



Indian and Northern  
Affairs Canada

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Submitted Via E-Mail  
Our File: 2BE-MSX0712  
Your File: \_\_\_\_\_  
CIDM #193769

January 21, 2008

Mr. Gary Vivian, P. Geol.  
Aurora Geosciences Ltd.  
3502 Raccine Road  
Yellowknife, NT X1A 3J2  
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**RE: Water License Inspection of the Muskox Property on August 12<sup>th</sup>, 2007**

The Water Resources Officer (WRO) appreciates the assistance and cooperation provided by Mr. Vic Boland, Camp Manager who accompanied the Inspector during the inspection of the camp site.

The following report is based on observations made at the time of the inspection, results of samples collected during the inspection and items outlined during a review of the terms and conditions of the license with Mr. Boland. Immediately following the inspection an Industrial Water Use Inspection Report outlining any concerns was signed with the Inspector.

**Part A: Scope and Conditions**

Issues were found with respect to the location of the camp as it relates to the information contained within the current license. The current water license states the location of camp should be located at latitude 66°59.2 N and longitude 114°54. W. In fact the camp was located at 66 59 09.7 North and 114 53 51.4 West. This is in fact a variation of only 127 Meters however; the camp has been constructed immediately adjacent to and on the shore of, an unnamed lake well within the required 100 m setback from any water source.

Additionally, Part C of the current license states that all water for domestic use will come from McGregor Lake. McGregor lake is located a minimum of 10 Km South west of the current location making this an obvious error.

The Licensee is asked to provide as an addendum to the 2007 Annual report, information to provide clarity on this discrepancy. If required an amendment to the current license should be applied for from the Nunavut Water Board.

**Part B: General Conditions**

The issue of water use fees and security were not included within the context of this inspection.

A review of the Nunavut Water Board FTP – Public Registry was conducted during the writing of this report. As this license was issued on the 16<sup>th</sup> of May 2007 an annual report has not yet been required by the licensee.

The Licensee is reminded that an annual report is required to be filed with the Nunavut Water Board by March 31<sup>st</sup> 2008 for the year ending December 31<sup>st</sup> 2007. The annual report must include but should not be limited to those items listed in Section 2 i through vi of this Part as well as any supplementary information required by either the Nunavut water Board or an Inspector. The Licensee is encouraged to provide all information in the annual report on any on-going Progressive Reclamation activities undertaken during the year, including photographs and records of materials hauled off site.



Additionally as required under Part B of the license, the licensee has a responsibility to install and maintain flow meters on all intake systems to accurately record water consumption volumes.

The licensee is reminded that it is the responsibility of the licensee to ensure that any documentation submitted by the licensee to the Nunavut Water Board is acknowledged by the Manager of Licensing.

### **Part C: Conditions Applying to Water Use**

As noted above, clarification is required on both the location of the camp as well as the potable water source.

At the time of the inspection the licensee was allocated the use of 18 Cubic Meters water for all purposes. An inspection of the intake was conducted, it was noted that there were no meters installed for recording accurately volumes of water used by the licensee. This must be addressed by the next inspection.

Potable samples were collected at the time of the Inspection. No issues were noted in the results.

### **Part D: Conditions Applying to Waste Disposal**

The Licensee is reminded that section 7 of this Part of the current license requires as follows;

*7. The Licensee shall contain all greywater in a sump located at a distance of at least thirty (30) metres above the ordinary high water mark of any water body, at a site where direct flow into a water body is not possible and no additional impacts are created, unless otherwise approved by the Board,.*

During the period of Inspection the Camp sump was found to be within the 30 meter set back required by the license. This was brought to the attention of Mr. Boland. The Licensee is reminded that any sump must be constructed to allow settling of solids and be of sufficient size to prevent overflowing. This is to be addressed by the period of the next inspection.

Additionally, during the period of inspection the Inspector noted that a barrel was being used to dispose of combustible wastes. The Licensee is reminded that section 2 of this part states as follows;

*2. The Licensee shall not practice open burning or on-site land filling of domestic waste, unless otherwise approved by the Board*

Additionally and for clarity the current license also states in Section 3 the following;

*3. The Licensee is authorized to dispose of all acceptable food waste, paper waste and untreated wood products in an incinerator.*

The Inspector at this time issued a verbal direction to Mr. Boland to cease this activity and have installed an incinerator by the period of the next inspection. The Licensee is reminded to ensure that the capability of any incinerator unit installed on site meets the Canada-wide Standards for Dioxins and Furans and the Canada-wide Standard for Mercury Emissions.

The Licensee is reminded that Section 6 of this Part outlines the requirements of the licensee with respect to hazardous and other wastes. Section 6 reads as follows;

*6. The Licensee shall maintain records of all waste backhauled and records of confirmation of proper disposal of backhauled waste. These records shall be made available to an Inspector upon request*



The Licensee is reminded to include in the 2007 annual report, due on March 31<sup>st</sup>, 2008, a list of all hazardous materials shipped out of the camp, the treatment received, and the location of the approved treatment facility to which they were sent. Shipping and receiving invoices are not required so long as the records are available for inspection during the 2008 inspection season.

The Licensee is also reminded that section \* of the current license outlines the requirement for Latrine pits to be located a minimum of 30 meters from the ordinary high water mark of any water Board. During the period of inspection it was noted that this was not the case and given the proximity to the potable water source it is recommended that the camp and latrines be moved to comply with the terms and conditions of the existing license.

#### **Part E: Conditions For Camps, Access Infrastructures and Operations**

The Location of the camp is of concern for the Inspector. The camp being constructed on a peninsula extending out into the lake is contrary to the terms and conditions of the current license. It is recommended that the camp be moved to bring it into compliance by the period of the next inspection.

#### **Part F: Conditions Applying To Drilling Operations**

During the period of inspection one drill site was visited. The Inspector noted that no drill sump had been created to capture drill cuttings or sludge from the returns off the drill. This had resulted in drill cuttings and wastes building up under the drill platform and migrating with the returned downstream into the surrounding wetland area. Drill cuttings and a film of oil was noted over 50 meters from the drill platform and appeared to be continuing to migrate downhill toward an unnamed lake.

This was brought to the attention of both Mr. Boland Mr. David White, Project Geologist.

Additionally, during the period of inspection of the drill site the following were noted;

- No secondary containment was present.
- Fuel for the water pump was stored within the 30 meter setback from the ordinary high water mark
- A sheen that was not identified was noted in pools of water and cuttings downstream of the drill platform

All of these issues were brought to the attention of Mr. Boland Mr. David White at the time of the inspection.

Immediately following the inspection of the drill site a verbal direction to take remedial action on these sites was provided to Mr. Boland. Section 2 of the current license reads as follows;

*2. The Licensee shall ensure that all drill waste, including water, chips, muds and salts (CaCl<sub>2</sub>) in any quantity or concentration, from land-based and on-ice drilling, shall be disposed of in a properly constructed sump or an appropriate natural depression located at a distance of at least thirty (30) metres from the ordinary high water mark of any adjacent water body, where direct flow into a water body is not possible and no additional impacts are created.*

It was recommended that Mr. Boland provide photographic evidence of the remedial actions taken at the recently abandoned drill site and to provide this information via E-mail to the inspector once completed. To date this documentation has not been received by the inspector.

The licensee is cautioned that continued operations in non-compliance with the terms and conditions of the issued water license and Act will result in the licensee being the subject of the enforcement measures and penalties provided for under the Act.



### **Part G: Conditions Applying To Modifications**

No modifications were brought to the attention of the inspector during the period of inspection. A search of the Nunavut Water Board FTP site did not locate a request for modification during the writing of this report.

### **Part H: Conditions Applying To Contingency Planning**

A review of the Nunavut Water Board FTP site was conducted during the development of this report. It was noted that a Spill Contingency Plan entitled, "*Oil and Hazardous Material Spill Contingency Plan*" was located on the site along with the associated approval being listed in the License as issued. The Licensee is reminded to provide, as an addendum to the 20-07 annual report a revised Plan that incorporates the comments of INAC and Environment Canada into the Plan.

The Licensee is reminded that **All spills** are to be documented and reported to the **24 hour Spill Line at (867) 920-8130**. Additionally, the Licensee is reminded that as per Section 6 (iii) of this Part the Licensee is required to submit a detailed report on each spill occurrence no later than 30 days following the initial event.

The licensee is reminded that it is the responsibility of the licensee to ensure that any documentation submitted by the licensee to the Nunavut Water Board is acknowledged by the Manager of Licensing.

The proponent is reminded that secondary containment for all fuel storage locations is required as it prevents uncontrolled and accidental discharges to water and the environment. This includes fuel stored at the camp and at all other locations. Cuttings and wastes generated while drilling must also be contained. It was noted during the period of inspection that there was limited secondary containment at the camp, more is required. This must be addressed by the 2008 Inspection season

### **Part I: Conditions Applying To Abandonment And Restoration**

The Licensee is cautioned that while a prepared plan is not required at this time the Licensee should have in place methods and practices that will ensure the site can be reclaimed to its original condition upon completion of the program.

A formalized plan may be required in the future

The licensee is reminded that it is the responsibility of the licensee to ensure that any documentation submitted by the licensee to the Nunavut Water Board is acknowledged by the Manager of Licensing.

### **Part J: Conditions Applying To The Monitoring Program**

The Licensee is reminded to include in the 2007 Annual Report under the heading Monitoring Plan, due for submission to the Nunavut Water Board no later than March 31<sup>st</sup> 2008, the following information;

- Volumetric summary of water use for all purposes for the 2007 year
- GPS coordinates for all water sources
- GPS coordinates for all locations where waste was deposited

The licensee is reminded that it is the responsibility of the licensee to ensure that any documentation submitted by the licensee to the Nunavut Water Board is acknowledged by the Manager of Licensing.

### **Non-Compliance:**

During the inspection a number of items were noted and discussed with Mr. Boland. These issues required corrective action to be undertaken prior to the date of the next inspection and submission of a record showing these activities had been completed was requested. Specifically these were;



- Records of, including the quantities of, hazardous materials transported off site
- Open Burning – Installation of an approved incinerator
- Fuel storage (barrels) without secondary containment
- Spill kits and signage.
- Lack of secondary containment at the helicopter fuel transfer area
- Drill waste management and containment.
- Metering equipment to be installed on pump intake at both the camp and the Drill
- Accurate record keeping of potable water utilization
- Availability of licenses and records on site.
- Camp is located within the 30 meter set back from water

During the period of the inspection water samples were collected from both the potable source.

Andrew Keim  
Inspector's Name

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Inspector's Signature

Attached under separate cover;  
Photos taken during Inspection of August 12<sup>th</sup>, 2007

Cc:  
Peter Kusugak – Manager Field Operations Section- Indian and Northern Affairs Canada  
Phyllis Beaulieu – Manager licensing – Nunavut Water Board