



**Conservation**

Climate Change and Environmental Protection Division  
Environmental Assessment and Licensing Branch  
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CLIENT FILE NO.: 5487.00

January 17, 2011

Prachi Rajguru  
Manitoba Conservation - Parks & Natural Areas  
200 Saulteaux Crescent  
Winnipeg MB R3J 3W3

Dear Mr. Rajguru:

Enclosed is **Environment Act Licence No. 2951** dated January 17, 2011 issued in accordance with The Environment Act to **Manitoba Conservation - Parks & Natural Areas** for the construction and operation of a three-cell facultative wastewater treatment lagoon system on the south of Trout Pond Road, south of Dorothy Lake, in the Whiteshell Provincial Park.

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.

For further information on the administration and application of the Licence, please feel free to contact Edwin Yazon, Environmental Assessment and Licensing Branch (204) 945-7012.

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 within 30 days of the date of the Licence.

Yours truly,

Tracey Braun, M. Sc.  
Director  
Environment Act

Enc.

c: Don Labossiere, Director, Environmental Operations  
Tim Stratton, Stantec  
Public Registries

**NOTE:** Confirmation of Receipt of this Licence No. 2951 (*by the Licencee only*) is required by the Director of Environmental Assessment and Licensing. Please acknowledge receipt by signing in the space provided below and faxing a copy (letter only) to the Department by February 2, 2011.

\_\_\_\_\_  
Manitoba Conservation - Parks & Natural Areas

\_\_\_\_\_  
Date

**\*\*A COPY OF THE LICENCE MUST BE KEPT ON SITE AT THE DEVELOPMENT AT ALL TIMES\*\***

# LICENCE

Licence No. / Licence n°

2951

Issue Date / Date de délivrance

January 17, 2011

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 Sections 11(1) and 14(2) / Conformément au Paragraphe 11(1) et 14(2)

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

**MANITOBA CONSERVATION, PARKS AND NATURAL RESOURCES;**  
**"the Licencee"**

for the construction and operation of a three-cell facultative wastewater treatment lagoon system on the south of Trout Pond Road, south of Dorothy Lake, in the Whiteshell Provincial Park. The proposed development consists of one primary cell and two secondary cells, and treated effluent will be discharged between September 15<sup>th</sup> and October 31<sup>st</sup> of any year into a 700-hectare inland natural wetland, 1.5 km southeast of the lagoon site and four kilometers southwest of Nutimik Lake, in accordance with the Proposal filed under The Environment Act on September 27, 2010 and subject to the following specifications, limits, terms and conditions:

## **DEFINITIONS**

In this Licence,

"**accredited laboratory**" means an analytical facility accredited by the Standard Council of Canada (SCC), or accredited by another accrediting agency recognized by Manitoba Conservation 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;

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**"as constructed drawings"** means engineering drawings complete with all dimensions which indicate all features of the Development as it has actually been built;

**"ASAE"** means the American Society of Agricultural Engineers;

**"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;

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

**"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 appointed pursuant to The Environment Act;

**"fecal coliform"** means aerobic and facultative, Gram-negative, nonspore-forming, rod-shaped bacteria capable of growth at 44.5 °C, and associated with fecal matter of warm-blooded animals;

**"five-day biochemical oxygen demand"** 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"** 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;

**"HDPE"** means high density polyethylene;

**"high water mark"** means the line on the interior surface of the aerated and storage 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;

**"industrial wastewater"** means wastewater derived from an industry which manufactures, handles or processes a product and does not include wastewater from commercial or residential buildings;

**"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 aerated and storage 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 5 written complaints, received by the Director within a 90 day period and in a form satisfactory to the Director, 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;

**"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;

**"rip rap"** 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;

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

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

**"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;

**"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;

**"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; and

**"wastewater treatment lagoon"** means the component of the 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.

1. The Licencee shall direct all wastewater and septage generated within the Whiteshell Provincial Park toward the wastewater treatment lagoon or other approved sewage treatment facilities.
2. 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; or
  - c) 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.
3. The Licencee shall, unless otherwise specified in this Licence:
  - a) 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 analytical methodology approved by the Director;
  - b) have all analytical determinations undertaken by an accredited laboratory; and
  - c) report the results to the Director, in writing or in a format acceptable to the Director, within 60 days of the sample being taken.
4. The Licencee shall, in case of physical or mechanical breakdown of the wastewater collection and/or treatment system:
  - a) notify the Director immediately;
  - b) identify the repairs required to the wastewater collection and/or treatment system;
  - c) undertake all repairs to minimize unauthorized discharges of wastewater; and
  - d) complete the repairs in accordance with any written instructions of the Director.
5. The Licencee shall, during construction and operation of the Development, report spills of fuels or other contaminants to an Environment Officer in accordance with the requirements of *Manitoba Regulation 439/87* respecting *Environmental Accident Reporting* or any future amendment thereof.

6. The Licencee shall comply with the provisions of the Department of Fisheries and Oceans Canada/Manitoba Natural Resources publication, "*Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat*" (May, 1996).
7. 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. All classification documents must be made available to an Environment Officer upon request.
8. 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.
9. 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 to mitigate an odour nuisance.
10. The Licencee shall submit all information required to be provided to the Director under this Licence, in writing, in such form (including number of copies), and of such content as may be required by the Director.

#### **SPECIFICATIONS, LIMITS, TERMS AND CONDITIONS**

11. The Licencee shall notify the assigned Environment Officer not less than two weeks prior to beginning construction of the Development. The notification shall include the intended starting date of construction, the name of the contractor responsible for the construction and the name of the on-site contact person.
12. 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 materials where it will not erode into any watercourse;
  - d) implement 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) vegetate any disturbed areas by planting and seeding preferably native trees, shrubs or grasses and cover such areas with mulch to prevent soil erosion and to help seeds germinate; and
  - g) use rock that is free of silt and clay for rip rap.
13. The Licencee shall construct and maintain an all-weather access road to the wastewater treatment lagoon.
14. The Licencee shall, during construction of the wastewater treatment lagoon, 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 associated watercourses, and have an emergency spill kit for in water use available on-site during construction.
15. The Licencee shall, prior to the construction of the dykes for the wastewater treatment lagoon:
- a) remove all organic topsoil from the area where the dykes will be constructed; or
  - b) remove all organic material for a depth of 0.3 metres and a width of 3.0 metres from the area where the liner will be constructed.
16. The Licencee shall construct and maintain the wastewater treatment lagoon with a continuous liner, including cover material, underlying the primary and secondary cells of 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 double channel fusion 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 2.5 metres above the base of both the primary and secondary cells;
  - f) in accordance with ASTM Standard D-4437, the integrity of all field seams are tested by non-destructive test methods and a testing report is prepared and submitted to the Director within 30 days of commencing the installation of the liner;
  - g) the permeability of the liner does not exceed  $1.0 \times 10^{-9}$  centimetres per second over the entire surface area of both the primary and secondary cells; and
  - h) 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 Licencee shall construct and maintain an gas relief system, satisfactory to the Director, under the synthetic liner for the primary and secondary cells of the wastewater treatment lagoon.
18. The Licencee shall notify the Director two weeks prior to commencing the installation of the liner and the gas relief system.
19. The Licencee shall complete the installation of the synthetic liner at the wastewater treatment lagoon 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 designated Environment Officer.
20. The Licencee shall not cover the synthetic liner of the wastewater treatment lagoon until receiving approval of the Environment Officer of the report submitted pursuant to sub-Clause 16 f) of this Licence.
21. The Licencee shall operate and maintain the wastewater treatment lagoon in such a manner that:
  - a) the organic loading on the wastewater treatment lagoon, in terms of the five-day biochemical oxygen demand, is not in excess of 56 kilograms per hectare per day;
  - b) the depth of liquid in the cells does not exceed 1.5 metres;
  - c) the release of offensive odours is minimized; and
  - d) a 1.0 metre freeboard is maintained in primary and secondary cells at all times.
22. The Licencee shall not discharge effluent from the wastewater treatment lagoon:
  - a) where the organic content of the effluent, as indicated by the five day biochemical oxygen demand, is in excess of 25 milligrams per litre;
  - b) where the fecal coliform content of the effluent, as indicated by the MPN index, is in excess of 200 per 100 millilitres of sample;
  - c) where the total coliform content of the effluent, as indicated by the MPN index, is in excess of 1500 per 100 millilitres of sample;
  - d) where the total suspended solids content of the effluent is in excess of 25 milligrams per litre, unless the exceedance is caused by algae;
  - e) where the total phosphorus is in excess of 1.0 milligram per litre;
  - f) between the 1st day of November of any year and the 14<sup>th</sup> day of September of the following year;
  - g) when flooding from any cause is occurring along the effluent drainage route; or
  - h) when such a discharge would cause or contribute to flooding in or along the effluent drainage route.

23. 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.
24. The Licencee shall, if in the opinion of the Director, significant erosion of the interior surfaces of the dykes occurs, repair the dyke and install rip rap as necessary. The rip rap shall be placed on the interior dyke surfaces from 0.6 metres above the high water mark to at least 0.6 metres below the low water mark to protect the dykes from wave action.
25. 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.
26. 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.
27. The Licencee shall implement an ongoing program to remove burrowing animals from the site of the wastewater treatment lagoon.
28. 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 Regulation* or any future amendment thereof.
29. The Licencee shall maintain the discharge route of the wastewater treatment lagoon such that it performs its intended service.
30. The Licencee shall discharge the wastewater treatment lagoon at a rate that optimizes the opportunity for nutrients in the effluent to be assimilated in the discharge route while not challenging the normal operation of the wastewater treatment lagoon.
31. The Licencee shall actively participate in any current or future watershed-based management study, plan and/or nutrient reduction program, approved by the Director, for the Winnipeg River, Nutimuk Lake and Picket Lake, and associated waterways and watersheds.

### **MONITORING AND REPORTING**

32. The Licencee 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 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 fecal coliform content as indicated by the MPN index and expressed as MPN per 100 millilitres per sample;
  - d) the total coliform content as indicated by the MPN index and expressed as MPN per 100 millilitres per sample;
  - e) the total suspended solids content expressed as milligrams per litre; and
  - f) the total phosphorus content expressed as milligram per litre.
33. 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 daily grab samples 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 mg/L.
34. The Licencee shall:
- a) during each year maintain records of:
    - i) wastewater sample dates;
    - ii) original copies of laboratory analytical results of the sampled wastewater; and
    - iii) effluent discharge dates;
  - b) make the records being maintained pursuant to sub-Clause 34 a) of this Licence available to an Environment Officer upon request; and
  - c) keep the maintained records of any one calendar year available for inspection for a period of three years following the respective calendar year in which they were recorded.
35. The Licencee shall, during construction and operation of the Development:
- a) immediately report any reportable spills to Manitoba Conservation's Accident Reporting Line at (204) 944-4888; and
  - b) provide a follow-up report to the Director on a reportable environmental accident outlining the cause(s) and proposing corrective action to prevent reoccurrence.

36. The Licencee shall:
- a) prepare updated "as constructed drawings" for the Development and shall label the drawings "As Constructed"; and
  - b) provide to the Director, not later than six months after construction of the development is completed, two sets of "as constructed drawings" of the wastewater treatment lagoon.
37. The Licencee shall, during the first year of operation of the Development following the construction of the wastewater treatment lagoon that a discharge must occur, obtain two representative grab samples of the effluent during each effluent discharge campaign. The grab samples shall be obtained near the start of each discharge and near the end of each discharge, and shall be analyzed and reported in accordance with Schedule "A" attached to this Licence.

#### 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.



\_\_\_\_\_  
**Tracey Braun, M. Sc.**  
**Director**  
**Environment Act**

**FILE: 5487.00**

## **Schedule "A" to Environment Act Licence No. 2951**

### Initial Characterization of Wastewater

Facility Size: Very small (less than 500 m<sup>3</sup>/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.)
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.