THE ENVIRONMENT ACT
LOI SUR L'ENVIRONNEMENT

LICENCE

Manitoba

Licence No. / Licence n° 2952 R

Issue Date / Date de délivrance March 8, 2011

Revised April 13, 2012

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) / Conformément au Paragraphe 11(1)

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

KEEYASK HYDROPOWER LIMITED PARTNERSHIP, REPRESENTED BY THE GENERAL PARTNER, 5900345 MANITOBA LTD.:
"the Licencee"

for the construction, operation and maintenance of the Development being a 25 kilometre, two-lane, all-weather gravel road from Provincial Road 280 to the north shore of Gull Rapids, a start-up construction camp, and the first phase of a main construction camp, including wastewater treatment facilities for both camps, in accordance with the Proposal filed under The Environment Act, including the Environmental Assessment Report dated July 31, 2009, and additional information dated August 31, 2009, October 6, 2009, October 26, 2009, June 11, 2010, November 24, 2010, January 18, 2011, and January 24, 2011, and subject to the following specifications, limits, terms and conditions:

DEFINITIONS

In this Licence:

"Department" means Manitoba Conservation;

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

"Environment Officer" means an employee appointed as such by the Minister;

"Natural Resource Officer" means an employee appointed as such by the Minister;

"Partnership" means Keeyask Hydropower Limited Partnership, represented by the General Partner, 5900345 Manitoba Ltd.;

"waterbody" means any body of flowing or standing water, whether naturally or artificially created, and whether the flow or presence of water is continuous, intermittent or occurs only during a flood, including but not limited to a lake, river, creek, stream, slough, marsh, swamp and wetland, including ice on any of them; and

"wetlands" means those areas where the water table is at or above the land surface for a long enough period each year to make the area capable of supporting aquatic or hydrophilic vegetation, and which have soils with characteristics indicative of wet conditions.

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 not affect any land during the construction and operation of the Development which is not leased or owned by the Partnership or where permission to use land or resources has not been acquired through reservation, easement, or permit issued by the Province of Manitoba.

2. The Licencee shall establish any fuel storage areas required for the construction and operation of the Development:
   a) a minimum distance of 100 metres from any waterbody; and
   b) in compliance with the requirements of ***Manitoba Regulation 188/2001,*** or any future amendment thereof, respecting ***Storage and Handling of Petroleum Products and Allied Products.***

3. The Licencee shall ensure fuel storage containers incorporate secondary containment in accordance with ***Manitoba Regulation 188/2001***, or any future amendment thereof, respecting ***Storage and Handling of Petroleum Products and Allied Products.***

4. The Licencee shall collect and dispose of all used petroleum products and other regulated hazardous wastes generated by the machinery used in the construction and operation of the Development in accordance with ***The Dangerous Goods Handling and Transportation Act.***

5. The Licencee shall, at all times during the construction of the Development, have available at the construction sites, materials to contain and recover spills of fuel and other fluids associated with construction machinery.

6. 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 pursuant to ***Manitoba Regulation 439/87***, respecting ***Environmental Accident Reporting***, or any future amendment thereof; and
   b) at the request of the Director, provide a follow-up report to the Director on a reportable environmental accident outlining the cause(s) and proposed corrective action to prevent reoccurrence.

7. The Licencee shall dispose of solid waste and non-reusable demolition and construction debris from the Development at a waste disposal ground operating under the authority of a permit pursuant to ***Manitoba Regulation 150/91*** respecting ***Waste Disposal Grounds,*** or any future amendment thereof, or a Licence pursuant to ***The Environment Act***.

8. The Licencee shall, during construction of the Development, dispose of all sewage and septage from on-site sanitary facilities in accordance with:
   a) ***Manitoba Regulation 83/2003***, respecting ***Onsite Wastewater Management Systems Regulation***, or any future amendment thereof; or
   b) this Licence.

9. The Licencee shall, during construction of the Development, adhere to the general recommendations on design, construction and maintenance of stream crossings as specified in the Manitoba Department of Natural Resources and federal Department of Fisheries and Oceans guidelines titled ***Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat, May 1996.***

10. The Licencee shall, prior to construction of the Development, obtain all permits and agreements as required by Manitoba Infrastructure and Transportation.

11. The Licencee shall, prior to construction of the Development, provide a copy of this Licence and the Keeyask Infrastructure Project Environmental Protection Plan (EPP) to the contractor and subcontractor(s) involved in the Development and ensure they have a working knowledge and understanding of the conditions in the Licence and prescriptions in the EPP.

SPECIFICATIONS, LIMITS, TERMS AND CONDITIONS

12. The Licencee shall, not less than two weeks prior to beginning construction of the Development, provide notification to the Environment Officer in Thompson and the Natural Resource Officer in Gillam responsible for the administration of this Licence of the intended starting date of construction, the names of the contractors responsible for the construction, and the names of the personnel responsible for onsite management of the project.

13. The Licencee shall, prior to commencement of clearing and construction activities for the Development, submit to the Director, a Keeyask Infrastructure Project Environmental Protection Plan (EPP). The EPP shall describe the approach to be used by the Licencee to monitor construction activities of the project to ensure that mitigative measures are applied systematically, and in a manner consistent with the commitments made in the Keeyask Infrastructure Project Environmental Assessment Report. Specifically, the EPP shall:
    a) describe the protocol for internal reporting on monitoring and compliance for the construction of the project;
    b) provide field construction personnel with clear instructions on the mitigation measures to be implemented and on the appropriate lines of communication and means of reporting to be followed throughout the full-life cycle of the project;
    c) summarize environmental sensitivities and mitigation actions, list emergency response plans and reporting protocols, describe a closure plan for borrow pits, including mitigation of potential hazards to public safety and mitigation to address land reclamation concerns; and
    d) provide specific information on waste management practices to be used during the construction phase of the project, including consideration of all liquid and solid wastes generated.

14. The Licencee shall, prior to construction of the Development, arrange a meeting with the construction Project Managers and the Northeast Region of Manitoba Conservation to review the EPP, pursuant to Clause 13 of this Licence. Written confirmation from the Director that the EPP is acceptable to Manitoba Conservation is required prior to the start of construction of the Development.

15. The Licencee shall, prior to construction, prepare for the approval of the Director, a report on monitoring programs to be undertaken in relation to the environmental practices outlined in the Keeyask Infrastructure Project Environmental Assessment Report and the EPP. The report shall:
    a) provide a description of the proposed activities for monitoring effects to the physical, aquatic, and terrestrial environments arising from the site preparation and construction of the Development; and
    b) describe the parameters to be measured, the methodology and frequency of measurement, references to established thresholds and sustainability indicators, where appropriate, and the protocol for reporting the results of monitoring of the environmental conditions affected by the Development to Manitoba Conservation.

16. The Licencee shall, during construction, implement the monitoring programs approved pursuant to Clause 15 of this Licence.

17. The Licencee shall report annually to the Director on the results of the monitoring programs as approved pursuant to Clause 15 of this Licence.

18. The Licencee shall, prior to construction of the Development, obtain a Water Rights Licence for any water well(s) associated with the development, pursuant to ***The Water Rights Act.***

19. The Licencee shall, prior to construction of the Development, obtain a Live Fish Handling Permit from the Fisheries Branch of Manitoba Water Stewardship for any fish relocating activities.

20. The Licencee shall flag and avoid environmentally sensitive sites and priority habitat as prescribed in the EPP, prior to commencing construction activities near the areas in which they occur.

21. The Licencee shall, during construction of the Development, provide nuisance wildlife training to construction personnel when required.

22. The Licencee shall, during construction of the Development, minimize impacts to active animal dens and bird nests as prescribed in the EPP.

23. The Licencee shall, during construction of the Development, discourage hunting and access near the Development.

24. The Licencee shall, during construction of the Development, minimize right-of-way clearing near water crossings, and confine construction activities to the cleared areas.

25. The Licencee shall, at the completion of construction, post wildlife crossing signs at both ends of the road.

26. The Licencee shall, during construction and operation of the Development, minimize impacts to surface drainage patterns, flows rates, and the function of wetlands.

27. The Licencee shall, during construction and operation of the Development, implement measures designed to minimize erosion and prevent the deposition of sediment into waterbodies.

28. The Licencee shall:
    a) immediately following construction, revegetate erosion prone areas with a mixture of native plant species and/or where necessary for erosion control purposes, non-invasive grasses and herb mixtures; and
    b) not exceed recommended amounts of nitrogen and phosphorous when fertilizing restored areas.

29. The Licencee shall construct and operate the start-up camp wastewater collection and disposal system in accordance with the Keeyask Infrastructure Project Environmental Assessment Report dated July 31, 2009, and additional information dated October 6, 2009, October 26, 2009, June 11, 2010, and

November 24, 2010, and in accordance with the specifications, limits, terms and conditions prescribed under Schedule A of this Licence.

30. The Licencee shall construct and operate the 2500-person construction camp wastewater collection system and sewage treatment plant in accordance with the Keeyask Infrastructure Project Environmental Assessment Report dated July 31, 2009, and additional information dated January 18, 2011 and January 24, 2011, and in accordance with the specifications, limits, terms and conditions prescribed under Schedule B of this Licence.

31. The Licencee shall obtain approval from the Director for any proposed alteration to this Development before proceeding with the alteration.

32. The Licencee shall, not later than six months following a decision not to proceed with construction of the Keeyask Generating Station, file a decommissioning plan for the Development for the approval of the Director. The plan shall report on the actions to be taken by the Licencee in decommissioning the Development, including the timing of decommissioning and the methods used to restrict access to the area.

33. The Licencee shall implement the plan approved by the Director pursuant to Clause 32 of this Licence. Implementation of the plan shall be carried out as described in the plan unless otherwise required or approved by the Director in writing.

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, 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.

C. If construction of the development has not commenced within five years of the date of this Licence, the Licence is revoked.

Tracey Braun, M.Sc.
Director
Environment Act

File No. 5420.00

Manitoba

Conservation and Water Stewardship

Climate Change and Environmental Protection Division
Environmental Approvals Branch
123 Main Street, Suite 160, Winnipeg, Manitoba R3C 1A5
T 204 945-8321 F 204 945-5229
www.gov.mb.ca/conservation/eal

CLIENT FILE NO.: 5420.00

April 13, 2012

Ryan Kustra
Manitoba Hydro
360 Portage Avenue
P.O. Box 815
Winnipeg MB R3C 2P4

Dear Mr. Kustra:

Manitoba Conservation and Water Stewardship has determined that an alteration, pursuant to Section 14(2) of *The Environment Act*, to Environment Act Licence No. 2952 is required.

An alteration to the licence is required as it has been determined that the potential negative environmental effects associated with the methods required to identify active caribou calving areas are greater than the anticipated benefits of avoiding them for this project. Therefore, the licence conditions that require identification of these areas, specifically Clauses 24 and 25, have been removed.

This alteration will require a change to the Keeyask Infrastructure Project Terrestrial and Aquatic Monitoring Plan dated October 2011. A revised version of this plan is requested as soon as possible.

Enclosed is revised **Environment Act Licence No. 2952 R** dated April 13, 2012 issued in accordance with The Environment Act to **Keeyask Hydropower Limited Partnership, represented by the General Partner, 5900345 Manitoba Ltd.** for the construction, operation and maintenance of the Development being a 25 kilometre, two-lane, all-weather gravel road from Provincial Road 280 to the north shore of Gull Rapids, a start-up construction camp, and the first phase of a main construction camp, including wastewater treatment facilities for both camps, in accordance with the Proposal filed under The Environment Act, including the Environmental Assessment Report dated July 31, 2009, and additional information dated August 31, 2009, October 6, 2009, October 26, 2009, June 11, 2010, November 24, 2010, January 18, 2011, and January 24, 2011.

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. A Notice of Alteration must be filed with the Director for approval prior to any alteration to the Development as licensed.

For further information on the administration and application of the Licence, please feel free to contact Jeff Fountain, Environment Officer, Northeast Region at (204) 677-6703.

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, M.Sc.
Director
Environment Act

Enc.
c: Don Labossiere, Director, Environmental Compliance & Enforcement
Pierce Roberts, Director, Northeast Region
Jason Fontaine, Aboriginal and Northern Affairs
Public Registries

NOTE: Confirmation of Receipt of this Licence No. 2952 R *(by the Licencee only)* is required by the Director of Environmental Approvals. Please acknowledge receipt by signing in the space provided below and faxing a copy (letter only) to the Department by April 27, 2012.

On behalf of Keeyask Hydropower Limited Partnership **Date**

****A COPY OF THIS LICENCE AND THE KEEYASK INFRASTRUCTURE PROJECT ENVIRONMENTAL PROTECTION PLAN MUST BE KEPT ON SITE AT THE DEVELOPMENT AT ALL TIMES****

SCHEDULE A TO ENVIRONMENT ACT LICENCE NO.: 2952

In accordance with Clause 31 of this licence, this schedule outlines the specifications, limits, terms and conditions for the construction, operation and maintenance of the start-up camp wastewater collection and disposal system.

DEFINITIONS

"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;

"approved" means approved by the Director in writing;

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

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

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

"disposal field" means a system of wastewater effluent chambers laid in a shallow excavation or trenches and covered with top soil for the treatment and disposal of wastewater effluent;

"effluent" means treated wastewater flowing or pumped out of the wastewater disposal system;

"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;

"influent" means water, wastewater, or other liquid flowing into the wastewater disposal system;

"loam type soil" means a soil composed of sand, silt, and clay type soils present within certain proportions;

"piezometer" means an instrument for measuring pressure head in a conduit, tank, or soil;

"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;

"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;

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

"wastewater effluent" means wastewater after it has undergone at least one form of physical, chemical or biological treatment.

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 wastewater disposal system; 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 wastewater collection and disposal system in such a manner that:
   a) all wastewater generated at the 125-person start-up camp is directed toward the wastewater disposal system or other approved sewage treatment facilities;
   b) only wastewater as defined in this Licence is discharged into the wastewater disposal system;
   c) sludge solids are disposed in a waste disposal ground operated under:
      i) a permit issued in accordance with ***Manitoba Regulation 150/91*** respecting ***Waste Disposal Grounds***, or any future amendment thereof; or
      ii) the authority of a Licence issued under The Environment Act; and
   d) 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 the wastewater collection system and wastewater disposal system such that freezing of the effluent in the pipes is prevented.

6. The Licencee shall install, operate and maintain the engineered wastewater effluent disposal field such that effluent is discharged through the disposal field with no surface breakout.

7. The Licencee shall not spill, or allow to be spilled, wastewater and/or sludge in the area around the wastewater disposal system.

8. The Licencee shall undertake a regular program of maintenance for the wastewater collection and disposal systems.

9. The Licencee shall obtain and maintain classification of the wastewater collection and disposal system pursuant to *Manitoba Regulation 77/2003* respecting *Water and Wastewater 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 carry out the operation of the wastewater collection and disposal system with individuals properly certified to do so pursuant to *Manitoba Regulation 77/2003* respecting *Water and Wastewater Facility Operators* or any future amendment thereof.

SPECIFICATIONS, LIMITS, TERMS AND CONDITIONS

11. The Licencee shall notify the assigned Environment Officer not less than two weeks prior

to beginning construction of the wastewater disposal system. The notification shall include the intended starting date of construction and the name of the Licencee's contact person at the construction site.

12. The Licencee shall not cover the various components of the wastewater disposal system in a manner that obscures them from view or interferes with inspection of the tank, or engineered wastewater effluent disposal field, without authorization from the assigned Environment Officer.

13. The Licencee shall install all chambers of the engineered wastewater disposal system on a minimum 0.3 metre thick layer of sand meeting ASTM C-33 sand grain size specifications existing or installed over a loam type soil layer that:
    a) is at least 0.3 metre thick;
    b) is comprised of not more than 85% sand type soil; and
    c) the uppermost surface of which is at least 1.0 metre above bedrock, the water table or a layer of impervious material at that location.

14. The Licencee shall operate and maintain the wastewater disposal system in such a manner that:
    a) the maximum daily flow rate is not in excess of 60 cubic metres over any 24-hour period;
    b) the organic loading is not in excess of 11.25 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 install and maintain a security fence around all components of the wastewater disposal system that are not buried or enclosed within secured buildings.

16. The Licencee shall not discharge effluent from the wastewater disposal system except to the engineered wastewater effluent disposal field.

MONITORING AND REPORTING SPECIFICATIONS

17. 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 wastewater disposal system; and
    b) other process parameters approved or required by the Director.

18. The Licencee shall, within three months of the date of this Licence, submit to the Director for approval, an engineered groundwater monitoring plan relating to the engineered wastewater effluent disposal field that:
    a) includes the installation and maintenance of piezometers to be installed around the engineered wastewater effluent disposal field to monitor groundwater characteristics in the soils underlying the field; and
    b) identifies:

i) how often and which groundwater characteristics will be monitored;
ii) who will monitor and report the groundwater characteristics;
iii) when groundwater monitoring will commence; and
iv) strategies designed to allow the engineered wastewater effluent disposal field to remain in compliance with this Licence, related regulations, and the Manitoba Water Quality Standards, Objectives, and Guidelines.

19. The Licencee shall implement the monitoring plan approved pursuant to Clause 17 of this Licence.

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

21. The Licencee shall, in case of physical or mechanical breakdown of the wastewater collection and disposal systems:
a) notify the Director immediately;
b) identify the repairs required to the wastewater collection and disposal systems; and
c) complete the repairs in accordance with the written instructions of the Director.

22. The Licencee shall:
a) prepare "as constructed drawings" for the wastewater disposal system and shall label the drawings "as constructed"; and
b) provide to the Director, within six months of the completion of construction of the wastewater disposal system, two sets of "as constructed drawings" of the wastewater disposal system.

DECOMMISSIONING

23. The Licencee shall submit, within one year prior to closure of the 125-person start-up camp, a decommissioning plan for the wastewater collection and disposal systems for the approval of the Director.

24. The Licencee shall implement and maintain the approved decommissioning plan for the wastewater collection and disposal systems.

SCHEDULE B TO ENVIRONMENT ACT LICENCE NO.: 2952

In accordance with Clause 32 of this licence, this schedule outlines the specifications, limits, terms and conditions for the construction, operation and maintenance of the 2500-person construction camp wastewater collection system and sewage treatment plant.

DEFINITIONS

"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;

"approved" means approved by the Director in writing;

"as constructed drawings" means engineering drawings complete with all dimensions which indicate all features of the wastewater collection system and sewage treatment plant as they have actually been built;

"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;

"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;

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

"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 oxygen demand usually associated with biochemical oxidation of carbonaceous organic material within 5 days at a temperature of 20°C, excluding the oxygen demand usually associated with biochemical oxidation of nitrogenous organic matter;

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

"headworks" means the initial structures and devices of the sewage treatment plant;

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

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

"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 the component of this development which consists of the central facility, of the wastewater treatment facilities, which contains all treatment processes exclusive of the wastewater collection system;

"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;

"waste disposal ground" means an area of land designated by a person, municipality, provincial government agency, or crown corporation for the disposal of waste and approved for use in accordance with Manitoba Regulation 150/91 or a Licence pursuant to The Environment Act;

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

"wastewater collection system" means the sewer and pumping system used for the collection and conveyance of domestic, commercial and industrial wastewater; and

"wastewater effluent" means wastewater after it has undergone at least one form of physical, chemical or biological treatment.

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 sewage treatment plant; 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 in such a manner that:
   a) all wastewater generated at the 2500-person construction camp 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) sludge solids are disposed in a waste disposal ground operated under:
      i) a permit issued in accordance with ***Manitoba Regulation 150/91*** respecting ***Waste Disposal Grounds***, or any future amendment thereof; or
      ii) the authority of a Licence issued under The Environment Act; and
   d) 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 the wastewater collection system and sewage treatment plant such that freezing of the effluent in the pipes 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.

7. The Licencee shall undertake a regular program of maintenance for the sewage treatment plant.

8. The Licencee shall obtain and maintain classification of the wastewater collection system and sewage treatment plant pursuant to *Manitoba Regulation 77/2003* respecting *Water and Wastewater 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.

9. The Licencee shall carry out the operation of the wastewater collection system and sewage treatment plant with individuals properly certified to do so pursuant to *Manitoba Regulation 77/2003* respecting *Water and Wastewater Facility Operators* or any future amendment thereof.

10. 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.

SPECIFICATIONS, LIMITS, TERMS AND CONDITIONS

11. The Licencee shall notify the assigned Environment Officer not less than two weeks prior to beginning construction of the sewage treatment plant. The notification shall include the intended starting date of construction and the name of the Licencee's contact person at the construction site.

12. The Licencee shall not cover the various components of the sewage treatment plant in a manner that obscures them from view or interferes with inspection of the sewage treatment plant without authorization from the assigned Environment Officer.

13. 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 1,700 cubic metres over any 24-hour period;
    b) the organic loading is not in excess of 450 kilograms of five-day biochemical oxygen demand over any 24-hour period; and
    c) the release of offensive odours is minimized.

14. The Licencee shall utilize UV lamps 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.

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

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

17. The Licencee shall not discharge effluent from the sewage treatment plant except to the main channel of the Nelson River downstream of the generating station and construction camp location.

18. The Licencee shall, prior to disposal at a waste disposal ground, subject all sludge to aerobic digestion, or an equivalent digestion process acceptable to the Director.

19. 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;

e) the concentration of unionized ammonia is in excess of 1.25 mg/L, expressed as nitrogen (N), at 15°C ± 1°C; and

f) if effluent is chlorinated, the total residual chlorine content of the effluent is in excess of 0.02 milligrams per litre, as determined by the monthly average.

MONITORING AND REPORTING SPECIFICATIONS

20. 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 sewage treatment plant;

b) pH, dissolved oxygen, temperature, and tank liquid levels of the digestion processes;

c) flow rates into and through the UV disinfection system; and

d) other process parameters approved or required by the Director.

21. 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.

22. The Licencee shall arrange for the taking of samples of influent sewage at the headworks and treated sewage effluent at the final discharge point.

23. The Licencee shall:
    a) take one 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 composite effluent sample analyzed for five-day carbonaceous biochemical oxygen demand, temperature, pH, ammonia and total suspended solids; and
    d) have the grab samples analyzed for fecal coliform content and total coliform content.

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

25. The Licencee shall:
    a) prepare "as constructed drawings" for the sewage treatment plant and shall label the drawings "as constructed"; and
    b) provide to the Director, within six months of approved commissioning of the sewage treatment plant, two sets of "as constructed drawings" of the sewage treatment plant.

26. The Licencee shall, during the first year of operation of the sewage treatment plant, obtain grab samples of the effluent which shall be analyzed and reported in accordance with Schedule "B-1" herein attached.

DECOMMISSIONING

27. The Licencee shall submit, within one year prior to closure of the 2500-person construction camp, a decommissioning plan for the wastewater collection system and sewage treatment plant for the approval of the Director.

28. The Licencee shall implement and maintain the approved decommissioning plan for the wastewater collection system and sewage treatment plant.

Schedule "B-1" to Schedule "B"

Initial Characterization of Wastewater

Facility Size: Very small (less than 500 m^3/day)
Facility Type: Sewage Treatment Plant - Continuous discharge

Effluent Sampling

During the first year of operation:
1. a grab sample shall be collected on a monthly basis; and
2. a grab sample shall be collected on a daily basis, if chlorine is used.

Effluent Analysis

1. Have the monthly sample analyzed for:
    a) the organic content as indicated by the five-day biochemical oxygen demand and expressed as milligrams per litre;
    b) the organic content as indicated by the five-day carbonaceous biochemical oxygen demand and expressed as milligrams per litre;
    c) the total suspended solids content expressed as milligrams per litre;
    d) the *Esherichia coli* (*E. Coli*) content as indicted by the MPN index and expressed as MPN per 100 millilitres per sample;
    e) the fecal coliform content as indicated by the MPN index and expressed as MPN per 100 millilitres per sample;
    f) the total coliform content as indicated by the MPN index and expressed as MPN per 100 millilitres per sample;
    g) total ammonia nitrogen expressed as milligrams per litre;
    h) nitrate-nitrite nitrogen expressed as milligrams per litre;
    i) total Kjeldahl nitrogen, TKN (ammonia + organic N) expressed as milligrams per litre;
    j) dissolved phosphorus expressed as milligrams per litre;
    k) total phosphorus expressed as milligrams per litre;
    l) Temperature; and
    m) pH.

2. Have the daily sample analyzed for Total Residual Chlorine (TRC), if required.

Effluent Reporting

1. Report the results to the Director, in writing or in an electronic format acceptable to the Director within 60 days of the sampling date. The report shall include the sampling date, sample temperature, the dates of the effluent discharge, and copies of the laboratory analytical results of the sampled effluent.