



Water Resources  
Nunavut Regional Office  
P.O. Box 100  
Iqaluit, NU, X0A 0H0

April 13, 2012

Phyllis Beaulieu  
Licensing Administrator  
Nunavut Water Board  
P.O. Box 119  
Gjoa Haven, NU, X0A 1J0

Your file - Votre référence  
3BC-AMD----  
Our file - Notre référence  
CIDM# 521200

**Re: 3BC-AMD---- Analogue Mission to Determine the Genesis of Methane  
on Mars – Dr. Osinski, University of Western Ontario – New  
Application**

Dear Phyllis Beaulieu:

Aboriginal Affairs and Northern Development Canada (AANDC) has performed a review of the new water licence application, 3BC-AMD---- submitted by Dr. Gordon Osinski (University of Western Ontario) to the Nunavut Water Board (NWB). The following advice has been provided pursuant to AANDC's mandated responsibilities for the enforcement of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NWNSTRA) and the *Department of Indian Affairs and Northern Development Act* (DIAND Act). In conducting our review, AANDC referred to the documents on the NWB's FTP-site under 3BC-AMD----.

Should you have any questions or comments, please do not hesitate to contact me at (867) 975-4738 or by e-mail at [Jean.Allen@aandc-aadnc.gc.ca](mailto:Jean.Allen@aandc-aadnc.gc.ca)

Sincerely,

*Original Signed By*

Jean Allen  
Water Management Specialist

Cc. Murray Ball, Manager of Water Resources, AANDC  
Andrew Keim, A/Manager of Field Operations, AANDC



## **Technical Review Memorandum**

To: Phyllis Beaulieu – Manager of Licensing, Nunavut Water Board

From: Jean Allen – Water Management Specialist, AANDC

---

**Re: 3BC-AMD---- Analogue Mission to Determine the Genesis of Methane on Mars – Dr. Osinski, University of Western Ontario – New Application**

### **A. Project Description**

On March 13, 2012, the Nunavut Water Board (NWB) distributed Dr. Osinski's renewal application for a Type B water licence for water use and waste disposal in association with the Analogue Mission to Determine the Genesis of Methane on Mars Project. The applicant has requested a licence term of 2 months (June to August 2012) for scientific and technical research (robotics and scientific instrument testing) at Lost Hammer Spring on Axel Heiberg Island, Nunavut.

Dr. Osinski proposes to erect a temporary camp (79°4'32"N, 90°12'34"W) to accommodate up to 12 people for 2 weeks (July 4 to July 18, 2012). The camp is situated on Crown land, approximately 340 km northwest of Grise Fiord. Transportation to the site will be by twin otter to Strand Fiord and then by helicopter to the Lost Hammer Spring site.

Camp water will be collected in jugs from a small creek which runs north of the camp or a large river to the west of the camp. The estimated quantity of water required is 0.5 m<sup>3</sup> per day for domestic use only. Sewage will be incinerated then transported to the Polar Continental Shelf Program (PCSP) in Resolute Bay for disposal. Greywater will be disposed of in a sump 300 m from water bodies and 20 m from camp. Combustible solid waste will be incinerated and non-combustible solid waste will be transported to PCSP for disposal. Empty barrels will be transported to PCSP for reuse.

### **B. Results of Review**

AANDC Water Resources Division offers the following comments/recommendations for the Board's consideration.

#### **1. Waste Management**

- According to block 15 in the General Water Licence Application and Question 32 in the Supplementary Questionnaire, sewage and combustible solid waste will be incinerated in a can. It is noted that



question 33 in the Supplementary Questionnaire that requests a description of the incineration system on site was left unanswered. AANDC recommends that the applicant describe the incineration system proposed to incinerate sewage and combustible solid waste. AANDC does not encourage open burning of solid waste and recommends that all combustible waste be incinerated in an approved incinerator and conducting in accordance with Environment Canada's Technical Document for Batch Waste Incineration.

- According to block 15 in the General Water Licence Application and Question 32 in the Supplementary Questionnaire, empty fuel drums, non-combustible solid waste, and any remaining waste following incineration will be transported to PCSP for disposal or reuse. AANDC recommends that the applicant submit written authorization from PCSP confirming that they will accept the proposed types and quantities of waste for proper disposal on the PCSP site.

## **2. Spill Contingency Plan**

- Section (d) states that contaminants will be stored on an impermeable liner on flat ground, far from any open water. AANDC recommends that the applicant identify how far contaminants will be stored from open water. A distance of at least 100 m is recommended.
- Section (i) states that shovels will be located at the nearby camp. It is unclear how far the fuel storage site is from the camp. The applicant should provide the distance between the camp and fuel storage site and depending on this distance, it may be recommended that at least one shovel be located within the spill kit in case of an emergency.
- Section (f) describes a containment measure but no other preventative measures have been described in the plan including portable drip trays and daily visual inspections. AANDC recommends that the applicant consider the preventative measures listed in the Guidelines for Spill Contingency Planning (INAC, 2007).
- AANDC recommends that spills of any amount be reported in the annual report.