Indigenous and Northern Affairs Canada | Affaires autochtones et du Nord Canada

WATER LICENCE INSPECTION FORM

☒ Original
☐ Follow-Up Report

Licensee	Licensee Representative
Baffinland Iron Mines Corporation (BIMC)	Laura TAYLOR/Allan KNIGHT
Licence No. / Expiry	**Representative's Title**
2AM-MRY1325	Environmental Manager
Land / Other Authorizations	**Land / Other Authorizations**
8BC-MRY1416, 2BE-MRY1421	N2014X0012, N2014Q0016, N2014C0013
Date of Inspection	**Inspector**
May 29 - June 1,2017	Jonathan MESHER

Activities Inspected

☒ Camp ☐ Drilling ☒ Mining ☒ Construction ☐ Reclamation ☐ Fuel Storage
☒ Roads/Hauling ☐ Other: ☐ Other:

Conditions: **A - Acceptable** **C - Concern** **U - Unacceptable** **NA – Not Applicable** **NI – Not Inspected**

Water Use	Condition	Comment	Site Conditions	Condition	Comment	Haz/Mat Management	Condition	Comment
Intake/Screen	NI		Water Management Structures	U	1, 4	Storage	NI	
Flow Measure. Device	NI		Culverts / Bridges	U	4	Spills	NI	
Source:	A		Drainage	C	1,4	Spill Plan	A	
Water Use:	A		Erosion / Sediment	C				
Recirculation (y /n)	NA		Mitigation Measures	A		**Administrative**		
			Reclamation Activities	A		Records	NI	
			Materials Storage	C	1,4	Reports	A	
Waste Disposal			Signage	A		Plans	A	
Waste Water	A					Notifications	A	
Solid Waste	NI		**Monitoring**			**Other**		
Hazardous Waste	NI		Sample Collection / Analysis	NI		Follow-up from previous inspection	A	

**The number in the comments field will correspond with specific comments provided below.*

Samples taken by Inspector:	**Location(s): (1)** pooling water outside Ore Crusher Pad containment (figure2, Item 1) **(2)** snow dump Area at the mine site(Figure 2, Item 3) **(3)** old snow dump/ infiltration to ore stockpile pad ditches (Figure 4, item 2)
☒ Yes ☐ No	

SECTION 1 ☒ **Comments** ☐ **Non-Compliance with Act or Licence** ☐ **Action Required**

Inspectors Statement

On May 29 to June 1, 2016, a water licence inspection was conducted at the Mary River Project, Qikiqtani Region, Nunavut with Curtis DIDHAM (ECC), Laura TAYLOR(BIMC), Andrew VERMEER(BIMC), Allan KNIGHT, Justin HACK (INAC) and myself Jonathan MESHER (INAC).Sites inspected included the Mary River Mine Site, the Tote Road and the Milne Port area.

Weather Conditions on Site

Mainly cloudy with temperatures between -1 and 5 degrees Celsius. Mary River camp site and Milne Inlet port site were free of snow; however the horse shoe dam at the waste rock pile was snow covered at the time of the inspection.

Summary of Report

At the time of inspection, the Licensee was undertaking activities related to the operation of an open-pit iron ore mine at the Milne Port (Milne Inlet), Mine site (Mary River), and Tote Road. Most major construction activities have finished and BIMC is primarily mining ore and transporting it to Milne Port in preparation for open water season.

Prior to the Inspection, the Licensee had reported high levels of suspended solids (TSS) entering watercourses. These incidents were reported to relevant parties through Spill Reports #17-209 and 17-178. During the inspection, the elevated levels of TSS at Shear down Lake and Camp Lake appeared to have diminished based on the inspector's observations at the time of the inspection. BIMC had put preventative and reactionary measures in place such as silt fences, silt screens, pop-up berms, check dams, riprap and new culverts.

Sites inspected include;

1. Ore Stockpile and associated water management structures.
2. Water Management Structures along the Tote Road.
3. Water Management Structures along the Mine Haul Road.
4. Ore Crushing Pad and associated Sedimentation Ponds.
5. Waste Rock Pile water collection pond.
6. Camp lay-down pad.

Inspection

Water Management Structures:

1. Ore Stockpile Pad and associated water management structures
    a. The Ore Stockpile Pad had significant pooling inside the facility (figure 5 below); this leads the inspector to believe the facility is not being maintained properly.
    b. At the time of the inspection there was water infiltrating the ore stockpile pad, see figure 4 Item 2 below. This appears to be the reason of the unauthorized discharge from the east sedimentation pond.
        i. INAC Inspectors have expressed concern with this area where water is pooling before.
        ii. It's advised that BIMC find a way to properly divert the water away from this area.
    c. The ditches surrounding the facility do not appear to be graded properly due to water pooling within the unlined ditches.
    d. The Licensee is removing snow mixed with crushed ore from within the containment facility and dumping it outside of the facility (figure 3).
        i. The inspector is requesting that BIMC discontinue this practice and allow the facility to contain the snow/water that comes in contact with the ore stockpile pad.
    e. In the 2016 Geotechnical report the engineer recommend that repairs be done to both Sedimentation ponds, at the time of the inspection no work had been done.

2. Water Management Structures along the Tote Road
    a. The Tote Road showed signs of improvement from the previous year during freshet.
    b. The Licensee is currently developing a Tote Road Earthworks Execution Plan and has committed funds to repairing trouble areas.

3. Water Management Structures along the Mine Haul Road
    a. BIMC has completed significant work on the Mine Haul Road; there are no major concerns with the water management structures along the Mine Haul Road.

4. Ore Crushing Pad and associated Sedimentation Ponds
    a. In the previous inspection, there were concerns with the grading of the ore crusher pad at the Mine Site. This continues to be an issue and is causing the crusher pad to become saturated with iron filled mud.
    b. Ditches surrounding the facility do not appear to have been built to the specification of the "for construction" drawings that have been approved by the Nunavut Water Board. This is causing pooling within the unlined ditches.
    c. During the Inspection it was noted that there was no culvert in place to allow water from the North West unlined ditches to enter the sedimentation pond, this is a concern to the inspector because in the HATCH for construction drawings below (Figure 1) it shows that there should be a 1000mm DIA CSP culvert installed.
        i. The inspector is requesting that the culvert be installed before freshet 2018.
        ii. Samples were collected by the inspector to ensure no waste has entered the surrounding environment.
    d. After a review of the "2017 Mine Site Crusher Pad Expansion (Modification Request) Water Licence 2AM-MRY1325 – Amend. No. 1" application to the Water Board, the inspector noticed that the extent of the ore stockpile storage area doesn't appear to be consistent with the information provided in the application to the Nunavut Water Board.
        i. In the drawings provided to the Nunavut Water Board, the "oversized" ore storage area is not identified and does not appear to be surrounded by ditches as you can see in figure 7 below.
        ii. Considering the information provided the inspector is concerned that the sedimentation pond is under capacity because, the surface area/surface water calculations do not appear to be capturing the actual storage area of the crusher pad.
        iii. The inspector is requesting that the BIMC review the 2017 Mine Site Crusher Pad Expansion (Modification Request) Water Licence 2AM-MRY1325 – Amend. No. 1, provide the NWB with the correct storage area of ore and provide the NWB with revised data regarding the; surface water runoff, ditching capacity and sedimentation pond capacity.
    e. Sand Bags along the spill way have not been installed as agreed upon by the NWB and BIMC as a short term fix in order to increase capacity.
    f. The Licensee must ensure that all water generated on the facility is captured by the diversion ditches and sedimentation pond.

5. Waste Rock Pile water collection pond
    a. At the time of the inspection, the facility was covered in snow making it difficult to identify any potential issues.

6. Camp lay-down pad
During the inspection it was noted that a camp lay-down pad had been constructed within a waterway at approximately N71° 52.529, W080° 54.379 in Milne Inlet. Due to the location this camp lay-down pad was constructed in contravention of the Water Licence 2AM-MRY1325, specifically Part D Conditions Applying to Construction and Operation;

   a. Item 2 states: The Licensee shall submit to the Board for review and acceptance, at least sixty (60) days prior to construction or in a timeframe otherwise approved by the Board in writing, final design and for-construction drawings, stamped and signed by a Professional Engineer, for all infrastructure and/or facilities designed to contain, withhold, divert or retain Water and/or Waste, as authorized under the License.
   b. Item 20: The Licensee shall not erect camps or store material on the surface of frozen streams or lakes including the immediate banks except what is for immediate use. Camps shall be located such that impacts on surface drainage are minimized.
   c. Item 21: The Licensee shall undertake necessary corrective measures to mitigate impact on surface drainage resulting from the Licensee's activities.
   d. Item 25: The Licensee shall prevent the deposition of debris or sediment from entering into or onto any Water body, with respect to the construction of access roads, site laydown pads and areas or other earthworks. These materials shall be disposed of at a distance of at least thirty-one (31) metres from the ordinary High Water Mark in such a manner that they do not enter the water.
   e. For more information on this violation of the Water Licence please read the Inspectors Direction issued to Baffinland Iron Mines Corporation on June 9, 2017.

☐ Comments	☐ Non-Compliance with Act or Licence	☐ Action Required
Inspector's Name		
Jonathan MESHER		
Signature		
Date		
June 20, 2017		

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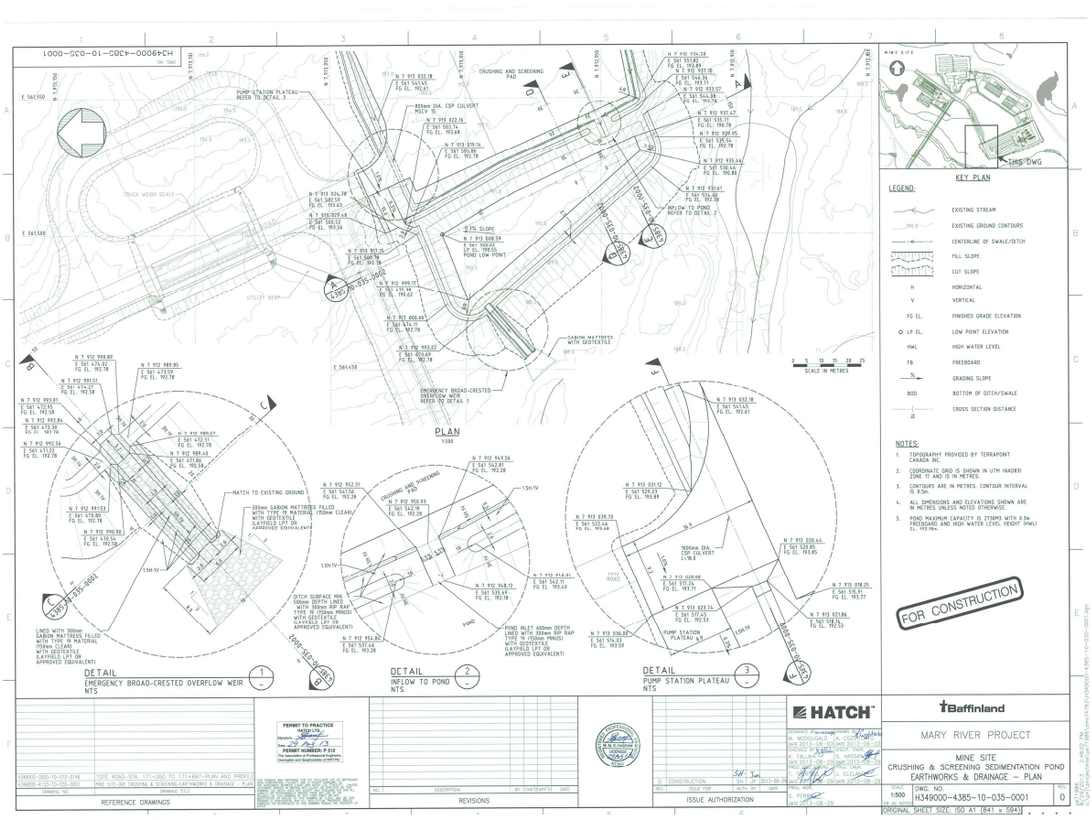

Figure 1 (HATCH drawings confirming the required culvert)

Figure 2 (**Item 1**: Oversized Ore stockpile location**. Item 2**: sampling location. **Item 3**: snow dump sampling location.

Figure 3: Snow Dump area, top left of the picture

Figure 4**: Item 1**: Washout from East sedimentation pond. **Item 2**: location of water infiltrating ditches, the old snow dump and sampling location. **Item 3:** approximate location of the Camp lay-down Pad

Figure 5: water pooling inside the ore stockpile pad

Figure 6: sandbags improperly installed

Figure 7: Oversized Ore outside of ditching