Purpose/Report Summary
The purpose of this report is to present to the Board a Land Use Permit Application (W2012T0001) that was submitted by Diavik Diamond Mines Inc. (DDMI) for construction activities for fish habitat compensation works at West Island near Lac de Gras.

Background
For the 2001 construction of the Diavik Diamond Mine to be undertaken on the East Island of Lac de Gras, an authorization (Fisheries Authorization SC980001) for the harmful alteration, disruption or destruction (HADD) of fish habitat was issued by the Department of Fisheries and Oceans (DFO). A HADD of fish habitat is prohibited under s.35(1) of the Fisheries Act, unless authorized by the Department of Fisheries and Oceans (DFO) under s.35(2) of the Fisheries Act. Such authorizations are typically only issued if it can be demonstrated that “no-net-loss of the productive capacity of fish habitat” can be achieved through habitat compensation.

A hierarchy of preferences relating to no-net-loss strategies is outlined in the Policy for the Management of Fish Habitat, with compensation of “like-for-like” habitat being the preferred option – replacing lost habitat with the same type of natural habitat at or near the site where the habitat loss occurred. The conditions of the authorization were that: DDMI shall compensate for the HADD of stream habitat on the East Island through; (6.1.2) the enhancement of a stream denoted as ‘ws 1’ located on the West Island between lake ‘w1’ and Lac de Gras. The purpose of this land use application is to complete the habitat compensation project at West Island required under the Fisheries Authorization SC980001. The work to be completed is located at West Island, within the Diavik Diamond Mines mineral claims and mining leases. The target species for the stream habitat compensation project is Arctic Grayling.
This stream habitat compensation project for ws 1 is intended to meet two main objectives:

1. Remove the cascade located near the outlet of ws1 Stream to Lac de Gras and improve fish passage/migration opportunities along the lower section of the channel; and
2. Increase fish habitat in the channel segment immediately upstream of the cascade by better defining the highly braided channel and installing spawning habitat.

The conceptual design for the project includes:

- Main channel excavation;
- Addition of riffle pools; and
- Addition of step pools.

On January 19, 2012, DDMI submitted an application for a Land Use Permit to complete the habitat compensation project at West Island. As outlined in Mackenzie Valley Land Use Regulations, Diavik Diamond Mines Inc. requires a Type A Land Use Permit as their activities trigger 4b(iv), which is the use of a stationary power-driven machine, other than a power saw, for hydraulic prospecting, moving earth or clearing land.

Construction is proposed to be completed in 2012, with minor modifications (if required) occurring during the following freshet June/July 2013. Post-construction monitoring and research (collaboration with University of Alberta) is proposed to continue until 2015. A request for review comments was sent out to various organizations on January 30, 2012.

**Discussion**

The attached comment table shows the responses that were received from Fisheries and Oceans Canada (DFO) and the Government of Northwest Territories – Environment and Natural Resources (GNWT-ENR). In summary:

- DFO noted that appropriate sediment and erosion control measures should be implemented and maintained during and after construction, and that the work area should be stabilized prior to spring thaw to minimize potential for sediment discharge into Lac de Gras. Diavik responded that they plan to employ the following mitigations which were successful during the M-Lakes project in 2011 (see attached photos):
  - Construction in and around the West Island stream will only happen during low flow periods of the year, i.e. mid to late summer. Construction will be completed in one season.
  - Silt curtains will be installed and maintained immediately downstream of any construction activities, see attached pictures.
  - As practical, water will be removed from the stream channel where construction is taking place, using electric pumps that will be discharged into a filter box made of geotextile cloth and placed away from the stream channel and Lac de Gras, see attached picture.
• If required during any heavy rains tarps will be available to cover exposed stockpiles of excavated material to reduce erosion.

Conditions in Section 26(1)(f) have been included in the draft land use permit which address sediment and erosion control.

• GNWT-ENR indicated that they had no concerns with the activities.
• Board staff note that there are two known archaeological sites, one within 150 m and the other within 70 m of the proposed development. In their application Diavik has noted that they have entered into an agreement with the Prince of Wales Northern Heritage Centre to access the NWT Archaeological Sites Database to obtain the exact location of these sites. WLWB staff recommend Conditions #27-30 have been included in the draft land use permit which address the protection of archaeological sites.

**Preliminary Screening**

Section 124(1) of the *Mackenzie Valley Resource Management Act* requires the Wek’èezhii Land & Water Board to undertake a Preliminary Screening of any proposed development prior to the issuance of a new Licence, Permit, or Authorization. The Preliminary Screening Report determined that the development proposal would have no significant adverse environmental impact or public concern.

**Security**

Board staff do not recommend the collecting of additional security due to the security deposit already held for the main Diavik site.

**Monitoring**

Diavik is working with DFO and University of Alberta to conduct post-construction monitoring programs to determine the effectiveness of the habitat enhancement project.

**Conclusion**

All information required to evaluate this Type ‘A’ Land Use Permit application has been submitted to the Board. No concerns were noted in the reviewer’s response to prevent the Board from issuing a Land Use Permit to Diavik Diamond Mine Inc.

**Recommendation**

Board Staff recommend that a Type ‘A’ Land Use Permit be issued to Diavik Diamond Mines Inc. for a period of five (5) years for the activities listed in the land use permit application at West Island near Lac de Gras.

Furthermore, the WLWB supports that Diavik Diamond Mines Inc. implement a monitoring program through to 2015 and encourages them to work in conjunction with Fisheries and Oceans Canada so that any issues resulting from these activities are identified and may be addressed.
Respectfully submitted,

Sarah Elsasser  Ryan Fequet
Regulatory Specialist  Regulatory Specialist

Attachments

- Land Use Permit Application and Supporting Documents
- Review Comment Table and Cover Letters
- Preliminary Screening
- Draft Land Use Permit
- Draft Land Use Permit Reasons for Decision
- Draft Issuance Letter
# Review Comment Table

**W2012T0001 - Diavik - West Island Fish Habitat Compensation Works - LUP Application (WLWB)**

<table>
<thead>
<tr>
<th>Item description</th>
<th>Diavik - West Island Fish Habitat Compensation Works - LUP Application</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Proponent</strong>:</td>
<td>Diavik Diamond Mines Inc.</td>
</tr>
<tr>
<td><strong>File(s)</strong>:</td>
<td>W2012T0001</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Document(s):</th>
</tr>
</thead>
<tbody>
<tr>
<td>W2012T0001 - Diavik - West Island Fish Habitat Compensation Works - LUP Application - Jan 19_12 (3MB)</td>
</tr>
<tr>
<td>W2012T0001 - Diavik - West Island Fish Habitat Compensation Works - Supplementary Info - Jan 19_12 (5MB)</td>
</tr>
<tr>
<td>W2012T0001 - Diavik - West Island Fish Habitat Compensation Works - Contingency Plan - Jan 19_12 (5MB)</td>
</tr>
<tr>
<td>W2012T0001 - Diavik - West Island Fish Habitat Compensation Works - Waste Management Plan - Jan 19_12 (0.5MB)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reviewer Comments Due By:</th>
<th>Feb 16, 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proponent Responses Due By:</td>
<td>Feb 23, 2012</td>
</tr>
</tbody>
</table>

**General Review Information:**
Your comments will be used in the preliminary screening the Board will be carrying out.

**Distribution List:**
Jan 30 at 17:20.

**Contact Information:**
Ryan Fequet 867-765-4589
Sarah Elsasser 867-765-4583

## Comment Summary

<table>
<thead>
<tr>
<th>Fisheries and Oceans Canada: Bruce Hanna</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ID</strong></td>
</tr>
<tr>
<td>--------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>---</td>
</tr>
</tbody>
</table>
| 1 | General Comment | **Comment:** Construction will take place during non-frozen conditions when little to no flow exists in the stream. This approach should reduce the potential for sediment and erosion issues but other measures should be included as necessary.  

**Recommendation:** Appropriate sediment and erosion control measures should be implemented and maintained during/after construction, and the work area should be stabilized prior to spring thaw to minimize the potential for sediment discharge into Lac de Gras. | Feb 20: In response to DFO’s concerns about siltation from the construction site entering the waters of Lac de Gras DDMI plans to employee the following mitigations which were successful during the M-Lakes project in 2011:  
- Construction in and around the West Island stream will only happen during low flow periods of the year, ie. mid to late summer. Construction will be completed in one season.  
- Silt curtains will be installed and maintained immediately downstream of any construction activities, see attached pictures.  
- As practical, water will | Feb 22: Proponent response is appropriate. Conditions in Section 26(1)(f) of the draft land use permit address erosion and sedimentation issues. |
be removed from the stream channel where construction is taking place, using electric pumps that will be discharged into a filter box made of geotextile cloth and placed away from the stream channel and Lac de Gras, see attached picture.

- If required during any heavy rains tarps will be available to cover exposed stockpiles of excavated material to reduce erosion.
February 15, 2012

Ryan Fequet
Regulatory Mine Specialist
Wek’èzhii Land and Water Board
#1-4905, 48th Street
Yellowknife, NT
X1A 3S3

RE: Diavik Diamond Mines Inc. (DDMI) Land Use Permit Application: West Island Fish Habitat Compensation

Dear Ryan:

As indicated by DDMI in the Land Use Permit application, the West Island fish habitat enhancement project is designed to meet compensation requirements under DDMI’s Fisheries Act S35 Authorization SC98001.

Therefore, DFO is supportive of the application and looks forward to the project commencing.

If you have any questions, don’t hesitate to call me at (867) 669-4931.

Bruce Hanna
Senior Habitat Biologist
Fish Habitat Management
Fisheries and Oceans Canada - Western Arctic Area
February 16, 2012

Ryan Fequet
Regulatory Specialist
Wek’eezhii Land and Water Board
#1-4905 48th Street
Yellowknife, NT
X1A 3S3

Dear Mr. Fequet:

Re: Diavik Diamond Mine Inc.
Land Use Permit Application – W2012T0001
Request for Review and Comment

The Department of Environment and Natural Resources has reviewed the above application based on its mandated responsibilities under the Environmental Protection Act, the Forest Management Act, the Forest Protection Act and the Wildlife Act and has no comments or recommendations at this time.

If you have any questions or concerns, please do not hesitate to contact Patrick Clancy, Environmental Regulatory Analyst at 920-6118 or email at patrick_clancy@gov.nt.ca.

Sincerely,

Patrick Clancy
Environmental Regulatory Analyst
Environmental Assessment and Monitoring
Land and Water Division
Department of Environment and Natural Resources
GNWT