

WATER LICENCE INSPECTION FORM

☒ Original

☐ Follow-Up Report

Licensee	Licensee Representative
Hamlet of Cape Dorset	Bhabesh Roy
Licence No. / Expiry	Representative's Title
3BM-CAP0810 (expired)	Government of Nunavut Representative
Land / Other Authorizations	
None	
Date of Inspection	Inspector
June 18 , 2016	Justin HACK
Activities Inspected	
<input checked="" type="checkbox"/> Camp/Municipality	<input type="checkbox"/> Drilling
<input type="checkbox"/> Roads/Hauling	<input type="checkbox"/> Other:
<input type="checkbox"/> Mining	<input type="checkbox"/> Construction
<input type="checkbox"/> Reclamation	<input type="checkbox"/> Fuel Storage
<input type="checkbox"/> Other:	

Conditions:

A - Acceptable

C - Concern

U – Unacceptable

NA – Not Applicable

NI – Not Inspected

Water Use	Condition	Comment	Site Conditions	Condit ion	Comme nt	Haz/Mat Management	Condition	Comment
Intake/Screen	A		Water Management Structures	U	4-8	Storage	A	
Flow Measure. Device	C	2	Culverts / Bridges	A		Spills	A	
Source:	A		Drainage	C		Spill Plan	A	
Water Use:	A		Erosion / Sediment	A				
Recirculation (y /n)	NA		Mitigation Measures	A		Administrative		
			Reclamation Activities	A		Records	NA	
			Materials Storage	A		Reports	NI	
Waste Disposal			Signage	A		Plans	NI	
Waste Water	U	4-8				Notifications	A	
Solid Waste	C	12	Monitoring			Other		
Hazardous Waste	A		Sample Collection / Analysis	NI				

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

Samples taken by Inspector:

☐ Yes ☒ No

Location(s):

SECTION 1	<input checked="" type="checkbox"/> Comments	<input type="checkbox"/> Non-Compliance with Act or Licence	<input type="checkbox"/> Action Required
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Inspectors Statement

On June 18, 2016, a water licence inspection was conducted at the Hamlet of Cape Dorset, Qikiqtani Region, Nunavut. Sites inspected included the 2007 Uncommissioned Lagoon, the Emergency Lagoon, the Three-Tier Lagoon, the Solid Waste Disposal Facility and the Metal Storage Area.

Background

The Hamlet of Cape Dorset has an expired licence for Municipal Undertakings for the use of 192 cubic meters of water per day and for the deposit of waste.

The Hamlet of Cape Dorset has two lagoons systems for the management of its sewage and waste water: the ‘Three Tier Lagoon,’ and the Emergency Lagoon.

The Three-Tier sewage Lagoon is the main sewage disposal facility for the community. This structure has a history of failing to meet the water quality effluent limits as required within their expired water licence and has a history of structural failure. More concerns about this facility have been raised by the Mayor of Cape Dorset in a letter issued to *Indigenous Affairs and Northern Development Canada* on July 20, 2016. In the letter the mayor outlines his concern on the effects this may have on the harvesting of clams and fish, the financial burden this lagoon has on the community, and the incapacity of the lagoon to properly treat sewage.

Furthermore, the Department of Health, Government of Nunavut has also issued a letter to *Indigenous Affairs and Northern Development* outlining the effluent entering the ocean exceeds both the *Canadian Shellfish Sanitation Effluent Criteria* for faecal coliforms and the *Northwest Territories Guidelines for the Discharge of Treated Municipal Wastewater (1992)*.

Community and Government Services are developing a strategy to address the concerns of the Three-Tier Lagoon. In 2007, a new lagoon system (2007 Uncommissioned Lagoon System) was built but never commissioned. This lagoon was built to replace the previous lagoon systems; however, due to issues with the containment and the access road, this lagoon was never commissioned. To address this situation, Community and Government Services have commissioned two studies to understand the issues with the 2007 Uncommissioned Sewage Lagoon: *Cape Dorset Tracer Technical Report (2011)* and the *Cape Dorset Feasibility Study (2015)*.



Inspection

Water Use and related structures:

1. Water is being withdrawn from the T-Lake as approved in an expired Water Licence.
2. Water withdrawal records were inspected and were up-to-date; however, water is being accounted for by measuring the amount of water delivered to water tanks throughout the community. This is not all of the water use in the community and a certain amount of water is not being accounted for. These activities include road watering for dust control and dumping of overnight water in trucks that do not meet chlorine specifications for Public Health requirements.
3. In 2015, the Hamlet of Cape Dorset withdrew approximately a total of 50,928m³ of water.

Three Tier Lagoon and Emergency Lagoon

4. Water was flowing from the Landfill Facility upstream into the Three Tier Facility because of ice blockages within the drainage ditches around this facility.
 - There was evidence that the Hamlet of Cape Dorset tried to remove the ice from the ditch with an excavator to try and properly divert the water; however, it was expressed that this is a very dangerous activity to perform because of the instability of cell wall #3.
 - The blocked drainage ditches also allows a substantial amount of water from Nungaaait Mountain to enter into the Three-Tier Facility.
 - At the time of the inspection, the blocked drainage ditches were causing the upstream run-off from the Landfill and the Mountain to enter cell #2.
5. At the time of the Inspection, the culvert leading from cell #1 to cell #2, and the culvert leading from cell #2 to cell #3 were blocked with ice.
 - Due to the frozen culverts, water is overtopping the cell #2, by passing cell #3 and flowing down a 100m slope into the ocean.
6. The culvert from cell #3 to the environment was free of ice and a small amount of flow was exiting this lagoon. Samples were taken from the small outflow from cell #3 to determine the quality of the effluent leaving the facility.
 - The Department of Health (Government of Nunavut) have expressed that these results exceed both the *Canadian Shellfish Sanitation Effluent Criteria* for faecal coliforms and the *Northwest Territories Guidelines for the Discharge of Treated Municipal Wastewater*.
7. This lagoon has a history of reaching capacity over the winter and in January 2016, INAC received a request to begin to discharge from the lagoon to create space within the facility.
8. On July 20, 2016 Cape Dorset Mayor Padlaya Qiatsuk provided a letter to *Indigenous Affairs and Northern Development Canada* outlining concerns related with the Three Tier Lagoon and its effect on the community's finances, environment, and public health.
 - This letter describes the significant man-power, costs, and energy required to maintain this facility that only operates as designed for a few months in the summer, and further describes the negative effects that this discharge may have on one of the community's fishing and clam harvesting areas.

2007 Uncommissioned Sewage Lagoon (P-Lake Lagoon)

9. The facility still has not been commissioned and water continues to leak out of the downstream berm.
10. A research team is currently studying the wetland downstream of this facility to determine its effectiveness.

Solid Waste Facility:

11. Fencing around the Solid Waste Disposal Facility was fixed to address windblown debris from entering water.
12. During the 2015 inspection, the Hamlet was requested to divert water around the landfill. This was completed; however, significant water still flows through the landfill and into the receiving environment due to the location of this facility.

Metal Storage Area

13. The community is segregating and storing metals within the Metal Storage Area.
14. Batteries are being stored in a contained sea can in anticipation for transportation to a southern disposal facility.
15. In 2015, the Hamlet was requested to divert a watercourse around this facility. This was completed and now significantly less water enters this facility.

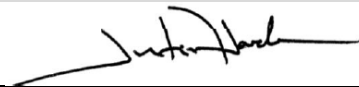
Hazardous Waste:

16. Some hazardous waste and batteries are being segregated in the Metal Storage Area. The materials are being stored sufficiently away from any watercourses and within sea cans in a manner to prevent waste from entering fresh water.

Reports/Records:

17. Records for Water Use were in good order.



Inspector's Name	
Justin Hack	
Signature	
	
Date	
September 9, 2016	