Environment Act Licence

Manitoba
Environment and
Workplace Safety
and Health

Licence No. 1254
Issue Date March 8, 1989

In accordance with the Manitoba Environment Act (C.C.S.M. c. E125)

THIS LICENCE IS ISSUED TO:

CANAMAX RESOURCES INC. (MANITOBA POTASH PROJECT); APPLICANT

STAGE 2 LICENCE
DEVELOPMENT AND CONSTRUCTION

The following limits, terms, and conditions shall be complied with in connection with the development and construction of a potash mine and milling facility in the Rural Municipality of Russell:

1. The Applicant shall design and construct the tailings disposal facility in accordance with the objectives contained in the documents:

   - Manitoba Potash Project - Technical And Economic Feasibility Study - Volume VI Environmental, dated August, 1987;
   - Manitoba Potash Project - Technical And Economic Feasibility Study - Volume VI Environmental Appendix A;
   - February 17, 1988 letter to Mr. Mark Boreskie from Mr. C.H. Sambells of Kilborn Energy Inc.

   Any substantial variation from the objectives contained in the above documents shall be submitted to the Department of Environment and Workplace Safety and Health and the Department of Energy and Mines for review.

2. The Applicant shall construct the wastewater treatment lagoon system with clay or other suitable material such that all interior surfaces of the wastewater treatment lagoon system are underlain with a minimum of 1 metre of soil having a hydraulic conductivity of 1×10^{-7} centimetres per second or less.

3. The Applicant shall, prior to the construction of dykes for the wastewater treatment lagoon:

   a) remove all organic topsoil from the area where the lagoon dykes will be constructed; or

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3.-- Continued:

b) remove all organic material for a depth of 0.3 metres and a width of 3.0 metres from the area where the dyke will be built, providing all the lagoon dykes are lined with clay or other suitable material as required by Clause 2, to a minimum thickness of one metre measured perpendicular to the face of the side wall.

4. The Applicant shall design and construct all processing equipment at the milling facility to ensure that particulate concentration at any point of emission does not exceed 0.23 grams per cubic metre calculated at 25 degrees Celsius and 760 millimetres of mercury and corrected to 12 percent carbon dioxide for any process involving combustion.

5. The Applicant shall conduct monitoring of soils and vegetation in accordance with the general objectives outlined in Appendix "A" to this Licence. Specific details of the monitoring program are to be agreed to by the Applicant and the Department. The monitoring program is to be established and at least one set of samples collected prior to any construction of facilities.

6. Prior to applying for the Stage 3 - Operating Licence, the Applicant shall submit to the Minister:

a) a report on the definitive review of the application of alternative tailings management and disposal methods, in whole or in part, with specific focus on the technical, environmental and economic application of these methods as compared to conventional surface tailings disposal and including requirements and costs for post operation management and rehabilitation for each alternate method;

b) a specific plan for post operation management and rehabilitation of the surface tailings disposal facility including identification of a mechanism and responsibility to undertake and fund the post operation management and rehabilitation.

7. The Applicant shall not commence commercial operation at the potash mine and milling facility until a Stage 3 - Operating Licence is received.

E Connery

Honourable Ed Connery
Minister

FILE NO.: 2913.10

Appendix "A" to Licence No 1254

OBJECTIVES
BASELINE MONITORING
SOILS AND VEGETATION
FOR
POTASH MINE DEVELOPMENT
IN MANITOBA

- Permanent quadrat sites (1 m x 1 m) to be established at selected sites to measure quantifiable changes to vegetation composition and abundance over the years of development and operation.

- Visual surveys of foliage condition are to be carried out on a regular basis at permament sample sites. A damage class index is to be developed and used to provide estimates of tree and plant health and vitality. Estimates should be taken during the first two weeks of July for foliage, and early spring for flower and fruiting characteristics.

SOILS

A network of soil sampling sites is to be established at all vegetation monitoring locations. That is at each site located on the 8 transects radiating out from the mine and extending 5 km with locations at 500 m, 1 km, 2 km, 3.5 km, 5 km.

In the vicinity of the main tailings area and the principal direction of flow from this area, additional soil sampling sites are to be established.

Sampling sites and parameters to be sampled should be appropriately replicated and permanently marked to ensure a continuous monitoring capability.

Baseline data from surface to 1 metre depth should be extracted from soil pits, with an additional soil auger sample to 2 metres provided. In each pit a soil sample from surface to 5 cm, 5-10 cm, 30 cm, 50 cm are to be extracted and analysed for the following during the first year (pre-start-up) and at 3 years and 5 years.

Soil Elements for Analysis:

pH, salinity, N, P, K, SO_4, Ca, Mg, S, Cu, Fe, Ni, Cd and Al

Routine monitoring of soils on an annual basis is to occur for surface soil (0-5 cm), 5-10 cm, 30 cm, 50 cm depths for potassium (K) sodium (Na), and chloride (Cl) as well as pH. This sampling is to occur in the fall of each year as an early indicator of potential contamination.