs, repair the dykes of the wastewater treatment lagoon 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.

34. The licensee 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.

35. The licensee shall annually remove by mechanical methods all reeds, rushes and trees in the wastewater treatment lagoon.

36. The licensee shall implement an ongoing program to remove burrowing animals from the site of the wastewater treatment lagoon.

Operation – General

37. The licensee shall obtain and maintain classification of the development pursuant to the Water and Wastewater Facility Operators Regulation 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.

38. The licensee shall carry out the operation of the development with individuals properly certified to do so pursuant to the Water and Wastewater Facility Operators Regulation or any future amendment thereof.

39. The licensee 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 minimum of 1.0 metre freeboard is maintained in the primary and the secondary cells at all times.

40. The licensee shall not discharge septage into the wastewater treatment lagoon between the 15th day of October of any year and the 15th day of June of the following year,

Operation – Effluent Discharge

41. The licensee shall not discharge effluent from the wastewater treatment lagoon where:
    a) 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 coliform content of the effluent, as indicated by one of either the fecal coliform or the *E. coli* content measured by the MPN index, is in excess of 200 per 100 millilitres of sample;
    d) where the unionized 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 the total phosphorus content of the effluent is in excess of 1.0 milligrams per litre;
    f) between the 1st day of November of any year and the 15th day of June of the following year;
    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.

Part f) of this clause applies only after the commissioning of the upgraded components of the development. Until that time, the earliest permissible date for effluent discharge is May 15 of any year.

42. The licensee shall when chlorine is used as a disinfecting agent:
    a) notify the environment officer 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 milligrams per litre.

MONITORING AND REPORTING SPECIFICATIONS

43. The licensee shall, unless otherwise specified in this licence:
    a) carry out all preservations and analyses of liquid samples in accordance with the methods prescribed in the Standard Methods for the Examination of Water and Wastewater or in accordance with equivalent preservation and analytical methodologies approved by the director;
    b) carry out all sampling of, and preservation and analyses on, soil, compost, and air samples in accordance with methodologies approved by the director;
    c) have all analytical determinations undertaken by an accredited laboratory; and
    d) 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.

44. The licensee 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 39 of this licence.

45. The licensee shall, if reporting is required pursuant to clause 44 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 serviced area. 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 wastewater collection system;
        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 44 of this licence, an engineering report describing in detail the results and observations concluded by 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.

Effluent Monitoring

46. The licensee shall, prior to each effluent discharge campaign, obtain grab samples of the treated wastewater and have them analyzed for:
    a) the organic content as indicated by the five-day carbonaceous biochemical oxygen demand and expressed as milligrams per litre;
    b) the total suspended solids content expressed as milligrams per litre;
    c) the fecal coliform content as indicated by the MPN index and expressed as MPN per 100 millilitres per sample;
    d) the unionized ammonia nitrogen expressed as milligrams per litre; and
    e) the total phosphorus content expressed as milligrams per litre.

47. The licensee 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 of laboratory analytical results;
    e) cell isolation dates (i.e., valve operation records);
    f) effluent discharge dates;
    g) estimated effluent discharge volumes;
    h) maintenance and repairs;
    i) expansions to the collection system with associated capacity assessment;
    j) updated organization charts identifying all certified operators, including backup operators; and
    k) a summary of any wastewater collection system overflows.

Biosolids Application Monitoring

48. The licensee shall determine the volume and solids content of the biosolids applied pursuant to clauses 24 – 32 of this licence.

49. The licensee shall conduct a monitoring and analysis program that is acceptable to the director, and in accordance with Schedules “B” and “C” of this licence to determine:
    a) the composition of the biosolids;
    b) the background levels of selected soil parameters the parcel of application land;
    c) the surface slope of the parcel of application land;
    d) the presence of clay or clay till to a depth of 1.5 metres of the parcel of application land;
    e) whether metals-based, phosphorus-based, or nitrogen-based application limits are most appropriate for field-specific application rates for the application land; and
    f) the crops grown on land on the application land during the previous 3-year period.

50. The licensee shall during each year of the biosolids monitoring program maintain the following records and retain them for a minimum period of five calendar years:
    a) details of the biosolids land application programs carried out during the calendar year including:
        i) a description of each parcel of land on which biosolids were applied;
        ii) the background levels of soil parameters as listed in Schedule "B" of this licence, for each parcel of land;
        iii) the dry weight of biosolids applied per hectare;
        iv) the weight of each heavy metal, in milligrams per kilogram of soil, added to each parcel of land for the metals listed in Schedule "B" of this licence; and
        v) the cumulative weight, in kilograms per hectare, of each heavy metal for each parcel of land as calculated by adding the amount of each heavy metal applied to the background level of the same metal;
    b) the amount of nitrogen, phosphorus, and potassium which was added per hectare for each parcel of land;
    c) the results of analysis of the biosolids and soil required by this licence; and
    d) a copy of the analytical procedures used and the results of analysis of reference materials in accordance with Schedule “C” of this licence.

51. The licensee shall undertake annual post-harvest soil testing of each field for Nitrate-N (0 – 24”) and phosphorus using the Olsen-P test (0 – 6”) for 3 years following biosolids application and maintain the records of the test results. Additionally, the licensee shall maintain information from the producer regarding cropping and the amounts of nutrients from other sources (fertilizer, manure, etc.) being added to the field.

Annual and Initial Characterization Reporting

52. The licensee shall submit an annual report to the environment officer by February 28 of the following year including all records required by clauses 47 and 48 - 51 of this licence.

53. The licensee 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.

Alterations

54. The licensee shall notify the director and receive the approval of the director for any alterations to the development as licensed, prior to proceeding with such alterations.

REVIEW AND REVOCATION

A. If, in the opinion of the director, the licensee 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.

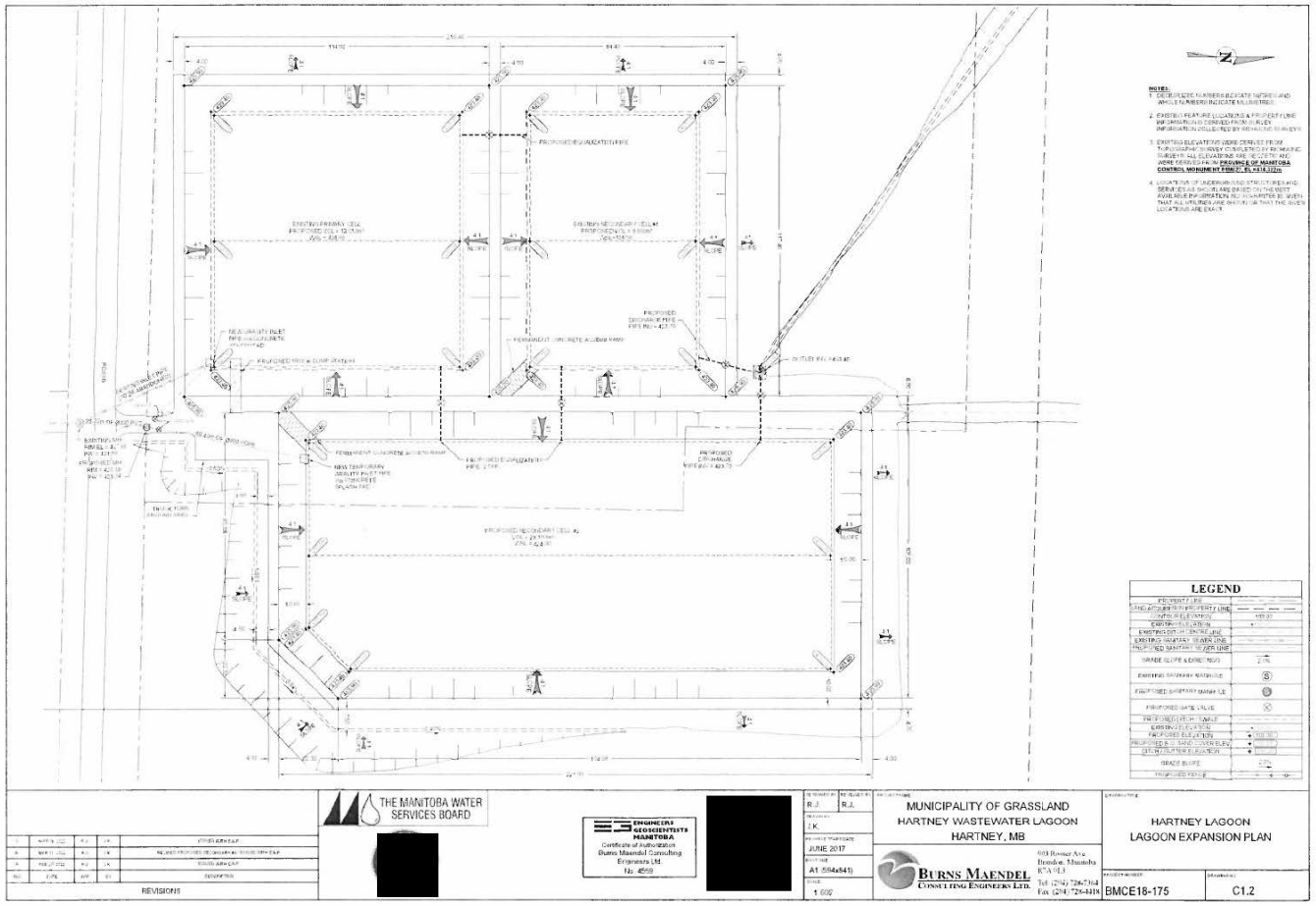
B. If, in the opinion of the director, new evidence warrants a change in the specifications, limits, terms or conditions of this licence, the director may require the filing of a new proposal pursuant to section 11 of The Environment Act.

Original Signed By

James Capotosto
Director

Schedule "A" to Environment Act Licence No. 3380

Plan of Wastewater Treatment Lagoon Pursuant to Clause 2



Schedule "B" to Environment Act Licence No. 3380

Biosolids and Soil Sampling Requirements Pursuant to Clauses 49 - 51

Biosolids

A representative sample of biosolids shall be collected from each cell from which biosolids will be removed for land application. A representative sample of biosolids from each cell shall be a composite of biosolids samples taken from a minimum of 5 locations distributed over the area of that cell.

1. The sample of biosolids shall be analyzed for the following parameters:*

a.	conductivity	j.	lead
b.	pH	k.	mercury
c.	total solids	l.	nickel
d.	volatile solids	m.	potassium
e.	nitrate nitrogen	n.	cadmium
f.	total Kjeldahl nitrogen	o.	copper
g.	ammonia nitrogen	p.	zinc
h.	organic nitrogen	q.	chromium
i.	total phosphorus	r.	arsenic

* Analysis for heavy metals must be carried out in accordance with Schedule "C" of this licence.

Soil

1. Composite samples from each field onto which biosolids will be applied shall be taken prior to application of biosolids. Each field of twenty-four hectares or less shall be sampled from a minimum of twelve representative sites or a minimum of one sample site per two hectares for larger fields. Each sample site shall be sampled from 0 to 15 centimetres and from 0 to 60 centimetres. The entire core extracted for each sample shall be collected. All samples from similar depths within a field shall be bulked in one container for thorough mixing prior to analysis yielding two samples per field.

2. Soil samples from 0 to 15 centimetres shall be analyzed for the following: *

a.	pH	g.	cadmium
b.	potassium	h.	chromium
c.	nickel	i.	copper
d.	mercury	j.	lead
e.	zinc	k.	arsenic
f.	sodium bicarbonate extractable phosphorus, as P		

* Analysis for heavy metals must be carried out in accordance with Schedule "C" of this licence.

3. Soil samples from 0 to 60 centimetres shall be analyzed for the following:
   a. nitrate nitrogen b. total nitrogen

Crops

1. The type of crop grown on lands on which biosolids have been applied during the previous 3-year period shall be listed along with the legal description of the land and the date of application of biosolids.

Schedule "C" to Environment Act Licence No. 3380

Metals Analysis Requirements Pursuant to Clauses 32, 49 and 50

The analysis for all metals shall be carried out in accordance with the following requirements:

1. The laboratory performing these analyses shall:
   a) possess and maintain accreditation with the Canadian Association for Laboratories Accreditation Inc. (CALA) and/or the Standards Council of Canada (SCC);
   b) operate a quality assurance program acceptable to the assigned environment officer;
   c) monitor the accuracy of the sludge and soil analyses for each set of ten or less samples of sludge or soil through the use of a suitable reference material acceptable to the assigned environment officer; and
   d) analyze field duplicates of samples based on a frequency of one in each set of ten or less field samples and that the acceptance criteria for duplicate analysis should be within ± 10 percent.

2. A copy of the analytical procedures and the analytical results for associated reference materials used in the laboratory, and any other controls used in the analysis, shall be submitted with the field sample results.

3. If the analytical results of any associated reference materials do not meet the following criteria, the soil and/or sludge samples must be re-analyzed:

- Arsenic	± 35 percent from the reference value
- Cadmium	± 25 percent from the reference value (for values above 1 µg/g)
- Cadmium	± 35 percent from the reference value (for values below 1 µg/g)
- Chromium	± 25 percent from the reference value
- Copper	± 25 percent from the reference value
- Lead	± 25 percent from the reference value
- Mercury	± 35 percent from the reference value
- Nickel	± 25 percent from the reference value
- Zinc	± 25 percent from the reference value

Schedule "D" to Environment Act Licence No. 3380

Initial Characterization of Wastewater Pursuant to Clause 53

Facility Size: Very small (less than 500 m^3/day)
Facility Type: Facultative wastewater treatment lagoon - intermittent discharge

Effluent Sampling:

During the first year of operation, for all discharge events:

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 millilitres per sample;
   e) the fecal coliform content as indicated by the MPN index and expressed as MPN per 100 millilitres per sample;
   f) the total coliform content as indicated by the MPN index and expressed as MPN per 100 millilitres 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.