THE ENVIRONMENT ACT
LOI SUR L'ENVIRONNEMENT

LICENCE

Manitoba

Licence No. / Licence n° 2909

Issue Date / Date de délivrance Dec 23, 2009

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 Sections 11(1) / Conformément au Paragraphe 11(1)

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

MANITOBA HYDRO"the Licencee"

for the construction and operation of the Development being a wastewater collection system, a membrane bio-reactor portable package sewage treatment plant, and a sludge dewatering system located in unsurveyed territory in 24-81-6EPM and with discharge of treated effluent into the Nelson River, in accordance with the Proposal filed pursuant to The Environment Act on August 18, 2009 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 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 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;

"bioassay" means a method of determining toxic effects of industrial wastes and other wastewaters by using viable organisms;

"composite sample" means a quantity of wastewater consisting of a minimum of 10 equal volumes of effluent, or flow proportional volumes collected over a 24-hour period, and may be collected manually or by means of an automatic sampling device;

"Director" means an employee so designated 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;

"final discharge point" means the outlet of the UV disinfection system at which an effluent monitoring station is located;

"five-day biochemical oxygen demand (BOD_5)" means that part of oxygen usually associated with biochemical oxidation of organic material within 5 days at 20°C;

"five-day carbonaceous biochemical oxygen demand ($CBOD_5$)" means that part of the oxygen demand usually associated with biochemical oxidation of carbonaceous organic matter within 5 days at a temperature of 20°C, excluding the oxygen demand usually associated with the biochemical oxidation of nitrogenous organic matter;

"flow proportional composite sample" means a combination of not less than ten individual samples of equal volume of wastewater taken at equal increments of wastewater flow over a specified period of time;

"grab sample" means a quantity of wastewater taken at a given place and time;

"influent" means water, wastewater, or other liquid flowing into the sewage treatment plant;

"liquid waste" means sewage, sewage effluent and sludge from septic tanks, holding tanks and municipal sewage treatment systems and has a slump of more than 150 mm using the slump test method (slump test, C.S.A. Standards Test Method A23.2-5C);

"MPN index" means the most probable number of coliform organisms in a given volume of wastewater as determined by statistical estimation;

"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;

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

"sewage" means human body, toilet, liquid, waterbourne culinary, sink or laundry waste;

"sewage effluent" means sewage after it has undergone at least one form of physical, or biological treatment;

"sewage treatment plant" means all components of this development, exclusive of the wastewater collection systems, that contribute to the wastewater treatment processes;

"sludge" means accumulated solid material containing large amounts of entrained water which has separated from wastewater during processing;

"sludge solids" means solids in sludge;

"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, non-spore 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;

"UV disinfection" means a disinfection process for treating wastewater using ultraviolet radiation;

"UV germicidal dose" means the units of intensity of ultra violet light that is required to kill bacteria and viruses present in the sewage effluent; and

"wastewater" means the spent or used water of a community or industry which contains dissolved and suspended matter.

GENERAL SPECIFICATIONS

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. 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, handling, treatment and disposal systems, for such pollutants, ambient quality, aquatic toxicity, seepage characteristics and discharge rates and for such duration and 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, bioassay data, flow rate measurements and such other information as may from time to time be requested.

2. The Licencee shall, unless otherwise specified in this Licence:
   a) carry out all preservations and analyses of liquid samples in accordance with the methods prescribed in the Standard Methods for the Examination of Water and Wastewater or in accordance with equivalent preservation and analytical methodologies approved by the Director;
   b) have analytical determinations undertaken by an accredited laboratory; and

c) report the results to the Director, in writing, within 60 days of the samples being taken.

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 operate the sewage treatment plant and sludge dewatering system in such a manner that:
   a) all wastewater generated at the Kelsey Generating Station Powerhouse and Townsite area is directed toward the sewage treatment plant or other approved sewage treatment facilities;
   b) only wastewater as defined in this Licence is discharged into the sewage treatment plant;
   c) prior to disposal, all sludge generated by the sewage treatment plant is adequately dewatered in the sludge dewatering system so as to not be considered a liquid waste;
   d) dewatered sewage sludge is not stored at the Kelsey Generating Station Powerhouse and Townsite area beyond the design sludge storage capacity of the sewage treatment plant and sludge dewatering system;
   e) primary screenings and dewatered sewage sludge are disposed of:
      i) at a waste disposal ground operated under;
         A) a permit issued in accordance with *Manitoba Regulation 150/91* or any future amendment thereof; or
         B) the authority of a Licence issued under The Environment Act; or
      ii) at another approved facility; and
   f) dewatered sewage sludge and sludge solids are transported in containers in such a manner to prevent loss of solids to the satisfaction of an Environment Officer.

5. The Licencee shall install, operate and maintain an effluent discharge pipeline from the sewage treatment plant into the Nelson River such that freezing of the effluent in the pipeline is prevented.

6. The Licencee shall not spill, or allow to be spilled, wastewater and/or sludge in the area around the sewage treatment plant and sludge dewatering system.

7. The Licencee shall carry out the operation of the Development with individuals properly certified to do so pursuant to *Manitoba Regulation 77/2003* respecting *Water and Wastewater Facility Operators* or any future amendment thereof.

8. The Licencee shall obtain and maintain classification of the Development pursuant to *Manitoba Regulation 77/2003* respecting *Water and Wastewater*

9. *Facility Operators* or any future amendment thereof and maintain compliance with all requirements of the regulation including, but not limited to, the preparation and maintenance of a Table of Organization, Emergency Response Plan and Standard Operating Procedures.

10. 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.

11. The Licencee shall have adequate instrumentation installed to provide constant monitoring of the UV process to ensure compliance with the disinfection requirements. Such instrumentation shall include but not be limited to the following:
    a) an UV sensor to monitor lamp intensity;
    b) an appropriate alarm and shutdown systems;
    c) a lamp monitoring system to identify the location of individual lamp failures;
    d) an hour meter which cannot be reset to display actual hours of UV lamp operation; and
    e) protective circuits for overcurrent and ground current leakage detection.

12. The Licencee shall in case of physical or mechanical breakdown of the Development:
    a) notify the Director immediately;
    b) identify the repairs required to the wastewater collection system and/or sewage treatment plant and sludge dewatering system; and
    c) complete the repairs in accordance with the written instructions of the Director.

13. The Licencee shall actively participate in any future watershed based management study, plan or nutrient reduction program, approved by the Director, for the Nelson River and associated waterways and watersheds.

SPECIFICATIONS, LIMITS, TERMS AND CONDITIONS

14. The Licencee shall notify the assigned Environment Officer prior to beginning construction of the sewage treatment plant and sludge dewatering system. The notification shall include the intended starting date of construction and the name of the Licencee's contact person at the construction site.

15. The Licencee shall operate and maintain the sewage treatment plant in such a manner that:
    a) the maximum daily flow rate is not in excess of 70 cubic metres over any 24-hour period;

b) the organic loading is not in excess of 50 kilograms of five-day biochemical oxygen demand over any 24-hour period; and
c) the release of offensive odours is minimized.

15. The Licencee shall subject all sludge to aerobic digestion, or an equivalent digestion process acceptable to the Director, where:
a) the digester contents have a minimum of 2 milligrams per litre dissolved oxygen during aeration;
b) the digester contents are maintained at a minimum temperature of 10°C; and
c) the digester provides a minimum solids retention time of 15 days.

16. The Licencee shall utilize UV lamps in the disinfection process that have a rated output of at least 254 nanometres (nm) capable of delivering a germicidal dose in excess of 30,000 microwatt seconds/sq cm.

17. The Licencee shall operate and maintain the UV disinfection system to give a germicidal dose of 80% or more of the design UV germicidal dose, at the end of the lamp life.

18. The Licencee shall locate fuel storage and equipment servicing areas established for the construction 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 Gasoline and Associated Products.

19. The Licencee shall install and maintain a security fence around all components of the sewage treatment plant that are not enclosed within secured buildings.

20. The Licencee shall not discharge effluent from the sewage treatment plant, as sampled at the monitoring station located after UV disinfection, where:
a) the organic content of the effluent, as indicated by the five-day carbonaceous biochemical oxygen demand ($CBOD_5$), is in excess of 25 milligrams per litre;
b) the fecal coliform content of the effluent, as indicated by the MPN index, is in excess of 200 per 100 millilitres of sample;
c) the total coliform content of the effluent, as indicated by the MPN index, is in excess of 1500 per 100 millilitres of sample;
d) the total suspended solids content of the effluent, as indicated by the non-filterable residue is in excess of 25 milligrams per litre; and
e) the total ammonia concentration of the effluent is in excess of the concentration specified in Schedule "A" attached to this Licence as determined by the pH of the effluent.

MONITORING AND REPORTING SPECIFICATIONS

21. The Licencee shall monitor, and make the records of such monitoring available to the Director as may be requested, the sewage treatment process for the following parameters:
    a) total flow rate(s) into the equalization tank(s);
    b) water level(s) in the equalization tank(s);
    c) flow rate(s) into the UV disinfection system;
    d) pH, dissolved oxygen, temperature, and tank liquid levels of the digestion processes, and
    e) other process parameters approved or required by the Director.

22. The Licencee shall:
    a) construct and make available for use by an Environment Officer, a secured and heated effluent monitoring station, allowing direct access to the discharge pipeline following the UV disinfection;
    b) have the monitoring station 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) 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; and
    f) equip the monitoring station with an electrical power source of 15 amperes at 110 volts.

23. The Licencee shall arrange for the taking of samples of influent at the inlet(s) to the equalization tank(s) of the sewage treatment plant and of treated effluent at the final discharge point.

24. The Licencee shall:
    a) take one flow proportional composite sample of effluent, from the effluent monitoring station during the discharge period once each month;
    b) take three grab samples of the effluent from the effluent monitoring station during the discharge period once each month;
    c) have the flow proportional composite effluent sample analyzed for five-day carbonaceous biochemical oxygen demand, temperature, pH, total ammonia, total suspended solids, and total phosphorus;
    d) have the grab samples analyzed for fecal coliform content and total coliform content; and

e) report the results to the Director within 30 days of the end of the month during which the samples were taken.

25. 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.

26. The Licencee shall:
a) prepare "as constructed drawings" for the Development, including the effluent discharge pipeline, complete with final elevations, and shall label the drawings "as constructed"; and
b) provide to the Director, on or before April 30, 2010, two sets of "as constructed drawings" of the Development.

DECOMMISSIONING OR ALTERNATIVE PLAN

27. The Licencee shall submit, not less than six months prior to completion of the re-runnering project, a decommissioning or alternative plan for the membrane bio-reactor portable package sewage treatment plant and sludge dewatering system for the approval of the Director.

28. The Licencee shall implement and maintain the approved decommissioning or alternative plan for the membrane bio-reactor portable package sewage treatment plant and sludge dewatering system.

REVIEW AND REVOCATION

A. 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.

B. If the Licencee has not commenced construction of the Development within two years of the date of this Licence, the Licence is revoked.

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 11 of The Environment Act.

Tracey Braun

Tracey Braun, M. Sc.
Director
Environmental Assessment and Licensing Branch

Client File No.: 5423.00

Schedule A
To Environment Act Licence No. 2909

Effluent pH	Total Ammonia (mg/L)
6.50	48.83
6.60	46.84
6.70	44.57
6.80	42.00
6.90	39.16
7.00	36.09
7.10	32.86
7.20	29.54
7.30	26.21
7.40	22.97
7.50	19.89
7.60	17.03
7.70	14.44
7.80	12.14
7.90	10.13
8.00	8.41
8.10	6.95
8.20	5.73
8.30	4.71
8.40	3.88
8.50	3.20
8.60	2.65
8.70	2.20
8.80	1.84
8.90	1.56
9.00	1.32

Manitoba

Conservation

Environmental Stewardship Division
Environmental Assessment and Licensing Branch
123 Main Street, Suite 160, Winnipeg, Manitoba R3C 1A5
T 204 945-7100 F 204 945-5229
www.gov.mb.ca/conservation/eal
FAXED
CLIENT FILE NO.: 5423.00

December 23, 2009

Mr. W.A. (Bill) Brown
Manager
Manitoba Hydro
820 Taylor Avenue
Winnipeg MB R3M 3T1

Dear Mr. Brown:

Enclosed is **Environment Act Licence No. 2909** dated December 23, 2009 issued in accordance with The Environment Act to **Manitoba Hydro** for the construction and operation of the Development being a wastewater collection system, a membrane bio-reactor portable package sewage treatment plant, and a sludge dewatering system located in unsurveyed territory in 24-81-6EPM and with discharge of treated effluent into the Nelson River, in accordance with the Proposal filed pursuant to The Environment Act on August 18, 2009.

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 Robert Boswick, Environment Engineer at (204) 945-6030.

Pursuant to Section 27 of The Environment Act, this licensing 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

Tracey Braun, M. Sc.
Director
Environment Act

Enc.
c: Don Labossiere, Director, Environmental Operations
Larry Cleven, Wardrop Engineering
Public Registries

NOTE: **Confirmation of Receipt of this Licence No. 2909 *(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 a copy (letter only) to the Department by January 13, 2010.**

_____ _____

On behalf of Manitoba Hydro **Date**

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