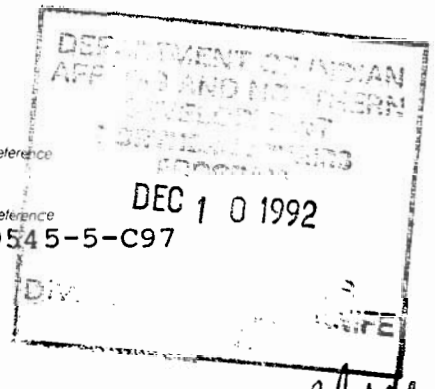
Indian and Northern Affairs | Affaires indiennes et du Nord

Northern Affairs Program
P.O. Box 100
Iqaluit, NWT
XOA OHO

December 4, 1992



Your file / Votre reference

Our file / Notre reference
B9545-5-C97

Mrs. Lizzie Pallituq
Senior Administrative Officer
Hamlet of Clyde River
Clyde River, NWT
XOA OEO

Clyde River
IWO
WB.

Dear Mrs Pallituq;

Re: Water Management
Hamlet of Clyde River, NWT
Inspection Report - 23 July, 1992

1. Please find the above noted report by Mr. Paul Smith, Water Resources Officer.

2. The inspection report has identified a number of concerns which you will wish to note - please refer to paragraph 14 of the report.

3. The results of the water samples taken are included. No concerns are noted with water quality.

4. Please find enclosed a bilingual (Inuktitut/English) explanation of the parameters tested.

5. Please feel free to contact our District Office if you have any questions or comments on this report.

Sincerely,

J.M.A. Theriault
District Manager
Baffin District

cc: Municipal Co-ordinator
Water Resources
DIAND NAP/NWT Region

INSPECTION REPORT

WATER MANAGEMENT

HAMLET OF CLYDE RIVER

13 AUGUST 1992

BY

PAUL SMITH

INSPECTOR UNDER THE NORTHERN INLAND WATERS ACT

NORTHERN AFFAIRS PROGRAM

IQALUIT, NWT

DATE: 17 SEPTEMBER 1992
WATER REGISTER: N/A - UNLICENCED COMMUNITY

INSPECTION REPORT

Water Supply

1. Water is pumped exclusively from the west side of the water lake, 1 km NW of the community. No concerns were noted at the truck fill point.

Waste Disposal

Sewage

2. Sewage continues to be disposed of at the old dump site. This area is littered with sewage bags and much other garbage from the exposed face of the abandoned dump. It will take considerable work to restore this site when the new lagoon is operational.

3. The new sewage lagoon under construction at the current waste disposal site will measure 100 x 64 m. The lagoon is built on clay soil, and will not let water drain through the bottom of the lagoon, so a culvert will be installed at the opposite end of the lagoon to prevent overflow.

Domestic

4. This site is well maintained. It is burned and well covered with gravel. The ground was wet in areas, but there was not sufficient leachate for a sample to be collected.

5. The abandoned dump site 500 m NE of town exists in the same state as at the time of the last inspection. The exception is that many of the drums have been crushed. Several drums remained uncrushed. Mr. Arreak said that they were full of ice when the crusher was available. The crushed drums will eventually be moved down to the sealift beach.

Waste Metal

6. Old vehicles and larger scrap are kept separate and spaced well away from the domestic dump.

7. Most of the drums from the drum crushing program are now stacked at the sealift beach. There are several hundred of these barrels. There are also a large number of uncrushed drums on the beach.

Waste Oil

8. An area at the waste disposal site has been designated as waste oil storage and several barrels of waste oil are located there.

Fuel Storage

9. Both the Renewable Resource and RCMP Officers expressed concerns with the bulk fuel storage facilities with respect to condition of the site and the possibility of leaks. The fence was not locked. Concerns that were expressed in the 1990 inspection persist today. That is exposed liners and inadequate berming. The fence was noted to be sagging in areas.

10. Deficiencies with the warning sign at the sealift intake have been corrected.

Warning Signs

11. No warning signs were posted at either the dump or current sewage disposal area.

Records

12. The Hamlet maintains records of water consumption.

Surveillance Network Program

13. Water quality samples were collected from the following locations:

Misc-CR-01	-	Truck fill point (raw water)
Misc-CR-02	-	Sewage effluent below old waste disposal site
Misc-CR-04	-	Runoff below the abandoned solid waste disposal site - 25 metres from site in drainage creek.

Discussion/Concerns

14. Mr. David Arreak, Hamlet Foreman, accompanied me throughout most of the inspection. The inspector met with Mrs. Lizzie Pallituq (SAO) after the inspection and reitterated the topics discussed and concerns noted.

a. Deficiencies with the fuel storage facility will have to be addressed by the GNWT.

b. When the sewage lagoon is operational, both the abandoned dump and the old dump site that now serves as the sewage disposal area will have to be cleaned up and restored.

Waste metal that can be brought to the new waste metal area should be. The remainder of the garbage should be consolidated and buried.

c. The Hamlet is requested to place warning signs at the dump site and at the sewage lagoon when construction is complete.

d. The inspector commends the efforts of the Hamlet to improve waste disposal practices.

15. The inspector appreciates the co-operation and assistance received from Lizzie Pallituq and David Arreak while in Clyde River.

DEPARTMENT OF IND. AFFAIRS AND NORTHERN DEVELOPMENT
WATER RESOURCES DIVISION, YELLOWKNIFE, NORTHWEST TERRITORIES
FIELD SAMPLING AND DATA

LICENSEE/PROJECT	LICENCE NO.	LOCATION
Hamlet of Clyde River	N/A	Clyde River, NT
DATE SAMPLED: 13 Aug 92	SAMPLED BY: Paul Smith	

ANALYSIS	SAMPLE VOLUME	PRESERVATIVE	STATION NUMBER: Misc-CR-01	Misc-CR-02	Misc-CR-04	Misc CR-0		
			BOTTLE NUMBER					
MISC. & ARSENIC	1 LITRE	NONE	"	"		"		
HEAVY METALS	~~250~~ 500 ML	~~3.5 mL 3.5:1~~ ~~2 ML 1:1~~ HNO_3	"		"			
CYANIDE	500 ML	About 6 pellets NaOH to pH 12	"					
MERCURY	250 ML	2 ML 1:1 HNO_3 + 2 ML 5% $K_2Cr_2O_7$	"					
NUTRIENTS	250 ML	NONE	"	"		"		
BACTERIA	500 ML	NONE						
OIL AND GREASE	1 LITRE (GLASS)	4 ML 1:1 H_2SO_4						
Time of Sampling			10:55	13:55	14:25			
Air Temperature			5° →					
Water Temperature			—	—	—			
Rate of Flow			—	~40 L/min	~10L/min			
Ice Thickness			Nil	L	—			
Depth of Sampling			Surface →					
pH			—	—	—			
Conductivity			—	—	—			
Dissolved Oxygen			—	—	—			

Misc. CR-01 Water Supply Lake - truckfill point
Misc CR-02 Sewage effluent below old waste disposal site
Misc-CR-04 Runoff below abandoned solid waste disposal site ~ 25m from site in drainage creek.

WATER RESOURCES DIVISION, YELLOWKNIFE, NORTHWEST TERRITORIES

RESULTS OF LABORATORY A...LYSIS

CENSEE/ PROJECT Hamlet of Clyde River	LICENCE NUMBER N/A	LOCATION Clyde River, NT
DATE SAMPLED 13 Aug 92	DATE RECEIVED Aug 18/92	DATE COMPLETED Oct 15/92

STATION NUMBER		MISC-CR-01		~~MISC-CR-02~~		~~MISC-CR-04~~		MISC CR-02				wc
LABORATORY NUMBER		920862		~~920863~~		~~920864~~		920863				
ANALYSIS REQUIRED	✓		✓		✓		✓		✓		✓	
pH (units)	✓	6.76	✓	Aug19/92 ML			✓	7.60		Aug 19/92		ML
Conductivity (μmho/cm)	✓	25	✓	Aug19/92 ML			✓	1720		Aug19/92		ML
Dissolved Oxygen												
Turbidity (NTU)	✓	15	✓	Aug 18/92 ML			✓	260		Aug 18/92		ML
Colour (colour U.)	✓	<5		Aug 18/92 ML			✓	500		Aug 18/92		ML
Suspended Solids	✓	<3	✓				✓	280		Sept 1/92		ML
TDS, Residue	✓	19	✓				✓	624				
Calcium	✓	<1.0	✓				✓	12.0				
Magnesium	✓	0.6	✓				✓	4.6		Aug 20		LA
Tot. Hardness ($CaCO_3$)	✓	5	✓				✓	49				
Tot. Alkalinity ($CaCO_3$)	✓	4	✓				✓	674		Sept 2/5		
Sodium	✓	2.5	✓				✓	101		Sept 13		LA
Potassium	✓	0.5	✓				✓	37.2				
Chloride	✓	3.9	✓				✓	81.8		Sept 9		LA
Sulphate	✓	<2	✓				✓	68		Sept 10		LA
Total Coliform (count / 100 ml)				did not								
Fecal Coli.				receive								
Fecal Strep.				bottles								
Std. Plate Cnt (cnt/ml)				for								
BOD_5				these								
COD												
Carbon, IC												
Carbon, TOC												
Ammonia Nitrogen (as N)												
Nitrate + Nitrite (as N)	✓	<0.04	✓				✓	<0.04		Aug 25		LA
Total Kjeldahl N												
Phosphorus O-P (as P)												
Phosphorus Tot. (as P)	✓	<0.005	✓				✓	,20.4		Aug 28		LA
Silica Reac. (as SiO_2)												
Total Cyanide	✓	<0.005								Sept 11		
Available Cyanide (WAD)												
Sulphide												
Oil & Grease												
Phenols												
Arsenic T (μg/L)	✓	<0.5		Aug 26	✓							
Arsenic D (μg/L)												
Cadmium T (μg/L)	✓	0.2		Aug21/92	✓							
Cadmium D (μg/L)												
Copper T (μg/L)	✓	3		"	✓							
Copper D (μg/L)												
Iron T (μg/L)	✓	55		"	✓							
Iron D (μg/L)												
Lead T (μg/L)	✓	<1		"	✓							
Lead D (μg/L)												
Mercury T (μg/L)	✓	<0.02		wc Aug 30								
Mercury D (μg/L)												
Nickel T (μg/L)	✓	1		Aug21/92	✓							
Nickel D (μg/L)												
Zinc T (μg/L)	✓	<1		"	✓							
Zinc D (μg/L)												
Chromium T (μg/L)	✓	3		"	✓							
Chromium D (μg/L)												

Results are expressed in mg/L, except as indicated. T and D refer to Total & Dissolved Metals

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT
WATER SOURCES DIVISION, YELLOWKNIFE, NORTHWEST TERRITORIES
RESULTS OF LABORATORY ANALYSIS

LICENCE/ PROJECT Hamlet of Clyde River	LICENCE NUMBER N/A.	LOCATION Clyde River, NT
DATE SAMPLED 13 Aug 92	DATE RECEIVED Aug 18/92	DATE COMPLETED Sept 18/92 mc

STATION NUMBER		Misc code		
LABORATORY NUMBER		920967		
ANALYSIS REQUIRED				
pH (units)				
Conductivity (umho/cm)				
Dissolved Oxygen				
Turbidity (NTU)				
Colour (colour U.)				
Suspended Solids				
TDS, Residue				
Calcium				
Magnesium				
Tot. Hardness ($CaCO_3$)				
Tot. Alkalinity ($CaCO_3$)				
Sodium				
Potassium				
Chloride				
Sulphate				
Total Coliform (count/100 ml)				
Fecal Coli. (count/100 ml)				
Fecal Strep. (count/100 ml)				
Std. Plate Cnt (cnt/ml)				
BOD_5				
COD				
Carbon, IC				
Carbon, TOC				
Ammonia Nitrogen (as N)				
Nitrate + Nitrite (as N)				
Total Kjeldahl N (as N)				
Phosphorus O-P (as P)				
Phosphorus Tot. (as P)				
Silica Reac. (as SiO_2)				
Total Cyanide				
Available Cyanide (WAD)				
Sulphide				
Oil & Grease				
Phenols				
Arsenic	T (ug/L)	✓	<0.5	Sept 15/92 LW
	D (ug/L)			
Cadmium	T (ug/L)	✓	<0.2	Sept 10/92 KP
	D (ug/L)			
Copper	T (ug/L)	✓	2	"
	D (ug/L)			
Iron	T (ug/L)	✓	53	"
	D (ug/L)			
Lead	T (ug/L)	✓	<1	"
	D (ug/L)			
Mercury	T (ug/L)	X		
	D (ug/L)			
Nickel	T (ug/L)	✓	<1	Sept 10/92 KP
	D (ug/L)			
Zinc	T (ug/L)	✓	<1	"
	D (ug/L)			
Chromium	T (ug/L)	✓	2	"
	D (ug/L)			
Cobalt	T (ug/L)	✓	<1	"
	D (ug/L)			

Results are expressed in mg/L except as indicated. T and D refer to total and dissolved

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT

WATER RESOURCES DIVISION, YELLOWKNIFE, NORTHWEST TERRITORIES

RESULTS OF LABORATORY ANALYSIS

LICENSEE/ PROJECT Hamlet of Clyde River	LICENCE NUMBER N/A		LOCATION Clyde River, NT
DATE SAMPLED 13 Aug 92	DATE RECEIVED Aug 16/92		DATE COMPLETED Oct 15/92

STATION NUMBER		MISC-CR-01	MISC-CR-02	MISC-CR-01	MISC-CR-02		WC
LABORATORY NUMBER		920862	~~920863~~	~~920864~~	920863		
ANALYSIS REQUIRED		✓	✓	✓	✓	✓	✓
pH (units)		✓ 6.76	✓ Aug 19/92 MK		✓ 7.60	Aug 19/92 MK	
Conductivity (µmho/cm)		✓ 25	✓ Aug 19/92 MK		✓ 1920	Aug 19/92 MK	
Dissolved Oxygen							
Turbidity (NTU)		✓ 15	✓ Aug 18/92 MK		✓ 260	Aug 18/92 MK	
Colour (colour U.)		✓ 45	Aug 18/92 MK		✓ 500	Aug 18/92 MK	
Suspended Solids		✓ 43	✓		✓ 280	Sept 1/92 MK	
TDS, Residue		✓ 19	✓		✓ 624		
Calcium		✓ 41.0	✓		✓ 12.0		
Magnesium		✓ 0.6	✓		✓ 4.6	See Aug 20	KA
Tot. Hardness ($CaCO_3$)		✓ 5	✓		✓ 49		
Tot. Alkalinity($CaCO_3$)		✓ 4	✓		✓ 674	Sept 2/92	KA
Sodium		✓ 2.5	✓		✓ 101	Sept 13	KA
Potassium		✓ 0.5	✓		✓ 37.2		
Chloride		✓ 3.9	✓		✓ 31.8	Sept 9	KA
Sulphate		✓ 42	✓		✓ 68	Sept 10	KA
Total Coliform (count/100 ml)				did not receive bottles for these			
Fecal Coli. (count/100 ml)							
Fecal Strep. (count/100 ml)							
Std. Plate Cnt. (cnt/ml)							
BOD_5							
COD							
Carbon, IC							
Carbon, TOC							
Ammonia Nitrogen (as N)							
Nitrate + Nitrite (as N)		✓ <0.04	✓		✓ <0.04	Aug 25	KA
Total Kjeldahl N							
Phosphorus O-P (as P)							
Phosphorus Tot (as P)		✓ <0.005	✓		✓ 20.4	Aug 28	KA
Silica Reac. (as SiO_2)							
Total Cyanide		✓ <0.005				Sept 11/92 MK	
Available Cyanide (WAD)							
Sulphide							
Oil & Grease							
Phenols							
Arsenic	T (µg/L)	✓ <0.5	Aug 26/92 MK				
	D (µg/L)						
Cadmium	T (µg/L)	✓ 0.2	Aug 21/92 MO				
	D (µg/L)						
Copper	T (µg/L)	✓ 3	"				
	D (µg/L)						
Iron	T (µg/L)	✓ 55	"				
	D (µg/L)						
Lead	T (µg/L)	✓ <1	"				
	D (µg/L)						
Mercury	T (µg/L)	✓ <0.02	WC Aug 30				
	D (µg/L)						
Nickel	T (µg/L)	✓ 1	Aug 21/92 MO				
	D (µg/L)						
Zinc	T (µg/L)	✓ <1	"				
	D (µg/L)						
Chromium	T (µg/L)	✓ 3	"				
	D (µg/L)						

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NOV 17 1992
Indian & Northern Affairs Canada
IQALUIT, N.W.T.

Results are expressed in µg/L, except as indicated. T and D refer to Total & Dissolved Metals

DEPARTMENT INDIAN AFFAIRS AND NORTHERN DEVELOPMENT

WATER RESOURCES DIVISION, YELLOWKNIFE, NORTHWEST TERRITORIES

FIELD SAMPLING AND DATA

LICENSEE/PROJECT	LICENCE NO.	LOCATION
Hamlet of Clyde River	N/A	Clyde River NT
DATE SAMPLED 13 Aug 92	SAMPLED BY ~~Paul~~ Paul Smith	

ANALYSIS	SAMPLE VOLUME	PRESERVATIVE	STATION NUMBER					
			Misc CR-01	Misc CR-02	Misc CR-04	Misc CR-0		
			BOTTLE NUMBER					
MISC. & ARSENIC	1 LITRE	NONE	"	"		"		
HEAVY METALS	~~500~~ 250 ML	~~2 ML 1:1~~ 3.5 mL 3.5:1 HNO_3	"		"			
CYANIDE	500 ML	About 6 pellets NaOH to pH 12	"					
MERCURY	250 ML	2 ML 1:1 HNO_3 + 2 ML 5% $K_2Cr_2O_7$	"					
NUTRIENTS	250 ML	NONE	"	"		"		
BACTERIA	500 ML	NONE						
OIL AND GREASE	1 LITRE (GLASS)	4 ML 1:1 H_2SO_4						
Time of Sampling			10:55	13:55	14:25			
Air Temperature			5° →					
Water Temperature			—	—	—			
Rate of Flow			—	~40 L/min	~10 L/min			
Ice Thickness			0.1		—			
Depth of Sampling			Surface →					
pH			—	—	—			
Conductivity			—	—	—			
Dissolved Oxygen			—	—	—			

Misc. CR-01 Water Supply Lake - truckfill point

Misc CR-02 Sewage effluent below old waste disposal site

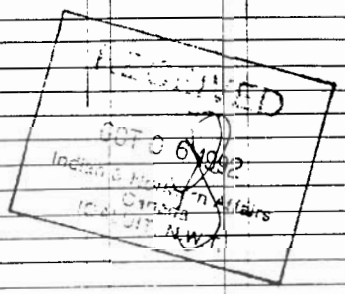
Misc-CR-04 Runoff below abandoned solid waste disposal site ~25m from site in drainage creek.

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT
WATER SOURCES DIVISION, YELLOWKNIFE, NORTHWEST TERRITORIES
RESULTS OF LABORATORY ANALYSIS

P3 4/10

LICENCE / PROJECT	Hamlet of Clyde River	
LICENCE NUMBER	N/A	
LOCATION	Clyde River, NT	
DATE SAMPLED	13 Aug 92	
DATE RECEIVED	Aug 18/92	
DATE COMPLETED	Sept 15/92 WC	
STATION NUMBER	Miscell	
LABORATORY NUMBER	920967	

ANALYSIS REQUIRED	
pH (units)	
Conductivity (umho/cm)	
Dissolved Oxygen	
Turbidity (NTU)	
Colour (colour U.)	
Suspended Solids	
TDS, Residue	
Calcium	
Magnesium	
Tot. Hardness ($CaCO_3$)	
Tot. Alkalinity ($CaCO_3$)	
Sodium	
Potassium	
Chloride	
Sulphate	
Total Coliform (count / 100 ml)	
Fecal Coli. (count / 100 ml)	
Fecal Strep. (count / 100 ml)	
Std. Plate Cnt (cnt/ml)	
BOD_5	
COD	
Carbon, IC	
Carbon, TOC	
Ammonia Nitrogen (as N)	
Nitrate + Nitrite (as N)	
Total Kjeldahl N (as N)	
Phosphorus O-P (as P)	
Phosphorus Tot. (as P)	
Silica Reac. (as SiO_2)	
Total Cyanide	
Available Cyanide (WAD)	
Sulphide	
Oil & Grease	
Phenols	



Arsenic	T (ug/L) / D (ug/L)	✓ LO.5	Sept 15/92 WC
Cadmium	T (ug/L) / D (ug/L)	✓ LO.2	Sept 10/92 KP
Copper	T (ug/L) / D (ug/L)	✓ 2	"
Iron	T (ug/L) / D (ug/L)	✓ 53	"
Lead	T (ug/L) / D (ug/L)	✓ L1	"
Mercury	T (ug/L) / D (ug/L)	X	
Nickel	T (ug/L) / D (ug/L)	✓ L1	Sept 10/92 KP
Zinc	T (ug/L) / D (ug/L)	✓ L1	"
Chromium	T (ug/L) / D (ug/L)	✓ 2	"
Cobalt	T (ug/L) / D (ug/L)	✓ L1	"

Results are expressed in mg/L, except as indicated. T and D refer to total and dissolved metals respectively.