October 20, 2011

Phyllis Beaulieu, Manager of Licensing
Sean Joseph, Licensing Administrator
Nunavut Water Board
P.O. Box 119, Gjoa Haven NU X0B 1J0

Dear Ms. Beaulieau / Mr. Joseph:

Re: Baffinland Iron Mines Corporation (BIM) - Submission of an Annual Geotechnical Inspection, NWB File: 2BB-MRY1114

1. INTRODUCTION

Under Part D, Item 19, of Baffinland Iron Mines Corporation (Baffinland) Water Licence 2BB-MRY1114, there is a requirement to ensure the proper function of earthworks associated with waste disposal facilities at its Mary River Project. This requirement is detailed in Part D, Item 19, which states that:

> "An inspection of the earthworks, geological regime, and the hydrological regime of the Project is to be carried out during the summer of 2011, by a Geotechnical Engineer. The Geotechnical Engineer's report shall be submitted to the Board within sixty (60) days of the inspection, with a covering letter from the Licensee outlining an implementation plan to respond to the Engineer's recommendations."

Since 2008 BIM retained GENIVAR Consultants (Genivar) to complete the annual water license geotechnical inspection of the on-site waste containment structures located at its two main camp sites, known as the Mary River Camp and Milne Inlet Camp. The 2011 field inspection was conducted by Genivar on August 10, 11, and 12, 2011, with follow-up review activities completed by the end of August. The 2011 report was completed and submitted to Baffinland in early October. During the 2011 inspection, the water and fuel containment structures reviewed at the respective camps included the following:

Mary River Mine Camp

- Bulk Fuel Storage Facility Containment,
- Generator Fuel Storage Facility Containment,
- Polishing/Waste Stabilization Pond No. 1, 2, and 3
- Helicopter Fuel Tank Containment
- Barrel Fuel Containment
- Stove Oil Storage
- Enviro-Tank Storage
- Jet Fuel Tank and Pump Contaninment

Milne Inlet Site

- Bulk Fuel Storage Facility Containment
- Polishing/Waste Stabilization Pond
- Barrel Fuel Storage
- Hazardous Waste Storage
- Oil and Antifreeze Containment

Attached, herewith, is Genivar's 2011 geotechnical report which presents the 2011 findings and recommendations for the aforementioned structures. Sections 2.0 and 3.0 of this letter summarize

Baffinland

Baffinland's plan for implementing Genivar's recommendations. Recommendations for 2011 were similar to those provided for the 2008, 2009, and 2010 annual geotechnical inspection reports.

2. MARY RIVER MINE CAMP RECOMMENDATIONS

2.1. Bulk Fuel Storage Facility Containment

There were no recommendations made at this time.

2.2. Generator Fuel Storage Facility Containment

Recommendation MR1: Based on the need to contain 110 % of the bladder volume in the event of a fuel spill, the maximum volume of fuel permitted to be stored in the bladder in this facility as it is constructed, is 77,376 litres (76 cm height). Baffinland will continue to control the amount of fuel to the stated volume as per current practice.
Baffinland Response: This recommendation has and continues to be implemented.

2.3. Polishing/Waste Stabilization Pond No. 1

Recommendation MR2: Continue the elevation monitoring program established on the top of the berm on an annual basis through 2012.
Baffinland Response: One round of elevation monitoring measurements will be completed prior to the 2012 annual inspection.

2.4. Polishing/Waste Stabilization Pond Nos. 2 and 3

Recommendation MR3: Continue the elevation monitoring program established on the top of the berm on an annual basis through 2012.
Baffinland Response: One round of elevation monitoring measurements will be completed prior to the 2012 annual inspection.

2.5. Helicopter Fuel Tank Containment, Barrel Fuel Containment, Hazardous Waste Storage, Enviro-Tank Storage, and Stove Oil Storage

There were no recommendations made at this time.

2.6. Jet Fuel Tank and Pump Containment

Recommendation MR4: A sign is to be posted at the containment structure: "No traffic other than foot traffic within this containment area". A curb similar to that in the helicopter fuel containment is to be placed where the hose slides over the containment dyke when fueling the aircraft.
Baffinland Response: The above recommendation will be fully implemented during the 2012 operating season.

3. MILNE INLET CAMP

3.1. Bulk Fuel Storage Facility Containment

There were no recommendations made at this time.

3.2. Polishing/Waste Stabilization Pond

There were no recommendations made at this time.

3.3. Barrel Fuel Storage

There were no recommendations made at this time.

3.4. Hazardous Waste Storage

Two minor tears were observed in the liner on one cell. Repairs to these tears were made once brought to the attention of Baffinland's management team. Since the repairs were already made at the time of geotechnical report issue, there were no recommendations.

3.5. Oil and Antifreeze Containment

There were no recommendations made at this time.

We trust that this submittal satisfies your current requirements. Should you have any questions, please do not hesitate to contact Jim Millard, Senior Environmental Superintendent at 902-403-1337 or by e-mail at jim.millard@baffinland.com.

Best Regards,
Baffinland Iron Mines Corporation

James Millard, M.Sc., P.Geo.
Senior Environmental Superintendent

Attach: Annual Geotechnical Inspection 2011, prepared by GENIVAR Consultants for Baffinland Iron Mines Corporation, dated October 5, 2011.

cc. Bob St. Eloi, Salamonie Shoo (QIA); Andrew Keim (AANDC); Erik Madsen, David McCann (Baffinland)

GENIVAR

October 5, 2011

Baffinland Iron Mines Corporation
120 Adelaide Street West, Suite 1016
Toronto, Ontario M5T 1T1

Attention: Dave McCann
dave.mccann@baffinland

RE: ANNUAL GEOTECHNICAL INSPECTION 2011-08-16
BAFFINLAND IRON MINES CORPORATION
OUR REFERENCE #10-098

1.0 Introduction

GENIVAR Consulting Engineers, completed the 4th annual water license geotechnical inspection of the on-site containment structures at Baffinland Iron Mines Corporation (BIM) Mary River Project. The containment structures for the operation are located at two main campsites known as the Mary River Project.

The soil structures reviewed are as per the following:

Mary River Mine Site

- Bulk Fuel Storage Facility Containment
- Generator Fuel Storage Facility Containment
- Polishing/Waste Stabilization Pond No. 1
- Polishing/Waste Stabilization Ponds No. 2 and No. 3 (Constructed as a 2 cell structure)
- Helicopter Fuel Cell Containment
- Barrel Fuel Containment (Constructed as a 2 cell structures)
- Stove Oil Storage
- Enviro-Tank Storage (Constructed contiguous with hazardous waste storage).
- Hazardous Waste Storage
- Jet fuel Tank and Pump Containment

Milne Inlet Site

- Bulk Fuel Storage Facility Containment
- Polishing/Waste Stabilization Pond
- Barrel Fuel Storage (Constructed as a 2 cell structure)
- Hazardous Waste Storage
- Oil and Antifreeze Containment

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This report presents the findings.

2.0 Methodology for Inspection

The geotechnical inspector was Mr. Barry H. Martin, P. Eng., who reviewed the sites on August 10, 11 and 12, 2011. The inspections were focused principally on the following aspects.

1. The structures were inspected for conformance with the design basis as presented in as-constructed and as-built drawings (provided in the first report).

2. The structures were specifically inspected for settlement, cracking, and seepage through the berms.

3. The areas around the sites were examined for evidence of seepage.

Photographs were taken to document observations made during the inspection and are attached.

3.0 Mary River Camp

3.1 Bulk Fuel Storage Facility

General Conditions

The containment structure has not varied from its use as noted in the 2009 report. Some bladders are empty and some bladders are currently full.

Stability

At the time of our review the water had recently been removed from the containment and treated for release. There was a small amount of water ponding in a depression or sump in the gravel from which water was removed.

The structure was visually inspected for any signs of cracking or subsidence. There was no indication of any settlements, seepage, or cracking in the soil structures that formed the dykes. As well, there was no indication of seepage at the base of the structure around the exterior. The soil structure is considered to be stable in the present condition and is in conformance with the design basis for the facility.

Recommendations

There are no recommendations to be made at this time.

3.2 Generator Fuel Storage Facility Containment

General Conditions

The containment structure has not varied from its use since our 2010 inspection. At that time our recommendation was to limit the fuel contained in this containment facility to 77.376 litres.

There is currently one bladder in this containment facility that has a capacity when full of 120,000 litres. This particular bladder contains 77,376 litres when the bladder is 32" high. The guideline for BIM is to fill this bladder to no more than 76 cm (30") which represents 70,097 litres.

A sign is posted to limit the bladder height at 30".

At the time of our visit on August 12, 2011, the bladder height was measured at 30" (recently filled).

Stability

The structure was visually inspected for any signs of subsidence or cracking. There was no sign of seepage at the base of the structure noted. The soil structure is considered to be stable in its present condition and is in conformance with our design principles.

Recommendation

We recommend that BIM control the fuel in the bladder at 70,097 litres (30" high).

3.3 Polishing/Waste Stabilization Pond No. 1

General Conditions

PWSP No. 1 continues to be utilized as a holding facility for sewage plant effluent that does not meet water effluent quality criteria.

Water is pumped from the RBC unit to PWSP No. 1 where it is held in the pond at times when effluent does not meet release criteria.

When it does not meet release criteria it is pumped over to PWSP's No. 2 and 3 where it is treated for turbidity removal and pH adjustment.

At the time of our visit there was considerable freeboard to accommodate further sewage and the structure readily conforms to its design intent.

Stability

Our review of the area around the pond at the base of the slopes showed no sign of seepage and hence we conclude that the liner has been effective in containing sewage and there are no tears or ruptures in the membrane.

A review of the top of the dyke showed no indication of cracking or settlement which would indicate stresses within the structure.

Tears that had occurred in the liner on the top of the dyke and have been patched during the period between reviews in 2008 and 2009 are holding well. As well there are no signs of weather related deterioration of the liner where it is exposed.
Monitoring points have been set up on the top of the dyke and have been monitored since 2009. Settlements of up to 17 cm have occurred since that time. These settlements have not led to any stress cracks in the structure.

There appears to be no sign of erosion of the dykes. This phenomena appears to be due to the minimal precipitation in this area of the island.

Recommendations

We recommend that monitoring of the top of the berm continue on an annual basis through 2012. With the excellent condition of the dyke construction, we see no reason to complete this function other than annually prior to the next inspection.

3.4 Polishing Ponds/Waste Stabilization Ponds #2 and #3

General Conditions

This structure was designed and constructed as a 2 cell structure.

Water is currently being treated for turbidity removal and pH adjustment and when the release criteria are met, the water shall be released to the environment.

At the time of our visit there was considerable freeboard to accommodate further sewage and the structure readily conforms to its design intent.

Stability

Our review of the area around the pond at the base of the slopes showed no sign of seepage and hence we conclude that the liner has been effective in containing the sewage and there are no tears or ruptures in the membrane.

Longitudinal cracking which appeared in the dykes of PWSP#3 due to the melt of permafrost wedges in 2009 have not reoccurred and we consider this structure to be stable in its present condition.

Monitoring points have been set upon the top of the dyke and have been monitored since 2009. Settlements in the order of up to 9cm have occurred since that time. These settlements have not led to any stress cracks in the structure.

There appears to be no sign of erosion of the dykes and plants are only just now beginning to seed themselves on the dykes.

Recommendations

We recommend that monitoring of the top of the dyke continue on an annual basis through 2012. With the excellent condition of the dyke construction we see no reason to complete this function other than annually prior to the next inspection.

3.5 Helicopter Fuel Tank Containment

General Conditions

The structure was designed and constructed as a single cell structure that contains a 1000 gal fuel storage tank.

The structure currently conforms to its design intent.

Recently a liner clad wood curb has been added to the top of the berm to prevent the erosion of gravel off the berm, caused by pulling the fuelling hose from within the dyke out to the helicopters to provide them with fuel.

Stability

Our review of the area around the pond at the base of the slopes showed no sign of seepage. Water that was ponding in this containment during our 2010 review is no longer present as there has been little or no precipitation this summer season.

A review of the exterior and the top of the berms showed no sign of cracking or settlement which would indicate stress within the structure.

The structure is considered to be stable in its present condition.

Recommendation

We have no recommendations with respect to this structure.

3.6 Barrel Fuel Containment

General Conditions

This particular structure which we called "Barrel Fuel Containment" in our 2010 inspection report is a two cell structure which is currently used to accommodate barrels of Jet A fuel in one cell including a number of fuel dispensing tanks and a number of stove fuel barrels on skids and a large number of empty drums in the other cell.

These two cells were constructed in accordance with a standardized drawing provided by this office utilizing a one piece liner.

Stability

Our review of the area around this containment structure showed no sign of seepage. This shows that there is reasonably little chance of tearing or rupture of the membrane.

A review of the exterior and top of the dyke showed no sign of cracking or settlement which would indicate stresses within the structure.

The structure is considered to be stable in its present condition.

Recommendations

We have no recommendations with respect to this structure.

3.7 Hazardous Waste Storage

General Conditions

This particular cell was constructed contiguous with an existing cell which is referred to on site as the "Enviro Tank Storage" from drawings provided by our office in 2010 and conforms to our drawings.

This structure was empty during our review in 2010 but now is used as a containment for skids of barrels containing stove fuel.

Stability

Our review of the area around this cell at the base of the slopes, showed no sign of seepage.

The structure appears stable in its present condition.

Recommendation

There are no recommendations at this time.

3.8 Enviro Tank Storage

General Conditions

This particular structure is constructed contiguous with the Hazardous Waste Storage constructed in 2010. It originally contained a fuel tank but now contains lubricants and antifreeze.

Our review of the area around this cell at the base of the slopes showed no sign of seepage.

The structure is stable in its present condition.

Recommendations

There are no recommendations at this time.

3.9 Stove Oil Storage

General Conditions

This particular structure has not been reported on before. This particular structure is being used to store barrels of stove fuel on pallets.

This structure was constructed in accordance with a standardized drawing provide by this office utilizing a one piece liner.

Stability

Our review of the area around the containment structure shows no signs of seepage. This shows that there is reasonably little chance of tearing or rupture of the membrane.

A review of the exterior and top of the dyke showed no sign of cracking or settlement which would indicate stresses with the structure.

The structure is considered to be stable in its present condition.

3.10 Jet Fuel Tank and Pump Containment

This particular containment structure has not been reported on before and is utilized as the containment for a 1000 gallon fuel tank and pump for the Dornier aircraft operated by Summit Air.

A review of the cell construction showed that it was constructed with what appears to be a one piece membrane similar to the membrane used in the other soil structures containing fuel.

There is no geotextile protection on top of the membrane and it is assumed that there is no geotextile protection on the bottom.

However, the traffic within the cell is restricted to foot traffic and it is assumed that there shall only ever be foot traffic in this small cell.

Stability

Our review of the area around the containment structure shows no sign of seepage.

A review of the exterior and top of the dyke showed no sign of cracking or settlement which would indicate stresses within the structure.

Recommendations

We recommend that the following sign be posed at this containment structure "No traffic other than foot traffic within this containment area".

We recommend that a curb similar to that at the helicopter fuel containment be placed where the hose slides over the containment dyke when placing fuel in an aircraft.

4.0 Milne Inlet

4.1 Bulk Fuel Containment Facility

General Conditions

The structure around the fuel farm currently conforms to the design of the facility. A review of the interior of the dyke showed only minor ponding of water although the oil stains on the interior sand layer indicates that the water on the interior of the dyke has been higher in the past as viewed during our review in 2009.

The treatment system used to treat the water prior to release to the environment remains in place.

The ponding of water, although minor, continues to confirm the integrity of the liner.

Stability

Our review of the area around the ponds at the base of the slopes showed no signs of oil, water or oil/water mixtures and hence we conclude that the integrity of the liner has been maintained. Tears or ruptures in the liner were not observed.

There was no sign of any settlements, seepage, or cracking at the soil structures forming the dykes.

The structure is considered to be stable in its present condition.

Recommendations

The performance of the structure in the past (2009) has been tested with ponded water within the structure. The observation noted during our past inspections have supported the conservative design of the structure. We have no recommendations at this time.

4.2 Polishing Pond/Waste Stabilization Pond

General Conditions

The PWSP was designed as storage for sewage effluent from the RBC sewage plant installed at the site during the start-up phase of the operation. At the time of this inspection, the camp was reopening for a small construction crew to build the new fuel storage facility.

There was considerable capacity remaining in the storage facility to accommodate the camp during the start-up of the RBC plant until release criteria are met for the sewage plant.

Currently the Milne PWSP structure conforms to the design basis for the facility.

Stability

With the PWSP constructed as it is, the structure is considered stable for long term use.

There was no sign of seepage at the bottom of the dyke. There was no sign of settlement or cracking which are signs of stress in the structure.

Recommendations

Currently, the Milne Inlet PWSP conforms to the design intent and we have no recommendations.

4.3 Barrel Fuel Storage

General Conditions

This particular structure is constructed as a two cell structure.

The structure around these two cells conforms to standardized drawings prepared by our office for such a facility.

Stability

Our review of the area around the ponds at the base of the slopes showed no signs of seepage.

The structures are considered stable in their present condition.

Recommendations

There are no recommendations to be made with respect to this structure at this time.

4.4 Hazardous Waste Storage

General Conditions

This particular structure is constructed as a 2 cell lagoon.

This structure conforms to the design basis for the facility.

I note that during our inspection there were two tears noted in the liner on one cell. This was brought to the attention of administration.

Repairs to these two minor tears were subsequently made, prior to issuing of this report in final format, by replacing the liner in one cell.

This was confirmed to us by Baffinland. Hence we confirm that this structure is acceptable.

Stability

Our review of the area around the dykes at the base of the slopes showed no signs of seepage. There were no signs of settlement of cracking which are signs of stress in the structure.

Recommendations

Currently this containment structure conforms to the design intent and we have no recommendations.

4.5 Oil and Antifreeze Containment

General Conditions

This particular structure which is located between the air strip and the Bulk Fuel Storage area has not been reported on in the past.

The structure around this containment area conforms to standardized drawings prepared by our office.

Stability

Our review of the area around the ponds at the base of the slopes showed no signs of seepage.

There is no cracking or settlement observed in the dyke structures which are signs of stress in the structure.

Recommendations

We have no recommendations to be made with respect to this structure.

We trust that the foregoing report is acceptable for inclusion into your report for the Nunavut Water Board.

Respectfully submitted,

GENIVAR

Barry H. Martin, P. Eng., MRAIC
BHM/cb

c.c. Jim Millard

Mary River Bulk Fuel Containment

Typical dyke – Bulk Fuel Containment – Mary River

Generator Fuel Storage Facility – Mary River

PWSP #1 – Mary River

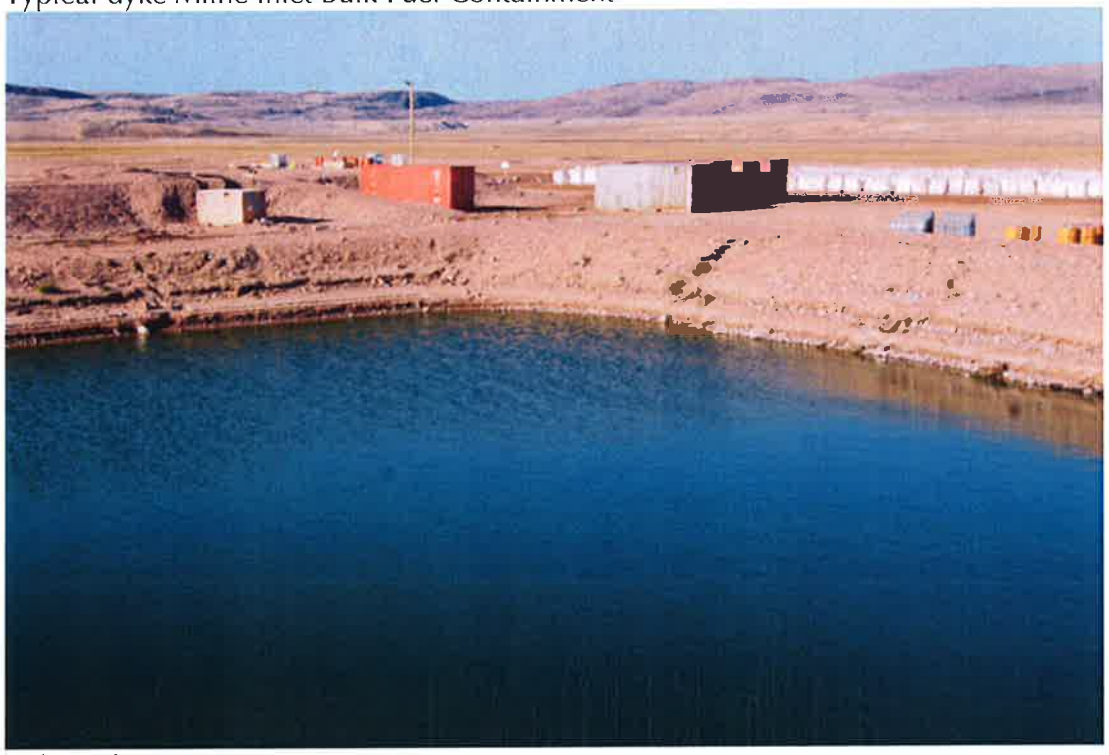
Typical dyke PWSP #1 – Mary River

PWSP #2 – Mary River

Typical dyke structure PWSP #2 – Mary River

Top of dyke PWSP #2 – Mary River

Typical dyke Milne Inlet Bulk Fuel Containment



Milne Inlet PWSP

PWSP #3 – Mary River

Top of dyke PWSP #3 – Mary River

Helicopter Fuel Cell Containment – curb sits above dyke – Mary River

Barrel Fuel Containment cell #1 – Mary River

Barrel Fuel Containment cell #2 – Mary River

Stove Oil Storage – Mary River

Enviro Tank Storage Containment – Mary River

Hazardous Waste Storage – Mary River

Milne Inlet showing Bulk Fuel Containment and PWSP

Milne Inlet Bulk Fuel Containment

Top of dyke at Milne PWSP

Barrel Fuel Storage Containment cell #1 – Milne Inlet

Barrel Fuel Storage Containment cell #2 – Milne Inlet

Typical Dyke Barrel Fuel Containment – Milne Inlet

Oil and Antifreeze Containment – Milne Inlet

Hazardous Waste Storage – Milne Inlet

Dyke at Hazardous waste storage