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October 22, 2007

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**RE: Water License Inspections- Back River Project – George Lake July 3<sup>rd</sup> and August 14<sup>th</sup>, 2007**

The Water Resources Officer (WRO) appreciates the assistance and cooperation provided by Mr. Bill Cronk, Camp Manager and Mr. Dan Russell, Environmental Coordinator who accompanied the Inspector during the 1<sup>st</sup> of the 2 inspections of the Back River Project and Mr. Cam Bartsch on the second inspection.

The following report is based on observations made at the time of the inspections at George Lake Camp on July 3<sup>rd</sup> 2007 and then again on August 14<sup>th</sup> in follow up. Items outlined during the first Inspection with Mr. Cronk were then reviewed with Mr. Bartsch on the 14<sup>th</sup> of August. A review of the terms and conditions of the water license was completed with both parties following the individual inspections.

Immediately following the inspection (s) an Industrial Water Use Inspection Report outlining any concerns was signed off by the parties with the Inspector.

**Part A: Scope and Conditions**

No issues were found with respect to the location of the camp as it relates to the information contained within the current license. The current license was issued July 3<sup>rd</sup>, 2002 to Kinross Gold Corp and then assigned to Dundee Precious Metals Inc. effective April 30<sup>th</sup> 2007, subject to the submission of a revised Abandonment and Restoration Plan and Spill Contingency Plan.

The license, as issued, remained a Type “B” license classed as exploration and clean-up activities.

In a review of the documents posted on the Nunavut Water Board FTP site the required assignment documents were located.

**Part B: General Conditions**

The issues 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. An annual report for the 2006 annum could not be located. This report is a requirement under the terms and conditions of the Water License. The annual report must include but should not be limited to those items listed in Section 1 (i) through (vi) of this Part. If this report has already been submitted under separate cover the licensee is asked to resubmit this report to the Inspector and the Nunavut Water Board as an addendum to the 2007 Annual report.



The proponent is reminded that an annual report is required to be filed 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 1 (i) through (vi) of this part as well as any information required by the Inspector.

Failure to file a complete report as outlined in the license is a violation of the Act and will subject the licensee to the enforcement measures and penalties provided for under the Act.

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 the use and the Protection of Water**

At the time of the inspection the licensee was allocated the use of 100 Cubic meters of water per day for all purposes. Domestic use is to come from George Lake and from sources adjacent to the drilling operations for use in exploration drilling activities.

During the period of both inspections it was stated that George Lake was not being used by the licensee as a camp and thus did not have a permanent presence. Drilling and other staff are being shuttled between the Goose Lake and George Lake on a daily basis. Water use is therefore limited to drilling operations.

During the first inspection of the George Lake camp it was noted that a pathway between the Lake and Bulk Fuel storage area had been constructed by heavy equipment. This pathway was used in winter to facilitate the off loading of fuel from the surface of the frozen lake to the bulk fuel storage area. During the period of inspections (summer months) evidence of erosion to the banks of George Lake and sedimentation from the hill side into George Lake was noted. The Inspector issued a verbal direction to the Licensee to address this issue and to provide information to the Nunavut Water Board on a reclamation plan to address this issue. By the period of the second inspection the Inspector did note the presence of silt fencing and guard stone to protect against further erosion to the bank of the lake.

The licensee also provided information from Murray Somers, Fish Habitat Biologist, Fisheries and Oceans Canada out of Yellowknife, NT. In an e-mail forwarded by Mr. Dan Russell, Mr. Somers outlines his concern that any remedial activity (removal of the material that entered George Lake) would in effect cause more harm than just leaving it. Additionally he suggests that the licensee implement measures to prevent the further erosion of materials into the lake.

The Inspector is satisfied that this issue has been addressed by the licensee however clarification on what measures the licensee proposes to use this winter to prevent the further erosion of the banks if they intent to use the pathway to facilitate the off loading of fuels in a similar manner. Until this plan is reviewed and approved it is understood that this pathway will not be used this coming winter to offload fuel into the bulk fuel storage area.

It should be noted for the Licensee that Sections 4 and 5 of this Part clearly reflect the requirements imposed on the licensee in addressing the issues of sedimentation and erosions into water bodies and the necessity to provide controls and measures to prevent this from occurring prior to undertaking an activity.

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

During the inspections of the camp the following items were noted and brought to the attention of Mr. Cronk and/or Mr. Russell and /or Mr. Bartsch. (Not differentiated between inspections unless rectified)

- Very little secondary containment was noted during the first inspection. This was discussed with Mr. Cronk. By the second inspection many of the barrels and other containers were consolidated into discreet sections however secondary containment remains an issue on site. Mr. Russell indicated that these had been ordered but had not arrived.



- At the time of both inspections it was noted that the fuel transfer area for the helicopter did not have secondary containment. Mr. Russell stated that this would be addressed prior to the next inspection.
- The bulk fuel tanks on site are new and are located within an area that, once completed, will include the required secondary containment. The liner which is currently in place is ripped in a number of locations and the walls of the containment area are not up to final nor sufficient grade. This was discussed during both inspections. It appears hold ups and delays with the contractor to repair the liner are the issue. The licensee is required to have this secondary containment in place prior to utilizing these tanks.
- During the first inspection the George Lake camp evidence of open burning was found adjacent to the airstrip. Burn barrels containing metal and other debris were noted. This was discussed with both Mr. Cronk and Mr. Russell who were present during the inspection. Open burning is expressly prohibited in the license. Both Mr. Cronk and Mr. Russell stated this area would be restored. By the next inspection this work was completed. It should also be noted that there did not appear to be an incinerator on site during the period of inspection.
- A number of pallets including open plastic sacks of Calcium Chloride were noted along the airstrip. There was no evidence of secondary containment during either inspection. In discussion with Mr. Russell there is a plan in place to locate a crusher to return the salt and to a useable form. The area was reorganized by the second inspection however the stockpiling of this material needs secondary containment and this is to be addressed by the next inspection.
- Running along both sides of the runway are shacks and buildings which are historic and are currently used for storage. An inspection of these shacks found fuels, solvents, drill additives and other hydrocarbons and chemicals stored without secondary containment. By the second inspection there was a marked improvement however there were still some outstanding issues that must be addressed by the licensee prior to the next inspection.
- A large area adjacent to the airstrip was also being used to consolidate and package historic bulk wastes and other wastes into drums for shipping off site. This process was on-going during both inspections. This progressive reclamation activity is good to see on site.

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

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

Only one active drill was visited during the first inspection.

Drill wastes were noted to be flowing from the area where they were being pumped. An oil or grease was found to be floating on the water adjacent to the drilling operation and spreading to areas around the drill. This was brought to the attention of Mr. Cronk and Mr. Russell who discussed the matter with the drill foreman. The licensee is reminded that any drill cuttings are to be deposited in a natural depression and the area is to be free of hydrocarbons and other wastes.

Evidence of open burning at the drill was found and documented.

Barrels of fuel were noted around the area however there were no secondary containment berms or clean up materials around the drill site. Bags of Calcium Carbonate were also present at the drill site stacked on the ground beside the drill again with no means of containment.



Water samples collected from down stream of the drill sump returned the following results;

Parameter	Result	CCME Guideline (Aquatic life)
Conductivity @25°	1030 µS/cm	None
pH	4.79 pH units	None
Calcium	147 mg/L	None
Chloride	294 mg/L	None
Aluminum	604 µg/L	5-100 µg/L
Copper	14.5 µg/L	2-4 µg/L
Iron	3380 µg/L	300 µg/L
Mercury	.06 µg/L	.026 µg/L
Nickel	173 µg/L	25-150 µg/L
Selenium	29 µg/L	1 µg/L
Strontium	1330 µg/L	None
Zinc	148 µg/L	30 µg/L

These results contain elements in excess of the CCME Guidelines for the Protection of Aquatic Life. As the volume of water sampled was collected 20 plus meters downstream of the drill it is clear that these elements did not settle out and may carry on to further impact the surrounding environment and water quality. The Licensee is reminded that the drilling operations conducted under the authority of the water license must be done in such a way as to minimize or prevent additional impacts.

Future occurrences of this nature will be viewed as a violation of the Act and will subject the licensee to the enforcement measures and penalties provided for under the Act.

The licensee is reminded that as per Section 6 of this Part the licensee is required to establish water quality conditions prior to and upon completion of any drilling program conducted on lake ice. These results are required to be submitted 60 days following the sampling and shall include an estimate of discharge volumes.

#### **Part F: Conditions Camps, Access Infrastructures And Operations**

Section 2 of this Part states that licensee shall not erect camps or store material on the surface of frozen streams or except what is for immediate use. Camps shall be located such as to minimize impacts on surface drainage. As noted above, the licensee is reminded to take action to prevent continued erosion and sediment from entering George Lake in the area adjacent to the bulk fuel storage area.

#### **Part G: Conditions Applying To Spill Contingency Planning**

A review of the Water Board FTP site found the Spill Contingency Plan dated July, 2007. The Plan had not been submitted during the period of the first inspection. This plan is referenced in the Assignment document issued by the Nunavut Water Board in April of 2007 and was a requirement of the license.

The Licensee is reminded that as per Section 3 (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.



### **Part H: Conditions Applying to Modifications**

No mention of modifications to the existing license was discussed during the period of inspection. The licensee is reminded that all modifications need to be consistent with the terms and conditions of the existing license and if not then will require the Nunavut Water Boards approval as set out in Section (1) of this Part.

The Licensee is reminded that Section 3 of this Part requires that the licensee provide as-built drawings, stamped by an engineer within 90s days of completion of any approved modifications.

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

As noted in the assignment documents issued by the Nunavut Water Board the licensee was required to submit a revised Abandonment and Restoration Plan within 6 months of the assignment.

A review of the Nunavut Water Board FTP site found a document entitled the Back River Abandonment and Restoration Plan and dated June 2007. A further review of the FTP site noted letters and submissions by Environment Canada, INAC, DOE, and KIA regarding the Abandonment and Restoration Plan.

The search on the FTP site however did not locate an approval from the Nunavut Water Board accepting the plan as submitted. Given the level of input concerning the Plan the licensee is asked to clarify with the Nunavut Water Board if this plan has been approved and if not determine what is required from the Licensee to achieve that approval. Section 2 of this Part outlines the process to be followed if the plan is not approved and provides the licensee 60 days to address any outstanding issues.

During the period of both inspections the inspector noted a variety of on-going restoration work at the site. This included the collection and containment of hazardous and bulk wastes well as the consolidation of old drums for transport off site.

A large number of drums of old fuel still remain at the site. It was stated during the inspections that these drums were of mixed fuels and left over from past owners of the site and were essentially historic in nature. It was expected that if they could not be utilized or given away they would be hauled out during the winter.

### **Non-Compliance:**

During the inspection a number of items were noted and discussed with Mr. Cronk and subsequently again with Mr. Russell. These issues require corrective action to be undertaken prior to the date of the next inspection. The submission of a record showing these activities had been completed was requested at the time.

Specifically these concerns were;

- Marshalling of hazardous materials without secondary containment
- Fuel storage (barrels) without secondary containment
- Bulk Fuel storage without proper secondary containment
- Lack of an Incinerator at the George Lake site
- Open burning at both the camp and drill sites. ( addressed by second inspection)
- Location of the treatment facility where hazardous wastes generated on site are shipped.
- Submission of a plan to address erosion issues at bulk fuel storage site access to George Lake
- Lack of secondary containment at the helicopter fuel transfer area.
- Poor control of drill waste and return water.

George Lake was found to be a well organized and camp with a number of historic issues being addressed by the licensee. The licensee made great efforts in addressing the concerns of the first inspection and while



Indian and Northern  
Affairs Canada

Affaires indiennes  
et du Nord Canada

not completely accomplished the efforts were noticeable. The Licensee is commended for the on-going and progressive reclamation work on site.

Andrew Keim  
Inspector's Name

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Inspector's Signature

Attached under separate cover;  
Photos taken during Inspection of July 2nd, 2007

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