

Environment and Natural Resources  
Government of the Northwest Territories  
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October 9, 2015

Hamlet of Paulatuk  
PO Box 98  
Paulatuk NT X0E 1N0

**Attn: Greg Morash, Senior Administrative Officer**

**RE: Municipal Water Licence N7L3-1619  
CLASS B - MUNICIPAL**

Dear Mr. Morash,

An inspection was conducted of the Municipal Water Supply and Waste Disposal Facilities on August 11, 2015. Enclosed is a copy of the Municipal Water Licence Inspection Report.

There have been visible improvements since the last inspection such as the addition of a hazardous waste storage area at the Solid Waste Disposal Facility and the general condition of the Water Supply Facility. The Hamlet is also to be commended for submitting updated Operation and Maintenance Plans and a Spill Contingency Plan as required.

There remains however a number of violations as depicted on page five of the Inspection Report. Some of the violations relate to reporting, signage, Surveillance Network Program responsibilities and administrative requirements and can be dealt with promptly. Please review and address the concerns throughout the Inspection Report.

While it is clear that progress is being made on certain issues, there are terms and conditions of your Water Licence that are being neglected resulting in non-compliance/violations. Upon review of previous years Inspection Reports it is apparent that many of the violations and concerns outlined in the Inspection Report are consistent with those in previous years.

It is the Hamlet's responsibility to ensure compliance with all of the terms and conditions of its Water Licence. Environment and Natural Resources is available to assist you in achieving this goal.

A copy of this report will be sent to the Inuvialuit Water Board for their review and public records. A copy will also be sent to the Hamlet Mayor and Council. If you have any questions/concerns regarding the enclosed, please do not hesitate to me at (867) 678-6676.

Sincerely,



Philippe Thibert-Leduc  
Water Resource Officer  
Inuvik Region

Cc: Stephen Charlie – Superintendent – Inuvik Region – ENR

Enclosure: Municipal Water Licence Inspection Report (6 pages)

<b>LICENCE #:</b>	<b>N7L3-1619</b>	<b>EXPIRY DATE:</b>	<b>November 20, 2015</b>
<b>LICENCEE:</b>	<b>Hamlet of Paulatuk</b>	<b>PREVIOUS INSPECTION:</b>	<b>August 30, 2011</b>
<b>COMPANY REP:</b>	<b>Greg Morash SAO</b>	<b>INSPECTION DATE:</b>	<b>August 11, 2015</b>

**WATER SUPPLY**

Source:	New Water Lake	Quantity Used:	Approximately 12,499m <sup>3</sup>
Owner/Operator:	Hamlet of Paulatuk	Meter Reading:	N/I

**Indicate:**      **A - Acceptable**                      **U - Unacceptable**                      **N/A - Not Applicable**                      **N/I - Not Inspected**

Intake Facilities	A	Storage Structures	A	Treatment Systems	A	Recycling	N/A
Flow Meas. Device	A	Conveyance Lines	A	Pumping Stations	A	Chem. Storage	A
Water Delivery Truck	A					Modifications	N/A

**Water Supply Comments:**

- Water Lake was clean looking with no floating debris and no obvious signs of human activity surrounding the lake other than the occasional ATV and snowmobile. Hamlet staff mentioned that they are still working to educate residents to make it clear that the Water Supply Facilities (WSF) are offlimits, but that people generally understand and comply. The Hamlet is to be commended for partially fencing-off access to the WSF in recent years and working to control access.
- Signs at the gate and at the Water Treatment Plant (WTP) are clear and in good condition. WTP and generator rooms are kept locked when the Water Operator is not on site. Gate also helps to control unauthorized access.
- WTP was generally clean and tidy at the time of the inspection. Some clutter in the generator room which could be cleaned up.
- The Water Operator is maintaining daily logs and is meeting all record-keeping requirements. Water analysis and routine checks are being conducted.
- Hamlet staff is having issues with its chlorine pump as it is an older model and replacement parts are often needed and difficult to come by. Hamlet is working towards replacing this pump. No issues in meeting water demand as the Hamlet maintain stock replacement parts on site and has access to backup water in case of an emergency.
- No spillages reported nor were any signs of spills observed on site.
- Generator appears to be in good condition, secondary containment is in place in case of spill. Recommend inspecting this periodically to ensure that there are no leaks.
- Pilings have been installed in front of the WTP and were in good conditions.
- It appears that a single hamlet employee is currently trained to operate the WSF. Recommend training other Hamlet personnel so that there is a designated back-up at all times.
- Ensure that a spill response kit is present on site and that staff is trained on how to use it as per the Spill Contingency Plan.
- Signage needs to be maintained upright and secured into place. Strong winds are displacing signs overtime.
- Access road is in good condition and area around WTP is stable.
- Water intake pipeline is in good condition and Hamlet has had no issues with it in recent years.
- Flexor pipe connecting the aboveground storage tank (AST) is in good condition and no signs of movement were observed.
- Water delivery truck appears to be in good condition and everything was sealed and capped properly during transport.
- Backup generator is rarely used. Recommend testing periodically to ensure that it is functional and recommend monitoring fuel line for leaks and secondary container for rust and water pooling.

**WASTE DISPOSAL – SEWAGE**

Disposal Method		Primary Treatment					
Mechanical	N	Camp Sump	N	Natural Water Body	Y	Wetland Treatment	Y
Continuous Discharge	Y	Intermittent Discharge	N	Seasonal Discharge	N	Land Spread	N
Accelerated Biological	N	Other	N/A				

**Indicate:**      **A - Acceptable**                      **U - Unacceptable**                      **N/A - Not Applicable**                      **N/I - Not Inspected**

Discharge Quality	A <sup>1</sup>	Decent Process & Structures	N/A	Discharge Measurement Device	A
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Freeboard	A	Sludge Disposal Method	N/A		
Periods Of Discharge	Appears to discharge continuously, water levels remain high		SNP Samples Collected	Yes	
Effluent Discharge Rates	Natural outflow into the wetland				

**Sewage Comments:**

- <sup>1</sup>Sampling was conducted by the Water Resource Officer at SNP Station Number 1619-2 (sewage effluent discharged from the sewage lagoon) and at the point of discharge between the wetland and the ocean. The intent was to measure the effectiveness of the natural filtration system. Not all parameters could be analyzed due to lack of sampling supplies. In addition, the fecal coliform parameter was analyzed past the 24 hours holding time. All parameters that were analyzed for the sewage outflow into the wetland came back under criteria. Total suspended solids were measured at 388 mg/L at outflow from the wetland into the ocean which is over the 120 mg/L limit. More sampling will have to be conducted earlier in the season next year to properly assess all SNP Stations.
- Regular SNP sampling is not being conducted by the Hamlet as per SNP requirements.
- Truck pad by the sewage discharge chute appears to be in poor condition (see Figure 1). One of the 2 pilings is heavily damaged and the other is lying flat on the ground. Unclear if damage was caused by sewage truck, truck pad stability issues or both. Both pilings need to be set upright and secured into place. Consider relocating them further away from the discharge chute as to create sufficient room between the discharge chute and the sewage truck.
- There is very clear evidence of ongoing spillage at the site of discharge. This could lead to erosion and stability issues for the truck pad and the sewage discharge chute. Ensure that the sewage truck is not leaking any sewage/oil. Recommend backfilling heavily eroded/unstable areas in the short term and adding a catchment basin under the point of discharge to prevent any spillage on the truck pad. Longer term, recommend re-slopping the entire truck pad to ensure that there is sufficient drainage.
- Sewage discharge chute appears to be in poor condition. Previous wooden pad structured has been removed and current one appears to be unstable and potentially unsafe for workers. Ensure that the discharge chute is of proper length for the sewage truck and that it is secured in place. The Hamlet is to be commended for adding a secondary piece of metal to act as a further measure to prevent erosion of the culvert, as recommended in the last Inspection Report. However, some sewage is spilling directly on the pad. Recommend adding a containment basin or funnel-like structure to contain any sewage leaks from spilling on the ground.
- There is evidence of an hydrocarbon or hydraulic spill on site (see Figure 2). Unclear if this is the same potential spill that was reported in the last Inspection Report. This needs to be sampled and sent for analysis, and remediated accordingly. Environment and Natural Resources (ENR) can provide assistance with this (equipment & process). Short term, recommend inspecting at sewage and waste disposal trucks for any sign of leakage.
- Quality (colour/smell/turbidity) of the water seemed adequate. Some wastes could be observed along the shoreline of the sewage lake (See Figure 3). Recommend cleaning this up periodically to prevent any garbage from reaching the wetland downstream.
- Wetland appears to be healthy and functioning up to standards. Recommend cleaning up any garbage that makes its way into the wetland on a regular basis to prevent any risk to its efficiency.
- Freeboard level is adequate; however Paulatuk experienced a lot of precipitation over the summer. As a result, Hamlet staff should closely monitor the sewage lake water level so that no waste from the solid waste site gets submerged.
- Access road is generally in good condition.
- Signage is on site informing people that this lake is used for sewage disposal, at the entrance of the access road.

**WASTE DISPOSAL – SOLID WASTE**

Disposal Method		Landfill					
Open Dump	N	Landfill	Y	Burn & Landfill	U <sup>1,2,3</sup>	Underground	N
Offsite Removal	N	Other	N/A				
Owner / Operator	Hamlet of Paulatuk						

**Indicate:**      **A - Acceptable**              **U - Unacceptable**              **N/A - Not Applicable**      **N/I - Not Inspected**

Runoff Diversion	N/A	SNP Samples Collected	No
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**Solid Waste Comments:**

- It is the duty of the Hamlet to inform the Water Resource Officer when accepting contaminated soil/snow at the Solid Waste Disposal Facility (SWDF). 2 bags of suspected contaminated soil and of unknown origin were present (see Figure 4) and it was reported that contaminated snow was also brought on site. It also poses a threat to the surrounding environment, including the sewage lake which is downstream from the SWDF.
- The Hamlet is constructing a bermed cell to store hazardous wastes. It appears that the Hamlet or residents have already begun using this designated site although construction is not complete (see Figure 5). There were unused liner rolls observed beside the bermed area that have yet to be put into place. Recommend closing access to this cell and putting appropriate signage in place to inform residents so that no hazardous wastes are deposited there until construction is complete. Recommend adding a bin on site

to store hazardous wastes in the meantime, or have residents drop-off hazardous wastes at the Hamlet garage for temporary storage.

- Ensure that there is sufficient operating area for burning of authorized waste to ensure that it is fully controlled.
- It appears that animal carcasses are being disposed in a designated cell but left uncovered. Recommend covering up any animal carcasses periodically to prevent attracting pests and wildlife.
- It is evident that the Hamlet is continually dealing with windblown garbage issues. Some areas around the SWDF are fenced-off but most of them are failing due to the repeated strain caused by the cumulative weight of the household wastes (see Figure 6). Recommend periodically removing garbage piling up on fences to prevent damage. Recommend repairing or completely replacing and extending beyond what is currently fenced.
- Recommend using fill to help with managing SWDF capacity and windblown garbage as compacting is not sufficient. It was evident at the time of the inspection that no fill is being used to cover household wastes even though the Hamlet has access to a nearby quarry. Using fill will help control windblown debris and deter wildlife. Fencing and higher berms are also effective control methods.
- Oil drums and batteries should be kept above ground (e.g. wood pellets) and inspected regularly for leaks/general condition. Empty oil drums should be sealed and stored on their side so that no water accumulates inside. There is evidence of spillage of drum/containers contents on the ground especially near the drums at the SWDF. Contaminated soil needs to be cleaned up and disposed in the designated contaminated soil storage area. Please note that when any contaminated soil is deposited at the SWDF the Hamlet needs to notify the Inspector as per Part D: Conditions applying to Waste Disposal, Item 7, of the Water Licence. The contaminated soil storage area at the SWDF should not be for long term storage but allow for the remediation of soils and their permanent disposal. There needs to be regular turning of soil/aeration, sampling, removal of soil for proper disposal. This will ultimately expose other layers of soil to the remediation process and create an efficient remediation program.
- Any new drums should be brought to the Hamlet garage or triaged by Hamlet staff before entering the SWDF. Knowing their content is key so that chemicals and fuels can be consolidated together in plastic pails and stored adequately. Empty drums can then be brought at the landfill. The Hamlet is to be commended for managing a considerable amount of hazardous waste using the Hamlet garage as a temporary storage. ENR can provide advice and assistance as to the final disposal of temporarily stored hazardous waste.
- As has been mentioned in past inspection reports, there needs to be better/further segregation of waste. Signage would help and educate residents as to where to dispose of their wastes. Efforts have been made with regards to segregation but this needs to be maintained to further increase public awareness and assistance. Signage should be present for but not limited to the following: bulk metal waste, white metal waste (fridges, washers/dryers, etc.), hazardous waste (oil, fuel, batteries, drums), empty drums, fuel tanks, tires, vehicles/ATVs/ skidoos, honey bag pit, waste animal pit, domestic/household garbage, paper/wood/cardboard-designated burning area, etc. Segregation will aid in an organized site that residents will respect and help maintain. This will also keep costs down in the future when it is time to recycle waste or abandon and restore the site.
- Waste could be observed in water between landfill and sewage lagoon should be moved above water line.
- It is apparent that components of the current Operation and Maintenance Plan (O&M Plan) are not being followed as per Part E: Conditions Applying to Operation and Maintenance, Item 4, of the Water Licence. Ensure that Hamlet personnel are familiar with the approved O&M Plan and that it is being properly implemented. A copy of the approved O&M Plan must be onsite and readily available.

## FUEL STORAGE

**Indicate:**      **A - Acceptable**                      **U - Unacceptable**                      **N/A - Not Applicable**      **N/I - Not Inspected**

Owner:	Hamlet of Paulatuk	Operator:	Hamlet of Sachs Harbour	Condition of tanks:	A
Berms & Liners	A <sup>1</sup>	Water within Berm:	U <sup>2</sup>	Evidence of Leaks:	None
Drainage Pipes	N/A	Pump Station and Catchment Berm	A	Runoff Diversion	N/A
Pipeline Condition	A				

### **Fuel Storage Comments:**

- <sup>1,2</sup>No leaks or signs of previous spills observed anywhere around the aboveground fuel tank, which appears to be in good condition and stable. However there was water and rust at the bottom of the secondary containment. Water in the secondary containment is a concern as it displaces part of the emergency spill capacity. It needs to be consistently removed. Another option is to consider adding a cover/roof to prevent precipitation from accumulating.
- Flex pipe is in good condition; however no pictures available to compare bending overtime. As noted in the last Inspection Report from 2011, there is no flex pipe on the return pipeline from the generator the fuel tank. Continue to monitor for any further changes to the fuel tank and associated piping as any spill would pose an immediate risk the Hamlet's water supply.

## SURVEILLANCE NETWORK PROGRAM

Samples Collected Hamlet	No samples have been taken/reported for the last few years
Samples Collected ENR	2 samples were collected during the inspection: between the sewage lagoon and the wetland, and a second at the end of the wetland, near the point of discharge into the ocean to get a sense of the effectiveness of the natural filtration system

Signs Posted: SNP	N/A – all that is needed is a map with sampling sites, GPS coordinates etc. This has yet to be done.	Warning	Signage indicating Paulatuk Water Supply and at fenced entrance to Water Supply Facilities stating “No Unauthorized Entry”. No signage for Sewage Disposal Facilities or Solid Waste Disposal Facilities.
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**Surveillance Network Program Comments:**

- As has been stated in past inspection reports, warning signage needs to be posted for the Sewage Disposal Facility (SDF) so that residents are aware of the hazard. Failing to do this is a violation of Part B: General Conditions, Item 5, of the Water Licence.
- Sampling by the Hamlet has not occurred, which is a violation of Part B: General Conditions, Item 2, of the Water Licence.
- Since SNP signage is no longer required it is now necessary for the Hamlet to provide a map or drawing indicating the locations of the SNP sampling locations. Contact the Water Resource Officer or the Inuvialuit Water Board if you require assistance with this. Failing to provide this document is a violation of Part B: General Conditions, Item 4, of the Water Licence.

**GENERAL CONDITIONS/REPORTS/PLANS**

**Indicate:**      **A - Acceptable**                      **U - Unacceptable**                      **N/A - Not Applicable**                      **N/I - Not Inspected**

C&R Plan	N/A	Records & Reporting	A	Final Report	N/A
Geotechnical Inspection	N/A	Posting, Signage	U <sup>1</sup>	Contingency Plan	A
Restorations Activities	N/A	Spills	A	O&M Plan	A
Maintenance	A	Modifications	N/A	Annual Report	U <sup>2</sup>

**General Comment:**

- Hamlet council mentioned interest in acquiring an incinerator to better manage household wastes. Recommend contacting ENR to further discuss this project if the Hamlet decides to move forward with this. Such a project is not without obstacles as it would require training for staff, regular maintenance and updates to the O&M plans, for example. There are also current and future regulatory requirements to consider.
- <sup>1</sup>It's important that postings and signs be maintained and added where needed.

**Missing Deliverables:**

- <sup>2</sup>If data is limited the **Annual Reports** should be sent with what information is known so there are records available. The last Annual Report on file was submitted for 2012. An Annual report for 2014 was due on April 30<sup>th</sup>, 2015. Failure to submit an Annual Report with the Board is a violation of Part B: General Conditions, Item 1, of the Water Licence.

**Water Licence Comments:**

- Water Licence N7L3-1531 is set to expire on November 20, 2015. Please note that as per Item 4, under “General Procedures for the Administration of Licences Issued Under the Northwest Territories Waters Act in the Northwest Territories”, it is the responsibility of the Licensee to apply to the Water Board for renewal of the Licence. It is recommended that a renewal application be submitted at least 8 months in advance of the Licence expiry date. It is important to note that past performance of the Licensee, new documentation and information, and any other supporting documents including the findings of this inspection report will be used to determine the terms and conditions of the Licence renewal. I advise that the Hamlet prioritize issues and concerns flagged in the most recent inspection reports and correspondence with the Inuvialuit Water Board in preparation for the renewal of the Water Licence.
- Recommendation in the short term:
  - o Review general terms and conditions of the Water Licence
  - o Have staff become familiar with general terms and conditions of the Water Licence
  - o Identify necessary training, if any, for staff, and ensure that there is more than one trained and certified Water Operator
  - o Prepare for SNP sampling as per the terms of the Water Licence in time for spring and summer 2016
  - o Consider using cover material to manage household wastes and control windblown debris and wildlife
  - o Address issues observed at the sewage discharge pad
  - o Prioritize non-compliant items flagged in most recent inspection reports and correspondence with the Inuvialuit Water Board
  - o Ensure that the new hazardous waste storage area at the SWDF is completed and used properly by Hamlet staff and residents
  - o Repair the fence around the SWDF and consider extending it to better contain windblown debris
- Please note that as of April 1, 2014, some information has changed under Item 6 of Water Licence N7L3-1531, under “General Procedures for the Administration of Licences Issued Under the Northwest Territories Waters Act in the Northwest Territories”. In the future, you may use the following contact information for the Analyst and the Inspector:

ANALYST:

Analyst  
Taiga Environmental Laboratory  
Department of Environment and Natural Resources  
Government of the Northwest Territories

Phone: (867) 765-6645  
Fax: (867) 920-8740  
Email: taiga@gov.nt.ca

4601 - 52nd Avenue  
Yellowknife NT X1A 2L9

INSPECTOR:

Philippe Thibert-Leduc  
Water Resource Officer  
Department of Environment and Natural Resources  
Government of the Northwest Territories

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**NON-COMPLIANCE/VIOLATIONS OF ACT OR LICENCE**

Part B: General Conditions, Item 1,

"The Licensee shall file an Annual Report with the Board not later than April 30<sup>th</sup> of the year following the calendar year reported..."

Part B: General Conditions, Item 2,

"The Licensee shall comply with the "Surveillance Network Program" annexed to this Licence, and any amendment to the said "Surveillance Network Program" as may be made from time to time, pursuant to the conditions of this Licence."

Part B: General Conditions, Item 4,

"The Licensee shall, within 60 days of the issuance of this Licence, submit to the Board for approval a map or drawing indicating the location of all Surveillance Network Program sampling stations, with associated GPS coordinates."

Part B: General Conditions, Item 5,

"The Licensee shall, within 60 days of issuance of this Licence, post signs in the appropriate areas to inform the public of Water Supply and Waste Disposal Facilities. Additional signage at the Solid Waste Disposal Facility shall clearly indicate where different waste streams collected by the Hamlet should be deposited. All postings shall be located and maintained to the satisfaction of an Inspector."

Part D: Conditions Applying to Waste Disposal, Item 7,

"The Licensee shall notify an Inspector when any contaminated soil and/or contaminated snow is deposited at the Solid Waste Disposal Facilities."

Part D: Conditions Applying to Waste Disposal, Item 8,

"The Licensee shall contain all contaminated soil and/or contained snow in such a manner as to minimize the potential for migration of contaminants into any Waters, to the satisfaction of an Inspector"

Inspector's Signature: \_\_\_\_\_



**Inspection Images:**

**Figure 1**

Sewage discharge pad is in poor condition and needs to be addressed.



**Figure 2**

Evidence of a hydrocarbon or hydraulic spill on the sewage discharge pad. This needs to be sampled and sent for analysis, and remediated accordingly.



**Figure 3**

Wastes could be observed along the shoreline of the sewage lake. Recommend cleaning this up periodically to prevent any garbage from reaching the wetland downstream. Bulk wastes need to be taken out of the sewage lake.



**Figure 4**

Bags of suspected contaminated soil of unknown origin – not reported to ENR.



**Figure 5**

Hazardous wastes being stored at incomplete designated storage area.



**Figure 6**

Failing fence behind solid waste disposal site due to strain caused by accumulation of windblown garbage.

