



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/envapprovals

FAXED

CLIENT FILE NO.: 5274.00

September 21, 2007

Denis Mallet
General Manager
FPM Peat Moss Co. Ltd.
422 Pallot Road
Inkerman NB E8P 1B5

Dear Mr. Mallet:

Enclosed is Environment Act **Licence No. 2783** dated September 21, 2007 issued in accordance with The Environment Act to **FPM Peat Moss Co. Ltd.** for the construction/installation, operation and reclamation of the Development eventual restoration of a peat moss development at Sprague Lake Bog, Caribou Southwest Bog and Northwest Angle Bog.

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 Andreas Oertel, Environment Officer at (204) 345-1447.

Pursuant to Section 27 of The Environment Act, this licencing 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: John Irwin, Eastern Regional Director
Andreas Oertel, EO
Millennium Public Library/Manitoba Eco-Network/Jake Epp Public Library
R.M. of Reynolds (As Registry) & (Office copy)
Shaun Moffatt, KGS Group

NOTE: Confirmation of Receipt of this Licence No. 2783 (*by the Licensee 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 back to the Department by September 27, 2007.

On behalf of FPM Peat Moss Co. Ltd.

Date

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

LICENCE

Licence No. / Licence n° 2783

Issue Date / Date de délivrance September 21, 2007

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

FPM PEAT MOSS CO. LTD.; "the Licencee"

for the construction/installation, operation and reclamation of the Development eventual restoration of a peat moss development at Sprague Lake Bog, Caribou Southwest Bog and Northwest Angle Bog. The Sprague Lake Bog Quarry Lease 1286 is 265.69 ha in size and located in portions of Sections 21, 22 and 27 Township 4, Range 16E. The Caribou Southwest Bog Quarry Leases 1117-1120 are 738 ha in size and located in Sections 13, 14, 23 and 24 Township 5, Range 15E and Sections 18 and 19 Township 15, Range 16E. The Northwest Angle Bog Quarry Leases 1288, 1893 and 1894 are 622.7 ha in size and located in portions of Sections 19, 20, 29, 30 and 31 Township 4, Range 16E all in the Unorganized Division No. 1 of Manitoba; in accordance with the Proposal dated June 15, 2007, and received by Manitoba Conservation under The Environment Act on June 19, 2007 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;

“**active mining area**” means any field within the project area of the Development, which has undergone preliminary induced drainage for access, and on which surface disturbance in preparation for peat mining has commenced, until such time as when the mined field has been isolated for water level control in preparation for the reclamation and restoration of the field;

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

“approved” means approved in writing;

“buffer zone” means a strip of undisturbed land comprised of in-situ vegetation;

“dangerous goods” means dangerous goods as defined in the *Manitoba Dangerous Goods Handling and Transportation Act*, and regulations issued thereunder;

“Director” means an employee of the department appointed as such by the Minister;

“drainage water” means surface or sub-surface water induced, by reason of constructed drains, to drain towards a final discharge point of the Development, but does not include surface runoff diverted around an active mining area nor preliminary induced drainage;

“effluent” means drainage water released into the environment;

“final discharge point” means an effluent quality control point designated as such through the provisions of this Licence, unless otherwise re-designated in writing by the Director;

“fugitive emissions” means suspended particulate matter windblown into the atmosphere and off-site from any source on-site of the Development;

“particulate matter” means any finely divided liquid or solid matter other than water droplets;

“peat or peat moss” means the moderate to heavily decomposed organic matter of dead vegetation found primarily in the fens and bogs of wetland environments, that has accumulated in varying depths by depositional means over a long period of time;

“peat mining” means the excavation, harvesting or removal of peat or peat moss for commercial purposes;

“preliminary induced drainage” means induced surface and subsurface drainage, off an area intended to be mined, to the extent as may be required to facilitate access to, and the construction of, sedimentation ponds incorporating final discharge points;

“project area” means all that area within the outer perimeter boundaries of the Quarry Leases shown in Appendix 'B' attached to this Licence;

“reclamation” means the activity which focuses on the after-use of mined peatland sites;

“**restoration**” means the re-establishment of a mined peatland site as a peatland with a functioning natural ecosystem with characteristics as close as possible to pre-mining conditions;

“**septage**” means the sludge produced in individual on-site sewage disposal systems such as septic tanks;

“**sewage**” means sewage as defined in *Manitoba Regulation 95/88R*, or any future amendment thereto, respecting private sewage disposal systems and privies;

“**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; and

“**wastewater**” means any liquid containing a pollutant (as defined in *The Environment Act*) which is designated for release into the environment.

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. 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.

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; and
- (b) ensure that all analytical determinations are undertaken by an accredited laboratory.
3. The Licencee shall report all the information requested through the provisions of this Licence in a manner and form acceptable to the Director.

SPECIFICATIONS, LIMITS, TERMS AND CONDITIONS

Respecting the Pre-Development Phase

4. The Licencee shall:
- (a) before commencing any surface disturbance or preliminary induced drainage of an intended mining area within the project area, and subject to Sub-clause 7(a)(iii) of this Licence, conduct, compile and submit to the Director for approval, such wildlife, habitat and/or vegetation surveys as deemed necessary by the Regional Operations Division of Manitoba Conservation for the specific area and time of year, whereby the Regional Operations Division of Manitoba Conservation should be contacted well in advance for instructions or direction on which surveys will be required; and
- (b) before commencing and undertaking any surface disturbance or preliminary induced drainage of an intended mining area within the project area:
- (i) transplant any visible rare, endangered or threatened species of vegetation which may be encountered on the site, to another equally suitable site in consultation with the Regional Operations Wildlife Manager; and
- (ii) upon the completion of any transplantation activity, advise the Director, in writing, of the type and number of any plant species so transplanted and the location to which they were transplanted.

Respecting Access Road Construction

5. The Licencee shall not create any new borrow pit(s) for the construction of the access/haulage roads without prior consultation with, and the written concurrence of, the Regional Operations Division of Manitoba Conservation.
6. The Licencee shall construct any stream crossing for the new access roads, following the *Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat* (DFO and MNR, 1996).

Respecting Land Use and Operational Activities

7. The Licencee shall restrict construction and operational activities related to the Development to:
 - (a) those lands to which the Licencee possesses:
 - (i) surface rights, or complete ownership, or a signed agreement with another person or legal entity respecting the use of any land to which that person or legal entity possesses the surface rights or complete ownership, wherein the agreement clearly identifies the party which accepts full responsibility for any environmental liabilities incurred by the activities of the Licencee;
 - (ii) applicable work permits and timber cutting permits, as may be required by Manitoba Conservation; and
 - (iii) authorization for surface disturbance from the Director through Schedule 'C', attached to this Licence, which Schedule the Director may amend from time to time upon the receipt from the Licencee of satisfactory reports on wildlife, habitat and vegetation surveys conducted on the specific land areas within the overall project area, excepting:
 - (1) that area of roadway allowance for all new access/haulage roads; and
 - (2) such minimal disturbance as may be necessary to provide for adequate preliminary induced drainage off any undisturbed phased-in area intended for mining; and
 - (b) those lands within and adjacent to the project area which are at least 100 metres away from identified:
 - (i) riparian wildlife habitat along ecological reserves; and
 - (ii) riparian beaver flood habitat.
8. The Licencee shall restrict all mining of peat or peat moss within the project area of the Development to only those deposits located within:
 - (a) the boundaries of each Quarry Lease listed in Schedule 'C' attached to this Licence, and shown in Appendix 'B' attached to this Licence; and
 - (b) the boundaries as described in any future newly acquired Quarry Lease(s) of which the Director has been notified in writing, and has approved as an alteration to the licenced Development.
9. The Licencee shall, where practical, avoid draining and clearing any portion of the overall project area too soon in advance of its needs.
10. The Licencee shall design and construct the bog drainage system to ensure that the original water or groundwater level can be restored in the bog in the post-mining period.

11. The Licencee shall leave a buffer zone:
 - (a) along the interior of the entire perimeter of the project area (excepting the right-of-way allowance of the bog road) having a width of at least 100 metres and possessing a minimum of 50 centimetres in depth of peat; and
 - (b) along such corridors within the project area, and to such a width as may be specified in writing by the Director in consideration of any recommendation(s) received from the Regional Operations Division Integrated Resource Management Team of Manitoba Conservation respecting a desirability for any windbreak or habitat corridors.

12. The Licencee shall maintain at least 1.0 metre of in-situ peat throughout the bottom of any active mining area unless evidence provided by the Licencee, and satisfactory to the Director and the Regional Operations Division Integrated Resource Management Team of Manitoba Conservation, suggests that a residual depth of less than 1.0 metre but greater than 0.5 metres will not adversely affect the effluent quality leaving the Development, nor compromise the optimum regrowth rate of vegetation or otherwise adversely affect the reclamation objective of restoring the mined bog area(s) of this Development to a functioning wetland that may eventually succeed back to a sphagnum bog.

13. The Licencee shall, prior to commencing the surface disturbance of an undisturbed peat mining area that has been authorized to be prepared for mining, meet with and present to the Regional Operations Division Integrated Resource Management Team of Manitoba Conservation the mining plan for the newly authorized area, outlining and detailing
 - (a) the proposed drainage ditches;
 - (b) the proposed periphery and corridor buffer zones, where or if applicable;
 - (c) the depth of peat versus the proposed depth of mining; and
 - (d) the projected rates of water release, the projected effluent quality and the projected water quality impact on Lake of the Woods and the Whitemouth River, based on the compiled and reported sampling data collected pursuant to this Licence up to the time of the meeting;whereupon any outstanding concerns brought to the attention of the Director by the Regional Operations Integrated Resource Management Team of Manitoba Conservation may be addressed through a revised conditional authorization of disturbance for the affected area.

14. The Licencee shall:
 - (a) implement a progressive reclamation or restoration program in each mined out field of the project area of the Development which is designated for restoration, and encourage the progressive restoration with appropriate water level controls and the transplanting of appropriate vegetation from undisturbed areas of the Development, in a manner consistent with a Closure Plan approved by the Director of the Mines Branch; and

(b) consult a specialist in restoration ecology for Manitoba if the annual monitoring of the progression of the vegetation carpet, in any field undergoing restoration, suggests a progression rate which is unsatisfactory to the Director.

15. The Licencee shall not import wood bark which contains live pine shoot beetles in the egg, larva or adult stages.

Respecting Wildlife Habitat

16. The Licencee shall, where any potential wildlife habitat losses have been identified by Manitoba Conservation, consult with the Regional Operations wildlife staff of Manitoba Conservation with respect to the mitigation of the losses, and carry out any agreed upon mitigation measures to the satisfaction of the Director.

Respecting Drainage and Liquid Discharges

17. The Licencee shall not construct any engineered drains associated with the Development, nor release any drainage water from the Development, without the prior receipt of a Drainage Permit from the Water Stewardship Branch.

18. The Licencee shall:

(a) before commencing any drainage off a Quarry Lease area which borders the periphery of the project area shown in Appendices 'B' and 'C' attached to this Licence, place a series of five piezometers at distances of approximately 20, 40, 60, 80 and 100 metres from the outer edge of the site to be drained, and where necessary two separate locations acceptable to the Director (for Caribou Southwest Bog and Northwest Angle Bog), along a line parallel to the direction of the flow of groundwater into the site of the Development being drained; and

(b) whereupon evidence indicates that:

(i) the zone of measurable groundwater drawdown extends beyond the 100 metre mark; or

(ii) any existing piezometers no longer serve an area which is being actively drained; place additional or alternate piezometers at such locations and such distances as may be specified by the Director;

until the Director is satisfied that no additional piezometers are required.

19. The Licencee shall:

(a) prevent, as much as practical, natural surface runoff water from outside the boundaries of any active mining area of the Development by diverting such surface runoff water around the perimeter of the active mining area(s) of the Development;

- (b) subsequent to the commencement of preliminary induced drainage of an undisturbed area for reasons of access and the construction of sedimentation ponds, and prior to and throughout the activation of the respective undisturbed area through the commencement and the undertaking of surface disturbance or peat mining within the respective area, direct all drainage water associated with such an active mining area of the Development through one or more sedimentation ponds that are designed and constructed to achieve the effluent quality criteria specified in this Licence;
 - (c) release the effluent from each sedimentation pond through a final discharge associated with the sedimentation pond(s);
 - (d) register with the Director a list of all active final discharge points and their locations, and maintain the registered list in a current status at all times; and
 - (e) release effluent from the Development through a final discharge point registered as active with the Director.
20. The Licencee shall:
- (a) design and construct each final discharge point to facilitate the termination, if necessary, of the release of any effluent from the Development; and
 - (b) design and equip each final discharge point with a manual flow rate measuring device, satisfactory to the Director, and adequate to measure the full range of instantaneous rates of discharge as may be expected to be released into the environment.
21. The Licencee shall not release any effluent from the Development where the release of the effluent would:
- (a) cause a downstream flooding condition; or
 - (b) contribute to a forecast downstream flooding condition; or
 - (c) further aggravate an existing flooding condition prevailing at that time; downstream along the receiving Harrison Creek or other water bodies.
22. The Licencee shall not release any effluent from the Development if the quality of the effluent, as determined from the analysis of any grab sample taken of the effluent, is such that:
- (a) the pH is less than 5.0 pH units;
 - (b) the pH of the effluent is causing, or contributing to, the pH of the receiving water at sampling sites C1 and C2, as shown in Appendix 'B' attached to this Licence, to fall below the lesser of 6.5 pH units; or
 - (c) the suspended solids concentration is greater than 30 milligrams per litre.
23. The Licencee shall not release any effluent from the Development of such quality and quantity such as to:

- (a) cause the water quality of either the Whitemouth River, Harrison Creek or the Lake of the Woods, as determined at the receiving stream water quality sampling sites C1 and C2 Appendix 'B', to be adversely affected relative to the current *Manitoba Water Quality Standards, Objectives, and Guidelines*; or
- (b) cause naturally elevated levels (i.e. in excess of the current *Manitoba Water Quality Standards, Objectives, and Guidelines*) in these surface waterways to be further degraded.

24. The Licencee shall:

- (a) comply with Manitoba Regulation 95/88R, or any future amendment thereto, in regards to any sewage generated at the Development; and
- (b) dispose any sewage and septage transported off-site from the Development into a facility which has an Environment Act Licence or Environment Act Permit authorizing the acceptance of sewage and septage.

Respecting Air Emissions

25. The Licencee shall limit the discharge of fugitive emissions from any source within the site of the Development such that:
- (a) distinct plume forming fugitive emissions do not exceed an opacity of 5%;
 - (b) non plume forming fugitive emissions are not visible at any time; and
 - (c) the ambient air quality downwind of the Development is protected to the extent that the measured ground level concentration of suspended particulate matter is not greater than 120 micrograms per cubic metre of air averaged over a 24-hour period;
- when measured or viewed in the atmosphere beyond the property boundary of the Development.

Respecting Solid Wastes

26. The Licencee shall not deposit solid waste, as defined in *Manitoba Regulation 150/91* respecting waste disposal grounds, into the environment except into a waste disposal ground operating under the authority of;
- (a) a permit issued pursuant to *Manitoba Regulation 150/91*, or any future amendment thereto; or
 - (b) a Licence issued pursuant to The Environment Act.

Respecting Recyclable Wastes

27. The Licencee shall not deposit bulky metallic wastes, used tires, used oil or other fluid lubricants, hydraulic fluids, or any other class of recyclable waste substances as may be specified by the Director, into the environment except into:
- (a) a facility or infrastructure which accepts such materials for recycling; or

- (b) a waste disposal ground operating under the authority of:
 - (i) a permit issued pursuant to Manitoba Regulation 150/91, or any future amendment thereto; or
 - (ii) a Licence issued pursuant to The Environment Act;where these recyclable substances are kept segregated from each other and are not buried (unless otherwise specified by the Director) so as to facilitate their future recycling.

Respecting Dangerous Goods or Hazardous Wastes

- 28. The Licencee shall not store any petroleum products and allied products, dangerous goods or hazardous wastes at, or in the immediate vicinity of the active area(s) of the Development without secondary containment.
- 29. The Licencee shall comply with all the applicable requirements of:
 - (a) the more stringent requirements of the "*National Fire Code of Canada 1995*" and *Manitoba Regulation 188/2001* or any future amendment thereto, respecting the storage and handling of petroleum products and allied products; and
 - (b) *The Manitoba Dangerous Goods Handling and Transportation Act*, and regulations issued thereunder, respecting the handling, transport, storage and disposal of any dangerous goods brought onto or generated at the Development.

Respecting Contingency Plans and Emergency Response Plans

- 30. The Licencee shall:
 - (a) within two months of the date of issuance of this Licence, submit to the Director, for approval, a proposed Emergency Response Plan, consistent with the "*Industrial Emergency Response Planning Guide* (MIAC, September, 1996)" to address such matters as fire suppression and control, and cleaning up spills involving dangerous goods (hazardous chemicals, petroleum products, etc.); and
 - (b) continually maintain the approved Emergency Response Plan in a current status for the duration of the Development.
- 31. 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) at the request of the Director, provide a follow-up report to the Director on a reportable environmental accident outlining the cause(s) and propose corrective action to prevent reoccurrence.

Respecting Operational Monitoring, Record Keeping and Reporting

- 32. The Licencee shall, throughout the draining and mining of the project area of the Development, but only under conditions of effluent release:

- (a) once per week, collect samples of the effluent at each final discharge point, and have them analyzed at such frequencies as specified in Schedule 'A' attached to this Licence, for such substances and characteristics as specified in Schedule 'B' attached to this Licence;
 - (b) once per week, measure and record the flow rate (in cubic metres per second) of effluent being released from each final discharge point of the Development, and use the weekly flow rate measurements to determine an estimate of the total monthly volumes (expressed in cubic metres) of effluent released from each final discharge point of the Development; and
 - (c) collect representative samples of the waters in the streams at sites C1 and C2, identified in Appendix 'B' attached to this Licence, at such frequencies as specified in Schedule 'A' attached to this Licence, and have the samples analyzed for such substances and characteristics as specified in Schedule 'B' attached to this Licence;
- unless otherwise specified in writing by the Director.
33. The Licencee shall, throughout the draining and mining of the peripheral Quarry Lease areas of the overall project area, measure the elevation of the water table in the installed piezometers, as well as at a representative reference location in the drainage ditches at the Development, in accordance with the frequency specified in Schedule 'B' attached to this Licence for such duration until otherwise specified by the Director.
34. The Licencee shall establish at least nine observation stations on each mined out field and annually monitor and record the progress of regrowth of sphagnum moss and other introduced plants in a manner satisfactory to the Director.
35. The Licencee shall submit to the Director the analytical data, and flow rate measurements and monthly estimates, and water table elevation data determined and recorded in accordance with Clauses 32 and 33 of this Licence no later than 30 days following the end of the month in which the samples and measurements were taken.
36. The Licencee shall upon and after February 28, 2009 submit an annual summary of all the analytical values, measurements and estimates determined and recorded pursuant to Clauses 32, 33 and 34 of this Licence, to the Director, in writing and in an electronic format acceptable to the Director, for the preceding year's data.

Respecting Decommissioning, Reclamation and Restoration

37. The Licencee shall:
- (a) comply with *Manitoba Regulation 67/99*, or any future amendment thereto, issued under The Mines and Minerals Act, respecting closure plans for mining developments, particularly in regards to addressing environmental issues including, but not necessarily limited to:

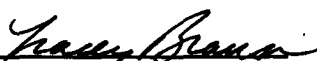
- (i) the implementation of any progressive restoration of those peat bog areas of the Development where mining has reached its terminal depth;
 - (ii) the decommissioning of any temporary fuel storage site used at or for the Development;
 - (iii) the decommissioning of access roads, stream crossings and power lines constructed for the Development;
 - (iv) the decommissioning, reclamation and restoration of the overall affected operational area of the Development;
 - (v) the restoration or replacement of wildlife or fish habitats disturbed, adversely affected or lost as a result of the Development;
 - (vi) the containment, control or treatment of pollutants originating from the mine site of the Development; and
 - (vii) the strategy, scope, frequency and duration of post-closure environmental monitoring activities at the mine site;
- where applicable;
- (b) provide the Director with:
 - (i) written notice three months in advance of any imminent permanent closure of this Development; or
 - (ii) an immediate written notice of any sudden decision to temporarily close this Development whereby the Development would be placed in a mothballed state for re-opening in the foreseeable future; and
 - (c) in the course of progressive reclamation and restoration, as well as upon the permanent or temporary closure of this Development, implement the environmentally related aspects of the Closure Plan approved pursuant to *Manitoba Regulation 67/99*, or any future amendment thereto, to the satisfaction of the Director.

REVIEW OR 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 three years of the date of this Licence, this Licence is revoked.

FPM Peat Moss Co. Ltd.
Sprague Lake Bog, Caribou SW Bog & NW Angle Bog
Licence No. 2783
Page 13 of 21

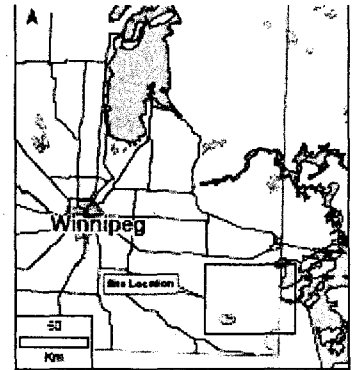
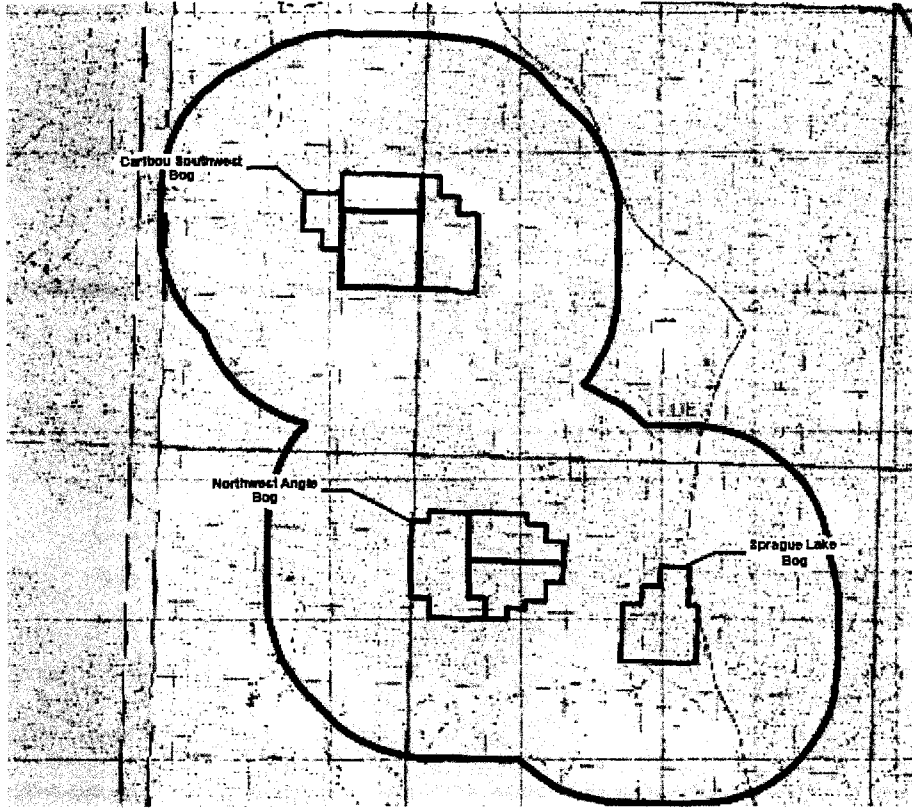
- C. If, in the opinion of the Director, new evidence warrants a change in the specifications, limits, terms or conditions of this Licence, the Director may require the filing of a new proposal pursuant to Section 11 of The Environment Act.





Tracey Braun, M.Sc.
Director
Environment Act

File: 5274.0

APPENDIX 'A' TO ENVIRONMENT ACT LICENCE NO. 2783

(Regional Map)



- Legend**
-  Project Study Area
 -  Regional Study Area
 -  Quarry Leases

APPENDIX 'B' TO ENVIRONMENT ACT LICENCE NO. 2783

(Project Area, Quarry Leases & WQ Sampling Stations)



Appendix "B"

Sprague Lake Bog

Sprague Lake Bog

APPENDIX 'B' Cont'd

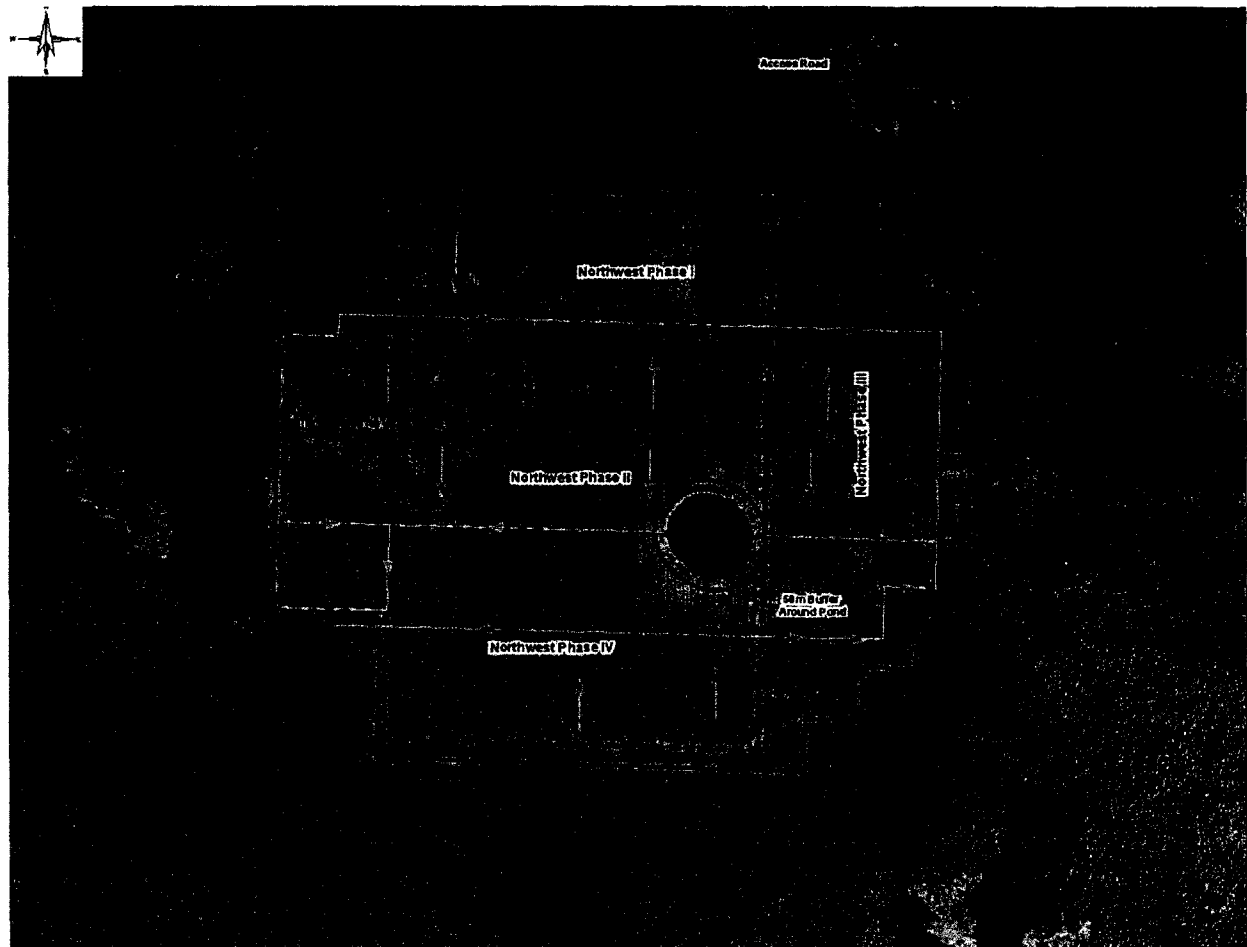


Appendix "B"

Caribou Southwest Bog

Caribou Southwest Bog

APPENDIX 'B' Cont'd

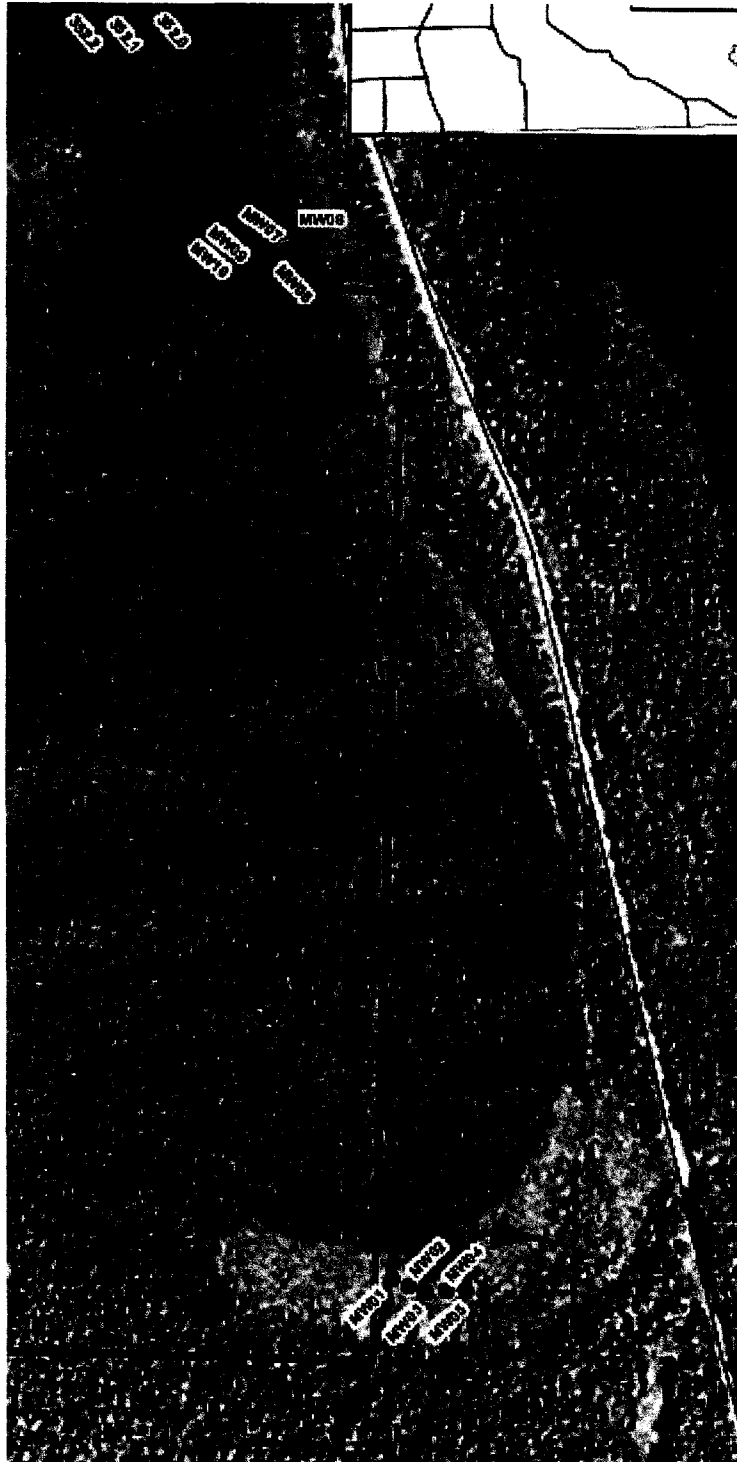


Appendix "B"

North West Angle Bog

North West Angle Bog

APPENDIX 'C' TO ENVIRONMENT ACT LICENCE NO. 2783



Sprague Lake Bog
Piezometer Locations

SCHEDULE 'A' TO ENVIRONMENT ACT LICENCE NO. 2783

(Sampling Requirements)

Area	Source	Location (see Appendix 'B')	Sampling Frequency *	Determinations or Analyses
Final Discharge Point	Effluent	S1, S2, S3, S4, S5 S6, S7, S8, S9, S10	weekly & 3x/year	See Schedule 'B'
Municipal Drain	Downstream Water	C1 and C2	3x/year	See Schedule 'B'
Receiving Waters	Downstream Receiving Water	C1 and C2	3x/year	See Schedule 'B'
Piezometers	Piezometers	Appendix "C"	3x/year	See Schedule 'B'

- * "weekly" means one sample every seven days, but on an operating day.
 "3x/year" means one sample every spring freshet, mid-summer and late fall.

Note: The Director reserves the right to make future alterations to this Schedule in the interests of effective environmental management.

SCHEDULE 'B' TO ENVIRONMENT ACT LICENCE NO. 2783

(Required Determinations and Analyses)

Sample Category							
	Effluent (weekly)	Effluent (3x / Year)	Effluent (1x / Year)	Receiving Water (3x / Year)	Receiving Water (1x / Year)	Downstream Municipal Drain (3x / Year)	Wells (3x / Year)
Parameters / Characteristics / Data							
Sampling Date	X	X	X	X	X	X	X
Piezometric Water Table Elevation							X
Flow rate	X						
pH	X	X		X		X	
Total Alkalinity		X		X		X	
Acidity		X		X		X	
Conductivity		X		X		X	
Total Dissolved Solids		X		X		X	
Total Suspended Solids	X	X		X		X	
5-day Biochemical Oxygen Demand		X		X		X	
Calcium		X		X		X	
Magnesium		X		X		X	
Hardness		X		X		X	
Total Phosphorus (as P)		X		X		X	
Total Kjeldahl Nitrogen		X		X		X	
Total ammonia (as N)		X		X		X	
Nitrate + Nitrite (as N)		X		X		X	
Manganese		X		X		X	
Sulphates (as S)		X		X		X	
Total Aluminum		X		X		X	
Total Iron		X		X		X	
Total Zinc		X		X		X	
Total Chromium		X		X		X	
Total Nickel		X		X		X	
Total Cadmium		X		X		X	
Total Lead		X		X		X	
Complete Heavy Metals			X		X		

"3x / year" means once during the spring freshet, once during mid-summer, and once in late fall.

"1x / year" means once during mid-summer (i.e. at the same time that the 3x / year mid-summer sample is taken).

Note: The Director reserves the right to make future alterations to this Schedule in the interests of effective environmental management.

SCHEDULE 'C' TO ENVIRONMENT ACT LICENCE NO. 2783

(List of peat mining quarry leases associated with this development)

BOG	QUARRY LEASES	TOTAL QUARRY AREA (Ha)	PROPERTY OWNERSHIP
Sprague Lake Bog	QL- 1186	265.69	Crown Land
Caribou Southwest Bog	QL-1117	88.31	Crown Land
Caribou Southwest Bog	QL-1118	268.8	Crown Land
Caribou Southwest Bog	QL-1119	134.36	Crown Land
Caribou Southwest Bog	QL-1120	246.86	Crown Land
Northwest Angle Bog	QL-1288	268.67	Crown Land
Northwest Angle Bog	QL-1893	177.34	Crown Land
Northwest Angle Bog	QL-1894	176.74	Crown Land