

2017 Annual Water Public Report

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Water Distribution System History

Since 1992, water purveyors in B.C. have been required to possess an Operating Permit issued by their Regional Health Authority, which includes following the [Guidelines for Canadian Drinking Water Quality](#)), and the [British Columbia Drinking Water Protection Act and BC Safe Drinking Water Regulations](#)

Water Distribution System Description

The Town of Smithers water system currently draws water from three wells. Well #1 (19th Avenue) is located about 30 feet away from the original well and is connected to the same pumphouse. It is 268 feet deep and in a sand and gravel aquifer with a 12 inch telescoping screen between 234 and 265 feet. This pumphouse is used for annual chlorine application for Spring Water Main Flushing.

Well #2 (Victoria Street well) is 244 feet deep, in the same aquifer, well confined from potential contamination from an old landfill site, and with a similar screen from 193 to 235 feet. Its capacity is unknown, but lower than Well #1.

Well #3 (Riverside Park) is located adjacent to the Bulkley River, is 92 feet deep gravel aquifer with a similar screen from 64 to 85 feet.

The Town reported that the Well #1 (19th Avenue) currently produces about 70 L/s (1,100 USGPM), the Well #2 (Victoria Street) produces about 17 L/s (270 USGPM) and the Well #3 (Riverside Park) produces about 60 L/s (950 USGPM). The system serves approximately 5,400 people.

Standards

The Town of Smithers has a Northern Health Authority permit to operate a drinking water system with 301 -10000 connections (copy of permit attached – Appendix “A”). The Emergency Response Plan is reviewed and updated annually.

Three samples are collected weekly and tested for Bacteria. Overall the Town of Smithers tests at least 9 different locations each month. These samples are taken to the local Northern Health Authority Office and sent to an accredited lab for testing and analyzed for presence of Total Coliform and *E. coli*.

A reporting error in the 2016 Annual Report indicated an incorrect number of samples collected. The correct information for 2016 is that there were a total of 98 samples collected and of the samples collected 8 were positive for Total Coliforms and 0 for *E. coli*. There was 1 set of consecutive samples that contained Total Coliforms out of the 98.

In 2017 there were a total of 165 samples collected, and of the samples collected, 14 were positive for Total Coliforms and 0 contained *E. coli*. There were a total of 4 sets of consecutive samples that contained Total Coliforms.

A complete breakdown of Total Coliforms and *E. coli* results can be found in Appendix 'B' for both 2016 and 2017.

Chemical testing is done at each well annually and are sent to an accredited lab from Northern Health Authority for testing and are analyzed for chemical and physical parameters including potability, metals and mercury. A history of results can be found in Appendix C.

The results can also be found at Healthspace.ca/nha - [Smithers Community Water Systems - Samples](#)

Lab analysis indicated that the water was slightly soft with relatively low mineral content. It met objectives except that the manganese level was 0.087 mg/L, which is slightly above the aesthetic objective (A0) of 0.05 mg/L.

Other than a high Manganese (Mn) count, which is an Aesthetic Objective, there were no other exceedances identified during testing. The Town of Smithers water quality meets or exceeds Guidelines for Canadian Drinking Water Quality.

Manganese (Mn)

The main problem with manganese in drinking water has to do with undesirable taste and discoloration (black) of the water. Aesthetic quality guidelines address parameters, which may affect consumer acceptance of drinking water, such as taste, odour and color. Operational guidelines are set for parameters that may affect processes at a treatment plant or in the drinking water distribution system. The aesthetic objective for manganese in drinking water is 0.05 mg/L. As with iron, the presence of manganese in water may lead to the accumulation of microbial growths in the distribution system. Even at concentrations below 0.05 mg/L, manganese may form coatings on water distribution pipes that may slough off as black precipitates.

Manganese levels for Well # 1 (19th Avenue) 0.138 mg/L, Well #3 (Riverside) 0.149 mg/L and Well #2 (Victoria Street) 0.101 mg/L.

For more information regarding drinking water, please refer to Health Canada and the Canadian Drinking Water Guidelines (CDWG) [Canadian Drinking Water Guidelines - Manganese](#).

Water Storage Facilities

The distribution system includes two reservoirs, both of which float on the system. The Float on the System is a method of operating a water storage facility. Daily flow into the facility is approximately equal to the average daily demand for water. When consumer demands for water are low, the storage facility will be filling. During periods of high demand, the facility will be emptying. The reservoir levels are lowered and raised significantly each day. One reservoir is 265,000 gallons and is approximately

10 feet deep. The other is 1,000,000 gallons and 25 feet deep. Both have a single inlet/outlet and the distribution system is flushed annually.

The main Moncton Road reservoir was built in 1975. The reservoir has been tested and the Condition Survey is on file in the Chief Operator's Office as well as in the Engineering Department at the Town Office. This reservoir was cleaned in 2005.

The small reservoir on Zobnick Road was built in 1950; it contains two compartments and is underground. Access is by manhole. The Zobnick reservoir was cleaned in September 2015.

Well Maintenance

Well maintenance is a critical component of our water infrastructure maintenance program. As the water from the three wells is introduced into our distribution grid untreated, we conduct maintenance and monitoring. The water levels are measured and recorded to ensure the aquifer is not over utilized and the system is checked for malfunctions. The system is flushed regularly and all activities around the wells are closely monitored and regulated. The Environmental Operators Certification Program of British Columbia certifies the employees who maintain this facility. Smithers has a Class 1 system and the Town has three employees who are all level 2 certified that maintain the facilities.

In 2017 we experienced contaminated water tests which showed Total Coliforms present in samples. The Town of Smithers issued a "Boil Water Notification" and with the direction of Northern Health instituted a direct disinfection cleaning process of reservoirs and distribution system.

Valve Exercising

Valves are interspersed along water mains and can be shut or opened to alter the flow of water. The Town of Smithers staff began a valve-exercising program in 2003. The Town of Smithers crew inspects each valve annually, exposing buried valves, making repairs and exercising every valve by turning it first to a closed position then back to open. This process begins in June and lasts approximately two weeks. When the water main flushing program is completed in May, the valves are checked to ensure all valves are open to give us adequate water supply and fire protection.

The Town of Smithers has 584 flow control valves attached to the underground network. The valves are primarily used to control the direction of water flow and to isolate areas of the network for inspection or repair. The expected service life of a flow control valve is 40 to 50 years without cathodic protection and 100 years with cathodic protection. Cathodic Protection (CP) is a technique used to control the corrosion of metal surface by making it the cathode of an electrochemical cell.

Water Main Flushing

The Town of Smithers initiated a water main flushing program in 1978. In 2002, the Town of Smithers replaced the old chlorine gas system with a new hypochlorite (liquid chlorine) system. Each main is flushed annually in the month of May during daytime hours and flushes its 46.7 km of water mains. Chlorine is added the week before and during flushing.

The Town of Smithers follows the Guidelines for Canadian Drinking Water Quality (GCDWQ) protocols regarding the levels of Chlorine that is used. More information regarding Chlorine can be found at [Guidelines for Canadian Drinking Water Quality: Guideline Technical Document – Chlorine](#).

In addition to accumulated debris, some areas of the water system are susceptible to water stagnation, where water usage is low or water mains terminate at a cul-de-sac or dead-end water main. Accumulated debris and stagnant water inhibit flow through mains, cause dirty water and create a favourable environment for bacteria growth. In response to these concerns, chlorine is added during flushing to offset any bacteria that might be disturbed during the flushing program.

We take our responsibility as a water supplier very seriously and take pride in the fact that we are able to maintain a system that consistently provides the Town of Smithers with the highest quality of potable water.

COMPLETED PROJECTS

In 2017 the Town of Smithers looped a 10 inch water main from Victoria Street up along Main Street to 16th Avenue.

REVIEW OF BOIL WATER ADVISORY

The Town of Smithers takes the responsibility of a water supplier very seriously and takes pride in the fact that we maintain a system that provides the Town of Smithers with the highest quality of potable water.

In 2017, due to the contamination collections and the 'Boil Water Notice' incident in September, an extensive review of the Emergency Response Plan for the Town of Smithers was undertaken in the fall and continues into 2018. Emergency Plan upgrades in response to the review includes revision to flushing protocols and sampling frequencies including more assessments of bacteriological tests at the source to ensure that we do not encounter a contamination collections in the future.

Another upgrade to the Emergency Response Plan is establishing a faster way to let the public know of contaminations and notifications by using the Everbridge Mass Notification System that will be instituted in early 2018. With an Emergency Notification System, the Town can ensure that all people registered with the Mass Notification System will receive notification of any water issues that arise promptly.

FUTURE PLANS

The Town of Smithers is looking into replacing cast iron water mains between 14th and 15th Avenue in the lane as well as also replacing cast iron water main between 18th Avenue and Hill Side Drive.

Respectfully submitted,

Dale Chartrand
Chief Utilities Operator

DC/jb



2017 Annual Water Public Report

APPENDIX "A"

2017 Ministry of Health Permit

PERMIT TO OPERATE

A Drinking Water System with
301-10000 Connections

System Name: Smithers Community Water System
Physical Location: Smithers Community Water System
1027 Aldous Street
Smithers BC
Owner Name: Town of Smithers

Conditions of Permit

- > Bacteriological sampling required minimum of twice weekly, from locations that are representative of the distribution system, as approved by the Environmental Health Officer.
- > Chemical sampling is required minimum yearly, from each source, or at the request of the Environmental Health Officer.
- > An Emergency Response plan shall be maintained and updated annually; or as required.

1-Jul-1992
Effective Permit Date


Environmental Health Officer

30-Jun-2016
Permit Revised Date
*This permit must be displayed
in a conspicuous place and is non-transferable*





2017 Annual Water Public Report

APPENDIX "B"

2016 Bacteriological Test Results

Smithers Community Water System - Water Sample Range Report

Range Report Information:

Date range: Jan 1 2016 to Dec 31 2016
Total number of samples: 98

Water Sample Details:

Samples that contain coliform:	8 (8% of total)
Samples that contain fecal coliform:	0 (0% of total)
Samples that contain e. coli	0 (0% of total)
Number of consecutive samples that contain total coliform:	1 (1% of total)
Number of samples that contain total coliform in last 30 days:	0 (0% of total)

For more information regarding bacteriological quality guidelines please refer to the Guidelines for Canadian Drinking Water Quality.

Sample Range Report

Northern Health - Northwest Health Service Delivery Area

Facility Name: Smithers Community Water System
Facility Type: WS1A
Date Range: Jan 1 2016 to Mar 31 2016
Date Created: Apr 08 2016

Operator Dale Chartrand
 Box 879
 Smithers, BC V0J 2N0

Sampling Site	Date Collected	Total Coliform	E. Coli	Fecal Coliform
<u>Municipal Office, Aldous Avenue</u>				
	1/12/2016	L1	L1	
	1/25/2016	L1	L1	
	2/9/2016	L1	L1	
	2/29/2016	L1	L1	
	3/8/2016	L1	L1	
	3/22/2016	<u>L1</u>	<u>L1</u>	
	Total Positive :	0	0	0
<u>Hilltop Inn, Main Street</u>				
	1/25/2016	<u>L1</u>	<u>L1</u>	
	Total Positive :	0	0	0
<u>Smithers Civic Centre,</u>				
	1/25/2016	L1 B45	L1	
	2/29/2016	L1 B9	L1	
	3/22/2016	<u>L1 B23</u>	<u>L1</u>	
	Total Positive :	0	0	0
<u>Municipal Works Yard, 16 th Avenue</u>				
	1/25/2016	L1	L1	
	2/29/2016	L1	L1	
	3/22/2016	<u>L1</u>	<u>L1</u>	
	Total Positive :	0	0	0
<u>Hudson Bay Lodge, Highway 16 East.</u>				
	2/29/2016	<u>L1</u>	<u>L1</u>	
	Total Positive :	0	0	0

Result Values:

E - estimated

L - less than

G - greater than

Sample Range Report

Northern Health - Northwest Health Service Delivery Area

Facility Name: Smithers Regional Airport - Water System
Facility Type: WS2
Date Range: Apr 1 2016 to Jun 30 2016
Date Created: Jul 04 2016

Operator Dale Chartrand
 c/o Town of Smithers
 Box 879
 Smithers, BC V0J 2N0

Sampling Site	Date Collected	Total Coliform	E. Coli	Fecal Coliform
<u>Smithers Airport - Terminal Building</u>				
	4/5/2016	L1	L1	
	5/10/2016	L1	L1	
	6/13/2016	<u>L1</u>	<u>L1</u>	
	Total Positive :	0	0	0
<u>Smithers Airport - Maintenance Shop, Smithers</u>				
	4/5/2016	L1	L1	
	5/10/2016	L1	L1	
	6/13/2016	<u>L1</u>	<u>L1</u>	
	Total Positive :	0	0	0
<u>Lake Kathlyn Elementary School - Staffroom kitchen sink, 7620 Highway 16</u>				
	4/5/2016	L1	L1	
	5/10/2016	L1	L1	
	6/13/2016	<u>L1</u>	<u>L1</u>	
	Total Positive :	0	0	0

Result Values: E - estimated L - less than G - greater than

Samples that contain total coliform:	0	0.00% of total
Samples that contain e. coli:	0	0.00% of total
Samples that contain fecal coliform:	0	0.00% of total
Number of consecutive samples that contain total coliform:	0	
Number of samples that contain total coliform in last 30 days:	0/3	
Total number of samples:	9	

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Sample Range Report

Northern Health - Northwest Health Service Delivery Area

Facility Name: Smithers Community Water System
Facility Type: WS1A
Date Range: Jan 1 2016 to Feb 29 2016
Date Created: Mar 17 2016

Operator Dale Chartrand
 Box 879
 Smithers, BC V0J 2N0

Sampling Site	Date Collected	Total Coliform	E. Coli	Fecal Coliform
<u>Municipal Office, Aldous Avenue</u>				
	1/12/2016	L1	L1	
	1/25/2016	L1	L1	
	2/9/2016	L1	L1	
	2/29/2016	<u>L1</u>	<u>L1</u>	
	Total Positive :	0	0	0
<u>Smithers Civic Centre,</u>				
	1/25/2016	L1 B45	L1	
	2/29/2016	<u>L1 B9</u>	<u>L1</u>	
	Total Positive :	0	0	0
<u>Hilltop Inn, Main Street</u>				
	1/25/2016	<u>L1</u>	<u>L1</u>	
	Total Positive :	0	0	0
<u>Municipal Works Yard, 16 th Avenue</u>				
	1/25/2016	L1	L1	
	2/29/2016	<u>L1</u>	<u>L1</u>	
	Total Positive :	0	0	0
<u>Hudson Bay Lodge, Highway 16 East.</u>				
	2/29/2016	<u>L1</u>	<u>L1</u>	
	Total Positive :	0	0	0

Result Values: E - estimated L - less than G - greater than

Samples that contain total coliform:	0		0.00% of total
Samples that contain e. coli:	0		0.00% of total
Samples that contain fecal coliform:	0		0.00% of total



2017 Annual Water Public Report

APPENDIX "B"

2017 Bacteriological Test Results

Town of Smithers

Work Order: N704052

LAB #	N704052-01	N704052-02	N704052-03	N704052-04
SAMPLED DATE	10-Apr-17	10-Apr-17	10-Apr-17	10-Apr-17
SAMPLED TIME	12:50	13:20	13:30	13:00
SAMPLE ID	19th Ave Well	Airport After Treatment	Airport Before Treatment	Victoria St Well
MRL Units	CDWG			
Bacteriological Parameters (Water)				
Total Coliforms	1 MPN/100 mL	MAC = None Detected (<1)	<1	<1
E. coli	1 MPN/100 mL	MAC = None Detected (<1)	<1	<1
Anions (Water)				
Chloride	1.0 mg/L	AO <= 250	14.0	3.5
Fluoride	0.05 mg/L	MAC = 1.5	0.14	0.15
Nitrite (as N)	0.01 mg/L	MAC = 1	<0.01	<0.01
Nitrate + Nitrite (as N)	0.10 mg/L	MAC = 10	<0.10	<0.10
Sulfate	10.0 mg/L	AO <= 500	2.0	6.3
General Parameters (Water)				
pH	1.0 pH units	7.0-10.5	8.1	8.2
Alkalinity (total, as CaCO ₃)	1 mg/L	-	210	210
Conductivity	1.0 uS/cm	-	423	418
Colour	1 PtCo units	AO <= 15	2	4
Turbidity	0.05 NTU	MAC = 1	0.11	0.12
Solids, Total Dissolved / TDS	1.0 mg/L	AO <= 500	240 [1]	240 [1]
Calculated Parameters (Water)				
Nitrate (as N)	0.10 mg/L	MAC = 10	<0.10	<0.10
Hardness, Total (as CaCO ₃)	0.500 mg/L	-	86.8	66.1
Total Metals (Water)				
Aluminum, total	0.0050 mg/L	OG < 0.1	<0.0050	<0.0050
Antimony, total	0.00010 mg/L	MAC = 0.006	<0.00010	<0.00010
Arsenic, total	0.00050 mg/L	MAC = 0.01	0.00135	0.00211
Barium, total	0.0050 mg/L	MAC = 1	0.0818	0.0917
Beryllium, total	0.00010 mg/L	-	<0.00010	<0.00010
Bismuth, total	0.00010 mg/L	-	<0.00010	<0.00010
Boron, total	0.004 mg/L	MAC = 5	0.063	0.064
Cadmium, total	0.00001 mg/L	MAC = 0.005	<0.00001	<0.00001
Calcium, total	0.20 mg/L	-	22.4	17.0

Northern Laboratories (2010) Ltd.

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 Phone: 250.627.1906 • Fax: 250.627.8214 • www.norlabs.com • info@norlabs.com

Town of Smithers

Work Order: N704052

LAB #	N704052-01			N704052-04
SAMPLED DATE	10-Apr-17			10-Apr-17
SAMPLED TIME	12:50			13:00
SAMPLE ID	19th Ave Well			Victoria St Well
	MRL Units	CDWG		
Total Metals (continued)				
Chromium, total	0.0005 mg/L	MAC = 0.05	<0.0005	<0.0005
Cobalt, total	0.00005 mg/L	-	<0.00005	<0.00005
Copper, total	0.0002 mg/L	AO <= 1	0.0017	0.0124
Iron, total	0.010 mg/L	AO <= 0.3	<0.010	<0.010
Lead, total	0.0001 mg/L	MAC = 0.01	0.0003	0.0008
Lithium, total	0.0001 mg/L	-	0.0031	0.0039
Magnesium, total	0.010 mg/L	-	7.48	5.77
Manganese, total	0.00020 mg/L	AO <= 0.05	0.141	0.0990
Mercury, total	0.00002 mg/L	MAC = 0.001	<0.00002	<0.00002
Molybdenum, total	0.00010 mg/L	-	0.00376	0.00471
Nickel, total	0.0002 mg/L	-	<0.0002	<0.0002
Phosphorus, total	0.05 mg/L	-	<0.05	<0.05
Potassium, total	0.02 mg/L	-	1.47	1.33
Selenium, total	0.00050 mg/L	MAC = 0.05	<0.00050	<0.00050
Silicon, total	0.5 mg/L	-	7.0	7.4
Silver, total	0.00005 mg/L	-	<0.00005	<0.00005
Sodium, total	0.02 mg/L	AO <= 200	66.1	74.8
Strontium, total	0.0010 mg/L	-	0.276	0.247
Sulfur, total	3.0 mg/L	-	<3.0	3.2
Tellurium, total	0.00020 mg/L	-	<0.00020	<0.00020
Thallium, total	0.00002 mg/L	-	<0.00002	<0.00002
Thorium, total	0.00010 mg/L	-	<0.00010	<0.00010
Tin, total	0.00020 mg/L	-	<0.00020	<0.00020
Titanium, total	0.0050 mg/L	-	<0.0050	<0.0050
Uranium, total	0.00002 mg/L	MAC = 0.02	0.00063	0.00066
Vanadium, total	0.0010 mg/L	-	<0.0010	<0.0010
Zinc, total	0.0040 mg/L	AO <= 5	<0.0040	0.0052
Zirconium, total	0.00010 mg/L	-	<0.00010	<0.00010

Town of Smithers

Work Order: N704052

LAB #	N704052-05
SAMPLED DATE	10-Apr-17
SAMPLED TIME	13:15
SAMPLE ID	Riverside Well

MRL Units	CDWG
------------------	-------------

Bacteriological Parameters (Water)

Total Coliforms	1 MPN/100 mL	MAC = None Detected (<1)	<1
E. coli	1 MPN/100 mL	MAC = None Detected (<1)	<1

Anions (Water)

Chloride	1.0 mg/L	AO <= 250	2.7
Fluoride	0.05 mg/L	MAC = 1.5	<0.10
Nitrite (as N)	0.01 mg/L	MAC = 1	<0.01
Nitrate + Nitrite (as N)	0.10 mg/L	MAC = 10	<0.10
Sulfate	10.0 mg/L	AO <= 500	9.9

General Parameters (Water)

pH	1.0 pH units	7.0-10.5	8.1
Alkalinity (total, as CaCO ₃)	1 mg/L	-	100
Conductivity	1.0 uS/cm	-	222
Colour	1 PtCo units	AO <= 15	3
Turbidity	0.05 NTU	MAC = 1	0.12
Solids, Total Dissolved / TDS	1.0 mg/L	AO <= 500	120

Calculated Parameters (Water)

Nitrate (as N)	0.10 mg/L	MAC = 10	<0.10
Hardness, Total (as CaCO ₃)	0.500 mg/L	-	83.9

Total Metals (Water)

Aluminum, total	0.0050 mg/L	OG < 0.1	<0.0050
Antimony, total	0.00010 mg/L	MAC = 0.006	<0.00010
Arsenic, total	0.00050 mg/L	MAC = 0.01	0.00286
Barium, total	0.0050 mg/L	MAC = 1	0.0461
Beryllium, total	0.00010 mg/L	-	<0.00010
Bismuth, total	0.00010 mg/L	-	<0.00010
Boron, total	0.004 mg/L	MAC = 5	0.023
Cadmium, total	0.00001 mg/L	MAC = 0.005	<0.00001
Calcium, total	0.20 mg/L	-	21.2
Chromium, total	0.0005 mg/L	MAC = 0.05	<0.0005

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Town of Smithers

Work Order: N704052

LAB #	N704052-05
SAMPLED DATE	10-Apr-17
SAMPLED TIME	13:15
SAMPLE ID	Riverside Well
MRL Units	CDWG

Total Metals (continued)

Cobalt, total	0.00005 mg/L	-	<0.00005
Copper, total	0.0002 mg/L	AO <= 1	0.0069
Iron, total	0.010 mg/L	AO <= 0.3	0.019
Lead, total	0.0001 mg/L	MAC = 0.01	0.0002
Lithium, total	0.0001 mg/L	-	0.0005
Magnesium, total	0.010 mg/L	-	7.47
Manganese, total	0.00020 mg/L	AO <= 0.05	0.146
Mercury, total	0.00002 mg/L	MAC = 0.001	<0.00002
Molybdenum, total	0.00010 mg/L	-	0.00109
Nickel, total	0.0002 mg/L	-	<0.0002
Phosphorus, total	0.05 mg/L	-	<0.05
Potassium, total	0.02 mg/L	-	0.55
Selenium, total	0.00050 mg/L	MAC = 0.05	<0.00050
Silicon, total	0.5 mg/L	-	5.3
Silver, total	0.00005 mg/L	-	<0.00005
Sodium, total	0.02 mg/L	AO <= 200	12.7
Strontium, total	0.0010 mg/L	-	0.216
Sulfur, total	3.0 mg/L	-	3.1
Tellurium, total	0.00020 mg/L	-	<0.00020
Thallium, total	0.00002 mg/L	-	<0.00002
Thorium, total	0.00010 mg/L	-	<0.00010
Tin, total	0.00020 mg/L	-	<0.00020
Titanium, total	0.0050 mg/L	-	<0.0050
Uranium, total	0.00002 mg/L	MAC = 0.02	0.00007
Vanadium, total	0.0010 mg/L	-	<0.0010
Zinc, total	0.0040 mg/L	AO <= 5	<0.0040
Zirconium, total	0.00010 mg/L	-	<0.00010

Special Notes

1 = Sample was analyzed outside of the recommended holding time.

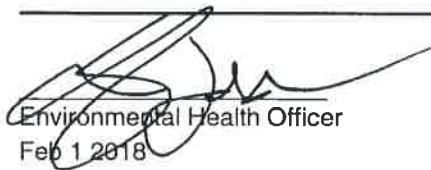
Department -
Training Room, 1445
Main Street

12/18/2017 L1 L1
Total Positive : **0** **0** **0**

Result Values: **E - estimated** **L - less than** **G - greater than**

Samples that contain total coliform:	14		8.48% of total
Samples that contain e. coli:	0		0.00% of total
Samples that contain fecal coliform:	0		0.00% of total
Number of consecutive samples that contain total coliform:	4		
Number of samples that contain total coliform in last 30 days:	0/0		
Total number of samples:	165		

Comments:



Environmental Health Officer
Feb 1 2018

FOR FURTHER INFORMATION PLEASE CALL: Shane Wadden (250) 847-6400

Definitions:

- Total Coliforms: total coliforms are organisms that are found all around us in the environment (ie on plants, animals and humans). They may or may not be harmful. Northern Health uses these organisms as indicator organisms. If total coliforms are found in the water, that indicates to the Environmental Health Officer (EHO) that other organisms may also be present.
- Fecal Coliforms: bacterial contamination from human or animal waste (feces).
- Escherichia coli: bacterial contamination from human or animal waste (feces).

Codes:

- A: means not tested; likely sample is too long in transit to the lab.
- B# (number) or BG: means the number of non-coliform background bacteria colonies. High numbers (>200) may indicate deteriorating water quality
- CFU: colony forming units
- E. Coli: means Escherichia coli.
- EST: means estimated count.
- L1: means less than 1 (<1) – essentially 0. Satisfactory.
- OG: means overgrowth of bacterial colonies; not possible to count coliform bacteria – unsatisfactory.
- R: means not tested; resample is likely required
- T: means not tested; likely sample is too long in transit to the lab.
- TNTC: means too numerous to count Similar to OG – unsatisfactory.

Sample Range Report

Northern Health - Northwest Health Service Delivery Area

Facility Name: Smithers Community Water System
Facility Type: WS1A
Date Range: Jan 1 2017 to Dec 31 2017
Date Created: Feb 01 2018

Operator Dale Chartrand
 Box 879
 Smithers, BC V0J 2N0

Sampling Site	Date Collected	Total Coliform	E. Coli	Fecal Coliform
<u>Monkton Road Reservoir, Monkton Road</u>				
	9/11/2017	12 B15	L1	
	9/18/2017	L1	L1	
	9/26/2017	<u>L1</u>	<u>L1</u>	
	Total Positive :	1	0	0
<u>Petrocan Bulk Plant - sink, Railway Ave., Smithers</u>				
	8/28/2017	2 B1	L1	
	9/5/2017	3	L1	
	9/11/2017	L1	L1	
	9/25/2017	L1	L1	
	9/26/2017	L1	L1	
	9/27/2017	L1	L1	
	11/21/2017	<u>L1</u>	<u>L1</u>	
	Total Positive :	2	0	0
<u>Municipal Office, 1027 Aldous Street</u>				
	1/10/2017	L1	L1	
	1/24/2017	L1	L1	
	1/31/2017	L1	L1	
	2/14/2017	L1	L1	
	3/14/2017	L1	L1	
	3/27/2017	L1	L1	
	4/4/2017	L1	L1	
	4/24/2017	L1	L1	
	5/2/2017	L1	L1	
	5/9/2017	L1	L1	
	5/23/2017	L1	L1	
	5/30/2017	L1	L1	
	6/6/2017	L1	L1	
	6/27/2017	L1	L1	
	7/4/2017	L1	L1	



7/24/2017	L1	L1	
8/8/2017	L1 B2	L1	
8/21/2017	3	L1	
8/28/2017	L1 B2	L1	
9/2/2017	L1	L1	
9/3/2017	L1	L1	
9/5/2017	L1 B1	L1	
9/11/2017	L1	L1	
9/25/2017	L1	L1	
9/26/2017	L1	L1	
9/27/2017	L1	L1	
10/3/2017	L1	L1	
10/17/2017	L1	L1	
11/6/2017	L1	L1	
11/14/2017	L1	L1	
11/27/2017	1	L1	
12/1/2017	L1	L1	
12/5/2017	<u>L1</u>	<u>L1</u>	
Total Positive :	2	0	0

Zobnic Road
Reservoir, Zobnic
Road

9/11/2017	2	L1	
9/18/2017	L1	L1	
9/25/2017	L1 B45	L1	
9/26/2017	L1 B5	L1	
9/27/2017	<u>L1</u>	<u>L1</u>	
Total Positive :	1	0	0

Bulkley Valley
District Hospital,
3950 8th Avenue

4/24/2017	L1	L1	
9/5/2017	L1	L1	
9/25/2017	L1	L1	
9/26/2017	L1	L1	
9/27/2017	L1	L1	
10/17/2017	L1	L1	
11/21/2017	L1	L1	
12/1/2017	L1	L1	
12/18/2017	<u>L1</u>	<u>L1</u>	
Total Positive :	0	0	0

Riverside Park,
Riverside Drive

5/23/2017	L1	L1	
6/13/2017	L1	L1	
6/20/2017	L1	L1	
7/11/2017	L1	L1	
7/24/2017	L1	L1	
8/15/2017	L1	L1	

8/21/2017	L1	L1	
8/28/2017	L1	L1	
9/5/2017	L1	L1	
9/25/2017	L1	L1	
9/26/2017	L1	L1	
9/27/2017	L1	L1	
10/3/2017	L1	L1	
10/10/2017	<u>L1</u>	<u>L1</u>	
Total Positive :	0	0	0

PIR Mill, 2375
Tatlow Road

8/28/2017	3 B2	L1	
9/5/2017	6 B10	L1	
9/11/2017	L1	L1	
9/25/2017	L1	L1	
9/26/2017	L1	L1	
9/27/2017	L1	L1	
11/21/2017	L1	L1	
12/12/2017	<u>L1</u>	<u>L1</u>	
Total Positive :	2	0	0

Sunny Point Drive,
1390 Sunny Point
Drive

4/24/2017	L1	L1	
9/5/2017	L1 B3	L1	
9/25/2017	L1	L1	
9/26/2017	L1	L1	
9/27/2017	L1	L1	
10/3/2017	<u>L1</u>	<u>L1</u>	
Total Positive :	0	0	0

Smithers Civic
Centre - Lunchroom,

1/24/2017	L1	L1	
2/14/2017	L1	L1	
3/14/2017	L1	L1	
4/24/2017	L1	L1	
5/9/2017	L1	L1	
5/30/2017	L1	L1	
6/13/2017	1 B1	L1	
6/20/2017	L1	L1	
7/11/2017	L1	L1	
8/21/2017	1	L1	
8/29/2017	1	L1	
9/2/2017	5 BG200	L1	
9/3/2017	L1 B39	L1	
9/11/2017	L1	L1	
9/25/2017	L1 B1	L1	
9/26/2017	L1	L1	

9/27/2017	L1	L1	
10/17/2017	2 B1	L1	
10/23/2017	L1 B1	L1	
11/14/2017	L1	L1	
11/21/2017	L1 B1	L1	
12/5/2017	<u>L1</u>	<u>L1</u>	
Total Positive :	5	0	0

Riverside Park
Cookhouse.
Riverside Drive

5/16/2017	<u>L1</u>	<u>L1</u>	
Total Positive :	0	0	0

Works Yard, 2888
19th Avenue

1/10/2017	L1	L1	
2/14/2017	L1	L1	
3/14/2017	L1	L1	
4/4/2017	L1	L1	
5/9/2017	L1	L1	
5/30/2017	L1	L1	
6/6/2017	L1	L1	
7/4/2017	L1	L1	
8/8/2017	L1	L1	
9/2/2017	L1	L1	
9/3/2017	L1	L1	
9/5/2017	L1	L1	
9/11/2017	L1	L1	
9/25/2017	L1	L1	
9/26/2017	L1	L1	
9/27/2017	L1	L1	
10/10/2017	L1	L1	
11/6/2017	L1	L1	
11/14/2017	L1	L1	
12/1/2017	L1	L1	
12/5/2017	<u>L1</u>	<u>L1</u>	
Total Positive :	0	0	0

Hudson Bay Lodge.
3251 Highway 16

2/14/2017	L1	L1	
8/15/2017	L1	L1	
9/5/2017	L1	L1	
9/25/2017	L1	L1	
9/26/2017	L1	L1	
9/27/2017	L1	L1	
11/14/2017	L1	L1	
12/18/2017	<u>L1</u>	<u>L1</u>	
Total Positive :	0	0	0

Court Street RV Fill,
Court Street

5/16/2017	L1	L1	
5/23/2017	L1	L1	
6/13/2017	L1	L1	
6/27/2017	L1	L1	
7/11/2017	L1 B1	L1	
7/24/2017	L1 B1	L1	
8/15/2017	L1	L1	
8/21/2017	L1 B1	L1	
9/2/2017	L1 B1	L1	
9/3/2017	L1	L1	
9/5/2017	L1	L1	
9/25/2017	L1	L1	
9/26/2017	L1	L1	
9/27/2017	L1	L1	
10/3/2017	L1	L1	
10/10/2017	<u>L1</u>	<u>L1</u>	
Total Positive :	0	0	0

Smithers Civic
Center - Zamboni
Room,

9/5/2017	L1	L1	
9/11/2017	L1	L1	
9/25/2017	L1 B1	L1	
11/27/2017	1	L1	
12/1/2017	<u>L1</u>	<u>L1</u>	
Total Positive :	1	0	0

Petrocan Bulk Plant -
Hose Bib,

9/11/2017	L1	L1	
9/25/2017	L1	L1	
9/26/2017	L1	L1	
9/27/2017	<u>L1</u>	<u>L1</u>	
Total Positive :	0	0	0

New Arena Lunch
Room, 4204 Third
Avenue

12/12/2017	<u>L1</u>	<u>L1</u>	
Total Positive :	0	0	0

Ranger Park, 3736
16th Avenue

12/12/2017	<u>L1</u>	<u>L1</u>	
Total Positive :	0	0	0

Smithers Fire