

**Assessment Studies of
Water and Wastewater Systems
and Associated Water Management Practices
at Fort Folly First Nation
Dorchester, NB (Site #06014)
Atlantic Region**

For
Indian and Northern Affairs Canada
Atlantic Region

By
MGI Limited
Fredericton, NB

March 2002



A member of the  Family of Companies

MGI Limited

466 Hodgson Road
Fredericton, New Brunswick
Canada E3C 2G5

Tel. 506.458.1248

Fax 506.462.7646

Email mgi.nb@mgi-limited.com

Web www.mgi-limited.com
www.CRAworld.com

March 28, 2001

Public Works & Government Services Canada
1713 Bedford Row
Halifax, NS
B3J 3C9

MGI File 10294B

Attention: Shauna Pierce

Re: Assessment Study - Fort Folly First Nation, Dorchester, NB (Site #06014)

Dear Ms. Pierce:

Please find enclosed our report on the assessment of the water and wastewater systems at the Fort Folly First Nation community located near Dorchester, NB.

We trust this report meets your requirements. If you have any questions, please call Neil Brodie at 506-458-1248.

Sincerely,
MGI LIMITED

F. Neil Brodie, P.Eng.
Senior Project Manager



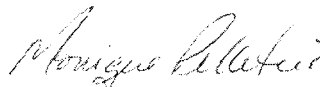

for Troy Small, M.Sc.
Project Hydrogeologist

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1.0 Overview

MGI Limited was retained by Public Works & Government Services Canada on behalf of Indian and Northern Affairs Canada to conduct an inspection of the water and wastewater system of the Fort Folly First Nation community located in Dorchester, NB. As the community obtains its potable water supply and wastewater collection services from the Village of Dorchester the program consisted of:

- 1) Review of available data from Indian and Northern Affairs Canada and Health Canada;
- 2) Liaison with Fort Folly First Nation community representative to schedule a site visit;
- 3) Site visit and interview with community representative (i.e. Chief, Community Health Representative, etc.);
- 4) Physical inspection of community infrastructure;
- 5) Discussion with municipality public works representative on system design and maintenance procedures; and
- 6) Draft and final report preparation discussing risks and possible mitigation if necessary.

Provided below is background information on the Fort Folly First Nation community in Dorchester, NB.

Date of Visit:	December 14, 2001
Inspector(s)/Interviewer(s):	Troy Small
Site Address:	PO Box 971, Dorchester, NB E4K 3V5
Phone #:	506-379-3400
Fax #:	506-379-3408
Tribal Council Affiliation:	North Shore Micmac District Tribal Council
Chief:	Joseph Knockwood
Location:	Dorchester, NB
Population:	43
# Housing Units:	19

2.0 Water System Findings

2.1 Water Source and Design

The community receives its potable water from the Village of Dorchester with the First Nation community being at the end of the municipal distribution system. The First Nation community distribution system extends west along Bernard Trail with approximately 2,360 metres of distribution piping (refer to Figure 2). The community distribution system consists of 150 mm diameter water mains that were installed in approximately 1991. The Village of Dorchester obtains its potable water from two groundwater wells. The two wells are reported to be greater than 60 meters in depth and are situated at opposite ends of the village. The two municipal wells operate in sequence but both well pumps will activate during periods of increased water demand. One village well/pumphouse is located on Woodlawn Avenue in the eastern portion of the village limits approximately two kilometres north of the First Nation Community. The Village of Dorchester water system operator noted that this well/pumphouse is rated to operate at 200 IGPM and is equipped with an emergency generator. The second well/pumphouse is located on Highway #106 adjacent to Keillor Brook and approximately one kilometre northwest of the First Nation community. This well/pumphouse is rated to operate at 250 IGPM but is not equipped with an emergency generator. The

Village of Dorchester water system operator noted that a municipal sewage lift station is located directly adjacent to the well and there are two cemeteries located in the immediate vicinity. He also noted that the village is currently in the process of finding a suitable well relocation site as part of the implementation of a new watershed protection plan. It was reported that the Village of Dorchester currently does not have a wellfield protection plan. The potable groundwater is not treated prior to being distributed to the Village of Dorchester and the Fort Folly First Nation but each pumphouse is equipped with emergency chlorine (sodium hypochlorite) addition units in the event of a bacterial presence in the distribution system.

In the January of 1999 Health Canada issued a boil water advisory to the First Nation community following the presence of total and fecal coliform bacteria. It was noted that the boil water advisory was only issued to the First Nation community as water sampling from the Village of Dorchester water system did not identify the presence of coliform bacteria. The municipal operator noted that the presence of bacteria was noted following new line installation and connection work completed in the First Nation community. Health Canada records noted that the boil order was not rescinded until October 1999. Raw water quality data for the municipal water systems was not available during the site visit but the municipal operator noted that periodically coliform bacteria are present in the municipal distribution system and aesthetic objectives of manganese and hardness normally exceed GCDWQ guidelines.

2.2 Operation and Sample Collection

The Village of Dorchester is responsible for the operation of the existing First Nation community distribution system including fire hydrant maintenance but the band is responsible for the installation of new infrastructure and maintenance of existing infrastructure. The Village of Dorchester conducts semi-annual (spring and fall) fire hydrant flushing/maintenance and flow testing at each of the 11 hydrants in the community. However, the municipality noted that the First Nation community does not have adequate fire flow provisions due to insufficient water pressure. It was also noted that the Village of Dorchester is currently trying to obtain permission to connect the municipal water distribution system to the existing water reservoir located at the Dorchester Federal Penitentiary. By connecting to the reservoir the municipality believes that the increased water pressure would provide fire flow provisions in the First Nation community. An engineering study has not been completed to determine accurate fire flow demands or assess flow capacity in the First Nation community.

As noted in Section 2.1, the municipal pumphouses are equipped with emergency chlorine addition units. Sodium hypochlorite is added to the system following the presence of coliform bacteria in the distribution system or following the installation/re-connection of distribution lines. When the water system is being disinfected the municipality monitors chlorine residual levels for a period of 24 hours at various points in the municipal distribution system and at the end of the First Nation community system (at the Chief's home). After 24 hours retention time, the system is flushed to remove residual chlorine.

Health Canada conducts monthly bacteriologic sampling at four locations in the community (Band Office, and three residences). Health Canada data noted the presence of total coliform bacteria on 30 occasions between 1999 and 2001. It should be noted that only three of the 33 positive bacterial presence analyses had total coliform counts above GCDWQ guidelines (above ten counts). The one time occurrence of fecal coliform was identified at the residence of **s.19(1)** in June 1999. Health Canada also collects water samples yearly for chemical analyses. The most recent chemical water data supplied by Health Canada

(1999) for the community water system noted that only hardness exceeded GCDWQ guidelines. The municipality also collects bacteriological samples from various points in the distribution system including the First Nation community distribution system (water sample collected at the Chief's house) on a weekly basis. The municipality data was not available at the time of the site visit but the Public Works department noted that aesthetic parameters of hardness and manganese routinely exceed aesthetic objectives.

The community has one home with a private potable water well that is located on Highway #106. The home was not connected to the municipal system due to the difficulty and cost of installing a water distribution line in this area (shallow bedrock that would require blasting for line installation).

The Fort Folly First Nation community Chief (Joseph Knockwood) is responsible for coordinating the maintenance/operation of the community water system in association with the municipality. The Chief does not have any formal water distribution training. It was noted during the site visit that all new infrastructure installations are completed by a licensed contractor or the municipality. The municipal water system operator (Craig Trenholm) reportedly has ACWWA Level I training and is responsible for the operation and maintenance of the water distribution system. However, the municipality does not have a back-up operator that accepts responsibility for the system during vacation or illness.

3.0 Wastewater System Findings

3.1 Wastewater Collection and Treatment

The community wastewater collection system consists of approximately 2,360 metres of sanitary sewer collection piping, 600 metres of force main and one lift station. The lift station is located at the intersection of Bernard Trail and Cherry Burton Road and is operated and maintained by the First Nation community. Wastewater is pumped from this lift station to a manhole at the Bingo Hall and from there is gravity forced to municipal lift station located along Highway #106. The wastewater is then pumped to the municipal single cell facultative lagoon located adjacent to the Memramcook River at the southern end of Dorchester. The facility is operated by the Village of Dorchester and discharges effluent to the Memramcook River marshland.

3.2 Operation

The lift station is operated and maintained by a community representative (Gregg Laundry) who reportedly cleans the lift station and pumps each month by adding degreasing agents to the pump chamber. The lift station is equipped with a light alarm and dual pumps. The lift station has an overflow pipe that discharges to an adjacent surface water drainage ditch. The lift station appeared to be in good condition and was not overflowing at the time of the site visit. It was noted during the interview with the Band Chief that the lift station maintenance personnel on occasion enters the lift station chamber to maintain the system but the community is not equipped with confined space entry equipment. However, the Village of Dorchester wastewater system operator (Craig Trenholm) noted that the municipality is normally on-site during lift station maintenance/cleaning and confined space entry work is not completed or required as part of lift station maintenance by the First Nation. The municipal wastewater operator noted that there has been historical problems with the lift station pumps malfunctioning as a result of the pump shut-off float being set to low in the lift station chamber. It was reported that the pump shut-off float level has been adjusted and now is operating properly.

The community has one home with a private septic system that is located on Highway #106. As per the water system, the home was not connected to the municipal system due to the difficulty and cost of installing a wastewater collection line in this area.

The Fort Folly Chief is responsible for coordinating the proper maintenance/operation of the community wastewater system in coordination with the municipality.

4.0 Discussion and Recommendations

Issue #1 The Village of Dorchester is currently in the process of finding a suitable well relocation site for the municipal well located on Highway #106 adjacent to Keillor Brook. A municipal sewage lift station is located directly adjacent to the well and there are two cemeteries located in the immediate vicinity. The municipal water system operator also noted that the village is in the process of developing a new watershed protection plan.

Recommendation: The municipality in conjunction with the New Brunswick Department of Environment and Local Government should continue to develop a watershed protection plan to protect against future potable water contamination.

Issue #2 The Village of Dorchester Public Works Department noted that coliform bacteria is periodically present in the distribution system and the municipal potable water is only disinfected (a sodium hypochlorite addition unit is available at each municipal pumphouse) following the presence of coliform bacteria in the distribution system or following the installation/re-connection of a water line. Health Canada data (1999-2001) identified the frequent presence of total coliform bacteria and a one time occurrence of fecal coliform bacteria in the First Nation community distribution system. In the January of 1999 Health Canada issued a boil water advisory to the First Nation community following the presence of total and fecal coliform bacteria. Health Canada records noted that the boil order was not rescinded until October 1999. The chemical quality of the water source reportedly regularly exceeds GCDWQ guidelines for hardness and manganese.

Recommendation: The First Nation community should be equipped with an on-site chlorine addition unit for continuous chlorination of the community distribution system. The system should be fitted with in-line chlorine residual analysers which control the sodium hypochlorite feed pumps. However, if the community objects to the taste/smell of chlorine then at a minimum ultraviolet disinfection (or similar treatment technology) should be installed on the community system prior to distribution of the potable water. Although UV disinfection does not provide residual disinfection protection for the distribution system it will provide a minimum level of disinfection in the absence of chlorine. In addition, a monthly hydrant flushing program (during above freezing conditions) should be implemented at the end point hydrants to discharge any potentially stagnant water from the system.

Issue #3 The community reportedly does not have fire flow provisions due to insufficient water pressure. It was also noted that the Village of Dorchester is currently trying to obtain permission to connect the municipal water distribution system to the existing water reservoir located at the Dorchester Federal Penitentiary.

Recommendation: Complete an engineering study to determine accurate fire flow demands and assess current water main capacity throughout the community. Determine if connection of the existing water distribution system to the Dorchester Federal Penitentiary reservoir would provide the First Nation community with sufficient water pressure for fire flow provisions.

Issue #4: The wastewater collection system in the community has one lift station that is reportedly operated and maintained by the community. It was noted during the interview with the Band Chief that the lift station maintenance personnel on occasion enter the lift station chamber to maintain the system but the community is not equipped with confined space entry equipment. However, the Village of Dorchester wastewater system operator (Craig Trenholm) noted that the municipality is normally on-site during lift station maintenance/cleaning and confined space entry is not required.

Recommendation: A protocol for confined space entry should be established and if confined space entry work is required mobile equipment for venting and testing air prior to worker entry should be provided.

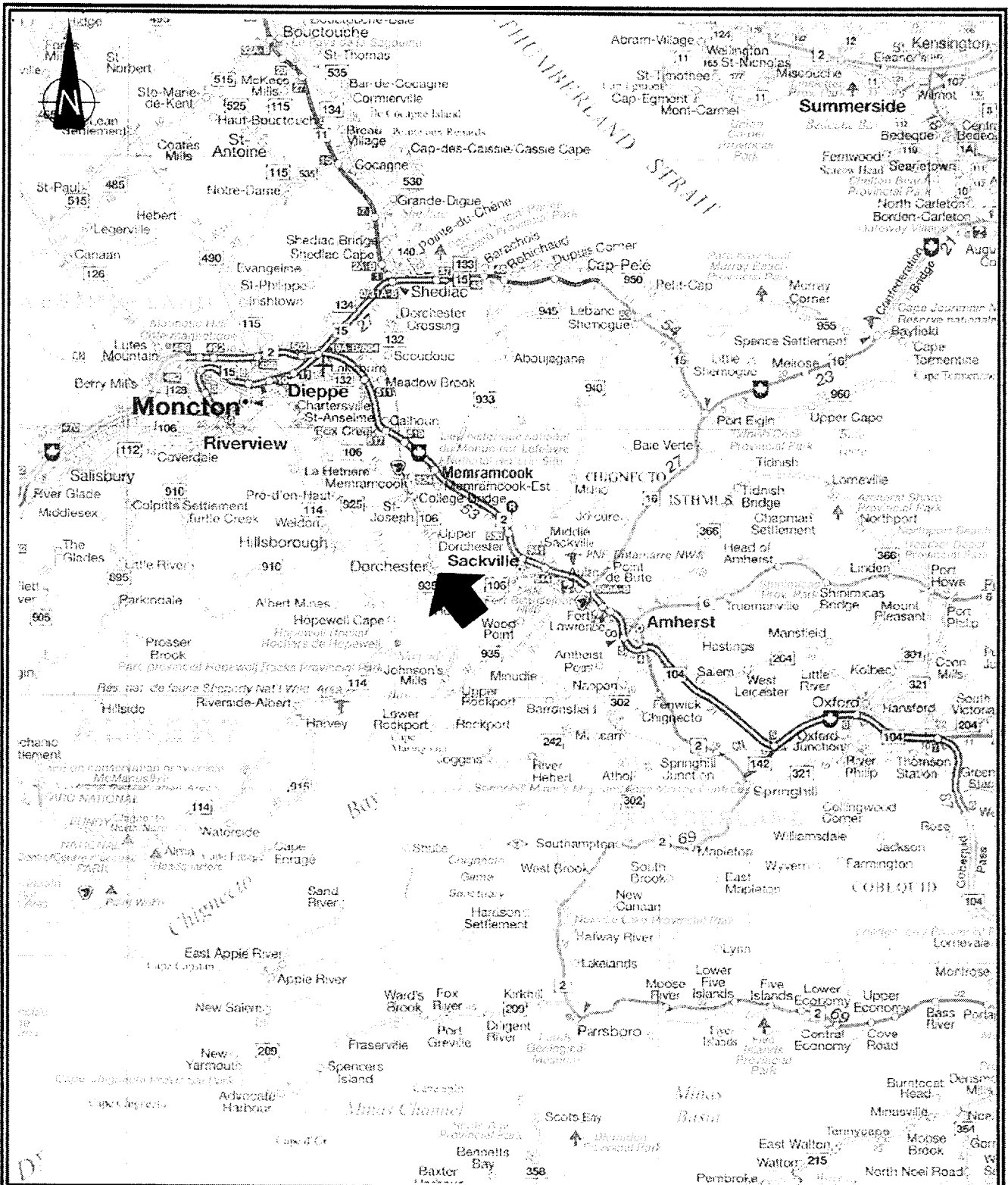
Issue #5: The municipal water and wastewater system operator reportedly has Level I ACWWA trainer, but the operator does not have back-up personnel that accept responsibility for the system during vacation or illness.


Recommendation: The municipality should ensure that there is a secondary operator available during vacation and illness. The back-up operator should complete ACWWA Level I Water Distribution and Water Treatment training.

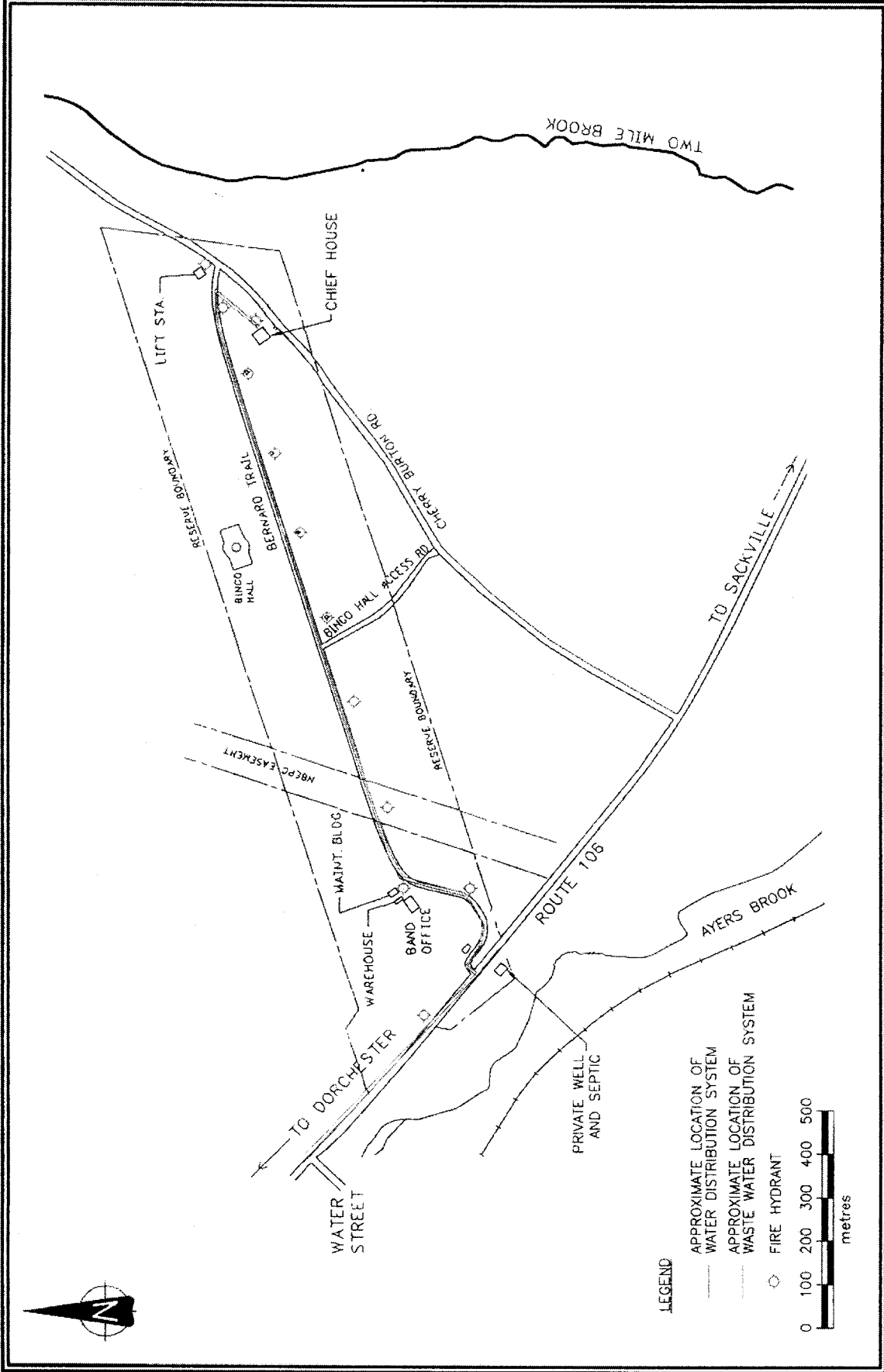
5.0 Conclusions

Overall Community Risk Assessment

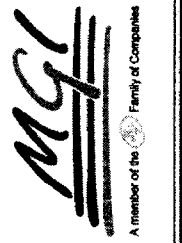
WATER		WASTEWATER	
A. Water Source	Medium	A. Effluent Receiving	Low
B. Design	Medium	B. Design	Low
C. Operations	Medium	C. Operations	Medium
D. Reporting	Low	D. Reporting	Low
E. Operators	Medium	E. Operators	Medium
F. Statistical Data	Low	F. Statistical Data	Low

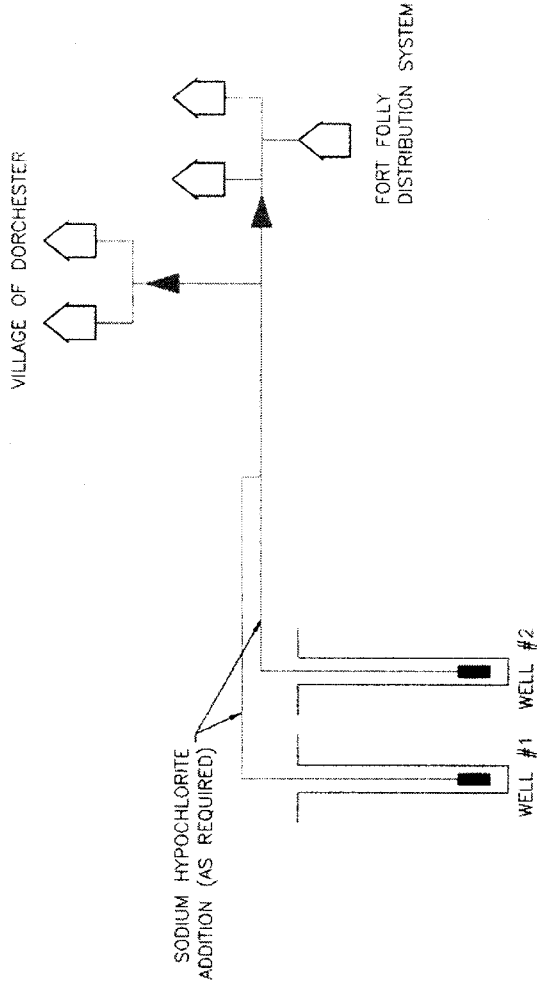



 A member of the Family of Companies	TITLE	DATE	PROJECT NO.	
		SITE LOCATION (SITE #06014)	Feb. 2002	10294B
	PROJECT	ASSESSMENT STUDIES OF WATER & WASTEWATER SYSTEMS	SCALE	FIGURE NO.
		ATLANTIC CANADA FIRST NATION COMMUNITIES FORT FOLLY FIRST NATION, DORCHESTER, NB.	Unknown	1
		DRAWN		
		GBS		

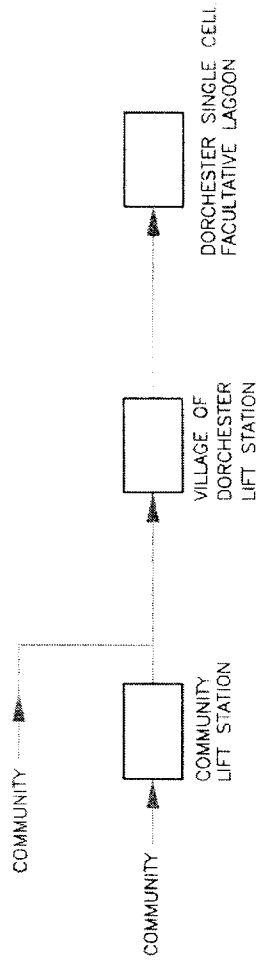



DATE	Feb. 2002	PROJECT NO.	10294B
	SCALE		As Noted
DRAWN	GBS	FIGURE NO.	2





	TITLE PROCESS FLOW-WATER (SITE #06014)		DATE Feb. 2002	PROJECT NO. 10294B
	PROJECT ASSESSMENT STUDIES OF WATER & WASTEWATER SYSTEMS ATLANTIC CANADA FIRST NATION COMMUNITIES FORT FOLLY FIRST NATION, DORCHESTER, NB.		SCALE NTS	FIGURE NO. 3
			DRAWN GBS	



	TITLE PROCESS FLOW-WASTEWATER (SITE #06014)		DATE Feb. 2002	PROJECT NO. 102948
	PROJECT ASSESSMENT STUDIES OF WATER & WASTEWATER SYSTEMS ATLANTIC CANADA FIRST NATION COMMUNITIES FORT FOLLY FIRST NATION, DORCHESTER, NB.		SCALE NTS	FIGURE NO. 4
			DRAWN GBS	

Appendix A
Water Testing Results

HEALTH CANADA DATABASE

Water Quality Data - Bacteriological Sampling
 FORT FOLLY MICMAC FIRST NATION RESERVE

SAMPLE LOCATION	DATE	PARAMETERS TESTED:	
		TOTAL COLIFORM /100ml	FECAL COLIFORM (ecoli) /100 ml
Amusement Centre	10/19/95	absent	absent
s.19(1)	06/23/99	5	absent
	07/27/99	1	absent
	10/18/99	3	absent
	01/13/00	absent	absent
	02/14/00	absent	absent
	05/30/00	absent	absent
	11/08/00	1	absent
	05/05/01	0	0
	05/24/01	2	0
Band Office	05/01/95	absent	absent
Band Office	10/19/95	absent	absent
Band Office	03/26/96	absent	absent
Band Office	11/13/96	absent	absent
Band Office	01/21/97	absent	absent
Band Office	06/19/97	absent	absent
Band Office	10/01/97	absent	absent
Band Office	01/20/98	absent	absent
Band Office	06/18/98	absent	absent
Band Office	07/30/98	absent	absent
Band Office	11/30/98	absent	absent
Band Office	01/28/99	absent	absent
Band Office	03/23/99	absent	absent
Band Office	05/03/99	absent	absent
Band Office	06/22/99	absent	absent
Band Office	06/23/99	absent	absent
Band Office	07/05/99	absent	absent
Band Office	07/27/99	absent	absent
Band Office	10/07/99	12	absent
Band Office	10/18/99	absent	absent
Band Office	10/19/99	absent	absent
Band Office	10/20/99	absent	absent
Band Office	10/28/99	1	absent
Band Office	03/30/00	absent	absent
Band Office	05/30/00	absent	absent
Band Office	08/14/00	absent	absent
Band Office	09/28/00	absent	absent
Band Office	11/08/00	absent	absent
Band Office	02/05/01	0	0
Band Office	04/15/01	3	0
Band Office	05/24/01	0	0
s.19(1)	10/01/97	absent	absent
	01/20/98	absent	absent
	06/18/98	absent	absent
	06/23/99	absent	absent
	07/05/99	absent	absent

		07/27/99	absent	absent
	s.19(1)	02/14/00	absent	absent
		02/05/01	0	0
		04/15/01	2	0
Blue Raven Restaurant		06/19/97	absent	absent
		06/14/00	absent	absent
	s.19(1)	03/23/99	absent	absent
		05/03/99	absent	absent
		07/27/99	absent	absent
Dorchester Well (Water St.)		06/23/99	absent	absent
Entertainment Centre		11/30/98	absent	absent
Entertainment Centre		01/28/99	absent	absent
Entertainment Centre		03/23/99	absent	absent
Entertainment Centre		05/03/99	absent	absent
Entertainment Centre		06/23/99	absent	absent
Entertainment Centre		07/05/99	absent	absent
Entertainment Centre		10/07/99	absent	absent
Entertainment Centre		10/18/99	2	absent
Entertainment Centre		10/19/99	absent	absent
Entertainment Centre		10/20/99	absent	absent
Entertainment Centre		10/28/99	absent	absent
Entertainment Centre		03/30/00	absent	absent
Entertainment Centre		05/30/00	absent	absent
Entertainment Centre		08/14/00	absent	absent
Entertainment Centre		09/28/00	absent	absent
Entertainment Centre		01/03/01	absent	absent
Entertainment Centre		03/12/01	0	0
Fire Hydrant 1		06/22/99	absent	absent
Fire Hydrant 2		06/22/99	absent	absent
Fire Hydrant 3		06/22/99	absent	absent
Fire Hydrant 4		06/22/99	absent	absent
Fire Hydrant 4		06/22/99	absent	absent
Health Centre		01/13/00	1	absent
Health Centre		02/14/00	absent	absent
House # 34 near Band Office		10/15/99	1	absent
		01/21/97	absent	absent
		03/23/99	absent	absent
		06/22/99	absent	absent
		06/23/99	5	absent
		07/05/99	6	absent
		07/27/99	absent	absent
		10/15/99	4	absent
	s.19(1)	10/18/99	1	absent
		10/19/99	2	absent
		10/20/99	absent	absent
		10/28/99	absent	absent
		01/13/00	absent	absent
		03/30/00	absent	absent
		08/14/00	absent	absent
		09/28/00	9	absent
		01/03/01	absent	absent
		04/15/01	1	0
		05/24/01	1	0
		11/13/96	absent	absent

s.19(1)

10/15/99	1	absent
10/18/99	1	absent
10/19/99	1	absent
10/20/99	absent	absent
10/28/99	absent	absent
06/18/98	absent	absent
07/30/98	absent	absent
11/30/98	absent	absent
01/28/99	absent	absent
06/22/99	absent	absent
06/23/99	absent	absent
07/05/99	5	absent
10/07/99	34	absent
10/15/99	5	absent
10/18/99	absent	absent
10/19/99	1	absent
10/20/99	1	absent
10/28/99	absent	absent
01/13/00	absent	absent
02/14/00	absent	absent
03/30/00	absent	absent
05/30/00	absent	absent
08/14/00	absent	absent
09/28/00	absent	absent
11/08/00	absent	absent
01/03/01	absent	absent
02/05/01	0	0
03/12/01	0	0
04/15/01	4	0
05/24/01	1	0
03/26/96	absent	absent
10/15/99	3	absent
06/18/98	absent	absent
06/22/99	10	8
01/20/98	absent	absent
01/28/99	absent	absent
05/03/99	absent	absent
03/13/96	absent	absent
11/13/96	2	absent
01/21/97	absent	absent
06/19/97	absent	absent
10/07/99	8	absent
10/15/99	2	absent
10/18/99	1	absent
10/19/99	1	absent
10/20/99	absent	absent
10/28/99	2	absent
03/30/00	absent	absent
05/30/00	absent	absent
08/14/00	absent	absent
09/28/00	absent	absent
11/08/00	absent	absent
01/03/01	absent	absent
03/12/01	0	0

	s.19(1)	05/24/01	0	0
		10/19/95	absent	absent
Spring (on East Fairfield Rd.)		01/03/01	absent	absent
Spring (on East Fairfield Rd.)		02/05/01	0	0
Spring (on East Fairfield Rd.)		03/12/01	0	0
		05/01/95	absent	absent
	s.19(1)	10/19/95	absent	absent
		10/01/97	absent	absent
4 Winds Entertainment Centre		10/01/97	absent	absent
4 Winds Entertainment Centre		01/20/98	absent	absent
4 Winds Entertainment Centre		07/30/98	absent	absent
			Roger	fortflyb

HEALTH CANADA DATABASE
 DRINKING WATER QUALITY (CHEMICAL) DATA
 FORT FOLLY MICMAC FIRST NATION RESERVE

Parameters Sampled		aluminum	arsenic	barium	boron	cadmium	chloride	chromium	colour	copper	fluoride	hardness	iron	L. I.	lead	manganese	nitrate	pH	selenium	sodium	sulphate	turbidity	uranium	zinc
Health or Aesthetic Limit	mg/l →	0.025	1.00	5.00	0.005	<250	0.05	< 15 TCU	< 1.0	1.5	80 - 100	< 0.3			0.01	< 0.05	45.00	6.5 to 8.5	0.01	< 200	< 500	1 NTU <5 NTU	0.1	< 5.0
LOCATION	Date:	IMAC	MAC	IMAC	MAC	AO	MAC	AO	AO	AO	MAC	MAC	AO		MAC	AO	MAC	AO	MAC	AO	AO	MAC & AO	MAC	AO
	06/14/00	<0.025	<0.0015	0.091	<0.01	<0.0005	12.6	<0.01		0.014	0.219	73.8	0.043	-1	<0.001	0.295	<0.05	7.38	<0.0015	6.58	19	0.1	<0.0005	0.0065
	10/23/95						30.9		16	0.02	0.29	67.3	0.62			1.84	<0.05	7.3		19.2	9	2.78	<0.001	<0.01
Public Supply	03/05/83	<0.005	<0.002	0.14	0.021	<0.0005	15.5	<0.002	5	0.16	0.1	102	0.02		0.0024	0.1	<0.05	8.1	<0.002	11.8	13	0.28	<0.0001	0.01
Public Supply	05/01/95						15		<3	0.31		101	<0.02			0.23	0.074	7.4		10.8	14	0.2		0.01
Public Supply	03/28/96	<0.025	<0.001	<0.156	<0.200	<0.0001	18.2	<0.02		0.41	0.112	108.9	0.023		<0.001	0.097	<0.05	7.81	<0.001	10.96	13.4	0.3		<0.01
Public Supply	07/30/98	<0.025	<0.001	0.132	<0.200	<0.0005	16.4	<0.01		0.384	0.11	97	<0.05		0.0014	0.045	<0.05	7.66	<0.001	12.1	12.4	0.1		<0.01
Public Supply	11/30/88	<0.025	<0.001	0.143	<0.200	<0.0005	15.5	<0.01		0.011	0.107	105	0.06		<0.001	<0.01	<0.05	7.79	<0.001	11.09	13.2	0.2		<0.01
Public Supply	10/07/99	<0.025	<0.0015	0.133	<0.200	<0.0005	16.1	<0.01		0.219	<0.1	108.8	<0.05	-0.2	<0.001	0.014	<0.05	7.77	<0.0015	12	12.9	0.2		<0.005

s.19(1)



Water

First Nations Environmental Health Services
261 Ch. Desherbiers
St. Louis, NB
E4X 1S2

Your file / Votre référence

Our file / Notre référence

Chief Joseph Knockwood
Fort Folly First Nation
PO Box 971
Dorchester, NB
E4K 3V5

Chief Knockwood:

RE: WATER SAMPLE RESULTS -

LOCATION	DATE	TOTAL COLIFORM	E-COLI	INTERPRETATION
	oct. 5, 01	nd	nd	acceptable
Band Office		nd	nd	acceptable
		nd	nd	acceptable
Kennell		nd	nd	acceptable

s.19(1)

The results indicate the water was bacteriologically acceptable on the day of sampling.

If you require more information on this report, please do not hesitate to contact me at (506) 876-1198 or at my cellular phone (506) 523-5743.

Yours truly,

Roger Mazerolle, C.P.H.I. (C)
Environmental Health Officer



First Nations Environmental Health Services
 261 Ch. Desherbiers
 Saint Louis N. B.
 E4X 1S2

Your file Votre référence

Our file Notre référence

Chief Joe Knockwood
 Fort Folly First Nation

Chief Knockwood

Date Sampled: June 11, 2001

Following are bacteriological analysis results of water collected from the public supply, recently in your community.

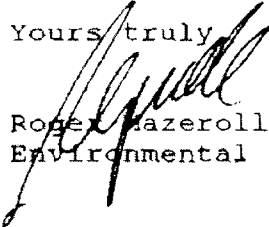
Lab No.	Sample I.D.	Total Coliform	E. coli
159828	Band Office	nd	nd
159829	[REDACTED]	1	nd
159830	[REDACTED]	1	nd
159831	[REDACTED]	1	nd

s.19(1)

INTERPRETATION: ND means non detected

Some contamination is evident I recommend that the water system be flushed

Yours truly


 Roger Mazerolle CPHI (C)
 Environmental Health Officer

Canada

Environment and Local Government **New Brunswick** Environnement et gouvernements locaux
 Analytical Services Laboratory/Laboratoire des services analytiques
 12, rue McJohn Street, Fredericton, NB E3A 5T8
 Microbiology Multi-Sample Report / Rapport d'échantillon multiple de microbiologie

Client information du Client:

Report Date

Date de Rapport: 2001/06/13

Organization/Organisation: Health Canada
 Attention: Roger Mazerolle
 Prop No./No. de projet: 0997
 Event No./No. d'événement: 13380
 Authorization/Autorisation: Preliminary/préliminaire
 Matrix/Matrice: Unknown / Inconnu

Date Collected/Date de prélèvement: 2001/06/11

Total coliform

Client Identifier No. d'échantillon	Lab No. No. de lab	Flag	Results Résultats	Units Unités	LOQ LDQ	DW EP
FORT FOLLY F.N. - #1 C/O BAND OFFICE	200159828	Not Detected / Non détecté		MPN/100ml		Y
FORT FOLLY F.N. - #2 C/O	200159829		1	MPN/100ml		Y
FORT FOLLY F.N. - #3 C/O KENNEL	200159830		1	MPN/100ml		Y
FORT FOLLY F.N. - #4	200159831		1	MPN/100ml		Y

s.19(1)

E. coli

Client Identifier No. d'échantillon	Lab No. No. de lab	Flag	Results Résultats	Units Unités	LOQ LDQ	DW EP
FORT FOLLY F.N. - #1 C/O	200159828	Not Detected / Non détecté		MPN/100ml		Y
FORT FOLLY F.N. - #2 C/O	200159829	Not Detected / Non détecté		MPN/100ml		Y
FORT FOLLY F.N. - #3 C/O KENNEL	200159830	Not Detected / Non détecté		MPN/100ml		Y
FORT FOLLY F.N. - #4	200159831	Not Detected / Non détecté		MPN/100ml		Y

s.19(1)

[A] Absence
 [P] Presence
 [MPN] Most Probable Number
 [CFU] Colony Forming Units
 [LOQ/LDQ] Limits of quantitation/Limites de quantification

JUN 13 2001
Ray Mazerolle

Level of detection is one bacterium per test volume

First Nations Environmental Health Services
 261 Ch. Desherbiers
 Saint Louis N. B.
 E4X 1S2

Your file / Votre référence

Our file / Notre référence

Chief Joe Knockwood
 Fort Folly First Nation

Date Sampled: April 15, 2001

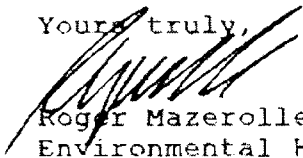
Following are bacteriological analysis results of water collected from the public supply, recently in your community.

Lab No.	Sample I.D.	Total Coliform	E. coli
157853	Band Office	3	nd
157854	Kennell	4	nd
157855	[REDACTED] s.19(1)	1	nd
157956	[REDACTED]	2	nd

INTERPRETATION: ND means non detected

Some contamination was detected in the water system. Resampling will be done this week

Yours truly,



Roger Mazerolle CPHI(C)
 Environmental Health Officer

Environment and Local Government **New Brunswick** Environnement et gouvernements locaux
 Analytical Services Laboratory/Laboratoire des services analytiques
 12, rue McGloin Street, Fredericton, NB E3A 5T8
 Microbiology Multi-Sample Report / Rapport d'échantillon multiple de microbiologie

Client Information du Client:

Report Date
 Date de Rapport: 2001/05/17

Organization/Organisation: Health Canada
 Attention: Rogor Mazerolle
 Prop No./No. de projet: 0997
 Event No./No. d'événement: 12483
 Authorization/Autorité: Preliminary/préliminaire
 Media/Matrics: Unknown / inconnu

Date Collected/Date de prélèvement: 2001/05/15

Total coliform

Client Identifier/ No. d'échantillon	Lab No./ No. de lab	Flag	Results/ Résultats	Units/ Unités	LOQ/ LDQ	DW/ EP
FORT FOLLEY F.N.- BAND OFFICE - #1	200157653		3	MPN/100ml		Y
FORT FOLLEY F.N.- KENNELL - #2	200157654		4	MPN/100ml		Y
FORT FOLLEY F.N.-	200157655		1	MPN/100ml		Y
S.19(1) FORT FOLLEY F.N.-	200157656		2	MPN/100ml		Y

E. coli

Client Identifier/ No. d'échantillon	Lab No./ No. de lab	Flag	Results/ Résultats	Units/ Unités	LOQ/ LDQ	DW/ EP
FORT FOLLEY F.N.- BAND OFFICE - #1	200157653	Not Detected. / Non détecté		MPN/100ml		Y
FORT FOLLEY F.N.- KENNELL - #2	200157654	Not Detected. / Non détecté		MPN/100ml		Y
FORT FOLLEY F.N.-	200157655	Not Detected. / Non détecté		MPN/100ml		Y
S.19(1) FORT FOLLEY F.N.-	200157656	Not Detected. / Non détecté		MPN/100ml		Y

[A] Absence
 [P] Presence
 [MPN] Most Probable Number
 [CFU] Colony Forming Units
 [LOQ/LDQ] Limit of quantitation/Limite de quantification

MAY 17 2001

[Handwritten signature]

Level of detection is one bacterium per test volume

Water

Surface-Ground Microbiology/Microbiologie Surface-Souterrain
 Department of the Environment/Ministère de l'Environnement
 Analysis Report / Rapport d'Analyse

Proposal #/N° de Projet: 997 Event #/Lot N° :00-0043
 Name/Non : ROGER MAZEROLLE August 10, 2000
 Project/Projet : ROGER MAZEROLLE Page : 1
 Address/Adresse : RR #1, SITE 17, BOX 16, ST. LOUIS DE KEN

Field #/N° d'Echantillon: - - 1 Priority/Priorité: ASAP (1-2 days)
 Lab #/N° de Laboratoire : 00-63451 County/Comté: Albert

Date Collected [yy mm dd]/Date du prélèvement[aa.mm.jj]: 00.08.00
 Sample Submitted by/Echantillon Soumis par: ROGER MAZEROLLE
 Name/Non : ROGER MAZEROLLE
 Address/Adresse: HEALTH CANADA
 : FORT POLLY FN C/O BAND OFFICE, NB

This is Drinking Water
 Sample Type/Genre d'Echantillon: Drilled Well/Puits fore
 Product/Produit : Other/Autre
 Reason/Motif : Routine/Routine

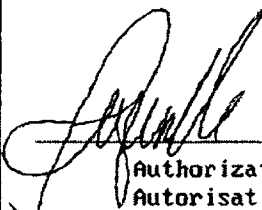
Parameter Test / Analyse Paramètre	Result Résultat	LOQ	Concentration	Analyst Analyste
MPN total coliforms (APHA 9221C)	ND	1	MPN/100ML	FF
MPN E.coli (APHA 9221C)	ND	1	MPN/100ML	FF

Footnotes: [LOQ] Limit of quantitation/Limite de quantification
 Apostillé: [ND] not detected/pas détecté
 * Indicates greater than acceptable limit/Signifie plus grand que la limite
 [CFU] Colony Forming Units

Questions?

See enclosed information or contact the Public Health Office in your area/ Voir les renseignements inclus ou communiquez avec le Bureau de la Santé publique de votre région.

Bacteriological Analysis of Water / Analyse Bactériologique de l'eau
<input checked="" type="checkbox"/> Acceptable/Acceptable
<input type="checkbox"/> Acceptable within range; advise further Sampling/ Acceptable a l'intérieur des limite; conseiller de prendre autre échantillon
<input type="checkbox"/> Unacceptable/ Inacceptable



 Authorization /
 Autorisation

Surface-Ground Microbiology/Microbiologie Surface-Souterrain
 Department of the Environment/Ministère de l'Environnement
 Analysis Report / Rapport d'Analyse

Proposal #/N° de Projet: 997 Event #/Lot N° :00-0043
 Name/Non : ROGER MAZEROLLE August 10, 2000
 Project/Projet : ROGER MAZEROLLE Page : 1
 Address/Adresse : RR #1, SITE 17, BOX 16, ST. LOUIS DE KEN

Field #/N° d'Echantillon: - - 5 Priority/Priorité: ASAP (1-2 days)
 Lab #/N° de Laboratoire : 00-63455 County/Comté: Albert

Date Collected [yy mm dd]/Date du prélèvement[aa.mm.jj]: 00.08.08
 Sample Submitted by/Echantillon Soumis par: ROGER MAZEROLLE
 Name/Non : ROGER MAZEROLLE
 Address/Adresse: HEALTH CANADA
 : FORT FOLLY FN C/O IRENE LECLAIR, NB

This is Drinking Water
 Sample Type/Genre d'Echantillon: Drilled Well/Puits fore
 Product/Produit : Other/Autre
 Reason/Motif : Routine/Routine

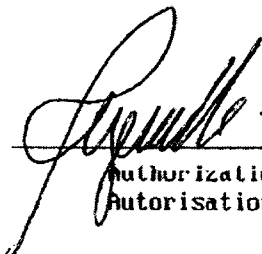
Parameter Test / Analyse Paramètre	Result Résultat	LOQ	Concentration	Analyst Analyste
MPN total coliforms (APHA 9221C)	ND	1	MPN/100ML	FF
MPN E.coli (APHA 9221C)	ND	1	MPN/100ML	FF

Footnotes: [LOQ] Limit of quantitation/Limite de quantification
 Apostillé: [ND] not detected/pas détecté
 * Indicates greater than acceptable limit/Signifie plus grand que la limite
 [CFU] Colony Forming Units

Questions?

See enclosed information or contact the Public Health Office in your area/ Voir les renseignements inclus ou communiquez avec le Bureau de la Santé publique de votre région.

Bacteriological Analysis of Water / Analyse Bactériologique de l'eau
<input checked="" type="checkbox"/> Acceptable/Acceptable
<input type="checkbox"/> Acceptable within range; advise further Sampling/ Acceptable a l'intérieur des limite; conseiller de prendre autre échantillon
<input type="checkbox"/> Unacceptable/ Inacceptable



 Authorization /
 Autorisation

Surface-Ground Microbiology/Microbiologie Surface-Souterrain
 Department of the Environment/Ministère de l'Environnement
 Analysis Report / Rapport d'Analyse

Proposal #/N° de Projet: 997 Event #/Lot N° :00-0043
 Name/Non : ROGER MAZEROLLE
 Project/Projet : ROGER MAZEROLLE
 Address/Adresse : RR #1, SITE 17, BOX 16, ST. LOUIS DE KEN

August 10, 2000
 Page : 1

Field #/N° d'Echantillon: - - 3 Priority/Priorité: ASAP (1-2 days)
 Lab #/N° de Laboratoire : 00-63453 County/Comté: Albert

Date Collected (yy mm dd)/Date du prélèvement(aa.mm.jj): 00.08.08
 Sample Submitted by/Echantillon Soumis par: ROGER MAZEROLLE
 Name/Non : ROGER MAZEROLLE
 Address/Adresse: HEALTH CANADA
 : FORT FOLLY FN C/O ANDREW KNOCKWOOD, NB

This is Drinking Water
 Sample Type/Genre d'Echantillon: Drilled Well/Puits fore
 Product/Produit : Other/Autre
 Reason/Motif : Routine/Routine

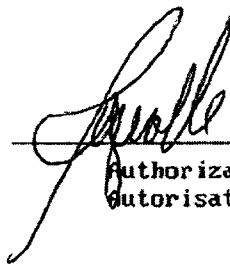
Parameter Test / Analyse Paramètre	Result Résultat	LOQ	Concentration	Analyst Analyste
MPN total coliforms (APHA 9221C)	ND	1	MPN/100ML	FF
MPN E.coli (APHA 9221C)	ND	1	MPN/100ML	FF

Footnotes: [LOQ] Limit of quantitation/Limite de quantification
 Apostillé: [ND] not detected/pas détecté
 * Indicates greater than acceptable limit/Signifie plus grand que la limite
 [CFU] Colony Forming Units

Questions?

See enclosed information or contact the Public Health Office in your area/ Voir les renseignements inclus ou communiquez avec le Bureau de la Santé publique de votre région.

Bacteriological Analysis of Water / Analyse Bactériologique de l'eau
<input checked="" type="checkbox"/> Acceptable/Acceptable
<input type="checkbox"/> Acceptable within range; advise further Sampling/ Acceptable a l'intérieur des limite; conseiller de prendre autre échantillon
<input type="checkbox"/> Unacceptable/ Inacceptable



 Authorization /
 autorisation

Surface-Ground Microbiology/Microbiologie Surface-Souterrain
 Department of the Environment/Ministère de l'Environnement
 Analysis Report / Rapport d'Analyse

Proposal #/N° de Projet: 997 Event #/Lot N° :00-0043
 Name/Non : ROGER MAZEROLLE August 10, 2000
 Project/Projet : ROGER MAZEROLLE Page : 1
 Address/Adresse : RR #1, SITE 17, BOX 16, ST. LOUIS DE KEN

Field #/N° d'Echantillon: - - 2 Priority/Priorité: ASAP (1-2 days)
 Lab #/N° de Laboratoire : 00-63452 County/Comté: Albert

Date Collected (yy mm dd)/Date du prélèvement(aa.mm.jj): 00.08.08
 Sample Submitted by/Echantillon Soumis par: ROGER MAZEROLLE
 Name/Non : ROGER MAZEROLLE
 Address/Adresse: HEALTH CANADA
 : FORT FOLLY FN C/O ENT CENTRE, NB

This is Drinking Water
 Sample Type/Genre d'Echantillon: Drilled Well/Puits fore
 Product/Produit : Other/Autre
 Reason/Motif : Routine/Routine

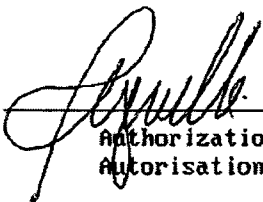
Parameter Test / Analyse Paramètre	Result Résultat	LOQ	Concentration	Analyst Analyste
MPN total coliforms (APHA 9221C)	ND	1	MPN/100ML	FF
MPN E.coli (APHA 9221C)	ND	1	MPN/100ML	FF

Footnotes: [LOQ] Limit of quantitation/Limite de quantification
 Apostillé: [ND] not detected/pas détecté
 * Indicates greater than acceptable limit/Signifie plus grand que la limite
 [CFU] Colony Forming Units

Questions?

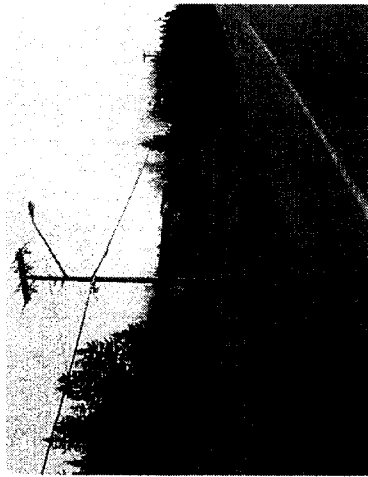
See enclosed information or contact the Public Health Office in your area/ Voir les renseignements inclus ou communiquez avec le Bureau de la Santé publique de votre région.

Bacteriological Analysis of Water / Analyse Bactériologique de l'eau
<input checked="" type="checkbox"/> Acceptable/Acceptable
<input type="checkbox"/> Acceptable within range; advise further Sampling/ Acceptable a l'intérieur des limite; conseiller de prendre autre échantillon
<input type="checkbox"/> Unacceptable/ Inacceptable

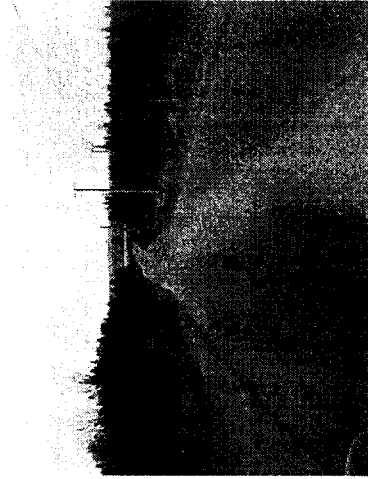


 Authorization /
 Autorisation

Appendix B
Photographs of Infrastructure



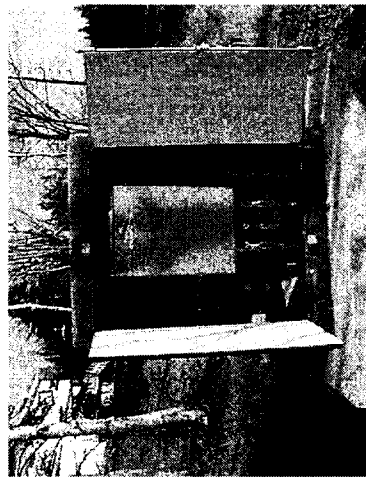
Fort Folly First Nation reserve entrance.



Bernard Trail looking east.



End of Bernard trail at intersection with Cherry Burton Road.



Community lift station.



Community lift station and overflow drainage ditch (foreground).



Fire hydrant at Chief's house (end of community water system).

Fort Folly First Nation (Site # 06014)