



Conservation

Environmental Stewardship Division
Environmental Assessment and Licensing Branch
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FAXED

CLIENT FILE NO.: 2677.10

January 9, 2008

Trevor Ouellette, P. Eng.
Manitoba Aboriginal & Northern Affairs
Bay 8 – 1680 Ellice Avenue
Winnipeg MB R3H 0Z2

Dear Mr. Ouellette:

Enclosed is Environment Act **Licence No. 2800** dated January 9, 2008 issued in accordance with The Environment Act to **Manitoba Aboriginal and Northern Affairs** for the remediation, expansion and operation of the Development being a wastewater collection system and wastewater treatment lagoon located in the southwest quarter of Section 3-45-28 WPM and the northwest quarter of Section 34-44-28 WPM at Barrows, Manitoba with discharge of treated effluent in a northerly direction into a swale which connects with a tributary of Red Deer Lake, in accordance with the Proposal filed under The Environment Act on November 30, 2006 and subsequent information provided on January 29, 2007 and June 13, 2007.

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.

For further information on the administration and application of the Licence, please feel free to contact Jennifer Winsor, Environmental Engineer at (204) 945-7012.

Pursuant to Section 27 of The Environment Act, this licencing 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: B. Wright, Western Regional Director
Millennium Public Library/Manitoba Eco-Network
North-West Regional Library
Jason Bunn, Cochrane Engineering (**GENIVAR**)
R.M. of Mountain (As Registry) & Office copy

NOTE: Confirmation of Receipt of this Licence No. 2800 (*by the Licensee 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) ack to the Department by January 14, 2008.

On behalf of Aboriginal & Northern Affairs

Date

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

Manitoba
spirited energy

LICENCE

Licence No. / Licence n° 2800

Issue Date / Date de délivrance January 9, 2008

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 :

MANITOBA ABORIGINAL AND NORTHERN AFFAIRS; "the Licencee"

for the remediation, expansion and operation of the Development being a wastewater collection system and wastewater treatment lagoon located in the southwest quarter of Section 3-45-28 WPM and the northwest quarter of Section 34-44-28 WPM at Barrows, Manitoba with discharge of treated effluent in a northerly direction into a swale which connects with a tributary of Red Deer Lake, in accordance with the Proposal filed under The Environment Act on November 30, 2006 and subsequent information provided on January 29, 2007 and June 13, 2007 and subject to the following specifications, limits, terms and conditions:

DEFINITIONS

In this Licence,

"**access road**" means a road that leads from a Provincial Trunk/Highway, Provincial Road, or a municipal road;

"**accredited laboratory**" means a laboratory accredited by the Standard Council of Canada (SCC), another accrediting agency recognized by Manitoba Conservation to be equivalent to the SCC, or at a laboratory which can demonstrate to Manitoba Conservation that it has the quality assurance/quality control (QA/QC) procedures in place equivalent to accreditation based on the Canadian Standard Can/CSA-Z753, extension of the international standard ISO 9000, Guide 25;

"**approved**" means approved by the Director in writing;

"**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 American Society of Agricultural Engineers;

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

"**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 (BOD₅)**" means that part of the oxygen demand usually associated with biochemical oxidation of organic matter within five days at a temperature of 20° C;

"**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;

"**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;

"**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;

"**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;

"**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;

"**PVC**" means polyvinyl chloride;

"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;

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

"sewage" means household and commercial wastewater that contains human waste;

"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 Association;

"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 this development which consists of an impoundment into which wastewater is discharged for storage and treatment by natural oxidation.

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 generated within the Community of Barrows to the wastewater treatment lagoon or other approved wastewater treatment facility.
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 samples 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 ensure that, during construction and operation of the Development, spills of fuels or other contaminants are reported to an Environment Officer in accordance with the requirements of *Manitoba Regulation 439/87* respecting *Environmental Accident Reporting*.
6. 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.
7. The Licencee shall ensure that the operation of the Development is carried out by individuals properly trained and qualified to do so.

8. 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

9. 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.
10. The Licencee shall install and effectively maintain a fence with warning signs surrounding the wastewater treatment lagoon with a lockable gate to control access.
11. The Licencee shall construct and effectively maintain an all-weather access road to the wastewater treatment lagoon.
12. The Licencee shall construct a truck dumping station for truck hauled wastewater. The truck dumping facility shall have a surface splash ramp with a smooth hard surface that can be easily washed free of solids.
13. The Licencee shall operate and maintain the wastewater treatment lagoon in such a manner that:
 - a) the release of offensive odours is minimized;
 - b) the organic loading on the primary cell, as indicated by the five-day biochemical oxygen demand, is not in excess of 35 kilograms per hectare per day;
 - c) the depth of liquid in the primary cell or secondary cells does not exceed 1.5 metres; and
 - d) a 1.0 metre freeboard is maintained in primary and secondary cells at all times.
14. The Licencee shall, prior to the construction of 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 cut-off will be constructed.
15. The Licencee shall construct and maintain a continuous liner, including cover material, underlying the wastewater treatment lagoon, such that:
 - a) the liner is constructed from polyvinyl chloride geomembrane (PVC);
 - b) the liner has a minimum thickness of 30 mils;
 - c) the liner is installed in accordance with ASAE Standard EP340.2 for the Installation of Flexible Membrane Linings;
 - d) the liner shall be installed to a minimum elevation of 2.5 metres above the base of both the primary and secondary cells;

- e) the liner is free of holes and has a hydraulic conductivity not exceeding 3.0×10^{-9} centimetres per second over the entire surface area of the liner;
 - f) the liner is tested for the integrity of all field seams by the air lance or ultrasonic pulse echo test method, in accordance with ASTM Standard D 4437-99, and a testing report is prepared and submitted to the Director for approval; and
 - g) the liner shall be covered with sand or other granular cover material to a minimum depth of 0.3 metre measured perpendicular to the surface of the liner.
16. The Licencee shall construct and maintain an effective gas relief system under the primary and secondary cells of the liner of the wastewater treatment lagoon.
 17. The Licencee shall notify the Director two weeks prior to commencing the installation of the liner and the gas relief system.
 18. The Licencee shall not cover the PVC liner or use the wastewater treatment lagoon until receiving the approval of the Director of the report submitted pursuant to sub-Clause 15 f) of this Licence.
 19. The Licencee shall complete the installation of the synthetic liner at the wastewater treatment lagoon between the 15th day of May and the 15th day of October of any year.
 20. The Licencee shall not discharge or permit the discharge of septage into the wastewater treatment lagoon between the 1st day of November of any year and the 15th day of June the following year.
 21. 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 (BOD_5), is in excess of 30 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) between the 1st day of November of any year and the 15th day of June of the following year; or
 - e) when such a discharge would cause or contribute to flooding in or along the effluent drainage route.
 22. The Licencee shall ensure that if, in the opinion of the Director, significant erosion of the interior surfaces of the dykes occurs, 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.

23. 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.
24. 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, while ensuring the integrity of the PVC geomembrane liner is maintained at all times.
25. The Licencee shall implement an ongoing program to ensure that burrowing animals are removed from the site of the wastewater treatment lagoon.


MONITORING AND REPORTING

26. The Licencee shall prior to each effluent discharge, obtain grab samples of the treated wastewater and have them analyzed for:
 - a) organic content as indicated by the five day biochemical oxygen demand and expressed as milligrams per litre;
 - b) fecal coliform content as indicated by the MPN index and expressed as MPN per 100 millilitres of sample; and
 - c) total coliform content as indicated by the MPN index and expressed as MPN per 100 millilitres of sample.
27. 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 27 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.
28. The Licencee shall actively participate in any future watershed based management study, plan and/or nutrient reduction program, approved by the Director, for the Red Deer Lake and/or associated waterways.
29. The Licencee shall submit to the Director for approval, within six months of the date of this Licence, a comprehensive groundwater monitoring plan for the site of the Development to monitor for liner integrity, to be carried out as approved by the Director.
30. The Licencee shall:
 - a) prepare "as constructed drawings" for the Development and shall label the drawings "As Constructed"; and

- b) provide to the Director, on or before 1st day of January 2009, two sets of "as constructed drawings" of the wastewater treatment lagoon.

REVIEW AND REVOCATION

- A. Environment Act Licence No. 1176 is rescinded upon approved commissioning of the remediated and expanded wastewater treatment lagoon.
- B. 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.
- C. If the Licencee has not commenced construction of the Development within three years of the date of this Licence, the Licence is revoked.
- D. 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

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