



Conservation

Environmental Stewardship Division
Environmental Assessment & Licensing Branch
123 Main Street, Suite 160
Winnipeg, Manitoba R3C 1A5
CANADA
www.gov.mb.ca/conservation/envapprovals

FAXED
File 4430.00

January 24, 2008

Twyla Ludwig, CMMA
Chief Administrative Officer
Rural Municipality of Shell River
Box 998
213-2nd Avenue NW
Roblin, MB R0L 1P0

Dear Ms. Ludwig:

Re: San Clara Wastewater Treatment Lagoon and Constructed Wetland - Environment Act Licence No. 2682 R

Receipt of the October 18, 2007 letter from Mr. Chad Davies of the Rural Municipality of Park and your letter of December 12, 2007, both with respect to the San Clara wastewater treatment lagoon, is acknowledged.

The October 18, 2007 requests the transfer of Environment Act Licence No. 2682 R from the R.M. of Park to the R.M. of Shell River due to the approved annexation of the land where the wastewater facility is situated. However, compliance with outstanding Licence requirements, specifically the submission of acceptable as-constructed drawings and a groundwater monitoring plan, was necessary prior to the Licence transfer.

Your December 12, 2007 letter includes a copy of the certified resolution by the R.M. of Shell River advising that the R.M. is committed to insuring that a groundwater monitoring plan is completed on or before March 31, 2008. Additionally, the as-constructed drawings for the development have been received and approved.

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Please find enclosed revised Environment Act Licence No. 2682 RR issued to the Rural Municipality of Shell River for the San Clara wastewater treatment lagoon and constructed wetland.

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.

If you have any questions, please contact Jennifer Winsor at (204) 945-7012.

Yours truly,



Tracey Braun, M.Sc.
Director
Environment Act

Enclosure

- c. Bruce Wright, Regional Director - Western Region, Manitoba Conservation
Chad Davies, CAO – R.M. of Park
Public Registries

NOTE: Confirmation of Receipt of this Licence No. 2682 RR (*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 (letter only) a copy back to the Department by January 30, 2008.

On behalf of RM of Shell River

Date

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

LICENCE

Licence No. / Licence n° 2682 RR

Issue Date / Date de délivrance May 18, 2005

Revised : **October 6, 2005**

Revised : **January 24, 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) and 14(2)/ Conformément au Paragraphe 11(1) and 14(2)

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

RURAL MUNICIPALITY OF SHELL RIVER; "the Licencee"

for the construction and operation of the Development being a wastewater treatment lagoon and constructed wetland located in fractional 11-29-29 AW in the Rural Municipality of Shell River with discharge of treated effluent to a municipal drainage ditch which drains into the Shell River and in accordance with the Proposal filed under The Environment Act on July 11, 2003 and subsequent information provided July 7, 2004 and September 26, 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 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 affected by an odour nuisance;

"approved" means approved by the Director in writing;

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AT ALL TIMES****

"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;

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

"constructed wetland" means a designed and man-made system composed of a basin containing soil at the bottom with emergent and submerged vegetation, animal life, and water that simulates natural wetlands for treatment of wastewater effluent;

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

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

"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 five days at a temperature of 20°C;

"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;

"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 the 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, and 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;

"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 wastewater that contains human waste;

"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;

"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; 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 sewage generated within the Hamlet of San Clara toward the primary cell of the wastewater treatment lagoon or other approved sewage treatment facility.
2. In addition to any of the following specifications, limits, terms and conditions specified in this Licence, the Licencee 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, treatment, handling, disposal or emission systems, for such pollutants, ambient quality, aquatic toxicity, leachate characteristics and discharge or emission rates, and for such duration and at such frequencies as may be specified;
 - b) determine the environmental impact associated with the release of any pollutant 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 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.
4. 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.
5. The Licencee shall ensure that the operation of the Development is carried out by individuals properly trained and qualified to do so.
6. 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.
7. 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.

SPECIFICATIONS, LIMITS, TERMS AND CONDITIONS

8. 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 and the name of the contractor responsible for construction.
9. The Licencee shall construct and maintain an all-weather access road to the wastewater treatment lagoon and constructed wetland.
10. 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.
11. The Licencee shall install and maintain:
- a) an effluent pumping station at the constructed wetland;
 - b) a discharge pipe from the constructed wetland to the pumping station;
 - c) buried discharge piping from the pumping station, along the discharge route to the municipal road, and along the municipal road to the discharge outlet; and
 - d) riprap at the discharge outlet.
12. The Licencee shall install and maintain a fence with warning signs:
- a) surrounding the wastewater treatment lagoon and constructed wetland with a gate to control access; and
 - b) along the lagoon access road.

13. 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 cell or secondary cells does not exceed 1.5 metres;
 - c) a minimum liquid depth of 0.75 metres above the floor elevation is maintained in the primary cell at all times;
 - d) a minimum liquid depth of 0.3 metres above the floor elevation is maintained in the secondary cell at all times; and
 - e) a 1.0 metre freeboard is maintained in primary and secondary cells at all times.

14. The Licencee shall operate and maintain the constructed wetland in such a manner that:
 - a) the liquid depth does not exceed 30 cm;
 - b) all vegetation is planted throughout the cells prior to receiving wastewater effluent from the wastewater treatment lagoon; and
 - c) any pesticide or herbicide used to control insects and algae receive prior approval from the Director before use.

15. The Licencee shall, prior to the construction of the wastewater treatment lagoon and constructed wetland:
 - 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 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 polyvinyl chloride geomembrane;
 - b) the liner has a minimum thickness of 20 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 1.8 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.
17. The Licencee shall construct and maintain a gas relief system under the liner for the primary and secondary cells of the wastewater treatment lagoon.
 18. The Licencee shall notify the Director one week prior to commencing the installation of the liner and the gas relief system.
 19. 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 16 f) of this Licence.
 20. The Licencee shall construct and maintain the constructed wetland with a continuous liner, including cutoffs, 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 metre in thickness;
 - c) the liner shall have a hydraulic conductivity of 1×10^{-6} centimetres per second or less at all locations; and
 - d) the liner shall be constructed to an elevation of 1.05 metres above the floor elevation.
 21. 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 riprap as necessary. The riprap 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.
 22. The Licencee shall not discharge or permit the discharge of septage into the wastewater treatment lagoon between the 15th day of October of any year and the 1st day of June the following year.
 23. The Licencee shall provide and maintain a grass cover on the dykes of the wastewater treatment lagoon and constructed wetland 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.

25. The Licencee shall implement an ongoing program to remove burrowing animals from the site of the wastewater treatment lagoon and constructed wetland.
26. 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*.
27. The Licencee shall, during construction and operation of the Development, locate fuel storage and equipment servicing areas 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*.

MONITORING AND SPECIFICATIONS

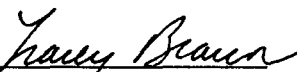
28. The Licencee shall prior to each effluent discharge campaign obtain grab samples of the treated wastewater from the wastewater treatment lagoon and have them analyzed for:
 - a) the organic content as indicated by the five day biochemical oxygen demand and expressed as milligrams per litre;
 - b) the fecal coliform content as indicated by the MPN index and expressed as MPN per 100 millilitres per sample; and
 - c) the total coliform content as indicated by the MPN index and expressed as MPN per 100 millilitres per sample.
29. The Licencee shall:
 - a) once every 2 weeks during the annual discharge period, collect one sample of the effluent from the constructed wetland at a monitoring location prior to the constructed wetland drainage outlet;
 - b) have the effluent sample analyzed for the concentration of total Kjeldahl nitrogen, total phosphorus, and the organic content as indicated by the five day biochemical oxygen demand and expressed as milligrams per litre;
 - c) report the results to the Director in an annual report within 60 days of the end of the discharge period; and
 - d) continue the sampling and reporting plan specified in sub-clause 29 a), b) and c) for a period of 5 years from the date of issuance of this Licence.
30. 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;
 - iii) effluent discharge dates;
 - b) make the records being maintained pursuant to sub-Clause 30 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.
31. The Licencee shall not discharge effluent from the wastewater treatment lagoon or constructed wetland:
- a) where the organic content of the effluent, as indicated by the five day biochemical oxygen demand, 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 15th day of October of any year and the 1st 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.
32. The Licencee shall submit to the Director for approval, within six months of the date of this Licence, a groundwater monitoring plan for the site of the Development to monitor for liner integrity, to be carried out as approved by the Director.
33. The Licencee shall submit to the Director for approval, within six months of the date of this Licence, an operation and maintenance plan for the Development, to be carried out as approved by the Director.
34. The Licencee shall actively participate in any future watershed-based management study, plan and/or nutrient reduction program, approved by the Director, for the Shell River and/or associated waterways and watersheds.
35. 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 2006, two sets of the "as constructed drawings" of the Development.

REVIEW AND REVOCATION

- A. This Licence replaces Licence No. 2682 R which is hereby rescinded.
- 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

Client File No.: 4430.00