Kugluktuk Water Licence Application

prepared for:

The Hamlet of Kugluktuk
Nunavut, Canada

prepared by:

FSC
Architects & Engineers
4910 53rd Street
Yellowknife, NWT
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FSC Project No: 2003-0600

Date: June 2003

EXECUTIVE SUMMARY

Enclosed is a water licence application for the Hamlet of Kugluktuk, Nunavut. The Hamlet is seeking a five-year licence, valid through 2008, to obtain water for municipal use from Coppermine River. The projected population for the population of Kugluktuk in the year 2008 is 1,395 persons. The Hamlet requests an annual water use rate of 61 million litres.

The water source for the Hamlet is Coppermine River. Located less than 1 kilometre west of the community centre, it has a flow rate of $262 m^3$/sec**.** The water is treated through a series of filters and is chlorinated by sodium hypochlorite. Water is distributed through out the community by delivery trucks. There are currently issues with high turbidity in the spring, however a newly installed water treatment plant should resolve these issues.

Sewage waste undergoes wetlands treatment and discharges into Coronation Gulf. The truck discharge is located 5 kilometres from the Hamlet. Some upgrades are scheduled by CG&T and will be made during the summer of 2003. INAC's 2002 inspection report states that work has recently been done on the site and Total Suspended Solids and Total Phosphorous levels are within *Municipal Wastewater Effluent Quality Guidelines.*

The fenced solid waste site, 4.5 kilometres west of the community, has been in operation since 1989. The site was designed to have a life span of 20 years. The waste is burned once a week and cover material is supplied from a local sand pit. There is segregation of waste oil, batteries, and bulky/metal waste.

Overall, this project will not substantially affect the quality, quantity, or flow of water through Inuit Owned Lands.

Section 1
Water Licence Application Form

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TEL: (867) 360-6338
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KATIMAYINGI

kNK5 wmoEp5 vtmpq
NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN

WATER LICENCE APPLICATION FORM

Application for: (check one)

___ New __ Amendment _√_Renewal ___Assignment

LICENCE NO:
(for NWB use only)

1. NAME AND MAILING ADDRESS OF APPLICANT/LICENSEE

Municipality of Kugluktuk
P.O. Box 271
Kugluktuk, NU
X0E 0E0

Phone: 867-982-4471
Fax: 867-982-3060
e-mail: _____

2. ADDRESS OF CORPORATE OFFICE IN CANADA (if applicable)

Phone: _____
Fax: _____
e-mail: _____

3. LOCATION OF UNDERTAKING (describe and attach a topographical map, indicating the main components of the Undertaking)

Latitude: 67° 50' N Longitude: 115° 15' W NTS Map No. 86-O-14 Scale 1:50,000

4. DESCRIPTION OF UNDERTAKING (attach plans and drawings)

5. TYPE OF UNDERTAKING (A supplementary questionnaire must be submitted with the application for undertakings listed in **"bold"**)

__ Industrial
__ **Mine Development**
__ **Advanced Exploration**
__ **Exploratory Drilling**
__ **Remote/Tourism Camps**
_√_ **Municipal**
__ Power
__ Other (describe): _____

6. WATER USE

_√_ To obtain water
__ To modify the bed or bank of a watercourse
__ To alter the flow of , or store, water
__ To cross a watercourse
__ To divert a watercourse
__ Flood control
__ Other (describe): _____

7. QUANTITY OF WATER INVOLVED (litres per second**,** litres per day or cubic metres per year, including both quantity to be used and quality to be returned to source)

142,949L/day, 52,176,212L/year in 2002
165,844L/day, 60,533,033L/year in 2008

The community is requesting an annual volume of 61,000,000 litres.

8. WASTE (for each type of waste describe: composition, quantity, methods of treatment and disposal, etc.)

_√_ Sewage
_√_ Solid Waste
_√_ Hazardous
_√_ Bulky Items/Scrap Metal
_√_ Waste oil
_√_ Greywater
_√_ Sludges
___ Other (describe):_____

9. PERSONS OR PROPERTIES AFFECTED BY THIS UNDERTAKING (give name, mailing address and location; attach if necessary)

Land Use Permit

DIAND __ Yes _√_ No If no, date expected _____

Regional Inuit Association __ Yes _√_ No If no, date expected _____

Commissioner __ Yes _√_ No If no, date expected _____

10. PREDICTED ENVIRONMENTAL IMPACTS OF UNDERTAKING AND PROPOSED MITIGATION MEASURES (direct, indirect, cumulative impacts, etc.)

NIRB Screening __ Yes _√_ No If no, date expected _____

11. INUIT WATER RIGHTS

Will the project or activity substantially affect the quality, quantity, or flow of water flowing through Inuit Owned Lands and the rights of Inuit under Article 20 of the Nunavut Land Claims Agreement?

No

11. (Continued)

If yes, has the applicant entered into an agreement with the Designated Inuit organization to pay compensation for any loss or damage that may be caused by the alteration. If no compensation agreement has been made, how will compensation be determined?

12. CONTRACTORS AND SUB-CONTRACTORS (name, address and functions)

N/A

13. STUDIES UNDERTAKEN TO DATE (list and attach copies of studies, reports, research, etc.)

Copper Mine River – Overview of the Hydrology and Water Quality, INAC 1998

14. THE FOLLOWING DOCUMENTS MUST BE INCLUDED WITH THE APPLICATION FOR THE REGULATORY PROCESS TO BEGIN

Supplementary Questionnaire (where applicable: see section 5) _√_ Yes __ No If no, date expected _____

Inuktitut/English Summary of Project _√_ Yes __ No If no, date expected _____

Application fee $30.00 (c/o of Receiver General for Canada) _√_ Yes __No If no, date expected _____

15. PROPOSED TIME SCHEDULE

__ Annual (or) _√_ Multi Year

Start Date: 2003 Completion Date 2008 .

Cal Shaw	Senior Administrative Officer		
Name (Print)	**Title (Print)**	**Signature**	**Date**

For Nunavut Water Board use only

APPLICATION FEE **Amount: $_____** **Receipt No.:**

WATER USE DEPOSIT **Amount: $_____** **Receipt No.:**

Section 2
Information for the Water Licence Application

Information for the Water Licence Application for the Hamlet of Kugluktuk

(1) Name and Mailing Address of Applicant/Licensee

Municipality of Kugluktuk
P.O. Box 271
Kugluktuk, NU
X0E 0E0

Phone: 1-867-982-4471
Fax: 1-867-982-3060

(3) Location of Undertaking

Kugluktuk is located immediately west of the mouth of the Coppermine River on Coronation Gulf at 67°50'N, 115°15'W, 595 air km north of Yellowknife.

The Hamlet extends inland to cover a rocky knoll. The townsite is underlain by Precambrian sedimentary and volcanic rock. Dolomite and shale, interspersed with volcanic rock, form steep outcrops in the vicinity of the settlement. The buildings along the shore are perched on consolidated beach deposits. Directly behind this ridge is a low, marshy area. There are numerous exposed bedrock surfaces in the community.

Surficial deposits in the area include talus and deltaic deposits. The angular talus, derived primarily from the mechanical breakdown of dolerite, ranges in size from silt to boulders but is commonly found as course sand or fine gravel.

Kugluktuk is underlain by permafrost. The thickness of the active layer ranges from less than 0.5 m to over 1 m in the sandy waterfront area. Permafrost features such as polygonal ground and thaw-related instability affect the raised delta surfaces and strongly influence their drainage characteristics.

Grasses, sedges, heather, mosses, and lichens grow in limited soils. Willow and alder thickets are common in wetland depressions.

Kugluktuk receives an average of 10.3 cm of rainfall and 100.7 cm of snowfall per year. Mean annual precipitation totals 20.2 cm. July mean high and low temperatures are 13.8° C and 5.6° C. The January mean high and low temperatures are -26.4° C and -33.8° C. The winds are generally south-west and annually average 16.6 km/h.

The Kugluktuk area is said to have been inhabited by both marine mammal-harvesting and caribou hunting Inuit. In 1771, Samuel Hearne of the Hudson Bay Company reached the mouth of the river he named Coppermine. His instructions were to report on copper deposits in the vicinity. The Inuit used copper for knives, arrowheads and other implements, becoming known as the Copper Eskimos. The Chipewyan Dene Chief Matonabbee led Hearne to a site 19 km upstream on the River to trade with the Inuit. To Hearne's dismay, the Dene slaughtered the Inuit for no apparent reason. Hearne named the site Bloody Fall. In 1912, Fathers Leroux and Rouviere visited the area and were

promptly murdered by the Inuit; Diamond Jenness, an ethnologist working for the Canadian Arctic Expedition, documented the events, culture and lifestyle of the Copper Eskimo beginning in 1913.

A trapper and trader, Charles Klengenberg set up a trading post at the site of the present community in 1916. The Inuit camped there on a semi-permanent basis to take advantage of the excellent fishing and sealing. In 1928, those few who had survived an epidemic at Bernard Harbour fled to Kugluktuk. The Anglican Mission was built that year, signalling the establishment of a permanent settlement. A hospital was established in 1929 followed by an RCMP detachment in 1932. A nursing station opened in 1948, followed by a school and Co-op store in 1959.

Beginning in the 1970's, oil and gas exploration provided a training and employment opportunity for the aboriginal population. Oil and gas exploration, arts and crafts sales, trapping, sealing, hunting and fishing are the main economic opportunities available. Tourist potential is great in the area. Char fishing, canoeing expeditions, historical sites, and native arts and crafts sales are all burgeoning ventures. Local business includes fur buying, general retail, secretarial services, outfitting, hotels, and photographic services.

Kugluktuk has great opportunity for development. Potential sources of economic growth include hotel expansion, a gravel crushing operation, a local construction and heavy equipment company, IZOK Mines development spin-offs, a proposed business services centre, and the creation of a local campground.

Kugluktuk, meaning 'place of rapids', gained Hamlet status on April 1, 1981. The Hamlet changed its name from Coppermine on January 1, 1996.

(4) Description of Undertaking

Water Supply and Treatment

Water is taken from the Coppermine River at a point approximately 900 m from the community's centre. The screened intake is located 15 m from the shore.

Currently Kugluktuk's water treatment system is comprised of two parallel trains of Harmsco HUR170 filters. Each train is made up of two filters in series followed by two filters in parallel. Paper cartridge filters can be installed in these trains ranging in size from 20 microns to 0.35 microns.

Generally, untreated water turbidity in the Coppermine River under ice and open water conditions ranges from 5 NTU to 20 NTU. During spring freshet, the turbidity has been observed to range as high as 170 NTU.

During test operations during open water in fall of 2002, reduced turbidity in the river allowed for a revision to the filtration train. Filters were operated during September 2002 under full-scale conditions using 5, 1, and 2x0.35 micron filters. Treated water quality was consistently about 1 NTU. Field tests for turbidity are limited to 1 significant figure, reporting either 0 or 1.

Confirmatory laboratory sample results can provide 2 significant figures but are not available at this time. (FSC 97-0170)

Water Storage and Distribution

The storage tanks, with a total capacity of 320,000 L, are located in the community. There are plans to replace these this year. Most homes are equipped with residential storage tanks and receive trucked delivery. Residential tanks are usually 1,135 L capacity.

Trucked water delivery service is provided by the Hamlet two to three times per week using four trucks: a 1992 model with an 11,500 L capacity; and three trucks with 4546 L capacities. Water deliveries are metered. Most residences have water pumped to fixtures via a manifold, pressurized by a household pump drawing water from the residence storage tank. All water deliveries are metered.

Water Quality:

INAC's 2002 Municipal Water Use Inspection Report indicates that the filtration system is not adequately reducing silt content of the water, and the saline detector was not functioning as programmed.

Sewage Collection and Disposal:

The old honeybag pit (17,000 m^2 total) is located at a site between the airstrip and Coronation Gulf, approximately 5 km from the community. Currently there is only one household using honeybags, and they are deposited next to the waste oil and battery disposal area. Sewage pumpout service is provided by the Hamlet. An 11,500 L truck and three 4546 L trucks are used.

Solid Waste Collection and Disposal:

Domestic garbage is placed in 205 L barrels in front of homes for collection. All solid wastes are collected by a two-person crew twice per week using a 1985 Ford model F-350 truck.

The current landfill site, 4.5 km west of the community, began operation in 1989. The 30,000 m^2 fenced site has been designed for a twenty year life-span.

A local sand pit is a source of cover material. Burning of wastes at the site is practiced once per week.

(5) Type of Undertaking

Municipal

(6) Water Use

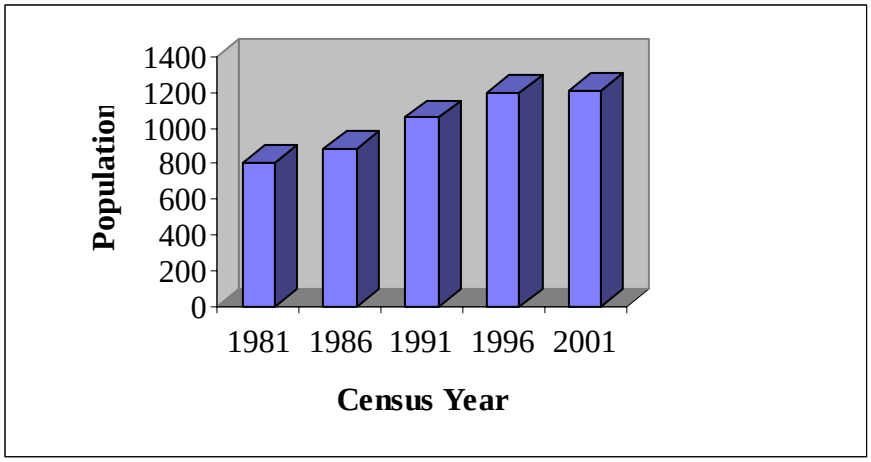
To obtain water

(7) Quantity of Water Involved:

Water Generation Projections:

The 2001 Census Report shows the increase in population of the Hamlet of Kugluktuk between the census years of 1986 to 2001. Figure 1 illustrates this population increase. A per capita growth rate of 2.03% was determined from data found in "Nunavut: Community Population Projections 2000-2020".

Figure 1 - Population Increase in the Hamlet of Kugluktuk



CG&T planning guidelines suggest that the increase in the projected per capita water use in a trucked service community should be modelled as follows:

(1) RWU x (1.0 + (0.0023 x Population)) **Population <2000**

The RWU or residential water use is estimated to be 90 litres per capita (Lpcd) for populations lower than 2000.

Ln is the natural logarithm.

The water use is projected as follows:

- The current amount of water use was estimated to be 53,474,692 L annually. This corresponds to a per capita water use of 116.1 Lpcd.
- In the year 2008, the per capita water use would be 118.9 Lpcd corresponding to an annual water use of 60,533,033 L.

Therefore, the community is requesting an annual volume of 61,000,000 litres.

Table 1 - Water Use Projection Hamlet of Kugluktuk

Planning Year	Calendar Year	Total Population	Projected Water Use	Daily Projected Volume	Annual Projected Volume
		#	Lpcd	Litres	Litres
	2001	1,212	115.1	139,487	50,912,806
0	2002	1,237	115.6	142,949	52,176,212
	2003	1,262	116.1	146,506	53,474,692
	2004	1,287	116.6	150,163	54,809,345
	2005	1,313	117.2	153,921	56,181,309
	2006	1,340	117.7	157,786	57,591,760
5	2007	1,367	118.3	161,759	59,041,914
	2008	1,395	118.9	165,844	60,533,033
	2009	1,423	119.5	170,045	62,066,421
	2010	1,452	120.1	174,366	63,643,427
	2011	1,482	120.7	178,809	65,265,450
10	2012	1,512	121.3	183,381	66,933,936

(8) Waste Generated

Sewage:

The volume for the year 2003 of sewage generated by the community of Kugluktuk is 53,474,692 litres corresponding to the annual water use. In 2008, the annual volume of sewage generated by the Hamlet of Kugluktuk will be 60,533,033 litres.

The sewage is discharged from the trucks into a bermed area, for solids retention. The fluid portion flows through a natural gully, undergoing wetlands treatment before entering Coronation Gulf, approximately 5 kms from the community.

Sewage Runoff Quality:

Issues with sewage effluent quality were found in the 2001 INAC report indicating that Faecal coliform, Ammonia and Phenol levels exceeded the *Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life*. It was also stated that Microtox samples showed notable levels of toxicity. According to the 2002 report, the lagoon had recently undergone some expansion and reinforcement of the berm. Effluent analysis revealed that Total Suspended Solids and Total Phosporous levels were within the *Municipal Wastewater Effluent Quality Guidelines*. Upgrades are being planned for summer 2003.

Sludges:

Sludge is generated through the sewage treatment process. If the sludge interferes with the process, they would have to be removed to a Nunavut Water Board approved facility. No plans have been made at this time.

Greywater:

Greywater is collected and treated with the liquid sewage.

Solid Waste Treatment:

The current landfill site, 4.5 km west of the community, began operation in 1989. The 30,000 m² fenced site had been designed for a twenty year life-span. A local sand pit is a source of cover material. Burning of wastes at the site is practiced once per week.

Solid Waste Volume Projections:

The types and quantities of materials in the Kugluktuk waste stream available for reuse, recycling, recover and composting programs was estimated by reviewing current information and by literature.

A recent solid waste composition study has not been conducted in Kugluktuk. The literature provides an insight. The Heinke and Wong study (1989) used by MACA in their planning studies to determine waste volumes suggests a certain volume and mix of MSW. A study by Quay and Heinke (1992) in Inuvik, Tsiigehtchic, and Fort McPherson suggests similar waste stream mix shown in the table that follows.

Table 2 - Estimated Solid Waste Composition

Food Wastes	20.3 %
Cardboard	9.8 %
Newsprint	2.4 %
Other Paper Products	14.8 %
Cans	4.4 %
Other Metal Products	6.2 %
Plastic, Rubber, Leather	14.0 %
Glass, Ceramics	5.7 %
Textiles	3.8 %
Wood	9.9 %
Diapers	3.8 %
Dirt	4.9 %
	100.0 %

NAPP Protocol

The National Packaging Protocol is an initiative by CCME in 1992 to respond to municipalities and the public over the proliferation of disposable consumer packaging. While per capita consumption of new packaging has decreased overall in the south where the data was generated, the implications for the North and, specifically, for Kugluktuk is not as clear.
Southern reductions were primarily a result of recycling, an opportunity not available in Kugluktuk. It is assumed that packaging for shipping foodstuff and consumer products has increased proportionately with population.

However, southern data for post-consumer packaging has shown an increase for various "sectors" of between 100 to 200 percent over a 5-year period (1992-1996). These sectors include: accommodation, food & beverage, amusement, and recreational services; retail; aluminium packaging; plastic; and paper sacks and bags. This data may have a direct implication in Kugluktuk for increased quantities of waste as the data may transfer directly to current disposal practices.

The classes, "Other paper products", "Cans", and "Plastic, Rubber, Leather" may represent the increasing sectors as per the NAPP data. These first two classes currently account for approximately 19.2% of the estimated waste stream in Kugluktuk. If it can be assumed equal contribution from each waste in the third stream, then plastics account for an additional 5%.
It appears then, increasing packaging impacts on approximately 24% of the waste stream. Assuming worst case, then, the 200% increase over 5 years is about 40% per year and causes an overall increase of approximately (40% of 24%) 10% per year. This value may over estimate the additional contribution and is unlikely to remain at this level during the entire planning horizon.

Regardless, it is prudent to assume some increase during the planning horizon not directly attributed to a population increase, assuming that recycling programs may not be cost-effective, or implemented in Kugluktuk.

Therefore, a 1% increase in the overall garbage generation rate has been incorporated in the volume estimations.

The following assumptions were made to prepare this table:

- Per capita volume described by Heinke and Wong (1990) has been increasing at a rate of 1 % per year
- The per capita population growth rate of the Hamlet of Kugluktuk is 2.03% per year.
- The waste density is 0.099 tonnes/m^3 (Bryant et al., 1996)

Table 3 - Solid Waste Projection estimates for the Community of Kugluktuk

Planning Year	Calendar Year	Total Population	Projected Daily Rate (m^3pcd)	Projected Daily Volume (m^3/day)	Projected Daily Weight (Tonnes)	Projected Annual Volume (m^3)	Projected Annual Weight (Tonnes)	Running Total (m^3)
	2001	1212	0.014	17.0	1.7	6,193	613	6,193
0	2002	1237	0.014	17.5	1.7	6,382	632	12,575
	2003	1262	0.014	18.0	1.8	6,577	651	19,152
	2004	1287	0.014	18.6	1.8	6,778	671	25,930
	2005	1313	0.015	19.1	1.9	6,984	691	32,914
	2006	1340	0.015	19.7	2.0	7,197	713	40,111
5	2007	1367	0.015	20.3	2.0	7,417	734	47,528
	2008	1395	0.015	20.9	2.1	7,643	757	55,171
	2009	1423	0.015	21.6	2.1	7,876	780	63,047
	2010	1452	0.015	22.2	2.2	8,116	804	71,163
	2011	1482	0.015	22.9	2.3	8,364	828	79,527
10	2012	1512	0.016	23.6	2.3	8,619	853	88,146

The amount of solid waste produced in 2003 for a population of 1,262 is 651 tonnes. In 2008 it is projected to be 757 tonnes with a population of 1,395.

Solid Waste Water Runoff Quality:

The 2001 Municipal Water Use Inspection Report from INAC indicated that there appeared to be significant run-off from the solid waste disposal site, flowing onto an adjacent marshy area. Samples taken from the pooled water at the toe of the site showed concentrations of iron and zinc that slightly exceeded the *Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life*, but microtox samples indicated that this would not have been caused by leachate. The 2002 Inspection did not report any problems with run-off.

Bulky Waste:

There is segregation of bulky/metal wastes at a site at. Items such as snowmobiles, bikes and whitte goods are left for reuse. After 2 years wastes get crushed.

Honey Bag Pit:

The old honeybag pit (17,000 m² total) is located at a site between the airstrip and Coronation Gulf, approximately 5 km from the community. Currently there is only one household using honeybags, and they are deposited next to the waste oil and battery disposal area.

Hazardous Waste:

Batteries are drained and stored in an old dump truck at the bulky metal waste site.

Waste Oil:

Waste oil is stored in barrels on pallets and strapped, in area next to the conatminated soil remediatioon site. The hamlet keeps inventory and checks the area daily for new deposits.

(11) Inuit Water Rights

Will the project or activity substantially affect the quality, quantity, or flow of water flowing through Inuit Owned Lands and the rights of Inuit under Article 20 of the Nunavut Land Claims Agreement? No

(12) Contractors and Sub-contractors:

None

(13) Studies Undertaken to Date:

Copper Mine River – Overview of the Hydrology and Water Quality, INAC 1998

(14) The following documents must be included with the application for the regulatory process to begin

Supplementary Questionnaire (where applicable: see section 5)	Yes
Inuktitut/English Summary of Project	Yes
Application fee of $30.00 (c/o Receiver General for Canada)	Yes

Section 3
Water Licence Application
Supplementary Questionnaire
For Municipalities

P.O. BOX 119
GJOA HAVEN, NT X0E 1J0
TEL: (867) 360-6338
FAX: (867) 360-6369

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NUNAVUT WATER BOARD
NUNAVUT
MALIRIYIN KATIMAYING

Water Licence Application
Supplementary Questionnaire
for Municipalities

I. GENERAL

1. Date: June 2003

2. Applicant: The Hamlet of Kugluktuk, Nunavut

   Municipality and Region: Kugluktuk, Kitimeot

   Contacts:

   Name of Contact: Cal Shaw
   Position: Senior Administrative Officer
   Telephone: 867-982-4471
   Fax: 867-982-3060

4. Community Status:

   __ Village
   __ Town
   __ City
   √ Hamlet
   __ Settlement Corporation

5. Indicate the status of the municipality's licence on the date of the application.

   __ New Application
   √ Renewal Water Licence # N7L4-1526 expiring June 30, 2003.

II. ATTACHMENTS

1. Attach current or up-to-date detailed map(s) showing the locations of the:

   a. Raw water intake
   b. Water storage and treatment facilities
   c. Fuel and chemical storage
   d. Sewage treatment facilities (lagoon, honey bag pit, wetland)
   e. Wastewater treatment area and discharge outlets
   f. Solid waste disposal areas
   g. Hazardous waste disposal area
   h. Transportation access routes
   i. Existing water bodies/courses and any changes to these water bodies/courses that have or may occur as a result of water use or waste disposal facilities, locations of environmental monitoring sites
   j. Outline drainage basin
   k. Traditional use areas outlined on site map and areas around the community used for recreation, camping, fishing, etc.

l. Abandoned and/or restored water treatment, sewage, and solid waste disposal facilities.

Are maps attached?

√ Yes ___ No

If no, please indicate when they will be available.

Indicate which organization has provided the various maps or diagrams.

III. WATER SUPPLY

Water Source

1. Type of source:

___ Lake
√ River
___ Well
___ Other

2. Name of water source and alternative, if any.

Primary Source: Coppermine River
Secondary Source: Not Applicable

3. Usual break-up & freeze-up period:

Break-up: June 18 (2003)
Freeze-up: September

Water Intake

1. Please provide short descriptions for the following:

a. Freshwater intake facility

Water is taken from the Coppermine River at a point approximately 900 m from the community's centre. The screened intake is located 15 m from the shore.

Operating capacity of pumps used: The river pumps pump at 375 lpm.

c. Intake screen size 75mm x 75mm x 19mm, wire cloth galvanized screening

Water Storage

1. Type of water storage facility. (Check where applicable)

√ Reservoir/Pond
√ Storage tank
___ None

Other

Description:

2. If "reservoir" checked:

Is the reservoir lined? Yes

What type of liner? FSC Textured HDPE

When was it installed? Summer 1999

Water Treatment

1. Indicate the quality of the water.

Summer:	√ good	___ fair	___ poor
Fall:	___ good	√ fair	___ poor
Winter:	√ good	___ fair	___ poor
Spring:	___ good	___ fair	√ poor

2. Describe.

During the river break up in the spring, the water is turbid and this affects the water quality. The water treatment plant should resolve this issue, however there are still some commissioning issues to be worked out.

In the fall, salt intrusions from Coronation Gulf can come upstream to the water intake. The purpose of the reservoir is to provide freshwater during these occurrences.

3. Type of water treatment.

√ Filtration and chlorination
___ Chlorination only
___ None
___ Other

Description:

Water is treated through a series of paper cartridge filters and chlorination.

Water Use And Distribution

1. Volume of water use:

Approximately 100,000 l per day.

General Condition of the water supply facilities

1. General condition of the:

Water supply facility

_√_ Satisfactory ___ Unsatisfactory

If unsatisfactory, explain.

b. Storage facility

___ Satisfactory _√_ Unsatisfactory

If unsatisfactory, explain.

The storage tanks are over 20 years old and can no longer be cleaned, they will be replaced this year.

c. Distribution system

_√_Satisfactory ___ Unsatisfactory

If unsatisfactory, explain.

Modifications

1. Are there any changes *planned* for the water supply system?

__√_No __Yes

If yes, please attach a copy of the plan, or describe changes. Provide information on the implementation schedule.

There will be re-alignment of the water transmission line from the pump house to

the water treatment plant. This will not affect the location of the intake or the rate of withdrawal or the volume.

2. Does the community believe changes needed to the water supply, storage or treatment facilities? Describe.

   Generally the community is happy with the changes made to date, however they will wait and see what happens with system.

Identification

1. Are there signs identifying drinking water sources presently used by the municipality?

   ___Yes _√_ No

   Community has been told not to park boats on the shore near the intake.

IV. SEWAGE DISPOSAL

1. What type(s) of sewage treatment does the community have?

   ___ Lagoon
   ___ Mechanical system
   _√_ Wetland
   ___ Honey bag
   ___ Combination/Other: describe

Lagoon *(if applicable)*

1. Have there been any operating problems with the lagoon?

   ___Yes ___ No

   If yes, describe

Mechanical System *(if applicable)*

1. Describe (type, specifications, operation and maintenance program for the mechanical wastewater treatment system).

   Not Applicable

2. Are sludges produced?

___ Yes ___ No

If yes, describe how the sludges are disposed of:

***Wetland** (if applicable)*

1. Describe the Wetland wastewater treatment system.

The sewage trucks discharge wastewater into the treatment area. In the fall of 2002, the Hamlet designed and built a small bermed area for solids retention at the beginning of the wetlands. The berm was made to capture some of the solids before treatment begins in the wetlands.

The wetlands have been used for 15 years and is a natural gully that discharges into Coronation Gulf.

Honey Bag Pit

1. Does the municipality use a honey bag pit?

_√_ Yes ___ No

If yes, describe the location, drainage and operation/maintenance of the site:

The pit is next to waste oil and battery disposal site. Currently there is only one household on honeybags and that house will soon be converted to a flush toilet.

Commercial, Industrial and/or Hazardous Wastes

1. Are there any sources of commercial or industrial *liquid* waste being discharged or deposited to the wastewater treatment system that may affect the quality of the effluent or leachate produced? *(The municipality should be aware that any commercial or industrial discharge has to be approved by the municipality)*

___ Yes _√_ No

If yes, indicate sources, types and quantities.

Sewage Discharge

1. Are fish, shellfish and other wildlife harvested in or near the discharge area?

___Yes √ No

General Condition of the sewage treatment facilities

1. General conditions

a. Sewage collection system

_√_ Satisfactory ___ Unsatisfactory

If unsatisfactory, explain.

b. Discharge control system

__ Satisfactory __ Unsatisfactory

If unsatisfactory, explain

Not applicable.

c. Dams, diversion dykes, berms

_√_ Satisfactory __ Unsatisfactory

If unsatisfactory, explain

In May 2003, John Morrison of DSD in Kugluktuk reported a breach of the sewage lagoon berm. He noticed liquid in the bermed area and then there was no liquid in the bermed area. He concluded that the berm must have breached and reported the incident as such. After conversations with FSC, CG&T and the Hamlet, he concluded that he did not understand how the system worked and the word "breach" was too strong of a word.

However, he still had concerns with the level of wetland treatment in the spring before the vegetation growing season.

Modifications

1. Are there any changes *planned* in the sewage treatment facilities?

_√_ Yes ___ No

If yes, please attach a copy of the plan, or describe changes. Provide information on the implementation schedule.

CG&T is preparing to have a planning study done. They should be putting out a Request for Proposals soon.

2. Does the municipality or residents believe changes are needed to the sewage treatment facilities? Describe:

Hamlet believes changes are needed and that the system should have better solids retention. Residents do not have any concerns at this time.

Abandonment and Restoration

1. List and describe abandoned or restored sewage treatment facilities. Refer to original attachment maps.

Before the community had indoor plumbing for black water, it was on honey bags. Honey bags were disposed at the abandoned solid waste site.

Identification

Are there signs identifying past and present sewage disposal sites?

_√_ Yes ___ No

There are signs identifying the present sewage disposal site, but not the abandoned solid waste site.

V. SOLID WASTE DISPOSAL

1. Briefly describe how solid wastes are collected and delivered to the disposal area.

The Hamlet collects MSW using a 5-yard stake truck.
Bulky wastes are collected and moved with a loader & flat deck.

2. Is the solid waste site fenced?

___ Yes _√_ No

The domestic waste site is fenced, the bulky and waste oil site are not.

3. Is the fence adequate?

_√_ Yes ___No

If no, describe:

Waste Reduction

1. Does the municipality burn garbage?

   _√_ Yes ___No

   If yes, describe how and when this is done.

   The Hamlet says that they burn paper when wind is blowing out of town. If they burn when the wind in blowing into town they receive complaints.

2. Has the municipality considered measures for waste reduction such as recycling or reuse?

   _√_ Yes ___No

   If yes, describe

   There is segregation of bulky waste, snowmobiles, bikes, white goods, metal etc. for reuse. Bulky wastes that have not been reused after 2 years get crushed and stored in a different section of the site.

Animal Carcasses Pit

1. Does the municipality have an area for the disposal of animal carcasses?

   _√_ Yes ___No

   If yes, describe the location, drainage and operation/maintenance of the site

   Animal carcasses are disposed in a separate section of the MSW site.

Waste Oil Pit

1. Describe the waste oil storage area.

   Oil is stored in barrels, on pallets and strapped. The Hamlet keeps an inventory of waste oil deposits and checks daily for new deposits.

Bulky Scrap Metal Waste Disposal Area

1. Does the municipality have a scrap metal or bulky waste disposal area?

   _√_ Yes ___ No

Commercial, Industrial and/or Hazardous Wastes Disposal Area

1. Are there any commercial or industrial waste being discharged or deposited in the solid waste disposal area? *(The municipality should be aware that any discharge of commercial or industrial waste has to be approved by the municipality)*

___ Yes _√_ No

If yes, please indicate sources, types and quantity.

Old trucks from contractors are stored in the bulky waste area.

2. Will the municipality use a hazardous waste storage area?

_√_ Yes ___ No

If yes, describe:

Batteries are drained and stored in an old dump truck bucket. There are no hazardous waste other than waste oil and batteries.

a. Location See map

b. Structure Pallets and barrels for liquid & dump truck for batteries

c. Operation and maintenance Checked daily by the Hamlet

General Condition of the Solid Waste Disposal Area

1. Comment on the general conditions of the:

a. Solid waste disposal area

_√_ Satisfactory __ Unsatisfactory

If unsatisfactory, explain.

Modifications

1. Are there any changes planned for the solid waste disposal area?

__ Yes _√__ No

If yes, attach a copy of the plan, or describe changes. Provide information on the implementation schedule.

2. Are changes needed to the solid waste disposal area? Describe.

The Hamlet believes that in the future they will need a bigger area for expansion.

Abandonment and Restoration

1. List and describe abandoned or restored solid waste facilities.
Indicate their location on a map.

There is an abandoned solid waste and honeybag site, located in the mapping. Before closing the site the bulky wastes were moved to the new site. The site was then covered.

Identification

1. Are there signs identifying past and present solid waste disposal sites?

_√_ Yes ___No

There are signs at the current site, but not at the abandoned site.

VI. INSPECTION AND MONITORING

1. When were municipal facilities inspected by:

_√_ Indian and Northern Affairs Inspector Date: August 20, 2002
_√_ Community Government and Transportation Date: June 17, 2003
___ Other: Date:_____

2. Is there a system in place for reporting spills?

√__ Yes ___ No

If yes, describe.

The community uses the RWED spill line.

3. Is there a contingency plan for clean up of spills?

___Yes √__ No

If yes, describe

The Hamlet does not have a formal contingency plan. If spill occurs the Hamlet is contacted and they clean it up immediately. Most spills are fuel or hydraulic lines

in people's homes

4. Have any spills occurred in the past five years?

√ Yes ___ No

If yes, describe and show on a map the locations of the spills. What action has been taken to clean the affected areas?

Mostly small pools of oil, cleaned up immediately. See attached spill report

Monitoring Program

1. Is water sampling and analysis done?

√ Yes ___No

If Yes, answer questions a through e

a. Briefly describe how samples are taken and sent to the laboratory.

The water treatment plant operator collects sample bottles from health centre. The samples are collected and then returned to the health centre for shipment to Yellowknife.

b. Briefly describe any monitoring done for wastewater effluent and leachate.

None

c. Who is responsible for water sampling?

Name: Peter Kakolak
Position: Hamlet Staff
Telephone: Hamlet Shop, (867) 982-4225
Fax:
Level of training:

d. Recognized laboratory performing analysis of samples.

Name: Stanton Territorial Hospital
Address: 550 Byrne Rd.
Yellowknife, NT

Telephone #: (867) 669-4162
Fax #: (867)

e. Are any changes planned in the water quality monitoring program?

___ Yes _√_No

If Yes, describe.

VII. PUBLIC CONCERNS

1. What concerns does the municipality or residents have regarding the municipal water supply or waste disposal facilities? List the concerns and describe what steps have been taken to address those concerns.

In the spring time the river water is turbid. DPW&S has built a new water treatment plant for the community this has improved the quality of water.

In the fall there are salt intrusions. There is a reservoir that the Hamlet can pump from during the salt intrusions.

VIII. PUBLIC HEALTH

Help may be obtained from the Regional Environmental Health Officer if you have difficulty with this section.

1. Date: June 2003
2. Municipality: Kugluktuk
3. Contact: Bob Phillips
   Telephone: (867) 982-4086
   Fax: (867) 983-4088

4. Have there been any problems or health/environmental concerns with drinking water?

√ Yes ___No

If yes, describe

Turbidity at spring breakup,
Occasional salinity intrusion depending on wind & tides

5. Have there been any problems or health/environmental concerns with sewage disposal/treatment?

√ Yes ___ No

If yes, describe

Lagoon may overflow in spring due to excessive snow melt runoff
Effluent stream intersects trail used by all terrain vehicles.

6. Have there been any problems or health/environmental concerns with solid waste disposal?

___ Yes √ No

If yes, describe

Monitoring Program

1. Does the Regional Health Board perform water quality sampling?

√ No ___ Yes

If Yes, answer questions (a) to (e)

H&SS monitors Hamlet of Kugluktuk as owner/operator is required to sample twice a month

a. Briefly describe the sampling methodology.

Analysis conducted at Stanton Regional Hospital (membrane filtration)
Total and faecal coliforms

b. Briefly describe any monitoring of wastewater effluent and leachate.

Undertaken by Water Resources Officer of Indian and Northern Affairs Canada

c. Who is responsible for sampling? Owner/operator

Name: Hamlet of Kugluktuk as per Nunavut Public Health Act
Position: Senior Administrative Officer
Telephone #: (867) 982-4471
Fax #: (867) 982-3060
Level of training: unknown

d. Recognized laboratory performing analysis of samples.

	Water	Effluent
Name:	Stanton Reg. Hospital	Taiga Environmental Lab
Address:	550 Byrne Rd.	
	Yellowknife, NT	Yellowknife, NT
Telephone #:	(867) 669-4162	(867) 669-2788
Fax #:		

e. Are any changes planned in the water quality monitoring program?

√ Yes ___ No

If yes, describe

During periods of turbidity, samples to be taken weekly.

IX. TECHNICAL INFORMATION

Assistance may be obtained from the Regional Community Government (CG&T) office if you have difficulty with this section.

1. Date:
2. Municipality: The Hamlet of Kugluktuk, Nunavut
3. Contact: Cal Shaw, SAO
   Telephone # 867-924-6220
   Fax # 867-924-6293
4. Population (according Hamlet Government): 1212
5. Estimated growth rate over next 5 years: 2.03%
6. Has any baseline data collection and evaluation been undertaken with respect to the physical, biological, and chemical characteristics of the main water bodies in the area?

   __Yes _√_No

   If yes, provide a summary of program details or site title, authors, cities, and dates:

   If no, are such studies being planned?

   __Yes _√_No (If yes, when and by whom):

7. Have Elders been consulted in the collection of baseline data on main water bodies in the area?

   __Yes _√_No

   If yes, specify

8. Has any baseline data collection and evaluation been undertaken with respect to the various biophysical components of the environment potentially affected by the

project?

__Yes _√_No

If yes, provide details below.

Prepared by:
Title:
Completion Date:

If no, are such studies being planned?

__Yes _√_No

If yes, specify:

Attachments

1. Attach detailed plan or drawing(s) of the present *solid waste disposal area*. Include the following information:

   a. Details of pond size and elevation:
   b. Details of all retaining structures:
   c. Details of the drainage basin, and existing and proposed drainage modifications:
   d. Details of all decant, siphon mechanisms etc., treatment facilities:
   e. Details regarding direction and path of wastewater flow from the area:
   f. Distance from watercourses and fish bearing waters:
   g. Location and construction of liners:
   h. Leachate and groundwater collection systems; and control structures:

2. Attach detailed plan or drawing(s) of the present *sewage treatment system*. The drawing(s) should include the following:

   a. Details of all retaining structures:
   b. Details of the drainage basin, and existing and proposed drainage modifications:
   c. Details regarding direction and path of wastewater flow from the area:
   d. Indications of the distance from watercourses and fish bearing waters:
   e. All sources of seepage presently encountered near these areas, including volumes (m^3/day) and directions
   f. The volume of seepage flow (m^3 / day):
   g. The direction of each flow:

3. Are drawings for the solid waste disposal area and sewage treatment system attached?

   __ Yes √ No

If yes, who has provided them?

If no, indicate when they will be available.

Hydrology

1. Effects on surface water flow:

Are any stream channels altered?

___ Yes _√_ No

Is the natural storage or water level of any lake or pond changed?

__ Yes _√_No

Are there changes in water flow downstream of the project?

_√_ Yes __No

There is increased flow from the wastewater discharge.

Is a storage reservoir created in a natural channel?

___ Yes _√_ No

If yes to any of the above, briefly describe the expected change in flow or storage:

2. Drainage Area:

What is the drainage area: The drainage area is approximately 350 ha

What is the average elevation of the drainage basin?

The elevation varies from 0-67 m.

Is the drainage basin outlined on an attached map?

√ Yes ___No

Describe the drainage basin characteristics, (vegetation, general soil type, lakes, swamps and permafrost areas, etc.)

The Hamlet extends inland to cover a rocky knoll. The townsite is underlain by Precambrian sedimentary and volcanic rock. Dolomite and shale, interspersed with volcanic rock, form steep outcrops in the vicinity of the settlement. The buildings along the shore are perched on consolidated beach deposits. Directly behind this ridge is a low, marshy area. There are numerous exposed bedrock surfaces in the community.

Surficial deposits in the area include talus and deltaic deposits. The angular talus, derived primarily from the mechanical breakdown of dolerite, ranges in size from silt to boulders but is commonly found as course sand or fine gravel.

Kugluktuk is underlain by permafrost. The thickness of the active layer ranges from less than 0.5 m to over 1 m in the sandy waterfront area. Permafrost features such as polygonal ground and thaw-related instability affect the raised delta surfaces and strongly influence their drainage characteristics.

Grasses, sedges, heather, mosses, and lichens grow in limited soils. Willow and alder thickets are common in wetland depressions.

3. Channel characteristics:

   Is the course of any channel changed?

   ___ Yes _√___No

   If yes, describe measures to maintain streambed and bank stability.

4. Will the cross-section of any watercourse be changed?

   ___ Yes _√___ No

   If yes, describe the change and its effect on the flow capacity of the channel.

Water Supply

1. What is the rate of withdrawal from the source?

   375 lpm maximum

2. Is water drawn from the source
   ___ intermittently
   √___continuously

3. If it is drawn intermittently, during what month(s) is it drawn? Not Applicable

4. For what period is it drawn (days/weeks/months)? Not Applicable

5. What is the rate of flow of source (if river) or size (if lake)?

   262 m3/sec. Please see attached DIAND report on the Coppermine River.

6. At the intended rate of water usage, describe the effects on the river or lake from which water will be drawn.

   There will be no effect.

Water Storage

1. Is a dam or dyke being used to store or alter the flow of water?

   ___Yes _√_No

2. What are the dimensions of the dam or dyke?

3. Does the proposed dam create a reservoir in a natural watercourse?

   If yes, what is the storage capacity and surface area of the reservoir?

4. Will the dam or dyke affect fish migration or movement?

   If yes, describe all measures for compensation of fish habitat lost due to the dam or dyke, and mitigation for fish migration or movement.

Water Treatment

1. Indicate the capacity of the treatment facility:

   The water treatment plant can pump at approximately 500 lpm into the storage tanks. Each tank can be filled in approximately six hours.

2. What is the capacity of the water storage facility:

   2 storage tanks – 160,000L each. Total capacity of 320,000 L.

3. Describe the method of water treatment (i.e., backwash, flocculation, sedimentation, chemicals used), and provide the results of the most recent bacteriological and chemical analysis. Attach a diagram, if possible.

   Raw water enters a surge tank, and then is chlorinated before passing through one of two parallel filter trains. There are four paper cartridge filters in each train, two in series followed by two in parallel. The order of filter cartridge pore size in

each train can be chosen based on the raw water conditions. The finest filter pore size combination would be 5µm and 1µm in the two series cartridges and 0.35µm in the parallel cartridges. The water treatment plant also has 10µm and 20µm filters.

After filtration the water is pumped into the storage tanks. The water is then chlorinated before being pumped into the water trucks for distribution.

The larger pore size filters 20µm, 10µm and 5µm can be cleaned and reused, the 1µm and 0.35µm can only be cleaned once before they have to be discarded.

4. Are there any changes planned in the water treatment facilities?

___No __√_Yes

If yes, attach a copy of the plan or indicate changes and include an implementation schedule. Include excerpt from MACA Capital Plan if available.

The storage tanks are scheduled to be replaced this year.

There could potentially be some changes to the new water treatment plant. At this time it is has not been decided by the GN, what these changes (if any) will be or when they will occur.

Sewage Disposal

1. Indicate the level of sewage treatment:
_√_primary
___ secondary
___ tertiary

Pre-treatment (if applicable):

___ screening
___ maceration

Lagoons (if applicable):

___ anaerobic
___ aerobic
___ facultative

2. Indicate the capacity of the sewage treatment facility:

No lagoon, wetlands treatment.

3. Based on current population projections, the facility will meet the needs of the community until the year: Unknown, to be determined

4. Average depth of the wastewater lagoon Not applicable

5. What is the design freeboard: Not applicable

6. Indicate the retention time of the sewage while in the treatment facility
days

Unknown, to be determined

7. Indicate the estimated rate of discharge of wastewater:

20,000gallons/day ~ 75,686 L/day
8 truck loads/day, 2,500 gallons/truckload

8. Indicate the location of the discharge point:

See map

9. Is the discharge:

___ seasonal
_√_ continuous

If the discharge is seasonal, during what month(s) is it done?

What is the duration of the discharge (days/weeks/months)?

10. Are there any changes planned in the sewage disposal facilities?

___ No _√_ Yes

If yes, attach a copy of the plan or indicate changes and include an implementation schedule. Include excerpt from MACA Capital Plan if available.

CG&T has indicated that changes will occur, most likely a winter storage/treatment cell. CG&T is in the process of preparing an RFP for a planning study of this work.

Solid Waste Disposal

1. Indicate the capacity of the disposal area: 30,000 m^2 is the total area.

2. The average depth of the solid waste disposal site: $1^1/_2$ – 2 ft (0.45-0.6m)

3. The current facility will meet community needs until the year:

   The site was originally designed to function until 2009. From FSC observations, the site should last at least until then.

4. Do any natural watercourse enter the solid waste disposal area? What methods are used to decrease the amount of runoff water entering these areas?

   There is little runoff, as the site is at a lower elevation than the access road, see attached mapping. There was some standing water on MSW site during a site visit at the beginning of June 2003.

5. Indicate the volume of water that may enter these areas from any source(s) and attach all pertinent details of the diversions.

   Source:
   Volume:

6. Please describe any diversions of watercourses:

   No diversions

7. Are there any changes planned in the solid waste disposal facilities?

   _√_ No __Yes

   If yes, attach a copy of the plan or indicate changes and include an implementation schedule. Include excerpt from MACA Capital Plan if available.

   No upgrades are scheduled other than regular maintenance and segregation.

Other

1. Describe any additional details on the existing municipal facilities which should be considered by the Nunavut Water Board during its review.

None

Appendix 2
Hazardous Materials Spill Reports

Northwest Territories
Resources, Wildlife and Economic Development

Hazardous Materials Spill Database

Environmental Protection Service of RWED

600, 5102-50th Avenue; Yellowknife, NT X1A 3S8
Phone: (867) 873-7654 Fax: (867) 873-0221

Monday, June 16, 2003

Sorted by Spill Number for the year(s) : 1971-2004

Spill No	Spill Date	Region	Location	Description	Commodity	Quantity (L or kg)	Party	Source	Agency
1974009	29-Apr-74	KIT	Coppermine	Tank Area	Gasoline	4546	Co-op	ST>	-
1975045	14-Nov-75	KIT	Coppermine	MOT Barracks	Heating Oil	2727	MOT	ST<	INAC
1976029	04-Aug-76	KIT	Coppermine	Dock	Diesel P-40	909	NTCL	PL	-
1978010	25-May-78	KIT	Coppermine	-	Diesel Fuel	0	GNWT	PL	-
1979026	09-May-79	KIT	Coppermine	Powerhouse Area	Diesel - Marine	9090	NCPC	ST>	INAC
1982002	04-Jan-82	KIT	Coppermine	NCPC Plant	Diesel P-40	4455	NCPC	ST>	GNWT
1983020	09-Feb-83	KIT	Coppermine	Tank Farm	Fuel Oil	0	POL	ST>	GNWT
1984063	18-Jun-84	KIT	Coppermine	Tank Farm	Gasoline	410	GNWT	PL	GNWT
1985060	09-Jul-85	KIT	Coppermine	-	Diesel P-50	500	Coppermine Co-op	TRU	GNWT
1985078	09-Aug-85	KIT	Coppermine	Tank Farm	Jet B	100	Coppermine Co-op (POL)	TRU	GNWT
1985094	20-Sep-85	KIT	Coppermine	Tank Farm	Gasoline	3500	POL	ST>	GNWT
1986069	10-Jul-86	KIT	Coppermine	Tank Farm	Diesel P-50	1140	Co-op (POL)	PL	GNWT
1988059	27-May-88	KIT	Coppermine	Airport	JP4	4000	Kluguktuk Contractor	PL	GNWT
1988121	17-Aug-88	KIT	Coppermine	Shoreline	Diesel P-50	350	NWTPC	PL	GNWT
1989127	19-Aug-89	KIT	Coppermine	Deck & Water	Diesel Fuel	135	NTCL	MV	INAC
1990027	28-Feb-90	KIT	Coppermine	House #6	Diesel P-50	600	Unknown	PL	GNWT
1991130	22-Jul-91	KIT	Coppermine	Recreation Complex	Diesel P-50	227	Hamlet of Coppermine	ST<	GNWT
1991160	20-Aug-91	KIT	Coppermine	Re-supply Line	Diesel P-50	650	POL	PL	GNWT
1991163	20-Aug-91	KIT	Coppermine	Unit 131	Fuel Oil	1135	Housing Association	PL	GNWT
1991170		KIT	Coppermine	School Portable	Diesel P-50	227	DPW	PL	GNWT
1992007	30-Jan-92	KIT	Coppermine	Tank Farm	Gasoline	116	Coppermine Co-op (POL)	TRU	GNWT
1992118		KIT	Coppermine	NWTPC Warehouse	Fuel Oil P-50	45	NWTPC	ST<	GNWT
1992156	08-Jul-92	KIT	Coppermine	Public Library	Heating Oil	20	POL Contractor	ST<	GNWT
1992170	27-Jul-92	KIT	Coppermine	Airport	Aviation Fuel	0	POL	PL	GNWT
1992208	18-Sep-92	KIT	Coppermine	Tank Farm	Diesel P-50	11000	POL Contractor	ST<	GNWT
1992214	24-Sep-92	KIT	Coppermine	House #134	Heating Fuel P-50	5	Nules Construction Ltd	ST<	GNWT
1993004	14-Jan-93	KIT	Coppermine	Kegktuk School	Heating Oil	500	Kegtuk School	PL	GNWT
1993014	08-Feb-93	KIT	Coppermine	Tank Farm	Gasoline	500	POL	PL	GNWT
1993071	26-May-93	KIT	Coppermine	Anglican Mission	Diesel Fuel	1100	Arctic Coast Enterprises	PL	GNWT
1993121	23-Jul-93	KIT	Coppermine	Kuglugtuk School	Diesel P-50	100	DPW	ST<	GNWT
1994083	25-May-94	KIT	Coppermine	Coppermine Housing Unit, Rehab	Diesel Fuel	182	Mulco Ltd	ST>	GNWT

Sorted by Spill Number for the year(s) : 1971-2004

Spill No	Spill Date	Region	Location	Description	Commodity	Quantity (L or kg)	Party	Source	Agency
1994132	25-Jul-94	KIT	Coppermine	Tank Farm	Aviation Gasoline	100	Coppermine Co-op (POL)	ST>	GNWT
1995042	13-Apr-95	KIT	Coppermine	Tank Farm	Heating Fuel	300	Coppermine Co-op (POL)	TRU	GNWT
1995075	30-May-95	KIT	Coppermine	Tank Farm	Heating Fuel P-50	773	Coppermine Co-op (POL)	TRU	GNWT
1996050	09-Apr-96	KIT	Kugluktuk	Tank Farm	Gasoline	5000	Kugluktuk Co-op (POL)	ST>	GNWT
1996078	26-May-96	KIT	Kugluktuk	Hamlet Garage	Diesel P-50	4444	Hamlet of Kugluktuk	ST>	GNWT
1996173	03-Sep-96	KIT	Kugluktuk	POL Tank Farm	Diesel P-50	55	Co-op (POL)	ST>	GNWT
1997001	14-Jan-97	KIT	Kugluktuk	Kugluktuk Tank Farm	Gasoline	1574	Kugluktuk Co-op (POL)	TRU	GNWT
1997106	27-May-97	KIT	Kugluktuk	DPW Area	Heating Fuel P-50	200	Mulco Ltd	UK	GNWT
1997164	10-Jul-97	KIT	Kugluktuk	Airport Tarmac	Jet A-1	36	PPD (POL)	AIR	GNWT
1997208	31-Aug-97	KIT	Kugluktuk	Pipeline to Tank Farm	Aviation Fuel	0	DPW	ST>	GNWT
1997267	08-Dec-97	KIT	Kugluktuk	Tank Farm	Jet A	159	Co-op (POL)	ST>	GNWT
1997274	23-Dec-97	KIT	Kugluktuk	Gasoline Dispenser	Gasoline	180	Kugluktuk Co-op (POL)	ST>	GNWT
1998043	31-Mar-98	KIT	Kugluktuk	Co-op	Diesel P-50	0	Hans Peterson	UK	GNWT
1998140	21-Aug-98	KIT	Kugluktuk	GNWT Receiving Manifold Location	Gasoline	200	NTCL	MV	CCG
1998158	21-Sep-98	KIT	Kugluktuk	Trailer #3	Diesel P-50	60	Hamlet of Kugluktuk	ST<	GNWT
2000254	11-Sep-00	KIT	Kugluktuk	Town Dock	Jet B	14	NTCL MV Edgar Kotokak	DRUM	CCG
2000264	19-Sep-00	KIT	Kugluktuk	NWTPC Power Plant	Diesel P-50	150	NWTPC	OTH	GN
2001353	13-Nov-01	KIT	Kugluktuk	Airport Dispensing Area	Jet A	200	Kugluktuk Co-op (POL)	ST<	GN
2002293	24-Apr-02	KIT	Kugluktuk	Near Sewage Lagoon	Sewage	200	Hamlet of Kugluktuk	DRUM	GN
2002349	25-May-02	KIT	Kugluktuk	53 Kugluktuk Drive	Diesel P-50	100	Kugluktuk Co-op (POL)	ST<	GN
2003391		KIT	Kugluktuk	Sewage Lagoon	Sewage	181840	Hamlet of Kugluktuk	SL	INAC

Total Spills on this Report: 52

This report contains information regarding spills that were reported to the NWT 24-Hour Spill Line. The absence of information on any particular location in no way guarantees that contamination has not occurred at that location.

LEGEND

Region:
BAF - Baffin
DEH - Deh Cho
INU - Inuvik
KEE - Keewatin
KIT - Kitikmeot
NSL - North Slave
SAH - Sahtu
SSL - South Slave

Source:
AIR - Aircraft
DRUM - Drum or Barrel
MV - Marine Vessel
NS - Natural Seepage
OTH - Other Transportation
PL - Pipe or Line
RT - Rail Train
SL - Sewage Lagoon
ST< - Storage Tank <4000 litres
ST> - Storage Tank >4000 litres
TP - Tailings Pond
TRU - Truck
UK - Unknown
WELL - Wet Wells Flaring Boom

Agency:
CCG - Canadian Coast Guard
EP - Environment Canada
GN - Government of Nunavut
GNWT - Government of the Northwest Territories
ILA - Inuvialuit Land Administration
INAC-Indian and Northern Affairs Canada
NEB - National Energy Board