Spill Contingency Plan for the Hamlet of Tuktoyaktuk

Water Licence #N5L3-0714

Created September 15, 2015
Revised October 2023

Original prepared by AECOM Canada Ltd., Peter Jalkotzy, P.Biol., RPBio., EP(EM)

Preface

Under the *Waters Act* (*WA*) and Section 5 (2) (g) of the *Waters Regulations* (*WR*) 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.

Revision History

Date	Revised By:	Revision Description
Sept 15, 2015	AECOM	
Jan 28, 2016	AECOM	
Feb 2, 2016	AECOM	
Sept 2018	AECOM	Updates to Water Licence (cover, 1.11.4), contacts (1.1, 1.3, 2.1, 2.2) and landfill (1.12.2)
Oct 2023	AECOM	Updates to contacts (1.1, 1.3, 2.1, 4.2), preventative measures (1.9), and potential spill sizes and sources (3.1)
Oct 31, 2023	AECOM	Updates to contacts (sections 1, 2, 3, 4), spill kits (4.1), record keeping (5)

Table of Contents

1. Introduction and Project Details

1.1. General

This Spill Contingency Plan provides for the prompt and coordinated response of the Hamlet of Tuktoyaktuk located at 69° 27' N and 133° 02' W.

Contact information:
P.O. Box 120, Tuktoyaktuk, NT X0E 1C0
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Fax: 867-977-2110
Email: SAO@Tuktoyaktuk.ca; ASAO@Tuktoyaktuk.ca

Attention: Lucy Kuptana, SAO
Katrina Cockney, Acting SAO (ASAO)

1.2. Effective Date

The effective date of this Spill Contingency plan is September 15, 2015.

1.3. Distribution List

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

Distribution List

Organization	Title	Date distributed
Environment and Climate Change Canada (ECCC)- Environmental Protection	Vanessa Charlwood/Regional Director, Prairie and Northern Region Phone: (780) 951-8887	
Fisheries and Ocean Canada	Ellen Lea/Fisheries Management Biologist Phone: (867) 777-7503	
Government of NWT- Municipal and Community Affairs (MACA)	Dana Moran/Regional Superintendent Phone: (867) 678-8045 ext. 21650	
Hamlet of Tuktoyaktuk	Lucy Kuptana/SAO Phone: (867)777-2286	
Hamlet of Tuktoyaktuk	Katrina Cockney/ASAO Phone: (867)777-2286	
Government of the NWT – Environment and Climate Change (ECC) - Lands and Waters Division – Beaufort Delta Region	Donald Arey/Regional Superintendent Phone: (867) 678-8090 ext. 24651	
Government of the NWT – ECC – Lands and Waters Division, Beaufort Delta Region	Lloyd Gruben/Water Resource Officer (Inspector) Phone: (867) 678-8090 ext. 24659	
Inuvialuit Water Board (IWB)	Mardy Semmler/Executive Director Phone: (867) 678-8609	

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. The Spill Contingency Plan shall be reviewed annually.

1.5. Environmental Policy

Not available.

1.6. Sites Descriptions

The Hamlet of Tuktoyaktuk (or Tuktuujaartuq, “looks like a caribou”) is located on Kugmallit Bay near the Mackenzie River Delta. Tuktoyaktuk is accessible by plane, or a 137 kilometre (km) all season Inuvik-Tuktoyaktuk Highway (ITH).

Tuktoyaktuk is the most northern community on Canada’s mainland. Prior to 1900, the area was home to many Inuit whalers, but this original population was badly hit by years of influenza epidemics brought by American whalers. Eventually Alaskan Dene people and inhabitants of Herschel Island settled in the area. A Hudson’s Bay trading post was built in 1928, and in the 1950s Tuktoyaktuk became a supply base for the Cold War DEW Line. Today, many community residents work in oil and gas, and transportation (i.e., Inuvik-Tuk Highway), support local tourism and Arctic research, or practice traditional economic activities such as hunting and trapping.

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

Table 1: Profile of Tuktoyaktuk

Category	Description
Location:	69° 27' N and 133° 02' W
Population:	962 (2014 NWT Bureau of Statistics)
Residences:	265 (2014 NWT Bureau of Statistics)
Proximity:	137 km north of Inuvik, 1130 km northwest of Yellowknife
Weather:	Annual Daily Average = -10.2°C July Daily Average = 11.0°C and January Daily Average = -26.6°C (Canadian Climate Normals 1981-2010)
Precipitation:	7.49 cm of rainfall and 10.31 cm of snowfall annually
Vegetation:	Surrounding vegetation consists of moss, peat, grasses, lichens, and small bushes of willow and Labrador Tea. Small flowering plants are common in summer (GNWT, 1982).
Transportation:	Accessible by air year-round, and by an all-weather highway from Inuvik year-round
Economy:	Major industries include transportation, petroleum exploration, tourism and traditional trapping and hunting
Services:	Public School, Health Centre, RCMP Station, etc.
Geology/Terrain:	Terrain around Tuktoyaktuk is flat, barren tundra dotted with shallow lakes and pingos. Permafrost is continuous, with an active layer generally less than 0.5 m. The peninsula under the community is coarse sand, silt, clay and gravel with interbedded ice lenses, formed from erosion material.

1.7. Identification of Special Areas that can Potentially be Impacted

Sensitive Locations
Hamlet Water Supply – 69° 26' 15" N, 133° 1' 40" W
Landfill – 69° 25' 15" N, 133° 1' 29" W
Wastewater Discharge location – 69° 24' 0" N, 133° 2' 55" W

1.8. Hazardous Materials Stored on Site

Table 2: On Site Hazardous Materials, Container Type, Normal/Maximum Quantities, Location

Material	Storage container	Average on-site	Maximum on-site	Storage location and uses
Automotive Batteries	On pallets in cold storage warehouse	15	30	Municipal yard – store and transfer
Used Oil	1000 litre containers	1	1	Municipal yard – burned in waste oil furnace
Mercury-containing Products	In clearly labelled waste containers	20	40	Municipal yard – store and transfer
Propane	2 X 3000 L and 4 X 1500 L tanks	6	6	Kudlak lake access road – used to power the water pump system
Chlorine	32 X 20 L pails	20	50	Inside Water Treatment Plant – treating water
Heating Fuel	1 X double-walled 1500 L tank	1	1	Water Treatment Plant – heating the building

1.9. Preventive Measures

This section provides an overview of Tuktoyaktuk's water supply and waste disposal systems and their built in preventative measures. **Figure 1.9.1** shows the locations of the water and waste management infrastructure described below. **Figures 1.9.2 through 1.9.5** show details of each facility, including hazardous and spill kit locations.

Additionally, all fuel or storage vessels containing hazardous substances left for extended periods of time, including overnight, should be stationed in a manner that provides sufficient secondary containment (i.e., drip pans, lined bermed areas, double walled enviro-tanks, etc.).

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N

KUGMALLIT BAY

WEST ENTRANCE (TUKTOYAKTUK HARBOUR)

MUNICIPAL YARD/ MUNCIPAL FUEL STORAGE

WATER TREATMENT PLANT

TUKTOYAKTUK HARBOUR

AIRSTRIP

SOLID WASTE FACILITY

SANITARY SEWAGE FACILITY

WATER INTAKE

KUDLAK LAKE

TUKTOYAKTUK, NT

0 625 1250 m

1:25000

WATER LICENCE RENEWAL (2015)
SPILL CONTINGENCY PLAN
HAMLET OF TUKTOYAKTUK
Project No.: 60439290 Date: 2016-01-28

BUILDING, ROADS, AIRSTRIPS AND WATER BODIES

AECOM

Figure: 1.9.1

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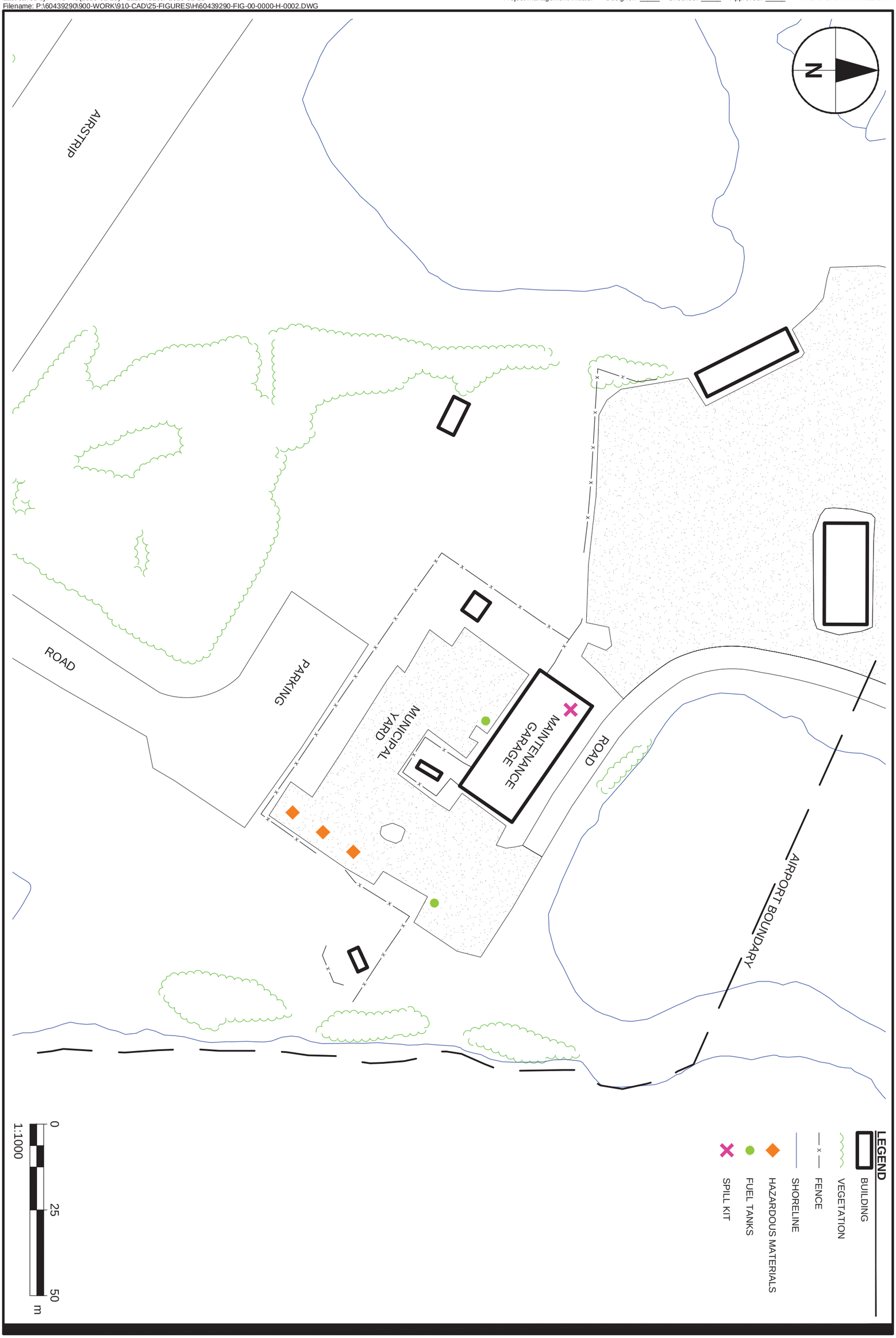

WATER LICENCE RENEWAL (2015)
SPILL CONTINGENCY PLAN
HAMLET OF TUKTOYAKTUK
Project No.: 60439290 Date: 2016-01-28

MUNICIPAL YARD / FUEL STORAGE /
TEMPORARY HAZARDOUS WASTE STORAGE -
STORAGE LOCATIONS AND SPILL KIT LOCATION

AECOM

Figure: 1.9.2

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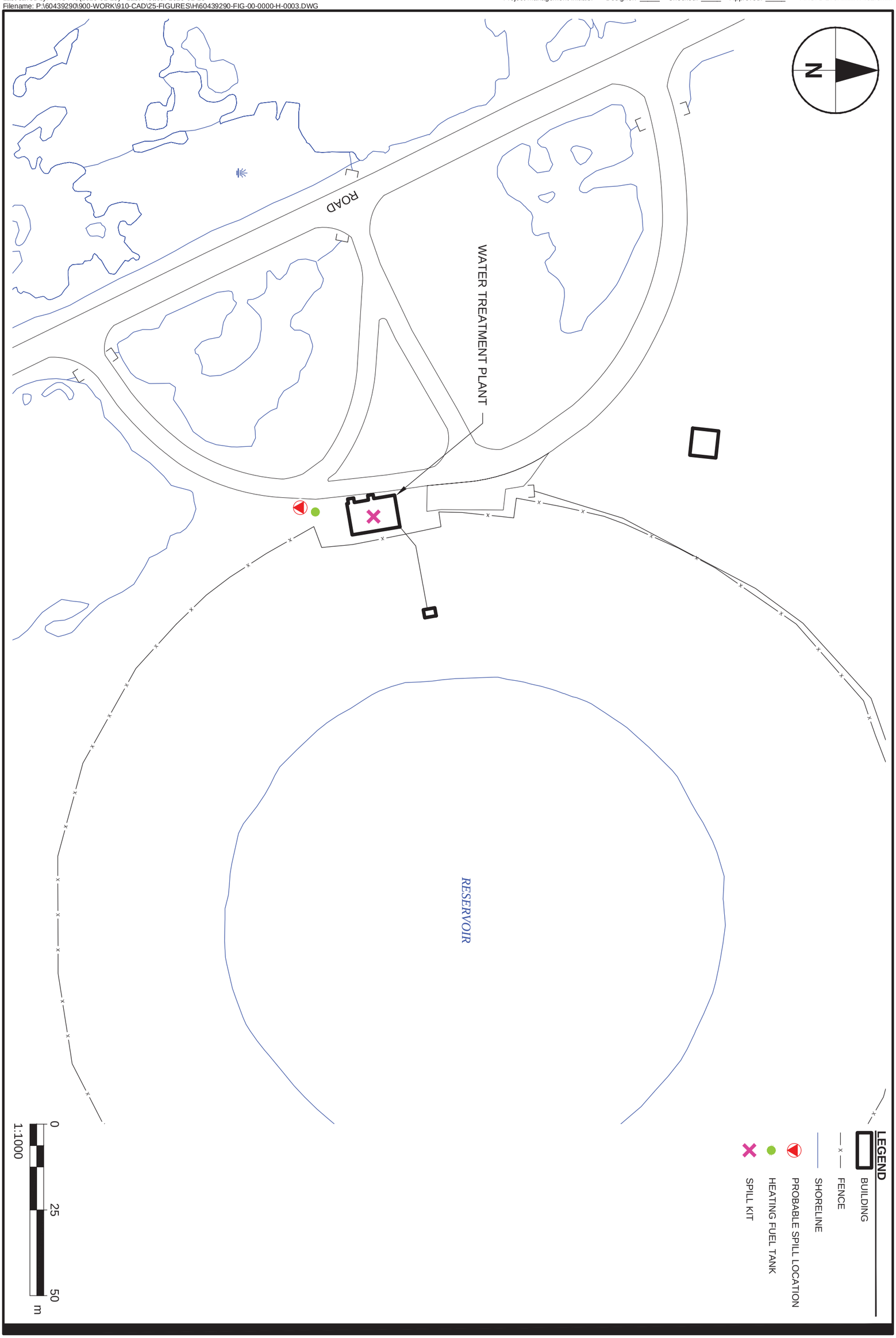

WATER LICENCE RENEWAL (2015)
SPILL CONTINGENCY PLAN
HAMLET OF TUKTOYAKTUK
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WATER SUPPLY FACILITY -
SPILL KIT LOCATION

AECOM

Figure: 1.9.3

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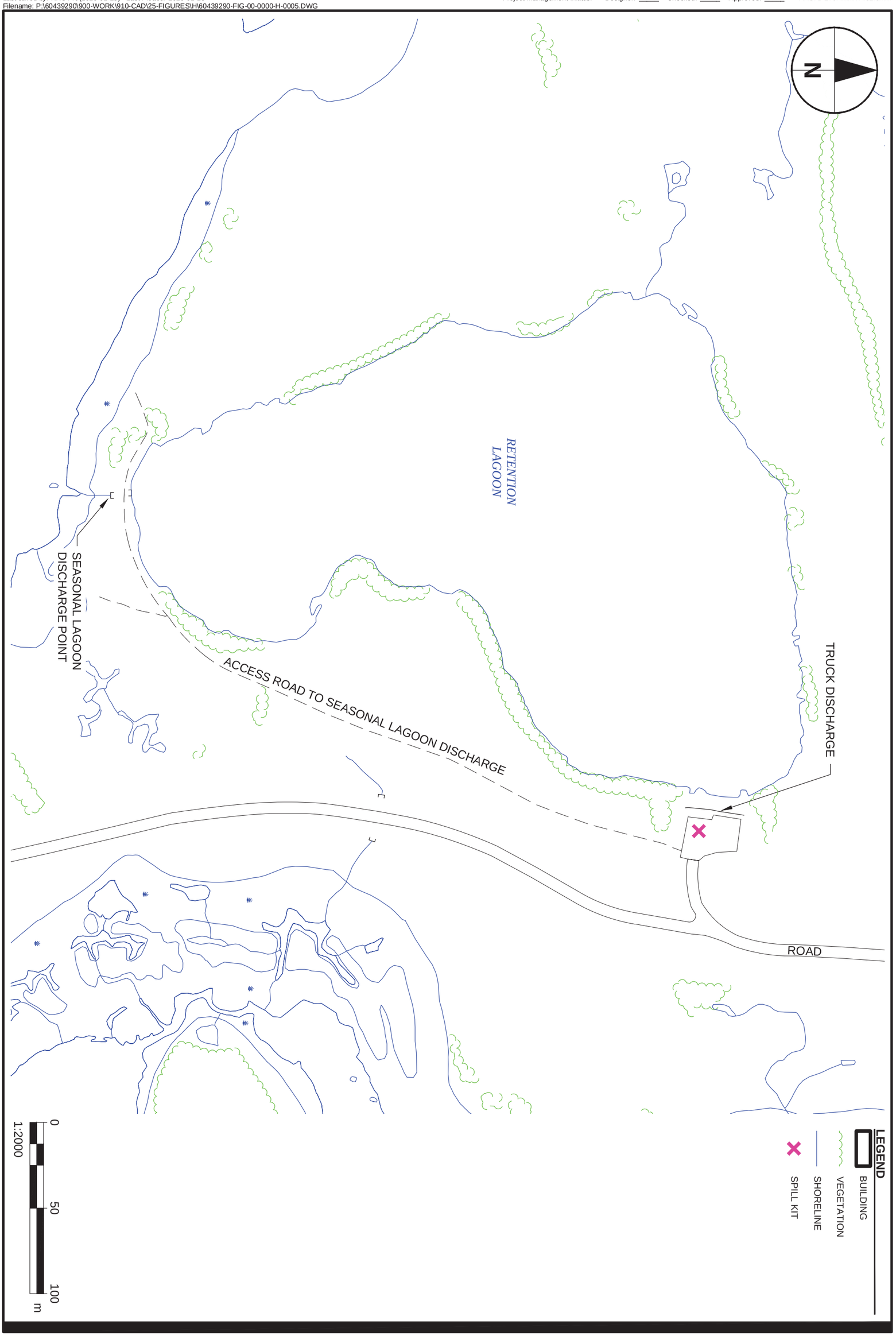

WATER LICENCE RENEWAL (2015)
SPILL CONTINGENCY PLAN
HAMLET OF TUKTOYAKTUK
Project No.: 60439290 Date: 2016-01-28

SANITARY SEWAGE FACILITY -
SPILL KIT LOCATION

AECOM

Figure: 1.9.4

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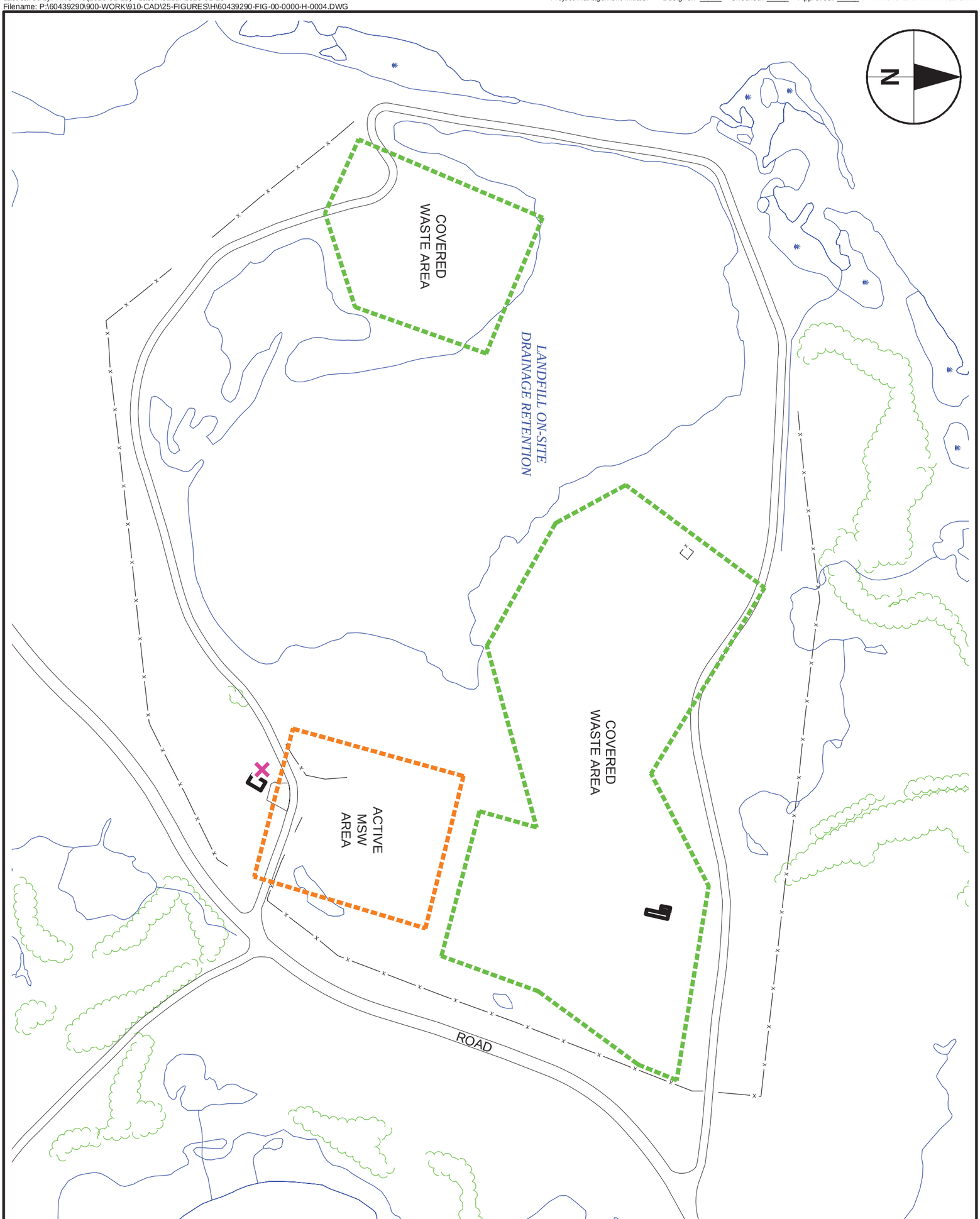


WATER LICENCE RENEWAL (2015)
SPILL CONTINGENCY PLAN
HAMLET OF TUKTOYAKTUK
Project No.: 60439290 Date: 2016-01-28

SOLID WASTE FACILITY -
SPILL KIT LOCATION

AECOM

Figure: 1.9.5

1.10. Water Supply

The Hamlet's potable water supply system consists of the following elements:

- Seasonal raw water supply from Kudlak Lake
- Raw water storage reservoir
- Water treatment facility and truckfill station
- Trucked water delivery

1.10.1. Seasonal Raw Water Supply

Tuktoyaktuk's raw water comes from Kudlak Lake, a shallow lake located approximately 5.5 km east of the community centre and 4.5 km east of the raw water reservoir. Tuktoyaktuk's raw supply water is of good chemical quality for domestic use. The water is clear, moderately hard, well buffered, slightly alkaline, and has a moderate amount of dissolved solids.

In winter, the lake freezes deep enough that obtaining water from the lake is difficult and water quality is poor. The Hamlet uses a raw water storage reservoir to hold water for use during winter months.

The community obtains water from the lake via a high-density polyethylene pipeline. This intake line is partially submerged under Tuktoyaktuk Harbour and runs along the ground surface for the overland distance to the raw water reservoir. The intake line was replaced in October 2006 with a new 200 millimetre (mm; 8") diameter pipe after the old 100 mm diameter pipeline broke in the summer of 2006.

The water pump house at Kudlak Lake was relocated south of the previous location in April 2007.

1.10.2. Water Storage Reservoir

The water reservoir, built in 1984, is an earth structure with a capacity of approximately 90,300 cubic metres (m^3). The reservoir characteristics are presented in **Table 3** below.

Table 3: Tuktoyaktuk Water Reservoir Characteristics

Characteristic	Description
Maximum Reservoir Capacity	94,300 m^3
Usable Volume Under Ice	53,100 m^3
Maximum Water Depth	7.0 m
Design Ice Thickness	2.1 m
Dead Storage Depth	0.5 m
Freeboard	1.3 m
Full Reservoir Water Surface Dimension	102 m in diameter
Inside Slope	4:1
Liner	0.8 mm CPE with sand cover

The design capacity of the water reservoir is equivalent to consumption by 1,900 community residents and 250 camp residents.

The raw water storage reservoir is filled to capacity in the late summer of each year. This filling procedure usually takes about a week of continuous pumping of water from Kudlak Lake.

1.10.3. Water Treatment and Truckfill Station

Prior to 2009, water was treated by chlorinating with calcium hypochlorite (powdered form of chlorine) during truckfill.

A new water treatment plant and truckfill station was constructed in 2009 by Corix Water Systems. The new water treatment process includes 50 micron cartridge filters, a pressure filter, UV reactors applying a 40 mJ/cm^2 dose, and a chlorine contact chamber.

1.10.4. Distribution

Water is distributed throughout the community using water trucks operated by a private contractor. Two trucks operate seven days per week, filling individual building water tanks. Most of the existing houses have small tanks that are filled daily. Each truck has a capacity of 15, 890 litres (L.) Water deliveries are metered at the truck.

1.11. Sanitary Sewage Facility

Tuktoyaktuk's sewage is collected using trucked pumpout services. The sewage is discharged in a sewage lagoon, which is located approximately 5 km south of the Community.

1.11.1. Trucked Sewage Pumpout

Sewage is collected by a local contractor using two 14,320 L vacuum trucks. Two trucks operate seven days per week. The sewage is transferred from holding tanks in each building to a retention lagoon located approximately 5 km south of the community via an all-weather gravel road.

1.11.2. Lagoon Access Road and Sewage Truck Discharge Area

The access road to the sewage lagoon is an all-weather gravel road which exits the Reindeer Point subdivision access road. The access road leads to the truck discharge area at the north end of the lagoon. A seasonal access road extends to the south end of the lagoon.

The truck discharge area consists of a gravel area with two gravel ramps leading to a steel chute and pipe system for the discharge from the vacuum trucks. The vacuum trucks discharge by elevating the tank at the front end of the truck, and opening a valve at the back of the truck.

The dispersion structures at the sewage lagoon consist of a timber retaining wall and a metal ramp from the base of the retaining wall into the lagoon. The metal ramp provides a means of effluent dispersion into the lagoon and provides erosion protection to the retaining wall.

1.11.3. Sewage Lagoon

The Hamlet's sewage lagoon is located approximately 5.8 km due south from the Hamlet Office, or 3.9 km south of the Airport Terminal Building, and 1.5 km southwest of the Reindeer Point subdivision.

The sewage lagoon provides 365-day retention of the sanitary sewage generated by the community. The facility is a 5.9 hectare natural lake that has been modified with a perimeter berm at the south edge to provide the necessary retention capacity. The lagoon has sufficient capacity for a population of 1,900 community residents and 250 camp residents, assuming only domestic use.

1.11.4. Lagoon Effluent Discharge

The sewage lagoon is discharged in the early fall of each year to a saltwater inlet. Fall discharge ensures that the sewage receives the maximum possible natural aerobic treatment within the lagoon provided by sunlight, warm temperatures, and wind in the summer.

The seasonal discharge point is located on the constructed berm at the south edge of the lagoon, 3.0 km directly southeast from the open ocean of Kugmallit Bay and approximately 6.5 km from the ocean by way of the inlet channels. Discharge is accomplished by pumping effluent over the berm.

The Hamlet collects samples from the sewage lagoon (SNP 0714-2) and the run-off lagoon at the landfill (SNP 0714-3) during summer and fall months. Some historical data is available from Taiga labs for the number of samples shown in **Table 4**. More recent data has not been included in this Plan.

Table 4: Lagoon Effluent Sampling Summary

SNP Sampling Location	Number of Samples with Available Data			
	2005	2006	2007	2008
0714-2 (Sewage Lagoon)	6	2	4	1
0714-3 (Runoff Lagoon at Landfill)	1	3	1	0

The following tables show the average sample results for the sewage lagoon and solid waste lagoon, along with the operating parameter requirements of the Hamlet's Water Licence.

Table 5: Results of Sewage Lagoon Effluent Sampling

Parameter	Units	Licence Requirement	Average Sample Result
BOD_5	mg/L	120 (MAC)	28
TSS	mg/L	180 (MAC)	92
pH		6 to 9	7.93
Oil & Grease	mg/L	5 and no visible sheen	None visible
Fecal Coliforms	CFU/100mL	1×10^4 (10,000)	11000

Table 6: Results of Solid Waste Run-off Lagoon Effluent Sampling

Parameter	Units	Licence Requirement	Sample Result (2012)
BOD_5	mg/L	120 (MAC)	10
TSS	mg/L	180 (MAC)	6
Polychlorinated Biphenyls (PCBs)	µg/L	25 (MAC)	<0.1
Oil & Grease	mg/L	5 (MAC)	-
pH			8.36
Fecal Coliforms	CFU/100mL		55
Cadmium	µg/L		<0.05
Cobalt	µg/L		<0.01
Chromium	µg/L		0.8
Copper	µg/L		<0.02
Iron	µg/L		391
Mercury	µg/L		<0.01
Manganese	µg/L		7.4
NIckel	µg/L		2.2
Lead	µg/L		<0.01
Zinc	µg/L		6.6

1.12. Solid Waste Facility

Tuktoyaktuk's solid waste is collected by truck and transported to the solid waste landfill, approximately 3 km south of the Hamlet. The landfill site consists of the following components:

- Perimeter fence and access roads to landfill areas
- Active municipal waste disposal area (east area)
- Bulky waste disposal area (south area)
- Remediated disposal areas
- On-site drainage retention system

1.12.1. Solid Waste Collection and Site Access

Solid waste collection is done by truck under contract to the Hamlet. Collection currently involves two trucks operating seven days per week. The Solid Waste Disposal site is accessed from a gate along the all-weather road to Reindeer Point. This entrance provides access to the bulky waste area and storage shed for the Hamlet's caterpillar tractor. The gate is normally closed to provide security for the caterpillar tractor.

The landfill site is surrounded by a 1200 metre (m) perimeter fence on the inland side of the site. The ocean-facing side of the landfill, to the west, is not fenced.

1.12.2. Solid Waste Disposal Facility

The Tuktoyaktuk Solid Waste Disposal site is a large fenced-in facility, approximately 3 km south of the Hamlet. It has been in operation since the early 1970s as a replacement to the dump formerly located at the end of the community airstrip. The facility covers an area of approximately 20 hectares, but not all of the area is currently in use.

The municipal waste area occupies an area approximately 70 m wide and 50 m long. There are designated areas for separation of municipal solid waste, metal, white goods, tires. Hazardous waste is stored at the municipal yard. The municipal waste area is used by both the community and the local industries with no direct fee charged. Access to the site is not controlled and the site is not manned.

The Hamlet was operating a bulky metal waste area approximately 100 m wide by 100 m long. This area was remediated with complete cover in 2004.

Several old landfill areas were remediated in the north, southwest and east portions of the landfill site. These areas have been covered, and have limited vegetative cover in the north and southwest areas and substantial vegetative cover in the east area.

The existing landfill is scheduled to cease operation and is a listed priority site of the Government of Northwest Territories (GNWT) and Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) for closure. A new landfill site located approximately 17 km southwest of the community has been designed and approved and construction was initiated in 2015. As of this writing, Phase 1, including a landfill cell and access road to the site, has been completed. Phase 2, including fencing, gate, and buildings, is not complete. Final operations will be contingent upon receipt of final permission for direct access to the new ITH.

1.12.3. Solid Waste Disposal Facility On-site Drainage Retention and Control Berm

Most of the surface area of the Solid Waste Disposal facility is covered by a lagoon containing surface runoff from the landfill. The surface runoff lagoon is retained by a 250 m long gravel and clay berm on the eastern edge of the landfill site.

The berm does not have any discharge control structure, so water that accumulates from spring melt and rain is pumped over the berm into the ocean periodically. The perimeter berm also prevents the ingress of the ocean.

1.12.4. Water Pollution

The pollution factors associated with the landfill include surface water pollution, and subsurface water pollution. Surface water pollution is a concern which is managed with the on-site runoff collection within the landfill area.

2. Response Organization

2.1. Primary List of Contacts for Spill Response

Table 7: Primary List of Contacts for Spill Response

Organization	Contact	Phone Number
Northwest Territories 24 Hour Spill Report Line		867-920-8130
Inuvialuit Water Board (IWB)	Mardy Semmler	867-678-2942
GNWT Environment & Climate Change (ECC), Lands and Waters Division, Water Resource Officer (Inspector)	Lloyd Gruben	867-678-8090 Ext. 24659
GNWT ECC, Lands and Waters Division, Beaufort Delta Region, Superintendant	Donald Arey	(867) 678-8090 ext. 24651
GNWT ECC, Lands and Waters Division, Beaufort Delta Region, Regional Environmental Assessment Coordinator,	Alicia McRae	867-678-8091 Ext. 53657
GNWT ECC, Lands and Waters Division, Beauford Delta Region (Tuktoyaktuk), Renewable Resource Officer	Scott Lundrigan	867-678-8091 Ext. 53660
Inuvialuit Land Administration (Env. Mgmt.)	Dean Holman	867-777-7100 Ext. 1003

2.2. Spill Reporting Procedures

The Hamlet of Tuktoyaktuk has established procedures in the event of a spill. All spills regardless of quantity will be reported to the Hamlet Management, GNWT ECC Water Resource Officer (Inspector) and the NWT/NU Spill Line where the release:

- Is near or into a water body
- Is near or into a designated sensitive environment or sensitive wildlife habitat
- Poses an imminent threat to human health or safety; or
- Poses an imminent threat to a listed species at risk or its critical habitat

If applicable a detailed report including GPS location must be submitted to the GNWT ECC Inspector no later than 30 days after the initial report for any occurrence.

The NT/NU Spill Report Form is provided in Schedule A**, Appendix A** and will be kept with a copy of the Spill Response Plan at all areas where potentially harmful substances or fuel are stored or transferred, and extra copies will be available with the Hamlet Management.

If the public may be impacted by a spill, they will be notified by appropriate methods that may include local radio, a community siren, P.A. systems on community fire trucks, mail, and/or by informing residents door to door.

2.3. Initial Spill Response Actions

- Ensure safety of all personnel.
- Assess spill hazards and risks.
- Remove all sources of ignition.
- Stop the spill if safely possible (e.g., shut off pump, replace cap, tip drum upwards, patch leaking hole). Use the contents of the nearest spill kit to aid in stopping the spill if it is safe to do so.
- No matter what the volume is, notify Hamlet Management.
- Contain the spill - use contents of spill kits to place sorbent materials on the spill, or use shovel to dig to contain spill. Methods may vary depending on the nature of the spill.
- Relay information to internal company contacts, government agencies and, if required, the designated Communications representative.

- If needed workers will be evacuated or diverted from the spill area.
- If the spill involves petroleum products, all sources of ignition will be eliminated from spill area, and the area will be evaluated for risk of fire or explosion.
- Personal Protective Equipment (PPE) will be used until concentrations are determined to be within acceptable levels.
- If the area is deemed hazardous, it will be marked, flagged and ribbon off.
- Ground and Weather conditions will be evaluated to assess the risk to environment. (Rain, gravel, sand, water body, muskeg, etc.)
- Leak location will be identified, the type of leak, the duration and the volume release, and reported to the Hamlet Management who will advise the authority having jurisdiction.
- Monitor the air at the perimeter of the flagged off area as necessary.
- In the event of a large spill, or a spill in a watercourse, the spill will be evaluated for: possibility of migrating, anticipated direction of migration, how far can it go, what lands or water bodies may be affected. This information will be collected and provided to the Hamlet Management and authorities having jurisdiction.
- The spill will initially be contain and then cleaned up using appropriate methods.
- For large spill or in a watercourse, the access to the spill and the recovery points will be established as well as the equipment required to perform the cleanup operation.
- Minimize vehicular traffic as much as possible at the spill site.
- The spill site may be cordoned off to prevent wildlife from entering.

Spills of hazardous materials in the NWT present a potential threat to the public interest and environment. Agencies responsible for conducting spill investigations and monitoring clean-up of spills have signed an agreement to promote a well-coordinated state of preparedness for these activities.

2.4. Designation of Lead Investigating Agency for Spill on Land in the NWT:

- The GNWT, Department of Environment and Climate Change (ECC) is the lead agency in dealing with spills on lands and facilities in the Northwest Territories
- The Canada Energy Regulator (CER) is responsible for spills at oil and gas exploration and production facilities
- The Inuvialuit Land Administration (ILA) is responsible for spills on land in the NWT set aside under the Inuvialuit Land Claim Agreement

2.5. Designation of Lead Agency for Spills on Water in NWT:

- The Government of the Northwest Territories, Department of Environment and Climate Change (ECC) is the lead agency responsible for spills on water in the NWT.
- Transport Canada is the Lead Investigating Agency for all ship source spills
- The Canadian Coast Guard is the Lead Response Agency ensuring spills from ships and barges (including Oil Handling Facility re-supply) and unreported spills on water are addressed.
- The CER is responsible for spills on water at oil and gas exploration and production facilities.

2.6. Response Team Organization

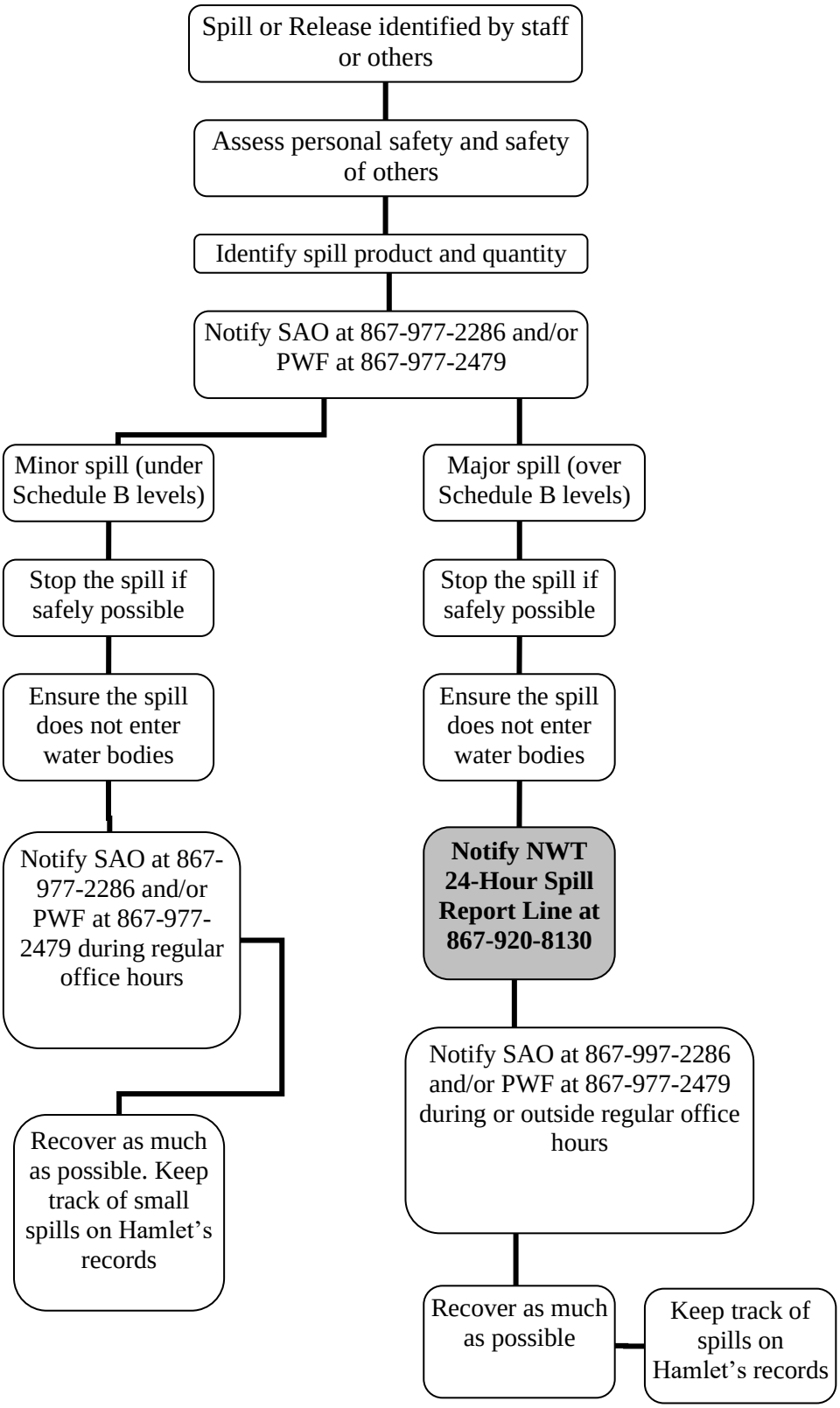
The flow chart depicted in **Figure 2.1** identifies the response organization and when applicable their alternates, as well as the chain of command for responding to a spill or release. The duties of various response personnel are summarized, contact information is provided including 24-Hour

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 Schedule B in **Appendix A**. It will be reported to the NWT 24-Hour Spill Report Line at 867-920-8130. Any spills less than these quantities will not be reported immediately to the spill reporting line. Rather, these minor spills will be tracked and documented by the Hamlet of Tuktoyaktuk and submitted to the appropriate authority either immediately 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.
Modes of communication during spills include telephones, personal cell phones and vehicle 2-way radios. In the event of a spill involving danger to human life these phones or CB radios will be used to contact emergency response personnel.

The person that discovers the spill will inform the SAO or the Public Works Foreman (PWF) and, they will report the spill to the NWT 24-Hour Spill Report Line as necessary. The person that discovers the spill will also inform the SAO or the Public Works Foreman of minor spills that are under the thresholds identified on Schedule B in **Appendix A** for tracking on the Hamlet's records.

Figure 2.1: Flow Chart of Response



3. 3.0 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 Hamlet's facilities. The most likely spill discharge volume is indicated and the spill cleanup procedures will focus on spills of this quantity. A worst case scenario is also presented.

For the operator's convenience and increased environmental protection, all heavy equipment and refuelling vehicles will carry portable spill kits that include items such as absorbent pads, containment booms, and spill pool catchment receptacles. Readily available and fully stocked spill kits can effectively mitigate potential spills.

3.1.1. Sewage spills from trucks

Sewage spill could originate from valves or hoses and connections during transfer. Spills could also occur from failed holding tanks due to accidents or long term corrosion. 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 valves, hoses and connections. The North Coast Supply Company; Shawn Lundrigan at 867-977-2624 is responsible of cleaning in the event of a spill. The North Coast Supply Company; Shawn Lundrigan will be using two sewage truck(s) of 14,320 L each, which mean that in the event of a spill, the spill is likely to be under 14,320 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 a weekly basis by the PWF. In addition, during the summer months the integrity of the structures is visually checked by the PWF. In the event of a spill, the spill is likely to be under 100,000,000 L.

3.1.3. Spills from fuel storage

Many buildings have fuel storage for heating. There could be minor leaking or large puncture from drum or tank in/outside fuel storage areas. 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 SAO and/or PWF response will be called to protect that special area. The discharge of the spill is likely to be under 1364 L and in the worst case scenario the spill will be from a fuel oil storage tank for a building the size of the water treatment plant. If contents seeped into surrounding soil and water bodies, this could cause illness or death to aquatic life and indirectly affect wildlife feeding from the land and water.

3.1.4. Spills from Water Supply Facilities

At the water treatment plant, chlorine is contained in 20 L pails, which are stored inside the water treatment plant. The number of pails stored on site is normally less than 32. Heating fuel for the building is stored in a double-walled 1500 L tank located outside the building. The fuel tank is protected from vehicular impact by steel bollards.

Potential spills at the water plant could include chlorine or heating fuel. Chlorine spills could occur during receiving. In the event of half the pails spilling that would result in a spill of approximately 300 L. If the heating fuel were to spill, it could result in a release of up to 1500 L.

3.1.5. 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 drums, whether in or 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 SAO and/or PWF or designated employees. 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 200 L.

3.1.6. 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.

In the event of a spill occurring from one of the large tanks at Kudlak Lake, it could result in a release of up to 2000 L.

3.1.7. Waste Oil or Lubricating Oil spill

Runoff into water bodies must be avoided.

Oils 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 1000L. If a storage drum was punctured or opened and contents seeped into surrounding soil and water bodies, this could cause illness or death to aquatic life and indirectly affect wildlife feeding from the land and water.

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 SAO and/or PWF 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 (see Schedule A **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 SAO and or PWF.
2. The SAO and/or PWF should, upon notification, determine the extent and size of the spill. Therefore, the SAO and/or PWF 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 SAO and/or PWF 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 impervious structure.

1. Any person who sees a liquid flowing from a breach (a hole) in the lagoon dam structures should report this to the SAO and/or PWF.
2. The SAO and/or PWF should, upon notification, determine the extent and size of the problem. Therefore, the SAO and/or PWF 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 SAO and/or PWF.
2. The SAO and/or PWF should, upon notification, determine the source, the extent and size of the spill. Therefore, the SAO and/or PWF 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 pill is away from the shoreline a boat will need to be used to reach the spill and the boom can be set out. More then 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 SAO and/or PWF. The SAO and/or PWF should, upon notification, determine the source, the extent and size of the spill. The SAO and/or PWF 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:

Table 8: Ice 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 shovelled 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 shovelled 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 SAO and/or PWF. The SAO and/or PWF should, upon notification, determine the source, the extent and size of the spill. The SAO and/or PWF 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 shovelling 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 shovelled 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 then 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 SAO and/or PWF. The SAO and/or PWF should, upon notification, determine the source, the extent and size of the spill. The SAO and/or PWF 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, pickaxes, 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 vapours 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, CO_2, or water will then be used as appropriate for the fire.

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

Spill related hazardous waste 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 Water Supply Facility, Hazardous Waste Temporary Storage Area, Solid Waste Facility, and Sanitary Sewage Facility as indicated on Figures 1.4.1 through 1.4.5 as well as at the Kudlak Lake Propane Storage Area.. 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 at an approved disposal 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 SAO and/or PWF 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 re vegetation. 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 locations are indicated on **Figures 1.9.1** through **1.9.5**, and at the Kudlak Lake Propane Storage Area. The contents are described below. In addition, earth moving and other equipment is also listed below.

If required additional copies of the Spill Contingency Plan can be obtained through the Hamlet Management.

For the operator's convenience and increased environmental protection, all heavy equipment and refueling equipment will carry portable spill kits that include items such as absorbent pads, containment booms, and spill pool catchment receptacles. Readily available and fully stocked spill kits can effectively mitigate potential spills.

4.1.1. Contents of Spill Kits

A spill kit is available in the event of a chemical spill. The kit includes:

- Heavy-duty gloves
- Safety glasses
- Mop/wringer/spill squeegee
- Shovel/ broom/dustpan
- Chemical spill container with sealable lid
- Sand/kitty litter (absorbent, non-flammable material).

Alternatively, a 50 Gallon Universal Sorbent Spill Kit can be provided, which includes:

- (10)–3" x 48" socks
- (4)–3" x 10' socks
- (50)–15" x 17" pads
- (4)–pillows
- (50)–wipers
- (5)–disposal bags and ties
- (5)–tamperproof seals
- (2)–pair nitrile gloves
- (1)–emergency response guidebook

4.1.2. Earth moving and other equipment

A dozer, a loader and 2 gravel trucks are available for spill clean-up.

4.2. Off-Site Resources

Table 9: Contact List

Contact	Location/Contact	Phone Number
Environment and Climate Change Canada (ECCC) – Environmental Enforcement		1-800-668-6767
Fisheries and Oceans Canada	Inuvik Office	867-777-7500
GNWT Environment and Climate Change – Lands and Waters Division	Beauford Delta Region/ Superintendent	867- 678-8090 ext. 24615
GNWT Environment and Climate Change – Lands and Waters Division	Beauford Delta Region/ Water Resource Officer (Inspector)	867- 678-8090 ext. 24659
NWT Emergency Measures Office	Emergency Number	867-920-2303*
Inuvialuit Land Administration	Tuktoyaktuk	867-977-7100
NWT Emergency Services Division – MACA	Emergency Number	867-920-8130*
Environmental Health	Inuvik	867-777-4840/4841
Fire Department		867-977-2222
NWT Fire Marshal Office	Emergency Number	867-920-2303*
Police (RCMP)		867-977-1111
Medical	Tuktoyaktuk Health Centre	867-977-2321
Medical – Emergency Department	Inuvik Regional Hospital	867-678-8000
Tele-Care NWT Health Line		811
24 Hour Spill Report Line		867-920-8130

*24 Hour phone line

5. Training Program

The Hamlet is committed to ensure all personnel involved in a spill response fully understand their roles and the roles of others whom they may interact with during an incident. To meet this commitment and to ensure personnel respond effectively, training activities will include the following.

5.1. Orientation

- Provide employees and contractor personnel with an orientation to the Spill Contingency Plan and its applicable elements
- Discuss and clarify bridging between contractors' emergency response procedures and this Spill Contingency Plan where applicable
- Utilize summary wall charts outlining key responsibilities and lines of communication for quick reference purposes
- Devote a portion of scheduled safety and/or staff meetings to discussion of spill response issues on and on-going basis

5.2. Specialized Spill Response Training

- Make available (through the Hamlet Management) all required training
- Ensure employees and contractor personnel comply with the Hamlet's safety training requirements (e.g., First Aid/CPR, Workplace Hazardous Materials Information System (WHMIS), Transportation of Dangerous Goods, Firefighting, etc.)
- Keep a training record continuously updated to document when employees receive training.

5.3. Spill Drills

Employees and contractors should conduct drills on an on-going basis to ensure readiness.

5.4. External Orientation

As appropriate, brief and familiarize all external groups or agencies having a role in this Spill Contingency Plan with the overall plan and their specific responsibilities under the plan.

6. References

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

Northwest Territories Water Board. "Guidelines for Contingency Planning" 1987.

GNWT. "Consolidation of Regulation R-068-93 Spill Contingency Planning and Reporting Regulations", 1993

Appendix A: NT-Nu Spill Report Form and Instruction, Immediately Reportable Spill Quantities

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE
Tel: (867) 920-8130 • Email: spills@gov.nt.ca

REPORT LINE USE ONLY

A	Report Date: MM DD YY	Report Time:	☐ Original Spill Report **OR** ☐ Update # _____ to the Original Spill Report	**Report Number:**
B	Occurrence Date: MM DD YY	Occurrence Time:		
C	Land Use Permit Number (if applicable):		Water Licence Number (if applicable):	
D	Geographic Place Name or Distance and Direction from the Named Location:		Region: ☐ NT ☐ 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: ☐ Potential Spill	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:	Employer:	Location Called:	Report Line Number:

Lead Agency: ☐ EC ☐ CCG/TCMSS ☐ GNWT ☐ GN ☐ ILA ☐ AANDC ☐ NEB ☐ Other: _____

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:			

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**.

Immediately Reportable Spill Quantities

Updated: Oct, 2023
Current List is available at: https://www.gov.nt.ca/ecc/en/services/report-spill

TDG Class	Substance	Reportable Quantity
1 2.3/2.4 6.2 9 7 None	Explosives Compressed gas (toxic/corrosive) Infectious substances Sewage and Wastewater (unless otherwise authorized) Radioactive materials 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 grater than 100L
3.1 3.2 3.3	Flammable liquid	≥100 L or ≥ 20 L When released on a frozen water body that is being used as a working surface
None	Vehicle fluid	≥ 20 L When released on a frozen water body that is being used as a working surface
4.1 4.2 4.3	Flammable solid Substances liable to spontaneous combustion Water reactant substances	≥ 25 kg
5.1	Oxidizing substances	≥ 50 L or 50 kg
5.2 9.2	Organic peroxides Environmentally hazardous substances intended for disposal	≥1 L or 1 kg
6.1	Toxic substances	≥ 5 L or 5 kg
8	Corrosive substances Miscellaneous products, substances or organisms	≥ 5 L or 5 kg
9.1	PCB mixtures of 5 or more ppm	≥ 0.5 L or 0.5 kg
None	Other contaminants--for example, crude oil, drilling fluid, produced water, waste or spent chemicals, used or waste oil, vehicle fluids, wastewater.	≥ 100 L or 100 kg
None	Sour natural gas (i.e., contains H_2S) Sweet natural gas	Uncontrolled release or sustained flow of 10 minutes or more
Report releases or potential releases of any size that: **1. are near or in an open water body;** **2. are near or in a designated sensitive environment or habitat;** **3. Pose an imminent threat to human health or safety; or** **4. Pose an imminent threat to a listed species at risk or its critical habitat**		

Appendix B: SDS

SAFETY DATA SHEET

Revision date: 11-Mar-2022

Revision Number 11

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product identifier

Product Name CHLORINE

Product Code(s) 000031098201

Synonyms Liquefied chlorine, Liquid chlorine, Diatomic chlorine, Chlorine cylinder (used)

Recommended use Disinfection, water treatment, bleaching, metal recovery, neutralising agent, oxidant.

Supplier
Ixom Central Pacific Ltd
Company Number: 1030
Street Address: Lots 3&4 Wailada Industrial Estate
Lami
Fiji
Telephone Number: +67 9 336 1144
Facsimile: +67 9 336 1500

Emergency telephone number **+61 3 9663 2130 (International, Australia, All Hours)**

Please ensure you refer to the limitations of this Safety Data Sheet as set out in the "Other Information" section at the end of this Data Sheet.

2. HAZARDS IDENTIFICATION

GHS Classification

Classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG).

AU07 UN 1017 CHLORINE has a subsidiary risk 5.1, as well as 8. Despite this, when transported in cylinders, pressure drums, MEGCs or tanks, chlorine gas is not considered incompatible with dangerous goods of Class 8 or 9, or Division 6.1, or combustible liquids.

Classified as a hazardous chemical in accordance with the criteria of Safe Work Australia - Globally Harmonized System (GHS).

Oxidizing gases	Category 1
Gases under pressure	Liquefied gas
Acute toxicity - Inhalation (Gases)	Category 3
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Specific target organ toxicity (single exposure)	Category 3
Acute aquatic toxicity	Category 1

SIGNAL WORD
Danger

Label elements

Hazard statements
H270 - May cause or intensify fire; oxidizer
H280 - Contains gas under pressure; may explode if heated
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H331 - Toxic if inhaled
H335 - May cause respiratory irritation

The following health/environmental hazard categories fall outside the scope of the Workplace Health and Safety Regulations:
H400 - Very toxic to aquatic life

Precautionary Statements - Prevention
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
Keep/Store away from clothing/ combustible materials
Keep valves and fittings free from oil and grease
Do not breathe mist, vapours, spray.
Wash hands thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Wear protective gloves / protective clothing / eye protection / face protection
Avoid release to the environment
Precautionary Statements - Response
Immediately call a POISON CENTER or doctor/physician
Specific treatment (see First aid on this SDS)
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
IF ON SKIN: Wash with plenty of water and soap
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting
IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
In case of fire: Stop leak if safe to do so
Collect spillage
Precautionary Statements - Storage
Store in a well-ventilated place. Keep container tightly closed
Store locked up
Precautionary Statements - Disposal
Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Other hazards which do not result in classification
AUH071 - Corrosive to the respiratory tract
Contact with evaporating liquid may cause frostbite or freezing of skin.
Very toxic to aquatic life

General Hazards	Contact with evaporating liquid may cause frostbite or freezing of skin.
Poisons Schedule (SUSMP)	7

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Chemical name	CAS No.	Weight-%
Chlorine	7782-50-5	>=99.8

4. FIRST AID MEASURES

Description of first aid measures

General advice For advice, contact a Poisons Information Centre (e.g. phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor. Immediate medical attention is required. Take a copy of the Safety Data Sheet when going for medical treatment.

Inhalation Remove to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, (trained personnel should) give oxygen. Immediately give oxygen if victim turns blue (lips, ears, fingernails). If breathing has stopped, give artificial respiration. Get medical attention immediately.

Eye contact Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. Call a physician immediately.

Skin contact Immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Seek immediate medical attention/advice. A physician should see the patient promptly if contact with the product has resulted in blistering of the dermal surface or in deep tissue freezing.

Caution - material can be very cold. For dermal contact or suspected frostbite, remove contaminated clothing and flush affected areas with lukewarm water. DO NOT USE HOT WATER. Clothing frozen to the skin should be thawed before being removed. Call a physician immediately.

Ingestion Call a physician immediately. Rinse mouth thoroughly with water. Not an expected route of exposure.

Self-protection of the first aider Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes, and clothing. Do not breathe fume, gas, mist, vapours, spray. Use personal protective equipment as required. See section 8 for more information.

Most important symptoms and effects, both acute and delayed

Symptoms Contact with very cold material can cause freeze burns. Erythema (skin redness). Irritation. May cause redness and tearing of the eyes. Coughing and/ or wheezing. Difficulty in breathing.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically. Material may be very cold and may cause freeze burns. Delayed pulmonary edema may occur.

Administration of 5% carbon dioxide/oxygen medical gas mixture to patients with chronic respiratory disease or drug induced respiratory depression is potentially dangerous. 5% carbon dioxide/oxygen medical gas mixture should not be given to acidotic patients.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media

Suitable Extinguishing Media Dry chemical, CO2, water spray or regular foam.

Unsuitable extinguishing media No information available.

Specific hazards arising from the chemical

Specific hazards arising from the chemical May cause fire or explosion; strong oxidizer. Cylinders may rupture under extreme heat. Damaged cylinders should be handled only by specialists. In the event of fire and/or explosion do not breathe fumes. Most vapors are heavier than air. Vapors may spread along ground and collect in low or confined areas (sewers, basements, tanks). Corrosive hazard. Wear protective gloves/clothing and eye/face protection. Environmentally hazardous.

Special protective actions for fire-fighters

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Heating can cause expansion or decomposition of the material, which can lead to the containers exploding. If safe to do so, remove containers from the path of fire. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cylinders may rupture under extreme heat. Fight fire remotely due to the risk of explosion. Consider evacuation. Damaged cylinders should be handled only by specialists. Use personal protection equipment.

Hazchem code 2XE

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Do not breathe fume, gas, mist, vapours, spray. Avoid contact with skin, eyes and inhalation of vapors. Seek specialist advice. Use personal protective equipment as required. See section 8 for more information.

Other information Refer to protective measures listed in Sections 7 and 8.

For emergency responders Clear area of all unprotected personnel. Ventilate the area. Work up wind or increase ventilation. Use personal protective equipment as required. Use personal protection recommended in Section 8. Seek specialist advice.

Environmental precautions

Environmental precautions Should not be released into the environment. Local authorities should be advised if significant spillages cannot be contained. Prevent entry into waterways, sewers, basements or confined areas. Prevent product from entering drains. Keep out of waterways.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk.

Methods for cleaning up Work up wind or increase ventilation. This material is a liquefied gas. For a major leak which cannot be isolated use water fog to disperse vapour. DO NOT direct water onto liquid chlorine or leaking container. SMALL SPILLS: Small spills are allowed to evaporate provided there is adequate ventilation. LARGE SPILLS: Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). If safe to do so, cover with a large plastic sheet. Notify emergency services.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Do not breathe vapor or mist. Avoid contact with skin, eyes, and clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Protect cylinders from physical damage; do not drag, roll, slide or drop. Contents under pressure. Use personal protection equipment. Keep out of reach of children.

General hygiene considerations Avoid contact with skin, eyes, and clothing. Do not breathe fume, gas, mist, vapours, spray. Keep away from food, drink and animal feeding stuffs. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a cool, well-ventilated place. Keep dry, reacts with water. Store locked up. Keep at temperatures below 50°C / 122°F. Store away from foodstuffs and sources of heat or ignition. Cylinders should be stored upright with valve protection cap in place and firmly secured to prevent falling. Check cylinders regularly for leaks.

This material is a Scheduled Poison and must be stored, maintained and used in accordance with the relevant regulations.

Incompatible materials Combustible material. Reducing agents. Glass. Aluminium. Copper. Tin.

Poisons Schedule (SUSMP) 7

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits

Chlorine: Peak Limitation = 3 mg/m^3 (1 ppm)

As published by Safe Work Australia Workplace Exposure Standards for Airborne Contaminants.

Peak Limitation - a maximum or peak airborne concentration of a particular substance determined over the shortest analytically practicable period of time which does not exceed 15 minutes.

These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

Appropriate engineering controls

Engineering controls Ventilation systems. Ensure adequate ventilation, especially in confined areas. Apply technical measures to comply with the occupational exposure limits.

If in the handling and application of this material, safe exposure levels could be exceeded, the use of engineering controls such as local exhaust ventilation must be considered and the results documented. If achieving safe exposure levels does not require engineering controls, then a detailed and documented risk assessment using the relevant Personal Protective Equipment (PPE) (refer to PPE section below) as a basis must be carried out to determine the minimum PPE requirements.

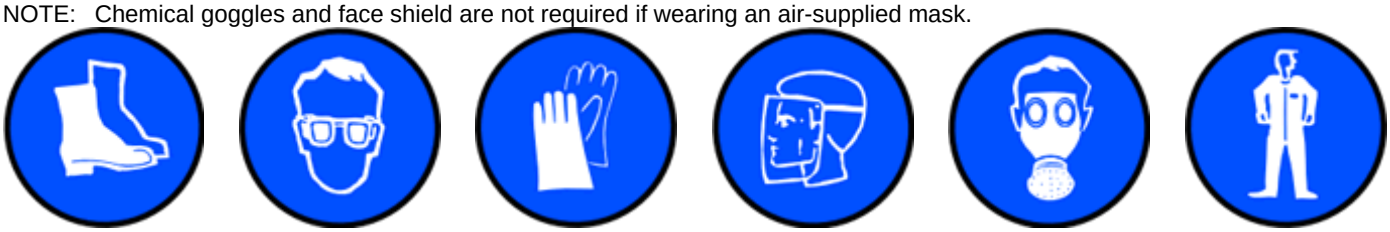
Individual protection measures, such as personal protective equipment

The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the

physical form of the chemical, the handling methods, and environmental factors.

OVERALLS, CHEMICAL GOGGLES, RUBBER BOOTS, AIR MASK , GLOVES (Long), APRON.

NOTE: Chemical goggles and face shield are not required if wearing an air-supplied mask.



Eye/face protection	Tight sealing safety goggles. If there is a risk of contact:. Face protection shield.
Skin and body protection	Rubber boots. Overalls. If there is a risk of contact:. Chemical resistant apron.
Hand protection	Elbow-length impervious gloves.
Respiratory protection	If determined by a risk assessment an inhalation risk exists, wear an air supplied respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716.
Environmental exposure controls	No information available.
Thermal hazards	Caution - material can be very cold. Avoid contact with escaping gas.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Gas
Appearance	Liquefied gas
Color	Greenish - Yellow (high concentrations) , Colourless (low concentrations)
Odor	Pungent , Irritating
Odor threshold	ca. 1 ppm

Property	**Values**	**Remarks • Method**
pH	No data available	None known
pH (as aqueous solution)	No data available	None known
Melting point / freezing point	-101 °C	None known
Boiling point / boiling range	-34 °C	None known
Flash point	Not applicable	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapor pressure	666 kPa @20°C	None known
Vapor density	2.4 (air=1)	None known
Relative density	1.468 (liquid); 1.56 @ -35°C.	None known
Water solubility	5.1 g/L @ 30 °C	None known
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known

Other information

Molecular formula Cl2

10. STABILITY AND REACTIVITY

Reactivity

Reactivity Chlorine reacts violently with many organic chemicals (e.g. mineral oils, greases), hydrocarbons, silicones, and finely divided metals. Forms explosive mixtures with alcohols, glycols, ammonia and its compounds, and hydrogen over a wide range of concentrations.

Chemical stability

Stability Corrosive to metals in the presence of moisture.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge No information available.

Possibility of hazardous reactions

Possibility of hazardous reactions Oxidizing agent. Supports combustion of other materials and increases intensity of a fire.

Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid

Conditions to avoid Keep away from open flames, hot surfaces and sources of ignition. Loss of containment. Moisture. Keep from any possible contact with water. Do not contaminate food or feed stuffs. Avoid contact with combustible substances.

Incompatible materials

Incompatible materials Combustible material. Reducing agents. Glass. Aluminium. Copper. Tin.

Hazardous decomposition products

Hazardous decomposition products Chlorine oxides. Chlorine compounds.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Information on likely routes of exposure

Product Information No adverse health effects expected if the chemical is handled in accordance with this Safety Data Sheet and the chemical label. Symptoms or effects that may arise if the chemical is mishandled and overexposure occurs are:

Inhalation Toxic if inhaled. Corrosive to the respiratory tract. Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Large exposures may be fatal. In high concentration the gas may cause a suffocation. Victim may not be aware of asphyxiation.

Eye contact Causes serious eye irritation. When cold:. Contact with product may cause frostbite. Can result in permanent injury.

Skin contact Causes skin irritation. Caution - material can be very cold. Contact with product may cause frostbite.

Ingestion Not a likely route of exposure, however, swallowing liquid chlorine will result in freeze burns of the mouth, throat, and stomach. Swallowing can result in chemical burns to the mouth, throat and abdomen; perforation of the gastrointestinal tract and vomiting of blood and eroded tissue.

Symptoms Irritation. Erythema (skin redness). Burning. May cause redness and tearing of the eyes. Coughing and/ or wheezing. Difficulty in breathing.

Numerical measures of toxicity - Product Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Chlorine	= 6800 mg/kg (Rat) = 5800 mg/kg (Rat)	-	= 293 ppm (Rat) 1 h

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity Not listed as carcinogenic according to IARC.
(IARC - International Agency for Research on Cancer).

Reproductive toxicity No information available.

STOT - single exposure Corrosive to the respiratory tract.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

Chronic effects: Repeated low-level contact with chlorine may cause erosion of the teeth and chloracne.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity Keep out of waterways. Very toxic to aquatic life.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Chlorine	-	LC50: =0.44mg/L (96h, Lepomis macrochirus) LC50: =0.014mg/L (96h, Oncorhynchus mykiss) LC50: 0.104 - 0.168mg/L (96h, Oncorhynchus mykiss) LC50: =0.08mg/L (96h, Pimephales	-	LC50: =0.017mg/L (48h, Daphnia magna)

		promelas) LC50: =0.1mg/L (96h, Pimephales promelas)		

Persistence and degradability

Persistence and degradability Not readily biodegradable.

Bioaccumulative potential

Bioaccumulation Material does not bioaccumulate.

Mobility

Mobility in soil Very toxic to the soil environment.

Other adverse effects

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products Contact supplier for advice. For all Ixom labelled chlorine packages, return directly to Ixom. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

14. TRANSPORT INFORMATION

ADG
Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail; DANGEROUS GOODS.

AU07 UN 1017 CHLORINE has a subsidiary risk 5.1, as well as 8. Despite this, when transported in cylinders, pressure drums, MEGCs or tanks, chlorine gas is not considered incompatible with dangerous goods of Class 8 or 9, or Division 6.1, or combustible liquids.

UN number 1017
Proper shipping name CHLORINE
Hazard class 2.3
Subsidiary hazard class 5.1
Subsidiary hazard class 2 8
Hazchem code 2XE

IATA
TRANSPORT PROHIBITED under the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air in Passenger and Cargo Aircraft, and Cargo Aircraft Only.
Subsidiary hazard class 2 8

IMDG
Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; DANGEROUS GOODS.

UN number 1017
UN proper shipping name CHLORINE
Transport hazard class(es) 2.3
Subsidiary hazard class 5.1

Subsidiary hazard class 2 8
IMDG EMS Fire F-C
IMDG EMS Spill S-U
Marine pollutant Yes

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Australia
Classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG).

AU07 UN 1017 CHLORINE has a subsidiary risk 5.1, as well as 8. Despite this, when transported in cylinders, pressure drums, MEGCs or tanks, chlorine gas is not considered incompatible with dangerous goods of Class 8 or 9, or Division 6.1, or combustible liquids.

Classified as a hazardous chemical in accordance with the criteria of Safe Work Australia - Globally Harmonized System (GHS).

See section 8 for national exposure control parameters

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)
Classified as a scheduled poison according to the Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)
Poisons Schedule (SUSMP) 7

Major hazard (accident/incident planning) regulation
Verify that license requirements are met

Chemical name	Threshold quantity (T)
Chlorine - 7782-50-5	25 tonne TQ

National pollutant inventory
Subject to reporting requirement

Chemical name	National pollutant inventory
Chlorine - 7782-50-5	10 tonne/yr Threshold category 1

International Inventories
AIIC This material is listed on the Australian Inventory of Industrial Chemicals.
NZIoC This material is listed on the New Zealand Inventory of Chemicals.

Legend:
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

16. OTHER INFORMATION

Reason(s) For Issue: 5 Yearly Revised Primary SDS

Issuing Date: 11-Mar-2022

This Safety Data Sheet has been prepared by Ixom Operations Pty Ltd (Toxicology and SDS Services).

Revision Note:
The symbol (*) in the margin of this SDS indicates that this line has been revised.

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

Key literature references and sources for data used to compile the SDS

EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australian Industrial Chemicals Introduction Scheme (AICIS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
RTECS (Registry of Toxic Effects of Chemical Substances)
World Health Organization

Disclaimer

This SDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since Ixom Operations Pty Ltd cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their Ixom representative or Ixom Operations Pty Ltd at the contact details on page 1.

Ixom Operations Pty Ltd's responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.

End of Safety Data Sheet

SAFETY DATA SHEET

DIESEL FUEL

000003000395

Version 6.3 Revision Date 2022/02/01 Print Date 2022/02/01

SECTION 1. IDENTIFICATION

Product name	:	DIESEL FUEL
Synonyms	:	Seasonal Diesel, #2 Diesel, #1 Diesel, #2 Heating Oil, #1 Heating Oil, OSX, D50, Arctic Diesel, Farm Diesel, Marine Diesel, Low Sulphur Diesel, LSD, Ultra Low Sulphur Diesel, ULSD, Mining Diesel, Naval Distillate, Dyed Diesel, Marked Diesel, Coloured Diesel, Furnace special, Biodiesel blend, B1, B2, B5, Renewable Diesel blend (RX where X is 2- 50, X is representative of volume %), Diesel Low Cloud (LC), Marine Gas Oil, Marine Gas Oil Dyed
Product code	:	103213, 100679, 100654, 100653, 100105, 100992, 100637, 100634, 100631, 100638, 100641, 100635, 100632, 100684, 100683, 100657, 100656, 100655, 100687, 100686, 100685, 100681, 100661, 100659, 100667, 100666, 100665, 100682, 100671, 100669, 100664, 100662, 100680, 100781, 100964, 103204, 103180, 103179, 103193, 103178, 103136, 103135, 103134, 103133, 103132, 103131, 101799, 102907, 102762, 102763, 102755, 102302, 102744, 101801, 100678, 100677, 101802, 100107, 100668, 100658, 100911, 100663, 100652, 100460, 100065, 101796, 101793, 101795, 101792, 101794, 101791, 100768, 100643, 100642, 100103, 101798, 101800, 101797, 101788, 101789, 101787, 102531, 100734, 100733, 100640, 100997, 100995, 100732, 100731, 100994
Manufacturer or supplier's details		Petro-Canada P.O. Box 2844, 150 - 6th Avenue South-West Calgary Alberta T2P 3E3 Canada, Telephone: 1-866-786-2671
Emergency telephone number		CHEMTREC: 1-800-424-9300 (toll free) or +1 703-527-3887; Suncor Energy: +1 403-296-3000

Recommended use of the chemical and restrictions on use

Recommended use	:	Diesel fuels are distillate fuels suitable for use in high and medium speed internal combustion engines of the compression ignition type. Mining diesels, marine diesels, MDO and naval distillates may have a higher flash point requirement.
Prepared by	:	Product Safety

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	Bright oily liquid.
Colour	Clear to yellow (This product may be dyed red for taxation purposes)

Odour	Mild petroleum oil like.

GHS Classification

Flammable liquids : Category 3

Acute toxicity (Inhalation) : Category 4

Skin irritation : Category 2

Carcinogenicity : Category 2

Specific target organ toxicity - single exposure : Category 3 (Central nervous system)

Specific target organ toxicity - repeated exposure : Category 2 (Liver, thymus, Bone)

Aspiration hazard : Category 1

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : Flammable liquid and vapour.
May be fatal if swallowed and enters airways.
Causes skin irritation.
Harmful if inhaled.
May cause drowsiness or dizziness.
Suspected of causing cancer.
May cause damage to organs (Liver, thymus, Bone) through prolonged or repeated exposure.

Precautionary statements : **Prevention:**
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep container tightly closed.
Ground and bond container and receiving equipment.
Use explosion-proof electrical/ ventilating/ lighting equipment.
Use non-sparking tools.
Take action to prevent static discharges.
Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:

IF SWALLOWED: Immediately call a POISON CENTER/doctor.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
IF exposed or concerned: Get medical advice/ attention.
Do NOT induce vomiting.
If skin irritation occurs: Get medical advice/ attention.
Take off contaminated clothing and wash it before reuse.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
Storage:
Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.
Disposal:
Dispose of contents/ container to an approved waste disposal plant.

Potential Health Effects

Primary Routes of Entry : Eye contact
Ingestion
Inhalation
Skin contact

Aggravated Medical Condition : None known.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration
Kerosine (petroleum), hydrodesulfurized; Kerosine — unspecified	64742-81-0	48 - 100 %
Kerosine (petroleum); Straight run kerosine	8008-20-6	
Fuels, diesel; Gasoil — unspecified	68334-30-5	
Alkanes, C10-20-branched and linear	928771-01-1	0 - 50 %
Fatty acids, C16-18 and C18-unsatd., Me esters	67762-38-3	0 - 20 %

All above concentrations are in percent by weight.

SECTION 4. FIRST AID MEASURES

If inhaled : Move to fresh air.
Artificial respiration and/or oxygen may be necessary.
Seek medical advice.

In case of skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing

		and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Wash clothing before reuse. Seek medical advice.
In case of eye contact	:	Remove contact lenses. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.
If swallowed	:	Rinse mouth with water. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Seek medical advice.
Most important symptoms and effects, both acute and delayed	:	Harmful if inhaled. Respiratory, skin and eye irritation; nausea; cancer.
Notes to physician	:	Treat symptomatically. For specialist advice physicians should contact the Poisons Information Service.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Dry chemical Carbon dioxide (CO2) Water fog. Foam
Unsuitable extinguishing media	:	Do NOT use water jet.
Specific hazards during firefighting	:	Cool closed containers exposed to fire with water spray.
Hazardous combustion products	:	Carbon oxides (CO, CO2), nitrogen oxides (NOx), sulphur oxides (SOx), smoke and irritating vapours as products of incomplete combustion.
Further information	:	Prevent fire extinguishing water from contaminating surface water or the ground water system.
Special protective equipment for firefighters	:	Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	For personal protection see section 8. Ensure adequate ventilation. Evacuate personnel to safe areas. Material can create slippery conditions.
Environmental precautions	:	If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Prevent further leakage or spillage if safe to do so. Remove all sources of ignition. Soak up with inert absorbent material. Non-sparking tools should be used. Ensure adequate ventilation.

Contact the proper local authorities.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Use only with adequate ventilation.
In case of insufficient ventilation, wear suitable respiratory equipment.
Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity.
Avoid contact with skin, eyes and clothing.
Do not ingest.
Keep away from heat and sources of ignition.
Keep container closed when not in use.

Conditions for safe storage : Store in original container.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Keep in a dry, cool and well-ventilated place.
Keep in properly labelled containers.
To maintain product quality, do not store in heat or direct sunlight.
Ensure the storage containers are grounded/bonded.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Kerosine (petroleum), hydrodesulfurized; Kerosine — unspecified	64742-81-0	TWA	200 mg/m3 (As total hydrocarbon vapour)	ACGIH
		TWA	200 mg/m3 (total hydrocarbon vapor)	CA AB OEL
		TWA	525 mg/m3	CA ON OEL
		TWA	200 mg/m3 (As total hydrocarbon vapour)	ACGIH
		TWA	200 mg/m3 (total hydrocarbon vapor)	ACGIH
Kerosine (petroleum); Straight run kerosine	8008-20-6	TWA	200 mg/m3 (total hydrocarbon vapor)	CA BC OEL
		TWA	200 mg/m3 (total hydrocarbon vapor)	CA AB OEL
		TWA	200 mg/m3 (total hydrocarbon	ACGIH

			vapor)	
Fuels, diesel; Gasoil — unspecified	68334-30-5	TWA	100 mg/m3 (total hydrocarbons)	CA AB OEL
		TWA (Vapour and inhalable aerosols)	100 mg/m3 (total hydrocarbons)	CA BC OEL
		TWA (Inhalable fraction and vapor)	100 mg/m3 (total hydrocarbons)	ACGIH

Engineering measures : Adequate ventilation to ensure that Occupational Exposure Limits are not exceeded.
Use only in well-ventilated areas.
Ensure that eyewash station and safety shower are proximal to the work-station location.

Personal protective equipment

Respiratory protection : Concentration in air determines protection needed.
Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Filter type : organic vapour cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.

Hand protection

Material : neoprene, nitrile, polyvinyl alcohol (PVA), Viton(R). Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.

Remarks : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eye protection : Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Protective measures : Wash contaminated clothing before re-use.

Hygiene measures : Remove and wash contaminated clothing and gloves, including the inside, before re-use.

Wash face, hands and any exposed skin thoroughly after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Bright oily liquid.
Colour	:	Clear to yellow (This product may be dyed red for taxation purposes)
Odour	:	Mild petroleum oil like.
Odour Threshold	:	No data available
pH	:	No data available
Melting point	:	No data available
Boiling point/boiling range	:	150 - 371 °C (302 - 700 °F)
Decomposition temperature		No data available
Flash point	:	> 40 °C (104 °F) Method: closed cup
Auto-Ignition Temperature	:	204 °C (399 °F)
Evaporation rate	:	No data available
Flammability	:	Flammable in presence of open flames, sparks and heat. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. This product can accumulate static charge and ignite.
Upper explosion limit	:	6 %(V)
Lower explosion limit	:	0.7 %(V)
Vapour pressure	:	7.5 mmHg (20 °C / 68 °F)
Relative vapour density	:	4.5
Relative density	:	0.8 - 0.88
Solubility(ies)		
Water solubility	:	insoluble
Partition coefficient: n-octanol/water	:	No data available
Viscosity		
Viscosity, kinematic	:	1.3 - 4.1 cSt (40 °C / 104 °F)

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Stable at normal ambient temperature and pressure.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Hazardous polymerisation does not occur.
Conditions to avoid	:	Extremes of temperature and direct sunlight.
Incompatible materials	:	Reactive with oxidising agents and acids.
Hazardous decomposition products	:	May release COx, NOx, SOx, smoke and irritating vapours when heated to decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
Eye contact
Ingestion
Inhalation
Skin contact

Acute toxicity

Product:

Acute oral toxicity	:	Remarks: Based on available data, the classification criteria are not met.
Acute inhalation toxicity	:	Acute toxicity estimate: 1.5 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method Assessment: The component/mixture is moderately toxic after short term inhalation. Remarks: Harmful if inhaled.
Acute dermal toxicity	:	Assessment: The substance or mixture has no acute dermal toxicity

Components:

Kerosine (petroleum), hydrodesulfurized; Kerosine — unspecified:

Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg,
Acute inhalation toxicity	:	LC50 (Rat): > 5.2 mg/l Exposure time: 4 hrs Test atmosphere: dust/mist
Acute dermal toxicity	:	LD50 (Rabbit): > 2,000 mg/kg,

Kerosine (petroleum); Straight run kerosine:

Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg,
Acute inhalation toxicity	:	LC50 (Rat): > 5 mg/l Exposure time: 4 h Test atmosphere: dust/mist
Acute dermal toxicity	:	LD50 (Rabbit): > 2,000 mg/kg,

Fuels, diesel; Gasoil — unspecified:

Acute oral toxicity	:	LD50 (Rat): 7,500 mg/kg,
Acute inhalation toxicity	:	LC50 (Rat): 4.1 mg/l Exposure time: 4 h Test atmosphere: vapour
Acute dermal toxicity	:	LD50 (Mouse): 24,500 mg/kg,

Skin corrosion/irritation

Product:

Remarks: Causes skin irritation.

Serious eye damage/eye irritation

Product:

Remarks: Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation

Product:

Remarks: Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Product:

Germ cell mutagenicity- Assessment	Based on available data, the classification criteria are not met.

Carcinogenicity

Product:

Carcinogenicity - Assessment	Suspected of causing cancer.

Reproductive toxicity

Product:

Reproductive toxicity - Assessment	Based on available data, the classification criteria are not met.

STOT - single exposure

Product:

Target Organs: Central nervous system
Remarks: May cause drowsiness or dizziness.

STOT - repeated exposure

Product:

Target Organs: Liver, thymus, Bone
Remarks: May cause damage to organs through prolonged or repeated exposure.

No data available

Aspiration toxicity

Product:

May be fatal if swallowed and enters airways.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish	:	Remarks: No data available
Toxicity to daphnia and other aquatic invertebrates	:	Remarks: No data available
Toxicity to algae	:	Remarks: No data available
Toxicity to bacteria	:	Remarks: No data available

Persistence and degradability

Product:

Biodegradability	:	Remarks: No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	The product should not be allowed to enter drains, water courses or the soil. Offer surplus and non-recyclable solutions to a licensed disposal company. Waste must be classified and labelled prior to recycling or disposal. Send to a licensed waste management company.

		Dispose of as hazardous waste in compliance with local and national regulations. Dispose of product residue in accordance with the instructions of the person responsible for waste disposal.
Contaminated packaging	:	Contact local or business unit authorities for guidance on disposal of product.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No.	:	UN 1202
Proper shipping name	:	Diesel fuel
Class	:	3
Packing group	:	III
Labels	:	Class 3 - Flammable Liquid
Packing instruction (cargo aircraft)	:	366

IMDG-Code

UN number	:	UN 1202
Proper shipping name	:	DIESEL FUEL
Class	:	3
Packing group	:	III
Labels	:	3
EmS Code	:	F-E, S-E
Marine pollutant	:	yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

National Regulations

TDG

UN number	:	UN 1202
Proper shipping name	:	DIESEL FUEL
Class	:	3
Packing group	:	III
Labels	:	3
ERG Code	:	128
Marine pollutant	:	yes

SECTION 15. REGULATORY INFORMATION

This product has been classified according to the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all of the information required by the HPR.

The components of this product are reported in the following inventories:

DSL On the inventory, or in compliance with the inventory

SECTION 16. OTHER INFORMATION

For Copy of SDS	:	Internet: www.petro-canada.ca/msds Canada-wide: telephone: 1-800-668-0220; fax: 1-800-837-1228 For Product Safety Information: 1 905-804-4752
Prepared by	:	Product Safety
Revision Date	:	2022/02/01

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Safety Data Sheet

Material Name: Fuel Oil No. 2

SDS No. 0088
EU/CLP GHS

Synonyms: #2 Heating Oil; 2 Oil; Off-road Diesel Fuel

* * * Section 1 - Product and Company Identification * * *

Manufacturer Information

Hess Corporation
1 Hess Plaza
Woodbridge, NJ 07095-0961

Phone: 732-750-6000 Corporate EHS
Emergency # 800-424-9300 CHEMTREC
www.hess.com (Environment, Health, Safety Internet Website)

* * * Section 2 - Hazards Identification * * *

GHS Classification:

Flammable Liquids - Category 3
Acute Toxicity, Inhalation - Category 4
Skin Corrosion/Irritation – Category 2
Eye Damage/Irritation – Category 2
Carcinogenicity - Category 2
Specific Target Organ Toxicity (Single Exposure) – Category 3 (respiratory irritation, narcosis)
Aspiration Hazard – Category 1
Hazardous to the Aquatic Environment, Acute Hazard – Category 3

GHS LABEL ELEMENTS

Symbol(s)

Signal Word

DANGER

Hazard Statements

Flammable liquid and vapor.
Harmful if inhaled.
Causes skin irritation.
Causes eye irritation.
Suspected of causing cancer.
Suspected of causing genetic defects.
May cause respiratory irritation.
May cause drowsiness or dizziness.
May be fatal if swallowed and enters airways.
Harmful to aquatic life.

Precautionary Statements

Prevention

Keep away from heat/sparks/open flames/hot surfaces. No smoking
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves/protective clothing/eye protection/face protection.
Avoid breathing fume/mist/vapors/spray.
Use only outdoors or in a well-ventilated area.
Wash hands and forearms thoroughly after handling.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid release to the environment.

Response

In case of fire: Use water spray, fog or foam.
If on skin (or hair): Wash with plenty of soap and water. Take off immediately all contaminated clothing and wash it before reuse. If skin irritation occurs, get medical advice/attention.
If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center or doctor if you feel unwell.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
If exposed or concerned: Get medical advice/attention.
If swallowed: Immediately all a poison center or doctor/physician if you feel unwell. Do NOT induce vomiting.

Storage

Store in a well ventilated place.
Keep cool. Keep container tightly closed.
Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

* * * Section 3 - Composition / Information on Ingredients * * *

CAS #	Component	Percent
68476-30-2	Fuel oil No. 2	100
91-20-3	Naphthalene	<0.1

A complex combination of hydrocarbons with carbon numbers in the range C9 and higher produced from the distillation of petroleum crude oil.

* * * Section 4 - First Aid Measures * * *

First Aid: Eyes

In case of contact with eyes, immediately flush with clean, low-pressure water for at least 15 min. Hold eyelids open to ensure adequate flushing. Seek medical attention.

First Aid: Skin

Remove contaminated clothing. Wash contaminated areas thoroughly with soap and water or with waterless hand cleanser. Obtain medical attention if irritation or redness develops.

First Aid: Ingestion

DO NOT INDUCE VOMITING. Do not give liquids. Obtain immediate medical attention. If spontaneous vomiting occurs, lean victim forward to reduce the risk of aspiration. Monitor for breathing difficulties. Small amounts of material which enter the mouth should be rinsed out until the taste is dissipated.

First Aid: Inhalation

Remove person to fresh air. If person is not breathing, provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

* * * Section 5 - Fire Fighting Measures * * *

General Fire Hazards

See Section 9 for Flammability Properties.

Vapors may be ignited rapidly when exposed to heat, spark, open flame or other source of ignition. When mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces. Being heavier than air, vapors may travel long distances to an ignition source and flash back. Runoff to sewer may cause fire or explosion hazard.

Hazardous Combustion Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

Extinguishing Media

SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO2, water spray, fire fighting foam, or gaseous extinguishing agent.

LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

Unsuitable Extinguishing Media

None

Fire Fighting Equipment/Instructions

Small fires in the incipient (beginning) stage may typically be extinguished using handheld portable fire extinguishers and other fire fighting equipment. Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing. Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam.

* * * Section 6 - Accidental Release Measures * * *

Recovery and Neutralization

Carefully contain and stop the source of the spill, if safe to do so.

Materials and Methods for Clean-Up

Take up with sand or other oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal.

Emergency Measures

Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to confirm spill areas. Spills may infiltrate subsurface soil and groundwater; professional assistance may be necessary to determine the extent of subsurface impact.

Personal Precautions and Protective Equipment

Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

Environmental Precautions

Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. The use of fire fighting foam may be useful in certain situations to reduce vapors. The proper use of water spray may effectively disperse product vapors or the liquid itself, preventing contact with ignition sources or areas/equipment that require protection.

Prevention of Secondary Hazards

None

* * * Section 7 - Handling and Storage * * *

Handling Procedures

Handle as a combustible liquid. Keep away from heat, sparks, excessive temperatures and open flame! No smoking or open flame in storage, use or handling areas. Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion.

Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when this product is loaded into tanks previously containing low flash point products (such as gasoline) - see API Publication 2003, "Protection Against Ignitions Arising Out Of Static, Lightning and Stray Currents."

Storage Procedures

Keep containers closed and clearly labeled. Use approved vented storage containers. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Store in a well-ventilated area. This storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". Avoid storage near incompatible materials. The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks."

Incompatibilities

Keep away from strong oxidizers; Fluorel ®

* * * Section 8 - Exposure Controls / Personal Protection * * *

Component Exposure Limits

Fuel oil No. 2 (270-671-4)

ACGIH: 100 mg/m3 TWA (inhalable fraction and vapor, as total hydrocarbons, listed under Diesel fuel)
Skin - potential significant contribution to overall exposure by the cutaneous route (listed under Diesel fuel)

Belgium: 100 mg/m3 TWA (as total hydrocarbon, aerosol and vapor)
Skin (listed under Gas oil)

Portugal: 100 mg/m3 TWA [VLE-MP] (aerosol and vapor, as total Hydrocarbons, listed under Fuel diesel)

Naphthalene (202-049-5)

ACGIH: 15 ppm STEL
10 ppm TWA
Skin - potential significant contribution to overall exposure by the cutaneous route

Austria: 10 ppm TWA [TMW]; 50 mg/m3 TWA [TMW]
skin notation

Belgium: 15 ppm STEL; 80 mg/m3 STEL
10 ppm TWA; 53 mg/m3 TWA
Skin

Denmark: 10 ppm TWA; 50 mg/m3 TWA

Finland: 2 ppm STEL; 10 mg/m3 STEL
1 ppm TWA; 5 mg/m3 TWA

France: 10 ppm TWA [VME]; 50 mg/m3 TWA [VME]

Germany: 0.1 ppm TWA AGW (The risk of damage to the embryo or fetus can be excluded when MAK and BAT values are observed, inhalable fraction, exposure factor 1); 0.5 mg/m3 TWA AGW (The risk of damage to the embryo or fetus can be excluded when MAK and BAT values are observed, inhalable fraction, exposure factor 1)

Greece: 10 ppm TWA; 50 mg/m3 TWA

Ireland: 15 ppm STEL; 75 mg/m3 STEL
10 ppm TWA; 50 mg/m3 TWA

Netherlands: 80 mg/m3 STEL
50 mg/m3 TWA

Portugal: 10 ppm TWA [VLE-MP]

Spain: 15 ppm STEL [VLA-EC]; 80 mg/m3 STEL [VLA-EC]
10 ppm TWA [VLA-ED]; 53 mg/m3 TWA [VLA-ED]
skin - potential for cutaneous exposure

Sweden: 10 ppm LLV; 50 mg/m3 LLV
15 ppm STV; 80 mg/m3 STV

Engineering Measures

Use adequate ventilation to keep vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces.

Personal Protective Equipment: Respiratory

A NIOSH/MSHA-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited.

Use a positive pressure, air-supplied respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.

Personal Protective Equipment: Hands

Gloves constructed of nitrile, neoprene, or PVC are recommended.

Personal Protective Equipment: Eyes

Safety glasses or goggles are recommended where there is a possibility of splashing or spraying.

Personal Protective Equipment: Skin and Body

Chemical protective clothing such as of E.I. DuPont TyChem®, Saranex® or equivalent recommended based on degree of exposure. Note: The resistance of specific material may vary from product to product as well as with degree of exposure. Consult manufacturer specifications for further information.

* * * Section 9 - Physical & Chemical Properties * * *

Appearance:	Red or reddish/orange colored (dyed)	**Odor:**	Mild, petroleum distillate odor
Physical State:	Liquid	**pH:**	ND
Vapor Pressure:	0.009 psia @ 70 °F (21 °C)	**Vapor Density:**	>1.0
Boiling Point:	340 to 700 °F (171 to 371 °C)	**Melting Point:**	ND
Solubility (H2O):	Negligible	**Specific Gravity:**	AP 0.823-0871
Evaporation Rate:	Slow; varies with conditions	**VOC:**	ND
Octanol/H2O Coeff.:	ND	**Flash Point:**	100 °F (38 °C) minimum
Flash Point Method:	PMCC	**Upper Flammability Limit (UFL):**	7.5
Lower Flammability Limit (LFL):	0.6	**Burning Rate:**	ND
Auto Ignition:	494°F (257°C)		

* * * Section 10 - Chemical Stability & Reactivity Information * * *

Chemical Stability

This is a stable material.

Hazardous Reaction Potential

Will not occur.

Conditions to Avoid

Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources.

Incompatible Products

Keep away from strong oxidizers; Fluorel ®

Hazardous Decomposition Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

* * * Section 11 - Toxicological Information * * *

Acute Toxicity

A: General Product Information

Harmful if swallowed.

B: Component Analysis - LD50/LC50

Fuel oil No. 2 (68476-30-2)

Oral LD50 Rat 12 g/kg; Dermal LD50 Rabbit 4720 µL/kg; Dermal LD50 Rabbit >2000 mg/kg; Inhalation LC50 Rat 4.6 mg/L 4 h

Naphthalene (91-20-3)

Inhalation LC50 Rat >340 mg/m3 1 h; Oral LD50 Rat 490 mg/kg; Dermal LD50 Rat >2500 mg/kg; Dermal LD50 Rabbit >20 g/kg

Product Mixture

Oral LD50 Rat 14.5 ml/kg; Dermal LD50 Rabbit >5 mL/kg; Guinea Pig Sensitization: negative; Primary dermal irritation: moderately irritating (Draize mean irritation score - 3.98 rabbits); Draize eye irritation: mildly irritating (Draize score, 48 hours, unwashed - 2.0 rabbits)

Potential Health Effects: Skin Corrosion Property/Stimulativeness

Practically non-toxic if absorbed following acute (single) exposure. May cause skin irritation with prolonged or repeated contact. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are repeatedly exposed.

Potential Health Effects: Eye Critical Damage/ Stimulativeness

Contact with eyes may cause mild irritation.

Potential Health Effects: Ingestion

Ingestion may cause gastrointestinal disturbances, including irritation, nausea, vomiting and diarrhea, and central nervous system (brain) effects similar to alcohol intoxication. In severe cases, tremors, convulsions, loss of consciousness, coma, respiratory arrest, and death may occur.

Potential Health Effects: Inhalation

Excessive exposure may cause irritations to the nose, throat, lungs and respiratory tract. Central nervous system (brain) effects may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death.

WARNING: the burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.

Respiratory Organs Sensitization/Skin Sensitization

This product is not reported to have any skin sensitization effects.

Generative Cell Mutagenicity

This product is not reported to have any mutagenic effects. Material of similar composition has been positive in a mutagenicity study.

Carcinogenicity

A: General Product Information

Suspected of causing cancer.

Dermal carcinogenicity: positive - mice

Studies have shown that similar products produce skin tumors in laboratory animals following repeated applications without washing or removal. The significance of this finding to human exposure has not been determined. Other studies with active skin carcinogens have shown that washing the animal's skin with soap and water between applications reduced tumor formation.

This product is similar to Diesel Fuel. IARC classifies whole diesel fuel exhaust particulates as probably carcinogenic to humans (Group 2A) and NIOSH regards it as a potential cause of occupational lung cancer based on animal studies and limited evidence in humans.

B: Component Carcinogenicity

Fuel oil No. 2 (68476-30-2)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans (listed under Diesel fuel)

Naphthalene (91-20-3)

ACGIH: A4 - Not Classifiable as a Human Carcinogen
NTP: Reasonably Anticipated To Be A Human Carcinogen (Possible Select Carcinogen)
IARC: Monograph 82 [2002] (Group 2B (possibly carcinogenic to humans))

Reproductive Toxicity

This product is not reported to have any reproductive toxicity effects.

Specified Target Organ General Toxicity: Single Exposure

This product is not reported to have any specific target organ general toxicity single exposure effects.

Specified Target Organ General Toxicity: Repeated Exposure

This product is not reported to have any specific target organ general toxicity repeat exposure effects.

Aspiration Respiratory Organs Hazard

The major health threat of ingestion occurs from the danger of aspiration (breathing) of liquid drops into the lungs, particularly from vomiting. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure and even death.

* * * Section 12 - Ecological Information * * *

Ecotoxicity

A: General Product Information

Very toxic to aquatic life with long lasting effects. Keep out of sewers, drainage areas and waterways. Report spills and releases, as applicable, under Federal and State regulations.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Fuel oil No. 2 (68476-30-2)

Test & Species		Conditions
96 Hr LC50 Pimephales promelas	35 mg/L [flow-through]	

Naphthalene (91-20-3)

Test & Species		Conditions
96 Hr LC50 Pimephales promelas	5.74-6.44 mg/L [flow-through]	
96 Hr LC50 Oncorhynchus mykiss	1.6 mg/L [flow-through]	

96 Hr LC50 Oncorhynchus mykiss	0.91-2.82 mg/L [static]
96 Hr LC50 Pimephales promelas	1.99 mg/L [static]
96 Hr LC50 Lepomis macrochirus	31.0265 mg/L [static]
72 Hr EC50 Skeletonema costatum	0.4 mg/L
48 Hr LC50 Daphnia magna	2.16 mg/L
48 Hr EC50 Daphnia magna	1.96 mg/L [Flow through]
48 Hr EC50 Daphnia magna	1.09 - 3.4 mg/L [Static]

Persistence/Degradability
No information available.

Bioaccumulation
No information available.

Mobility in Soil
No information available.

* * * Section 13 - Disposal Considerations * * *

Waste Disposal Instructions
See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

Disposal of Contaminated Containers or Packaging
Dispose of contents/container in accordance with local/regional/national/international regulations.

* * * Section 14 - Transportation Information * * *

IATA Information
Shipping Name: Heating oil, light
UN #: 1202 **Hazard Class:** 3 **Packing Group:** III

ICAO Information
Shipping Name: Heating oil, light
UN #: 1202 **Hazard Class:** 3 **Packing Group:** III

IMDG Information
Shipping Name: Heating oil, light
UN #: 1202 **Hazard Class:** 3 **Packing Group:** III

* * * Section 15 - Regulatory Information * * *

Regulatory Information

Component Analysis – Inventory

Component/CAS	EC #	EEC	CAN	TSCA
Fuel oil No. 2 68476-30-2	270-671-4	EINECS	DSL	Yes
Naphthalene 91-20-3	202-049-5	EINECS	DSL	Yes

* * * Section 16 - Other Information * * *

Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists; ADG = Australian Code for the Transport of Dangerous Goods by Road and Rail; ADR/RID = European Agreement of Dangerous Goods by Road/Rail; AS = Standards Australia; DFG = Deutsche Forschungsgemeinschaft; DOT = Department of Transportation; DSL = Domestic Substances List; EEC = European Economic Community; EINECS = European Inventory of Existing Commercial Chemical Substances; ELINCS = European List of Notified Chemical Substances; EU = European Union; HMIS = Hazardous Materials Identification System; IARC = International Agency for Research on Cancer; IMO = International Maritime Organization; IATA = International Air Transport Association; MAK = Maximum Concentration Value in the Workplace; NDSL = Non-Domestic Substances List; NFPA = National Fire Protection Association; NOHSC = National Occupational Health & Safety Commission; NTP = National Toxicology Program; STEL = Short-term Exposure Limit; TDG = Transportation of Dangerous Goods; TLV = Threshold Limit Value; TSCA = Toxic Substances Control Act; TWA = Time Weighted Average

Literature References

None

Other Information

Information presented herein has been compiled from sources considered to be dependable, and is accurate and reliable to the best of our knowledge and belief, but is not guaranteed to be so. Since conditions of use are beyond our control, we make no warranties, expressed or implied, except those that may be contained in our written contract of sale or acknowledgment.

Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material, even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in their use of the material.

End of Sheet

SAFETY DATA SHEET

GASOLINE, UNLEADED

SDS Number: 000003000644

Version: 4.0 Revision Date: 2023/04/19 Print Date: 2023/04/20

SECTION 1. IDENTIFICATION

Product name	:	GASOLINE, UNLEADED
Product code	:	11949, 11000, 10999, 10998, 10995, 10993, 10991, 10990, 10989, 10988, 10987, 10474, 10473, 10461, 10455, 10111, 10108, 10097, 10096, 10040, 10039
Other means of identification	:	TN-PE-TM15-X00-1499; LVB87, Regular, Unleaded Gasoline (US Grade), Mid-Grade, Plus, Super, WinterGas, Summer-Gas, Supreme, SuperClean, SuperClean WinterGas, Regu-larClean, PlusClean, Premium, marked or dyed gasoline, TQRUL, transitional quality regular unleaded, BOB, Blend-stock for Oxygenate Blending, Conventional Gasoline, RUL, MUL, SUL, PUL, Additive Denaturant

Manufacturer or supplier's details

Company name of supplier Address	:	Petro-Canada P.O. Box 2844, 150 - 6th Avenue South-West Calgary, Alberta T2P 3E3 Canada, Telephone: 1-866-786-2671
Emergency telephone	:	CHEMTREC: 1-800-424-9300 (toll free) or +1 703-527-3887; Suncor Energy: +1 403-296-3000

Recommended use of the chemical and restrictions on use

Recommended use	:	Unleaded gasoline is used in spark ignition engines including motor vehicles, inboard and outboard boat engines, small engines such as chain saws and lawn mowers, and recrea-tional vehicles.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the Hazardous Products Regulations

Flammable liquids	:	Category 1
Skin irritation	:	Category 2
Germ cell mutagenicity	:	Category 1B
Carcinogenicity	:	Category 1A
Reproductive toxicity	:	Category 2

Specific target organ toxicity - single exposure	:	Category 3 (Central nervous system)
Specific target organ toxicity - repeated exposure	:	Category 1
Aspiration hazard	:	Category 1

GHS label elements

Hazard pictograms :

Signal Word : Danger

Hazard Statements :

H224 Extremely flammable liquid and vapor.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H336 May cause drowsiness or dizziness.
H340 May cause genetic defects.
H350 May cause cancer.
H361 Suspected of damaging fertility or the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.

Precautionary Statements :

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use non-sparking tools.
P243 Take action to prevent static discharges.
P260 Do not breathe mist or vapors.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately

all contaminated clothing. Rinse skin with water.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P331 Do NOT induce vomiting.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	Common Name/Synonym	CAS-No.	Concentration (% w/w)
Gasoline; Low boiling point naphtha - unspecified	Gasoline; Low boiling point naphtha - unspecified	86290-81-5	85 - 100
toluene	toluene	108-88-3	0 - 40
benzene	benzene	71-43-2	0.006 - 1.5
ethanol	ethanol	64-17-5	0 - 0.3
methanol	methanol	67-56-1	0 - 0.08

SECTION 4. FIRST AID MEASURES

If inhaled : Move to fresh air.
Artificial respiration and/or oxygen may be necessary.
Seek medical advice.

In case of skin contact : In case of contact, immediately flush skin with plenty of water

		for at least 15 minutes while removing contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Wash clothing before reuse. Seek medical advice.
In case of eye contact	:	Remove contact lenses. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.
If swallowed	:	Rinse mouth with water. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Seek medical advice.
Most important symptoms and effects, both acute and delayed	:	Respiratory, skin and eye irritation; nausea; cancer. Inhalation may cause central nervous system effects. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Chronic exposure to benzene may result in increased risk of leukemia and other blood disorders.
Indication of immediate medical attention and special treatment needed, if necessary	:	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Dry chemical Carbon dioxide (CO2) Water fog. Foam
Unsuitable extinguishing media	:	Do NOT use water jet.
Specific hazards during fire fighting	:	Cool closed containers exposed to fire with water spray.
Hazardous combustion products	:	Carbon oxides (CO, CO2), nitrogen oxides (NOx), polynuclear aromatic hydrocarbons, phenols, aldehydes, ketones, smoke and irritating vapours as products of incomplete combustion.
Further information	:	Prevent fire extinguishing water from contaminating surface water or the ground water system.
Special protective equipment	:	Wear self-contained breathing apparatus and full protective

for fire-fighters	wear. Wear a positive-pressure supplied-air respirator with full face-piece.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	For personal protection see section 8. Ensure adequate ventilation. Evacuate personnel to safe areas. Material can create slippery conditions. Mark the contaminated area with signs and prevent access to unauthorized personnel. Only qualified personnel equipped with suitable protective equipment may intervene.
Environmental precautions	:	If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Prevent further leakage or spillage if safe to do so. Remove all sources of ignition. Soak up with inert absorbent material. Non-sparking tools should be used. Ensure adequate ventilation. Contact the proper local authorities.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling	:	For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Use only with adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Avoid contact with skin, eyes and clothing. Do not ingest. Keep away from heat and sources of ignition. Keep container closed when not in use.
Conditions for safe storage	:	Store in original container. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep in a dry, cool and well-ventilated place. Keep in properly labeled containers. To maintain product quality, do not store in heat or direct sunlight.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parame-ters / Permissible concentration	Basis
Gasoline; Low boiling point naphtha -unspecified	86290-81-5	TWA	300 ppm	CA AB OEL
		STEL	500 ppm	CA AB OEL
		TWA	300 ppm	CA BC OEL
		STEL	500 ppm	CA BC OEL
		TWA	300 ppm	ACGIH
		STEL	500 ppm	ACGIH
ethanol	64-17-5	STEL	1,000 ppm	CA BC OEL
		STEV	1,000 ppm	CA QC OEL
		TWA	300 ppm	CA AB OEL
		STEL	500 ppm	CA AB OEL
		STEL	1,000 ppm	ACGIH
methanol	67-56-1	TWA	200 ppm	CA BC OEL
		STEL	250 ppm	CA BC OEL
		TWA	200 ppm	CA AB OEL
		STEL	250 ppm	CA AB OEL
		TWA	200 ppm	ACGIH
		STEL	250 ppm	ACGIH
toluene	108-88-3	TWA	20 ppm	CA BC OEL
		TWAEV	20 ppm	CA QC OEL
		TWA	50 ppm	CA AB OEL
		TWA	20 ppm	ACGIH
benzene	71-43-2	TWA	0.5 ppm	CA BC OEL
		STEL	2.5 ppm	CA BC OEL
		TWA	0.5 ppm	CA ON OEL
		STEL	2.5 ppm	CA ON OEL
		TWAEV	0.5 ppm	CA QC OEL
		STEV	2.5 ppm	CA QC OEL
		TWA	300 ppm	CA AB OEL
		STEL	500 ppm	CA AB OEL
		TWA	0.5 ppm	ACGIH
		STEL	2.5 ppm	ACGIH

Engineering measures : Adequate ventilation to ensure that Occupational Exposure Limits are not exceeded.
Use only in well-ventilated areas.
Ensure that eyewash station and safety shower are proximal to the work-station location.

Personal protective equipment

Respiratory protection : Concentration in air determines protection needed.
Use respiratory protection unless adequate local exhaust

ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Filter type	:	A NIOSH-approved air-purifying respirator with an organic vapour cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.
Hand protection		
Material	:	polyvinyl alcohol (PVA), Viton(R). Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.
Remarks	:	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Eye protection	:	Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	:	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Protective measures	:	Wash contaminated clothing before re-use.
Hygiene measures	:	Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash face, hands and any exposed skin thoroughly after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Clear liquid.
Color	:	Clear to slightly yellow or green, undyed liquid. May be dyed red for taxation purposes.

Odor	:	Gasoline
Odor Threshold	:	No data available
pH	:	No data available
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	25 - 225 °C
Flash point	:	-50 - -38 °C Method: Tagliabue.
Evaporation rate	:	No data available
Flammability (solid, gas)	:	not applicable
Self-ignition	:	257 °C
Upper explosion limit / Upper flammability limit	:	7.6 %(V)
Lower explosion limit / Lower flammability limit	:	1.3 %(V)
Vapor pressure	:	< 802.5 mmHg (20 °C)
Relative vapor density	:	3
Relative density	:	0.685 - 0.8
Density	:	No data available
Solubility(ies)		
Water solubility	:	insoluble
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, kinematic	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Hazardous polymerization does not occur.
Conditions to avoid	:	Extremes of temperature and direct sunlight.
Incompatible materials	:	Reactive with oxidising agents, acids and interhalogens.
Hazardous decomposition products	:	May release COx, NOx, phenols, polycyclic aromatic hydrocarbons, aldehydes, ketones, smoke and irritating vapours when heated to decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact
Ingestion
Inhalation
Skin contact

Acute toxicity

Product:

Acute oral toxicity	:	Acute toxicity estimate: > 2,000 mg/kg Method: Calculation method Remarks: Based on available data, the classification criteria are not met.
Acute inhalation toxicity	:	Acute toxicity estimate: > 20 mg/L Exposure time: 4 h Test atmosphere: vapor Method: Calculation method Remarks: Based on available data, the classification criteria are not met.
Acute dermal toxicity	:	Acute toxicity estimate: > 2,000 mg/kg Method: Calculation method Remarks: Based on available data, the classification criteria are not met.

Components:

Gasoline; Low boiling point naphtha -unspecified:

Acute oral toxicity	:	LD50 (Rat): 13,600 mg/kg
Acute dermal toxicity	:	LD50 (Rabbit): > 3,750 mg/kg

toluene:

Acute oral toxicity	:	LD50 (Rat): 5,580 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): > 20 mg/l Exposure time: 4 h Test atmosphere: vapor
Acute dermal toxicity	:	LD50 (Rabbit): 12,125 mg/kg

benzene:

Acute oral toxicity	:	LD50 (Rat): 2,990 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): 13700 ppm Exposure time: 4 h Test atmosphere: vapor
Acute dermal toxicity	:	LD50 (Rabbit): > 8,240 mg/kg

ethanol:

Acute oral toxicity	:	LD50 (Rat): 7,060 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): > 32380 ppm Exposure time: 4 h Test atmosphere: vapor

methanol:

Acute oral toxicity	:	LD50 (Rat): 5,600 mg/kg
Acute dermal toxicity	:	LD50 (Rabbit): 15,800 mg/kg

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Based on available data, the classification criteria are not met.

Respiratory or skin sensitization

Skin sensitization

Based on available data, the classification criteria are not met.

Respiratory sensitization

Based on available data, the classification criteria are not met.

Germ cell mutagenicity

May cause genetic defects.

Carcinogenicity

May cause cancer.

Reproductive toxicity

Suspected of damaging fertility or the unborn child.

STOT-single exposure

May cause drowsiness or dizziness.

Product:

Target Organs : Central nervous system

STOT-repeated exposure

Causes damage to organs through prolonged or repeated exposure.

Product:

Aspiration toxicity

May be fatal if swallowed and enters airways.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish	:	Remarks: No data available
Toxicity to daphnia and other aquatic invertebrates	:	Remarks: No data available
Toxicity to algae/aquatic plants	:	Remarks: No data available
Toxicity to microorganisms	:	Remarks: No data available

Persistence and degradability

Product:

Biodegradability : Remarks: No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	The product should not be allowed to enter drains, water courses or the soil. Offer surplus and non-recyclable solutions to a licensed disposal company. Waste must be classified and labeled prior to recycling or disposal. Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. Dispose of product residue in accordance with the instructions of the person responsible for waste disposal.
Contaminated packaging	:	Contact local or business unit authorities for guidance on disposal of product.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No.	:	UN 1203
Proper shipping name	:	Gasoline
Class	:	3
Packing group	:	II
Labels	:	Flammable Liquids
Packing instruction (cargo aircraft)	:	364

IMDG-Code

UN number	:	UN 1203
Proper shipping name	:	GASOLINE
Class	:	3
Packing group	:	II
Labels	:	3
EmS Code	:	F-E, S-E
Marine pollutant	:	yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

TDG

UN number	:	UN 1203

Proper shipping name	:	GASOLINE
Class	:	3
Packing group	:	II
Labels	:	3
ERG Code	:	128
Marine pollutant	:	yes

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

NPRI Components : toluene
benzene
ethanol
methanol
xylene
Naphtha (petroleum), hydrotreated heavy; Low boiling point ydrogen treated naphtha
Ethylbenzene
Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified
naphthalene
1,2,4-trimethylbenzene

The ingredients of this product are reported in the following inventories:

DSL : All components of this product are on the Canadian DSL

Canadian lists

No substances are subject to a Significant New Activity Notification.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
CA AB OEL	:	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
CA BC OEL	:	Canada. British Columbia OEL
CA ON OEL	:	Ontario Table of Occupational Exposure Limits made under the Occupational Health and Safety Act.
CA QC OEL	:	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
ACGIH / TWA	:	8-hour, time-weighted average

ACGIH / STEL	:	Short-term exposure limit
CA AB OEL / STEL	:	Short term exposure limit
CA AB OEL / TWA	:	Time weighted average
CA AB OEL / TWA	:	8-hour Occupational exposure limit
CA AB OEL / STEL	:	15-minute occupational exposure limit
CA BC OEL / TWA	:	8-hour time weighted average
CA BC OEL / STEL	:	short-term exposure limit
CA ON OEL / TWA	:	Time-Weighted Average Limit (TWA)
CA ON OEL / STEL	:	Short-Term Exposure Limit (STEL)
CA QC OEL / TWAEV	:	Time-weighted average exposure value
CA QC OEL / STEV	:	Short-term exposure value

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

Revision Date : 2023/04/19

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific

material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

CA / EN

FICHE DE DONNÉES DE SÉCURITÉ

PROPANE

000003000646

Version 4.0 Date de révision 2020/12/11 Date d'impression 2020/12/11

SECTION 1. IDENTIFICATION

Nom du produit	:	PROPANE
Synonymes	:	Propane HD-5, Propane commercial, gaz de pétrole liquéfié (GPL), C3H8, Propane de grade 1 approuvé par l'ONGC, Propane de grade 2 approuvé par l'ONGC, propane odorant, propane malodorant, propane pour les autombiles, ER62.
Code du produit	:	103176, 103174, 103172, 103153, 103151, 103150, 103149, 103159, 103156, 103147, 100589, 100139

Détails concernant le fabricant ou le fournisseur

Petro-Canada
C.P. Box 2844, 150 - 6th Avenue South-West
Calgary Alberta T2P 3E3
Canada

Numéro d'appel d'urgence		CHEMTREC: 1-800-424-9300 (sans frais) ou +1 703-527-3887; Suncor Energy: +1 403-296-3000

Utilisation recommandée du produit et restrictions d'utilisation

Utilisation recommandée	:	Le propane est utilisé comme gaz combustible, réfrigérant et gaz de laboratoire. En tant que matière première, il entre dans la composition de synthèses organiques. La qualité indique la teneur en propane. Le propane est fourni sous forme de liquide pressurisé dans des citernes.
Préparé par	:	Product Safety: +1 905-804-4752

SECTION 2. IDENTIFICATION DES DANGERS

Aperçu des urgences

Aspect	Gaz à température ambiante; liquide lorsque entreposé sous pression., gaz comprimé liquéfié
Couleur	incolore
Odeur	Propane est un gaz inodore. Le propane odorant peut contenir jusqu'à 30 g d'éthyl mercaptan par 1000 L de propane.

Classification SGH

Gaz inflammables	:	Catégorie 1
Gaz sous pression	:	Gaz liquéfié
Asphyxiant Simple	:	Catégorie 1

Éléments d'étiquetage SGH

Pictogrammes de danger :

Mention d'avertissement : Danger

Mentions de danger : Gaz extrêmement inflammable.
Contient un gaz sous pression; peut exploser sous l'effet de la chaleur.
Peut remplacer l'oxygène et causer une suffocation rapide.

Conseils de prudence : **Prévention:**
Tenir à l'écart de la chaleur, des surfaces chaudes, des étincelles, des flammes nues et de toute autre source d'inflammation. Ne pas fumer.
Intervention:
Fuite de gaz enflammé: Ne pas éteindre si la fuite ne peut pas être arrêtée sans danger.
En cas de fuite, éliminer toutes les sources d'ignition.
Stockage:
Protéger du rayonnement solaire. Stocker dans un endroit bien ventilé.

Effets potentiels sur la santé

Voies d'entrée principales : Contact avec les yeux
Inhalation
Contact avec la peau

Condition médicale aggravée : Aucun(e) à notre connaissance.

Autres dangers

Aucun(e) à notre connaissance.

IARC Aucun composant de ce produit présent à des concentrations plus grandes que ou égales à 0,1% n'a été identifié comme cancérigène probable, possible ou reconnu pour l'homme par IARC.

ACGIH Aucun composant de ce produit présent à des concentrations plus grandes que ou égales à 0,1% n'a été identifié comme cancérigène ni comme cancérigène possible par ACGIH.

SECTION 3. COMPOSITION/ INFORMATIONS SUR LES COMPOSANTS

Substance/mélange : Mélange

Composants dangereux

Nom Chimique	No.-CAS	Concentration
propane	74-98-6	72 - 100 %
propène	115-07-1	0 - 23.8 %

butane	106-97-8	0 - 4.7 %
éthane	74-84-0	0 - 4.6 %
isobutane	75-28-5	0 - 3.6 %
isopentane	78-78-4	0 - 1 %
pentane	109-66-0	0 - 0.9 %
but-1-ène	106-98-9	0 - 0.5 %
méthane	74-82-8	0 - 0.2 %

Toutes les concentrations ci-dessus sont en pourcentage par volume.

SECTION 4. PREMIERS SECOURS

En cas d'inhalation	:	Amener la victime à l'air libre. Respiration artificielle et/ou oxygène peuvent être nécessaires. Demander conseil à un médecin.
En cas de contact avec la peau	:	En cas de contact, rincer immédiatement avec beaucoup d'eau pendant au moins 15 minutes en retirant les vêtements et chaussures contaminées. Laver la peau à fond avec de l'eau et du savon ou utiliser un produit reconnu pour le nettoyage de la peau. Laver les vêtements contaminés avant de les réutiliser. Demander conseil à un médecin.
En cas de contact avec les yeux	:	Enlever les lentilles de contact. Rincer immédiatement et abondamment à l'eau, y compris sous les paupières, pendant au moins 15 minutes. Appeler un médecin.
En cas d'ingestion	:	Ne présente pas une voie d'exposition significative.
Principaux symptômes et effets, aigus et différés	:	L'inhalation peut affecter le système nerveux central. L'inhalation des vapeurs peut causer de la somnolence, des maux de tête, des étourdissements et de la confusion. Peut irriter le système respiratoire. Un contact avec le gaz en expansion rapide peut provoquer des brûlures ou des gelures. La surexposition peut entraîner une sensibilisation cardiaque. Des concentrations élevées peuvent déplacer l'oxygène et provoquer des vertiges ou la suffocation.
Avis aux médecins	:	Traitement symptomatique requis. Contactez le spécialiste en traitement de poison immédiatement si de grandes quantités ont été ingérées ou inhalées.

SECTION 5. MESURES DE LUTTE CONTRE L'INCENDIE

Moyens d'extinction appropriés	:	Utiliser des moyens d'extinction appropriés aux conditions locales et à l'environnement proche.
Moyens d'extinction inappropriés	:	Pas d'information disponible.
Dangers spécifiques pendant la lutte contre l'incendie	:	Si la fuite de produit ne peut pas être coupée sans risque, laisser le produit se consumer. Refroidir par pulvérisation d'eau les récipients fermés se trouvant à proximité de la source d'incendie.
Produits de combustion dangereux	:	Oxydes de carbone (CO, CO2), fumée et vapeurs irritantes comme produits d'une combustion incomplète.

Information supplémentaire	:	Empêcher les eaux d'extinction du feu de contaminer les eaux de surface ou le réseau d'alimentation souterrain.
Équipements de protection particuliers des pompiers	:	Porter un appareil respiratoire autonome et un équipement de protection complet. Utiliser un respirateur à air comprimé équipé d'un masque intégral.

SECTION 6. MESURES À PRENDRE EN CAS DE DISPERSION ACCIDENTELLE

Précautions individuelles, équipement de protection et procédures d'urgence	:	Équipement de protection individuel, voir section 8. Assurer une ventilation adéquate. Évacuer le personnel vers des endroits sûrs. Lorsque la ventilation du local est insuffisante porter un équipement de protection respiratoire. Enlever toute source d'ignition.
Précautions pour la protection de l'environnement	:	En cas de pollution de cours d'eau, lacs ou égouts, informer les autorités compétentes conformément aux dispositions locales.
Méthodes et matériel de confinement et de nettoyage	:	Éviter tout déversement ou fuite supplémentaire, si cela est possible en toute sécurité. Assurer une ventilation adéquate. Utiliser un équipement de ventilation antidéflagrant. Utiliser des outils ne provoquant pas d'étincelles. Contacter les autorités locales compétentes.

SECTION 7. MANIPULATION ET STOCKAGE

Conseils pour une manipulation sans danger	:	Équipement de protection individuel, voir section 8. Ne pas manger, fumer ou boire dans la zone de travail. En cas de ventilation insuffisante, porter un appareil respiratoire approprié. Éviter le contact avec la peau, les yeux et les vêtements. Éviter de respirer les gaz. Éviter les sources d'ignition. Fixer et mettre à la terre les réservoirs et l'équipement. Ces mesures peuvent toutefois être insuffisantes pour décharger l'électricité statique. N'utiliser qu'avec une ventilation adéquate. Tenir à l'écart de la chaleur et des sources d'ignition. Conserver le conteneur fermé lorsqu'il n'est pas utilisé. Ne pas utiliser des outils qui peuvent provoquer des étincelles. Ne pas pénétrer dans les zones où l'on utilise ou stocke [cette matière] sans une ventilation adéquate.
Conditions de stockage sures	:	Conserver dans le conteneur d'origine. Refermer soigneusement tout récipient entamé et le stocker verticalement afin d'éviter tout écoulement. Conserver dans un endroit sec, frais et bien ventilé. Conserver dans des conteneurs proprement étiquetés. Pour conserver la qualité du produit, ne pas stocker à la chaleur ni au soleil. Conserver à l'écart de toute flamme ou source d'étincelles - Ne pas fumer. Assurer que les contenants entreposés sont mis à la terre ou

mis à la masse.

SECTION 8. CONTRÔLES DE L'EXPOSITION/ PROTECTION INDIVIDUELLE

Composants avec valeurs limites d'exposition professionnelle

Composants	No.-CAS	Type de valeur (Type d'exposition)	Paramètres de contrôle / Concentration admissible	Base
propane	74-98-6	TWA	1,000 ppm	CA AB OEL
		VEMP	1,000 ppm 1,800 mg/m3	CA QC OEL
propène	115-07-1	TWA	500 ppm 860 mg/m3	CA AB OEL
		TWA	500 ppm	CA BC OEL
		TWA	500 ppm	ACGIH
butane	106-97-8	TWA	1,000 ppm	CA AB OEL
		VEMP	800 ppm 1,900 mg/m3	CA QC OEL
		TWA	1,000 ppm	CA BC OEL
		STEL	1,000 ppm	ACGIH
éthane	74-84-0	TWA	1,000 ppm	CA AB OEL
isobutane	75-28-5	TWA	1,000 ppm	CA AB OEL
		TWA	1,000 ppm	CA BC OEL
		STEL	1,000 ppm	ACGIH
isopentane	78-78-4	TWA	600 ppm 1,770 mg/m3	CA AB OEL
		TWA	1,000 ppm	CA BC OEL
		TWA	1,000 ppm	ACGIH
Éthanethiol	75-08-1	TWA	0.5 ppm 1.3 mg/m3	CA AB OEL
		TWA	0.5 ppm	CA BC OEL
		VEMP	0.5 ppm 1.3 mg/m3	CA QC OEL
		TWA	0.5 ppm	ACGIH

Mesures d'ordre technique : Assurer une ventilation adéquate pour faire en sorte que la limite d'exposition en milieu de travail ne soit pas dépassée.
Utiliser seulement dans des zones bien ventilées.
Utiliser un équipement de ventilation antidéflagrant.

Équipement de protection individuelle

Protection respiratoire : Le choix du respirateur doit être fondé en fonction des niveaux d'expositions prévus ou connus, du danger que représente le produit et des limites d'utilisation sécuritaire du respirateur retenu.

Filtre de type : Toujours porter un appareil de protection respiratoire autonome approuvé par le NIOSH pour la manipulation de cette substance.

Protection des mains

Matériel : Porter des gants doublés afin de prévenir les engelures. Informez-vous auprès de votre fournisseur d'équipement de protection individuelle pour connaître le temps de protection offert et le type de gants le mieux adapté à vos besoins. Il est

à noter que peu importe leur degré d'imperméabilité, tout type de matériel va éventuellement devenir perméable aux produits chimiques. Il est donc important de vérifier régulièrement l'état de ses gants de protection. Aux premiers signes de durcissement ou de fissure du matériel, ils devraient être changés.

Remarques	:	Lors de la manipulation de produits chimiques, porter en permanence des gants étanches et résistants aux produits chimiques conformes à une norme approuvée, si une évaluation du risque indique que cela est nécessaire.
Protection des yeux	:	Porter un écran-facial et des vêtements de protection en cas de problèmes lors de la mise en oeuvre.
Protection de la peau et du corps	:	Choisir une protection corporelle en relation avec le type, la concentration et les quantités de substances dangereuses, et les spécificités du poste de travail.
Mesures de protection	:	Laver les vêtements contaminés avant de les remettre. Porter un équipement de protection adéquat.
Mesures d'hygiène	:	Enlever et laver les gants, y compris l'intérieur, et les vêtements contaminés avant la réutilisation. Se laver le visage, les mains et toute partie de la peau exposée soigneusement après manipulation.

SECTION 9. PROPRIÉTÉS PHYSIQUES ET CHIMIQUES

Aspect	:	Gaz à température ambiante; liquide lorsque entreposé sous pression., gaz comprimé liquéfié
Couleur	:	incolore
Odeur	:	Propane est un gaz inodore. Le propane odorant peut contenir jusqu'à 30 g d'éthyl mercaptan par 1000 L de propane.
Seuil olfactif	:	Donnée non disponible
pH	:	Donnée non disponible
Point de fusion/point de congélation	:	Donnée non disponible
Point/intervalle d'ébullition	:	-42 °C (-44 °F)
température de décomposition		Donnée non disponible
Point d'éclair	:	-104 °C (-155 °F) Méthode: coupelle fermée
Température d'auto-inflammation	:	450 °C (842 °F)
Taux d'évaporation	:	Donnée non disponible
Inflammabilité	:	Extrêmement inflammable en présence de flammes nues, d'étincelles et de chaleur. Les vapeurs sont plus lourdes que l'air; elles peuvent se déplacer sur une distance considérable

vers les sources d'inflammation et provoquer un retour de flammes. Un dégagement rapide de vapeurs peut produire une décharge d'électricité statique entraînant l'inflammation. Peut s'accumuler dans des espaces clos.

Limite d'explosivité, supérieure	:	9.5 %Vol
Limite d'explosivité, inférieure	:	2.1 %Vol
Pression de vapeur	:	10,763 mm Hg (38 °C / 100 °F)
Densité de vapeur relative	:	1.56
Densité relative	:	Donnée non disponible
Solubilité(s)		
Hydrosolubilité	:	Donnée non disponible
Coefficient de partage: n-octanol/eau	:	Donnée non disponible
Viscosité		
Viscosité, cinématique	:	Donnée non disponible

SECTION 10. STABILITÉ ET RÉACTIVITÉ

Réactivité	:	Pas de réactions dangereuses connues dans les conditions normales d'utilisation.
Stabilité chimique	:	Stable dans des conditions normales.
Possibilité de réactions dangereuses	:	Une polymérisation dangereuse ne se produit pas.
Conditions à éviter	:	Chaleur, flammes et étincelles.
Matières incompatibles	:	Réactif avec agents oxydants et composés halogénés.
Produits de décomposition dangereux	:	Susceptible de dégager des COx, fumées et vapeurs irritantes, en présence de chaleur jusqu'à décomposition.

SECTION 11. INFORMATIONS TOXICOLOGIQUES

Informations sur les voies d'exposition probables
Contact avec les yeux
Inhalation
Contact avec la peau

Toxicité aiguë

Produit:

Toxicité aiguë par voie orale	:	Remarques: Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
Toxicité aiguë par inhalation	:	Remarques: Compte tenu des données disponibles, les critères de classification ne sont pas remplis.

Toxicité aiguë par voie cutanée	:	Remarques: Compte tenu des données disponibles, les critères de classification ne sont pas remplis.

Composants:

butane:

Toxicité aiguë par inhalation	:	CL50 (Rat): 658 mg/L Durée d'exposition: 4 Heure Atmosphère de test: gaz

isobutane:

Toxicité aiguë par inhalation	:	CL50 (Rat): 658,000 mg/m3 Durée d'exposition: 4 Heure Atmosphère de test: gaz

isopentane:

Toxicité aiguë par inhalation	:	CL50 (Rat): 280 mg/L Durée d'exposition: 4 Heure Atmosphère de test: vapeur

pentane:

Toxicité aiguë par voie orale	:	DL50 (Rat): > 2,000 mg/kg,
Toxicité aiguë par inhalation	:	CL50 (Rat): 364 mg/L Durée d'exposition: 4 Heure Atmosphère de test: vapeur

Corrosion cutanée/irritation cutanée

Produit:

Remarques: Compte tenu des données disponibles, les critères de classification ne sont pas remplis.

Lésions oculaires graves/irritation oculaire

Produit:

Remarques: Compte tenu des données disponibles, les critères de classification ne sont pas remplis.

Sensibilisation respiratoire ou cutanée

Produit:

Remarques: Compte tenu des données disponibles, les critères de classification ne sont pas remplis.

Mutagénicité sur les cellules germinales

Produit:

Mutagénicité sur les cellules germinales- Evaluation	Compte tenu des données disponibles, les critères de classification ne sont pas remplis.

Cancérogénicité

Produit:

Cancérogénicité - Evaluation	Compte tenu des données disponibles, les critères de classification ne sont pas remplis.

Toxicité pour la reproduction

Produit:

Toxicité pour la reproduction - Evaluation	Compte tenu des données disponibles, les critères de classification ne sont pas remplis.

Toxicité spécifique pour certains organes cibles - exposition unique

Produit:

Remarques: Compte tenu des données disponibles, les critères de classification ne sont pas remplis.

Toxicité spécifique pour certains organes cibles - exposition répétée

Produit:

Remarques: Compte tenu des données disponibles, les critères de classification ne sont pas remplis.

Donnée non disponible

SECTION 12. INFORMATIONS ÉCOLOGIQUES

Écotoxicité

Produit:

Toxicité pour les poissons	:	Remarques: Donnée non disponible
Toxicité pour la daphnie et les autres invertébrés aquatiques	:	Remarques: Donnée non disponible
Toxicité pour les algues	:	Remarques: Donnée non disponible
Toxicité pour les bactéries	:	Remarques: Donnée non disponible

Persistance et dégradabilité

Produit:

Biodégradabilité	:	Remarques: Donnée non disponible

Potentiel de bioaccumulation

Donnée non disponible

Mobilité dans le sol

Donnée non disponible

Autres effets néfastes

Donnée non disponible

SECTION 13. CONSIDÉRATIONS RELATIVES À L'ÉLIMINATION

Méthodes d'élimination

Déchets de résidus	:	Empêcher le produit de pénétrer dans les égouts, les cours d'eau ou le sol. Remettre les excédents et les solutions non recyclables à une entreprise d'élimination des déchets agréée. Les déchets doivent être classés et étiquetés avant leur recyclage ou leur élimination. Envoyer à une entreprise autorisée à gérer les déchets. Éliminer les déchets dangereux en conformité avec les réglementations locales et nationales. Éliminer les résidus du produit conformément aux instructions de la personne responsable de l'élimination des déchets.
Emballages contaminés	:	Communiquer avec les autorités locales ou l'unité commerciale pour connaître les instructions d'élimination du produit.

SECTION 14. INFORMATIONS RELATIVES AU TRANSPORT

Réglementations internationales

IATA-DGR

UN/ID No.	:	UN 1978
Nom d'expédition des Nations unies	:	Propane
Classe	:	2.1
Groupe d'emballage	:	Non réglementé
Etiquettes	:	Class 2 - Gases: Flammable (Division 2.1)
Instructions de conditionnement (avion cargo)	:	200

Code IMDG

Numéro ONU	:	UN 1978
Nom d'expédition des Nations unies	:	PROPANE
Classe	:	2.1
Groupe d'emballage	:	Non réglementé
Etiquettes	:	2.1
EmS Code	:	F-D, S-U
Polluant marin	:	non

Transport en vrac conformément à l'annexe II de la convention Marpol 73/78 et au recueil IBC

Réglementation nationale

TDG

Numéro ONU	:	UN 1978
Nom d'expédition des Nations unies	:	PROPANE
Classe	:	2.1
Groupe d'emballage	:	Non réglementé

Etiquettes	:	2.1
Code ERG	:	115
Polluant marin	:	non

SECTION 15. INFORMATIONS RELATIVES À LA RÉGLEMENTATION

Ce produit a été classifié conformément aux critères de risque du Règlement sur les produits dangereux (HPR) et la fiche de données sur la sécurité contient toute les informations exigées par le HPR

Les composants de ce produit figurent dans les inventaires suivants:

DSL	Listé ou en conformité avec l'inventaire

SECTION 16. AUTRES INFORMATIONS

Pour obtenir des exemplaires de FDS	:	Internet: www.petro-canada.ca/fichessignaletiques Canada-wide: telephone: 1-800-668-0220; fax: 1-800-837-1228 Pour de l'information sur la prévention reliée aux produits: 1 905-804-4752
Préparé par	:	Product Safety: +1 905-804-4752
Date de révision	:	2020/12/11

Les informations contenues dans la présente fiche de sécurité ont été établies sur la base de nos connaissances à la date de publication de ce document. Ces informations ne sont données qu'à titre indicatif en vue de permettre des opérations de manipulation, fabrication, stockage, transport, distribution, mise à disposition, utilisation et élimination dans des conditions satisfaisantes de sécurité, et ne sauraient donc être interprétées comme une garantie ou considérées comme des spécifications de qualité. Ces informations ne concernent en outre que le produit nommément désigné et, sauf indication contraire spécifique, peuvent ne pas être applicables en cas de mélange dudit produit avec d'autres substances ou utilisables pour tout procédé de fabrication.