Town of Niverville
ATTN: RYAN DYCK
PO Box 267
Niverville MB R0A 1E0

Date Received: 30-MAR-17
Report Date: 06-APR-17 13:12 (MT)
Version: FINAL

Client Phone: 204-392-3012

Certificate of Analysis

Lab Work Order #: L1906996

Project P.O. #: NOT SUBMITTED
Job Reference: TOWN OF NIVERVILLE
C of C Numbers:
Legal Site Desc:

Hua Wo
Chemistry Laboratory Manager

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1906996-1 LANDSBURY LANE							
Sampled By: CLIENT on 30-MAR-17 @ 11:17							
Matrix: TREATED MUNICIPAL							
Miscellaneous Parameters							
Total Suspended Solids	<5.0		5.0	mg/L		31-MAR-17	R3691083
WP2 Drinking Water plus MAC							
Chloride in Water by IC							
Chloride (Cl)	59.7		0.50	mg/L		31-MAR-17	R3694397
Conductivity							
Conductivity	314		1.0	umhos/cm		31-MAR-17	R3690848
Fluoride in Water by IC							
Fluoride (F)	0.167		0.020	mg/L		31-MAR-17	R3694397
Hardness - grains/Imperial gallon							
Hardness-grains/IMPgal	1.69		0.010	grn/IMPgal		05-APR-17	
Hardness - grains/US gallon							
Hardness-grains/USgal	1.41		0.010	grn/USgal		05-APR-17	
Hardness Calculated							
Hardness (as CaCO3)	24.1	HTC	0.54	mg/L		05-APR-17	
Nitrate in Water by IC							
Nitrate (as N)	<0.020		0.020	mg/L		31-MAR-17	R3694397
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		06-APR-17	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		31-MAR-17	R3694397
Sulfate in Water by IC							
Sulfate (SO4)	11.2		0.30	mg/L		31-MAR-17	R3694397
TDS (Calculated from EC)							
TDS (Calculated from EC)	204		20	mg/L		03-APR-17	
Total Metals by ICP-MS							
Arsenic (As)-Total	0.0031		0.0010	mg/L	03-APR-17	03-APR-17	R3692031
Barium (Ba)-Total	0.00835		0.00050	mg/L	03-APR-17	03-APR-17	R3692031
Boron (B)-Total	0.598		0.030	mg/L	03-APR-17	03-APR-17	R3692031
Calcium (Ca)-Total	5.56		0.20	mg/L	03-APR-17	03-APR-17	R3692031
Copper (Cu)-Total	0.0214		0.0020	mg/L	03-APR-17	03-APR-17	R3692031
Iron (Fe)-Total	0.63		0.10	mg/L	03-APR-17	03-APR-17	R3692031
Lead (Pb)-Total	0.0054		0.0010	mg/L	03-APR-17	03-APR-17	R3692031
Magnesium (Mg)-Total	2.49		0.050	mg/L	03-APR-17	03-APR-17	R3692031
Manganese (Mn)-Total	0.0082		0.0010	mg/L	03-APR-17	03-APR-17	R3692031
Potassium (K)-Total	2.08		0.10	mg/L	03-APR-17	03-APR-17	R3692031
Sodium (Na)-Total	49.5		0.050	mg/L	03-APR-17	03-APR-17	R3692031
Uranium (U)-Total	<0.00050		0.00050	mg/L	03-APR-17	03-APR-17	R3692031
Zinc (Zn)-Total	<0.020		0.020	mg/L	03-APR-17	03-APR-17	R3692031
pH							
pH	7.42		0.10	pH units		31-MAR-17	R3690848
L1906996-2 RAW							
Sampled By: CLIENT on 30-MAR-17 @ 11:17							
Matrix: TREATED MUNICIPAL							
Miscellaneous Parameters							
Total Suspended Solids	<5.0		5.0	mg/L		31-MAR-17	R3691083
WP2 Drinking Water plus MAC							
Chloride in Water by IC							
Chloride (Cl)	384		5.0	mg/L		31-MAR-17	R3694397
Conductivity							
Conductivity	1940		1.0	umhos/cm		31-MAR-17	R3690848
Fluoride in Water by IC							
Fluoride (F)	1.28		0.20	mg/L		31-MAR-17	R3694397

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1906996-2 RAW							
Sampled By: CLIENT on 30-MAR-17 @ 11:17							
Matrix: TREATED MUNICIPAL							
Hardness - grains/Imperial gallon							
Hardness-grains/IMPgal	13.1		0.010	grn/IMPgal		05-APR-17	
Hardness - grains/US gallon							
Hardness-grains/USgal	10.9		0.010	grn/USgal		05-APR-17	
Hardness Calculated							
Hardness (as CaCO3)	186	HTC	0.54	mg/L		05-APR-17	
Nitrate in Water by IC							
Nitrate (as N)	<0.20	DLM	0.20	mg/L		31-MAR-17	R3694397
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.22		0.22	mg/L		06-APR-17	
Nitrite in Water by IC							
Nitrite (as N)	<0.10	DLM	0.10	mg/L		31-MAR-17	R3694397
Sulfate in Water by IC							
Sulfate (SO4)	84.3		3.0	mg/L		31-MAR-17	R3694397
TDS (Calculated from EC)							
TDS (Calculated from EC)	1260		20	mg/L		03-APR-17	
Total Metals by ICP-MS							
Arsenic (As)-Total	0.0037		0.0010	mg/L	03-APR-17	03-APR-17	R3692031
Barium (Ba)-Total	0.0323		0.00050	mg/L	03-APR-17	03-APR-17	R3692031
Boron (B)-Total	0.980		0.030	mg/L	03-APR-17	03-APR-17	R3692031
Calcium (Ca)-Total	42.0		0.20	mg/L	03-APR-17	03-APR-17	R3692031
Copper (Cu)-Total	0.0042		0.0020	mg/L	03-APR-17	03-APR-17	R3692031
Iron (Fe)-Total	0.35		0.10	mg/L	03-APR-17	03-APR-17	R3692031
Lead (Pb)-Total	<0.0010		0.0010	mg/L	03-APR-17	03-APR-17	R3692031
Magnesium (Mg)-Total	19.7		0.050	mg/L	03-APR-17	03-APR-17	R3692031
Manganese (Mn)-Total	0.0062		0.0010	mg/L	03-APR-17	03-APR-17	R3692031
Potassium (K)-Total	14.6		0.10	mg/L	03-APR-17	03-APR-17	R3692031
Sodium (Na)-Total	323		0.050	mg/L	03-APR-17	03-APR-17	R3692031
Uranium (U)-Total	<0.00050		0.00050	mg/L	03-APR-17	03-APR-17	R3692031
Zinc (Zn)-Total	<0.020		0.020	mg/L	03-APR-17	03-APR-17	R3692031
pH							
pH	7.95		0.10	pH units		31-MAR-17	R3690848

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
HTC	Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
CL-IC-N-WP	Water	Chloride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
EC-WP	Water	Conductivity	APHA 2510B
Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.			
ETL-HARD-EXT-IMP-WP	Water	Hardness - grains/Imperial gallon	Calculated/IMPgal
ETL-HARD-EXT-US-WP	Water	Hardness - grains/US gallon	Calculated/USgal
ETL-SOLIDS-CALCEC-WP	Water	TDS (Calculated from EC)	Calculated
F-IC-N-WP	Water	Fluoride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
HARDNESS-CALC-WP	Water	Hardness Calculated	APHA 2340B
Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.			
MET-T-MS-WP	Water	Total Metals by ICP-MS	APHA 3030E/EPA 6020A-T
This analysis involves preliminary sample treatment by hotblock acid digestion (APHA 3030E). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).			
NO2+NO3-CALC-WP	Water	Nitrate+Nitrite	CALCULATION
NO2-IC-N-WP	Water	Nitrite in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
NO3-IC-N-WP	Water	Nitrate in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
PH-WP	Water	pH	APHA 4500H
The pH of a sample is the determination of the activity of the hydrogen ions by potentiometric measurement using a standard hydrogen electrode and a reference electrode.			
SO4-IC-N-WP	Water	Sulfate in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
SOLIDS-TOTSUS-WP	Water	Total Suspended Solids	APHA 2540 D (modified)
Total suspended solids in aquesous matrices is determined gravimetrically after drying the residue at 103 105°C.			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA

Chain of Custody Numbers:

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

12 - 1329 Niakwa Rd. E.
Winnipeg, Manitoba R2J 3T4
(204) 255-9720
(204) 255-9721
Free: 1 800 607 7555

Chain of Custody / Analytical Request Form

CHEMISTRY INFO: (204) 255 9739
MICRO INFO: (204) 255 9740 OR (204) 255 9737

Environm

L1906996-COFC

WORK ORDER NO:

FOR L S)

LAB NO.: L1906996

Sampl ☐ NON ACCEPTABLE

DATE RECEIVED: March 30/17

☐ Fro ☐ Broken ☐ Leakage ☐ Incorrect Sample Container

TIME RECEIVED: 12:15

COMMENT:

BY:

Date Sampled: March 30/17 Time: 11 : 17 A.M. ☒ P.M. ☐

Date Required:

Location: Town of Niverville
(Town, Community, City)

Submitter's Name Printed:

Sample Submitted By:

Community Code Number:

Rural Municipality/LGC/UVD:

SAMPLE TYPE

DRINKING WATER
- ☐ Untreated Well
- ☐ Treated Well
- ☒ Treated Municipal
- ☐ Non-Treated Municipal
- ☐ Water-Surface-Raw
- ☐ Water-Surface-Treated

NON-DRINKING WATER
- ☐ Sewage/Waste Water
- ☐ Lake/River
- ☐ Swimming Pool
- ☐ Whirl Pool
- ☐ Other

PURPOSE OF TEST
☐ Private ☐ Real Estate ☐ Water Main

PLEASE PRINT & PRESS FIRMLY

NOTES & CONDITIONS
1. Quote number must be provided to insure proper pricing.
2. Failure to properly complete all portions of this form may delay analysis.
3. ALS's liability limited to cost of analysis.

SERVICE REQUESTED
☐ REGULAR ☐ PRIORITY (50% SURCHARGE) ☐ EMERGENCY (100% SURCHARGE)

LAB NUMBER	SAMPLE IDENTIFICATION	
	Landsbury Lane	Metals
	Landsbury Lane	Routine
	Landsbury Lane	Routine
	Raw	Metals
	Raw	Routine
	Raw	Routine

ALS CUSTOMER #: *QUOTE #:*

REPORT TO BE SENT TO

NAME: Andrew Rempel
COMPANY: Town of Niverville
ADDRESS:
CITY/TOWN: / PROV.:
POSTAL CODE:
PHONE: 204-371-0363
BY: *MAIL* ☐ *FAX* ☐ (FAX NUMBER)
PICKUP ☐ *E-MAIL* ☒ Utilities@whereyoubelong.ca (EMAIL ADDRESS)

CC
NAME: Ryan Dyck
ADDRESS:
CITY/TOWN: / PROV.:
POSTAL CODE:
PHONE:
BY: *MAIL* ☐ *FAX* ☐ (FAX NUMBER)
PICKUP ☐ *E-MAIL* ☒ Ryan@whereyoubelong.ca (EMAIL ADDRESS)

Analyses required Metals / Routine
TSS / TDS / PH / Hardness /

SAMPLING INSTRUCTIONS ON REVERSE SIDE

BILLING ADDRESS **SAME AS REPORT TO** ☐

NAME:
COMPANY:
ADDRESS:
CITY/TOWN: / PROV.:
POSTAL CODE:

PAYMENT PARTICULARS
- ☐ INVOICE NEEDED / CLIENT'S P.O. NO.
- ☐ INTERAC
- ☐ CASH — Subtotal $
- ☐ CHEQUE — G.S.T. $
- ☐ VISA / MASTERCARD — Total $

* OUR POLICY IS NOT TO ACCEPT SAMPLES FROM THE PRIVATE CITIZEN WITHOUT PREPAYMENT

ENTERED IN LIMS BY:

Manitoba Technology Centre Ltd.
Part of the **ALS Laboratory Group**
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