



November 9, 2018

Bijaya Adhikari
Science and Regulatory Coordinator
Inuvialuit Water Board
P.O. Box 2531
125 Mackenzie Road
Suite 302, Professional Building
Inuvik, NT X0E 0T0

**Re: Hamlet of Tuktoyaktuk (the Hamlet)
Municipal Water Licence Renewal Application – N5L3-0714
Municipal Water Usage and Deposits of Waste
Request for Review and Comments**

Dear Mr. Adhikari,

The Department of Environment and Natural Resources (ENR), Government of the Northwest Territories has reviewed the application at reference based on its mandated responsibilities under the *Environmental Protection Act*, the *Forest Management Act*, the *Forest Protection Act*, the *Species at Risk (NWT) Act*, the *Waters Act* and the *Wildlife Act* and provides the following comments and recommendations for the consideration of the Board.

Topic 1: Open Burning

Comment(s):

This recommendation applies to the Hamlet if planning on using an open burning as a disposal option for this municipal activity.

Recommendation(s):

- 1) If open burning will be utilized during project activities, only those waste streams identified in the *Municipal Solid Wastes Suitable for Open Burning* document located on the GNWT ENR website may be open burned without the use of an approved incinerator. The document can be found at the following site.

http://www.enr.gov.nt.ca/sites/enr/files/guidelines/solid_wastes_suitable_open_burning.pdf

Topic 2: Hazardous Waste Management

Comment(s):

ENR understands that hazardous materials may be disposed of at the landfill; therefore, it is recommended that the Hamlet registers as a receiver and as a storage facility.

All Proponents that generate hazardous wastes must be registered as a generator of hazardous waste in the NWT. It is recommended that the Hamlet be registered

The Guideline for the General Management of Hazardous Waste in the NWT defines hazardous waste and outlines the roles and responsibilities of generators, carriers, and receivers of hazardous waste in the NWT. The ENR, Environment Division (ED) registers generators, carriers, receivers, and tracks the disposal of hazardous waste generated in the NWT to registered receiving facilities on hazardous waste movement documents (manifest). The definition of hazardous waste includes all waste materials that are 'dangerous goods' according to the Transportation of Dangerous Goods Regulations, and any additional waste of special concern that the ED has determined hazardous until proven otherwise, including but not limited to:

- a) incinerator waste and/or residuals (including bottom ash and fly ash);
- b) any liquid or solid wastes contaminated with refined petroleum products;
- c) bilge wastes;
- d) vehicle or vessel servicing wastes
- e) drilling wastes;
- f) produced fluids (Glycol / Hydrocarbon / Inorganic Mixtures);
- g) tailings; and
- h) any hydrocarbon, lead, mercury or other forms of contaminated soils.

The Guideline for the General Management of Hazardous Waste in the NWT and the Transportation of Dangerous Good Regulations may be found at the following sites:

http://www.enr.gov.nt.ca/sites/enr/files/guidelines/general_management.pdf

<http://www.tc.gc.ca/eng/tdg/clear-menu-497.htm>

Recommendation(s):

- 1) If the Proponent is using, storing or generating hazardous waste, they must register as a generator of hazardous waste in the NWT and track the disposal of hazardous waste from the site activities to registered receivers on hazardous waste movement documents provided by ENR. Please contact the Environment Division, ENR to register or for more information contact Mr. Lee Ross,

Hazardous Waste Management Specialist, Environment Division by email (Lee.Ross@gov.nt.ca) or by phone (867) 767-9236 extension 53187.

Topic 3: Updates on Contact information

Comment(s):

The Hamlet should update its contact list in all supporting documents (e.g. Spill Contingency Plan), and ensure that the list is made readily available at the Municipal Water Supply and Waste Management facilities covered under the Water Licence.

Recommendation(s):

- 1) Update all Environment and Natural Resource contact information in all application documents.
- 2) Include Alicia McRae, Regional Environmental Assessment Coordinator, 867-678-6653, and the Water Resource Officer, 867-678-6676, contact information in Spill Contingency Plan.
- 3) Water Resource Officer is Lloyd Gruben, (867) 678-6676 and the Renewable Resource Officer is John Lucas, (867) 977-2350.
- 4) Table 9 in Section 4.2 of the SCP lists contact information for the Paulatuk, ENR office. Change this contact information to the Hamlet and Inuvik office.

Topic 4: Honey Buckets

Comment(s):

Honey bucket pit should be available for residents who bring their sewage bags back from hunting and for residents who still use honey buckets

Recommendation(s):

- 1) ENR recommends that a portion of the SWDF be designed, constructed and made available for honey bag disposal.

Topic 5: Windblown Waste and Debris

Comment(s):

There is no fencing, or snow fencing installed around the Solid Waste Disposal Facility (SWDF) to prevent windblown wastes and debris from being blown across the surrounding lands.

Recommendation(s):

- 1) ENR recommends that fencing is installed around the SWDF to minimize blown debris from entering surrounding lands and water bodies.

Topic 6: Fuel Storage and Spill Contingency Planning and Reporting

Comment(s):

ENR acknowledges the Hamlets Spill Contingency Plan.

In addition, the Proponent should also follow best practices for fuel storage and spill containment during project activities which may include the following recommendations.

Recommendation(s):

- 1) To assist in spill contingency planning, information is provided in EPA *Spill Contingency Planning and Reporting Regulations* found here:

<https://www.justice.gov.nt.ca/en/files/legislation/environmental-protection/environmental-protection.r2.pdf>

If clarification or further information is needed please contact the Environment Division, ENR directly to aid in the development of the Plan

- 2) In accordance with the *Spill Contingency Planning and Reporting Regulations Section 10*, all spills in accordance with Schedule B must be reported immediately to the 24-hour Spill Report Line (867) 920-8130.
- 3) With respect to the *Environmental Protection Act Section 5 (1b)* all spills, regardless of amount, must be cleaned up, and contaminated materials disposed of at an approved facility, or in an approved manner. Additionally, as indicated in *Section 5(1c)* all reasonable efforts must be made to notify any parties affected or potentially affected by the spill.
- 4) Fuel storage areas should be greater than 100m distance from the ordinary high water mark of a water body and not located in a drainage channel.
- 5) All fuel or storage vessels containing hazardous substances left for extended periods of time (including overnight in vehicles), should be stationed in an area that contains sufficient secondary containment (i.e. Drip pans, lined bermed areas, double walled enviro-tanks etc.).

- 6) It is recommended spill kits be provided. Personnel should be trained to ensure that in the event of a spill it is contained and remediated appropriately to industry-accepted best practices and regulatory approval. In case refuelling takes place near water, in water spill planning should be considered to prevent inadvertent releases.
- 7) ENR recommends, for the operator's convenience and increased environmental protection, that all heavy equipment and refuelling vehicles carry portable spill kits that include items such as absorbent pads, containment booms, and spill pool catchment receptacles. Readily available and fully stocked spill kits can effectively mitigate potential spills.

Topic 7: Spill Reporting

Comment(s):

ENR has noted that the municipal survey mentions that no spills have been reported within the past 5 years. ENR received a Spill Report in June of biohazardous materials that were left in the fenced landfill facility and helped coordinate the removal of that spill.

Recommendation(s):

- 1) ENR recommends that all reportable spills be included in Annual Water Licence Reports and in the Municipal Survey Form. It is recommended the Hamlet update the 5 year Spill Occurrence List to include all reported spills.

Topic 8: Part D - Conditions Applying to Waste Disposal

Comment(s):

The 'Conditions Applying to Waste Disposal' section presented under Part D in NWT Water Licences, typically contain conditions applying to either 'Sewage', 'Solid Waste', or both. As such, wastes received at either the 'Sewage Disposal Facilities (SDF)' or the 'Solid Waste Disposal Facilities (SWDF)' differ in nature, and are managed at two different locations under two different types of facilities and processes.

In recent years, the Gwich'in Land and Water Board, the Sahtu Land and Water Board & the Mackenzie Valley Land and Water Board have started organizing Part D's Terms and Conditions of Water Licences to foster further clarity, for the benefit of Water Licence users/readers such as community members/staff and other parties.

Under this approach, Conditions applying to both 'Sewage' and 'Solid Waste' types of wastes are enumerated first - but are then subsequently separated into two different waste types subcategories: 1) Sewage and 2) Solid Waste.

Recommendation(s):

- 1) For clarity purposes, and to foster a better understanding of SDF or SWDF specific activities and conditions, ENR recommends that the Hamlet's Water Licence, Part D, Terms and Conditions to be organized as described in the above comments.

Topic 9: Part D: EQCs for Solid Waste Disposal Facilities & Emergency Decants

Comment(s):

The Hamlet's current Water Licence N5L3-0714 contains Effluent Quality Criteria (EQC) for Solid Waste Disposal Facilities discharges in Part D, Item 18. ENR notes that waste types received at SWDF are different types of wastes that are managed differently when compared to wastes discharged at the SDF. As such, ponding water, leachates and/or runoff generated in and around a SWDF should be managed differently than treated wastewater discharged from SDF.

Typically, ponding water in and around the SWDF, as well as occasional runoffs traveling through and/or from SWDF (if any), are to be monitored at SNP locations for specific pre-determined industrial type parameters and/or contaminants in order to assess potential impacts of the SWDF on the surrounding environment.

ENR is not aware of other NWT Water Licences where EQCs were established in Part D, to allow discharges from the SWDF. ENR is also concerned regarding information provided on page 14 of the Questionnaire, specifying that an Emergency Decant from the Hamlet's Solid Waste Disposal Facilities was required in 2015 to maintain a safe 'freeboard'. According to the Hamlet's current Water Licence, a 'freeboard' (as per definition in p. 4 of 17) refers specifically to Sewage Disposal Facilities, and not to Solid Waste Disposal Facilities.

Should ponding water adjacent to the Hamlet's SWDF require a discharge, a broader suit of parameters and associated discharge limits should be incorporated to Part D Item 18, in order to represent contaminant types typically managed at the Hamlet SWDF. These contaminants may include, but are not limited to, Total Ammonia, Nitrate and Nitrite, CBOD, Total Phosphorus, Ortho-Phosphorus, DOC (Dissolved Organic Carbon), Total Phenols, Metals (ICP-MS Metal Scan (Total)), BTEX (Benzene, Toluene, Ethylbenzene, Xylene), TPH (Total Petroleum Hydrocarbons Fraction 1, Fraction 2, Fraction 3 & Fraction 4). Limits selected should consider protective water quality guidelines, such as those suggested in the Canadian Council of

Ministers of the Environment (CCME) or Schedule III and IV of GNWT April 2004 Industrial Guidelines.

Recommendation(s):

- 1) Should discharges of ponding water adjacent to the Hamlet's Solid Waste Disposal Facilities be necessary in the future, ENR recommends that a more comprehensive list of parameters, reflective of SWDF operations, be included (see details above).

Topic 10: Solid Waste Disposal Facilities (Current and New) - Updates

Comment(s):

The Hamlet's Solid Waste Disposal Facility Operations and Maintenance Plan (SWDF O&M Plan) specified that the landfill site covering ~ 20 hectares, is located approximately 3 km south of the Hamlet along the all-weather road to Reindeer Point, has been in operation since the early 1970s.

The Spill Contingency Plan (SCP) revised in September 2018 (p. 18 of 94), specifies the following information:

'The existing landfill is scheduled to cease operation and is a listed priority site of the Government of Northwest Territories (GNWT) and Aboriginal and Northern Development Canada (AANDC) for closure. A new landfill site located approximately 17 km southwest of the community has been designed and approved and construction was initiated in 2015. As of this writing, Phase 1, including a landfill cell and access road to the site, has been completed. Phase 2, including fencing, gate, and buildings, is not complete. Final operations will be contingent upon receipt of final permission for direct access to the new ITH.'

The Questionnaire further specifies (P. 14 of 42) that "A new SWDF site is planned and partially constructed (circa 2015), but not completed or in use yet".

Recommendations:

- 1) ENR recommends that the Hamlet provide the 2018 updates for the new SWDF construction to date, more specifically if the construction has been completed and if so, the date SWDF operations began.
- 2) ENR recommends that the Hamlet provide updates on current SWDF uses, more specifically, if the landfill operated since 1970 is still being used today and if not, the date when operations at this site ended. If operations at this site officially has

ceased, ENR recommends that the Hamlet to inform GNWT-MACA and the Board of the date operations ceased.

Topic 11: New Solid Waste Disposal Facilities – Construction Plans, Part H

Comment(s):

Page 11 of 82 of the current SWDF O&M Plan outlines that ‘The MSW facility is to provide MSW disposal and storage areas until the new engineered landfill is constructed and operational.’

Part H of the current Water Licence specifies that:

“Prior to construction of any dams, dykes or structures intended to contain, treat, withhold, divert or retain Water or Wastes other than as contemplated in the Contingency Plan, the Licensee shall submit to the Board for approval a construction plan and a design report signed and stamped by an Engineer.” Further related details are also provided under Part H.

ENR could not locate Construction Plans associated with the new SWDF construction.

Recommendation(s):

- 1) ENR recommends that the location of the above-mentioned Construction Plans for the new SWDF on the Public Registry be identified. Should this plan not be available or exist, ENR recommends that the IWB include the appropriate condition, in the new Water Licence, for the submission of all Construction Plans, as per Part H of the N5L3-0714.

Topic 12: ECCC Guidelines – Solid Waste Management for Northern and Remote Communities (March 2017)

Comment(s):

The [*Solid Waste Management for Northern and Remote Communities*](#) Guidelines were released by Environment Canada and Climate Change (ECCC) in March 2017.

Section 5.0 of this document offers guidance with respect to Landfill Designs and Operations in northern communities, amongst which Landfill Designs (Base liners & Leachate Management, Cover Systems, etc), Landfill Construction, etc. Overall, all sections offer interesting guidance specific to northern applications, such as Management of Major Waste Types (Section 6), Waste Management Planning and Continuous Improvement & Community Waste Assessment (Section 2), Solid Waste

Facility Site Selection (Section 3.0), Performance Monitoring and Reporting (Section 7), and Solid Waste Facility Closure and Post-Closure.

Recommendation(s):

- 1) ENR recommends that the Hamlet specify best practices and principles, from *ECCC Solid Waste Management for Northern and Remote Communities Guidelines*, that are/were planned and will be used (if any) at the new SWDF site.

Topic 13: Closure and Reclamation Plan

Comment(s):

Section 1.12.2 of the SCP specifies that in the past, the Hamlet was operating a bulky waste metal area of 100 m x 100 m, which is said to have been ‘remediated with complete cover in 2004.’ This section further specifies that several old landfill areas were remediated in the north, southwest and east portions of the landfill site, and that these areas have been covered and currently have various degrees of vegetation regrowth.

Part I of the Hamlet’s current Water Licence for ‘Conditions Applying to Closure and Reclamation’ outlines the Hamlet’s responsibility to provide a Closure and Reclamation Plan to the Board for approval, at least 6 months prior to closing any Water Supply, Sewage or Solid Waste Disposal Facilities, including information on the following (amongst others):

- a) contaminated site remediation,
- b) potential for groundwater contamination,
- d) type and source of cover material,
- e) future area use,
- f) Hazardous waste removal, transportation and removal,
- h) maps delineating all disturbed areas, borrow material locations and site facilities;
and
- i) a restoration monitoring plan.

ENR notes that the Questionnaire specified (p. 15 of 42) that there is currently no ‘Abandonment and Restoration Plan’ (typically referred to as Closure and Reclamation Plans), and that “*GNWT is expected to handle the abandonment of the existing solid waste disposal facility after the new site is open.*”

Recommendation(s):

- 1) ENR recommends that the Hamlet specify:

- 1) What closure/remediation work was completed in the past (2004 or else) other than covering the site, at each: the bulk metal area, north area, southwest area and east area of the landfill; and
 - 2) The party/parties/companies involved in all of the closure/remediation activities.
- 2) Should closure of the former SWDF be confirmed, ENR recommends that the Hamlet work with the IWB Board to clarify uses for both SWDF sites and help determine final Closure and Reclamation planning requirements for the older SWDF site, as specified under Part I of the Hamlet's Water Licence N5L3-0714. This planning should include all parties involved in the closure and remediation activities.

Topic 14: New SWDF - Hazardous Waste Management - MVLWB/GNWT Templates

Comment(s):

Section 6.2 of the current SWDF O&M Plan (p. 15 of 82) provides a modest section on Hazardous Waste Management.

Should construction of the new SWDF be confirmed at the present time, or in the future, a SWDF O&M Plan for the new SWDF should be provided to the IWB. In completing the O&M plan, the Hamlet should incorporate on-site Hazardous Waste Management best practices to maintain waste management improvements noted between the 2015 and 2017 ENR inspections.

Information typically required from other NWT communities within the SWDF O&M Plan MVLWB/GNWT Template is also relevant to the Hamlet SWDF O&M Plans. For example, the template requires important information on hazardous waste management, as well as staff roles, responsibilities & training, SWDF security and access control, SWDF Facility operating hours, presence/absence of a Site operator, facility designs, primary and secondary containments, presence/absence of asbestos, fuel tanks and drums, contaminated soil information, ultimate disposal of various type of hazardous materials and so on. Supplementary template information would provide further relevant guidance to the Hamlet's staff and provide waste management details that may be missing from the Hamlet's current SWDF O&M Plan.

Recommendation(s):

- 1) ENR recommends that their SWDF O&M Plans adopt site-specific best waste management practices by supplementing relevant waste management details -

(as per the MVLWB/GNWT fillable SWDF O&M Template) – within the current or subsequent versions of the SWDF O&M Plan.

- 2) ENR also recommends that current or subsequent versions of the SWDF O&M Plan includes site-specific best waste management practices, in order to maintain waste management improvements as noted between the 2015 and 2017 ENR inspection Reports.

Topic 15: Controlled Access to SWDF – High Priority Measure

Comment(s):

ENR most recent inspection conducted on October 12, 2017, specifies (p. 7 of 12) that “With no operator, there is no control on what is being brought to the landfill, for instance, industrial waste.”

ENR notes that controlling the access to landfills was assessed as a high priority measure in ECCC Guidelines (see Table 2-2).

Recommendation(s):

- 1) ENR recommends that the Hamlet specify systems and/or structures planned to control access to the current and/or new landfill site(s), to be outlined in the associated SWDF O&M Plan.

Topic 16: Acceptance of Industrial Waste

Comment(s):

In the submitted Questionnaire, the Hamlet stated that no sources of commercial or industrial waste were to be deposited in the municipal SWDF system, which may affect the quality of effluent or leachate generated (p. 13 of 42).

ENR notes that the current SWDF O&M Plan specifies that “if any commercial or industrial entities wish to dispose of their hazardous waste in the Tuktoyaktuk Landfill, they will have to make an application to the Hamlet of Tuktoyaktuk and any appropriate government department before disposal is allowed.” It is also noted that Part D, Item 23 of the Water Licence N5L3-0714 specifies that “*The Licensee shall not accept Hazardous Wastes generated by the commercial and industrial operators at the Temporary Hazardous Waste Containment Facility unless and otherwise authorized by the Inspector.*”

ECCC Guidelines (p. 65, or 77 of 132) also refers to the importance of keeping waste from large industrial generators out of communities SWF and SWDF (eg. drill

cuttings) – as municipal SWD and SWDF are not designed to handle such wastes, increasing long term liability to communities.

Recommendation(s):

- 1) ENR recommends that the Hamlet determine and promote a consistent approach with respect industrial waste acceptance in order to respect the containment and design capabilities of the current/future SWD and SWDF site(s). This approach should be consistent between established Water Licence’s conditions and align with the information provided in the Hamlet SWDF O&M Plan.

Topic 17: SNP Sampling Results

Comment(s):

Section 4 of the Questionnaire (top of p. 11) specifies that SNP sampling results from the lagoon outlet at SNP 0714-2 have been within Water Licence discharge EQCs, except for one faecal coliform result of 30,000 CFU/100 ml monitored on Sept 16, 2015.

Compilation of data submitted within the Tuktoyaktuk’s Annual Reports demonstrate that 12 years’ worth of data was submitted by the Hamlet since 2003 (no data submitted for 2009, 2013 and 2014).

While results for BOD and TSS have been consistently below Water Licence EQC limits of respectively 120 mg/L and 180 mg/L, faecal coliforms were monitored above the 10,000 CFU/100 ml EQC limit between Oct 1-4 2012 (67,000 cfu/100 ml & too numerous to count (tntc)), on Sept 14 2016 with 28,300 CFU/100 ml and Sept 21 2017 with 33,000 CFU/100 ml, according to ENR Inspector’s results.

Recommendation(s):

- 1) ENR recommends that the Hamlet clarify plans to improve treatment of faecal coliforms at the Sewage Disposal Facilities.

Topic 18: Part A - Definitions

Comment(s):

Part B of the Hamlet’s Water Licence provides definitions to foster further context and understanding of Terms and Conditions of the Water Licence. When re-drafting the current Water Licence, as part of the current renewal process, the Board may wish to add further precision to certain definitions already outlined such as with the ‘Act’ - that may be further specified as the ‘*Water Act, S.G.N.W.T. 2014, C18*’.

The Board may also wish to add other relevant definitions such as *Receiving Environment, Reclamation, Batch Decant, Construction, Commercial Wastewater, Discharge, Unauthorized Discharge*, etc.

ENR notes that above suggested conditions and definitions (as well as others) may be found amongst most recently issued municipal Water Licences, such as G17L3-001 (Town of Inuvik in 2017), and the MV2016L3-0001 (Hamlet of Fort Providence in 2016).

Recommendation(s):

- 1) ENR recommends that the above (or equivalent) conditions and definitions be considered and/or added to the Hamlet's Water Licence to ensure clarity and consistency with other NWT Water Licence issuances.

Comments and recommendations were provided by ENR technical experts in the Water Resources Division and the Inuvik Region and were coordinated and collated by the Environmental Assessment and Monitoring Section (EAM), Conservation, Assessment and Monitoring Division.

Should you have any questions or concerns, please do not hesitate to contact Patrick Clancy, Environmental Regulatory Analyst at (867) 767-9233 Ext: 53096 or email patrick.clancy@gov.nt.ca.

Sincerely,



Patrick Clancy
Environmental Regulatory Analyst
Environmental Assessment and Monitoring Section
Conservation Assessment and Monitoring Division
Department of Environment and Natural Resources
Government of the Northwest Territories