Environment Act Licence

Manitoba Environment

Licence No. 1581

Issue Date AUGUST 5, 1992

In accordance with the Manitoba Environment Act (C.C.S.M. c. E125) (REVISED: SEPTEMBER 11, 1992)

THIS LICENCE IS ISSUED TO:

TOWN OF CARBERRY; "the Licencee"

for the construction and operation of the Development being the operation of a wastewater collection system and the construction and operation of a wastewater treatment lagoon located in the northeast quarter of Section 29, Township 10, Range 14 WPM and with discharge of treated effluent by irrigation onto land owned by or under the control of the Licencee and to a natural drain flowing easterly across private land 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.

"ASAE" means the American Society of Agricultural Engineers.

"ASTM" means the American Society for Testing and Materials

"average daily wastewater flow rate" means the volume of wastewater that is discharged to the wastewater treatment lagoon as determined by monitoring the wastewater flow at a lift station through which all the wastewater flows over a prescribed period of time.

"Director" means the Director, Environment Act.

"effluent" means treated wastewater flowing or pumped out of the wastewater treatment lagoon.

"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.

"mil" means one-thousandth of a 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.

"secondary cell" means the second cell of the wastewater treatment lagoon system and which is the cell that receives partially treated wastewater from the primary cell.

GENERAL SPECIFICATIONS

1. The Licencee shall ensure that all domestic sewage generated within the Town of Carberry is directed toward the wastewater treatment lagoon.

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, as indicated by the five day biochemical oxygen demand, to the primary cell is not in excess of 56 kilograms per hectare per day;

   (c) the depth of wastewater in the primary cell does not exceed 1.5 metres; and

(d) the depth of wastewater in the secondary cell does not exceed 2.55 metres.

3. The Licencee shall obtain all necessary property easements required to discharge effluent to the natural surface drain located on private property south of the lagoon site.

4. The Licencee shall arrange with the designated Environment Officer a mutually acceptable time and date for the required testing between the 15th day of May and the 15th day of October of any year.

5. The Licencee shall install and maintain a fence around the wastewater treatment lagoon to limit access.

6. The Licencee shall, on or before the 31st day of June, 1993, provide to the Director "as constructed" drawings of the wastewater treatment lagoon and all appurtenances.

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.

DISCHARGE LIMITS, TERMS AND CONDITIONS

8. The Licencee shall not discharge effluent from the wastewater treatment lagoon:

   (a) if the organic content of the effluent, as indicated by the five day biochemical oxygen demand, is in excess of 30 milligrams per litre;

   (b) if the fecal coliform content of the effluent, as indicated by the MPN index, is in excess of 200 per l00 millilitres of sample;

   (c) if the total coliform content of the effluent, as indicated by the MPN index, is in excess of 1500 per 100 millilitres of sample; or

   (d) between the 1st day of November of any year and the 1st day of June of the following year.

9. The Licencee shall, on and after June 1, 1993, ensure that all treated effluent is disposed of by spray irrigation onto land owned by or under the control of the Licencee and that:

   (a) effluent is only discharged to irrigate:

      (i) actively growing cereal, forage or oil seed crops;

      (ii) grasslands which will not be utilized for grazing:

         A. by dairy cattle for at least 30 days after effluent is applied; or

         B. by livestock other than dairy cattle for at least 7 days after effluent is applied;

   (b) after agriculture crops are irrigated, harvesting of the crops does not take place for at least 7 days;

   (c) if corn has been grown, it is used solely for making silage;

(d) for at least 10 continuous hours in every 24-hour period, no effluent is applied to the particular lands; and

(e) if ponding or surface runoff occurs during application the gross depth of effluent applied during any application of effluent shall be reduced so that ponding or surface runoff does not occur.

10. The Licencee shall not discharge effluent, by spray irrigation:

(a) within 300 metres of any dwelling not owned or lawfully controlled by the Licencee;

(b) within 100 metres of any surface watercourse or groundwater well; or

(c) within 100 metres of any property boundary.

11. Notwithstanding Clauses 9 and 10 of this Licence, the Director may grant approval for effluent discharge to the natural surface drain located south of the wastewater treatment lagoon site provided the Licencee demonstrates that the required hydraulic storage capacity, calculated by multiplying the daily sewage flow rate by the storage period of 213 days, does not exceed the available hydraulic storage capacity as calculated from the "as constructed" drawings by adding 50 percent of the allowable volume of the primary cell and 100 percent of the allowable volume of the secondary cell.

CONSTRUCTION SPECIFICATIONS

12. The Licencee shall, prior to the construction of the dikes for the wastewater treatment lagoon, remove all organic topsoil from the area where the dikes will be constructed.

13. The Licencee shall construct and maintain a continuous poly-vinyl chloride geosynthetic membrane liner underlying each cell of the wastewater treatment lagoon system such that:

    a) the liner shall be installed in accordance with ASAE Standard EP340.2 for the Installation of Flexible Membrane Linings;

    b) the liner shall be installed to minimum elevations of 1.8 metres and 2.85 metres above the base of the completed primary and secondary cells respectively;

    c) the liner shall have a minimum thickness of 20 mils;

    d) the permeability of the liner shall not exceed 3.5×10^{-9} centimetres per second;

    e) in accordance with ASTM Standard D-4437, the integrity of all field seams shall be tested by both destructive and nondestructive test methods and a testing report shall be prepared; and

    f) the liner shall be covered with sand or other granular cover material to a minimum depth of 0.15 metre measured perpendicular to the surface of the liner.

14. The Licencee shall, subject to the approval of the Director, construct and maintain an approved gas relief system under the liner for the primary cell of the wastewater treatment lagoon.

MONITORING AND REPORTING SPECIFICATIONS

15. The Licencee shall submit plans for two monitoring well systems including the number, location and design of the monitoring wells and shall obtain the Director's approval for the plans. One monitoring well system must be designed to monitor the groundwater conditions around the lagoon site and the other monitoring well system must be designed to monitor the groundwater along the surface drain located south of the lagoon site.

16. The Licencee shall install a monitoring well system approved by the Director around the lagoon site, prior to discharging any wastewater into the secondary cell, and shall install another monitoring well system along the surface drain provided the property owners grant permission to the Licencee to install and monitor the wells.

17. The Licencee shall, at least 2 weeks before each cell of the wastewater treatment lagoon is placed in operation, submit to the Director all reports and results of the tests carried out pursuant to Clause 13 for the respective cell which is to be placed into operation.

18. The Licence shall:

    a) sample the monitoring wells twice each year, in the spring and fall seasons;

    b) have the samples analyzed for: conductivity, pH, boron, calcium, magnesium, sodium, nitrate-nitrogen, chloride, sulfate, sodium adsorption ratio using methods from the latest edition of Standard Methods for the Examination of Water and Wastewater or using other methods approved by the Director; and

    c) report the results to the Director and the owners of private property along the natural surface drain within four months of the samples being taken.

19. The Licencee shall, prior to discharging any wastewater into the secondary cell, commence the water sampling program required in Clause 18 to establish the back-ground water quality condition.

20. The Licencee shall, prior to the discharge of effluent to the natural surface drain located on private property not owned by the Licencee:

    a) take samples of the effluent in the cell which is to be discharged and have the samples analyzed for: biochemical oxygen demand, fecal coliform level, total coliform level, and total nitrogen using methods from the latest edition of Standard Methods for the Examination of Water and Wastewater or using other methods approved by the Director; and

    b) provide at least one week notice of the planned discharge with a copy of the effluent analysis to the Director and to all the owners of private property over which the effluent will flow.

21. The Licencee shall conduct an annual wastewater flow study by measuring the pumping capacity of every pump at a lift station through which all the wastewater flows, measuring the operating time for each pump over a period of not less than 10 days and calculating the average daily wastewater flow rate. The Licencee shall file a copy of the report including all field measurements with the Director.

22. This Licence replaces Licence No. 1248 which is hereby rescinded.

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

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