

**Assessment Study of
Water and Wastewater Systems
and Associated Water Management Practices
at the Burns Lake First Nation Community**

**for the
Indian and Northern Affairs Canada
BC Region**



CH2MHILL

December, 2001

Appendix C
Water Quality Test Results

IO:		INFO	QIS	ACT
EHO				
EHO	FT. ST. JOHN			
EHO	WILLIAMS LAKE			
LAB				
PUBLIC SERVICE HEALTH NORTH EAST DISTRICT				

analytical
service
laboratories
ltd.



CHEMICAL ANALYSIS REPORT

Date: April 26, 1993

ASL File No. 8756C

Report On: Drinking Water Surveillance Program


Report To: **Health & Welfare Canada**
Medical Services
409 - 280 Victoria Street
Prince George, BC
V2L 4X3

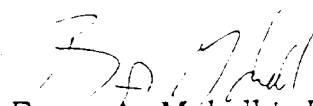
Attention: **Mr. Ian Baird**, Sr. Environmental Health Officer

Received: February 17, 1993

ASL ANALYTICAL SERVICE LABORATORIES LTD.

per:


Barbara Szczachor, B.Sc.
Manager, Water Quality Lab


Brent A. Makelki, B.Sc.
Project Chemist

cc: R. Lawrence - Vancouver



METHODOLOGY

File No. 8756C

Samples were analyzed by methods acceptable to the appropriate regulatory agency. Outlines of the methodologies utilized are as follows:

Conventional Parameters in Water

These analyses are carried out in accordance with procedures described in "Standard Methods for the Examination of Water and Wastewater" 18th Ed. published by the American Public Health Association, 1992. Further details are available on request.

Metals in Water

These analyses are carried out in accordance with procedures described in "Standard Methods for the Examination of Water and Wastewater" 18th Edition published by the American Public Health Association, 1992. The procedures involve a variety of instrumental analyses including atomic emission spectrophotometry (ICP) and atomic absorption spectrophotometry (AA) to obtain the required detection limit for each element. Specific details are available on request.

Volatile Organic Priority Pollutants in Water

This analysis is carried out in accordance with U.S. EPA Method 624 and 524. These procedures involve purge and trap extraction of the sample and subsequent analysis of the volatile components by capillary column gas chromatography with mass spectrometric detection.

Polynuclear Aromatic Hydrocarbons in Water

This analysis is carried out in accordance with U.S. EPA Method 3510/8270. (publ. #SW-846, 3rd Ed., Washington, DC 20460). This method involves the extraction of the sample with methylene chloride followed by silica column chromatography cleanup. The resulting extract was analysed by capillary column gas chromatography with mass spectrometric detection.

Chlorinated and Non-Chlorinated Phenols in Water

This analysis is carried out in accordance with U.S. EPA Methods 604 (EPA 1984 - 40 CFR Part 136, 49:209) and 3510/8040. The sample is extracted with acidified methylene chloride followed by a ion-exchange cleanup. The final extract is derivatized and analysed by capillary column gas chromatography with flame ionization detection and electron capture detection.

End of Report



RESULTS OF ANALYSIS

File No. 8756

MUNICIPAL

Well

93 02 16

Total Metals

Aluminum	T-Al	0.014
Antimony	T-Sb	<0.0001
Arsenic	T-As	0.0048
Barium	T-Ba	0.172
Boron	T-B	<0.10
Cadmium	T-Cd	<0.0002
Calcium	T-Ca	50.6
Chromium	T-Cr	<0.001
Cobalt	T-Co	<0.001
Copper	T-Cu	0.328
Iron	T-Fe	<0.030
Lead	T-Pb	0.001
Magnesium	T-Mg	11.8
Manganese	T-Mn	0.223
Mercury	T-Hg	<0.00005
Potassium	T-K	2.4
Selenium	T-Se	<0.0005
Sodium	T-Na	7.00
Uranium	T-U	0.00040
Zinc	T-Zn	0.016

Inorganic Parameters

Sulphide	S	<0.02
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Halogenated Volatiles

Bromodichloromethane	<0.001
Bromoform	<0.001
Carbon Tetrachloride	<0.001
Chlorobenzene	<0.001
Chloroform	0.006
Dibromochloromethane	<0.001
1,2-Dichlorobenzene	<0.001
1,4-Dichlorobenzene	<0.001
1,2-Dichloroethane	<0.001
1,1-Dichloroethylene	<0.001
Tetrachloroethylene	<0.001
Trichloroethylene	<0.001
Trichlorofluoromethane	<0.001
Vinyl Chloride	<0.001

Remarks regarding the analyses appear at the beginning of this report. Results are expressed as milligrams per litre except where noted. < = Less than the detection limit indicated.

CANADIAN DRINKING WATER GUIDELINES (Con't)

Physical Parameters	Drinking *1 Water Guidelines	Basis of Guideline
<u>Halogenated Volatiles</u>		
Bromodichloromethane	-	-
Bromoform	-	-
Carbon Tetrachloride	0.005	MAC
Chlorobenzene	0.08	MAC
Chloroform	-	-
Dibromochloromethane	-	-
1,2-Dichlorobenzene	0.2	MAC
1,4-Dichlorobenzene	0.005	MAC
1,2-Dichloroethane	0.005	IMAC
1,1-Dichloroethylene	-	-
Tetrachloroethylene	-	-
Trichloroethylene	0.05	MAC
Trichlorofluoromethane	-	-
Vinyl Chloride	-	-
<u>Non-Halogenated Volatiles</u>		
Benzene	0.005	MAC
Ethylbenzene	0.0024	AO
Toluene	0.024	AO
meta- & para-Xylene	0.3	AO
ortho-Xylene	0.3	AO
<u>Polycyclic Aromatic Hydrocarbons</u>		
Benzo(a)pyrene	0.00001	MAC
<u>Chlorinated Phenols</u>		
2,4-Dichlorophenol	0.9	MAC
2,4,6-Trichlorophenol	0.005	MAC
2,3,4,6-Tetrachlorophenol	0.1	MAC
Pentachlorophenol	0.06	MAC
<u>Organic Parameters</u>		
Total Organic Carbon	-	-

*1 = Published by Health & Welfare Canada, 1989 (available from Canadian Government Publishing Centre, Ottawa, K1A 0S2. Catalogue No. H48-10/1989E. ISBN 0-660-13271-0).

Basis for Guideline (refer to above reference for details).

MAC = Maximum Acceptable Concentrations (health considerations).

IMAC = Interim Maximum Acceptable Concentrations.

AO = Aesthetic Objective (taste, odour, appearance, etc.).

*2 = Maximum level not established - levels greater than 200 mg/L are considered poor, but may be tolerated.

*3 = At point of consumption / level of 5 NTU may be permitted for water entering a distribution system. (Consult publication cited for details.)



Ship to: 251 Kaien Road, Prince Rupert, B.C.
Mail to: P.O. Box 1035, Prince Rupert, B.C. V8J 4B7
Tel: (250) 627-1906 1-800-990-9522
Fax: (250) 627-8214
Email: norlabs@citytel.net

ANALYSIS FINAL REPORT

Water '99

LAB REFERENCE #: 990673

MAY 18 1999

DATE RECEIVED: April 29, 1999
SITE: Well #3 Burns Lake
DATE/TIME SAMPLED: April 28, 1999/Not given
SAMPLE TAKEN BY: Client
DATE REPORTED: May 13, 1999

All tests were done in accordance with standard procedures published by the American Public Health Association, the U.S. Environmental Protection Agency, B.C. Environment, or Environment Canada.

Extractable metals were determined in an unfiltered, acidified sample aliquot by UNICP-AES (EPA Method 200.15).

SEND RESULTS TO:

Ted Riehl
Public Works Superintendent
Village of Burns Lake
P.O. Box 570
Burns Lake, B.C. V0J 1E0
Tel. 692-7587 FAX 692-3059


Charles Armstrong
Lab Manager



METALS

	<u>DWG</u>	<u>Well #3</u>
Aluminum	0.2	<0.01
Antimony	0.006	<0.02
Arsenic	0.025	<0.02
Barium	1.0	0.181
Beryllium	-	<0.0002
Bismuth	-	<0.02
Cadmium	0.005	<0.0005
Calcium	-	50.6
Chromium	0.05	<0.001
Cobalt	-	<0.001
Copper	(0.5)	<0.002
Iron	(0.3)	0.032
Lead	0.01	<0.005
Lithium	-	0.003
Magnesium	-	12.2
Manganese	(0.05)	0.343
Molybdenum	0.25	<0.005
Nickel	0.2	<0.002
Phosphorus	-	<0.06
Potassium	-	2.7
Selenium	0.01	<0.01
Silicon	-	13.2
Silver	-	<0.001
Sodium	(200)	7.07
Strontium	-	0.258
Sulfur	-	1.6
Thorium	-	<0.005
Tin	-	<0.005
Titanium	0.1	<0.001
Uranium	0.1	<0.06
Vanadium	0.1	0.004
Zinc	(5.0)	0.01
Zirconium	-	<0.001
Hardness:	500	177

DWG = Canadian or BC Drinking Water Guidelines
 () = Guideline is aesthetic, i.e. not health-related
 All results are mg/l.



Lab order number: 000117
Date received: January 25, 2000

RESULTS

Anions	DWG	Well #1 Jan 24/00
Chloride	(250)	<2
Fluoride	1.5	<0.5
Sulfate as SO ₄	(500)	3.8

Physical parameters

pH	pH units	7.83
Conductivity	µmhos/cm	329
Turbidity	NTU	0.19
Alkalinity, total as CaCO ₃		174
Total dissolved solids		205
Total suspended solids		<1
True colour	PtCo colour units	2

Results are expressed as mg/l unless otherwise indicated.
DWG = Canadian or BC Drinking Water Guidelines
() = Guideline is aesthetic, i.e. not health-related
NTU = Nephelometric turbidity units

Bacteriology

		Well #1 Jan 24/00
Total coliforms	CFU/100 ml	<1
Fecal coliforms	CFU/100 ml	<1

Method: Membrane filtration, 2 x 100 ml
CFU = colony forming units



Ship to: 25, Kaiser Road, Prince Rupert, B.C.
Mail to: P.O. Box 1035, Prince Rupert, B.C. V8J 4R7
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Fax: (250) 627-8214
Email: nortlabs@citytel.net

ANALYSIS FINAL REPORT

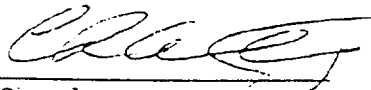
ORDER NO.: 000564
SOURCE: Village of Burns Lake
Monitoring well TH#1
DATE RECEIVED: April 19, 2000
DATE REPORTED: May 3, 2000

METHODOLOGY

All tests were done in accordance with standard procedures published by the American Public Health Association, the U.S. Environmental Protection Agency, B.C. Environment, or Environment Canada.

SEND RESULTS TO:

Ted Riehl
Public Works Superintendent
Village of Burns Lake
P.O. Box 570
Burns Lake, B.C. V0J 1E0
Tel. 692-7587 FAX 692-3059


Charles Armstrong
Lab Manager



TOTAL METALS

Client ID Detection TH#1
 Limit April 18

Aluminum	0.2	295
Antimony	0.2	<0.4
Arsenic	0.2	<0.4
Barium	0.01	3.93
Beryllium	0.005	0.01
Bismuth	0.1	0.2
Boron	0.1	<0.2
Cadmium	0.0001	0.0070
Calcium	0.05	127
Chromium	0.01	0.50
Cobalt	0.01	0.16
Copper	0.01	0.52
Iron	0.03	468
Lead	0.006	0.142
Lithium	0.01	0.20
Magnesium	0.1	85.2
Manganese	0.005	16.1
Molybdenum	0.03	<0.06
Nickel	0.05	0.4
Phosphorus	0.3	16.6
Potassium	2	33
Selenium	0.0005	0.0022
Silicon	0.05	26.2
Silver	0.01	<0.02
Sodium	2	18
Strontium	0.005	1.31
Thallium	0.2	<0.4
Tin	0.03	<0.06
Titanium	0.01	6.86
Vanadium	0.03	0.96
Zinc	0.005	1.14

Results are expressed as mg/l.



Lab reference number: 000769

RESULTS

Client ID

Lagoon Monitoring Well

	Detection Limit	TH#1 May 18	TH#2 May 18
NO ₃ as N	0.1	0.204	3.29
NO ₂ as N	0.01	<0.01	<0.01
Chloride	1.0	7.3	8.7
Fluoride	0.5	<0.5	<0.5
Sulfate	1	1.95	5.56
Total Kjeldahl N as N	0.05	7.0	1.5
Total phosphate as P	0.002	12.1	1.30
Fecal coliforms MPN/100 ml	2	<2	<2

MPN = Most probable number

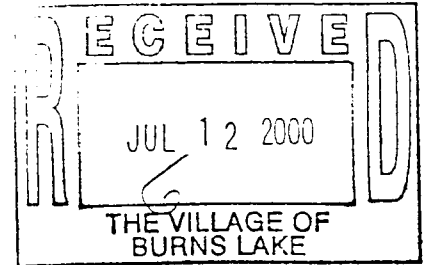
Results are expressed as mg/l unless otherwise indicated.



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Email: norlabs@citytel.net

ANALYSIS FINAL REPORT

ORDER NO.: 001039
SOURCE: Village of Burns Lake
Monitoring wells TH#1 & TH#2
DATE RECEIVED: June 20, 2000
DATE REPORTED: July 6, 2000



METHODOLOGY

All tests were done in accordance with standard procedures published by BC Environment, Environment Canada, the American Public Health Association, or the US EPA.

SEND RESULTS TO:

Ted Riehl
Public Works Superintendent
Village of Burns Lake
P.O. Box 570
Burns Lake, B.C. V0J 1E0
Tel. 692-7587 FAX 692-3059

Charles Armstrong
Lab Manager



TOTAL METALS

Client ID	Detection Limit	TH#1 June 19	TH#2 June 19
Aluminum	0.2	113	14.1
Antimony	0.2	<0.4	<0.4
Arsenic	0.2	<0.4	<0.4
Barium	0.01	1.77	0.62
Beryllium	0.005	<0.01	<0.01
Bismuth	0.1	<0.2	<0.2
Boron	0.1	<0.2	<0.2
Cadmium	0.0001	0.0020	0.0004
Calcium	0.05	72.2	146
Chromium	0.01	0.18	<0.02
Cobalt	0.01	0.06	<0.02
Copper	0.01	0.21	0.03
Iron	0.03	206	19.9
Lead	0.006	0.047	0.012
Lithium	0.01	0.07	<0.02
Magnesium	0.1	38.2	31.5
Manganese	0.005	6.43	1.02
Molybdenum	0.03	<0.06	<0.06
Nickel	0.05	0.1	<0.1
Phosphorus	0.3	6.7	0.6
Potassium	2	18	4
Selenium	0.0005	0.0025	0.0018
Silicon	0.05	86.8	22.9
Silver	0.01	<0.02	<0.02
Sodium	2	13	9
Strontium	0.005	0.71	0.72
Thallium	0.2	<0.4	<0.4
Tin	0.03	<0.06	<0.06
Titanium	0.01	3.17	0.54
Vanadium	0.03	0.35	<0.06
Zinc	0.005	0.45	0.07

Results are expressed as mg/l.



Lab reference number: 001633

RESULTS

Client ID

	Detection Limit	TH#1 Aug 15	TH#2 Aug 15
NO ₂ as N	0.01	<0.01	<0.01
Fecal coliforms MPN/100 ml	2	<2	1600

MPN = Most probable number

Results are expressed as mg/l unless otherwise indicated.



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 Fax: (250) 627-8214
 E-mail: norlabs@citytel.net

Metals	DWG	Well #2	August 20, 2001
Aluminum	0.2	<0.02	- up .01
Antimony	0.006	<0.001	DN .02
Arsenic	0.025	0.005	DN.
Barium	1.0	0.184	SAME.
Beryllium	-	<0.001	DN.
Bismuth	-	<0.02	SAME.
Boron	5	<0.008	.
Cadmium	0.005	<0.002,	WAS .0005.
Calcium	-	49.7	DN.
Chromium	0.05	<0.002	up .001
Cobalt	-	<0.003	WAS .001
Copper	(0.5)	0.003	WAS .002
Iron	(0.3)	0.028	up WAS 1.005
Lead	0.01	0.001	
Magnesium	-	11.9	DN 12.2
Manganese	(0.05)	0.344	SAME.
Molybdenum	0.25	<0.005	"
Nickel	0.2	<0.008	up WAS .002
Phosphorus	-	0.05	DN.
Potassium	-	2.2	DN.
Selenium	0.01	<0.001	DN.
Silver	-	<0.01	DN.
Sodium	(200)	6.94	
Strontium	-	0.25	SAME.
Sulfur	-	1.26	DN.
Tellurium	-	<0.02	
Thallium	-	<0.03	up WAS .005
Tin	-	<0.01	
Titanium	0.1	<0.002	up WAS .001
Vanadium	0.1	<0.003	DN.
Zinc	(5.0)	0.045	up WAS .01
Zirconium	-	<0.003	up WAS .001
Hardness as CaCO ₃	500	173	DN WAS 177

DWG = Canadian or BC Drinking Water Guidelines
 () = Guideline is aesthetic, i.e. not health-related
 All results are mg/l.

Appendix D

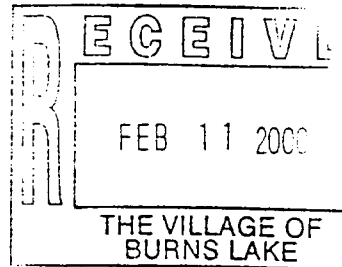
Wastewater Quality Test Results



Ship to: 251 Kaien Road, Prince Rupert, B.C.
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Fax: (250) 627-8214
Email: norlabs@citytel.net

ANALYSIS FINAL REPORT

ORDER NO.: 000046
SOURCE: BURNS LAKE STP
DATE SAMPLED: January 11, 2000
DATE RECEIVED: January 12, 2000
DATE REPORTED: January 31, 2000



METHODOLOGY

All tests were done in accordance with standard procedures published by the American Public Health Association, the U.S. Environmental Protection Agency, B.C. Environment, or Environment Canada. Suspended solids filter pore size: 1.5 microns (μm). BOD_5 was determined using nitrification inhibition.

Quality assurance analyses in replicate were performed on various samples for various parameters. Please contact the lab for details.

Temperature, conductivity and pH data were supplied by the Village of Burns Lake for incorporation into this report.

SEND RESULTS TO:

Ted Riehl
Public Works Superintendent
Village of Burns Lake
P.O. Box 570
Burns Lake, B.C. V0J 1E0
Tel. 692-7587 FAX 692-3059

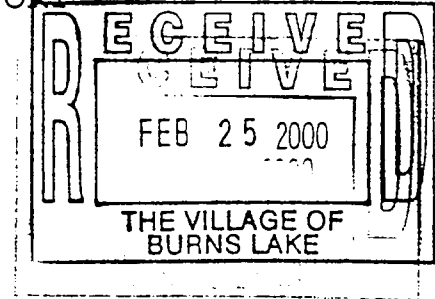

Charles Armstrong
Lab Manager



Ship to: 251 Kaen Road, Prince Rupert, B.C.
Mail to: P.O. Box 1035, Prince Rupert, B.C. V8J 4B7
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Fax: (250) 627-8214
Email: norlabs@citytel.net

ANALYSIS FINAL REPORT

ORDER NO.: 000200
SOURCE: BURNS LAKE STP
DATE SAMPLED: February 2, 2000
DATE RECEIVED: February 3, 2000
DATE REPORTED: February 17, 2000



METHODOLOGY

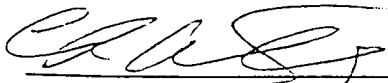
All tests were done in accordance with standard procedures published by the American Public Health Association, the U.S. Environmental Protection Agency, B.C. Environment, or Environment Canada. Suspended solids filter pore size: 1.5 microns (μm). BOD₅ was determined using nitrification inhibition.

Quality assurance analyses in replicate were performed on various samples for various parameters. Please contact the lab for details.

Temperature, conductivity and pH data were supplied by the Village of Burns Lake for incorporation into this report.

SEND RESULTS TO:

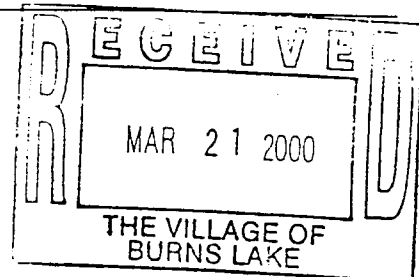
Ted Riehl
Public Works Superintendent
Village of Burns Lake
P.O. Box 570
Burns Lake, B.C. V0J 1E0
Tel. 692-7587 FAX 692-3059


Charles Armstrong
Lab Manager



Ship to: 251 Kaen Road, Prince Rupert, B.C.
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Email: norlabs@citytel.net

ANALYSIS FINAL REPORT



ORDER NO.: 000329
SOURCE: BURNS LAKE STP
DATE SAMPLED: March 2, 2000
DATE RECEIVED: March 3, 2000
DATE REPORTED: March 14, 2000

METHODOLOGY

All tests were done in accordance with standard procedures published by the American Public Health Association, the U.S. Environmental Protection Agency, B.C. Environment, or Environment Canada. Suspended solids filter pore size: 1.5 microns (μm).

Quality assurance analyses in replicate were performed on various samples for various parameters. Please contact the lab for details.

Temperature, conductivity and pH data were supplied by the Village of Burns Lake for incorporation into this report.

SEND RESULTS TO:

Ted Riehl
Public Works Superintendent
Village of Burns Lake
P.O. Box 570
Burns Lake, B.C. V0J 1E0
Tel. 692-7587 FAX 692-3059

Charles Armstrong
Lab Manager



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Email: norlabs@citytel.net

ANALYSIS FINAL REPORT

ORDER NO.: 000502
SOURCE: Burns Lake STP
DATE SAMPLED: April 5, 2000
DATE RECEIVED: April 6, 2000
DATE REPORTED: April 18, 2000

METHODOLOGY


All tests were done in accordance with standard procedures published by BC Environment, Environment Canada, the American Public Health Association, or the US EPA.

Quality assurance analyses in replicate were performed on various samples for various parameters. Please contact the lab for details.

Temperature, conductivity and pH data were supplied by the Village of Burns Lake for incorporation into this report.

SEND RESULTS TO:

Ted Riehl
Public Works Superintendent
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Burns Lake, B.C. V0J 1E0
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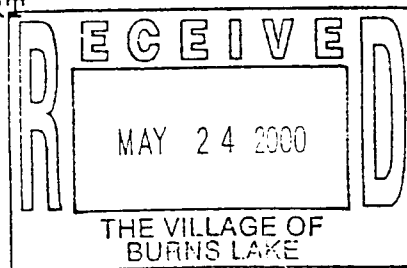

Charles Armstrong
Lab Manager



Ship to: 251 Kaen Road, Prince Rupert, B.C.
Mail to: P.O. Box 1035, Prince Rupert, B.C. V8J 4B7
Tel: (250) 627-1906 1-800-990-9522
Fax: (250) 627-8214
Email: norlabs@citytel.net

ANALYSIS FINAL REPORT

ORDER NO.: 000645
SOURCE: Burns Lake STP
DATE SAMPLED: May 2, 2000
DATE RECEIVED: May 3, 2000
DATE REPORTED: May 18, 2000



METHODOLOGY

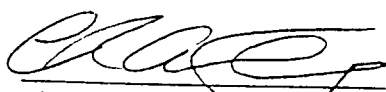
All tests were done in accordance with standard procedures published by BC Environment, Environment Canada, the American Public Health Association, or the US EPA.

Quality assurance analyses in replicate were performed on various samples for various parameters. Please contact the lab for details.

Temperature, conductivity and pH data were supplied by the Village of Burns Lake for incorporation into this report.

SEND RESULTS TO:

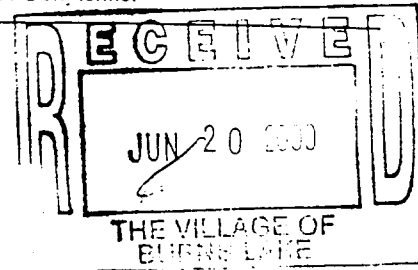
Ted Riehl
Public Works Superintendent
Village of Burns Lake
P.O. Box 570
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Tel. 692-7587 FAX 692-3059


Charles Armstrong
Lab Manager



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Email: norlabs@citytel.net

ANALYSIS FINAL REPORT



ORDER NO.: 000829
SOURCE: Burns Lake STP
DATE SAMPLED: May 29, 2000
DATE RECEIVED: May 31, 2000
DATE REPORTED: June 16, 2000

METHODOLOGY

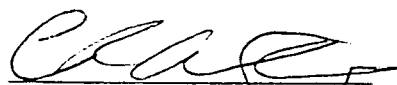
All tests were done in accordance with standard procedures published by BC Environment, Environment Canada, the American Public Health Association, or the US EPA.

Quality assurance analyses in replicate were performed on various samples for various parameters. Please contact the lab for details.

Temperature, conductivity and pH data were supplied by the Village of Burns Lake for incorporation into this report.

SEND RESULTS TO:

Ted Riehl
Public Works Superintendent
Village of Burns Lake
P.O. Box 570
Burns Lake, B.C. V0J 1E0
Tel. 692-7587 FAX 692-3059

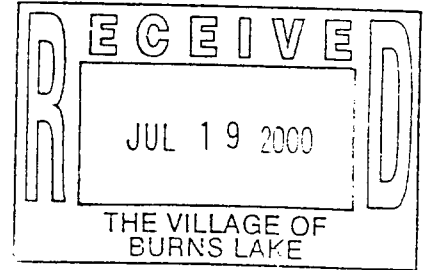

Charles Armstrong
Lab Manager



6020
Ship to: 251 Karen Road, Prince Rupert, B.C.
Mailing: P.O. Box 1035, Prince Rupert, B.C. V8P 4E7
Tel: (250) 627-1905 1-800-990-8322
Fax: (250) 627-8214
Email: nordlabs@citytel.net

ANALYSIS FINAL REPORT

ORDER NO.: 001151
SOURCE: Burns Lake STP
DATE SAMPLED: June 23, 2000
DATE RECEIVED: June 29, 2000
DATE REPORTED: July 18, 2000



METHODOLOGY

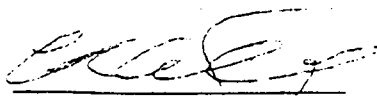
All tests were done in accordance with standard procedures published by BC Environment, Environment Canada, the American Public Health Association, or the US EPA.

Quality assurance analyses in replicate were performed on various samples for various parameters. Please contact the lab for details.

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SEND RESULTS TO:

Ted Rieh
Public Works Superintendent
Village of Burns Lake
P.O. Box 570
Burns Lake, B.C. V0J 1E0
Tel. 692-7587 FAX 692-3059


Charles Armstrong
Lab Manager



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ANALYSIS FINAL REPORT



ORDER NO.: 001525
SOURCE: Burns Lake STP
DATE SAMPLED: August 2, 2000
DATE RECEIVED: August 3, 2000
DATE REPORTED: August 16, 2000

METHODOLOGY


All tests were done in accordance with standard procedures published by BC Environment, Environment Canada, the American Public Health Association, or the US EPA.

Quality assurance analyses in replicate were performed on various samples for various parameters. Please contact the lab for details.

Temperature, conductivity and pH data were supplied by the Village of Burns Lake for incorporation into this report.

SEND RESULTS TO:

Ted Riehl
Public Works Superintendent
Village of Burns Lake
P.O. Box 570
Burns Lake, B.C. V0J 1E0
Tel. 692-7587 FAX 692-3059


Charles Armstrong
Lab Manager



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ANALYSIS FINAL REPORT

ORDER NO.: 001795
SOURCE: Burns Lake STP
DATE SAMPLED: August 31, 2000
DATE RECEIVED: September 1, 2000
DATE REPORTED: September 14, 2000

METHODOLOGY

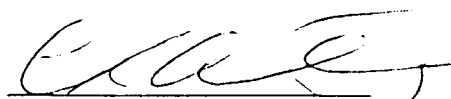
All tests were done in accordance with standard procedures published by BC Environment, Environment Canada, the American Public Health Association, or the US EPA.

Quality assurance analyses in replicate were performed on various samples for various parameters. Please contact the lab for details.

Temperature and conductivity data were supplied by the Village of Burns Lake for incorporation into this report.

SEND RESULTS TO:

Ted Riehl
Public Works Superintendent
Village of Burns Lake
P.O. Box 570
Burns Lake, B.C. V0J 1E0
Tel. 692-7587 FAX 692-3059

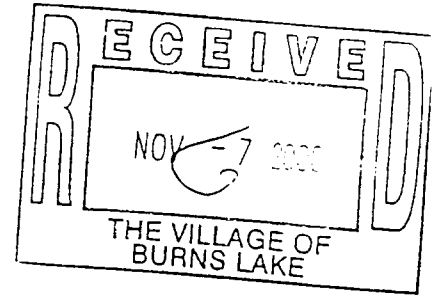

Charles Armstrong
Lab Manager



620

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ANALYSIS FINAL REPORT



ORDER NO.: 002127
SOURCE: Burns Lake STP
DATE SAMPLED: October 4, 2000
DATE RECEIVED: October 5, 2000
DATE REPORTED: October 24, 2000

METHODOLOGY

All tests were done in accordance with standard procedures published by BC Environment, Environment Canada, the American Public Health Association, or the US EPA.

Quality assurance analyses in replicate were performed on various samples for various parameters. Please contact the lab for details.

Temperature, pH and conductivity data were supplied by the Village of Burns Lake for incorporation into this report.

SEND RESULTS TO:

Ted Riehl
Public Works Superintendent
Village of Burns Lake
P.O. Box 570
Burns Lake, B.C. V0J 1E0
Tel. 692-7587 FAX 692-3059

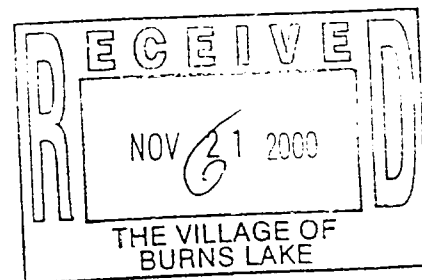

Charles Armstrong
Lab Manager



Ship to: 251 Kaien Road, Prince Rupert, B.C.
Mail to: P.O. Box 1035, Prince Rupert, B.C. V8J 4B7
Tel: (250) 627-1906 1-800-990-9522
Fax: (250) 627-8214
E-mail: norlabs@citytel.net

ANALYSIS FINAL REPORT

ORDER NO.: 002366
SOURCE: Burns Lake STP
DATE SAMPLED: November 2, 2000
DATE RECEIVED: November 3, 2000
DATE REPORTED: November 19, 2000



METHODOLOGY


All tests were done in accordance with standard procedures published by BC Environment, Environment Canada, the American Public Health Association, or the US EPA.

Quality assurance analyses in replicate were performed on various samples for various parameters. Please contact the lab for details.

Temperature, pH and conductivity data were supplied by the Village of Burns Lake for incorporation into this report.

SEND RESULTS TO:

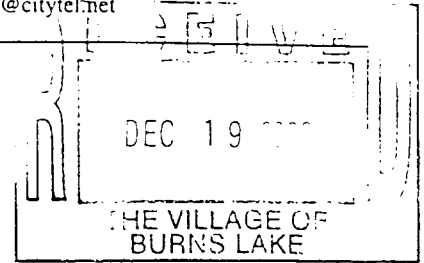
Ted Riehl
Public Works Superintendent
Village of Burns Lake
P.O. Box 570
Burns Lake, B.C. V0J 1E0
Tel. 692-7587 FAX 692-3059


Charles Armstrong
Lab Manager



527
Ship to: 251 Kaien Road, Prince Rupert, B.C.
Mail to: P.O. Box 1035, Prince Rupert, B.C. V8J 4B7
Tel: (250) 627-1906 1-800-990-9522
Fax: (250) 627-8214
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ANALYSIS FINAL REPORT



ORDER NO.: 002644
SOURCE: Burns Lake STP
DATE SAMPLED: December 6, 2000
DATE RECEIVED: December 7, 2000
DATE REPORTED: December 15, 2000

METHODOLOGY


All tests were done in accordance with standard procedures published by BC Environment, Environment Canada, the American Public Health Association, or the US EPA.

Quality assurance analyses in replicate were performed on various samples for various parameters. Please contact the lab for details.

Temperature, pH and conductivity data were supplied by the Village of Burns Lake for incorporation into this report.

SEND RESULTS TO:

Ted Riehl
Public Works Superintendent
Village of Burns Lake
P.O. Box 570
Burns Lake, B.C. V0J 1E0
Tel. 692-7587 FAX 692-3059


Charles Armstrong
Lab Manager

NEW - MONTH END

NEW.APR'98

LAGOON LAB REPORTS

MONTH END

DATE	LAB#	NO3 as N	NO2 as N	NH3 as N	TTI N as N	Reactive Phos as P	Total Phos. as P	BOD5	E.coli CFU/100ml	PH PH UNITS	Suspended Solids	Temp. C	Conductivity mS/cm
05/04/2000	502	<0.06	0.01	21.7	23	2.9	3.45	18	2	7.41	8.3	3.1	55
02/03/2000	329	<0.06	<0.01	22.2	35	3.3	3.75	6.8	<1	7.96	3.6	2.6	58
02/02/2000	200	<0.06	<0.01	21.3	27	3.4	3.68	9.7	<1	7.3	7.3	2	59
11/01/2000	469	0.11	<0.05	22	36.5	3.3	3.6	<6	4	7.68	4	1.8	61
01/12/1999 dec1/99	992160	0.17	<.05	21.9	22.1	3.1	3.9	<6	<1	7.4	12	2	57
01/06/1999	990864	0.34	0.24		17.6	2.5	2.9	<6	<1	7.74	18	12.8	0.61
04/03/1999	990356	<0.1	<0.02	17	25	3.1	3.6	7.9	65	7.76	9.6	2.8	55
04/02/1999	990214	0.37	0.02	21.3	26	2.9	3.5	<6	<1	7.74	6.5	3.1	53
06/01/1999	990015	0.75	0.031	21.3	25	2.9	3.3	<7	95	7.68	4.8	4.4	52
03/12/1998	982261	1.51	0.105	17.4	20.9	1.7	2.46	<10	35	7.92	12.5	1.6	59
03/11/1998	982055	2.1	0.19	8.1	17.3	1.5	1.7	<6	<1		2.4	6.2	56
02/10/1998	981804	3.8	0.4	8.4	13.9	0.94	1.14	<10	<1	7.61	2.8	11.7	59
02/09/1998	981630	1.8	0.48	7.9	11.8	1.8	1.9	<10	<1	7.48	2.6	17.1	58
04/08/1998	981422	5.9	<0.01	<0.1	7.38	3.1	3.5	<10	286		3.2	19.3	59
03/07/1998	981179	0.8	0.56	13	17.4	3.6	4.1	<10	59		8.3	19.1	72



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Fax: (250) 627-8214
E-mail: norlabs@citytel.net

Date sampled: September 5, 2001
Lab reference number: 012217

Client ID	Lagoon Outfall
NO ₃ as N	0.23
NO ₂ as N	0.164
NH ₃ as N	19.6
Total N as N	31.3
Reactive phosphorus as P	3.67
Total phosphorus as P	3.85
BOD ₅	12
<u>E.coli</u> CFU/100 ml	2
Total suspended solids	2

Temperature °C	13.2
Conductivity mS/m	64
pH pH units	7.5

All results are mg/l unless otherwise noted.
CFU = Colony forming units



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Fax: (250) 627-8214
E-mail: norlabs@citytel.net

Date sampled: August 1, 2001
Lab reference number: 011832

Client ID	Lagoon Outfall
NO ₃ as N	0.11
NO ₂ as N	0.21
NH ₃ as N	16.1
Total N as N	27.3
Reactive phosphorus as P	3.7
Total phosphorus as P	4.4
BOD ₅	<10
<u>E.coli</u> CFU/100 ml	5
Total suspended solids	5.7

Temperature °C	17.5
Conductivity mS/m	67
pH pH units	7.4

All results are mg/l unless otherwise noted.
CFU = Colony forming units



Date sampled: July 4, 2001
Lab reference number: 011543

Client ID	Lagoon Outfall
NO ₃ as N	0.76
NO ₂ as N	0.40
NH ₃ as N	14.1
Total N as N	27.8
Reactive phosphorus as P	2.5
Total phosphorus as P	3.2
BOD ₅	17
<u>E.coli</u> CFU/100 ml	3
Total suspended solids	14

Temperature °C	17.5
Conductivity mS/m	66
pH pH units	7.9

All results are mg/l unless otherwise noted.
CFU = Colony forming units



Date sampled: Not given
Lab reference number: 011277

Client ID	Lagoon Outfall
NO ₃ as N	1.41
NO ₂ as N	0.34
NH ₃ as N	17.6
Total N as N	26.0
Reactive phosphorus as P	2.74
Total phosphorus as P	3.1
BOD ₅	13
<u>E.coli</u> CFU/100 ml	1
Total suspended solids	2.5

Temperature °C	14.1
Conductivity mS/m	65
pH pH units	7.5

All results are mg/l unless otherwise noted.
CFU = Colony forming units



Date sampled: May 2, 2001
Lab reference number: 010946

Client ID	Lagoon Outfall
NO ₃ as N	0.19
NO ₂ as N	0.08
NH ₃ as N	21.3
Total N as N	33.5
Reactive phosphorus as P	2.6
Total phosphorus as P	3.36
BOD ₅	16
<u>E.coli</u> CFU/100 ml	<1
Total suspended solids	6.6

Temperature °C	8.3
Conductivity mS/m	58
pH pH units	8.21

All results are mg/l unless otherwise noted.
CFU = Colony forming units



Date sampled: April 4, 2001
Lab reference number: 010687

Client ID	Lagoon Outfall
NO ₃ as N	<0.06
NO ₂ as N	0.01
NH ₃ as N	22.0
Total N as N	23.8
Reactive phosphorus as P	2.77
Total phosphorus as P	3.4
BOD ₅	<6
<u>E.coli</u> CFU/100 ml	<1
Total suspended solids	2.8

Temperature °C	Not available
Conductivity mS/m	61
pH pH units	7.9

All results are mg/l unless otherwise noted.
CFU = Colony forming units



Date sampled: February 28, 2001
Lab reference number: 010421

Client ID	Lagoon Outfall
NO ₃ as N	0.02
NO ₂ as N	0.01
NH ₃ as N	23.4
Total N as N	40.4
Reactive phosphorus as P	3.15
Total phosphorus as P	3.81
BOD ₅	<6
<u>E.coli</u> CFU/100 ml	<1
Total suspended solids	4.8

Temperature °C	0.1
Conductivity mS/m	48
pH pH units	8.2

All results are mg/l unless otherwise noted.
CFU = Colony forming units



Date sampled: January 30, 2001
Lab reference number: 010218

Client ID	Lagoon Outfall
NO ₃ as N	0.20
NO ₂ as N	0.02
NH ₃ as N	23.2
Total N as N	31.3
Reactive phosphorus as P	2.93
Total phosphorus as P	3.57
BOD ₅	<6
<u>E.coli</u> CFU/100 ml	<1
Total suspended solids	2.4

Temperature °C	0.1
Conductivity mS/m	52
pH pH units	10.3

All results are mg/l unless otherwise noted.
CFU = Colony forming units



Date sampled: January 2, 2001
Lab reference number: 010020

Client ID	Lagoon Outfall
NO ₃ as N	n/a
NO ₂ as N	0.03
NH ₃ as N	22.0
Total N as N	28.5
Reactive phosphorus as P	2.75
Total phosphorus as P	3.33
BOD ₅	11
<u>E.coli</u> MPN/100 ml	1
Total suspended solids	2

Temperature °C	0.5
Conductivity mS/m	52
pH pH units	7.7

All results are mg/l unless otherwise noted.
MPN = Most probable number
n/a = not available



Date sampled: January 2, 2001
Lab reference number: 010020

Client ID	Lagoon Outfall
NO ₃ as N	n/a
NO ₂ as N	0.03
NH ₃ as N	22.0
Total N as N	8.35
Reactive phosphorus as P	2.75
Total phosphorus as P	3.33
BOD ₅	11
<u>E.coli</u> MPN/100 ml	1
Total suspended solids	2

Temperature °C	0.5
Conductivity mS/m	52
pH pH units	7.7

All results are mg/l unless otherwise noted.
MPN = Most probable number
n/a = not available