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Your file - Votre référence

November 12, 2003

Department of Public Works and Services
Government of Nunavut
Rankin Inlet, NU X0C 0G0
Ph: (867) 645-8158
Fax: (867) 645-8197

Our file - Notre référence
NWB3GRA0207



Re: Water licence inspection for September 17, 2003

I would like to thank Hamlet Foreman Arnie Brown, Utilidoor Systems Officer Amil Lindsay and Petroleum Products Officer Tommy Gordon for their time and assistance during the Water Licence Inspection.

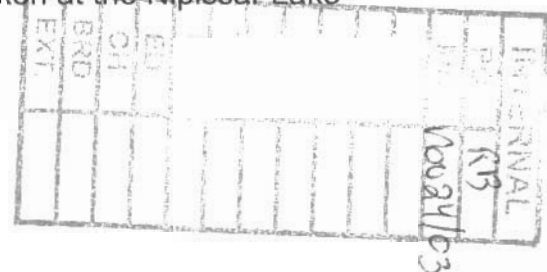
This report deals with the Water and Sewage Treatment Facilities in the Hamlet of Rankin Inlet. The Department of Public Works and Services (DPWS) is responsible for these facilities.

Overall, the DPWS appears to be doing a good job of monitoring and maintaining the water and sewage treatment plants but some issues need to be addressed. A discrepancy has been noted between the lead concentrations measured at the Nipissar Lake Pumphouse and the Williams Lake Treatment Plant. Problems were also identified with the sewage treatment and screened solids disposal, the Monitoring Program, waste oil and Bulk Fuel Storage, and the absence of Operation and Maintenance Manuals for the water and sewage treatment facilities. These issues need to be addressed for the licensee to be in compliance with its water licence under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act (NWNSRTA 2002)*.

The results for water samples taken by DPWS at the Nipissar Lake pumphouse and the Williams Lake Treatment Plant are attached to this report along with preliminary results for samples taken in the course of the Water Licence Inspection.

Potable Water

The source of potable water in Rankin Inlet is Nipissar Lake (figure 1). The water treatment and distribution system appears to be well monitored and maintained with good records of water use and chlorination but high lead and iron concentrations were recorded for samples taken at the Nipissar Lake pumphouse.



The Williams Lake water treatment plant utilizes gas chlorination to treat the Hamlet's drinking water (figure 2). Mr Lindsay demonstrated that chlorine residual concentrations are recorded both as the water leaves the pumphouse and as it circulates back to the plant. In addition, DPWS keeps daily records of the Hamlet of Rankin Inlets water use, including the total pump run times and average efficiency. This data is compiled into tabular results of the Hamlet's monthly water use. This data would make a good addition to the Annual Report required by the Nunavut Water Board (NWB) no later than March 31, 2004.

Samples taken from the pumphouse at Nipissar Lake (figure 3) proved to be high in iron but still below the Aesthetic Objective of 3.0 mg/L. The results for lead analysis at the same location greatly exceeded the Canadian Guidelines for lead in drinking water (27 ug/L >> 10ug/L *Summary of Guidelines for Canadian Drinking Water Quality 2003*). Sample results from this location have consistently approached or exceeded the Canadian Guidelines. However, according to Fred O'Brien, Health and Social Services in Rankin Inlet, the samples were not representative of the water going out to the community. This is supported by the fact that water sampled at the Williams lake treatment Plant has never approached the Canadian Guidelines. Fred O'Brien and Amil Lindsay suggested that a different sample site could eliminate the discrepancy. The Hamlet must be certain that the community is not being exposed, through it's drinking water, to lead concentrations exceeding Canadian Guidelines. If the water is simply not being sampled from a representative point then the sample location should be changed. However, if the sample location is representative, the source of lead in the distribution system will need to be eliminated to ensure the safety of the Hamlet's drinking water.

Sewage Treatment

Sewage treatment in Rankin Inlet is performed using a rotating filter screen (figure 4) with sewage effluent discharged at a point 500m into the bay (figure 5). The community is concerned with the effluent quality and is considering an upgraded system to improve the quality of the sewage effluent. Presently, the screened solids from the sewage treatment plant are limed and buried at the solid waste landfill. A conversation with Bryan Purdy at Community Government and Transportation in Rankin Inlet, revealed that further studies on the receiving environment for the sewage effluent need to be performed before the funds required to upgrade the sewage treatment facility can be obtained. The study focuses on the ability of the receiving waters to deal with the sewage effluent and includes a risk assessment for the receiving waters and a determination of the Dilution Factor in the discharge area. Any upgrades to the treatment facility must be approved by the NWB but a study of the receiving environment is unlikely to be completed prior to 2005.

Samples of sewage effluent being discharged had an oxygen demand of 160 mg/l. This value surpasses the licenced limit of 120mg/L. An increased level of treatment could eliminate this problem. The remainder of the parameters tested were within the *Guidelines for the Discharge of Treated Municipal Wastewater in the Northwest Territories 1992*.

Fuel Storage Facility

The tank farm in Rankin Inlet is not properly maintained. The liner is exposed in a number of places and it's integrity may be compromised through long-term exposure (figure 6). The liner needs to be covered to ensure it is not broken down by weathering or mechanical means.

Non-Compliance of the Act or Water Licence

The Department of Public Works and Services needs to address problems with the drinking water distribution system (Nipissar lake pumphouse), oxygen demand of sewage effluent exceeding guidelines, insufficient documentation, problems with fuel and waste oil storage, and development of a monitoring program to assess the impact of municipal activities on the environment and protect public health and safety. Until these issues are addressed, the Hamlet of Rankin Inlet will be out of compliance with its water licence and the *NWNSRTA 2002*. Despite the Hamlets non-compliance, the DPWS has demonstrated a willingness to work towards compliance with its water licence. I look forward to assisting DPWS in improving their compliance with Canadian Guidelines and the Water Licence issued by the NWB. If you have any questions or concerns, please do not hesitate to contact me.

Sincerely,



Scott Stewart
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Figure 1. Rankin Inlet pumphouse at Nipissar lake, the drinking water source for the community.



Figure 2. Chlorination system for the Hamlet of Rankin Inlet at Williams Lake treatment plant.

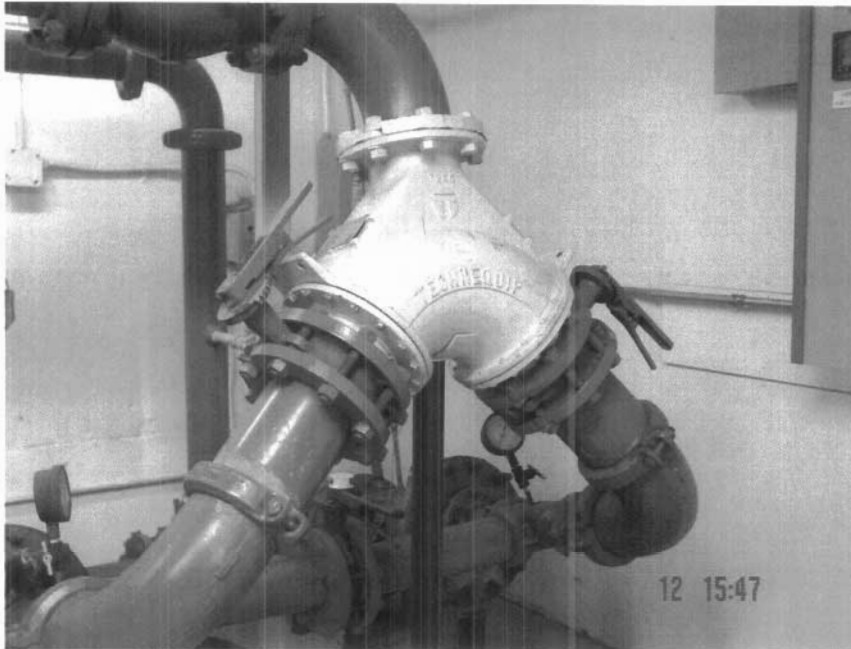


Figure 3. Section of pipe in Nipissar Lake pumphouse near location of valve from which water sample with high Iron and Lead concentrations was taken.

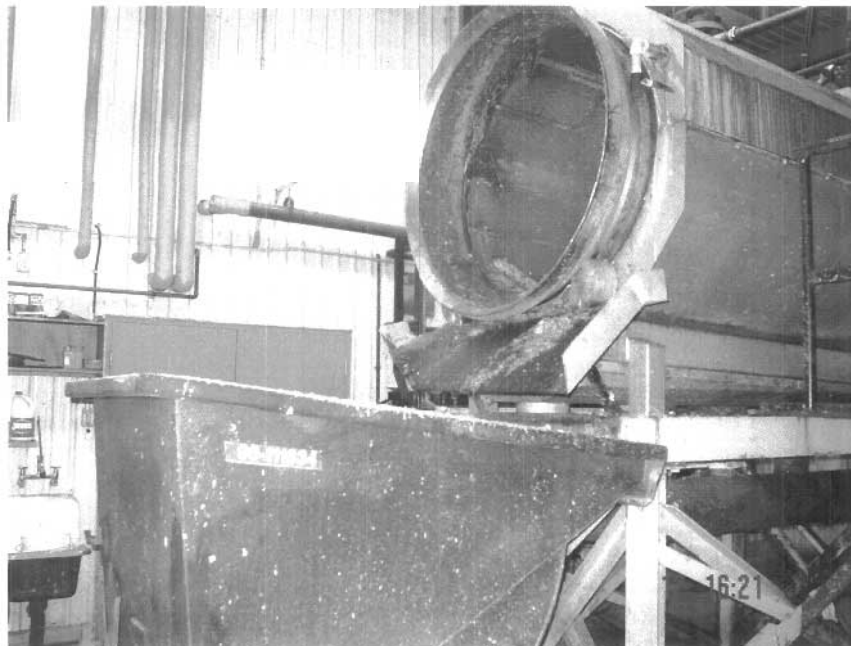


Figure 4. Rotating filter screen at the Hamlet of Rankin Inlet Sewage Treatment Plant.



Figure 5. Point at which the discharge pipe for the Hamlet of Rankin Inlet sewage treatment plant leaves the shore.



Figure 6. Exposed liner in the berm of the Rankin Inlet Fuel Storage Facility.



MUNICIPAL WATER USE INSPECTION REPORT

Date: August 12, 2003 Licensee Rep. (Name/Title): CG&T for Government NU

Licensee: DPWS in Hamlet of Rankin Inlet

Licence No.: Unlicensed

WATER SUPPLY

Source(s): Nipissar Lake

Quantity used: Not Calculated

Owner:/Operator: DPW-Rankin Inlet

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

Intake Facilities: NI

Storage Structure: A

Treatment Systems: A

Chemical Storage: A

Flow Meas. Device: A

Conveyance Lines: AI

Pumping Stations: A

Comments: The pumphouse at Nipissar Lake is well maintained, the only concern would be the proximity of the lake to a road with high atv traffic and large amounts of dust which could affect water quality. It is not a serious concern but it could become important.

WASTE DISPOSAL

Sewage: Sewage Treatment System (Prim./Sec/Ter.): Primary (rotating screen)

Natural Water Body:

Continuous Discharge (land or water): Discharge to Ocean

Seasonal Discharge: Continuous

Wetlands Treatment: NIL

Trench:

Solid Waste:

Owner/Operator: DPW Rankin Inlet

Landfill:

Burn & Landfill: X

Other:

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

Discharge Quality: NA

Decant Structure: NA

Erosion: NA

Discharge Meas. Device: NA

Dyke Inspection: NA

Seepages: A

Dams, Dykes: NA

Freeboard: NA

Spills: None

Construction: NA

O&M Plan: NA

A&R Plan: NI

Periods of Discharge: A

Effluent Discharge Rate: Not Measured

Comments:

FUEL STORAGE

Owner/Operator:

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

Berms & Liners: U

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: unknown

INAC: potable water, sewage effluent

Signs Posted SNP: NIL

Warning: NIL

Records & Reporting: U

Geotechnical Inspection: None Required

Non-Compliance of Act or Licence: According to the water licence issued by the Nunavut Water Board the Hamlet is out of compliance with respect to development of an Operation and Maintenance Manual, an Abandonment and Restoration Plan and a Spill Contingency Plan. Results of sampling will reveal whether or not the effluent continuously discharged from the lagoon is within Canadian Guidelines. An A&R plan needs to be submitted as construction of a new landfill has been begun but the old landfill is not yet dealt with.

Scott Stewart

Inspector's Name

Inspector's Signature

232656	Baker Lk Source	freshwater	Baker Lake	8/8/03	8/12/03	Phosphorous, Total	Nutrients	Phosphorous, Total	0.007	mg/L	0.002	8/22/03	SM4500-P.B	:
232656	Baker Lk Source	freshwater	Baker Lake	8/8/03	8/12/03	Colour	Physicals	Colour	< 5		5	8/27/03	none	:
232656	Baker Lk Source	freshwater	Baker Lake	8/8/03	8/12/03	Conductivity, Specific	Physicals	Conductivity, Specific	35.4	µS/cm	0.3	8/19/03	none	:
232656	Baker Lk Source	freshwater	Baker Lake	8/8/03	8/12/03	pH	Physicals	pH	7.10	pH units	0.05	8/19/03	none	:
232656	Baker Lk Source	freshwater	Baker Lake	8/8/03	8/12/03	Solids, Total Suspended	Physicals	Solids, Total Suspended	< 3	mg/L	3	8/20/03	GF/C Filt.	:
232656	Baker Lk Source	freshwater	Baker Lake	8/8/03	8/12/03	Turbidity	Physicals	Turbidity	1.8	NTU	0.1	8/20/03	none	:
232657	Lagoon Baker Lk Seep	freshwater	Baker Lake	8/8/03	8/12/03	Arsenic, Total in water	Metals, Total	Arsenic	1	µg/L	1	8/18/03	Microwave	:
232677	Nipissar LK. RAN-1	sewage	Rankin Inlet	8/12/03	8/15/03	Calcium	Major Ions	Calcium	17.1	mg/L	0.05	8/19/03	none	:
232677	Nipissar LK. RAN-1	sewage	Rankin Inlet	8/12/03	8/15/03	Magnesium	Major Ions	Magnesium	3.80	mg/L	0.02	8/19/03	none	:
232677	Nipissar LK. RAN-1	sewage	Rankin Inlet	8/12/03	8/15/03	Potassium	Major Ions	Potassium	1.94	mg/L	0.03	8/20/03	none	:

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	Taiga Sample ID	Client Sample ID	Sample Type	Sampling Location	Sample Collect Date	Sample Received Date	Test Group Name	Lab Section	Parameter Name	Result Flag	Reported Result	Units	Calc MDL	Sample Result Qualifier
	232677	Nipissar LK. RAN-1	sewage	Rankin Inlet	8/12/03	8/15/03	Total Metals (24) by ICP-MS water	Metals, Total	Selenium	<	1	µg/L	1	
							Total Metals (24) by ICP-MS water	Metals, Total	Silver		0.1	µg/L	0.1	
							Total Metals (24) by ICP-MS water	Metals, Total	Strontium		96.5	µg/L	0.1	
							Total Metals (24) by ICP-MS water	Metals, Total	Thallium	<	0.1	µg/L	0.1	
							Total Metals (24) by ICP-MS water	Metals, Total	Titanium		0.2	µg/L	0.1	
							Total Metals (24) by ICP-MS water	Metals, Total	Uranium		0.2	µg/L	0.1	
							Total Metals (24) by ICP-MS water	Metals, Total	Vanadium		0.2	µg/L	0.1	
							Total Metals (24) by ICP-MS water	Metals, Total	Zinc		895	µg/L	10	
							Ammonia	Nutrients	Ammonia as N		1.23	mg/L	0.005	
							Nitrates+Nitrites as N	Nutrients	Nitrate+Nitrite as N	<	0.008	mg/L	0.008	

Field Sheet
Bottle Order Form

232677	Nipissar LK. RAN-1	sewage	Rankin Inlet	8/12/03	8/15/03	Organic Carbon, Total	Nutrients	Organic Carbon, Total	5.7	mg/L	0.2	9/10/03	none	EP
232677	Nipissar LK. RAN-1	sewage	Rankin Inlet	8/12/03	8/15/03	Conductivity, Specific	Physicals	Conductivity, Specific	252	µS/cm	0.3	8/19/03	none	SM
232677	Nipissar LK. RAN-1	sewage	Rankin Inlet	8/12/03	8/15/03	pH	Physicals	pH	7.48	pH units	0.05	8/19/03	none	SM H.I.
232677	Nipissar LK. RAN-1	sewage	Rankin Inlet	8/12/03	8/15/03	Solids, Total Suspended	Physicals	Solids, Total Suspended	10	mg/L	3	8/20/03	GF/C Filt.	SM
232678	Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03	Calcium	Major Ions	Calcium	27.4	mg/L	0.05	8/19/03	none	SM
232678	Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03	Magnesium	Major Ions	Magnesium	0.54	mg/L	0.02	8/19/03	none	SM
232678	Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03	Potassium	Major Ions	Potassium	6.70	mg/L	0.03	8/20/03	none	SM K.I.
232678	Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03	Sodium	Major Ions	Sodium	45.2	mg/L	0.02	8/20/03	none	SM Na
232678	Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03	Sulphate	Major Ions	Sulphate	27	mg/L	3	8/21/03	none	SM SC
232678	Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03	Total Metals (24) by ICP-MS water	Metals, Total	Aluminum		µg/L			Microwave	EP

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232677	Nipissar LK. RAN-1	sewage	Rankin Inlet	8/12/03	8/15/03	Total Metals (24) by ICP-MS water	Metals, Total	Antimony	<	0.9	µg/L	0.1	10/18/03	Microwave EPA200.8 P

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232677	Nipissar LK. RAN-1	sewage	Rankin Inlet	8/12/03	8/15/03	Arsenic, Total in water	Metals, Total	Arsenic	<	1	µg/L	1	8/18/03	Microwave SM3113:B P
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232677	Nipissar LK. RAN-1	sewage	Rankin Inlet	8/12/03	8/15/03	Total Metals (24) by ICP-MS water	Metals, Total	Barium		29.5	µg/L	0.1	10/18/03	Microwave EPA200.8 P
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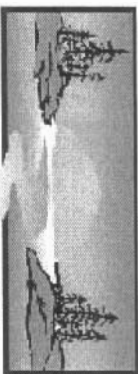
232677	Nipissar LK. RAN-1	sewage	Rankin Inlet	8/12/03	8/15/03	Total Metals (24) by ICP-MS water	Metals, Total	Beryllium	<	0.1	µg/L	0.1	10/18/03	Microwave EPA200.8 P
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232677	Nipissar LK.	sewage	Rankin	8/12/03	8/15/03	Total Metals (24) by	Metals, (24) by	Cadmium		0.2	µg/L	0.1	10/18/03	Microwave EPA200.8 P
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232677	Nipissar LK. RAN-1	sewage	Rankin Inlet	8/12/03	8/15/03	ICP-MS water	Total Metals (24) by ICP-MS	Cesium	<	0.1	µg/L	0.1	10/18/03	Microwave	EPA200.8	P
232677	Nipissar LK. RAN-1	sewage	Rankin Inlet	8/12/03	8/15/03	Total Metals (24) by ICP-MS water	Metals, Total	Chromium		3.1	µg/L	0.3	10/18/03	Microwave	EPA200.8	P
232677	Nipissar LK. RAN-1	sewage	Rankin Inlet	8/12/03	8/15/03	Total Metals (24) by ICP-MS water	Metals, Total	Cobalt		4.0	µg/L	0.1	10/18/03	Microwave	EPA200.8	P
232677	Nipissar LK. RAN-1	sewage	Rankin Inlet	8/12/03	8/15/03	Total Metals (24) by ICP-MS water	Metals, Total	Copper		234	µg/L	0.2	10/18/03	Microwave	EPA200.8	P
232677	Nipissar LK. RAN-1	sewage	Rankin Inlet	8/12/03	8/15/03	Iron, Total	Metals, Total	Iron		2804	µg/L	30	8/18/03	Microwave	SM311:B	P
232677	Nipissar LK. RAN-1	sewage	Rankin Inlet	8/12/03	8/15/03	Total Metals (24) by ICP-MS water	Metals, Total	Lead		242	µg/L	0.1	10/18/03	Microwave	EPA200.8	P
232677	Nipissar LK. RAN-1	sewage	Rankin Inlet	8/12/03	8/15/03	Total Metals (24) by ICP-MS water	Metals, Total	Lithium		2.0	µg/L	0.3	10/18/03	Microwave	EPA200.8	P
232677	Nipissar LK. RAN-1	sewage	Rankin Inlet	8/12/03	8/15/03	Total Metals (24) by ICP-MS water	Metals, Total	Manganese		101	µg/L	0.1	10/18/03	Microwave	EPA200.8	P
232677	Nipissar LK. RAN-1	sewage	Rankin Inlet	8/12/03	8/15/03	Mercury, Total	Metals, Total	Mercury	<	0.01	µg/L	0.01	8/25/03	none	SM3112:B	P

232677	Nipissar LK. RAN-1	sewage Inlet	8/12/03	8/15/03	Total Metals (24) by ICP-MS water	Metals, Total	Molybdenum	1.6	µg/L	0.1	10/18/03	Microwave	EPA200.8	P
232677	Nipissar LK. RAN-1	sewage Inlet	8/12/03	8/15/03	Total Metals (24) by ICP-MS water	Metals, Total	Nickel	13.5	µg/L	0.1	10/18/03	Microwave	EPA200.8	P
232677	Nipissar LK. RAN-1	sewage Inlet	8/12/03	8/15/03	Total Metals (24) by ICP-MS water	Metals, Total	Rubidium	1.7	µg/L	0.1	10/18/03	Microwave	EPA200.8	P

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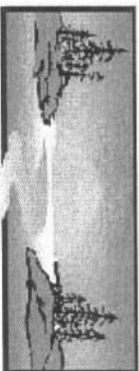
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232678	Taiga Sample ID	Client Sample ID	Sample Type	Sampling Location	Sample Collect Date	Sample Received Date	Test Group Name	Lab Section	Parameter Name	Result Flag	Reported Result	Units	Calc MDL	Sample Result Qualifier	Analysis Result Qualifier	Analysis Date	Prep Method
232678		Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03	Total Metals (24) by ICP-MS water	Metals, Total	Thallium	<	0.1	µg/L	0.1			9/20/03	Microwave
232678		Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03	Total Metals (24) by ICP-MS water	Metals, Total	Titanium		5.6	µg/L	0.1			9/20/03	Microwave
232678		Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03	Total Metals (24) by ICP-MS water	Metals, Total	Uranium		0.4	µg/L	0.1			9/20/03	Microwave
232678		Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03	Total Metals (24) by ICP-MS water	Metals, Total	Vanadium	<	0.1	µg/L	0.1			9/20/03	Microwave
232678		Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03	Total Metals (24) by ICP-MS water	Metals, Total	Zinc		144	µg/L	10			9/20/03	Microwave
232678		Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03	Ammonia	Nutrients	Ammonia as N		8.03	mg/L	0.005			8/28/03	none
232678		Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03	Chemical Oxygen Demand	Nutrients	Chemical Oxygen Demand		160	mg/L	1			8/26/03	none
232678		Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03	Nitrates+Nitrites as N	Nutrients	Nitrate+Nitrite as N	<	0.008	mg/L	0.008			8/27/03	none
232678		Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03	Organic Carbon, Total	Nutrients	Organic Carbon, Total		31.8	mg/L	0.2			9/10/03	none
232678		Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03	Conductivity, Specific	Physicals	Conductivity, Specific		531	µS/cm	0.3			8/19/03	none
232678		Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03	pH	Physicals	pH		7.22	pH units	0.05			8/19/03	none
232678		Effluent	sewage	Rankin	8/12/03	8/15/03	Solids, Total	Physicals	Solids, Total		94	mg/L	3			8/20/03	GF/C Filt.

		Inlet	Suspended		Suspended			
		Rankin Inlet	Phenols	Subcontracted Organics	Phenols			
232678	RAN-3 Effluent RAN-3	8/12/03	8/15/03		8.4	µg/L	0.5	8/21/03 none
232796	Landfill seep Wha-2	Hamlet of Whale cove	8/14/03	8/20/03	Calcium	Major Ions	Calcium	37.9 mg/L 0.05
232796	Landfill seep Wha-2	Hamlet of Whale cove	8/14/03	8/20/03	Magnesium	Major Ions	Magnesium	8.89 mg/L 0.02
232796	Landfill seep Wha-2	Hamlet of Whale cove	8/14/03	8/20/03	Potassium	Major Ions	Potassium	5.24 mg/L 0.03
232796	Landfill seep Wha-2	Hamlet of Whale cove	8/14/03	8/20/03	Sodium	Major Ions	Sodium	44.1 mg/L 0.02
232796	Landfill seep Wha-2	Hamlet of Whale cove	8/14/03	8/20/03	Sulphate	Major Ions	Sulphate	49 mg/L 3
232796	Landfill seep Wha-2	Hamlet of Whale cove	8/14/03	8/20/03	Total Metals (24) by ICP-MS water		Aluminum	µg/L
232796	Landfill seep Wha-2	Hamlet of Whale cove	8/14/03	8/20/03	Arsenic, Total in water	Metals, Total	Arsenic	6 µg/L 1
								8/26/03 Microwave

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Prior visitors may wish to visit the following forms directly (Adobe Acrobat Reader required):

Field Sheet														
Bottle Order Form														
						water								
						Total Metals (24) by ICP-MS water	Metals, Total	Cesium	<	0.1	µg/L	0.1		
232678	Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03								9/20/03	Microwave EPA200.8 Pt
						Total Metals (24) by ICP-MS water	Metals, Total	Chromium		4.2	µg/L	0.3		
232678	Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03								9/20/03	Microwave EPA200.8 Pt

232678	Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03	Total Metals (24) by ICP-MS water	Metals, Total	Cobalt	0.5	µg/L	0.1	9/20/03	Microwave	EPA200.8	Pt
232678	Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03	Total Metals (24) by ICP-MS water	Metals, Total	Copper	110	µg/L	0.2	9/20/03	Microwave	EPA200.8	Pt
232678	Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03	Iron, Total	Metals, Total	Iron	552	µg/L	30	8/25/03	Microwave	SM3111:B	Pt
232678	Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03	Total Metals (24) by ICP-MS water	Metals, Total	Lead	3.5	µg/L	0.1	9/20/03	Microwave	EPA200.8	Pt
232678	Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03	Total Metals (24) by ICP-MS water	Metals, Total	Lithium	3.0	µg/L	0.3	9/20/03	Microwave	EPA200.8	Pt
232678	Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03	Total Metals (24) by ICP-MS water	Metals, Total	Manganese	113	µg/L	0.1	9/20/03	Microwave	EPA200.8	Pt
232678	Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03	Mercury, Total	Metals, Total	Mercury	< 0.01	µg/L	0.01	8/25/03	none	SM3112:B	Pt
232678	Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03	Total Metals (24) by ICP-MS water	Metals, Total	Molybdenum	1.0	µg/L	0.1	9/20/03	Microwave	EPA200.8	Pt
232678	Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03	Total Metals (24) by ICP-MS water	Metals, Total	Nickel	10.3	µg/L	0.1	9/20/03	Microwave	EPA200.8	Pt
232678	Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03	Total Metals (24) by ICP-MS	Metals, Total	Rubidium	7.2	µg/L	0.1	9/20/03	Microwave	EPA200.8	Pt

232678	Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03	water	Total Metals (24) by ICP-MS	Metals, Total	Selenium	1	µg/L	1	9/20/03	Microwave	EPA200.8	Pi
232678	Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03	water	Total Metals (24) by ICP-MS	Metals, Total	Silver	< 0.1	µg/L	0.1	9/20/03	Microwave	EPA200.8	Pi
232678	Effluent RAN-3	sewage	Rankin Inlet	8/12/03	8/15/03	water	Total Metals (24) by ICP-MS	Metals, Total	Strontium		µg/L			Microwave	EPA200.8	Pi

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