

Licence No.: 2583

Licence Issued: December 4, 2002

**IN ACCORDANCE WITH THE MANITOBA ENVIRONMENT ACT (C.C.S.M. c. E125)
THIS LICENCE IS ISSUED PURSUANT TO SECTIONS 10(1) AND 14(2) TO:**

GRANNY'S POULTRY CO-OPERATIVE (MANITOBA) LTD.; "the Licencee"

for the construction, operation and maintenance of the Development being a poultry abattoir, process wastewater pre-treatment facility, wastewater storage pond and lift station located in NE 27-7-6 EPM in the Rural Municipality of Hanover and a forcemain connection to the Rural Municipality of Hanover - Blumenort aerated wastewater treatment lagoon and with discharge of pre-treated effluent to the Rural Municipality of Hanover - Blumenort aerated wastewater treatment lagoon under normal operating conditions, in accordance with the revised Notice of Alteration filed under The Environment Act on May 3, 2002 and subsequent information provided on June 6, 2002 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;

"aerated" means the bringing about of intimate contact between air and a liquid by bubbling air through the liquid;

"aerated wastewater treatment lagoon" means the component of a wastewater treatment facility which consists of an impoundment into which wastewater is discharged for treatment by mechanical aeration and storage;

"affected area" means a geographical area, excluding the property of the Development;

"approved" means approved by the Director 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;

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

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

"cell" means the cell or cells of the wastewater storage pond and which is used for temporary storage of pre-treated process wastewater;

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

"dissolved air floatation (DAF) system" means an aeration component in an industrial wastewater pre-treatment system;

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

"emergency" means an unforeseen combination of circumstances or the resulting state that calls for immediate action;

"environmental accident" means a release, leakage or spillage of a contaminant into the environment otherwise than

in accordance with the provisions of The Environment Act, its licences, orders and regulations or the Dangerous Goods Handling and Transportation Act, its orders and regulations, or an incident which may or is likely to result in such a release, leakage or spillage, which, having regard to the environment in which the release, leakage or spillage takes place or may take place, and to the nature of the contaminant, creates or may create a hazard to human life or health, to other living organisms, or to the physical environment;

"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;

"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 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;

"in-situ" means on the site;

"industrial use agreement" means an agreement to discharge industrial wastewater to municipal wastewater collection and treatment systems;

"Industrial Services Agreement" means the industrial use agreement dated March 22, 2001, between the Rural Municipality of Hanover and the Licencee;

"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 or pre-treatment facility or any components of the facility;

"low water mark" means the line on the interior surface of the cell of the wastewater storage pond 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;

"noise nuisance" means a continuous or repeated noise 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 noise

- 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 noise 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;

"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 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;

"pollutant" means a pollutant as defined by The Environment Act;

"pre-treatment facility" means the DAF units, controls, associated servers and the buildings in which they are located;

"process wastewater" means water at the Development, excluding sanitary wastes, which has been used in any process or has in any manner become contaminated;

"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;

"solid waste" means discarded material, such as garbage, refuse and scrap, that is most commonly landfilled;

"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;

"tare material" means foreign material that accumulate in the transport containers handling area;

"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 storage pond" means the component of the Development which consists of an impoundment into which pre-treated wastewater is discharged for temporary storage.

GENERAL TERMS AND CONDITIONS

This Section of the Licence contains requirements intended to provide guidance to the Licensee 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, except during an emergency as determined by the Director, direct all wastewater generated within the Development toward the Rural Municipality of Hanover - Blumenort aerated wastewater treatment lagoon located at NE and SE 32-7-6 EPM and NW and SW 33-7-6 EPM in the Rural Municipality of Hanover.
2. Subject to Clauses 23 and 24 of this Licence, the Licencee shall not discharge wastewater to the wastewater storage pond except during an emergency as determined by the Director when it is not possible to discharge such wastewater to the Rural Municipality of Hanover - Blumenort aerated wastewater treatment lagoon located at NE and SE 32-7-6 EPM and NW and SW 33-7-6 EPM in the Rural Municipality of Hanover.
3. The Licencee shall, upon receipt of any written request from the Rural Municipality of Hanover:
 - a. restrict the quantity of any wastewater stream being directed from the Development to the Rural Municipality of Hanover - Blumenort aerated wastewater treatment lagoon to such a degree, within such timeframe, and for such duration as specified by the Rural Municipality of Hanover; and
 - b. immediately advise the Director of the receipt of such a written request.
4. 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.
5. 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; and
 - b. have all analytical determinations undertaken by an accredited laboratory or a laboratory approved by the Director.
6. 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.
7. The Licencee shall implement a high standard of equipment maintenance and good housekeeping and operational practices with respect to the Development, at all times.
8. The Licencee shall not cause or permit a noise 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 a noise nuisance.
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 mitigate an odour nuisance.

10. The Licencee shall, in case of physical or mechanical breakdown of the Development:
 - a. notify the Director and the Rural Municipality of Hanover immediately;
 - b. identify the repairs required; and
 - c. complete the repairs in accordance with any written instructions of the Director.

11. The Licencee shall, in the event that the wastewater discharged from the Development for any reason, causes or contributes to a non-compliance of the limits set out in Clause 38 of this Licence, and the effluent from the Rural Municipality of Hanover - Blumenort aerated wastewater treatment lagoon does not exceed a limit, term, condition, or specification set out in [Environment Act Licence No. 2550](#) or subsequent revision thereof:
 - a. determine the cause of the event;
 - b. determine the duration of the event and estimate the frequency of any future events resulting from a similar cause;
 - c. assess the impact of the event on the downstream components of the Rural Municipality of Hanover - Blumenort aerated wastewater treatment lagoon;
 - d. assess the risk of causing the effluent from the Rural Municipality of Hanover - Blumenort aerated wastewater treatment lagoon to exceed a limit, term, condition, or specification set out in [Environment Act Licence No. 2550](#) or subsequent revision thereof;
 - e. determine the alternatives and need to stop the event and any future events;
 - f. develop a preferred course of action to mitigate any adverse impacts of the event and any future similar events on the downstream components of the Rural Municipality of Hanover - Blumenort aerated wastewater treatment lagoon;
 - g. report the above determinations and assessments to the Director within 30 days from the identification of the event or such other date as may be approved in advance by the Director; and
 - h. take any action deemed necessary by the Director to stop the event or any future events.

The Licencee may submit, to the Director for approval, proposed amendments to the course of action to stop the event or any future events. The Licencee shall implement any amendments approved by the Director, in a manner and within the time frames specified by the Director.

12. The Licencee shall, in the event where the wastewater discharged from the Development for any reason, causes or contributes to a non-compliance of the limits set out in Clause 38 of this Licence, and the effluent from the Rural Municipality of Hanover - Blumenort aerated wastewater treatment lagoon exceeds a limit, term, condition, or specification set out in [Environment Act Licence No. 2550](#) or subsequent revision thereof:
 - a. notify the Director by facsimile or any other notification procedure approved by the Director, stating the nature of the event, the time and estimated duration of the event and the reason for the event as follows:
 - i. as soon as possible but no later than within 12 hours of the event; or
 - ii. before noon of the first business day following an event on a weekend or statutory holiday;
 - b. restrict the loading from the Development or take any other action deemed necessary by the Director to stop the event or future events where the limits set out in Clause 38 of this Licence are exceeded, within the time frame specified by the Director;
 - c. assess the impact of the effluent from the Development that exceeds the limits set out in Clause 38 of this Licence, on the downstream components of the Rural Municipality of Hanover - Blumenort aerated wastewater treatment lagoon;
 - d. determine the alternatives and need to stop the discharge of effluent from the Rural Municipality of Hanover - Blumenort aerated wastewater treatment lagoon that is in excess of a limit, term, condition, or specification set out in [Environment Act Licence No. 2550](#) or subsequent revision thereof, where the effluent from the Development is determined to cause or contribute to the discharge of effluent from the Rural Municipality of Hanover - Blumenort aerated wastewater

treatment lagoon in excess of a limit, term, condition, or specification set out in [Environment Act Licence No. 2550](#) or subsequent revision thereof;

- e. develop a preferred course of action;
- f. report the above determinations and assessments to the Director within 30 days from the identification of the event or such other date as may be approved in advance by the Director; and
- g. take any actions, deemed necessary by the Director in a manner and within the time frames specified by the Director, respecting the operation of the Development to stop the discharge of effluent from the Rural Municipality of Hanover - Blumenort aerated wastewater treatment lagoon that is in excess of a limit, term, condition, or specification set out in [Environment Act Licence No. 2550](#) or subsequent revision thereof.

The Licencee may submit, to the Director for approval, proposed amendments to the course of action to mitigate the impacts of the event and any similar future events. The Licencee shall implement any amendments approved by the Director, in a manner and within the time frames specified by the Director.

13. The Licencee shall notify the Director, in writing, of any intention to amend the terms and conditions of the Industrial Services Agreement or any other industrial use agreement relative to this Licence to which the Licencee is party.
14. The Licencee shall notify the Director of, and receive approval from the Director for, any alteration in the Development as Licenced, prior to proceeding with such alteration.
15. The Licencee shall, during construction and operation of the Development, report all environmental accidents to an Environment Officer in accordance with the requirements of *Manitoba Regulation 439/87* respecting *Environmental Accident Reporting*.
16. The Licencee shall dispose of non-reusable demolition and construction debris from the Development at a waste disposal ground operating under the authority of a permit issued under *Manitoba Regulation 150/91* respecting *Waste Disposal Grounds* or a Licence issued pursuant to The Environment Act.

SPECIFICATIONS, LIMITS, TERMS AND CONDITIONS

Respecting Construction - General

17. The Licencee shall notify the designated 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 the construction.
18. 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*.

Respecting Operation - General:

19. The Licencee shall dispose of solid waste from the Development, other than waste that is designated for re-sale or rendering, to a waste disposal ground operated under a permit issued in accordance with Manitoba Regulation 150/91 or a Licence issued under The Environment Act.
20. The Licencee shall not undertake any on-site burning of solid waste.
21. The Licencee shall:
 - a. direct all blood, entrails, feathers and manure to an off-site rendering facility that is duly licenced

- under The Environment Act or under the appropriate legislation of another corresponding jurisdiction; and
- b. dispose of tare material in containers in such a manner to prevent loss of the material to the satisfaction of an Environment Officer.

Respecting Operation - Abattoir:

22. The Licencee shall minimize the loss of blood to the process wastewater sewers by maximizing the efficiency of the blood collection to the satisfaction of the Director.

Respecting Construction and Maintenance - Wastewater Storage Pond:

23. The Licencee shall undertake an engineering assessment of the wastewater storage pond and submit an engineering report that shall include information specific to the characteristics of any liner of the wastewater storage pond to the Director for approval prior to commencing operation of the wastewater storage pond.
24. The Licencee shall re-construct, as may be deemed necessary by the Director following results of the engineering assessment required by Clause 23 of this Licence, and maintain the wastewater storage pond with a continuous liner 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^{-7} centimetres per second or less at all locations; and
 - d. the liners of the cells of the wastewater storage pond shall be constructed to an elevation of 2.4 metres above the floor elevations of the cells.
25. The Licencee shall install and maintain a fence around the wastewater storage pond to control access.
26. The Licencee shall construct and maintain an access road to the wastewater storage pond.

Respecting Operation - Wastewater Storage Pond:

27. The Licencee shall, pursuant to Clause 2 of this Licence:
 - a. direct such discharge only to cell 2 and cell 3 of the wastewater storage pond, as shown on Schedule "A" of this Licence;
 - b. retain such wastewater solely in cell 2 and cell 3 of the wastewater storage pond;
 - c. subject to d), discharge such wastewater from cell 2 and cell 3 of the wastewater storage pond, as soon as possible, but, in any case commencing not more than 24 hours after the conclusion of the emergency circumstances event or condition which necessitated the emergency discharge;
 - d. discharge such wastewater from cell 2 and cell 3 of the wastewater storage pond only through the "emergency overflow line" to the Rural Municipality of Hanover - Blumenort aerated wastewater treatment lagoon as illustrated in Schedule "A" of this Licence;
 - e. keep the valve leading from the said abattoir to the "emergency overflow line" closed except when discharges to or from cell 2 and cell 3 of the wastewater storage pond are taking place; and
 - f. maintain, and make available for inspection on request by an Environment Officer, an up-to-date record of wastewater discharges to cell 2 and cell 3 of the wastewater storage pond detailing the nature, date and duration of all emergencies.
28. The Licencee shall operate and maintain the wastewater storage pond in such a manner that:
 - a. the depth of liquid in the pond does not exceed 1.5 metres; and
 - b. the depth of liquid in the pond is maintained at a minimum of 0.5 metres.

29. The Licencee shall, if, in the opinion of the Director, significant erosion of the interior surfaces of the dykes occurs, repair the dyke and place rip rap 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.
30. The Licencee shall provide and maintain a grass cover on the dykes of the wastewater storage pond and shall regulate the growth of the vegetation so that the height of the vegetation does not exceed 0.3 metres on all dykes.
31. 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 storage pond.
32. The Licencee shall implement an ongoing program to remove burrowing animals from the site of the wastewater storage pond.
33. 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.
34. The Licencee shall take and test undisturbed soil samples, in accordance with Schedule "B" attached to this Licence, from the liner of the wastewater storage pond; the number and location of samples and test methods to be specified by the designated Environment Officer up to a maximum of 20 samples.
35. The Licencee shall, before the wastewater storage pond is placed in operation, submit to the Director the results of the tests carried out pursuant to Clause 34 of this Licence.

Respecting Operation - Dissolved Air Floatation (DAF) Units:

36. The Licencee shall operate and maintain a DAF unit(s) to pre-treat all wastewater prior to discharging to the Rural Municipality of Hanover - Blumenort aerated wastewater treatment lagoon or the wastewater storage pond.
37. The Licencee shall direct all oily concentrate and solids from the DAF unit(s) to an off-site rendering facility that is licenced under The Environment Act or under the appropriate legislation of another corresponding jurisdiction.

Respecting Process Wastewater:

38. The Licencee shall not release any process wastewater from the Development:
 - a. except from the wastewater pre-treatment plant to the Rural Municipality of Hanover - Blumenort aerated wastewater treatment lagoon;
 - b. which exceeds a maximum daily flow rate of 2,617 cubic metres per day; and
 - c. which exceeds any of the maximum daily pollutant loadings shown in the following table:

Parameter	Maximum Daily (kilograms per day)
BOD ₅	3,140
total suspended solids	1,805
total kjeldahl nitrogen	550
oil and grease	262

Respecting Effluent Monitoring Station:

39. The Licencee shall:

- a. make available for use by an Environment Officer, secured and heated monitoring and sample collection station with direct access to the effluent pipelines at the end of the forcemain and located within the aeration building located within NE 32-7-6 EPM as necessary;
- b. make all monitoring stations accessible to an Environment Officer at all times;
- c. install and maintain a flow measuring device at the monitoring station or at a location acceptable to the Director which is capable of measuring the volume of effluent with an accuracy of ± 2 percent;
- d. have the flow measuring device re-calibrated biannually or on the request of an Environment Officer;
- e. size the effluent monitoring station to accommodate a flow proportional 24-hour composite sampler;
- f. equip the station with electronic interfaces to the effluent flow metering device whereby the electronic interfaces are compatible with the departmentally owned ISCO sampler; and
- g. equip the monitoring station with a flow-proportional sampling device equipped to function with the flow measuring device and have the sampling device available on request for use by an Environment Officer.

Respecting Sanitary Wastewater:

40. The Licencee shall direct all sanitary wastewater generated on the site of the Development to the lift station located on the Licencee's property and thence to the Rural Municipality of Hanover - Blumenort aerated wastewater treatment lagoon.

MONITORING AND REPORTING

Respecting Monitoring, Record Keeping and Reporting:

41. The Licencee shall maintain the effluent flow meters and electronic interface devices in proper working order.
42. The Licencee shall during each month of operation monitor for, determine and record:
 - a. the daily (each processing day), the weekly (cubic metres per week), and the total monthly quantity of process wastewater (cubic metres) released from the wastewater pre-treatment plant and measured at the aeration building located within NE 32-7-6 EPM; and
 - b. the daily loadings and the weekly loadings (kilograms per week) of:
 - i. 5-day biochemical oxygen demand;
 - ii. total kjeldahl nitrogen (as N);
 - iii. total phosphorus (as P);
 - iv. total suspended solids; and
 - v. oil and grease;released from the pre-treatment facility and sampled at the aeration building located within NE 32-7-6 EPM, and submit the recorded information to the Director, in writing and in an electronic format acceptable to the Director, no later than 30 days after the end of the month during which the information was determined.
43. The Licencee shall, when the wastewater storage pond is in operation, maintain records of the wastewater storage pond operations and/or maintenance requirements including, but not limited to, the following:
 - a. presence of odours and their source;
 - b. liquid levels;
 - c. duration of operation of the wastewater storage pond; and
 - d. make these records available to the designated Environment Officer on request.
44. 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 Seine River Diversion Watershed - and associated waterways and watersheds.

45. 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 the 1st day of December, 2004, two sets of "as constructed drawings" of the Development.

Respecting Surface Water Discharge

46. The Licencee shall not permit any pollutants to be directed into, or transported by, any surface drainage route leading off the property of the Development.

Respecting Emergency Response Planning

47. The Licencee shall submit to the Director for approval, on or before 31st day of January, 2004, a contingency plan, in accordance with the Manitoba Industrial Accidents Council (MIAC) *Industrial Emergency Response Planning Guide*, outlining procedures to be used in the event of a leak, spill, fire or other hazardous condition at the Development.

Respecting Decommissioning

48. The Licencee shall submit, within one year of the date of issuance of this Licence, for the approval of the Director, a decommissioning plan for the Development.
49. The Licencee shall submit for the approval of the Director, within one year prior to imminent closure of the Development, a formal and detailed decommissioning plan for the Development.
50. The Licencee shall implement and maintain the approved decommissioning plan for the Development.

REVIEW AND REVOCATION

- A. This Licence replaces Licence No. 1066 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, 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 10 of The Environment Act.

"original signed by"
Larry Strachan, P. Eng.
Director
Environment Act

Client File No.: 111.20

Schedule "A" to Environment Act Licence No. 2583 (please refer to file copy)

Schedule "B" to Environment Act Licence No. 2583

Soil Sampling:

1. The Licencee shall provide a drilling rig, acceptable to the designated Environment Officer, to extract soil samples from the liner which is not placed or found at the surface of the lagoon structure. This includes all wastewater treatment lagoons constructed with clay cutoffs at the interior base of the dyke or with a clay cutoff in the centre of the dyke. The drill rig shall have the capacity to drill to the maximum depth of the clay cutoff plus an additional 2 metres. The drill rig shall be equipped with both standard and hollow stem augers. The minimum hole diameter shall be 5 inches.
2. For lagoon liners placed or found at the surface of the lagoon structure, the Licencee shall provide a machine, acceptable to the designated Environment Officer, capable of pressing a sampling tube into the liner in a straight line motion along the centre axis line of the sample tube and without sideways movement.
3. Soil samples shall be collected and shipped in accordance with ASTM Standard D 1587 (Standard Practice for Thin-Walled Tube Sampling of Soils), D 4220 (Standard Practice for Preserving and Transporting Soil Samples) and D 3550 (Standard Practice for Ring-Lines Barrel Sampling of Soils). Thin-walled tubes shall meet the stated requirements including length, inside clearance ratio and corrosion protection. An adequate venting area shall be provided through the sampling head.
4. At the time of sample collection, the designated Environment Officer shall advise the Licencee as to the soil testing method that must be used on each sample. The oedometer method may be used for a sample were the Environment Officer determines that the soil sample is taken from an undisturbed clay soil which has not been remoulded and which is homogeneous and unweathered. The triaxial test shall be used for all samples taken from disturbed and remoulded soils or from non homogenous and weathered soils.
5. The Licencee shall provide a report on the collection of soil samples to the designated Environment Officer and to the laboratory technician which includes but is not limited to: a plot plan indicating sample location, depth or elevation of sample, length of advance of the sample tube length of soil sample contained in the tube after its advancement, the soil test method specified by the Environment Officer for each soil sample and all necessary instructions from the site engineer to the laboratory technician.
6. All drill and sample holes shall be sealed with bentonite pellets after the field drilling and sampling has been completed.

Soil Testing Methods:

1. Triaxial Test Method
 - a. The soil samples shall be tested for hydraulic conductivity using ASTM D 5084 (Standard Test Method for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter).
 - b. Soil specimens shall have a minimum diameter of 70 mm (2.75 inches) and a minimum height of 70 mm (2.75 inches). The soil specimens shall be selected from a section of the soil sample which contains the most porous material based on a visual inspection. The hydraulic gradient shall not exceed 30 during sample preparation and testing. Swelling of the soil specimen should be controlled to adjust for: the amount of compaction measured during sample collection and extraction from the tube and the depth or elevation of the sample. The effective stress used during saturation or consolidation of the sample shall not exceed 40 kPa (5.7 psi) or the specific stress level, that is expected in the field location were the sample was taken, which ever is greater.
 - c. The complete laboratory report, as outlined in ASTM D 5084, shall be supplied for each soil sample collected in the field.
2. Oedometer Test Method

- a. The soil samples shall be tested for hydraulic conductivity using ASTM D 2435 (Standard Test Method for One-Dimensional Consolidation Properties of Soils).
- b. Soil specimens shall have a minimum diameter of 50 mm (2 inches) and a minimum height of 20 mm (0.8 inches). The soil specimens shall be selected from a section of the soil sample which contains the most porous material based on a visual inspection. The soil specimen shall be taken from an undisturbed soil sample. The soil specimen shall be completely saturated.
- c. The complete laboratory report, as outlined in ASTM D 2435, shall be supplied for each soil sample collected in the field.