

Hamlet of Aklavik

Background Report for Water Licence Renewal

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Project Number:

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Date:

August 2014

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August 15, 2014

Fred Barons
Senior Administrative Officer
Hamlet of Aklavik
P.O. Box 88
Aklavik, NT X0E 0A0

Dear Mr. Barons:

Project No: 60317543

Regarding: Background Report for Water Licence Renewal

We are pleased to provide the final Background Report for Water Licence Renewal (Background Report).

The Hamlet will need to send three hard copies and two electronic copies (CD's) of the complete application package to the NWT Water Board, along with the application fee. The application package includes:

- signed Schedule III form
- NWT Water Board Questionnaire form
- Background Report

If you have any questions, please contact me. Thank you for choosing AECOM for this work.

Sincerely,
AECOM Canada Ltd.



Mike Yamada, M.Eng., P.Eng.
Senior Process Engineer
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MY:cm
Encl.

Distribution List


# of Hard Copies	PDF Required	Association / Company Name
4	Yes	Hamlet of Aklavik

Revision Log


Revision #	Revised By	Date	Issue / Revision Description
0		July 28, 2014	Draft for client review
1		August 15, 2014	Final report

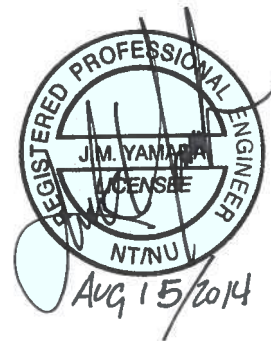
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PERMIT TO PRACTICE	
AECOM Canada Ltd.	
Signature	
Date	Aug 15, 2014
PERMIT NUMBER: P 639	
The Association of Professional Engineers and Geophysicists of the NWT/NU.	

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Appendices

Appendix A. Spill Contingency Plan for the Hamlet of Aklavik, May 2011

1. Introduction

AECOM has prepared this report to support the Hamlet of Aklavik's application for water licence renewal (2014) to the Northwest Territories Water Board (NWT WB). The report presents an overview of the community's wastewater and solid waste infrastructure based on existing information. The drinking water system is not discussed since that system operates under a licence from the Gwich'in Land and Water Board which does not expire until 2019.

A similar report was prepared for the Hamlet's last application in 2009. This report focuses on issues and improvements at the sewage and solid waste systems from 2009 to 2014. The report summarizes Aboriginal Affairs and Northern Development Canada (AANDC) Inspection Reports, the Hamlet's Annual Reports, and conversations with Hamlet staff.

Information in the following report is presented through a combination of figures and text to provide a complete understanding of the community's infrastructure. The waste systems are illustrated in aerial photos, and tables are used throughout the report to summarize information. The variety of presentation techniques should make the information clear and convenient for all stakeholders in the application process.

2. Community Brief

The Hamlet of Aklavik (“Place of the Barren Land Grizzly Bear”) is located on the west shore of the Peel Channel in the Mackenzie River Delta. The community is accessible year-round by air, and can be reached via an ice road from Inuvik in the winter.

Aklavik has a history of trapping and was used by the Gwich’in and Inuvialuit peoples as a spot to gather for trading. By the 1920’s, Aklavik was a permanent settlement with a Hudson’s Bay trading post, Anglican and Roman Catholic missions, and the RCMP regional headquarters. The community grew to around 1500 people by the 1950’s, mainly due to the booming muskrat fur trade, and was the seat of government services in the Mackenzie Delta area. However, after severe flooding and erosion in the 1950’s, the Federal Government began construction on Inuvik about 50 km to the east, and most services were moved from Aklavik to Inuvik. Although Aklavik’s population declined as people moved to Inuvik, many residents chose to stay. Today, a large percentage of the community is Gwich’in or Inuvialuit and many residents practice traditional activities such as trapping, hunting and fishing.

Table 2-1 presents a brief profile of the community including size, terrain, climate and socio-economic characteristics.

Table 2-1: Profile of Aklavik

Location:	68° 13' N and 135° 0' W.
Population:	628 in 2012 (NWT Bureau of Statistics).
Residences:	228 in 2009 (NWT Bureau of Statistics).
Proximity:	58 air km west of Inuvik, 1143 air km northwest of Yellowknife.
Weather:	Annual Daily Average = -8.2°C. July Daily Average = 14.1°C and January Daily Average = -26.9°C. (Canadian Climate Normals for nearby Inuvik, 1981 to 2010)
Precipitation:	11.5 cm of rainfall and 158.6 cm of snowfall annually.
Vegetation:	Aklavik is within the Boreal forest zone. White spruce (upper delta) or balsam, poplar and black spruce (lower delta) grow on high ground, and low lying areas may have willows, alders, marshy vegetation and muskeg (GNWT, 1982).
Transportation:	Accessible by air or ice road in winter, air or boat in summer.
Economy:	Major activities include trapping, hunting and fishing.
Services:	Public School, Health Centre, RCMP Station, Canada Post outlet, etc.
Geology/Terrain:	The delta region surrounding Aklavik is characterized by alluvial deposits of fine sand and silt. Permafrost is continuous, with an active layer between 0.3 and 0.9 m thick. Aklavik is about 10 m above sea level, or 3.5 m above summer water level, so flooding is occasionally a problem.

3. Infrastructure Descriptions

This section provides an overview of Aklavik's sewage and solid waste disposal systems. See **Figure 3-2** for the locations of the infrastructure described below.

The sewage lagoon and solid waste disposal facilities located at Clearing Lake were built in 1987.

3.1 Sanitary Sewage Facility

Aklavik's sewage is collected using trucked pump-out services. The sewage is treated at the Clearing Lake Sewage Lagoon approximately 2 km northwest of the community. See **Figure 3-3** for a site plan of the sewage lagoon.

Sewage is collected by a local contractor, K&D Contracting, using a 9000 L capacity vacuum truck. The sewage truck typically makes six trips/day from Aklavik to the Clearing Lake sewage lagoon.

The sewage is trucked to the lagoon site via a gravel/dirt road. Sewage is emptied into the lagoon at a truck dump on the east side of the lagoon. The trucks empty into the lagoon through a discharge chute which was built in 2011 or 2012.

The truck discharge area is identified by a sign. Surveillance Network Program (SNP) station number 570-4 is also posted at this location, although this station is not currently regulated by the Water Licence.

The Clearing Lake Sewage Lagoon is a natural lagoon that operates with continuous discharge into the adjacent natural wetland. **Figure 3-1** below illustrates the sewage treatment process. Freeze-up of the lagoon typically happens in early October, and break-up is in late May or early June.

The lagoon covers an area of approximately 290,000 m² and is about 1.5 m (5 ft) deep. The lagoon can therefore hold roughly 435,000 m³ of sewage. For an average sewage input of 87 m³/day (with sewage production assumed equal to potable water use), the lagoon theoretically provides a retention time of 5018 days (14 years).



Figure 3-1: Aklavik Sewage Treatment Schematic



Figure 3-2: Infrastructure Locations



Figure 3-3: Sewage Lagoon Site Plan

3.1.1 Effluent Discharge

Effluent discharges continuously from the Clearing Lake Sewage Lagoon into the adjacent wetland area. The outfall point is on the west side of the lagoon, across from the sewage truck discharge area.

The lagoon outflow point is SNP station 570-3. This station is accessed by canoe launched from the sewage truck dump area.

3.2 Solid Waste Facility

Solid waste is collected from Aklavik by truck and deposited at the Clearing Lake Solid Waste Facility (landfill) near the Sewage Lagoon. See **Figure 3-4** for a site plan of the landfill.

A local contractor, Michael Greenland, trucks Aklavik's solid waste to the landfill. Approximately four truckloads of solid waste are collected daily from Aklavik and taken 2 km north to the Clearing Lake landfill.

There is a gate at the entrance to the landfill site, located just past the tank farm. This gate is normally unlocked to prevent residents leaving garbage on the road if they can't access the landfill. The road continues a short distance past the landfill site to the sewage lagoon truck discharge area.

The Clearing Lake landfill is located east of the Clearing Lake Sewage Lagoon. The landfill is a ground-level site, with low berms surrounding the bulky metal waste and honeybag areas. The entire site covers approximately 20,000 m² (235 m x 85 m). The landfill is not fenced, but is surrounded by trees, which help keep windblown debris contained.

The landfill is organized to segregate some types of waste. Some signs are present, such as a "Danger: Solid Waste Site" near the entrance, "Metal Only", "No Dumping Garbage", etc. A bulky metal waste area is located north of the access road; this area is currently close to full. The rest of the landfill is south of the road. Hazardous wastes (tires, batteries, etc.) are separated from other wastes. There is a partially bermed pit for honeybags, however, all residents of Aklavik now use trucked sewage pumpout from tanks. Domestic waste is located in the area at the back (south side) of the landfill site.

A rough estimate for the capacity of the entire landfill site is 40,000 m³, assuming the entire site of 20,000 m² is built up to a height of 2 m. The domestic waste disposal area is about 45 m x 80 m (3,600 m²), so the capacity of this area is approximately 7,000 m³.

The landfill receives some industrial waste from housing construction and other contractors.

One domestic solid waste area at the Clearing Lake landfill was filled in 1993. A new section was cleared and the old cell was partially covered with soil.

The Hamlet currently does not burn waste at the landfill.



Figure 3-4: Landfill Site Plan

4. Water Licence and Annual Reports

4.1 Water Licences and Amendments

Aklavik's Water Licence was first issued as N3L4-0570 in 1984 by the Northwest Territories Water Board (NWT WB). The Hamlet currently holds Licence N3L3-0570 with the NWT WB for municipal waste disposal, and Licence G99L3-003 with the Gwich'in Land & Water Board (GLWB) for municipal water use. **Table 4-1** provides a summary of the Hamlet's recent water licences. The Hamlet is currently applying for a renewal of Licence N3L3-0570 with the NWT WB.

Table 4-1: Summary of Recent Water Licences

Effective Date	Expiry Date	Water Board	Licence #	Licence Scope
August 1, 2009	November 30, 2019	Gwich'in LWB	G99L3-003	Municipal Water Use
June 29, 2009	November 30, 2014	NWT WB	N3L3-0570	Municipal Waste Disposal

Aklavik's current Water Licence requires that the Hamlet conduct a Surveillance Network Monitoring Program (SNP). There is one SNP monitoring station at Aklavik's waste disposal site, SNP 570-3, at the point where effluent discharges from the Sewage Lagoon. The Hamlet's SNP requires that effluent from the Sewage Lagoon be sampled at 570-3 once in spring, immediately after break-up of the Lagoon, and once in fall, prior to freeze-up.

To meet the current Licence requirements, effluent leaving the lagoon at SNP 570-3 must meet the effluent quality standards in **Table 4-2** below.

Table 4-2: Sewage Lagoon Effluent Quality Standards

Sample Parameter	Maximum Average Concentration
Faecal Coliforms	10,000 coliforms per 100 mL
Biological Oxygen Demand (BOD ₅)	120 mg/L
Oil and Grease	5 mg/L and no visible sheen
Total Suspended Solids (TSS)	180 mg/L
pH	Between 6 and 9

4.2 Water Licence Annual Reports

The Hamlet submitted Water Licence Annual Reports for 2009, 2010, 2011, and 2012. A report was apparently not submitted for 2013, likely due to staff turnover as the Hamlet's new Senior Administrative Officer (SAO) started in May 2014 after the previous SAO had been away on medical leave.

The amount of sewage generated at Aklavik is assumed to be the same as the amount of potable water used. Average water use was 31,640 m³ per year from January 2009 to December 2012. This is an approximate use of 138 litres per capita per day. The annual water use is shown in **Table 4-3**.

Table 4-3: Water Consumption by Group User (cubic metres)

Year	Residential	Commercial	Government	Total
2009	13,100	2,191	15,638	30,929
2010	13,348	2,375	15,790	31,513
2011	13,485	2,612	15,461	31,557
2012	13,724	2,580	16,261	32,566

The Hamlet took at least three samples of sewage lagoon effluent over the course of the current Water Licence, but only one set of laboratory results was included in the Hamlet's annual reports and available for this report. **Table 4-4** below summarizes the sampling done from 2009 to 2013 at the sewage lagoon discharge location SNP 570-3.

Table 4-4: Sewage Lagoon Effluent Quality at SNP 570-3

Parameter	Units	July 10, 2009	July 15, 2011	Fall 2013
pH	pH units	7.34	AANDC Inspector's report from August 26, 2011 noted that Hamlet staff had sampled the sewage lagoon discharge on July 15, 2011, and that sample results were below the discharge criteria.	Hamlet Foreman reported that a sample was taken and sent to lab in Yellowknife, but he did not have a copy of the results.
Total Suspended Solids	mg/L	66		
Biochemical Oxygen Demand	mg/L	Note 1		
Faecal Coliforms	CFU/100 mL	Note 1		

Note 1: Sample received at laboratory past allowable hold time; analysis not possible.

5. Past Performance

5.1 Inspection Reports, 2009 - 2013

This section summarizes the Indian and Northern Affairs Canada (INAC) / Aboriginal Affairs and Northern Development Canada (AANDC) inspection reports from 2009 to 2013 on Aklavik's waste disposal system. AANDC inspections are done to provide a general summary of the state of the infrastructure and current operation of the facilities operating under a water licence, highlight any concerns, and determine a community's compliance or non-compliance with its water licence.

The following tables present a summary of comments from Inspection Reports from 2009 to 2013. Table 5-1 presents comments on the Hamlet's waste disposal facilities, and Table 5-2 shows comments on the Hamlet's SNP and records and reporting requirements. Table 5-3 summarizes the non-compliance items / violations that the Inspector identified for Water Licence N3L3-0570.

Table 5-1: Summary of AANDC Inspections (Waste Facilities)

Inspection Details	Concerns	Notes
August 26, 2011 by Jan Davies	<ol style="list-style-type: none"> 1. Ensure solid waste signs are in the appropriate locations. Additional signage needed for bulk metal waste, white metal waste, hazardous waste, etc. 2. Warning signs needed to identify waste facilities. 3. Erosion at sewage discharge chute. 4. Ensure vehicles, engines etc. have fluids cleaned out properly to avoid contamination issues. 5. Confirm drums are emptied as per GNWT Guidelines before they are taken to Solid Waste Disposal Facility (SWDF). 6. Household waste cell does not appear to be covered on a regular basis. Cover waste to control windblown debris and prevent wildlife issues (bears). 7. Waste oil containers need proper storage and disposal. Hamlet needs to collect oil/glycol to send out for proper disposal, or burn in a used oil burner. 8. Hazardous waste should be stored in an area with a containment berm. This storage is temporary prior to disposal at approved and designated facilities. For oil spills, make sure soil is cleaned up, contained and properly disposed of. 9. Operation & Maintenance Plan needs to be updated and followed. 10. Ensure waste containers at SWDF from Water Treatment Plant are rinsed and cleaned thoroughly. 11. Fuel and sewage tanks need to be empty and sealed. 12. Construction & demolition material needs to be segregated and/or covered. 13. Sewage Treatment Plan due June 2011 was not submitted to NWT Water Board. 14. Sewage lagoon discharge was sampled July 15, 2011. Sampling needs to be done twice per year. 15. Emergency release of about 34,000 L of sewage occurred May 21 – 23, 2011. Spill Contingency Plan needed with measures to handle flooding situations, e.g. extra sewage tank storage or more frequent emptying of sewage tanks around flooding season. 	<ol style="list-style-type: none"> 1. Gated entrance and drop-off bin were removed during inspection. Gate has been re-installed. New sewage discharge chute has been installed. 2. A lot of work was done by the Hamlet to improve the SWDF. Fill was placed over part of bulky waste cell; there is more crushed metal waste including vehicles. Water samples were taken from the waste vehicle cell which had filled with water as of the September 2, 2010 inspection and had evidence of hydrocarbon contamination. Samples results showed below detection or low levels of oil. Vehicles have since been pulled from the flooded cell. There is no longer a sheen/oil present in the cell. 3. The location where asbestos is buried at the SWDF needs to be recorded for future activities. 4. It is understood that the Hamlet is looking for a new location for the SWDF. 5. Culvert was replaced on the gravel access road. 6. New bermed area for honey bags noted on the left side of entrance to the SWDF. 7. Efforts are being made to segregate construction debris, tires, fuel tanks and white metal waste. 8. Signs and fencing are being used to direct people where to dispose of various waste. 9. Hamlet has a designated burn bin for burning approved materials. 10. Contaminated soil needs to be sent to a proper disposal facility or dealt with properly. 11. Operation & Maintenance Plan is due June 30, 2012.

Inspection Details	Concerns	Notes
November 18, 2009 by Jan Davies	<ol style="list-style-type: none"> 1. A sewage lagoon effluent sample was taken in July 2009. Please ensure sampling is done twice per year as required by the Surveillance Network Program. 2. Erosion present at sewage disposal chute. 3. A lot of work has been done to improve the SWDF. Vehicles are being separated and crushed; vehicular fluids have been removed. The Water Board needs to confirm whether the current cell for vehicle disposal is approved. 4. Signs should be posted for wood waste, empty drums, and hazardous waste. 5. The location where asbestos is buried at the SWDF needs to be recorded for future activities. 6. Bags of black sand were found at SWDF. Thought to be filter sand from the pool or the Water Treatment Plant. 7. Contaminated soil needs to be sent to a proper disposal facility or dealt with properly (contained with geotextile liner and berm). 8. Hamlet needs to notify an Inspector when contaminated soil is deposited at the SWDF. 9. During 2008 inspection there was a sheen on water in the wetland and ditch outside the perimeter road on the east side of the Bulky Waste Metal Area. If there is a sheen present, samples need to be taken. 10. Make sure there is an adequate berm for the Honey Bag Pit that is long enough and surrounds the whole pit. 11. O&M Plan needs to be updated and followed. 12. A berm should be constructed around the hazardous waste area to provide better containment. Ensure the hazardous waste area is organized and spills are cleaned up. Hamlet should not store hazardous waste (oil, batteries etc) permanently at the SWDF and should take effort to dispose of this waste properly. 	<ol style="list-style-type: none"> 1. SWDF has gated access. There is a drop off bin for after hours disposal. 2. Signs and fencing are being used to direct people where to dispose of various wastes. 3. Batteries are taken for storage at the Hamlet. 4. No evidence of burning at the time of inspection. Hamlet has designated a burn bin for burning approved materials. 5. Sewage Treatment Plan is due June 30, 2011 and Operation & Maintenance Plan is due June 30, 2012.

Table 5-2: Summary of AANDC Inspections (SNP and Reporting)

Inspection Date	Records & Reporting	SNP
August 26, 2011 by Jan Davies	<ol style="list-style-type: none"> 1. The Hamlet must provide a map or drawing indicating the locations of SNP sampling locations. 2. Conduct sampling at lagoon discharge twice per year as per the SNP. 3. Signs need to be posted for the Sewage Disposal Facility and Solid Waste Disposal Facility. 4. Spill contingency plan not submitted. 5. 2010 annual reports were provided, but late. Annual reports are still required for years 2004 – 2008 for licence N3L3-0570. 	
November 18, 2009 by Jan Davies	<ol style="list-style-type: none"> 1. Annual reports not submitted from 2004 – 2008. 2. The Hamlet must provide a map or drawing indicating the locations of SNP sampling locations. 3. A sign needs to be posted for the Sewage Disposal Facility. 4. Conduct sampling at lagoon discharge twice per year (once after breakup and once prior to freeze-up) as per SNP. 	<ol style="list-style-type: none"> 1. Spill contingency plan is due June 30, 2010.

Table 5-3: Summary of Non-compliance Items from AANDC Inspections

Inspection Date	Non-compliance / Violation of Act or Licence
August 26, 2011 by Jan Davies	<ol style="list-style-type: none"> 1. File annual report 2. Submit a map or drawing indicating the location of SNP sampling stations 3. Post signs to inform the public of Waste Disposal Facilities 4. Segregate and store hazardous waste to the satisfaction of an Inspector 5. Submit Spill Contingency Plan 6. Submit Sewage Treatment Plan 7. Implement the Spill Contingency Plan, Sewage Treatment Plan and Solid Waste O&M Plan
November 18, 2009 by Jan Davies	<ol style="list-style-type: none"> 1. File annual report 2. Comply with SNP 3. Submit a map or drawing indicating the location of SNP sampling stations 4. Post signs to inform the public of Waste Disposal Facilities 5. Contain all contaminated soil to the satisfaction of an Inspector 6. Segregate and store hazardous waste to the satisfaction of an Inspector

5.2 Compliance Reports

A Compliance Report indicates any non-compliance with the Water Licence terms during a particular calendar year in order to identify problem areas. AANDC did not prepare any compliance reports for Aklavik between 2009 and 2013.

5.3 Emergency Release of Sewage

There was an emergency release of sewage for two days in May 2011 (May 21-23) when the sewage lagoon was inaccessible due to flooding. According to the Hamlet’s Annual Report, sewage was discharged at the road by the tank farm, after consultation with INAC.

A second emergency release occurred in June 2013 when flooding again prevented access to the Aklavik sewage lagoon. AANDC Water Resources approved this release verbally and in writing on June 1, 2013. Sewage was discharged at the airstrip.

6. Recent and Planned Improvements

6.1 Recent Improvements

The Hamlet has made improvements to its waste infrastructure and operation, records and reporting practices in the past five years, including:

- Installed a new sewage discharge chute (in 2011 or 2012)
- Improved sampling by taking samples of sewage lagoon effluent in 2009, 2011, 2013
- Built a new bermed area for honeybags on the left side of entrance to the landfill, to address Inspector's concerns that the previous berm was inadequate (between 2009 and 2011)
- Added a gate at the landfill entrance (2009)
- Worked to segregate solid waste at the landfill
- Submitted annual reports for 2009, 2010, 2011, and 2012
- Completed a Spill Contingency Plan (in 2011) and a sewage treatment and solid waste facilities Operation & Maintenance Plan (in July 2012) to meet conditions in the current Water Licence. A copy of the Spill Contingency Plan is attached in Appendix A for reference.

6.2 Planned Improvements

The Hamlet has started planning for a new site for the waste facilities, to address problems caused by flooding. The planning and design will take place over the next few years.

7. Conclusions and Recommendations

Over the most recent term of its Water Licence (2009 – 2013), the Hamlet of Aklavik has had non-compliance issues related to the SNP, signage, records, and reporting components of the Water Licence. In addition, the AANDC Inspector had concerns regarding the hazardous waste and contaminated soil storage areas at the Solid Waste Disposal Facility.

The Hamlet appears to be complying with the Water Licence sewage lagoon effluent quality requirements, based on the analysis results for two samples. AECOM recommends that the Hamlet increase its efforts to take samples and submit the results every year as required by the water licence.

Some significant improvements have been made over the term of the current Water Licence. For example, the Hamlet submitted annual reports regularly from 2009 to 2012, whereas during the previous Water Licence term Annual Reports were not consistently submitted. The Hamlet has made efforts to improve the layout and operation of the Solid Waste Disposal Facility, as described in Section 6.1.

The Hamlet will continue to work on managing and segregating waste at the landfill. The Hamlet also intends to build new waste disposal facilities at a different site in a few years, which will address problems caused by flooding. Aklavik's waste facilities have served the community successfully, and should continue to do so in the future.

8. References

AECOM, *Hamlet of Aklavik Background Report for Water Licence Renewal*, May 2009.

NWT Bureau of Statistics, Aklavik – Statistical Profile

<http://www.statsnwt.ca/community-data/Profile%20PDF/Aklavik.pdf> accessed online March 2014

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Hamlet of Aklavik, *Municipal Water Licence Annual Reports*, 2009, 2010, 2011, 2012

Jan Davies, Aboriginal Affairs and Northern Development Canada, *Water Licence Inspection Report (Aklavik)*, August 26, 2011.

Jan Davies, Indian and Northern Affairs Canada, *Water Licence Inspection Report (Aklavik)*, November 18, 2009.

Appendix A

Spill Contingency Plan

Spill Contingency Plan for the Hamlet of Aklavik, NT

Water Licence Number N3L3-0570

Created in May 2011

Prepared for and by the Hamlet of Aklavik

Preface

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1. Introduction and Project Details

Under the *Northwest Territories Waters Act (NWTWA)* and Section 6 g (i) and (ii) of the *Northwest Territories Waters Regulations (NWTWR)* all applicants where the undertaking involves the handling or storage of petroleum products or hazardous materials, must prepare (i) a plan for the safe handling, storage and disposal thereof, and (ii) a contingency plan for their containment and for the clean-up thereof in the event of a spill.

1.1. General

This Spill Contingency Plan provides for the prompt and coordinated response of the Hamlet to spills located on Hamlet property and to assist any agency located within the Hamlet of Aklavik corporate boundaries.

Contact information: Hamlet of Aklavik
P.O. Box 88
Aklavik, NT
X0E 0A0
Phone: 867-978-2351 or 867-978-2361
Fax: 867-978-2434
Email: saoklavik@permafrost.com

Attention: Senior Administrative Officer (SAO)

1.2. Effective date

The effective date of this Spill Contingency plan is May 27, 2011

1.3. Distribution list

This plan and the most recent revisions have been distributed to:

Table 1.1: Distribution list

Organization	Title	Date distributed
Environment Canada- Environmental Protection Government of NWT- Environmental Protection Division	Carey Ogilvie- Head Phone: 867-669-4737 Ken Hall-Manager Phone: 867-873-7654	
Government of NWT- MACA Gwich'in Land and Water Board (GLWB)	Lorrie Fyfe-Manager Phone: 867-777-7121 Paul Sullivan-Chair Phone: 867-777-7960	
Hamlet of Aklavik Indian and Northern Affairs Canada- North Mackenzie District, NWT Region	Hamlet Foreman Conrad Baetz-Manager Phone: 867-777-8901	

Organization	Title	Date distributed
Indian and Northern Affairs Canada- Water Resources Northwest Territories Water Board (NWTWB)	Robert Jenkins-Head Phone: 867-669-2574 Eddie Dillon-Chair Phone: 867-678-2942	

1.4. Purpose and scope

The purpose of this plan is to outline response actions for potential spills. The plan identifies key response personnel and their roles and responsibilities in the event of a spill, as well as the equipment and other resources available to respond to a spill. It details spill response procedures that will minimize potential health and safety hazards, environmental damage, and clean-up requirements. The plan has been prepared to ensure quick access to all the information required in responding to a spill.

1.5. Hamlet environmental policy

1.6. Sites descriptions

The Hamlet of Aklavik is responsible for the operation and maintenance of their waste disposal facilities (Sewage Disposal Facilities and Solid Waste Disposal Facilities) and water supply facilities.

The Hamlet of Aklavik is located on the west shore of the Peel Channel in the Mackenzie River Delta, at latitude 68°13'00" North and longitude 134°59'00" West, in the Northwest Territories.

1.7. Identification of special areas that can potentially be impacted

Following is a list of special places that will receive additional consideration should a spill occur in this area:

- Bodies of water within the community; and
- Town infrastructure (i.e. community hall, school, youth center, etc.)

1.8. Hazardous materials stored on site

There are X hazardous materials storage areas in the Hamlet of Aklavik. Table 1.3 presents a list of hazardous materials on-site, the type of storage container, the average and maximum quantities stored and their storage location.

Table 1.2: List of hazardous materials stored on-site, type of storage container, the normal and maximum storage quantities, and storage locations.

Material	Storage container	Average on-site	Maximum on-site	Storage location and uses

--	--	--	--	--

1.9. Preventive measures

Planning for an emergency situation is imperative. Due to the nature of the materials stored in the Hamlet of Aklavik facilities, adequate training of staff is critical. The storage areas for hazardous materials are to be lined with impermeable liners and bermed with 110% containment. Planking can be used to protect the liner from the fuel drums and cylinders.

Spill kits are located at GIVE NAME of the LOCATION of SPILL KITS. See section 4 called "Resource Inventory" for details on spill kit contents. Does the Hamlet of Aklavik Forman conducts monthly visual inspections to check for leaks or damage to the storage containers, as well as for stained or discolored soils around the storage areas and adjacent motorized equipment. If so, does he use a checklist to ensure no areas have been missed and results of the inspections are recorded by the Hamlet of Aklavik? If a check list is used, you need to put it in schedule C.

1.10. Maps

1.10.1. Building, Roads, Airstrips and water Bodies

1.10.2. Storage Locations of each Hazardous Material and Spill Kit

1.10.3. Probable Spill Location

2. Response Organization

The Hamlet of Aklavik has established procedures in the event of a spill.

2.1. Notification

- Any community employee or member of the public discovering a spill will immediately take steps to notify the Hamlet Foreman. If a spill is discovered during normal working hours, the employee will also contact the Hamlet of Aklavik Office at 867-978-2351 or 867-978-2361.
- If a spill is discovered after normal working hours, the person will use the most expedient method at his disposal to contact the Hamlet Foreman.
- The Hamlet Foreman will also notify the community's SAO as soon as possible if he/she haven't been notified already.
- The Hamlet of Aklavik Forman or SAO is responsible for notifying the Government of the Northwest Territories 24 hour Spill Report Line at 1-867-920-8130, collect calls accepted.
- The Hamlet Foreman is responsible to fill out the NWT Spill Report (see appendix A).

2.2. Response Team Organization

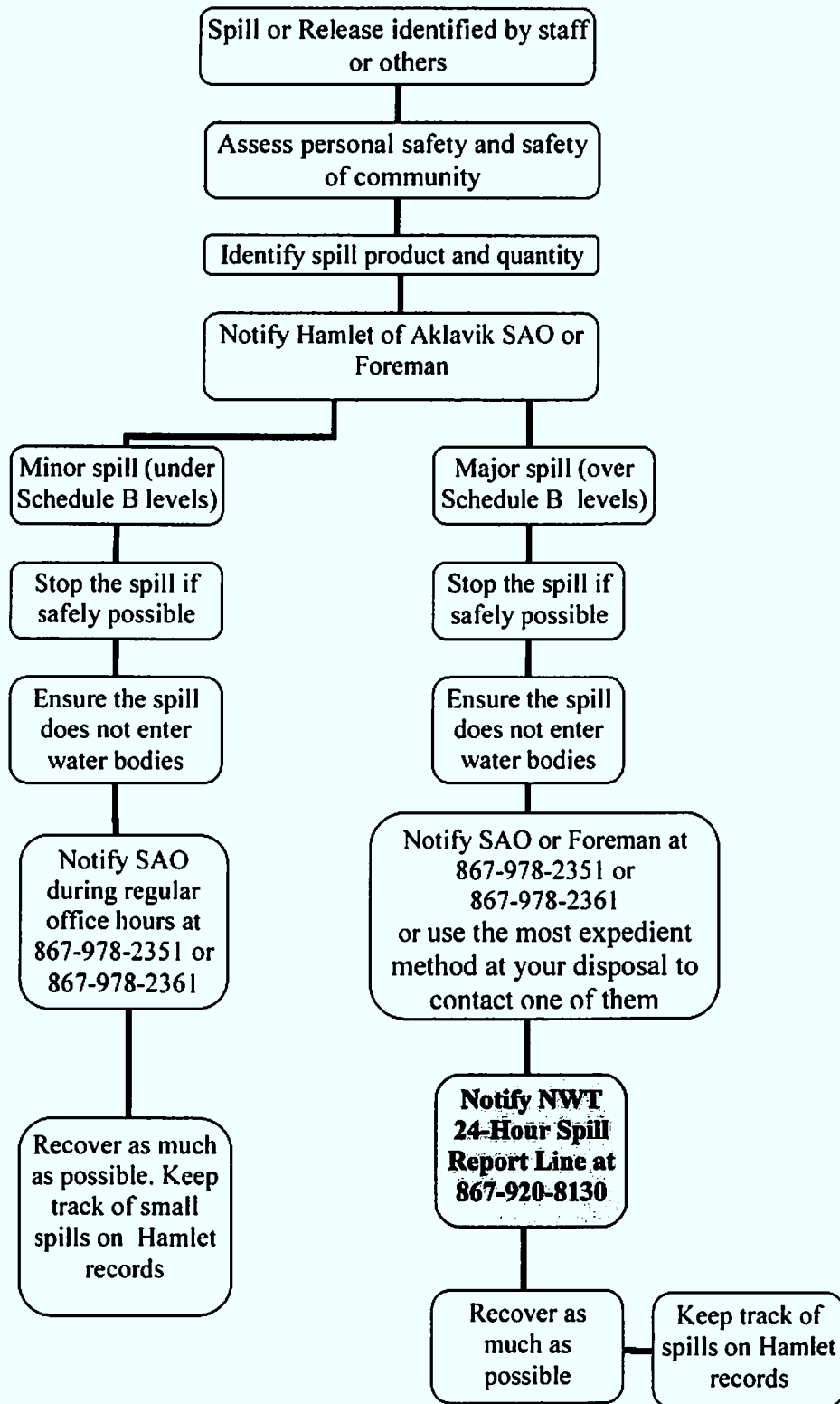
The flow chart depicted in Figure 2.1 identifies the response organization and when applicable their alternates, as well as the chain of command for responding to a spill or release. The duties of various response personnel are summarized, contact information is provided including 24-Hour phone numbers for responsible people and the location of communications equipment on site is discussed.

An immediately reportable spill is defined as a release of a substance that is likely to be an imminent human health or environmental hazard or meets or exceeds the volumes outlined in appendix B. It must be reported to the NWT 24-Hour Spill Report Line at 867-920-8130. Any spills less than these quantities do not need to be reported immediately to the spill reporting line. Rather, these minor spills will be tracked and documented by the Hamlet and submitted to the appropriate authority upon request or at a pre-determined reporting interval. If there is any doubt that the quantity spilled exceeds reportable levels, the spill will be reported to the NWT 24-Hour Spill Report Line.

In the event of a spill involving danger to human life the closest phones or CB radios will be used to contact emergency response personnel in the Hamlet of Aklavik.

The person that discovers the spill will inform the SAO or Hamlet Forman and, they will report the spill to the NWT 24-Hour Spill Report Line as necessary. The Hamlet Forman will also inform the Hamlet office of minor spills that are under the thresholds identified on Schedule B for tracking on the Hamlet records. If spills occur outside regular office hours, the Hamlet Forman should be contacted using the most expedient method available to contact him.

Figure 2.1: Flow Chart of response



3. Action Plan

3.1. Potential spill sizes and sources

In this section the potential spill event and spill volume are presented for the primary hazardous materials stored in the Hamlet of Aklavik facilities. The most likely spill discharge volume is indicated and the spill clean up procedures will focus on spills of this quantity. A worst case scenario is also presented.

3.1.1. Sewage spills from trucks

Sewage holding tanks could fail from hairline cracks, corrosion and collision or from wear and tear due to the environment. Routine inspections consist of looking for sewage coming out of the tanks from crack or failure of the tank wall. Owners should visually inspect their tanks several times a year. Failure of a Sewage Truck or any equipment used while pumping sewage into the truck from a tank or out of the truck to the sewage disposal facility can also be prevented by routine inspections by the owner of all equipment and connections. The Hamlet is responsible of cleaning in the event of a spill. The Hamlet of Aklavik has X sewage truck of VOLUME liters, which mean that in the event of a spill, the spill is likely to be under MAX VOLUME of TRUCK CAPACITY L.

3.1.2. Sewage spills from Sewage Disposal Facilities

The truck turn-around pad and sewage discharge chute associated with sewage disposal facility structures, and drainage courses are inspected on an annual basis by the Hamlet Foreman. In addition, during the summer months the integrity of the structures is visually checked by the Hamlet staff. In the event of a spill, the spill is likely to be under the capacity of the sewage treatment facility which is ENTER THE CAPACITY OF THE SEWAGE.

3.1.3. Spills from fuel storage

Many buildings within the Hamlet have fuel storage for home and building heating. There could be minor leaking or large puncture from drum or tank in/outside fuel storage areas. Piping failure is also a source of spills from fuel storage tanks. In the event of a spill at a privately owned structure, owners are responsible for the cleaning of the spill, unless the spill threatens a special area like the school. Should this happen, the Hamlet's response will be to protect that special area. The discharge of the spill is likely to be under X L/tank and in the worst case scenario the spill will be from the full fuel storage tank.

3.1.4. Fuel spill from motorized equipment

Fuel spills can occur when overfilling motorized equipment, spills can also come from drum or hose while filling the motorized equipment, from drum in/outside the storage area. Fuel spills from accidents involving personal vehicles and fuel carriers will be addressed as they pertain to special areas. Clean up will be the responsibility of the individuals or organizations involved. Regular maintenance and oil checks of all motorized equipment are also undertaken to avoid preventable leaks. The discharge of the spill is likely to be less than X Liters.

3.1.5. Propane spill

Propane is extremely volatile and is the most flammable material stored on site, thus the Fire Department should be the first responder in all cases. All non-responders must be kept well away from the area.

Propane spill can occur when the cylinder has a leak in or outside fuel storages area, when propane lines not properly connected to equipment (i.e. kitchen stove, dryer). The complete volume of the cylinder will be released if a leak develops; therefore safety during emergency response to a propane spill is of the utmost concern.

3.1.6. Waste Oil or Lubricating Oil spill

Waste Oils or lubricating oil spill could come from a variety of sources including new supplies but mainly from waste oils stored in drums that are leaking. The discharge of the spill is likely to be under XL/drum. In the worst case scenario the complete cotenant of the drum will spill.

3.2. Procedures for Initial Action

1. Be alert and consider your personal safety first;
2. Assess the hazard to persons in the vicinity of the spill and where possible take action to control danger to human life (ensure safety of everyone);
3. Assess the situation and make arrangements for first aid and removal of injured personnel. Take the necessary action where possible to secure the site to protect human safety;
4. Assess spill hazards and risks;
5. Identify the material or products involved in the spill;
6. If applicable and only if it is safe to do so, remove or shut off all ignition sources;
7. If safe try to take the appropriate action to stop the spill (e.g. shut off pump, replace cap, tip drum upward, patch leaking hole, create a ditch to stop flow etc). Use the contents of the nearest spill kit to aid in stopping the spill if it is safe to do so;
8. Take all necessary action to contain or prevent the spread of the spilled (e.g. use contents of spill kits to place sorbent material on the spill, or use shovel to dig dike to contain spill. Methods will vary depending on the nature of the spill);
9. Gather information on the status of the situation;
10. No matter what the volume is, contact the Hamlet Foreman and SAO to report the spill;

11. As soon as possible and if required, contact the NWT 24 Hour Spill Report Line at 1-867-920-8130;
12. If required, complete a spill report form (attached in appendix A).

3.3. Procedures for Containing and Cleaning up the Spill

First, initiate spill containment by first determining what will be affected by the spill. Second, assess speed and direction of spill and cause of movement (water, wind and slope). Third, determine best location for containing spill, avoiding any water bodies. Have a contingency plan ready in case spill worsens beyond control or if the weather or topography impedes containment.

3.3.1. Sewage infrastructure

1. Any person who sees a liquid flowing or seeping from a sewage holding tank, a sewage truck or a connection from the truck to a hose or the lagoon should report this to the Hamlet Foreman, the homeowners and the trucking company.
2. The Hamlet Foreman should, upon notification, determine the extent and size of the spill. Therefore, the Hamlet Foreman is responsible to take the appropriate action and use the reporting procedures to notify the proper authorities. Since spills of sewage involve an infectious substance that may cause health problems, the local nursing station and Environmental Health Officer should be notified of the spill.
3. If the area in which the spill occurred is accessible to the public or domestic pets, the contaminated area must be clearly marked or cordoned off to restrict access. Keep children and interested bystanders away from cleanup activities.
4. If the spilled material can't be recovered using hand tools, a commercial vacuum / pump truck should be called to remove all visible liquid and solid material. Any spill resulting from the failure of a sewage truck or its connections would necessitate the procurement of vacuum trucks to contain the sewage while any soil or ground material contaminated by the spill is recovered and properly disposed of according to an Environmental Health Officer.
5. Protective clothing (at a minimum, rubber or latex gloves and rubber boots) should be worn when cleaning up a sewage spill. (Dispose of gloves and wash rubber boots when leaving spill site).
6. When the area is visibly clean, lime will be spread on the ground where the spill took place under the instructions of an Environmental Health Officer. Lime can be obtained from a variety of hardware stores. Please note that hydrated lime is a caustic material and can be dangerous to handle and apply. Lime should only be used or applied by people experienced in using this material.
7. If no lime is available, a chlorine/water solution (bleach) should be applied to the spill area to disinfect. To make a 5% chlorine solution, add 3/4 cup (180 ml) Clorox bleach to one (1) gallon of water. Only use bleach that has "sanitizes" or "kills germs" on the label. Do not mix cleaning/disinfecting products or

chemicals. Cleaning products can react with one another to produce toxic vapor or liquid substances.

8. Notify the Hamlet of Aklavik when the clean up is done.
9. When the spill area has been cleaned (24 hours after the chlorine solution or hydrate lime has been spread), the barriers can be removed and access to the area restored.
10. Any repairs or replacement of the failed tank should take place under acceptable engineering standards.

3.3.2. Lagoon dam structure

The lagoon is designated as an exfiltration lagoon. Liquid flows continuously through and under the lagoon berm and is directed toward further treatment in the wetlands.

1. Any person who sees a liquid flowing from a breach (a hole) in the lagoon dam structures should report this to the Hamlet Foreman.
2. The Hamlet Foreman should, upon notification, determine the extent and size of the problem. Therefore, the Hamlet Foreman is responsible to take the appropriate action and use the reporting procedures to notify the proper authorities.
3. Any spill resulting from the failure of a lagoon dam structure would likely necessitate the construction of a berm to contain the sewage while either temporary or permanent repairs are carried out on the failed structure. A qualified Engineer and contractor would be engaged to undertake the work.
4. Rebuilding the dam or establishing a cofferdam with course materials, clay and sandy materials would contain the spill. Any sewage should be contained with berms or impoundment basins and pumped back into the lagoon. Any repairs to the failed structure would take place to acceptable engineering standards.

3.3.3. Containment of Spill on open water

Spills on water such as rivers, streams or lakes are the most serious types of spills as they can negatively impact water quality and aquatic life. All measures need to be undertaken to contain spills on open water.

For spills in open water, containment procedures will vary depending on whether the material floats or sinks, and whether the water is flowing or standing.

1. In the event of a spill, any person who found it should report this to the Hamlet Foreman.
2. The Hamlet Foreman should, upon notification, determine the source, the extent and size of the spill. Therefore, the Hamlet Foreman is responsible to take the

appropriate action and use the reporting procedures to notify the proper authorities.

3. If the area in which the spill occurred is accessible to the public or domestic pets, the contaminated area must be clearly marked or cordoned off to restrict access. Keep children and interested bystanders away from cleanup activities.
4. Protective clothing (at a minimum, rubber or latex gloves and rubber boots) should be worn when cleaning up a spill. (Dispose of gloves and wash rubber boots when leaving spill site).
5. Assess speed and direction of spill.
6. Determine best location for containing spill.
7. For floating materials, a surface boom shall be deployed. Booms are commonly used to recover fuel floating on the surface of a lake or slow moving streams. They are released from the shore of a water body to create a circle around the spill. If the spill is away from the shoreline a boat will need to be used to reach the spill and the boom can be set out. More than one boom may be used at once. Booms may also be used in streams and should be set out at an angle to the current. Booms are designed to float and some have sorbent materials built into them to absorb fuels at the edge of the boom. Fuel contained within the circle of the boom will need to be recovered using sorbent materials or pumps and placed into barrels for disposal. If a boom can't be installed, weirs may be constructed, especially in shallow areas.
8. Weirs can be used to contain spills in streams and to prevent further migration downstream. Plywood or other materials found on site can be placed into and across the width of the stream, such that water can still flow under the weir. Spilled fuel will float on the water surface and be contained at the foot of the weir. It can then be removed using sorbents, booms or pumps and placed into barrels.
9. The On-Scene Coordinator will have to judge whether the impact of the spill will be most reduced by carrying out a containment procedure or by immediately attempting to remove any containers from the water. This will depend on the equipment available and how long it will take for additional equipment to arrive. Removed containers should be placed on an impermeable contained surface (example poly liner in a depression) or an overpack drum to prevent further seepage.

3.3.4. Containment of Spills on Ice

Spills on ice are generally the easiest spills to contain due to the predominantly impermeable nature of the ice.

For spills on Ice, containment procedures will vary depending on whether the material stays on the ice or sinks into it.

1. In the event of a spill, any person who found it should report this to the Hamlet Foreman. The Hamlet Foreman should, upon notification, determine the source, the extent and size of the spill. The Hamlet Foreman is responsible to take the appropriate action and alert the necessary people.
2. Use the reporting procedures to notify the proper authorities.
3. If the area in which the spill occurred is accessible to the public or domestic pets, the contaminated area must be clearly marked or cordoned off to restrict access. Keep children and interested bystanders away from cleanup activities.
4. Protective clothing (at a minimum, rubber or latex gloves and rubber boots) should be worn when cleaning up a spill. (Dispose of gloves and wash rubber boots when leaving spill site).
5. Assess speed and direction of spill.
6. Determine best location for containing spill.
7. Spills on ice can be affected by the strength of the ice and the floating or sinking characteristics of the materials. The safe bearing capacity of ice has to be carefully assessed. For good ice the following thickness table can be used to estimate the load capacity:

Thickness		Load	
Mm	Inches	Kg	Tons
80	3	181	.2
150	6	907	1.0
230	9	5443	6.0
500	20	9071	10
760	30	18143	20
1010	40	36287	40

8. If the spill does not penetrate the ice, and the ice is safe to work on, sorbent materials are used to soak up spilled fuel. Remaining contaminated ice/slush can be scraped and shoveled into a barrel. However, all possible attempts should be made to prevent spills from entering ice covered waters as no easy method exists for containment and recovery of spills if they seep under ice.
9. If the spill penetrates the ice, dykes can be used to contain fuel spills on ice. By collecting surrounding snow, compacting it, mounding it and watering it down to form a dyke down slope of the spill, a barrier is created thus helping to contain the spill. The collected fuel can then be pumped into barrels or collected with sorbent materials.
10. For significant spills on ice, trenches can be cut into the ice surrounding and/or down slope of the spill such that fuel is allowed to pool in the trench. It can then

be removed via pump into barrels, collected with sorbent materials, or mixed with snow and shoveled into barrels.

3.3.5. Containment of Spills on Snow

Snow is a natural sorbent, thus as with spills on soil, spilled can be more easily recovered. Therefore, snow should be used as much as possible when it is available.

1. In the event of a spill, any person who found it should report this to the Hamlet Foreman. The Hamlet Foreman should, upon notification, determine the source, the extent and size of the spill. The Hamlet Foreman is responsible to take the appropriate action and alert the necessary people.
2. Use the reporting procedures to notify the proper authorities.
3. If the area in which the spill occurred is accessible to the public or domestic pets, the contaminated area must be clearly marked or cordoned off to restrict access. Keep children and interested bystanders away from cleanup activities.
4. Protective clothing (at a minimum, rubber or latex gloves and rubber boots) should be worn when cleaning up a spill. (Dispose of gloves and wash rubber boots when leaving spill site).
5. Assess speed and direction of spill.
6. Determine best location for containing spill.
7. Small spills on snow can be easily cleaned up by raking and shoveling the contaminated snow into empty barrels, and storing these at an approved location.
8. Dykes can also be used to contain fuel spills on snow. By compacting snow down slope from the spill, mounding it to form a dyke and watering it down, a barrier is created thus helping to contain the spill. The collected fuel/snow mixture can then be shoveled into barrels, or collected with sorbent materials.

3.3.6. Containment of Spills on Land

Spills on land include spills on rock, gravel, soil and/or vegetation. It is important to note that soil is a natural sorbent, thus spills on soil are generally less serious than spills on water as contaminated soil can be more easily recovered. Generally spills on land occur during the late spring, summer or fall when snow cover is at a minimum. It is important that all measures be undertaken to avoid spills reaching open water bodies.

1. In the event of a spill, any person who found it should report this to the Hamlet Foreman. The Hamlet Foreman should, upon notification, determine the source, the extent and size of the spill. The Hamlet Foreman is responsible to take the appropriate action and alert the necessary people.
2. Use the reporting procedures to notify the proper authorities.

3. If the area in which the spill occurred is accessible to the public or domestic pets, the contaminated area must be clearly marked or cordoned off to restrict access. Keep children and interested bystanders away from cleanup activities.
4. Protective clothing (at a minimum, rubber or latex gloves and rubber boots) should be worn when cleaning up a spill. (Dispose of gloves and wash rubber boots when leaving spill site).
5. Assess speed and direction of spill.
6. Determine best location for containing spill.
7. In all cases of liquid spills, the initial containment step is to prevent further dispersion. This is done with cut-off ditches and dyking with soil as needed around the spill utilizing mobile heavy equipment. If necessary, absorbents (example Zorbal, Hazorb Pillows, peat moss, sawdust) or gelling agents (example - Chemgel) should be spread to prevent further spread or seepage.
8. Dykes can be created using soil surrounding a spill on land. These dykes are constructed around the perimeter or down slope of the spilled fuel. A dyke needs to be built up to a size that will ensure containment of the maximum quantity of fuel that may reach it. Fuel that pool up can be removed with sorbent materials or by pump into barrels. If the spill is migrating very slowly a dyke may not be necessary and sorbents can be used to soak up fuels before they migrate away from the source of the spill.
9. If you can't build a dyke, trenches can be dug out to contain spills as long as the top layer of soil is thawed. Shovels pick axes or a loader can be used depending on the size of trench required. It is recommended that the trench be dug to the bedrock or permafrost, which will then provide containment layer for the spilled fuel. Fuel can then be recovered using a pump or sorbent materials. Once the soil has been removed it should be replaced with clean soil to avoid slumping.

3.3.7. Fire or Explosion

1. In all cases the first step is to clear people from the surrounding area. Particular care must be taken to prevent inhalation of vapors that are products of combustion.
2. When fire is associated with a spill of hazardous material, the local fire department must be the first responder to fire and explosion occurrence in all cases.
3. The fire department will take all the necessary measures to extinguish the fire.
4. If necessary, the fire department will construct dykes down slope from liquid spills, to minimize spreading of fire and contain unburned fluid. Foam, CO₂ or water will then be used as appropriate for the fire.

3.4. Procedures for Transferring, Storing, and Managing Spill-Related Wastes

Loose material should be scooped up (using equipment appropriate to the spill size) and transferred into containers. Any soil beneath the spill, which may have been contaminated, should also be removed where possible, and disposed of with the recovered material.

In most cases, spill cleanups are initiated at the far end of the spill and contained moving toward the source of the spill. Sorbent socks and pads are generally used for small spill clean up. A pump with attached fuel transfer hose can suction spills from leaking containers or large accumulations on land or ice, and direct these larger quantities into empty drums. Hand tools such as cans, shovels, and rakes are also very effective for small spills or hard to reach areas. Heavy equipment can be used if deemed necessary, and given space and time constraints.

Used sorbent materials are to be placed in barrels for future disposal. All materials mentioned in this section are available in the spill kits located at the Hamlet office and Hamlet Forman truck. Following clean up, any tools or equipment used will be properly washed and decontaminated, or replaced if this is not possible.

For most of the containment procedures outlined in Section 3.3, spilled petroleum products and materials used for containment will need to be placed into containers such as empty waste oil/fuel containers and sealed for proper disposal. Does the Hamlet disposed of contaminated soil, snow or any hazardous material in a specific area of the solid waste facility. After the clean up of a sewage spill, is the contaminant disposed at the sewage waste facility.

3.5. Procedures for Restoring Affected Areas, Providing Inspectors with Status Updates and Cleanup Completion

Once a spill of reportable size has been contained, the Hamlet of Aklavik will consult with the regulatory authorities to determine the level of cleanup required. The Regulator may require a site specific study to ensure appropriate clean up levels are met. Criteria that may be considered include natural biodegradation of oil, replacement of soil and revegetation. Also, the soil will be remediated to meet Government of Northwest Territories (GNWT) soil criteria and water will be addressed so that it meets the Canadian Council of Ministers of the Environment (CCME) requirements for the protection of aquatic life.

4. Resource Inventory

4.1. On-Site Resources

Spill kits are indicated in figure 1.6. The contents are described below. In addition, earth moving and other equipment located in the Hamlet of Aklavik is also listed below.

4.1.1. Contents of Spill Kits

4.1.2. Earth moving and other equipment

4.1.3. Tool kit

4.2. Off-Site Resources

Environment Canada	Emergencies Duty Office	1-866-845-6047*
Environment Canada	Northern Division	1-867-920-8130*
Fisheries and Oceans Canada (Inuvik)	Manager	1-867-777-7520
GNWT Environment and Natural Resources		1-867-678-6650
GNWT territorial emergency Management	Measures Office	867-873-7554*
Hamlet of Aklavik	SAO	867-978-2351 or 867-978-2361
Hamlet of Aklavik	Foreman	867-xxx-xxxx
Hamlet of Aklavik Health Center		867-978-2516 or 867-978-2160
Indian and Northern Affairs Canada	Inspector	1-867-777-8900
Inuvialuit Land Administration	Main Office	1-867-977-7100
NWT 24-Hour Spill Line**		1-867-920-8130*
NWT Emergency Services Division-MACA	Manager	1-867-873-7554*
RCMP		867-978-1111
Environmental Health Officer		1-867-777-7250 or 1-867-7220
Tele-Care Health Line		1-888-255-1010
Volunteer Fire Hall		867-978-2222

*24 Hour phone line

** Can be call collect

5. Training Program

Training will comprise of the following:

6. References

Water Resources Division Indian and Northern Affairs Canada. (2007). Guideline for Spill Contingency Planning.

Green Engineering Ltd. (2010). Background Report for the Hamlet of Aklavik.

Google Earth, 2010

Schedule A: NT-NU Spill Report Form



Canada

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE
 TEL: (867) 920-8130
 FAX: (867) 873-6924
 EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH - DAY - YEAR	REPORT TIME	<input type="checkbox"/> ORIGINAL SPILL REPORT, OR	REPORT NUMBER
B	OCCURRENCE DATE: MONTH - DAY - YEAR	OCCURRENCE TIME	<input type="checkbox"/> UPDATE # _____	_____
C	LAND USE PERMIT NUMBER (IF APPLICABLE)	WATER LICENCE NUMBER (IF APPLICABLE)		
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION	REGION <input type="checkbox"/> NWT <input type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN		
E	LATITUDE DEGREES MINUTES SECONDS	LONGITUDE DEGREES MINUTES SECONDS		
F	RESPONSIBLE PARTY OR VESSEL NAME	RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION		
G	ANY CONTRACTOR INVOLVED	CONTRACTOR ADDRESS OR OFFICE LOCATION		
H	PRODUCT SPILLED	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER	
H	SECOND PRODUCT SPILLED (IF APPLICABLE)	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER	
I	SPILL SOURCE	SPILL CAUSE	AREA OF CONTAMINATION IN SQUARE METRES	
J	FACTORS AFFECTING SPILL OR RECOVERY	DESCRIBE ANY ASSISTANCE REQUIRED	HAZARDS TO PERSONS, PROPERTY OR ENVIRONMENT	
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS			
L	REPORTED TO SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLING FROM
M	ANY ALTERNATE CONTACT	POSITION	EMPLOYER	ALTERNATE CONTACT
REPORT LINE USE ONLY				
N	RECEIVED AT SPILL LINE BY	POSITION STATION OPERATOR	EMPLOYER	REPORT LINE NUMBER (867) 920-8130
LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN	FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED
AGENCY	CONTACT NAME		CONTACT TIME	REMARKS
LEAD AGENCY				
FIRST SUPPORT AGENCY				
SECOND SUPPORT AGENCY				
THIRD SUPPORT AGENCY				

Instructions for Completing the NT-NU Spill Report Form

This form can be filled out electronically and e-mailed as an attachment to spills@gov.nt.ca. Until further notice, please verify receipt of e-mail transmissions with a follow-up telephone call to the spill line. Forms can also be printed and faxed to the spill line at 867-873-6924. Spills can still be phoned in by calling collect at 867-920-8130.

A. Report Date/Time	The actual date and time that the spill was reported to the spill line. If the spill is phoned in, the Spill Line will fill this out. Please do not fill in the Report Number: the spill line will assign a number after the spill is reported.
B. Occurrence Date/Time	Indicate, to the best of your knowledge, the exact date and time that the spill occurred. Not to be confused with the report date and time (see above).
C. Land Use Permit Number / Water Licence Number	This only needs to be filled in if the activity has been licenced by the Nunavut Water Board and/or if a Land Use Permit has been issued. Applies primarily to mines and mineral exploration sites.
D. Geographic Place Name	In most cases, this will be the name of the city or town in which the spill occurred. For remote locations - outside of human habitations - identify the most prominent geographic feature, such as a lake or mountain and/or the distance and direction from the nearest population center. You must include the geographic coordinates (Refer to Section E).
E. Geographic Coordinates	This only needs to be filled out if the spill occurred outside of an established community such as a mine site. Please note that the location should be stated in degrees, minutes and seconds of Latitude and Longitude.
F. Responsible Party Or Vessel Name	This is the person who was in management/control/ownership of the substance at the time that it was spilled. In the case of a spill from a ship/vessel, include the name of the ship/vessel. Please include full address, telephone number and e-mail. Use box K if there is insufficient space. Please note that, the owner of the spilled substance is ultimately responsible for any spills of that substance, regardless of who may have actually caused the spill.
G. Contractor Involved?	Were there any other parties/contractors involved? An example would be a construction company who is undertaking work on behalf of the owner of the spilled substance and who may have contributed to, or directly caused the spill and/or is responding to the spill.
H. Product Spilled	Identify the product spilled; most commonly, it is gasoline, diesel fuel or sewage. For other substances, avoid trade names. Wherever possible, use the chemical name of the substance and further, identify the product using the four digit UN number (eg: UN1203 for gasoline; UN1202 for diesel fuel; UN1863 for Jet A & B)
I. Spill Source	Identify the source of the spill: truck, ship, home heating fuel tank and, if known, the cause (eg: fuel tank overfill, leaking tank; ship ran aground; traffic accident, vandalism, storm, etc.). Provide an estimate of the extent of the contaminated/impacted area (eg: 10 m ²)
J. Factors Affecting Spill	Any factors which might make it difficult to clean up the spill: rough terrain, bad weather, remote location, lack of equipment. Do you require advice and/or assistance with the cleanup operation? Identify any hazards to persons, property or environment: for example, a gasoline spill beside a daycare centre would pose a safety hazard to children. Use box K if there is insufficient space.
K. Additional Information	Provide any additional, pertinent details about the spill, such as any peculiar/unique hazards associated with the spilled material. State what action is being taken towards cleaning up the spill; disposal of spilled material; notification of affected parties. If necessary, append additional sheets to the spill report. Number the pages in the same format found in the lower right hand corner of the spill form: eg. "Page 1 of 2", "Page 2 of 2" etc. Please number the pages to ensure that recipients can be certain that they received all pertinent documents. If only the spill report form was filled out, number the form as "Page 1 of 1".
L. Reported to Spill Line by	Include your full name, employer, contact number and the location from which you are reporting the spill. Use box K if there is insufficient space.
M. Alternate Contact	Identify any alternate contacts. This information assists regulatory agencies to obtain additional information if they cannot reach the individual who reported the spill.
N. Report Line Use Only	Leave Blank. This box is for the Spill Line's use only.

Schedule B: Immediately Reportable Spill Quantities

TDG Class	Substance for NWT 24 Hour Spill Line	Immediately Reportable Quantities
1 2.3 2.4 6.2 7 None	Explosives Compressed gas (toxic) Compressed gas (corrosive) Infectious substances Radioactive Unknown substance	Any amount
2.1 2.2	Compressed gas (flammable) Compressed gas (non-corrosive, non-flammable)	Any amount of gas from containers with a capacity greater than 100 L
3.1 3.2 3.3	Flammable liquids	> 100 L
4.1 4.2 4.3	Flammable solids Spontaneously combustible solids Water reactant	> 25 kg
5.1 9.1	Oxidizing substances Miscellaneous products or substances excluding PCB mixtures	> 50 L or 50 kg
5.2 9.2	Organic peroxides Environmentally hazardous	> 1 L or 1 kg
6.1 8 9.3	Poisonous substances Corrosive substances Dangerous wastes	> 5 L or 5 kg
9.1	PCB mixtures of 5 or more ppm	> 0.5 L or 0.5 kg
None	Other contaminants (e.g. crude oil, drilling fluid, produced water, waste or spent chemicals, used or waste oil, vehicle fluids, waste water, etc.)	> 100 L or 100 kg
None	Sour natural gas (i.e. contains H ₂ S) Sweet natural gas	Uncontrolled release or sustained flow of 10 minutes or more

In addition, all releases of harmful substances, regardless of quantity, are to be reported to the NWT spill line if the release is near or into a water body, is near or into a designated sensitive environment or sensitive wildlife habitat, poses imminent threat to human health or safety, poses imminent threat to a listed species at risk or its critical habitat, or is uncontrollable.