



Environment

Environmental Management

Building 2
139 Tuxedo Avenue
Winnipeg, Manitoba, CANADA
R3N 0H6

FAXED

Client File: 608.10

April 6, 1994

Mr. Eric Towler
Secretary Treasurer
R. M. of Springfield
Box 219
Oakbank MB R0E 1J0

Dear Mr. Towler:

Enclosed is Environment Act Stage 1 Licence No. 1772 S1 dated April 6, 1994 issued in accordance with the Manitoba Environment Act to the Rural Municipality of Springfield (Oakbank Wastewater Treatment Lagoon) in connection with the expansion and operation of a wastewater collection system and a wastewater treatment lagoon on the E $\frac{1}{2}$ of 22-11-5 EPM and with discharge of treated effluent into the Lagoon Drain which flows into the Swede Drain and then into Cooks Creek.

In addition to the enclosed Stage 1 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 Stage 1 Licence, please feel free to contact Mr. Mike Van Den Bosch at 945-7015.

Yours truly,

Larry Strachan, P. Eng.
Director
Environment Act

Enclosure

cc: D. Wotton, Regional Director
Brokenhead River Regional Library (Beausejour)
Mr. J. Cousin, P. Eng.

NOTE: Confirmation of Receipt of this Licence is required by the Director of Approvals. Please acknowledge receipt by signing in the space provided below and faxing (945-5229) back to the Department by: April 9/94.

On behalf of the R. M. of Springfield

Date



Environment Act Licence

Manitoba
Environment



Licence No. 1772 S1

Issue Date APRIL 6, 1994

In accordance with the Manitoba Environment Act (C.C.S.M. c.E125)

THIS LICENCE IS ISSUED TO:

RURAL MUNICIPALITY OF SPRINGFIELD; "the Licencee"
OAKBANK WASTEWATER TREATMENT LAGOON
STAGE 1 LICENCE

for the expansion and operation of the Development being a wastewater collection system and a wastewater treatment lagoon located on the east half of Section 22, Township 11, Range 5 EPM and with discharge of treated effluent into the Lagoon Drain which flows into the Swede Drain and then into Cooks Creek and subject to the following specifications, limits, terms and conditions:

DEFINITIONS

In this Licence,

"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;

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

"cut-off" means a vertical-side trench filled with compacted clay or a wall constructed from compacted clay;

"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;

"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;

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

“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;

“in-situ” means on the site;

“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;

“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;

“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;

“sodium adsorption ratio” (SAR) means an expression of the relative activity of the sodium ions in exchange reactions with soil, indicating the sodium or alkali hazard to soil and the ratio is calculated from the expression $SAR = Na^+ [(Ca^{2+} + Mg^{2+}) / 2]^{-1/2}$;

“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 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 REQUIREMENTS

1. The Licencee shall direct all sewage generated within the Unincorporated Village District of Oakbank toward the wastewater treatment lagoon or other approved sewage treatment facilities.
2. 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 40 kilograms per hectare per day; and
 - (c) the depth of liquid in the primary cell or secondary cell does not exceed 1.5 metres.
3. 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.
4. The Licencee shall install and maintain a fence around the wastewater treatment lagoon to control access.

CONSTRUCTION SPECIFICATIONS

5. The Licencee shall, prior to the construction of the dykes for the expansion to 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.
6. The Licencee shall construct and maintain the wastewater treatment lagoon:
- (a) with a continuous liner under all interior surfaces of the cells in accordance with the following specifications:
- (i) the liner shall be made of clay;
 - (ii) the liner shall be at least one metre in thickness;
 - (iii) the liner shall have a hydraulic conductivity of 1×10^{-7} centimetres per second or less; and
 - (iv) the liner shall be constructed to an elevation of 2.5 metres above the floor elevation of the secondary cell; and
- (b) with a cut-off in the all exterior dykes in accordance with the following specifications:
- (i) the cut-off shall be constructed of clay which has been mechanically compacted;
 - (ii) the cut-off shall be at least one metre in thickness;
 - (iii) the cut-off shall have a hydraulic conductivity of 1×10^{-7} centimetres per second or less;
 - (iv) the cut-off shall be keyed into the underlying clay liner a minimum of 0.3 metres; and
 - (v) the cut-off shall be constructed to an elevation of 2.5 metres above the floor elevation of the secondary cell.
7. 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 0.6 metres below the low water mark to protect the dykes from wave action.

DISCHARGE LIMITS, TERMS AND CONDITIONS

8. 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 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; and
- (d) between the 1st day of November of any year and the 15th day of June of the following year.

MONITORING AND REPORTING SPECIFICATIONS

9. The Licencee shall arrange with the designated Environment Officer a mutually acceptable time and date for any required soil sampling between the 15th day of May and the 15th day of October of any year.
10. The Licencee shall provide a drill rig which is acceptable to the designated Environment Officer to extract soil samples from the liner and the cut-offs.
11. The Licencee shall ensure that all drill holes are sealed with bentonite pellets after the field drilling and sampling have been completed.
12. The Licencee shall subject undisturbed soil samples from the liner and the cut-offs from the wastewater treatment lagoon, to hydraulic conductivity tests, with the number and location of samples to be specified by the designated Environment Officer up to a maximum of 10 samples.
13. The Licencee shall, not less than 2 weeks before the wastewater treatment lagoon is placed in operation, submit to the Director the results of the tests carried out pursuant to Clause 12.
14. The Licencee shall, on or before the 1st day of June, 1995, provide to the Director "as constructed" drawings of the wastewater treatment lagoon and all appurtenances.
15. This Licence replaces Licence No. 618 which is hereby rescinded.

STAGE 2 REQUIREMENTS

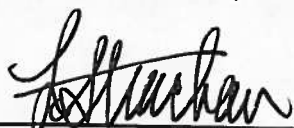
16. The Licencee shall, on or before the 1st day of February, 1995, file a Proposal for a Stage 2 Licence with the Director detailing the Licencee's plans to restrict the discharge of chloride and sodium into the wastewater collection system so that prior to discharge from the wastewater treatment lagoon the chloride concentrations in the wastewater does not exceed 150 milligrams per litre and the sodium adsorption ratio does not exceed 6.0.

STAGE 3 REQUIREMENTS

17. The Licencee shall, on or before the 1st day of September, 1995, file a Proposal for a Stage 3 Licence with the Director which includes: the environmental impact of nutrients on the receiving environment; the results of a feasibility study on the use of a constructed wetland for the removal of nutrients from the wastewater; and a review of alternative discharge routes.

REVOCATION

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 herein, the Director may revoke, temporarily or permanently, this Licence.



Larry Strachan, P. Eng.
Director
Environment Act

FILE: 608.20

Environment Act Licence

Manitoba
Environment



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