



WATER LICENCE INSPECTION FORM

☒ Original
☐ Follow-Up Report

| | | | |
|---|-----------------------------------|---------------------------------|---------------------------------------|
| Licensee | | Licensee Representative | |
| City of Iqaluit | | Paul Clow | |
| Licence No. / Expiry | | Representative's Title | |
| 3AM-IQA0612 (expired) | | Project Manager | |
| Land / Other Authorizations | | | |
| None | | | |
| Date of Inspection | | Inspector | |
| April 8 2015 | | Justin HACK | |
| Activities Inspected | | | |
| <input checked="" type="checkbox"/> Camp/Municipality | <input type="checkbox"/> Drilling | <input type="checkbox"/> Mining | <input type="checkbox"/> Construction |
| <input type="checkbox"/> Roads/Hauling | <input type="checkbox"/> Other: | <input type="checkbox"/> Other: | <input type="checkbox"/> Reclamation |
| <input type="checkbox"/> Fuel Storage | | | |

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|--|----|----------------|------------------------------|------------------|---------------------|--------------------|---------|
| Conditions: | | A - Acceptable | C - Concern | U - Unacceptable | NA – Not Applicable | NI – Not Inspected | |
| Water Use | | Condition | Comment | Site Conditions | | Condition | Comment |
| Intake/Screen | C | 2 | Water Management Structures | C | 11 | Storage | A |
| Flow Measure. Device | A | | Culverts / Bridges | A | | Spills | C |
| Source: | A | | Drainage | A | | Spill Plan | A |
| Water Use: | C | 3,4 | Erosion / Sediment | A | | | |
| Recirculation (y /n) | NA | | Mitigation Measures | A | | Administrative | |
| | | | Reclamation Activities | A | | Records | A |
| | | | Materials Storage | A | | Reports | A |
| Waste Disposal | | | Signage | A | | Plans | A |
| Waste Water | A | | | | | Notifications | A |
| Solid Waste | C | 18 | 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: | | | Location(s): | | | | |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | | | | | | |

| | | | |
|--|--|---|--|
| SECTION 1 | <input checked="" type="checkbox"/> Comments | <input type="checkbox"/> Non-Compliance with Act or Licence | <input type="checkbox"/> Action Required |
| Background | | | |
| <p>The City of Iqaluit remains in the regulatory process to acquire a new water licence that will authorize the City of Iqaluit to use water and deposit wastes to water or wastes that may enter water under the authority of a licence. It is estimated that the new licence will be issued sometime in 2016.</p> <p>The City of Iqaluit’s previous licence has been expired since 2012, but they have been involved in the regulatory process to acquire a new licence since that time.</p> <p>The City of Iqaluit continues to operate without a licence and has been issued a Letter of Non-Compliance, pursuant to Section 90 of the <i>Nunavut Waters and Nunavut Surface Rights Tribunal Act</i> for contravening Section 11(1), namely using waters for a municipal undertaking without a water use licence as prescribed in Schedule 2 of the <i>Nunavut Waters Act</i>.</p> | | | |
| Inspectors Statement | | | |
| <p>On April 8 2015, an Inspection was conducted at the City of Iqaluit of all relevant conditions of the expired water licence (3AM-IQA0612). This inspection included all facilities administered by the City of Iqaluit that either uses water or deposits waste to water or under conditions in which that waste may enter waters. This included an inspection of the Lake Geraldine Reservoir and the appurtenant infrastructure, the drinking water plant, the sewage lagoon, the waste water processing plant, and the West 40 landfill and related water storage areas. Furthermore, the intent of the inspection was also to identify any other activities that were occurring in the municipality that may trigger section 11 and section 12 of the <i>Nunavut Waters and Nunavut Surface Rights Tribunal Act</i>.</p> <p>Prior to the inspection, a pre-inspection meeting was held where a brief summary of activities occurring on site were discussed, reminders related to conditions associated with the emergency measures were discussed, and a follow-up on previous commitments and deficiencies as noted in the previous inspection were discussed.</p> <p>Grab samples were not taken at the waste water outflow from the sewage treatment facility considering no new equipment has been installed and water samples would be in range of the previous inspection results. Furthermore, no grab samples were taken from the water storage ponds at the West 40 Landfill because the City of Iqaluit is not permitted to discharge wastes without the authority of a licence.</p> | | | |



SECTION 2

☐ Comments

☐ Non-Compliance with Act or Licence

☒ Action Required

Lake Geraldine Reservoir:

Observations:

1. As noted in the previous inspection, a Dam Safety Inspection was completed on September 22, 2014. This document was submitted to the NWB on December 17, 2014. The Dam Safety Inspection for 2015 has been submitted November 5, 2015.
2. The City of Iqaluit has committed to installing a screen on the water intake pipe at Lake Geraldine in 2016. The city is currently issuing a tender for this work next week.
3. The water line and the heated re-circulation line were inspected between the Dam and the Raw Water Treatment Facility. Approximately half way between both facilities liquid water was observed beside the water lines.

Concerns:

There is concern that there may be a potential leak in the water lines between the Dam and the Water Treatment Facility. It is recommended that the City of Iqaluit follow-up and ensure the water lines are not cracked. The City has conducted a preliminary inspection since the possible leak was discovered. They believe it to be ground water but need to do more work to confirm. Provide a report to the inspector addressing this concern by June 30, 2016.

Drinking Water Treatment Plant:

Observations:

4. Records of water usage were available to the Inspector and up-to-date.
5. Spill kits were noted to be on site.

Concerns:

The City of Iqaluit, pursuant to Section 90 of the NWNSRTA is in non-compliance for contravening Section 11(1), namely using waters for a municipal undertaking without a water use licence as prescribed in Schedule 2 of the *Nunavut Waters Regulations*. This non-compliance is being addressed currently through quarterly progress meetings to ensure any areas of concerns are dealt with in a timely manner.

Waste Water Treatment Plant:

Observations:

6. The Waste Water Treatment Plant continues to operate only as primary treatment. Sludge is collected and placed at the landfill.
7. Waste water is still discharged into the nearshore of Koojessee Inlet.
8. Records were up-to-date and in good order.
9. Spill kits were noted and available throughout the facility.

Sewage Lagoon

Observations:

10. Berms walls surrounding the sewage lagoon showed no signs of slumping or cracking; however, conditions on site prevented a thorough inspection of this structure.
11. Ice was close to overtopping the sewage lagoon.
 - a. The City representative outlined that the lagoon was decanted weeks ago after notifying INAC. There is a depression in the middle of the lagoon that may relieve pressure on the walls of the berms surrounding the facility.
 - b. It is recommended more sewage is not added to this facility to prevent failure unless freeboard is further addressed.
12. Deposited on the side of the lagoon was snow containing sewage. This pile of snow containing sewage is a product of sewage spill clean-up from around town. It is recommended that this snow containing sewage be pushed further into the lagoon to prevent run-off into the receiving environment.

Concerns:

Storing (waste) water within a facility with insufficient freeboard increases the risk of structural failure. Given the frequency that the lagoon needs to be used, it is recommended that the capacity of the lagoon be increased to deal with the proper treatment of sewage before it is discharged, or standard operating procedures be changed to address this concern.

Furthermore, the sewage resting on the lagoon wall must be placed within the confines of the lagoon. The City has confirmed that this will be actioned.

West 40 Landfill Site

Observations:

13. During the last inspection, a *Landfill Post Fire Restorative Work Plan* was established with the City of Iqaluit as a means to address the restorative work required after the fire at the Landfill to ensure compliance with the Act.
14. The City of Iqaluit is on track to meet all of the commitments established under this plan and will likely implement all measures by the end of 2016.
 - a. Please refer to the **West 40 Landfill Post Fire Restorative Work Plan** below on page 3 to see updates



and current status of this plan.

15. Surrounding the West 40 Landfill site exist four water storage facilities for the storage of run-off waste water from the landfill. Two of these facilities are currently being licenced through the regulatory process, whereas the other two were established under the Emergency Measures clause of the NWNSRTA. It is expected the unlicensed water storage facilities will be remediated before October 31, 2016 as understood as part of their emergency measures or the City of Iqaluit will be in contravention of section 11 of the Act, for the use of water without an authorization. Another option it that the City of Iqaluit can apply for an amendment to their water licence before October 31, 2016 to include these storages of water.
16. Due to significant snow cover conditions on the ground, berm integrity and freeboard were not inspected at the four water storage facilities.
17. It was communicated that the City of Iqaluit is prohibited from discharging any of the waste water within these storage facilities to inland waters without the authority of a licence.
 - a. Until such a time, the City of Iqaluit outlined during the inspection that they will be treating the waste water to parameters set by Environment Canada and discharging this water to the marine environment.
18. At the north end of the Landfill facility, the City of Iqaluit burns cardboard in a controlled burn box. At the time of the inspection, residual ash from the burn was not being controlled in a way to prevent the waste ash from entering water when freshet is to occur.

Concerns:

Due to the poor ash handling, waste ash handling procedures must be implemented immediately to prevent waste ash from entering water. Otherwise, the City of Iqaluit must request an amendment to their licence to allow for the deposit of waste ash into water.

It is requested that the City of Iqaluit submit a plan to the Inspector by May 13 2016, explaining how they will prevent this waste from entering water or will be subject to further enforcement actions.

West 40 Landfill Post Fire Restorative Work

Background

During the fire extinguishment in 2014, it was explained to the City of Iqaluit that all major water use measures would be temporary in nature and would require work to restore and reclaim the workings to pre-extinguishment status within a reasonable time (which has been set to October 31, 2016). The City of Iqaluit responded post-fire with this work plan outlining the work that would be undertaken to address the restorative work required.

Plan

1. Run-off water collected from the firefighting operations (i.e. water used on the fire) has been transferred from the catchment area to the retention pond across the road and to the new drafting pond adjacent to the landfill entrance; this water will be held in these areas until next summer, when it will be treated and discharged.
 - a. *Update: Run-off water from the firefighting operations has been transferred to the new pond and has received primary treatment. In August 2016, the plan is to further treat this water to standards set up Environment and Climate Change Canada for release into marine waters until a water licence is issued.*
2. The household waste that is currently being temporarily stored next to the retention pond will be removed and placed back into the landfill (note: a temperature monitoring program was initiated by the City upon the recommendation of Hellfire Suppression Services to ensure that the “new” waste pile in the landfill was sufficiently cool to accept new waste; this monitoring program is managed by the Acting Director of Emergency and Protective Services; as soon as the temperatures are low enough, the Acting Director will authorize the opening of the “new” waste pile and the waste from the temporary storage site will be transferred back into the landfill).
 - a. *Update: The household waste has been removed and placed back within the landfill.*
3. After the household waste has been removed from the temporary storage site, approximately 6-8” of soil will be removed from across the site and deposited in the landfill and the surface grade will be reinstated.
 - a. *Update: Soil from underneath the temporary storage area was removed and placed into the landfill. Surface grade was reinstated.*
4. It is expected that there will be some additional run-off water that collects in the catchment area until freeze-up; this run-off water will also be held until next summer when it will be treated and discharged.
 - a. *Update: Run-off water has been contained and is currently being held within the old pond. It is scheduled to be treated summer 2016.*
5. A sample of the run-off water that was transferred to the retention pond was procured and analyzed for a suite of parameters including metals, F1-F4 hydrocarbons, BTEX/VOCs, PAHs, Dioxins & Furans, and BOD/TOC, TSS, and nutrients; the results of this sample will support the development of a quote for the treatment of the run-off water.
 - a. *Update: The sampling of the run-off water was completed.*



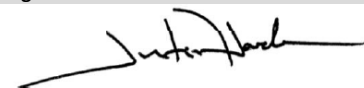
6. The weir that was installed in Carney Creek has been removed and the sediment reinstated at the location where the fire pump was set up to draft fresh water.

a. *Update: The weir that was installed in Carney Creek was removed and the sediment was reinstated.*
7. Additional water sampling will be completed in the spring of 2015 to assess the run-off water quality within the West 40 Landfill containment areas in order to further optimize the treatment process.

a. *Update: Completed.*
8. After the water from the new drafting pond has been treated and discharged, the liner will be removed and the grade reinstated.

a. *Update: Water still remains in the new drafting pond. The City of Iqaluit has confirmed that once discharges from these facilities occur this summer, it can move ahead and remediate the drafting pond.*
9. The plan to address the temporary metals storage site is for the City to issue a tender call in early 2015 for the removal of the material from the site (along with metal waste currently stored at the landfill) and to ship the material to a metals recycling facility in southern Canada. Following the removal of the metal waste, soil samples will be procured and analyzed for a suite of chemical parameters and compared to the analyses that were completed this summer prior to depositing metal waste at the site. If it is determined that any negative impacts occurred to the soil at the site due to the temporary storage of the metal waste, the severity of the impact will be assessed and a remediation program will be initiated if warranted. Water samples will also be procured from the drainage ponds located south of the site that receive run-off from the site. Similarly, these results will be compared to the results of the water analyses that were completed this summer prior to depositing metal waste at the site. If it is determined that any negative impacts occurred to the water in these ponds as a result of the temporary storage of metals at the site, the severity of the impact will be assessed and the water will be diverted to the landfill retention pond for treatment, if warranted.

a. *Update: The City issued an RFP in March. In the terms of Reference it required the successful proponent to remove metals from inside the landfill by 2016. The metals from the temporary site must be removed by 2017 and if the successful proponents plans on storing these metals in town in 2016/2017, these metals must be removed by 2018.*

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| Inspector's Name | |
| Justin Hack | |
| Signature | |
|  | |
| Date | |
| April 26, 2016 | |