Indian and Northern Affairs Canada
www.inac.gc.ca

Affaires indiennes et du Nord Canada
www.ainc.gc.ca

INAC, Nunavut District Office
P.O. Box 100
Iqaluit, NU
X0A 0H0

Tel.: (867) 975-4298
Fax.:(867) 979-6445

Your file - Votre référence

Our file - Notre référence

December 4, 2002

NWB3-KIM0207

Judy Ortiz
Senior Administrative Officer
Hamlet of Kimmirut
P.O. Box 120
Kimmirut, NU X0A 0N0

RE: August 1, 2002 Municipal Water Use Inspection - Report

The Water Resources Officer (WRO), appreciates the assistance provided during the tour of the Hamlet's water use and waste disposal facilities. Enclosed for your records, is a copy of the Municipal Water Use Inspection Report performed on August 1, 2002. As of September 1, 2002 the Municipality of Kimmirut has held a Water Licence as required under *Nunavut Land Claims Agreement, Nunavut Waters and Nunavut Surface Rights Tribunal Act*. During the inspection the following observations were noted.

☐ **Water Supply:** It appears that the generator at the Fundo Lake Water Intake Facility, has not been functioning for some time (Photo 2). It was noted in the 2001 inspection, that the generator was also not functioning at the time of the annual inspection. There were several concerns noted at the present truck fill station. The intake for the trucks was 2 meters from shore, and it was observed that seepage with considerable silt load was draining very close to the water truck intake (Photo 1). There was no spill equipment located near the Water Intake Facility (Photo 2). The Water Resources Officer recommended that measures be undertaken to extend the water truck intake beyond the present 2 meters. Also, to reduce the amount of silt caused by seepage and truck filling operations that clean aggregate be placed by the truck fill station. Chlorination of potable water was achieved with chlorine bleach. Enclosed analysis of samples taken at Fundo Lake (KIM-1) indicate Turbidity (0.4 NTU vs 1 NTU), pH (7.86 vs 6.5-8.5) and Nitrate + Nitrite (<0.008 mg/L vs 3.2 mg/L), meets the *Guidelines for Canadian Drinking Water Quality.*

☐ **Sewage Disposal:** The Sewage Treatment Facility is located at the tipping face of the Solid Waste Disposal Facility (Photo 5). After flowing along the tipping

face of the dump the sewage flows down hill to the ocean (Photo 8 & 10). Some aeration and filtering out of large particles is accomplished before the effluent enters the ocean some 100 meters down stream. Attached analysis of sewage effluent (KIM-3) indicate pH (7.95 vs 6.5-9), Total Suspended Solids (8 mg/L vs 120 mg/L) and Biological Oxygen Demand (27 mg/L vs 100 mg/L) meet the *Municipal Wastewater Effluent Quality Guidelines*. However enclosed analysis indicate that Total Ammonia (21.3 mg/l vs 2.2 mg/L) and Nitrate + Nitrite (5.71 mg/L vs 3.2 mg/L) exceed the *Municipal Wastewater Effluent Quality Guidelines* Maximum Acceptable Concentrations.

☐ **Waste Disposal:** The Solid Waste Disposal Facility was partly segregated with separation of bulky metal waste and general refuse (Photo 3). There was some burning of refuge at the dump. Hazardous materials (waste batteries and oil) require proper storage areas (Photo 6). Considerable bulky metal and oil waste are located along side the road above the dump (Photo 11 & 12). These materials should be relocated and properly stored at the Solid Waste Disposal Facility.

☐ **Fuel Storage:** The Tank Farm berm appeared to be in good repair. There was no obvious signs of fuel or oil spillage within the bermed area. There was some water within the berm area but no concerns were raised. Of concern was the fact that several unmanned drainage hoses were left unattended at the Tank Farm, they should be removed.

☐ **Non-Compliance of Act or Licence**: The Water Resources Officer suggested that measures be undertaken to consolidate the waste oil in the Solid Waste Disposal Facility and waste storage area above the dump. In accordance with General Conditions, Part B of the *Water Licence*; Within 90 days of the first visit of the Inspector, all necessary signs including Surveillance Network Program (SNP) stations shall be posted in all official languages of Nunavut to the satisfaction of the Inspector.

If there are any concerns or questions in regards to this inspection, please contact me at (867) 975 4298 or bodykevichc@inac.gc.ca.

Sincerely,

Constantine Bodykevich
Water Resources Officer (WRO)
INAC, Nunavut District

cc. -Nunavut Water Board, Gjoa Haven (Jim Wall)
-CG&T, Iqaluit (Doug Sitland)
-Baffin Health & Social Services, Iqaluit (Shannon Mackie)
-EC Environmental Protection, Yellowknife (Anne Wilson)
- INAC Water Management, Iqaluit (Michael Roy)

Indian and Northern Affairs Canada
www.inac.gc.ca

Affaires indiennes et du Nord Canada
www.ainc.gc.ca

MUNICIPAL WATER USE INSPECTION REPORT

Date: August 1, 2002 **Licensee Rep. (Name/Title):** Judy Ortiz / SAO

Licensee: Hamlet of Kimmirut **Licence No.: NWB3-KIM0207** (NEW)

WATER SUPPLY

Source(s): Fundo Lake **Quantity used:** Not Metered

Owner:/Operator: Hamlet of Kimmirut

Indicate: **A** - Acceptable **U** - Unacceptable **NA** - Not Applicable **NI** - Not Inspected

Intake Facilities: U **Storage Structure:** NA **Treatment Systems:** U **Chemical Storage:** U

Flow Meas. Device: U **Conveyance Lines:** NA **Pumping Stations:** NA

Comments: At the time of inspection, the Water Intake Facility was not operational, due to the fact that the generator was not functioning. Chlorine bleach was being added to the Water Truck to disinfect the drinking water.

WASTE DISPOSAL

Sewage: **Sewage Treatment System** (Prim./Sec/Ter.): Primary; discharge in dump , overland to ocean.

Natural Water Body: **Continuous Discharge** (land or water): dump, land

Seasonal Discharge: continues **Wetlands Treatment:** very limited **Trench:**

Solid Waste: **Owner/Operator:** Hamlet of Kimmirut

Landfill: **Burn & Landfill:** X **Other:**

Indicate: **A** - Acceptable **U** - Unacceptable **NA** - Not Applicable **NI** - Not Inspected

Discharge Quality: Sampled **Decant Structure:** NA **Erosion:** NA

Discharge Meas. Device: NIL **Dyke Inspection:** NA **Seepages:** NA

Dams, Dykes: NA **Freeboard:** NA **Spills:** NIL

Construction: NA **O&M Plan:** U **A&R Plan:** U

Periods of Discharge: U **Effluent Discharge Rate:** Not determined

Comments: The Sewage Treatment Facility consists of discharging sewage at the Solid Waste Disposal Facility tipping face. The sewage then flows towards the ocean. The Solid Waste Disposal Facility has some of the bulky metal segregated from the general refuge. Some burning and covering of the refuge is practiced. However the discharging of sewage at the dump washes away some of the dump cover material.

FUEL STORAGE

Owner/Operator:

Indicate: **A** - Acceptable **U** - Unacceptable **NA** - Not Applicable **NI** - Not Inspected

Berms & Liners: A **Water within Berms:** A **Evidence of Leaks:** A

Drainage Pipes: U **Pump Station & Catchment Berm:** NA

Pipeline Condition:NI **Not Applicable:** **Condition of Tanks:** NI

SURVEILLANCE NETWORK PROGRAM (SNP)

Samples Collected **Hamlet:** NIL

INAC: potable water, sewage effluent-solid waste facility seepage

Signs Posted **SNP:** NIL **Warning:** None Observed

Records & Reporting: Not Applicable

Geotechnical Inspection: Not Applicable

Non-Compliance of Act or Licence: At the time of inspection the Water Licence for the Hamlet of Kimmirut had expired. The Water Resources Officer suggested to consolidate the waste oil from the road above the dump, and the waste oil from the Solid Waste Disposal Facility.

Constantine Bodykevich
Inspector's Name

Inspector's Signature

Global Positioning System Coordinates for Municipality of Kimmirut

Kimmirut 1 Kimmirut Fundo Lake/ drinking water	N62.50138 W69.53065
Kimmirut 2 Kimmirut Sewage Lagoon	N62.50535 W69.54249
Kimmirut 3 Kimmirut Sewage Sample	N62.50249 W69.52221
Kimmirut 4 Kimmirut Dump	N62.50283 W69.52302
Kimmirut 5 Kimmirut Waste Oil	N62.50358 W69.54079
Kimmirut 6 Kimmirut Tank Farm	N62.50306 W69.52270

Kimmirut Inspection pictures 2002

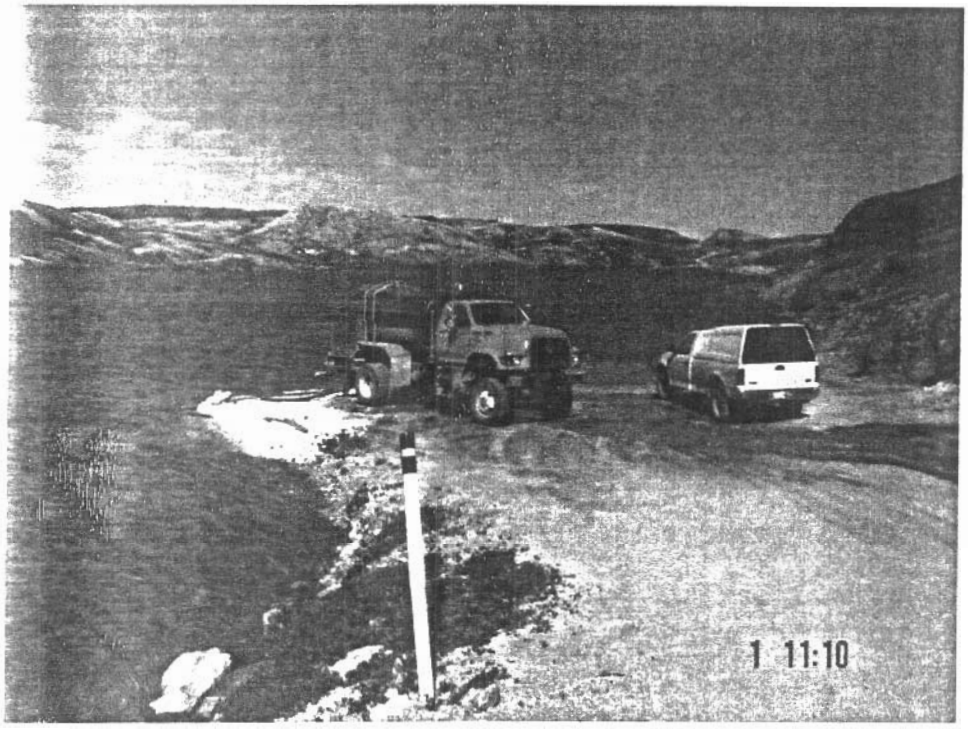


Photo # 1 Water truck shown at potable water supply filling up. Location of potable water supply sample. Chlorine bleach used to chlorinate potable water.

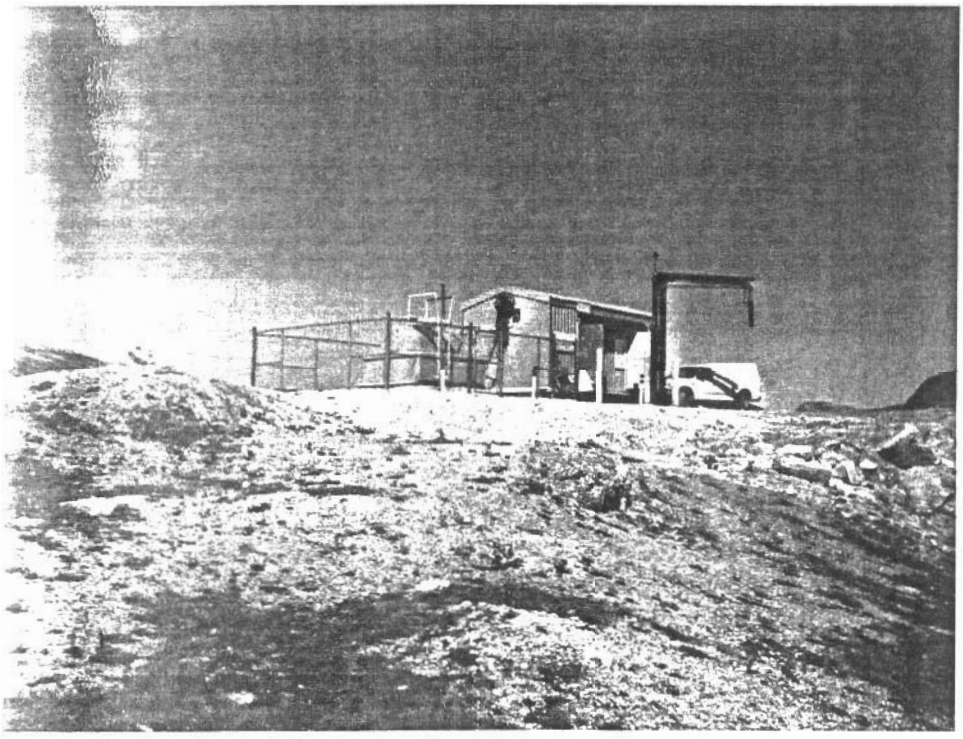


Photo # 2 Water Intake Facility. Generator at facility has been non-operational since 2001. Facility not in operation at the time of this inspection.

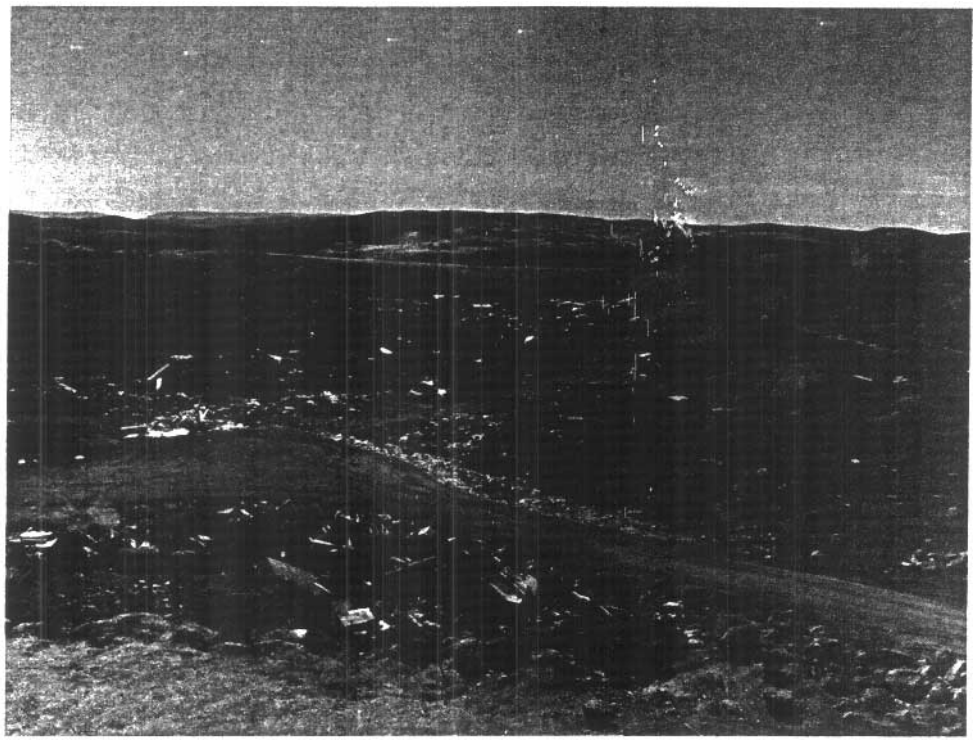


Photo # 3 Solid Waste Disposal Facility.

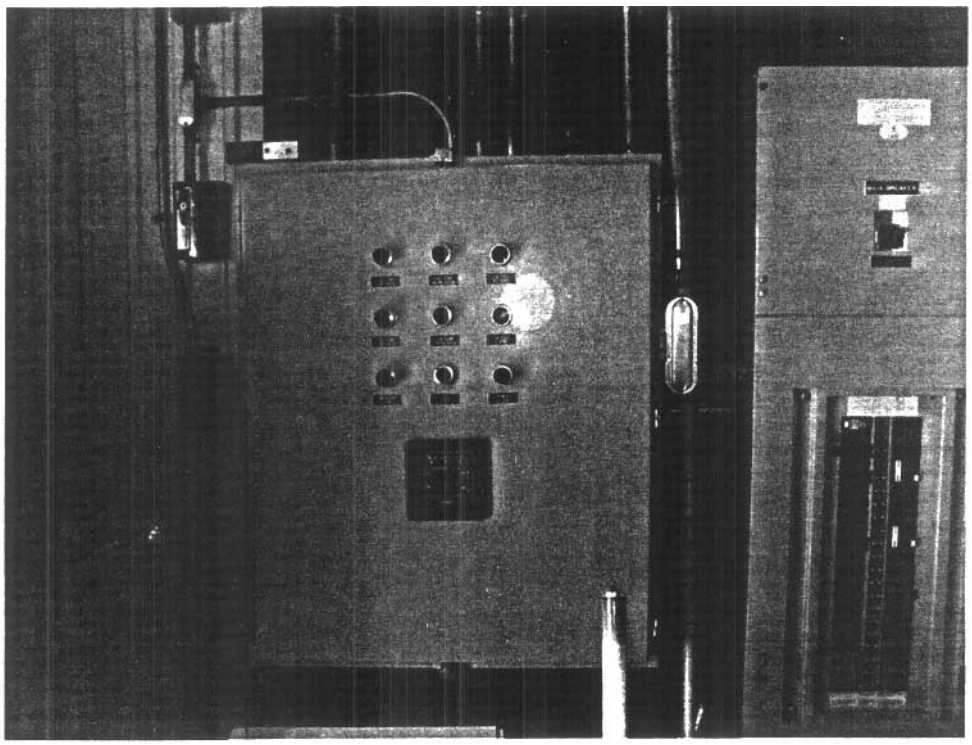


Photo # 4 Control panel in Water Intake Facility.

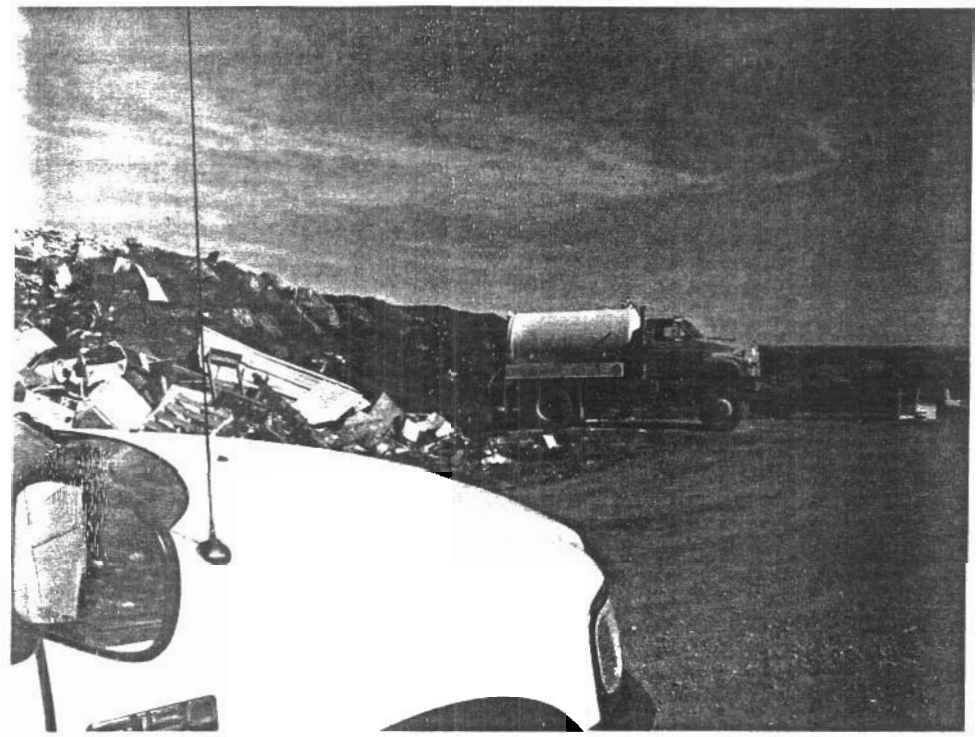


Photo # 5 Sewage truck discharge at tipping face of Solid Waste Disposal Facility.

Photo # 6 Waste oil and drum storage area at Solid Waste Disposal Facility. Note that there is oil staining in the area.

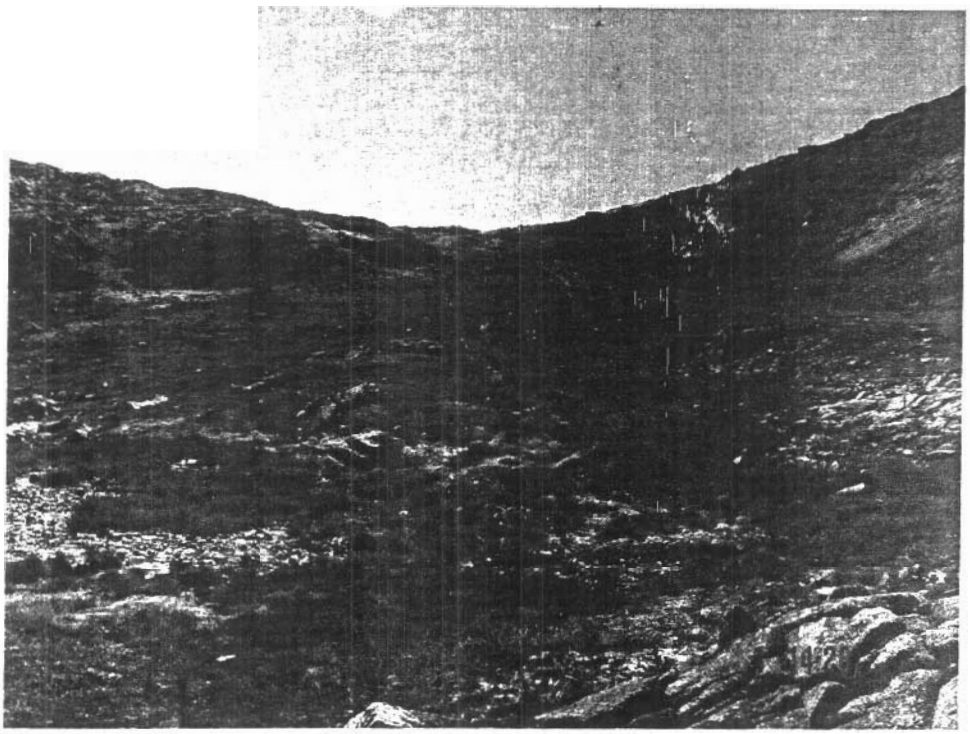


Photo # 7 Trail from sewage trucks shown at centre of photo. Solid waste associated with sewage discharges shown at left of photo.

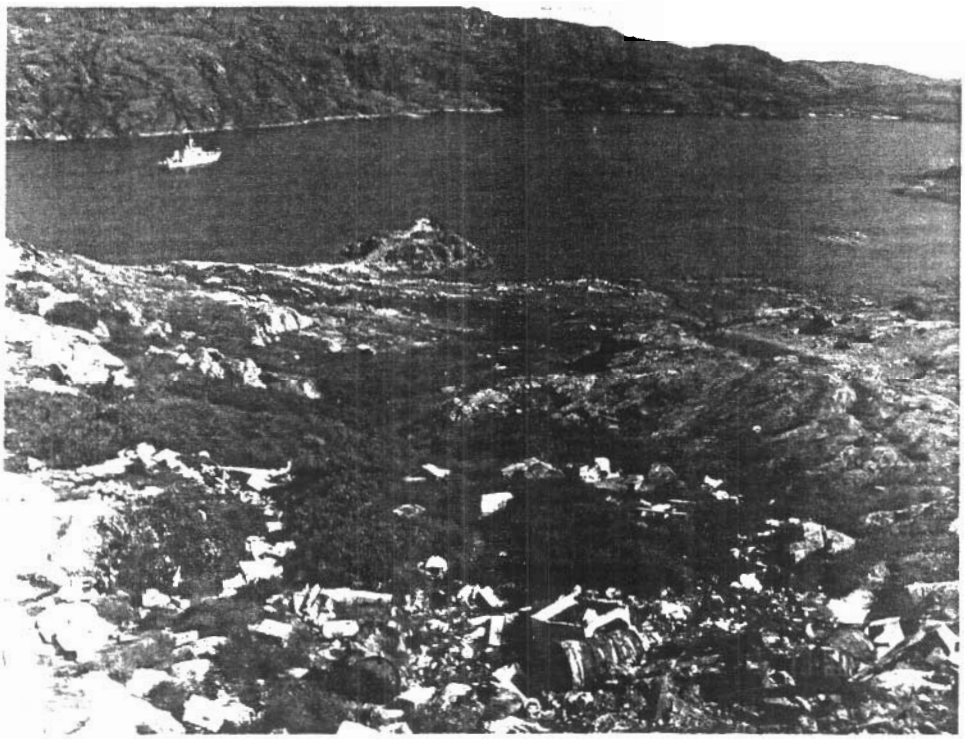


Photo # 8 Flow path of sewage effluent flows through solid waste disposal facility. Note at front of photo refuse that sewage stream has carried from the tipping face.

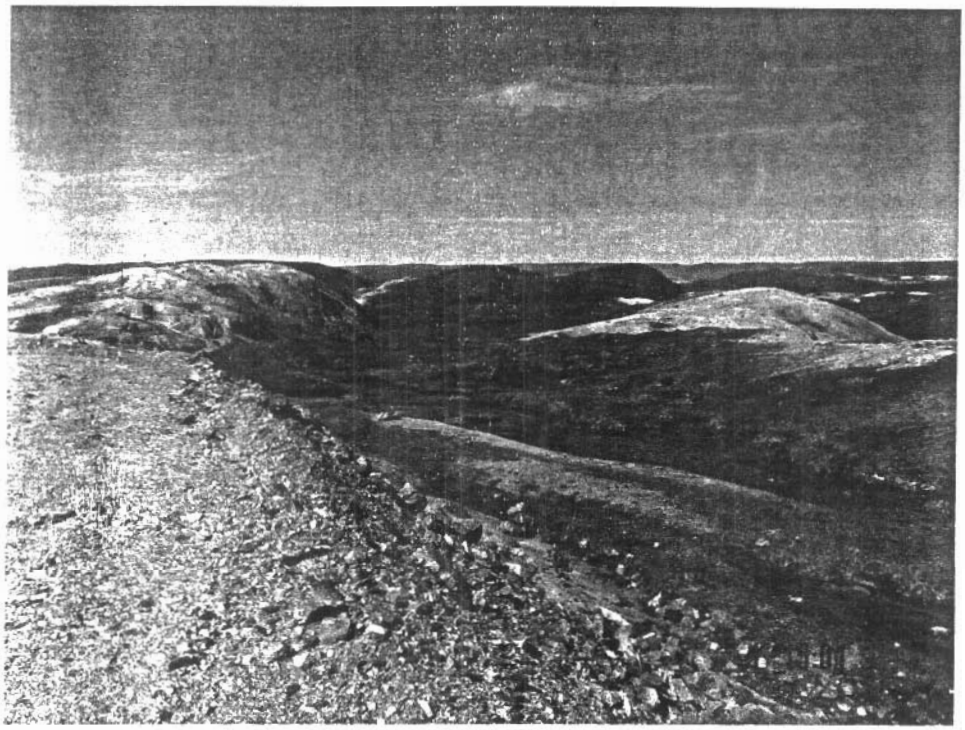


Photo # 9 Location of new Solid Waste Disposal Facility.

Photo # 10 Sewage discharge shown at centre of photo as effluent makes it's way to the ocean.

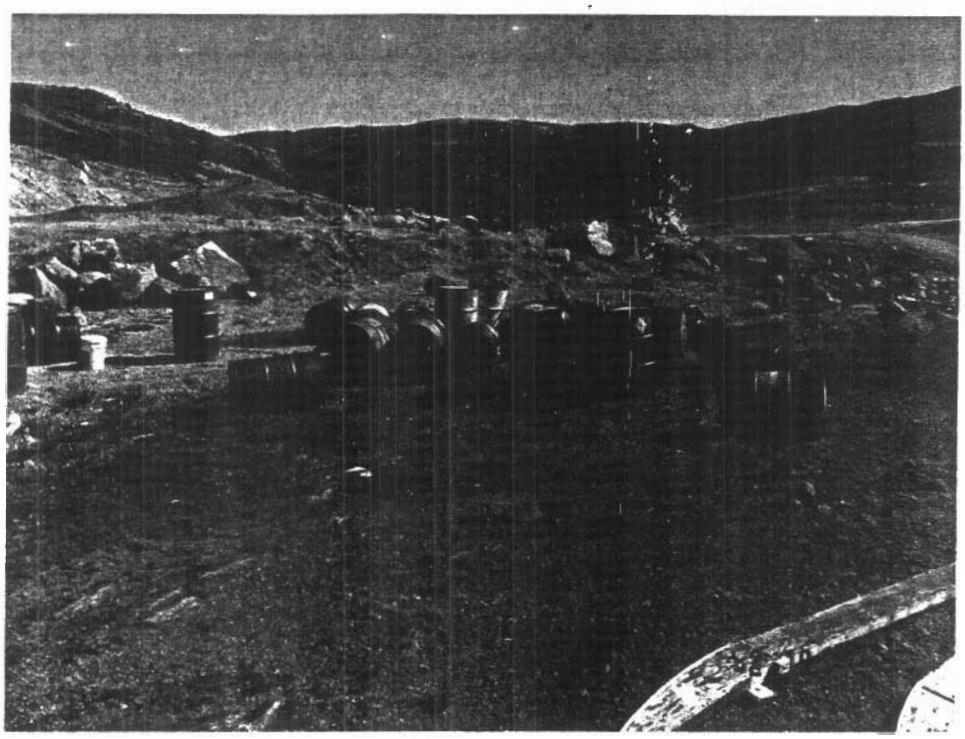


Photo # 11 Unconfined waste oil storage area shown overlooking current bulky metal disposal area. Note considerable oil staining on soil in area.

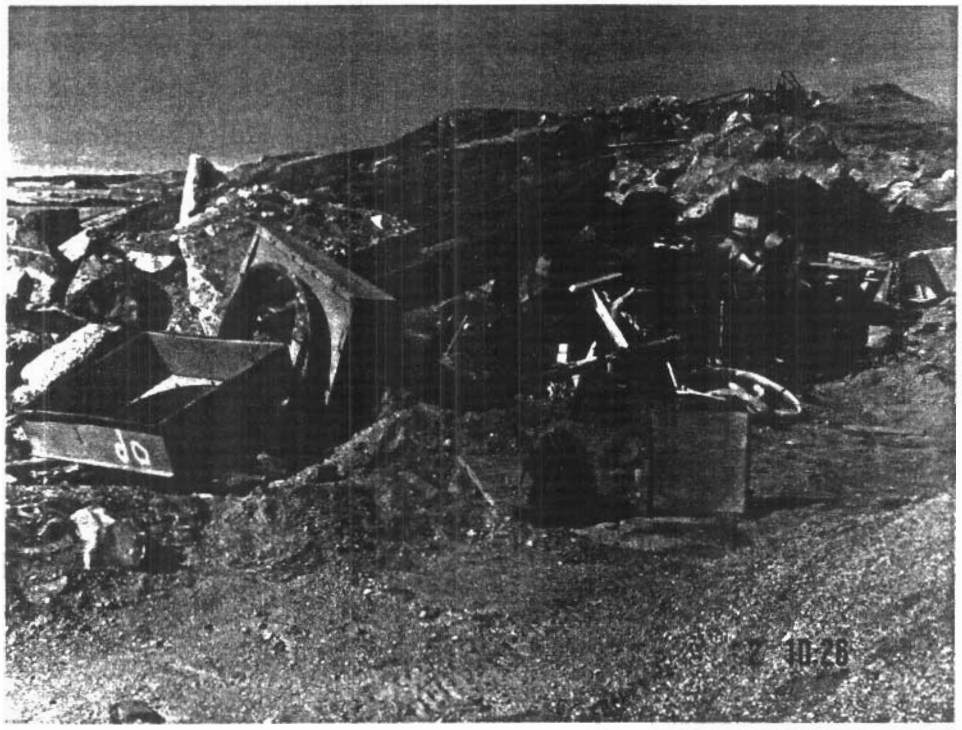
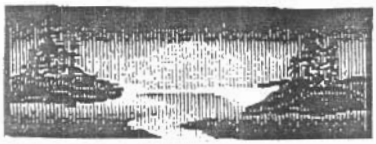


Photo # 12 Bulky metal waste, waste oil storage area located adjacent to road above current Solid Waste Disposal Facility.



Taiga Environmental Laboratory
4601-52nd Ave , Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788
Fax: (867)-669-2718

- CERTIFICATE OF ANALYSIS -

Prepared For: DIAND Nunavut District Office *Attn:* Constantine Bodykevi

Sample ID: Kimmirut Potable Water (23,24) KIM-1 **Taiga Sample ID:** 222317

Client Project: **Sample Type:** water **Received Date:** 12-Aug-02

Location: Kimmirut Potable Water **Sampling Date:**

Report Status: Final *Approved by:* _____

Test Parameter	Result	Units	Detection Limit	Analysis Date
Physicals				
Alkalinity	51.3	mg/L	0.3	19-Aug-02
Colour	10		5	15-Aug-02
Conductivity, Specific	149	µS/cm	0.3	19-Aug-02
pH	7.86	pH units	0.05	19-Aug-02
Solids, Total Dissolved	93	mg/L	10	27-Aug-02
Solids, Total Suspended	<3	mg/L	3	27-Aug-02
Turbidity	0.4	NTU	0.1	28-Aug-02
Nutrients				
Ammonia as N	0.008	mg/L	0.005	19-Aug-02
Biological Oxygen Demand	<2	mg/L	2	12-Aug-02
Nitrate+Nitrite as N	<0.008	mg/L	0.008	27-Aug-02
Organic Carbon, Dissolved	2.6	mg/L	0.5	22-Aug-02
Organic Carbon, Total	2.3	mg/L	0.5	22-Aug-02
Phosphorous, Dissolved	0.011	mg/L	0.004	15-Aug-02
Phosphorous, Total	<0.004	mg/L	0.004	15-Aug-02

Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788
Fax: (867)-669-2718

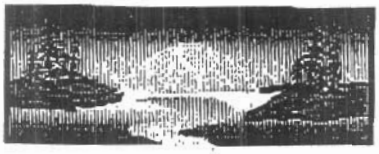
- CERTIFICATE OF ANALYSIS -

Prepared For: DIAND Nunavut District Office *Attn:* Constantine Bodykevi

Sample ID: Kimmirut Potable Water (23,24) KIM-1 **Taiga Sample ID:** 222317

Major Ions

Chloride	2.5	mg/L	0.2	16-Aug-02
Potassium	0.41	mg/L	0.03	20-Aug-02
Silica, Reactive	2.61	mg/L	0.02	19-Aug-02
Sodium	2.10	mg/L	0.02	20-Aug-02
Sulphate	19	mg/L	3	14-Aug-02



Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788
Fax: (867)-669-2718

- CERTIFICATE OF ANALYSIS -

Prepared For: DIAND Nunavut District Office *Attn:* Constantine Bodykevi

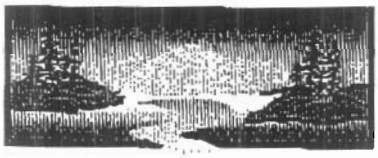
Sample ID: Kimmirut Sewage Sample (25,26) KIM-3 **Taiga Sample ID:** 222318

Client Project: **Sample Type:** water WASTE **Received Date:** 12-Aug-02

Location: Kimmirut Sewage Sample **Sampling Date:**

Report Status: **Preliminary** *Approved by:* _____

Test Parameter	Result	Units	Detection Limit	Analysis Date
Physicals				
Alkalinity	328	mg/L	0.3	19-Aug-02
Colour	30		5	15-Aug-02
Conductivity, Specific	1130	µS/cm	0.3	19-Aug-02
pH	7.95	pH units	0.05	19-Aug-02
Solids, Total Dissolved	783	mg/L	10	27-Aug-02
Solids, Total Suspended	8	mg/L	3	27-Aug-02
Turbidity	6.1	NTU	0.1	28-Aug-02
Nutrients				
Ammonia as N	21.3	mg/L	0.005	19-Aug-02
Biological Oxygen Demand	27	mg/L	2	12-Aug-02
Nitrate+Nitrite as N	5.71	mg/L	0.008	27-Aug-02
Organic Carbon, Dissolved	39.0	mg/L	0.5	
Organic Carbon, Total	11.0	mg/L	0.5	
Phosphorous, Dissolved	0.164	mg/L	0.004	21-Aug-02
Phosphorous, Total	0.369	mg/L	0.004	21-Aug-02



Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788
Fax: (867)-669-2718

- CERTIFICATE OF ANALYSIS -

Prepared For: DIAND Nunavut District Office *Attn:* Constantine Bodykevi

Sample ID: Kimmirut Sewage Sample (25,26) KIM-3 **Taiga Sample ID: 222318**

Major Ions

Chloride	47.0	mg/L	0.2	16-Aug-02
Potassium	15.6	mg/L	0.03	20-Aug-02
Silica, Reactive	10.2	mg/L	0.02	19-Aug-02
Sodium	61.6	mg/L	0.02	20-Aug-02
Sulphate	176	mg/L	3	14-Aug-02