APPENDIX D

Spill Contingency Plan

SPILL CONTINGENCY PLAN

Remediation of the Old Town Site,
Clyde River, Nunavut

DRAFT

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ABBREVIATIONS

GN-CGS.....Government of Nunavut Department of Community and Government Services

Hamlet.....Hamlet of Clyde River

AANDC .....Aboriginal Affairs and Northern Development Canada

INAC ..... Indian and Northern Affairs Canada

SAO ..... Senior Administrative Officer

SCP.....Spill Contingency Plan

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1 INTRODUCTION

This Spill Contingency Plan (SCP) has been developed for use by the Government of Nunavut Department of Community and Government Services (GN-CGS) and its remedial contractor during the remediation of the Old Town Site in Clyde River, NU (herein referred to as the "Project"). The remedial contractor is required to develop and submit a SCP prior to Project start-up. This SCP has been developed for the Project and regulatory approvals. The remedial contractor's SCP will meet or exceed the features of this SCP and can be provided to the appropriate regulatory bodies once complete.

The Project activities to be completed include the construction of a temporary landfarm, new landfill containment cell at the Clyde River Solid Waste Facility, a temporary access road, and the development of borrow sources. The purpose of this SCP is to provide a guide to operators, contractors and the GN-CGS personnel in the event of an accidental release of fuel or other waste during the Project. The SCP was developed based on the NWTWB (1987) and INAC (2007) and is planned to be protective of the local environment and public and personnel health and safety.

All persons involved with the Project should read and be familiar with this SCP. To be effective, it is important that all personnel are familiar with their responsibilities and steps to take in the event of a spill. Personnel should not read the SCP for the first time during an emergency.

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2 SITE DESCRIPTION

The community of Clyde River was originally established on the east side of Patricia Bay, approximately 5 km east of the present day community, as illustrated in Figure 1 in Appendix A. Known locally as "Old Town Site", the original settlement was occupied from 1923 until 1970 when the new community was established. The Old Town Site formerly included a weather station, school, electrical generating plants and residences. Residents of Clyde River currently camp in the Old Town area during the summer and collect drinking water from the streams running through the area.

It is understood that the debris and impacted soil from the Old Town Site is to be remediated, and as part of the remediation, new facilities are to be constructed to accommodate the materials (waste) generated from the remediation. The new facilities are to include a temporary landfarm near the Old Town Site, a temporary access road from an existing Hamlet road to the Old Town Site, and a new landfill containment cell at the existing solid waste facility (see Figure 1 in Appendix A).

The surficial geology in the area is expected to be undifferentiated, unconsolidated deposits, some stratified and locally fossiliferous; chiefly glacial deposits partially reworked by fluvial, lacustrine, marine, and frost action; minor interglacial strata. The bedrock is expected to be from the Aphebian Group formation which mainly consists of migmatite.

Several water bodies are located within or near the Project area, including four small drainage channels at the Old Town Site, the Clyde River (north of the Old Town Site), and the marine environment of Patricia Bay.

2.1 Potential Contaminants

Over the course of the Project, several contaminants may be used by equipment and crews working and travelling along the access road and at other Project locations. These contaminants are listed below and may be involved in a spill:

- Gasoline
- Diesel
- Hydraulic oil
- Motor oil
- Lubricating oils and grease
- Antifreeze and other coolants
- Contaminated soil and/or water

Contaminant spills may occur on land or in the water along the entire Project route. Spills may result from any of the following occurrences:

- Leaks or ruptures of fuel storage tanks
- Valve or line failure in systems, vehicles or heavy equipment
- Heat expansion due to overfilling or improper storage
- Improper storage of contaminants
- Vehicular accidents
- Spill during transfer of contaminant
- Vandalism

3 RESPONSE ORGANIZATION

A qualified professional with expertise in northern remediation projects will be contracted to manage construction of the access road, landfill containment cell, and landfarm, operation of the borrow sources, and the remedial excavation work. This contractor has not yet been selected but will be responsible for initiating this SCP during the entire remediation project. Development and operation of the existing Hamlet Quarry will be managed by the Hamlet of Clyde River.

Whenever a spill is identified, the contractor or the GN-CGS representative should be contacted as soon as possible. The Project Remedial Contractor is responsible for initiating the SCP. Contact information for GN-CGS is provided in Table 3-1 below. The SCP will be updated with the remedial contractor contact information once they are selected.

Table 3-1 Spill Contingency Contacts for Remediation of the Old Town Site, Clyde River, NU

GN – CGS Contact Information	Remedial Contractor
Jack O'Keefe Project Officer Department of Community and Government Services Government of Nunavut P.O. Box 379 Pond Inlet, NU X0A 0S0 Ph: (867) 899-7312 Fax: (867) 899-7328	To be determined

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4 INITIAL ACTIONS

The following actions should be taken by the first person(s) who identifies a spill:

1. Be alert and considerate of your safety and of those around you. If possible, identify the spilled contaminant.
2. Assess the hazard to persons in the area of the spill.
3. If possible, without further assistance, control any danger to human life or the environment.
4. Assess whether the spill can be readily stopped or brought under control.
5. If safe to do so, and if possible, try to stop the spillage of contaminant.
6. Gather information about the status of the situation.
7. Report the spill immediately to the contractor or the GN-CGS representative who will report the spill to the 24-Hour Emergency Spill Report Line – **867 – 920 – 8130**
8. Resume any effective action to contain, clean up or stop the flow of spilled contaminant. See Section 6.1 for more information on spill response procedures.

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5 REPORTING PROCEDURE

All spills or potential spills of contaminants must be reported to the 24-hour Northwest Territories – Nunavut Emergency Spill Report Line to ensure that an investigation may be undertaken by the appropriate government authority. Reporting of any spills associated with the Project should be completed by the contractor or the GN-CGS representative.

To report a spill:

1. Fill out the Nunavut Spill Report Form (found in Appendix B of this SCP) as completely as possible before calling in the spill report.
2. Contact the Government of Nunavut 24-hour Emergency Spill Report Line

   24-HOUR EMERGENCY SPILL REPORT LINE 867-920-8130
3. Where fax is available, fax the completed Nunavut Spill Report Form to **867-873-6924**. Alternatively, if email is available, email the completed Nunavut Spill Report Form to spills@gov.nt.ca

Any person reporting a spill is required to give as much information as possible, however reporting of a spill should not be delayed if all of the necessary information is not known. Additional information can be provided later. From the *Consolidation of Spill Contingency Planning and Reporting Regulations* (1998), as much of the following information should be reported during the initial spill report:

- Date and time of spill
- Location of spill
- Direction spill is moving
- Name and phone number of a contact person close to the location of the spill
- Type of contaminant spilled and quantity
- Cause of spill
- Whether spill is continuing or has stopped
- Description of existing contaminant
- Action taken to contain, recover, clean up, and dispose of spilled contaminant
- Name, address and phone number of person reporting the spill
- Name of owner or person in charge, management or control of contaminants at the time of the spill

In addition to reporting to the 24-hour Emergency Spill Report Line, an Aboriginal Affairs and Northern Development Canada (AANDC) Water Resources Inspector must be notified of a spill immediately after occurrence. The AANDC Water Resources Inspector should be contacted at (867) 975-4298. A copy of the completed Nunavut Spill Report Form should be forwarded to them.

6 ACTION PLANS

The most likely spill possibilities during the Project would be leakage or line failure from heavy equipment or other vehicles, spilling during fuel transfer, or vehicular accident. The likelihood of a major spill is negligible as no contaminants will be stored at construction sites within the Project footprint. All contaminants will be stored at a designated storage facility (e.g., Community Tank Farm). Further, a spill response kit will be kept at all construction sites.

The risk of spills will be further reduced through regular inspection and maintenance of all heavy equipment and vehicles associated with the Project, as well as routine activities. These activities may include, but not be limited to:

- Routine checks of fuel transfer hoses and equipment;
- Inspection of fuel and oil lines on all equipment;
- Completing on-site fuel transfer over spill pads and a minimum of 100 m from the high water mark of any waterbody;
- Monitoring of tank volume during fuel transfer;
- Cleaning up drips and minor spills immediately; and,
- Ensure the quick repair of any identified deficiencies on heavy equipment or other vehicles.

6.1 Spill Response

The following steps outline the general spill response procedures for initial actions to be taken to contain and clean up a contaminant spill, as well as disposing of contaminated materials. Three procedures have been developed for handling contaminant spills, depending on where the spill has occurred (i.e., land, water or snow/ice).

6.1.1 Spills on Land

1. Once a spill is identified, all sources of ignition should be turned off (e.g., no smoking, shut off engines).
2. The spilled material (e.g., gasoline, diesel, antifreeze, etc) should be identified, if possible.
3. The affected area should be secured, ensuring the area is safe for entry and does not represent a threat to human health and safety of the spill responders. Public access of the area should be restricted.
4. If possible, identify where the spill is coming from (the source). Determine if the spill is still occurring (i.e., still leaking) or if the spillage has stopped. If the spill has not stopped, determine if it is safe to stop or control the spill (e.g., plug hole, close valve, upright container), or contain the spill (e.g., place a container or tarp with built up edges under the spill source to contain the spill).

5. If the spill is too large to be controlled with the spill materials at hand, contact the contractor or the GN-CGS representative and report the spill immediately (see Section 3 for contact information).
6. If the spill is small enough to be controlled with the spill response materials at hand, prevent spilled contaminants from spreading or entering waterways by using sorbent (oil-absorbing) materials or a soil dyke down slope from the spill. This is especially the case with liquid contaminants (e.g., gasoline, diesel).

   If some contaminant has entered a waterway, follow procedures in the next section (***Spills in Water***) to contain and clean-up the contaminant in the water.
7. Once the spill has been controlled and further spreading prevented, contact the contractor or the GN-CGS representative and report the spill (see Section 3 for contact information). The contractor or the GN-CGS representative is responsible to report the spill to the 24-Hour Emergency Spill Report Line.
8. If possible with spill response materials at hand, clean up the remaining spilled contaminant and store contaminated materials in a secure container for proper disposal. Do not flush the affected area with water.
9. If possible, remove any contained liquid by pumping into secure drums.

6.1.2 Spills in Water

1. Once a spill is identified, all sources of ignition should be turned off (e.g., no smoking, shut off engines).
2. The spilled material (e.g., gasoline, diesel, antifreeze, etc) should be identified, if possible.
3. The affected area should be secured, ensuring the area is safe for entry and does not represent a threat to human health and safety of the spill responders. Public access of the area should be restricted.
4. If possible, identify where the spill is coming from (the source). Determine if the spill is still occurring (i.e., still leaking) or if the spillage has stopped. If the spill has not stopped, determine if it is safe to stop or control the spill (e.g., plug hole, close valve, upright container).
5. If the spill is too large to be controlled with the spill materials at hand, contact the contractor or the GN-CGS representative and report the spill immediately (see Section 3 for contact information).
6. If the spill is small enough to be controlled with the spill response materials at hand, use sorbent booms to contain the spill for recovery. Place sorbent sheets on the water within the boomed area to help contain the contaminant. For narrow waterways such as streams, place one or more sorbent booms across the waterway, downstream of the spill location, and anchor the booms on the each bank.

7. Once the spill has been controlled and further spreading prevented, contact the contractor or the GN-CGS representative and report the spill (see Section 3 for contact information). The contractor or the GN-CGS representative is responsible to report the spill to the 24-Hour Emergency Spill Report Line.
8. If possible with the spill response materials at hand, clean up the remaining spilled contaminant within the boomed area. Store contaminated materials in a secure container for proper disposal.

6.1.3 Spills on Snow/Ice

1. Once a spill is identified, all sources of ignition should be turned off (e.g., no smoking, shut off engines).
2. The spilled material (e.g., gasoline, diesel, antifreeze, etc) should be identified, if possible.
3. The affected area should be secured, ensuring the area is safe for entry and does not represent a threat to human health and safety of the spill responders. Public access of the area should be restricted.
4. If possible, identify where the spill is coming from (the source). Determine if the spill is still occurring (i.e., still leaking) or if the spillage has stopped. If the spill has not stopped, determine if it is safe to stop or control the spill (e.g., plug hole, close valve, upright container).
5. If the spill is too large to be controlled with the spill materials at hand, contact the contractor or the GN-CGS representative and report the spill immediately (see Section 3 above for contact information), particularly since a spill occurring on snow or ice presents the potential for immediate access of contaminants into waterways.
6. If the spill is small enough to be controlled with the spill response materials at hand, prevent spilled contaminants from spreading or entering waterways by using sorbent materials or a snow/soil dyke down slope from the spill. This is especially the case with liquid contaminants (e.g. gasoline, diesel).
7. Once the spill has been controlled and further spreading prevented, contact the contractor or the GN-CGS representative and report the spill (see Section 3 above for contact information). The contractor or the GN-CGS representative is responsible to report the spill to the 24-Hour Emergency Spill Report Line.
8. If possible with the spill response materials at hand, clean up the remaining spilled contaminant and store contaminated materials in a secure container for disposal. Impacted snow should also be stored in drums for proper disposal.

6.2 Additional Spill Delineation or Monitoring

In the event of a large spill or a spill in which not all of the spilled contaminant can be readily cleaned up with materials at hand (as described above), delineation of the affected area may be required. This would include subsurface investigation of the area (i.e., digging of test pits, soil sampling,

installation of monitoring wells) to determine how large and how deep the contaminant affected the subsurface soil and/or groundwater (horizontal and vertical extent of the spill). The delineation would result in the development of an appropriate remediation plan for the affected area. In this case, a qualified environmental consultant should be retained to provide advice on how to proceed with delineation and remediation of a large spill.

7 ENVIRONMENTAL MAPPING

As described in Section 1, impacts from spills could occur at the landfill containment cell, along the access road, at or adjacent to borrow sources, and at the Old Town Site, including within or near the landfarm, any excavated areas, and adjacent waterbodies.

All drainage channels within the Project footprint eventually flow into the marine environment of Patricia Bay and spills in water or on land adjacent to the channels could impact this downstream environment. Spills in water or on land adjacent to water bodies could impact fish and fish habitat.

Spill response equipment (e.g., spill kits) will be present at the landfill containment cell area, at the excavation operations of the borrow sources, and Old Town Site. Spill response equipment is also kept in the Hamlet Garage and the community Bulk Fuel Storage Facility.

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8 RESOURCE INVENTORY

8.1 On-Site Resources

8.1.1 Personnel

All personnel hired to work on the Project will be trained on-site in spill prevention, response and clean-up measures (see Section 9).

8.1.2 Equipment

The following is a list of equipment available to respond to possible spills.

- One loaders
- Two haul/dump trucks
- One excavator
- Two pick-up trucks (light vehicle)

8.1.3 Spill Kits

8.1.3.1 Spill Kit Locations

At least one spill kit should be clearly marked and present at landfarm, the landfill area, at the pullouts of the access road, and at the excavation operations of the borrow sources.

8.1.3.2 Spill Kit Contents

The following outlines the recommended minimum requirements for contents of spill kits to be used during the Project; the remedial contractor is responsible to supply the spill kits. Each spill kit should be regularly inspected to ensure it always contains the following, at a minimum (in part from INAC [2007]):

- 1 – 205 L open top steel drum with lid, bolting ring and gasket (spill kit container)
- 10 disposable large 5 mil polyethylene bags (dimensions 65 cm x 100 cm) with ties
- 4 – 12.5 cm x 3 m (5 in. X 10 ft.) sorbent booms
- 10 kg bag of sorbent particulate
- 100 sheets (1 bail) of 50 cm x 50 cm sorbent sheets
- 2 large (5 m x 5 m) plastic tarps
- 1 roll duct tape
- 1 utility knife
- 1 field notebook and pencil

- 1 rake
- 1 pick-axe
- 3 spark-proof shovels
- 4 Tyvex® splash suits
- 4 pairs chemical resistant gloves
- 4 pairs of splash protective goggles
- Instruction binder, including Spill Contingency Plan.

The entire spill kit contents, with the exception of the spark-proof shovels, can be stored within the 205 L steel drum. The drum should be sealed securely to protect the spill kit contents though should always be accessible without the use of tools (i.e., finger tight bolt ring). The drum's bolt ring should be inspected regularly during facility inspections to ensure it turns freely and is lubricated.

Extra spill response materials should also be available for use, in addition to the spill kit contents. These include:

- 10 – 205 L open top steel drum with lid, bolting ring and gasket
- 2 spark-proof shovels
- 50 disposable large 5 mil polyethylene bags (dimensions 65 cm x 100 cm)
- 10 – 12.5 cm x 3 m (5 in. X 10 ft) sorbent booms
- 5 – 10 kg bags of sorbent particulate
- 500 sheets (5 bails) of 50 cm x 50 cm sorbent sheets
- 2 Tyvex® splash suits
- 2 pairs of chemical resistant gloves
- 2 pairs of splash protective goggles.

8.2 Off-Site Resources

The following agencies can be contacted for assistance in spill reporting, response and/or clean-up and remediation.

Table 8-1 Regulatory agency contact information for spill contingency planning.

Agency	Legislation	Contact Information
Nunavut Water Board	*Nunavut Waters and Surface Right Tribunal Act*	Phone: (867) 360-6338 Fax: (867) 360-6369
Nunavut Impact Review Board	*Nunavut Land Claims Agreement Act*	Phone: (867) 983-2593
Government of Nunavut Department of Environment	*Nunavut Environmental Protection Act*	Phone: (867) 975-7700 Fax: (867) 975-7740
Environment Canada	*Canadian Environmental Protection Act,* 1999	Phone: (867) 975-4464 Fax: (867) 975-4645

Agency	Legislation	Contact Information
Fisheries and Oceans Canada	*Fisheries Act*	Phone: (867) 979-8000 Fax: (867) 979-8039
Transport Canada (Coast Guard)	*Transportation of Dangerous Goods Act*	Phone: (867) 979-5269 Fax: (867) 979-4260

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9 TRAINING & EXERCISES

9.1 Outline

The remedial contractor will be responsible for providing a qualified supervisor and training site workers in spill response. All individuals hired to work on the Project should have their basic first aid and WHMIS (Workplace Hazardous Materials and Information System) training before working on site. A training session on spill prevention and response will be held for all individuals prior to the start of the remediation project. The training session should review this SCP and include information on:

- Individuals roles and responsibilities in regards to spill prevention, detection, response and clean-up;
- Location(s) of hard copies of the SCP, maps and spill kits;
- Equipment available for spill response;
- Content of spill kits;
- Initial actions and spill reporting procedures; and,
- Spill response and clean-up actions.

Training exercises, including proper use of spill kits, should also be held prior to the start of construction to provide hands-on training for individuals on spill response procedures and equipment. Training exercises can be held during the training session for all individuals or at another time for individuals directly involved with handling of hazardous materials.

9.2 Schedule

The training session and exercises will be held prior to the start of construction and borrow source excavation each year as part of a Worker Orientation Seminar. This will ensure all returning individuals receive a refresher while any new individuals become familiar with on-site spill prevention and response measures.

The Hamlet will keep records of all individuals who attend the training session and exercises, as well as copies of their training certificates (e.g., first aid, WHMIS).

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10 REFERENCES

10.1 Literature Cited

Indian and Northern Affairs Canada (INAC). Guidelines for Spill Contingency Planning. Yellowknife, NT: Water Resources Division, INAC, 2007. Retrieved 7 February 2011: http://www.ainc-inac.gc.ca/ai/scr/nt/pdf/SCP-EUD-eng.pdf

Northwest Territories Water Board (NWTWB). Guidelines for Contingency Planning. Yellowknife, NT: NWTWB, 1987.

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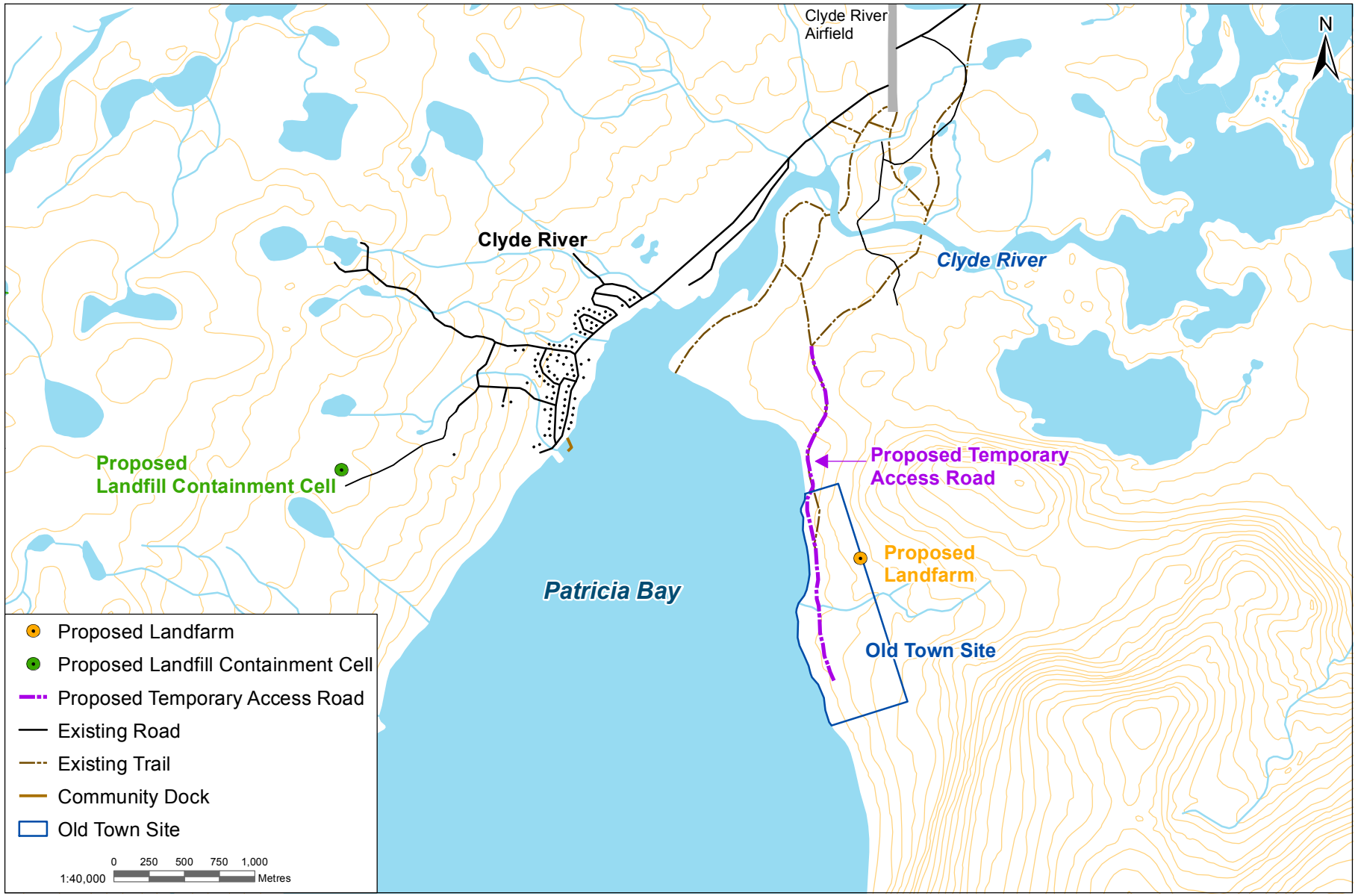
APPENDIX A

Figures



Landfill, Landfarm and Access Road Development at Clyde River, NU

Clyde River Old Town Site Remediation Overview

Acknowledgements: Original Drawing by Nunami Stantec: NTS Data: Sheet 027F08, 1:50,000 provided by Government of Canada, Natural Resources Canada, Centre for Topographic Information.

PREPARED BY NUNAMI STANTEC

PREPARED FOR Nunavut

FIGURE NO. 1

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APPENDIX B

Nunavut Spill Report Form

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	☐ ORIGINAL SPILL REPORT, OR ☐ UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER ____-_____
B	OCCURRENCE DATE: MONTH – DAY – YEAR	OCCURRENCE TIME		

C	LAND USE PERMIT NUMBER (IF APPLICABLE)	WATER LICENCE NUMBER (IF APPLICABLE)
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION	REGION ☐ NWT ☐ NUNAVUT ☐ 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
	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	TELEPHONE
M	ANY ALTERNATE CONTACT	POSITION	EMPLOYER	ALTERNATE CONTACT LOCATION	ALTERNATE TELEPHONE

REPORT LINE USE ONLY

N	RECEIVED AT SPILL LINE BY	POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130

LEAD AGENCY ☐ EC ☐ CCG ☐ GNWT ☐ GN ☐ ILA ☐ INAC ☐ NEB ☐ TC

SIGNIFICANCE ☐ MINOR ☐ MAJOR ☐ UNKNOWN

FILE STATUS ☐ OPEN ☐ CLOSED

AGENCY	CONTACT NAME	CONTACT TIME	REMARKS
LEAD AGENCY			
FIRST SUPPORT AGENCY			
SECOND SUPPORT AGENCY			
THIRD SUPPORT AGENCY			