SPILL RESPONSE AND CONTAMINATED-SITE REMEDIATION GUIDE FOR NUNAVIK

for municipalities and regional organizations

Guide No. 3

TABLE OF CONTENTS

This guide is the third in a series of three guides. Guide No. 1 is intended for municipalities and regional organizations that regularly handle hazardous materials. Guide No. 2 is intended for the general public and describes residual materials in broad terms, including proper handling and storage practices.

1 INTRODUCTION

The *Spill Response and Contaminated-Site Remediation Guide for Nunavik* is geared towards those who may be required to respond to environmental emergencies involving hazardous materials. The objectives of the Guide are to describe response measures and to provide essential and practical information in case of contamination. The Guide is intended to complement the spill-response protocol that municipalities and regional organizations should possess.

2 CONTAMINATED-SITE INSPECTIONS

Ground, water, snow or sediments with contaminant levels exceeding acceptable regulatory thresholds for human health, plants and wildlife are considered contaminated. Possible sources of contamination include buried residual materials, nonpoint chemical pollution (leaks or frequent small spills), disposal and storage of hazardous materials, major spills and fire-caused emissions. Contamination may also occur when contaminated soil is stored improperly. Contaminated sites may have short- and long-term consequences on human health and the environment. If you believe that a site may be contaminated, carry out a careful inspection based on the following questions.

2.1 What Is the History of the Site?

It is important to know the history of the site.

- Is the site located near a hydrocarbon tank farm or a contaminated site?
- Is the site located near a former hydrocarbon or fuel tank farm?
- Has there ever been a spill at or near the site?
- Are there any nearby tanks or contaminated sites that could have contaminated the current site?

2.2 What Is the Contaminant?

The contaminant must be identified in order to determine suitable decontamination options. Hydrocarbons, such as furnace oil, fuel and oil are the most common type of contaminant in Nunavik. You may take samples of the contaminated material to identify the contaminant and its concentration. In accordance with the type of analysis required, accredited laboratories are able to provide useful information as well as appropriate containers for your samples. A list of accredited laboratories in

Québec may be found on the website of the *ministère du Développement durable, de l'Environnement et des Parcs* (sustainable development, environment and parks, MDDEP): **http://www.ceaeq.gouv.qc.ca/accreditation/PALA/lla01.htm** (in French).

2.3 What Is the Level of Contamination?

Answers to the following questions are required.

- What is the size of the contaminated site (length and width)?
- What is the soil type? (sand, clay, gravel, etc.)?
- Is the contaminated site sloped?
- Is there surface water at or near the site?
- Is there permafrost at the site?
- What is the estimated volume of spilled contaminant?

2.4 What Are the Potential Effects?

The contaminated site may affect human health, wildlife and plants. Identify contamination corridors and all potential receptors.

- Why are there contaminants at the site? Where did they come from?
- Are there any toxic vapours?
- Are there any observable effects on water bodies, wetlands, plants or animals? If yes, what are these effects?
- How will the contaminants affect the surrounding areas?
- Is the contaminated site used by the general public? Is the contaminated site a residential area?

3 MANDATORY STATEMENT

Once the contaminant has been identified, and its concentration and potential effects determined, contact the generator. Pursuant to provincial and federal regulations, generators (which is to say any individual, business or organization that uses hazardous materials) are responsible for managing any substances that must be handled, packaged, stored, treated and disposed of. The generator must complete the *Nunavik Environmental Emergency Report Form* (appended to this guide), with special attention to be paid to the type of spill, its place, its date and its cause, as well as the name of the organization or individual responsible for remediating the site. Any other relevant information may also be indicated on the form.

Completed forms must be faxed (819-964-0694) to the environmental specialist with the Renewable Resources, Environmental and Land Use Planning Department of the Kativik Regional Government (KRG). The KRG environmental specialist processes the information about the incident and informs the MDDEP regional office. The KRG environmental specialist may be asked to participate in contaminated-site inspections. The MDDEP also offers 24-hour emergency support and tips (toll free 1-866-694-5454). For immediate emergency assistance in situations that threaten in particular human life, your local police or fire department may be contacted.

4 CONTAMINATED-SITE MANAGEMENT

Once an inspection has been completed, the generator must respond quickly, taking all the necessary steps to remediate the site and reduce or mitigate the risks for human health, property and the environment.

Some contaminated sites require major remediation. Major remediation may include actions such as the removal, containment, cleaning and disposal or treatment of the contaminated material, as well as administrative decisions regarding, for example, rezoning and the enforcement of regulations. Also, prior to beginning major remediation work, certificates of authorization must be obtained from the MDDEP. Major contaminated-site remediation therefore involves considerable work as well as external assistance. Those responsible for major contaminated-site remediation may request assistance from the environmental specialist with the KRG Renewable Resources, Environmental and Land Use Planning Department (tel. 1-877-964-2961). Municipalites also have staff trained to handle hazardous materials, as well as heavy equipment for this purpose.

Some contaminated sites require only simple remediation work that may be managed and performed by the generator.

4.1 Safety

When handling hazardous materials, safety should always be the number one concern. To reduce exposure, personal protective equipment should be worn, such as rubber gloves, steel toe boots, hard hats, masks, safety goggles and other related gear. This equipment does not eliminate the hazard, but it does reduce the risk of accident and injury. Moreover, smoking near contaminated sites and public access should be prohibited. Perimeter tape or fencing may be used for this purpose.

4.2 Containment Measures in Nunavik

The most common environmental emergencies in Nunavik are hydrocarbon spills resulting from leaks in residential heating-oil tanks or from heavy equipment. Whenever such an incident occurs, it is important to react quickly to contain the spill. The owner of the equipment should be notified immediately. Other basic steps to contain the spill are described below:

- If the spill reaches a body of water, use floating containment booms and oil sponges to limit the spill and recover the hazardous materials. Be sure to dispose of used sponges in the same manner as residual hazardous materials.

- If the spill occurs on the ground, use absorbent pads and rolls to limit the spill, or erect a barricade or fence with soil or any other available material.

- If the spill occurs on a paved road or airport tarmac, spread absorbent gravel evenly over the contaminated area. Allow to stand for an hour and then collect the gravel. The collected gravel should be placed in empty drums or on a plastic tarp. Be sure to dispose of the gravel in the same manner as residual hazardous materials.

4.3 Storage and Identification of Contaminated Materials

It is unacceptable for contaminated materials to be abandoned or disposed of in the environment or as regular trash at a residual materials disposal site. Residual hazardous materials should be stored in appropriate, resistant and leak-free containers.

- Collect the contaminated materials until all traces of contamination (sight and smell) have been removed.
- Place the contaminated materials (gravel, soil, snow or water) in drums or Wrangler bags.
- If drums or Wrangler bags are not available, place the contaminated materials on a plastic tarp in a designated location for hazardous residual materials. The contaminated materials should moreover be covered with another plastic tarp held firmly in place to protect them from wind and precipitation. This measure should only be temporary.

Storage containers (drums and bags) should be properly labelled to facilitate inventory, storage and transportation. Appropriate storage and labelling practices for residual hazardous materials commonly found in Nunavik are described below.

Used oil should be stored in closed plastic or metal drums, or in resistant Wrangler bags. For transportation purposes, up to four drums or one Wrangler bag may be secured to a pallet. The drums or Wrangler bags should never be stored directly on the ground. Labels (see immediately below) should appear on all drums or Wrangler bags.

SHIPPING NAME: Material contaminated with hydrocarbons (not covered under the TDG Regulations)
UN: n/a
CLASS: n/a
UNIT NUMBER: 1 of 1
PROVINCIAL CODE: A01-0.0-L
GENERATOR: Northern Village of Quaqtaq
DATE: 2010-11-14

Oil-contaminated water or **melted snow** should be stored in closed plastic or metal drums. For transportation purposes, up to four drums may be secured to a pallet. The drums should never be stored directly on the ground. Labels (see immediately below) should appear on all drums.

SHIPPING NAME: Oil-contaminated water
(not covered under the TDG Regulations)

UN: n/a

CLASS: n/a

UNIT NUMBER: 1 of 1

PROVINCIAL CODE: A03-0.0-L

GENERATOR: Northern Village of Umiujaq

DATE: 2011-03-21

Contaminated soil should be stored in closed plastic or metal drums, or in Wrangler bags. For transportation purposes, up to four drums or one Wrangler bag may be secured to a pallet. The drums or Wrangler bags should never be stored directly on the ground. Labels (see immediately below) should appear on all drums or Wrangler bags.

SHIPPING NAME: Soil contaminated with hydrocarbons
(not covered under the TDG Regulations)

UN: n/a

CLASS: n/a

UNIT NUMBER: 1 of 1

PROVINCIAL CODE: O01-0.0-S

GENERATOR: Northern Village of Kuujjuaq

DATE: 2010-06-01

Storing contaminated materials is not an acceptable long-term solution. Nonetheless, for safety purposes, each Northern village should designate and clearly identify a site for the short-term storage of recovered contaminated materials until they can be shipped for treatment elsewhere in Nunavik or in the South.

5 TRANSPORTATION OF CONTAMINATED MATERIALS

The treatment and disposal of residual hazardous materials is the final means for reducing and eliminating the risks posed to human health and the environment. These actions are moreover the responsibility of the generator. Generally, for this purpose the generator must transport the materials out of Nunavik.

Residual hazardous materials transported to recycling, treatment, storage or disposal facilities must be properly sorted, packaged, labelled and recorded on the shipping (air, marine or land) manifest.

Shipping companies that serve the North for the transport of these materials are indicated below:

Groupe Desgagnés (Transarctik) Inc.
6565 Hébert Blvd.
Sainte-Catherine QC J5C 1B5
Tel.: 450-635-0833
Fax: 450-635-5126
info@transarctik.desgagnes.com
http://desgagnes.com

Nunavut Eastern Arctic Shipping Inc. (NEAS)
2100 Pierre-Dupuy, Suite 2060
Montreal QC H3C 3R5
Tel.: 514-597-0186
Toll free: 1-877-225-6327
Fax: 514-523-7875
www.neas.ca

6 RESIDUAL HAZARDOUS MATERIALS MANAGEMENT FIRMS

Before shipping residual hazardous materials, contact the shipping company and a residual hazardous materials management firm in the South. Management firms that possess experience and equipment for receiving residual hazardous materials from Nunavik are indicated below. These management firms are able to provide advice regarding residual hazardous materials equipment, labels and containers. This list is not exhaustive.

Sanexen
1471 Lionel-Boulet,Blvd., Suite 32
Varennes QC J3X 1P7
Tel : 450-652-9990
Fax : 450-652-2290
info@sanexen.com
www.sanexen.com

Biogénie S.R.D.C. Inc.
4495 Wilfrid-Hamel Blvd., Suite 200
Quebec City QC G1P 2J7
Tel.: 418-653-4422
Fax: 418-653-3583
quebec@biogenie-env.com
www.biogenie-env.com

Recubec
485 Marien
Montreal QC H1B 4V8
Tel.: 514-645-9233
Fax: 514-645-2050
info@recubec.ca
www.recubec.ca

Quatrex Environnement Inc.
2105 Monterey
Laval QC H7L 3T6
Tel.: 450-963-4747
Toll free: 1-800-967-3002
Fax: 450-622-5392
info@quatrex.ca
www.quatrex.ca

Conterm Inc.
220 Labrosse Ave.
Pointe-Claire QC H9R 1A1
Tel.: 514-694-2164
Toll free: 1-888-447-2164
Fax: 514-694-1640
info@conterm.ca
http://www.conterm.ca

7 CONCLUSION

This guide represents a brief introduction to contaminated-site assessment and spill responses. It is intended to serve as a source of information for emergency environmental issues, including heating-oil, fuel and oil spills. In no manner whatsoever does it replace applicable Québec and Canadian regulations.

7.1 Resources

For further information, contact the Kativik Regional Government or the Québec government:

Kativik Regional Government
Environmental Technician or Specialist
Renewable Resources, Environmental and Land Use Planning Department
P.O. Box 9
Kuujjuaq QC J0M 1C0
Tel.: 819-964-2961
Toll free: 1-877-964-2961
Fax: 819-964-0694
www.krg.ca

Ministère du Développement durable, de l'Environnement et des Parcs
Regional Analysis and Expertise Branch for Abitibi–Témiscamingue and Nord-du-Québec
Emergency Coordinator
180 Rideau Blvd., Suite 1.04
Rouyn-Noranda QC J9X 1N9
Tel.: 819-763-3333, ext. 256
Hot line: 1-866-694-5454
Fax: 819-763-3202
www.mddep.gouv.qc.ca

7.2 References

The following references were used to prepare this guide:

Regulation respecting Hazardous Materials (c. Q-2, r. 32), Québec government, February 2010.

Transport of Dangerous Goods Regulations, Government of Canada, February 2008.

Management of Hazardous Waste, training manual, Stabilis, 2004.

Guideline for the General Management of Hazardous Waste in the NWT, Government of the Northwest Territories, Department of Resources, Wildlife and Economic Development, February 1998.

APPENDIX

Nunavik Environmental Emergency Report Form			
Northern village		**Report date**	
Incident date			
Incident location		**Public area affected**	
Individual, business or organization responsible			
Contact person		**Contact information**	
Cause of incident (description)			
Type of contaminant			
Spill: estimated quantity		**Recovery: estimated quantity**	
Action taken to stop the spill			
Action taken to collect the contaminated material			
Action taken to ensure the safe storage of the contaminated material			
Decontamination treatment			
Other information			
Report prepared by:		**Date:**	
Contact person:	**Environmental Technician or Specialist** Kativik Regional Government Tel.: 819-964-2961 Toll free: 1-877-964-2961 Fax: 819-964-0694		

NOTES:

NOTES:

NOTES:

SPILL RESPONSE AND CONTAMINATED SITE REMEDIATION GUIDE FOR NUNAVIK

for municipalities and regional organizations

1
2
3

HAZARDOUS MATERIAL SPILL

1. Stop the spill.

2. Contain the spill.

3. Secure the site.

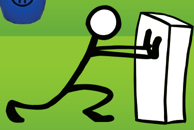
4. Write down a description of the situation.

5. Fill out the "Nunavik Environmental Emergency Report Form". (Guide #3 Appendix)

6. Call for information.
   - Your local municipality, or
   - KRG: 1-819-964-2961, or
   - MDDEP: 1-866-694-5454

7. Storage and Identification of Contaminated Materials.

8. Send contaminated material to treatment center.



NEED HELP? call:

- Your local municipality, or
- KRG: 1-819-964-2961, or
- MDDEP: 1-866-694-5454

ᑲᑎᕕᒃ ᐊᕙᑎᓕᕆᓂᕐᒧᑦ ᐃᓱᒪᓵᕐᓯᔪᕐᑏᑦ ᑲᑎᒪᔩᑦ
Comité consultatif de l'environnement Kativik
Kativik Environmental Advisory Committee

KATIVIK

ᑲᑎᕕᒃ ᐊᐅᑎᓕᓐᓂᖅᓱᒻᒪᑦ ᐃᓕᓴᕐᕕᐅᔪᒃᑎᑦ ᑲᑎᒪᔨᖅ
Comité consultatif de l'environnement Kativik
Kativik Environmental Advisory Committee

KATIVIK
ᑲᑎᕕᒃ ᓄᓇᕗᑦᓯᓕᒃ ᑲᔪᓯᑎᒃ
Administration régionale Kativik
Kativik Regional Government