



Appendix E

Environmental Emergency Contingency Plan



Environmental Emergency Contingency Plan Hamlet of Kugluktuk

Prepared by

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Preamble

This Environmental Emergency Contingency Plan relating to the collection, transportation, storage, and treatment operations of sewage and solid waste for the Hamlet of Kugluktuk, Nunavut, is effective from November 20, 2003 to November 30, 2008. This plan applies to all operations and spill events relating to sewage, solid waste and hydrocarbons including gasoline, oil, and lubricants in the Hamlet of Kugluktuk, Nunavut (formerly known as Coppermine).

The following formal distribution will be made after this document receives approval:

- Hamlet of Kugluktuk:
 - Mayor and Council
 - Senior Administrative Officer (SAO)
 - Hamlet Operations Staff
 - Fire Department
 - Community Health Centre
 - RCMP Detachment.
- Nunavut Water Board.

Additional copies and updates of this plan may be obtained by writing to:

Hamlet of Kugluktuk
Senior Administrative Officer
Kugluktuk, Nunavut, X0E 0E0

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1.0 Introduction

1.1 Purpose of Plan

The impacts of spills can be catastrophic and may threaten or damage the environment, especially water sources. As such, the Government of Nunavut (GN) requires contingency plans be written and fully implemented. The purpose of this *Environmental Emergency Contingency Plan* is to provide a plan of action for all spills of sewage, solid waste, and petroleum products that may occur as a result of sewage collection and treatment, and solid waste collection and disposal operations undertaken within the Hamlet of Kugluktuk, Nunavut.

This *Environmental Emergency Contingency Plan* will assist in implementing corrective options quickly to minimize environmental damage. Furthermore, it defines the responsibilities of key personnel and outlines procedures to effectively and efficiently contain and recover spills of sewage, solid waste, and hydrocarbon products arising from water, sewage, and solid waste; collection, transportation, storage, and treatment operations. It will assist the Hamlet in meeting the regulatory requirements related to reporting events to the appropriate authorities within the prescribed time period.

1.2 Objectives

The objectives of this Emergency Spill Contingency Plan are to:

- Provide a plan including procedures so that the Hamlet and their Spill Response Team can rapidly respond to a spill situation and minimize injury to individuals and environmental damage
- Comply with all existing regulations
- Cooperate with other groups and agencies
- Be prepared and able to provide an integrated team approach with all involved departments and agencies
- Keep staff, government officials, and Hamlet residents informed.

1.3 Hamlet of Kugluktuk Environmental Policy

It is the policy of the Hamlet of Kugluktuk to fully comply with all applicable legislation to ensure the protection of the environment of the territory of Nunavut. The legislation includes, but is not limited to, the:

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- Environmental Protection Act, Section 34 --- Spill Contingency Planning and Reporting Regulations
- Nunavut Waters and Nunavut Surface Rights Tribunal Act.

The Hamlet will cooperate with other groups committed to protecting the environment and shall ensure that Hamlet employees, regulatory authorities, and the public are informed on the policies and procedures developed to help protect the environment and the citizens of the Hamlet of Kugluktuk.

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2.0 Site Description

2.1 General Site Description

This *Environmental Emergency Contingency Plan* is to be implemented within the Municipal boundaries of the Hamlet of Kugluktuk, Nunavut.

The Hamlet of Kugluktuk is situated on Coronation Gulf at the mouth of the Coppermine River. The Hamlet is situated on a rocky area on the west side of the Coppermine River, at latitude 67°49'N, longitude 115°06'W. The Hamlet is predominately residential with a few small commercial establishments including a hotel, several construction contracting businesses, a grocery store, and a variety of other small businesses. Hunting and fishing in the traditional manner is still a prime occupation for many of the inhabitants. Community buildings include a high school, elementary school, arena, swimming pool, Hamlet office, public works yard, GN offices, and police station. The community has a population of approximately 1,585. A site location map is included on Figure 1.

2.2 Sewage Collection, Water Supply, Treatment and Distribution, and Storage

The Hamlet provides trucked water service for the community. Water is drawn from the Coppermine River and treated by membrane filtration and chlorination. Treated water is distributed by tanker truck to storage tanks in each building.

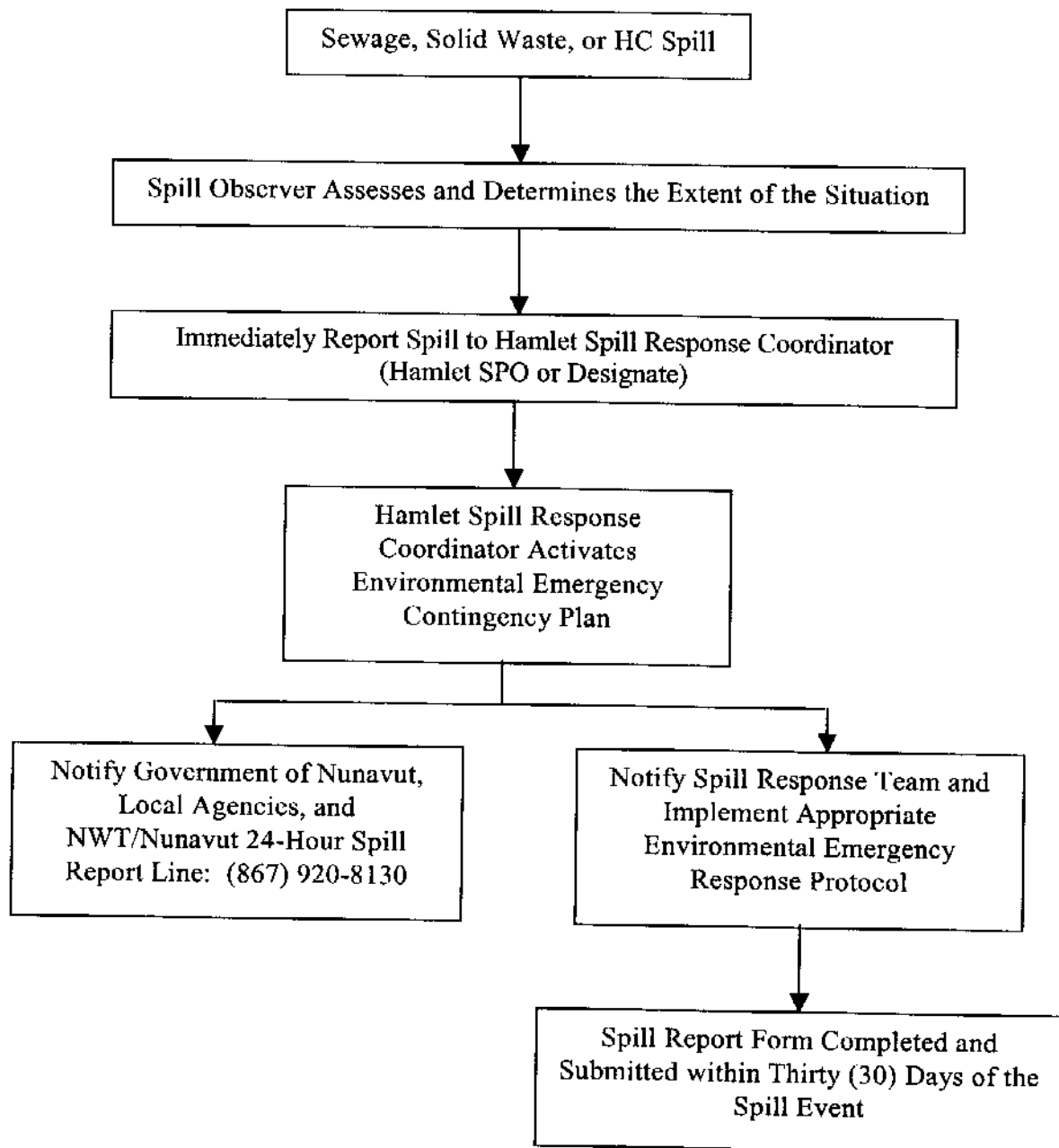
Sewage is collected by vacuum truck, and transported to a Sewage Treatment Facility (Figure 3) operated by the Hamlet of Kugluktuk located approximately 4 km west-southwest from the Hamlet on Coronation Drive. Sewage is discharged into a lagoon, which provides primary treatment before discharging to an engineered wetland where treatment is completed.

The Hamlet of Kugluktuk provides regular solid waste pickup for the Community's residents, businesses, and institutions. Solid waste is trucked to the Hamlet's Solid Waste Disposal facility (Figure 3), which is located adjacent to the sewage treatment facility on Coronation Drive, approximately 4 km west-southwest from the Hamlet. The Solid Waste Disposal Facility includes a landfill cell for municipal solid waste, a landfarm for contaminated soils, a storage area for hazardous and liquid wastes, and a long-term storage area for bulky metals. Municipal solid waste is burned daily prior to spreading and compaction by a loader.

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3.0 Spill Response Organization

The following is a flow chart to illustrate the sequence of events that must be followed in the event of a sewage, solid waste, or HC spill occurring during supply, distribution, collection, transportation, storage, and treatment operations:



Emergency Response Flow Chart

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3.1 Spill Response Team

The Hamlet Senior Administrative Officer (SAO) or his/her Designate will serve as the Spill Response Coordinator for the Hamlet in the event of a sewage or HC spill during collection, transportation, storage, or treatment operations. The SAO of the Hamlet of Kugluktuk will appoint and train appropriate personnel to make up the Spill Response Team, which normally consist of the following personnel:

- Spill Response Coordinator (Hamlet SAO or Designate)
- Hamlet Works Personnel.

The responsibilities of the Spill Response Coordinator are as follows:

1. Assume complete authority over the spill scene and coordinate all personnel involved
2. Evaluate the spill situation and develop overall plan of action
3. Activate the *Environmental Emergency Contingency Plan* for the Hamlet of Kugluktuk
4. Immediately report the spill to the NWT/Nunavut 24-Hour Spill Report Line at (867) 920-8130, and other applicable regulatory or assistance agencies
5. Provide regulatory agencies with information regarding the status of the clean-up activities
6. Act as a spokesperson on behalf of the Hamlet of Kugluktuk with regulatory agencies, the public, and the media
7. Prepare and submit a report on the spill incident to regulatory agencies within 30 days of the event.

3.2 Contact Information

A complete listing of contact information, including telephone numbers of standard regulatory agencies, Hamlet personnel, and assistance agencies who may be contacted to supply resources, expertise, and advise needed to deal with a spill emergency is included in Appendix A.

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4.0 Spill Reporting Procedure

The Spill Response Coordinator must be notified immediately by any individual who is aware of any spill either by phone, radio, or in person.

The following are the incident reporting procedures once the Spill Response Coordinator activates this Environmental Emergency Spill Contingency Plan:

1. Report spill immediately to the 24-Hour NWT/Nunavut Spill Report Line Phone (867) 920-8130 (Section 4.1)
2. Report immediately to the INAC Manager, Water Resources in Iqaluit at (867) 975-4550
3. Notify Hamlet of Kugluktuk Fire Department
4. Fill out the NWT/Nunavut Spill Report Form (Appendix B) within thirty (30) days of the spill event occurring.

4.1 NWT/Nunavut Spill Report Line

All spills as defined in this document must be reported immediately to the 24-hour NWT/Nunavut Spill Report Line. Gather the following information prior to making the call:

- Date and time of spill (if known)
- Location and map coordinates (if known) and direction of flow of spill materials if moving
- Party responsible for spill
- Product/material spilled and estimate of the quantity
- Cause of spill
- If the spill has been stopped or if it is continuing
- Extent of contaminated area
- Factors affecting spill or recovery, such as weather conditions or terrain
- If containment of spill is available
- Action taken or proposed
- If assistance is required
- Possible hazards to person, property or environment (e.g. fire, drinking water, fish, wildlife, etc.).

The information collected should be brief, and quick estimates made so the Spill Report Line and the Spill Response Coordinator can assess the situation. The information is similar to that required in boxes B, D, E, F, G, H, I, J, K, L, M, N, O, and P on the spill report form that must be completely filled out and submitted within thirty days of the incident. This form is included as Appendix B.

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5.0 Action Plans

5.1 Initial Action

The instructions to be followed by the first person on the spill scene are as follows:

1. Always be alert and consider your safety first
2. If possible, estimate the volume of material that has been spilled
3. Assess the hazard of people in the vicinity of the spill
4. If possible, and safety permits, attempt to stop the release of product to minimize potential for environmental impacts
5. Immediately report the spill to the Spill Response Coordinator
6. Resume any effective action to contain, mitigate, or terminate the flow of the spilled material.

5.2 Environmental Health Protection and Mitigation Measures

The environmental protection and mitigation measures outlined in the following sections are to be taken by all personnel responding to a spill event and to reduce the chance of environmental impairment and health hazards due to spill, release, or other incident.

5.2.1 General Procedures

The following general clean-up procedures shall apply for all spill areas within the Hamlet:

- Always wear personnel protective equipment (PPE)
- Smoking is prohibited during all spill response activities
- Eliminate all ignition sources
- Contain spills on soil or rock by construction of earthen dykes using available material. If soil is not available, place sorbent materials or a boom in the path of the spill. As the sorbent barrier becomes saturated, continually replace it. Fuel or other liquids lying in pools, or trenches are to be removed with pumps, buckets, or skimmers
- If the ground is snow covered, create snow dykes, and line with a chemically-compatible liner for containment and recovery of liquid
- For fuels on water, deploy containment booms, and recovery as much fuel as possible with a work boat and skimmer if the area has less than 1/10th ice cover. If the area is frozen, burn any fuel spills using igniters
- Apply sorbets, if necessary
- Assess potential for disturbance of wildlife, fish, and archaeological sites by spill or clean-up operations
- Notify environmental authorities to discuss available and feasible disposal and clean-up options

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- Conduct required clean-up operations
- Assess and appropriately treat any areas disturbed by clean-up activities with laboratory testing
- Ensure the site has been completely restored and cease operations, only when all work is finalized and laboratory testing confirmed.

Procedures for containing spills of specific contaminants are provided in the following sections.

5.3 Mitigative Measures: Sewage, Gasoline, Diesel Fuel, Hydraulic Fluid, Lubricating Oil and Aviation Fuel

If possible, and safety permits, stop the flow of product, which is occurring, and eliminate all ignition sources. *Smoking is prohibited during all spill response activities.*

5.3.1 HC Spill on Soil, Gravel, Rock, or Vegetation

- Build a containment berm using soil material or snow and place a plastic tarp at the foot of the berm for easy capture of the spill after all vapors have dissipated
- Remove the spill by using absorbent pads or excavating the soil, gravel or snow
- Remove spill splashed on vegetation using particulate absorbent material.

5.3.2 HC Spill On Water

- Use containment boom to capture spill for recovery after vapors have dissipated
- Use absorbent pads to capture small spills
- Use a petroleum skimmer for larger spills.

5.3.3 HC Spill on Ice and Snow

- Build a containment berm around spill using snow
- Remove spill using absorbent pads or particulate sorbent material
- The contaminated ice and snow must be scraped and shoveled into plastic buckets with lids, 205 litre drums, and/or polypropylene bags.

5.3.4 HC-Contaminated Material Storage and Transfer

Soil and gravel contaminated by HC should be treated at the on-site landfarm in accordance with normal operating procedures. If necessary, contaminated soil and gravel may be stored temporarily until space becomes available in the landfarm, provided that appropriate measures are taken to prevent the leaching of contaminants into the underlying soil. Larger quantities of soil could be placed on a tarp, and covered if necessary. Small quantities could be stored in labeled drums in the hazardous waste storage area.

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As space permits, small quantities of water, ice, snow, vegetation and cleanup supplies contaminated by IIC may be stored in labeled drums in the hazardous waste storage facility in accordance with normal operating procedures. If the quantity of contaminated material makes storage in drums unfeasible, the Hamlet shall contact the appropriate regulatory agencies before removing any materials.

5.4 Mitigative Measures: Sewage

If possible, and safety permits, stop the flow of product, which is occurring.

5.4.1 Sewage Spill on Soil, Gravel, Rock, or Vegetation

- Build a containment berm using soil material or snow and place a plastic tarp at the foot of the berm for easy capture of the spill, and to prevent sewage from entering any water body
- Remove the spill by using vacuum trucks or excavating the soil, gravel, or snow.

5.4.2 Sewage Spill into Water

- Use containment boom to capture spill, and pump contaminated water into vacuum trucks
- Deposit contaminated water to the Hamlet sewage lagoon
- Monitor the affected water body sampling at a minimum for Biological Oxygen Demand (BOD), Total Suspended Solids (TSS), ammonia (NH₃), and faecal coliforms (FC).

5.4.3 Sewage Spill on Ice and Snow

- Build a containment berm around spill using snow
- Remove spilled sewage and contaminated snow and ice to the Hamlet sewage lagoon.

5.4.4 Sewage Storage and Transfer

All contaminated water, ice, snow, soil, and clean-up supplies will be deposited to the Hamlet sewage lagoon or landfill facility, as appropriate.

5.5 Mitigative Measures: Solid Waste

5.5.1 Solid Waste Spill on Soil, Gravel, Rock, or Vegetation

- Physically remove the spilled solid waste from the area, and deposit in the approved Hamlet Solid Waste Disposal Facility.

5.5.2 Solid Waste Spill into Water

- Use containment boom to capture soil for recovery
- Physically remove the spilled solid waste from the water, and deposit in the approved Hamlet Solid Waste Disposal Facility

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- Capture any sheen from the water using absorbent pads or skimmer, and deposit any used absorbent pads to the approved Hamlet Solid Waste Disposal facility.

5.5.3 Solid Waste Spill on Ice and Snow

- Build a containment berm around spill using snow
- Physically remove the spilled solid waste and deposit to the approved Hamlet Solid Waste Disposal Facility

5.5.4 Disposal

Any solid waste shall be removed to the approved Hamlet Solid Waste Disposal Facility.

5.6 Spill Recovery Assessment

In order to determine whether a spill has been successfully remediated, samples of the soil and/or water within the spill containment area and surrounding the area, are to be collected and sent to an accredited Canadian Association of Environmental Analytic Laboratories (CAEAL) laboratory to be analyzed for the chemical parameters contained in the spill material. If concentrations of the spill chemicals are not detected, or are at concentrations below the applicable Territorial, Federal, or CCME regulations/criteria, the spill clean-up will be determined a success. Clean-up operations may then cease.

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6.0 Spill Response Resource Inventory

6.1 Additional Personnel Available

In addition to Hamlet staff, the Kugluktuk Fire Department is available to assist in spill response and clean-up activities. Personnel from the local RCMP Detachment will be available for securing the site from unauthorized individuals, closing roads, etc. The Community Health Centre has personnel to assist in the treatment of anyone injured during the emergency.

6.2 Spill Response Equipment Inventory

Equipment available within the community to assist in responding to a hazardous materials spill includes heavy equipment (i.e. vacuum trucks, dozer, front end loader, and grader), as well as various hand held tools including shovels. In addition, three spill kits should be available on site during spill incident response operations. Each spill kit should contain the following supplies.

Composition of Spill Kit

	Quantity
• 360 litre polyethylene over pack drum	1
• oil sorbent booms (5" X 10')	6
• oil sorbent sheets (16.5" X 20" X 3/8")	100
• drain cover (36" X 36" X 1/16")	1
• Caution tape (3" X 500')	1
• 1 lb plugging compound	1
• Nitrile gloves (pair)	4
• Safety goggles (pair)	4
• Tyvek coveralls (pair)	4
• instruction booklet	1
• printed disposable bags (24" X 48")	10

Sorbent capacity of each spill kit is 240 litres.

The spill response kits should be stored in the on-site lockers provided for this purpose. Some equipment may be stored in other areas throughout the community while being used to complete other tasks.

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7.0 Training

All members of the Spill Response Team should be trained in the safe operation of all machinery and tools to help prevent sewage and hazardous material spills. All employees on site should also be trained for initial spill response. Annual refresher exercises should be conducted to review the procedures of this *Environmental Emergency Contingency Plan* with all members the Spill Response Team, including members of the local volunteer fire department, RCMP Detachment, and Community Health Centre.

Spill Response Team training should include the following aspects:

- Spill awareness and prevention
- Methods of detection
- Types of spills and seasonal considerations
- Reporting procedures and initial responses
- Spill response kit familiarization
- Clean-up and site remediation methods
- Occupational health and safety including proper selection and use of protective equipment.

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8.0 Annual Review of this Environmental Emergency Contingency Plan

As part of the preparation of the Annual Report to the Nunavut Water Board for the Water License, the Hamlet should review and update the information contained within this plan. The purpose of the update is to ensure all changes to regulations are incorporated into this plan, along with the use of any new technology or method advances, to prevent or stop a spill and to mitigate and/or remediate a spill. This ensures that the plan adapts as the Hamlet grows, to ensure the community is properly prepared in the event of an incident.

Finally, it is recommended that annual refresher training of personnel be completed after any revisions to this document have been approved. This will familiarize personnel with the updated plan, and to provide a rapid and coordinated response.

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9.0 References

Nunavut Water Board, September 2000. *Hamlet of Kugluktuk Water License NWB3Q1K0106*. Goja Haven, Nunavut.

Nunavut Water Board, November 2004. *Guidelines for Spill Contingency Planning*. Goja Haven, Nunavut.

Northwest Territories, Date Unknown. *Contingency Planning and Spill Reporting in the NWT: A Guide to the New Regulations, Yellowknife, Northwest Territories*.

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Appendix B

NWT Spill Report

A Report Date and Time ፳፻፲፱ ዓ.ም. ጥቅምት ፳፻፲፱ ዓ.ም. ፳፻፲፱ ዓ.ም.		B Date and Time of Spill (if known) ፳፻፲፱ ዓ.ም. ጥቅምት ፳፻፲፱ ዓ.ም. (፳፻፲፱ ዓ.ም.)		C <input type="checkbox"/> Original Report ፳፻፲፱ ዓ.ም. ጥቅምት ፳፻፲፱ ዓ.ም. <input type="checkbox"/> Update No. ፳፻፲፱ ዓ.ም. ጥቅምት ፳፻፲፱ ዓ.ም.		Spill Number ፳፻፲፱ ዓ.ም.	
D Location and Map Coordinates (if known) and Direction (if moving) መሬት ላይ ያለው አካባቢ (ከ፳፻፲፱ ዓ.ም.) ላይ ያለው አካባቢ (፳፻፲፱ ዓ.ም.)							
E Party Responsible for Spill (Full Name and Address) የሥራ ስም (፳፻፲፱ ዓ.ም.)							
F Product(s) Spilled and Estimated Quantities (provide metric volumes/weights if possible) የሥራ ስም ዓይነት (ከ፳፻፲፱ ዓ.ም.)							
G Cause of Spill የሥራ ስም							
H Is Spill Terminated? አዲስ መጠን? <input type="checkbox"/> Yes/አ <input type="checkbox"/> No/አይ		I If Spill Is Continuing, Give Estimated Rate የሥራ ስም መጠን (ከ፳፻፲፱ ዓ.ም.)		J Is Further Spillage Possible? አዲስ መጠን? <input type="checkbox"/> Yes/አ <input type="checkbox"/> No/አይ		K Extent of Contaminated Area (in square metres if possible) የሥራ ስም መጠን (ከ፳፻፲፱ ዓ.ም.)	
L Factors Affecting Spill or Recovery (weather conditions, terrain, snow cover, etc.) የሥራ ስም ዓይነት (ከ፳፻፲፱ ዓ.ም.)				M Containment (natural depression, dykes, etc.) የሥራ ስም ዓይነት (ከ፳፻፲፱ ዓ.ም.)			
N Action, if any, taken or Proposed to Contain, Recover, Clean Up or Dispose of Product(s) and Contaminated Materials የሥራ ስም ዓይነት (ከ፳፻፲፱ ዓ.ም.)							
O Do You Require Assistance? አዲስ መጠን? <input type="checkbox"/> No አይ <input type="checkbox"/> Yes, describe: አዲስ መጠን				P Possible Hazards to Persons, Property or Environment e.g. fire, drinking water, fish or wildlife የሥራ ስም ዓይነት (ከ፳፻፲፱ ዓ.ም.)			
Q Comments and/or Recommendations የሥራ ስም ዓይነት (ከ፳፻፲፱ ዓ.ም.)						FOR SPILL LINE USE ONLY የሥራ ስም ዓይነት (ከ፳፻፲፱ ዓ.ም.) Lead Agency የሥራ ስም ዓይነት (ከ፳፻፲፱ ዓ.ም.) Spill Significance የሥራ ስም ዓይነት (ከ፳፻፲፱ ዓ.ም.) Lead Agency Contact and Time የሥራ ስም ዓይነት (ከ፳፻፲፱ ዓ.ም.) Is this file now closed? የሥራ ስም ዓይነት (ከ፳፻፲፱ ዓ.ም.)	
Reported By የሥራ ስም ዓይነት (ከ፳፻፲፱ ዓ.ም.)		Position, Employer, Location የሥራ ስም ዓይነት (ከ፳፻፲፱ ዓ.ም.)				Telephone የሥራ ስም ዓይነት (ከ፳፻፲፱ ዓ.ም.)	
Reported To የሥራ ስም ዓይነት (ከ፳፻፲፱ ዓ.ም.)		Position, Employer, Location የሥራ ስም ዓይነት (ከ፳፻፲፱ ዓ.ም.)				Telephone የሥራ ስም ዓይነት (ከ፳፻፲፱ ዓ.ም.)	