

The Rural Municipality of Rockwood



STONY MOUNTAIN ANNUAL WATER REPORT

2022

Website: www.rockwood.ca

Prepared March 30, 2023



Contents

Water System Contact Information	2
Introduction:.....	3
1. Description of the Water System	3
1.1 Water Supply Source	3
1.2 Water Treatment Process	3
1.3 Distribution Systems	3
1.4 Water Quality Standards.....	4
1.5 Utility Rates	4
1.6 Monitoring Requirements.....	4
1.7 The Environment Act’s Water and Wastewater Facility Operators Regulation	4
1.7.1 Plant Classification is as follows:.....	4
1.7.2 Operators Certification is as follows:	4
2. Disinfection System in Use	5
2.1 Disinfection used.....	5
2.2 Equipment redundancy and monitoring requirements	5
2.3 Disinfection residual overall performance/results.....	5
3. Boil Water Advisory	5
3.1 Boilw Water Advisory Notice.....	6
3.2 Rescinded Advisory Notice.....	7
3.3 ALS Testing Results.....	8
3.4 Corrective Action Report.....	20
4. Water Quality / Treatment	21
5. Monitoring Schedule	22
6. Major Expenses in 2022.....	23
7. Major Expenses in 2023.....	23
8. Future System Improvement/Expenses for 2023/2024.....	23
2021 Analytical Report Results ALS	24
Stony Mountain Water Treatment Plant Layout & Pictures.....	32
Distribution Header	33
Data Recorder	34
Chlorine Analyzer.....	35
Dual Peristaltic Chemical Pumps	36
Chemical Pump Control	38
Genset	39
Water Treatment Building	41

PUBLIC WATER SYSTEM ANNUAL REPORT

Water System Contact Information

- 2022 -

Name of the Public Water System: Stony Mountain Water Treatment Plant

Name of the Legal Owner: The Rural Municipality of Rockwood

Contact Person: Chris Luellman, CAO

Phone: (204) 467-2272

Email: info@rockwood.ca

Website: www.rockwood.ca

Water System's Emergency Numbers:

**(204) 461-3399 Emergency Number
(204) 467-2272 Administration Office
(204) 344-5148 Stony Mountain Shop**

Utilities Manager: Alan Schick

**Utilities Operators: Cody Dubbert
Reid Kolesar
Nathan Benevides-Harris
(Started Employment August 15, 2022)**

Utilities Operator Part-time: Jeffrey Sing (Started Employment Sept. 20, 2022)

Introduction:

The 2022 Annual Report for Stony Mountain summarizes the water utility's ability to produce safe potable water and meet provincial regulations.

1. Description of the Water System

The Stony Mountain Public Water System Licence # (PWS-10-453-02) provides potable drinking water to a population of approximately 1600 residents. Treated water produced from the water treatment plant meets all health and aesthetic objectives as stated in the Guidelines for Canadian Drinking Water Quality. The Operating License has been renewed and is in compliance with provincial regulations. Engineer assessment was completed in 2016 / 2017. Water System Qualified Person Assessment is due 2025.

1.1 Water Supply Source

Stony Mountain Water Treatment Plant receives groundwater from three (3) wells located one (1) mile west of Stony Mountain. The three (3) wells draw groundwater from a confined aquifer. They were drilled in 1991 to a depth of approximately 150'. As water flows through the ground it dissolves metals and minerals and comes in contact with iron, manganese, calcium carbonate (hardness causing mineral). These do not pose any health risk, they are known as aesthetic water quality parameters.

1.2 Water Treatment Process

Water is drawn from the aquifer into the Water Treatment Plant where chlorine is added by a metering pump for disinfection to achieve a free residual before it enters into the distribution system. A corrosion inhibitor is added for corrosion control of metal parts in the distribution systems.

1.3 Distribution Systems

Consists of a network of PVC piping approximately thirty-four (34) miles long, which includes a rural line with seventy-four (74) customers, two (2) duty pumps which are controlled by VFD for constant town pressure, plus a fire pump controlled by a pressure switch for heavy and fire flows. Our system supplies fire protection for the residents of Stony Mountain and industrial park. The distribution system has ninety-one (91) fire hydrants and five (5) flush hydrants for flushing dead ends. Water is supplied to approximately seven hundred (700) users which consist of Domestic, Commercial, Public Schools, Daycares and Community Clubs. All connections are metered.

1.4 Water Quality Standards

- Bacteriological bi-weekly water samples have met water quality Standards, which is summarized in Tables 1 & 2
- The Stony Mountain public water system met the bacteriological water quality standards in 2022.
- Compliance with section 6.11 of the Rm of Rockwood Operating Licence – 2022 Advisory Notification Plan completed & submitted
- A free chlorine residual of at least .01 mg/L has been maintained in the distribution system at all times
- The RM of Rockwood is in compliance with The Drinking Water Safety Act, its supporting regulations, and the terms and conditions of the water systems current operating license
- The Office of Drinking Water is no longer sending out Annual Audits. Any non-compliance incidents are discussed throughout the year via phone call or email, and the necessary records will be in the monthly reports. Stony Mountain has no non-compliance incidents identified in 2022, and there is no outstanding water system assessment to be completed at this time.

1.5 Utility Rates

Rates have not changed in 2022. A Rate study scheduled for 2023.

1.6 Monitoring Requirements

- The general chemical analysis was performed in 2021.
- The next general chemical analysis will be performed in 2023.
- 1 Raw, 1 treated and 1 distributed water sample is collected for bacteriological analysis on a bi-weekly basis.
- The drinking water in all Stony Mountain schools is tested once a month.

1.7 The Environment Act's Water and Wastewater Facility Operators Regulation

1.7.1 Plant Classification is as follows:

- Class I Water Treatment Facility,
- Class II Water Distribution System,
- Class II Wastewater Collection System,
- Class II Wastewater Treatment Facility

1.7.2 Operators Certification is as follows:

- Alan Schick – Level III
- Cody Dubbert – Level II
- Reid Kolshar – Level II
- Nathan Benevides - Harris – Level II
- Jeffrey Sing – Level IV – Part-time Operator

2. Disinfection System in Use

Disinfection is the selective destruction or inactivation of potential disease, causing organisms in water. As per the *Drinking Water Safety Act* the Stony Mountain Public Water System must ensure that a disinfectant residual of at least:

- 0.5 mg of free chlorine per litre of water is detectable at the point where water enters the distribution system.
- 0.1 mg of free chlorine per litre of water is detectable at all times at any point in the distribution piping network.

2.1 Disinfection used is 12% sodium hypochlorite injected by peristaltic chemical metering pumps (Watson Marlow). Also have a second pump on stand-by if needed; controlled by automatic switch over. Parameters for all pumps are set manually by operator. Priority is rotated weekly. I.e: pump 1 becomes stand-by and pump 2 becomes duty etc.

2.2 Equipment redundancy and monitoring requirements

As per the *Drinking Water Safety Act* – continuous disinfection is maintained at the plant by keeping in stock all spare parts required for the chemical metering pumps, as well as a spare chemical metering pump.

2.3 Disinfection residual overall performance/results

For 2022, the Stony Mountain Public Water System has met all regulatory requirements regarding monitoring and reporting disinfection residuals leaving the water plant and in the distribution system.

Water sampling is carried out on a biweekly basis for the presence of Total Coliform (TC) which is an indicator that disease causing organisms may also be present. Sampling is also conducted for E-Coli (EC) bacteria.

3. Boil Water Advisory

A boil water advisory was sent out on January 11, 2022, for the Stony Mountain Rural Distribution System (Bristol Rural Line). Public Notices (Pages 6 and 7).

Water samples taken after repairs were completed, see ALS testing results (Page 8-19). See Corrective Action report for full details (Page 20).

3.1. Boil Water Advisory Notice



PUBLIC NOTICE

BOIL WATER ADVISORY

PORTION OF STONY MOUNTAIN PUBLIC WATER SYSTEM (BRISTOL RURAL LINE)

Issued by the Medical Officer of Health, Manitoba Health and the Office of Drinking Water, Manitoba Conservation and Climate

January 11, 2022

A line break on January 11, 2022 has led to the loss of water pressure in a portion of the Stony Mountain distribution system- the Bristol Rural Line. Distribution depressurization can compromise the safety of the water supply; therefore, a boil water advisory has been issued to ensure public health protection.

RECOMMENDATIONS

Until further notice, all water used for consumption should be brought to a rolling boil for at least one minute before it is used for:

- Drinking and ice making
- Preparing beverages, such as infant formula
- Preparing food, including washing fruits and vegetables
- Brushing teeth

It is **not** necessary to boil tap water used for other household purposes, such as laundry or washing dishes. Adults and older children that are able to avoid swallowing the water can wash, bathe, or shower. Young children should be sponge bathed. If boiling is not practical, an alternate and safe supply of water should be used for consumptive purposes; i.e. bottled water. [Boil Water Advisory Fact Sheet #1 - Boil Water Advisory For Manitoba Water System Users](#) contains additional information on water use and can be found on the website below.

All commercial, public and permitted facilities (ex: restaurants, health care facilities, day cares, personal care homes and other private facilities that provide food and water services) must follow water use recommendations from the [Boil Water Advisory Fact Sheet #3 – Boil Water Advisory For Commercial/Public Facilities](#). A copy of this Fact Sheet is available on the website below.

To avoid burn injuries from hot water, caution should be taken. Please keep young children away from boiling water. Place kettles and pots away from counter and stove edges.

Please share this information with other people who use the tap water, especially those who may not have received this notice directly (ex: renters, tenants, staff, or clients). This notice can also be posted in common areas where people tend to gather.

DURATION

The Boil Water Advisory will remain in effect until the water supplied by this water system no longer presents a risk to public health. You will be notified when the advisory has been rescinded. If you have any questions or concerns, please contact water system at 204-467-2272 or the Regional Drinking Water Officer at 204-641-3530, or Health Links at 204-788-8200 (toll free at 1-888-315-9257). **To review Fact Sheets on water use, please go to www.manitoba.ca/drinkingwater or <http://www.gov.mb.ca/health/publichealth/environmentalhealth/water.html>**

3.2 Rescinded Advisory Notice

The Rural Municipality of Rockwood

BOX 902, 285 MAIN ST.
STONEWALL, MB R0C 2Z
Tel: 204-467-2272
Fax: 204-467-5329

EMAIL: info@rockwood.ca

WEBSITE: www.rockwood.ca



REEVE
WES TAPLIN

CHIEF ADMINISTRATIVE
OFFICER
CHRIS LUELLMAN

COUNCILLORS
TOM HUFFMAN
CURTIS MCCLINTOCK
NEAL WIRGAU
ART GOUDY
TERRY HARTLE
LYLE WILLIS

PORTION OF STONY MOUNTAIN WATER SYSTEM BRISTOL RURAL LINE BOIL WATER ADVISORY RESCINDED

The Boil Water Advisory for the Portion of the Stony Mountain Water System: **Bristol Rural Line** from the water main break that occurred January 11th, 2022 has been **rescinded**.

The work has been completed, pressure restored, and bacteriological testing results met regulatory standards.

Normal Water use may resume.

If you have questions, please contact the Utility Department at 204-467-2272

Thank you for your patience.

The Rural Municipality of Rockwood

3.3 ALS Testing Results



RM of Rockwood - Stony Mountain - PWS
ATTN: ALAN SCHICK
Stony Mountain - PWS
Box 902
Stonewall MB R0C 2Z0

Date Received: 12-JAN-22
Report Date: 13-JAN-22 13:55 (MT)
Version: FINAL

Client Phone: 204-467-2272

Certificate of Analysis

Lab Work Order #: L2678480
Project P.O. #: CONTRACT 6675
Job Reference: WP222.50 - STONY MOUNTAIN - PWS
C of C Numbers:
Legal Site Desc:

Sheriza Rajack-Ahamed
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721
ALS CANADA LTD Part of the ALS Group An ALS Limited Company

Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier	D.L.	Units	Extracted	Analyzed	Batch
L2678480-1 STONY MOUNTAIN- DOWNSTREAM OF REPAIR AREA							
Sampled By: CLIENT on 12-JAN-22 @ 12:50							
Matrix: DRINKING WATER - RAW							
Miscellaneous Parameters							
Chlorine Free Client Supplied	0.540		0.010	mg/L		13-JAN-22	R5693576
Chlorine Total Client Supplied	0.600		0.010	mg/L		13-JAN-22	R5693576
Temperature Cooler 1	15.4		-50	Deg. C		13-JAN-22	R5693576
Total Coliform and E.coli							
Total Coliforms	0		0	MPN/100mL		12-JAN-22	R5694156
Escherichia Coli	0		0	MPN/100mL		12-JAN-22	R5694156
L2678480-2 STONY MOUNTAIN- REPAIR AREA SITE							
Sampled By: CLIENT on 12-JAN-22 @ 12:50							
Matrix: DRINKING WATER - TREATED							
Miscellaneous Parameters							
Chlorine Free Client Supplied	0.560		0.010	mg/L		13-JAN-22	R5693576
Chlorine Total Client Supplied	0.640		0.010	mg/L		13-JAN-22	R5693576
Temperature Cooler 1	15.4		-50	Deg. C		13-JAN-22	R5693576
Total Coliform and E.coli							
Total Coliforms	0		0	MPN/100mL		12-JAN-22	R5694156
Escherichia Coli	0		0	MPN/100mL		12-JAN-22	R5694156
L2678480-3 STONY MOUNTAIN- UPSTREAM OF REPAIR AREA							
Sampled By: CLIENT on 12-JAN-22 @ 12:50							
Matrix: DRINKING WATER - DISTRIBUTION							
Miscellaneous Parameters							
Chlorine Free Client Supplied	0.520		0.010	mg/L		13-JAN-22	R5693576
Chlorine Total Client Supplied	0.540		0.010	mg/L		13-JAN-22	R5693576
Temperature Cooler 1	15.4		-50	Deg. C		13-JAN-22	R5693576
Total Coliform and E.coli							
Total Coliforms	0		0	MPN/100mL		12-JAN-22	R5694156
Escherichia Coli	0		0	MPN/100mL		12-JAN-22	R5694156

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

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
CL2-FREE-CLIENT-WP	Water	Chlorine (Free) supplied by client	Supplied by client
CL2-TOTAL-CLIENT-WP	Water	Chlorine (Total) supplied by client	Supplied by client
TC,EC-QT51-WP	Water	Total Coliform and E.coli	APHA 9223B QT51
<p>This analysis is carried out using procedures adapted from APHA Method 9223B "Enzyme Substrate Coliform Test". E. coli and Total Coliform are determined simultaneously. The sample is mixed with a mixture of hydrolyzable substrates and then sealed in a 51-well packet. The packet is incubated at 35.0 +/- 0.5 degrees C for 18 or 24 hours and then the number of wells exhibiting positive responses are counted. The final results are obtained by comparing the number of positive responses to a probability table.</p>			
TEMP-ON-REC-WP	Water	Temperature on Receipt	Temp. taken on receipt of samples
<p>Temperature taken and recorded upon receipt of samples in the lab.</p>			

** 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:

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.



Quality Control Report

Workorder: L2678480

Report Date: 13-JAN-22

Page 1 of 2

Client: RM of Rockwood - Stony Mountain - PWS
 Stony Mountain - PWS Box 902
 Stonewall MB R0C 2Z0

Contact: ALAN SCHICK

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
TC,EC-QT51-WP	Water							
Batch	R5694156							
WG3684422-1	MB							
Total Coliforms			0		MPN/100mL		1	12-JAN-22
Escherichia Coli			0		MPN/100mL		1	12-JAN-22
WG3684422-2	MB							
Total Coliforms			0		MPN/100mL		1	12-JAN-22
Escherichia Coli			0		MPN/100mL		1	12-JAN-22
WG3684422-3	MB							
Total Coliforms			0		MPN/100mL		1	12-JAN-22
Escherichia Coli			0		MPN/100mL		1	12-JAN-22

Quality Control Report

Workorder: L2678480

Report Date: 13-JAN-22

Page 2 of 2

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



12 - 1329 Niakwa Rd. E.
Winnipeg, Manitoba R2J 3T4
Tel: (204) 255-9720
Fax: (204) 255-9721
Toll Free: 1 800 607 7556



L2678480-COFC

Custody / Analytical Request Form

WORK ORDER NO: _____

FOR LABORATORY USE ONLY (SHADED AREAS)

Sample Condition Upon Receipt: ACCEPTABLE NON ACCEPTABLE
 Frozen Cold Ambient Broken Leakage Incorrect Sample Container

LAB NO.: _____

DATE RECEIVED: 12/1/22

TIME RECEIVED: 1:21pm

BY: O.A. TEMP: 15.4°C

Date Sampled: Jan 12, 22 Time: 12:50 AM P.M. Date Required: _____

Location: Stony mtn Rural distribution
(Town, Community, City)

Submitter's Name Printed: Alan Schick

Sample Submitted By: Alan Schick

Community Code Number: WP 222.50

Rural Municipality/CC/UID: Rf Rockwood

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: _____

NOTES & CONDITIONS

- Quote number **MUST BE** provided to insure proper pricing.
- Failure to properly complete all portions of this form may delay analysis.
- ALS's liability limited to cost of analysis.

SERVICE REQUESTED

- REGULAR PRIORITY EMERGENCY SAME DAY
(50% SURCHARGE) (100% SURCHARGE) (200% SURCHARGE)

PURPOSE OF TEST
 Private Real Estate Water Main break

LAB NUMBER	SAMPLE IDENTIFICATION	ALS CUSTOMER #	QUOTE #
		W7301	
		REPORT TO BE SENT TO	
	① Down stream of Repair area Free - 0.54 mg/l Total - 0.60 mg/l	NAME: Alan Schick	
		COMPANY: Rm of Rockwood.	
		ADDRESS: Box 902	
		CITY/TOWN: Stonewall / PROV: mb	
		POSTAL CODE: R0C-2B0	
		PHONE: 204-467-2272	
		BY: MAIL <input type="checkbox"/> FAX <input checked="" type="checkbox"/> 204-467-5329	
		E-MAIL <input checked="" type="checkbox"/> info@rockwood.ca	
		cc: odw.bacteria-res@mts@gov.mb.ca	
		alan.schick@rockwood.ca	
		NAME: _____	
		ADDRESS: _____	
		CITY/TOWN: _____ / PROV: _____	
		POSTAL CODE: _____	
		PHONE: _____	
		BY: MAIL <input type="checkbox"/> FAX <input type="checkbox"/> _____	
		E-MAIL <input type="checkbox"/> _____	

Analyses required 1, 2 & 3 - TC, EC, OT5

BILLING ADDRESS SAME AS REPORT TO

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

SAMPLING INSTRUCTIONS ON REVERSE SIDE
ALS ENVIRONMENTAL

12 - 1329 Niakwa Rd. E., Winnipeg, MB Canada R2J 3T4
Phone: +1 204 255 9720 Fax: +1 204 255 9721 www.alsglobal.com
A Campbell Brothers Limited Company

SUBMITTER COPY

PAYMENT PARTICULARS (CASH NOT ACCEPTED)

INVOICE NEEDED / CLIENT'S P.O. NO. _____
 INTERAC
 CHEQUE Subtotal \$ _____
 VISA G.S.T. \$ _____
 MASTERCARD Total \$ _____

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

ENTERED IN LIMS BY: _____



RM of Rockwood - Stony Mountain - PWS
ATTN: ALAN SCHICK
Stony Mountain - PWS
Box 902
Stonewall MB R0C 2Z0

Date Received: 13-JAN-22
Report Date: 14-JAN-22 12:59 (MT)
Version: FINAL

Client Phone: 204-467-2272

Certificate of Analysis

Lab Work Order #: L2678619
Project P.O. #: CONTRACT 6675
Job Reference: WP222.50 - STONY MOUNTAIN - PWS
C of C Numbers:
Legal Site Desc:

Sheriza Rajack-Ahamed
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721
ALS CANADA LTD Part of the ALS Group An ALS Limited Company

Environmental

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2678619-1 STONY MOUNTAIN - DOWNSTREAM OF REPAIR AREA Sampled By: CLIENT on 13-JAN-22 @ 08:30 Matrix: DRINKING WATER							
Miscellaneous Parameters							
Chlorine Free Client Supplied	0.460		0.010	mg/L		13-JAN-22	R5694001
Chlorine Total Client Supplied	0.540		0.010	mg/L		13-JAN-22	R5694001
Temperature Cooler 1	12.4		-50	Deg. C		13-JAN-22	R5694001
Total Coliform and E.coli							
Total Coliforms	0		0	MPN/100mL		13-JAN-22	R5695576
Escherichia Coli	0		0	MPN/100mL		13-JAN-22	R5695576
L2678619-2 STONY MOUNTAIN - REPAIR AREA Sampled By: CLIENT on 13-JAN-22 @ 08:30 Matrix: DRINKING WATER							
Miscellaneous Parameters							
Chlorine Free Client Supplied	0.500		0.010	mg/L		13-JAN-22	R5694001
Chlorine Total Client Supplied	0.540		0.010	mg/L		13-JAN-22	R5694001
Temperature Cooler 1	12.4		-50	Deg. C		13-JAN-22	R5694001
Total Coliform and E.coli							
Total Coliforms	0		0	MPN/100mL		13-JAN-22	R5695576
Escherichia Coli	0		0	MPN/100mL		13-JAN-22	R5695576
L2678619-3 STONY MOUNTAIN - UPSTREAM OF REPAIR AREA Sampled By: CLIENT on 13-JAN-22 @ 08:30 Matrix: DRINKING WATER							
Miscellaneous Parameters							
Chlorine Free Client Supplied	0.630		0.010	mg/L		13-JAN-22	R5694001
Chlorine Total Client Supplied	0.740		0.010	mg/L		13-JAN-22	R5694001
Temperature Cooler 1	12.4		-50	Deg. C		13-JAN-22	R5694001
Total Coliform and E.coli							
Total Coliforms	0		0	MPN/100mL		13-JAN-22	R5695576
Escherichia Coli	0		0	MPN/100mL		13-JAN-22	R5695576

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

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
CL2-FREE-CLIENT-WP	Water	Chlorine (Free) supplied by client	Supplied by client
CL2-TOTAL-CLIENT-WP	Water	Chlorine (Total) supplied by client	Supplied by client
TC,EC-QT51-WP	Water	Total Coliform and E.coli	APHA 9223B QT51
<p>This analysis is carried out using procedures adapted from APHA Method 9223B "Enzyme Substrate Coliform Test". E. coli and Total Coliform are determined simultaneously. The sample is mixed with a mixture of hydrolyzable substrates and then sealed in a 51-well packet. The packet is incubated at 35.0 +/- 0.5 degrees C for 18 or 24 hours and then the number of wells exhibiting positive responses are counted. The final results are obtained by comparing the number of positive responses to a probability table.</p>			
TEMP-ON-REC-WP	Water	Temperature on Receipt	Temp. taken on receipt of samples
<p>Temperature taken and recorded upon receipt of samples in the lab.</p>			

** 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:

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 lwf - 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.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
CL2-FREE-CLIENT-WP	Water	Chlorine (Free) supplied by client	Supplied by client
CL2-TOTAL-CLIENT-WP	Water	Chlorine (Total) supplied by client	Supplied by client
TC,EC-QT51-WP	Water	Total Coliform and E.coli	APHA 9223B QT51
This analysis is carried out using procedures adapted from APHA Method 9223B "Enzyme Substrate Coliform Test". E. coli and Total Coliform are determined simultaneously. The sample is mixed with a mixture of hydrolyzable substrates and then sealed in a 51-well packet. The packet is incubated at 35.0 +/- 0.5 degrees C for 18 or 24 hours and then the number of wells exhibiting positive responses are counted. The final results are obtained by comparing the number of positive responses to a probability table.			
TEMP-ON-REC-WP	Water	Temperature on Receipt	Temp. taken on receipt of samples
Temperature taken and recorded upon receipt of samples in the lab.			

** 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:

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.

Quality Control Report

Workorder: L2678619

Report Date: 14-JAN-22

Page 2 of 2

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



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



L2678619-COFC

Study / Analytical Request Form

ORDER NO: _____

FOR LABORATORY USE ONLY (SHADED AREA)

Sample Condition Upon Receipt: ACCEPTABLE NON ACCEPTABLE
 Frozen Cold Ambient Broken Leakage Incorrect Sample Container
COMMENT: _____

DATE RECEIVED: 13/1/22
TIME RECEIVED: 9:41am
BY: O.A. TEMP: 12.4C

Date Sampled: Jan 13, 2022 Time: 08:30 A.M. P.M.

Date Required: _____

Location: Stony mtn Rural distribution
(Town, Community, City)

Submitter's Name Printed: Alan Schick

Sample Submitted By: Alan Schick

Community Code Number: WP-222.50

Rural Municipality/DC/UVD: of Rockwood

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: _____

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 EMERGENCY SAME DAY
(50% SURCHARGE) (100% SURCHARGE) (200% SURCHARGE)

PURPOSE OF TEST
 Private Real Estate Water Main break

LAB NUMBER	SAMPLE IDENTIFICATION	ALS CUSTOMER #: W7301 QUOTE #:
		REPORT TO BE SENT TO
		NAME: Alan Schick
		COMPANY: Rm of Rockwood
		ADDRESS: Box 902
		CITY/TOWN: Stonywall / PROV.: mb
		POSTAL CODE: R0C-2Z0
		PHONE: 204-467-2272
		BY: MAIL <input type="checkbox"/> FAX <input type="checkbox"/> 204-467-5329 (FAX NUMBER)
		E-MAIL <input checked="" type="checkbox"/> Info@rockwood.ca (EMAIL ADDRESS)
		CC: odw.bacteria-results@gov.mb.ca
		NAME: alan.schick@rockwood.ca
		ADDRESS: _____
		CITY/TOWN: _____ / PROV.: _____
		POSTAL CODE: _____
		PHONE: _____
		BY: MAIL <input type="checkbox"/> FAX <input type="checkbox"/> _____ (FAX NUMBER)
		E-MAIL <input type="checkbox"/> _____ (EMAIL ADDRESS)

Analyses required 1, 2, 3 - TC, EC, QT51

BILLING ADDRESS SAME AS REPORT TO

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

SAMPLING INSTRUCTIONS ON REVERSE SIDE
ALS ENVIRONMENTAL
12 - 1329 Niakwa Rd. E., Winnipeg, MB Canada R2J 3T4
Phone: +1 204 255 9720 Fax: +1 204 255 9721 www.alsglobal.com
A Campbell Brothers Limited Company

PAYMENT PARTICULARS (CASH NOT ACCEPTED)

INVOICE NEEDED / CLIENT'S P.O. NO. _____
 INTERAC
 CHEQUE Subtotal \$ _____
 VISA G.S.T. \$ _____
 MASTERCARD Total \$ _____

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

SUBMITTER COPY

ENTERED IN LIMS BY: _____

3.4 Corrective Action Report

CORRECTIVE ACTION REPORT



Water Stewardship

WATER SYSTEM: Stony Mtn PWS WATER SYSTEM CODE: PWS 232.50
 LOCATION OF NON-COMPLIANCE INCIDENT (ex. Water Plant): Bristol distribution line
 OPERATOR: Alan Schick Signature: [Signature]

TYPE OF NON-COMPLIANCE INCIDENT:

- Low disinfectant residual entering the distribution system, 21(1) MR 40/2007
- Low disinfectant residual in the distribution system, 22 MR 40/2007
- Filtered water turbidity exceeding the turbidity standard, 6(1) MR 41/2007
- Low positive total coliform (< 10 CFU/100mL), 8 MR 41/2007
- Other

INITIAL TEST RESULTS:

0.54 F / 0.60 T DATE: Jan 12, 2022

DESCRIPTION OF CORRECTIVE ACTIONS TAKEN (attach additional sheets if required):

noticed a drop in water pressure in distribution located + isolated a water main leak. Call ODW notified that we need to shut a part of distribution system in order to make repairs. Brian go ahead with a self managed boil water advisory. Printed up notice, delivered to pick residents on the line + put on our website. Completed repairs. Samples taken at repair site upstream + downstream results came back negative and boil water advisory was lifted. Last of samples collected after repair completed Jan 12/22, repair site, upstream, downstream, results TC/EC - 0 negative. Last of samples collected 24hr later Jan 13/22, repair site, upstream, downstream, results - TC/EC - 0 negative, boil water notice was lifted Jan 14/22.

TEST RESULTS AFTER CORRECTIVE ACTIONS: Negative 0 TC/EC DATE: Jan 13/22
 (attach laboratory results if applicable)

EMERGENCY REPORTING IS REQUIRED WHERE A POTENTIAL HEALTH RISK IS INVOLVED. FOLLOW THE INSTRUCTIONS OF YOUR DRINKING WATER OFFICER ON SITUATIONS REQUIRING IMMEDIATE REPORTING.

DISTRIBUTION:

FORWARD THE ORIGINAL TO YOUR DRINKING WATER OFFICER WITH YOUR MONTHLY DISINFECTION OR TURBIDITY MONITORING REPORT. RETAIN A COPY FOR YOUR RECORDS

Contact your Drinking Water Officer with any comments, questions or concerns.

4. Water Quality / Treatment Standards

Table 1: Water Quality / Treatment Standards – Summary

Parameter	Quality Standards	ALS Results	Raw/Treated/ Distribution
Total coliform	Less than one total coliform bacteria detectable per 100 mL in all treated and distributed water	0	Raw/Treated/ Distribution
E. coli	Less than one E. coli bacteria detectable per 100 mL in all treated and distributed water	0	Raw/Treated/ Distribution
Chlorine Residual	Chlorine Free residual of at least 0.5 mg/L in water entering the distribution system following a minimum contact time of 20 minutes. Chlorine Free residual of at least 0.01 mg/L at all times at any point in the water distribution system.	0.570 0.010	Treated/ Distribution
Arsenic	Less than or equal to 0.01 mg/L	0.00027	TREATED
Benzene	Less than or equal to 0.005 mg/L	<0.00050	RAW
Ethylbenzene	Less than or equal to 0.14 mg/L	<0.00050	RAW
Fluoride	Less than or equal to 1.5 mg/L	0.283	
Lead	Less than or equal to 0.005 mg/L	0.000124	TREATED
Nitrate	Less than or equal to 45 mg/L measured as nitrate (10 mg/L measured as nitrogen)	<0.0050	TREATED
Nitrite	Less than or equal to 3 mg/L measured as nitrate (1 mg/L measured as nitrogen)	<0.001	TREATED
Trichloroethylene	Less than or equal to 0.005 mg/L	NA	NA
Tetrachloroethylene	Less than or equal to 0.01 mg/L	NA	NA
Toluene	Less than or equal to 0.06 mg/L	<0.00050	RAW
Total Xylenes	Less than or equal to 0.09 mg/L	<0.00064	RAW
Uranium	Less than or equal to 0.02 mg/L	0.000560	TREATED

5. Monitoring Schedule

Table 2: Monitoring Schedule 2022 - Summary

Parameter	Monitoring Requirement	ALS Results	Parameters
Bacteriological (total coliform and E.coli)	Biweekly sampling program with each set of samples consisting of one raw, one treated, and a minimum of one distribution sample. Consecutive sample sets to be separated by at least 12 days	0	Raw/Treated/ Distribution
Free Chlorine (treated water)	One sample per day of water entering the distribution system following at least 20 minutes of contact time	0.570	Treated
Free Chlorine (distribution system)	At the same times and location(s) as bacteriological distribution system sampling	0.010	Distribution
General Chemistry (parameter list provided by Office of Drinking Water)	One raw and one treated water sample once every three years	Table 1	Raw/Treated/ Distribution
Total Metals (distribution system)	One sample taken at the same time(s) as General Chemistry sampling at a mid-point in the distribution	Table 1	Raw/Treated/ Distribution
Other Parameters	As per the instruction of the Drinking Water Officer	NA	

6. Major Expenses in 2022

- Continue with curb stop renewal program \$45,000
- Well maintenance and camera \$15,000
- Genset & equipment for emergency backup power \$200,000

7. Major Expenses as of March 2023

- New Utility Truck \$70,000

8. Future System Improvement/Expenses for 2023/2024

- On going training for operations staff \$10,000

- Feasibility Study \$42,000
Connecting Balmoral RO water system to Stony Mountain

2021 Analytical Report Results



RM of Rockwood - Stony Mountain - PWS
ATTN: ALAN SCHICK
Stony Mountain - PWS
Box 902
Stonewall MB ROC 2Z0

Date Received: 03-DEC-21
Report Date: 10-DEC-21 10:06 (MT)
Version: FINAL

Client Phone: 204-467-2272

Certificate of Analysis

Lab Work Order #: L2669284
Project P.O. #: NOT SUBMITTED
Job Reference: STONY MOUNTAIN - PWS 222.50
C of C Numbers:
Legal Site Desc: 8620

Craig Riddell, B.Sc.Ag
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721
ALS CANADA LTD Part of the ALS Group An ALS Limited Company

Environmental

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Physical Tests (WATER)

		ALS ID		L2669284-1	L2669284-2
		Sampled Date		03-DEC-21	03-DEC-21
		Sampled Time		09:30	09:30
		Sample ID		STONY	STONY
Analyte	Unit	Guide Limit #1	Guide Limit #2	MOUNTAIN 1 - RAW	MOUNTAIN 2 - TREATED @ MIT
Colour, True	CU	15	-	<5.0	<5.0
Conductivity	umhos/cm	-	-	1150	1150
Hardness (as CaCO3)	mg/L	-	-	453 ^{HTC}	457 ^{HTC}
Langelier Index (4 C)	No Unit	-	-	0.69	0.66
Langelier Index (60 C)	No Unit	-	-	1.5	1.4
pH	pH units	7.00-10.5	-	7.99	7.94
Total Dissolved Solids	mg/L	500	-	578	609
Transmittance, UV (254 nm)	%T/cm	-	-	97.1	97.1
Turbidity	NTU	-	-	0.33	<0.10

Federal Guidelines for Canadian Drinking Water Quality (MAR, 2021)

#1: GCDWQ - Aesthetic Objective/Other Value (Jan.2020)

#2: GCDWQ - Maximum Acceptable Concentrations (MACs-Jan.2020)

Anions and Nutrients (WATER)

		ALS ID		L2669284-1	L2669284-2
		Sampled Date		03-DEC-21	03-DEC-21
		Sampled Time		09:30	09:30
		Sample ID		STONY	STONY
Analyte	Unit	Guide Limit #1	Guide Limit #2	MOUNTAIN 1 - RAW	MOUNTAIN 2 - TREATED @ MIT
Alkalinity, Total (as CaCO3)	mg/L	-	-	409	411
Ammonia, Total (as N)	mg/L	-	-	0.034	<0.010
Bicarbonate (HCO3)	mg/L	-	-	498	502
Bromide (Br)	mg/L	-	-	0.103	0.032
Carbonate (CO3)	mg/L	-	-	<0.60	<0.60
Chloride (Cl)	mg/L	250	-	93.7	94.7
Fluoride (F)	mg/L	-	1.5	0.283	0.278
Hydroxide (OH)	mg/L	-	-	<0.34	<0.34
Nitrate (as N)	mg/L	-	10	<0.0050	<0.0050
Nitrite (as N)	mg/L	-	1	<0.0010	<0.0010
Sulfate (SO4)	mg/L	500	-	85.5	85.3

Federal Guidelines for Canadian Drinking Water Quality (MAR, 2021)

#1: GCDWQ - Aesthetic Objective/Other Value (Jan.2020)

#2: GCDWQ - Maximum Acceptable Concentrations (MACs-Jan.2020)

Organic / Inorganic Carbon (WATER)

		ALS ID		L2669284-1	L2669284-2
		Sampled Date		03-DEC-21	03-DEC-21
		Sampled Time		09:30	09:30
		Sample ID		STONY	STONY
Analyte	Unit	Guide Limit #1	Guide Limit #2	MOUNTAIN 1 - RAW	MOUNTAIN 2 - TREATED @ MIT
Dissolved Organic Carbon	mg/L	-	-	1.35	1.43 ^{RRV}
Total Organic Carbon	mg/L	-	-	1.43	1.09 ^{RRV}

Federal Guidelines for Canadian Drinking Water Quality (MAR, 2021)

#1: GCDWQ - Aesthetic Objective/Other Value (Jan.2020)

#2: GCDWQ - Maximum Acceptable Concentrations (MACs-Jan.2020)

Detection Limit for result exceeds Guide Limit. Assessment against Guide Limit cannot be made.
 Analytical result for this parameter exceeds Guide Limit listed on this report.
 * Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Total Metals (WATER)

Analyte	Unit	ALS ID		L2669284-1	L2669284-2	L2669284-3
		Guide Limit #1	Guide Limit #2	Sampled Date	Sampled Date	Sampled Date
				03-DEC-21	03-DEC-21	03-DEC-21
				09:30	09:30	10:00
				Sample ID	Sample ID	Sample ID
				STONY MOUNTAIN 1 - RAW	STONY MOUNTAIN 2 - TREATED @ MIT	STONY MOUNTAIN 3 - DISTRIBUTION @ SMI PLANT
Aluminum (Al)-Total	mg/L	0.1	2.9	<0.0030	<0.0030	<0.0030
Antimony (Sb)-Total	mg/L	-	0.006	<0.00010	<0.00010	<0.00010
Arsenic (As)-Total	mg/L	-	0.01	0.00020	0.00027	0.00024
Barium (Ba)-Total	mg/L	-	2	0.0335	0.0329	0.0317
Beryllium (Be)-Total	mg/L	-	-	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Total	mg/L	-	-	<0.000050	<0.000050	<0.000050
Boron (B)-Total	mg/L	-	5	0.252	0.250	0.247
Cadmium (Cd)-Total	mg/L	-	0.005	<0.0000050	<0.0000050	<0.0000050
Calcium (Ca)-Total	mg/L	-	-	71.1	72.8	71.6
Cesium (Cs)-Total	mg/L	-	-	0.000016	0.000016	0.000016
Chromium (Cr)-Total	mg/L	-	0.05	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	mg/L	-	-	0.00012	0.00013	0.00012
Copper (Cu)-Total	mg/L	1	2	<0.00050	0.0139	0.0573
Iron (Fe)-Total	mg/L	0.3	-	0.041	0.040	0.012
Lead (Pb)-Total	mg/L	-	0.005	0.000052	0.000124	0.000133
Lithium (Li)-Total	mg/L	-	-	0.0516	0.0518	0.0522
Magnesium (Mg)-Total	mg/L	-	-	66.9	66.9	67.4
Manganese (Mn)-Total	mg/L	0.02	0.12	0.00460	0.00459	0.00063
Molybdenum (Mo)-Total	mg/L	-	-	0.000288	0.000298	0.000291
Nickel (Ni)-Total	mg/L	-	-	<0.00050	<0.00050	0.00328
Phosphorus (P)-Total	mg/L	-	-	<0.030	0.680	0.443
Potassium (K)-Total	mg/L	-	-	9.47	9.53	9.54
Rubidium (Rb)-Total	mg/L	-	-	0.00502	0.00495	0.00496
Selenium (Se)-Total	mg/L	-	0.05	0.000055	<0.000050	<0.000050
Silicon (Si)-Total	mg/L	-	-	4.84	4.77	4.75
Silver (Ag)-Total	mg/L	-	-	<0.000010	<0.000010	<0.000010
Sodium (Na)-Total	mg/L	200	-	77.4	80.1	81.4
Strontium (Sr)-Total	mg/L	-	7	0.432	0.451	0.431
Sulfur (S)-Total	mg/L	-	-	32.6	32.0	32.0
Tellurium (Te)-Total	mg/L	-	-	<0.00020	<0.00020	<0.00020
Thallium (Tl)-Total	mg/L	-	-	<0.000010	<0.000010	<0.000010
Thorium (Th)-Total	mg/L	-	-	<0.00010	<0.00010	<0.00010
Tin (Sn)-Total	mg/L	-	-	<0.00010	<0.00010	<0.00010

Federal Guidelines for Canadian Drinking Water Quality (MAR, 2021)
 #1: GCDWQ - Aesthetic Objective/Other Value (Jan.2020)
 #2: GCDWQ - Maximum Acceptable Concentrations (MACs-Jan.2020)

 Detection Limit for result exceeds Guide Limit. Assessment against Guide Limit cannot be made.
 Analytical result for this parameter exceeds Guide Limit listed on this report.
 * Please refer to the Reference Information section for an explanation of any qualifiers noted.

Total Metals (WATER)



		ALS ID		L2669284-1	L2669284-2	L2669284-3
		Sampled Date		03-DEC-21	03-DEC-21	03-DEC-21
		Sampled Time		09:30	09:30	10:00
		Sample ID		STONY	STONY	STONY
Analyte	Unit	Guide Limit #1	Guide Limit #2	MOUNTAIN 1 - RAW	MOUNTAIN 2 - TREATED @ MIT	MOUNTAIN 3 - DISTRIBUTION @ SMI PLANT
Titanium (Ti)-Total	mg/L	-	-	<0.00030	<0.00030	<0.00030
Tungsten (W)-Total	mg/L	-	-	<0.00010	<0.00010	<0.00010
Uranium (U)-Total	mg/L	-	0.02	0.000531	0.000560	0.000552
Vanadium (V)-Total	mg/L	-	-	<0.00050	<0.00050	<0.00050
Zinc (Zn)-Total	mg/L	5	-	<0.0030	0.0033	0.0090
Zirconium (Zr)-Total	mg/L	-	-	<0.00020	<0.00020	<0.00020

Federal Guidelines for Canadian Drinking Water Quality (MAR, 2021)
#1: GCDWQ - Aesthetic Objective/Other Value (Jan.2020)
#2: GCDWQ - Maximum Acceptable Concentrations (MACs-Jan.2020)

Volatile Organic Compounds (WATER)

		ALS ID		L2669284-1
		Sampled Date		03-DEC-21
		Sampled Time		09:30
		Sample ID		STONY
Analyte	Unit	Guide Limit #1	Guide Limit #2	MOUNTAIN 1 - RAW
Benzene	mg/L	-	0.005	<0.00050
1,1-dichloroethene	mg/L	-	0.014	<0.00050
Dichloromethane	mg/L	-	0.05	<0.00050
Ethylbenzene	mg/L	0.0016	0.14	<0.00050
MTBE	mg/L	0.015	-	<0.00050
Tetrachloroethene	mg/L	-	0.01	<0.00050
Toluene	mg/L	0.024	0.06	<0.00050
Trichloroethene	mg/L	-	0.005	<0.00050
o-Xylene	mg/L	-	-	<0.00050
m+p-Xylenes	mg/L	-	-	<0.00040
Xylenes (Total)	mg/L	0.02	0.09	<0.00064
Surrogate: 4-Bromofluorobenzene (SS)	%	-	-	79.4
Surrogate: 1,4-Difluorobenzene (SS) %		-	-	98.6

Federal Guidelines for Canadian Drinking Water Quality (MAR, 2021)
#1: GCDWQ - Aesthetic Objective/Other Value (Jan.2020)
#2: GCDWQ - Maximum Acceptable Concentrations (MACs-Jan.2020)

 Detection Limit for result exceeds Guide Limit. Assessment against Guide Limit cannot be made.
 Analytical result for this parameter exceeds Guide Limit listed on this report.
* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Reference Information

Qualifiers for Individual Parameters Listed:

Qualifier	Description
RRV	Reported Result Verified By Repeat Analysis
HTC	Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-CO3CO3-CALC-WP	Water	Alkalinity, Carbonate	CALCULATION
<p>The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by carbonate is calculated and reported as mg CO₃ 2-/L.</p>			
ALK-HCO3HCO3-CALC-WP	Water	Alkalinity, Bicarbonate	CALCULATION
<p>The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by bicarbonate is calculated and reported as mg HCO₃-/L.</p>			
ALK-OH0H-CALC-WP	Water	Alkalinity, Hydroxide	CALCULATION
<p>The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by hydroxide is calculated and reported as mg OH-/L.</p>			
ALK-TITR-WP	Water	Alkalinity, Total (as CaCO ₃)	APHA 2320B
<p>The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. Total alkalinity is determined by titration with a strong standard mineral acid to the successive HCO₃- and H₂CO₃ endpoints indicated electrometrically.</p>			
BR-L-IC-N-WP	Water	Bromide in Water by IC (Low Level)	EPA 300.1 (mod)-LR
<p>Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.</p>			
C-DOC-HTC-WP	Water	Dissolved Organic Carbon by Combustion	APHA 5310 B-WP
<p>Filtered (0.45 µm) sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.</p>			
C-TOC-HTC-WP	Water	Total Organic Carbon by Combustion	APHA 5310 B-WP
<p>Sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.</p>			
CL-L-IC-N-WP	Water	Chloride in Water by IC (Low Level)	EPA 300.1 (mod)
<p>Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.</p>			
COLOUR-TRUE-WP	Water	Colour, True	APHA 2120C
<p>True Colour is measured spectrophotometrically by comparison to platinum-cobalt standards using the single wavelength method (450 - 485 nm) after filtration of sample through a 0.45 µm filter. Colour measurements can be highly pH dependent, and apply to the pH of the sample as received (at time of testing), without pH adjustment. Concurrent measurement of sample pH is recommended.</p>			
EC-WP	Water	Conductivity	APHA 2510B
<p>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.</p>			
ETL-LANGELIER-4-WP	Water	Langelier Index 4C	Calculated
ETL-LANGELIER-60-WP	Water	Langelier Index 60C	Calculated
F-IC-N-WP	Water	Fluoride in Water by IC	EPA 300.1 (mod)
<p>Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.</p>			
HARDNESS-CALC-WP	Water	Hardness Calculated	APHA 2340B
<p>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.</p>			
IONBALANCE-CALC-WP	Water	Ion Balance Calculation	APHA 1030E
<p>Cation Sum, Anion Sum, and Ion Balance (as % difference) are calculated based on guidance from APHA Standard Methods (1030E Checking</p>			

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
<p>Correctness of Analysis). Because all aqueous solutions are electrically neutral, the calculated ion balance (% difference of cations minus anions) should be near-zero.</p> <p>Cation and Anion Sums are the total meq/L concentration of major cations and anions. Dissolved species are used where available. Minor ions are included where data is present. Ion Balance (as % difference) cannot be calculated accurately for waters with very low electrical conductivity (EC), and is reported as "Low EC" where EC < 100 uS/cm (umhos/cm). Ion Balance is calculated as:</p> <p style="text-align: center;">Ion Balance (%) = [Cation Sum-Anion Sum] / [Cation Sum+Anion Sum]</p>			
MET-T-CCMS-WP	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/8020B (mod.)
<p>Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.</p> <p>Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.</p>			
NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F
<p>Ammonia in water samples forms Indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourimetrically.</p>			
NO2-L-IC-N-WP	Water	Nitrite in Water by IC (Low Level)	EPA 300.1 (mod)
<p>Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.</p>			
NO3-L-IC-N-WP	Water	Nitrate in Water by IC (Low Level)	EPA 300.1 (mod)
<p>Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.</p>			
PH-WP	Water	pH	APHA 4500H
<p>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.</p>			
SO4-IC-N-WP	Water	Sulfate in Water by IC	EPA 300.1 (mod)
<p>Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.</p>			
TDS-WP	Water	Total Dissolved Solids (TDS)	APHA 2540 SOLIDS C,E
<p>A well-mixed sample is filtered through a glass fiber filter paper. The filtrate is then evaporated to dryness in a pre-weighed vial and dried at 180 - 2C. The increase in vial weight represents the total dissolved solids.</p>			
TURBIDITY-WP	Water	Turbidity	APHA 2130B (modified)
<p>Turbidity in aqueous matrices is determined by the nephelometric method.</p>			
UV-%TRANS-WP	Water	UV Transmittance (Calculated)	APHA 5910B
<p>Test method is adapted from APHA Method 5910B. A sample is filtered through a 0.45 um polyethersulfone (PES) filter and its UV Absorbance is measured in a quartz cell at 254 nm. UV Transmittance is calculated from the UV Absorbance result and reported as UV Transmittance per cm. The analysis is carried out without pH adjustment.</p>			
VOC+F1-HSMS-WP	Water	VOC plus F1 by GCMS	EPA 8260C / EPA 5021A
<p>In this method samples are analyzed using a headspace autosampler interfaced to a dual column gas chromatograph with MS and Flame Ionization detectors.</p>			
XYLENES-SUM-CALC-WP	Water	Sum of Xylene Isomer Concentrations	CALCULATED RESULT
<p>Total xylenes represents the sum of o-xylene and m&p-xylene.</p>			

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

Chain of Custody Numbers:

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

Reference Information

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.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.



Regular Service (default): Regular Service (is 5-7 Days):
 1 Day, rush / priority
 2 Day, rush / priority
 3 Day, rush / priority

Unless otherwise requested

Report to Operator (email PDF):
 Contact: Alan Schick
 Address: Box 902, Stonewall, MB R0C2Z0
 Phone: (204) 467-2272
 Email: info@rockwood.ca

Report to Owner (email PDF):
 Contact: Chris Luellman
 Address: Box 902, Stonewall, MB R0C2Z0
 Phone: (204) 467-2272
 Email: info@rockwood.ca

Regular Service (default): Regular Service (is 5-7 Days):
 1 Day, rush / priority
 2 Day, rush / priority
 3 Day, rush / priority

Unless otherwise requested

Client / Project Information: Lab: STONY MOUNTAIN - PWS
 Operation Name: STONY MOUNTAIN - PWS
 Operation Code: 222.50
 Operation ID: 8620
 Sampled by: Alan Schick

Agency Code: 382
 Report Type: EMS (Lab-MWS)
 Project: DWQ-C

Expected Sample Time: **January-2021**

DO NOT COPY or RE-USE this form. Sample Number are unique to the Office of Drinking Water and provided by Drinking Water Officer.

Sample Number	Station Number	Sample Identification	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Sample Date (dd-mm-YYYY)	Sample Time (hh:mm)	Sample Matrix	Sample Type	# of Containers
2101CB5007	MBOS01D191	Stony Mountain 1 - Raw	0.74	0.88	03-12-2021	9:34pm	6	1	X
2101CB5008	MBOS01D192	Stony Mountain 2 - Treated 1	0.74	0.88	03-12-2021	9:36pm	10	1	X
2101CB5009	MBOS01D193	Stony Mountain 3 - Distribution	0.74	0.74	03-12-2021	10:00pm	9	1	X
									MB-CH-PWS-V2013
									MB-MET-T-CCMS
									MB-VOC-PWS-V2013

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.

By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified by the Laboratory.

For ALL other testing, please use Laboratory specific forms.

Relinquished By: Alan Schick Date & Time: Dec 3, 2021 2:05 PM

Received By: Alan Schick Date & Time: 14:08

Temperature: 4.0 Samples Received in Good Condition? Y/N

Sample Matrix: 6-Raw Water, 9-Distributed Water, 10-Treated Water
 Sample Type: 1-Grab Sample

Validated By (lab use only):
 Sample Condition (lab use only):
 Date & Time:



The following pictures are from the

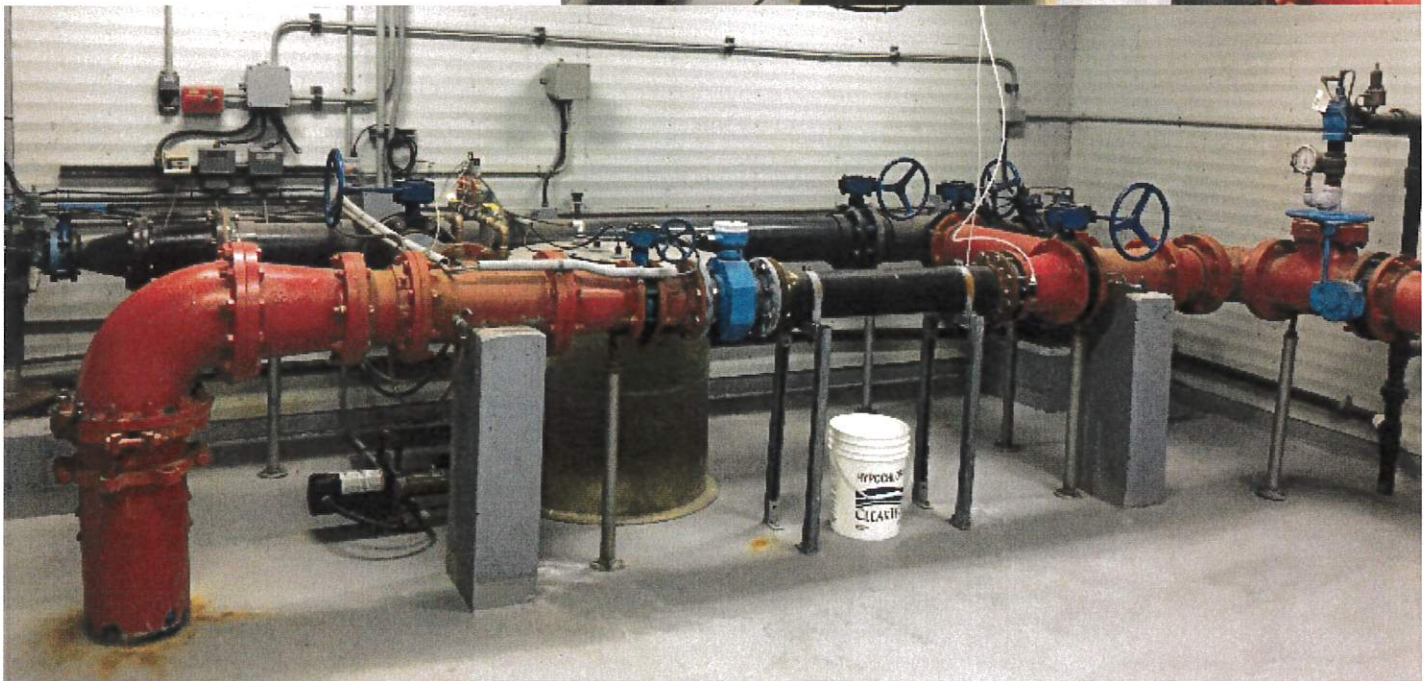
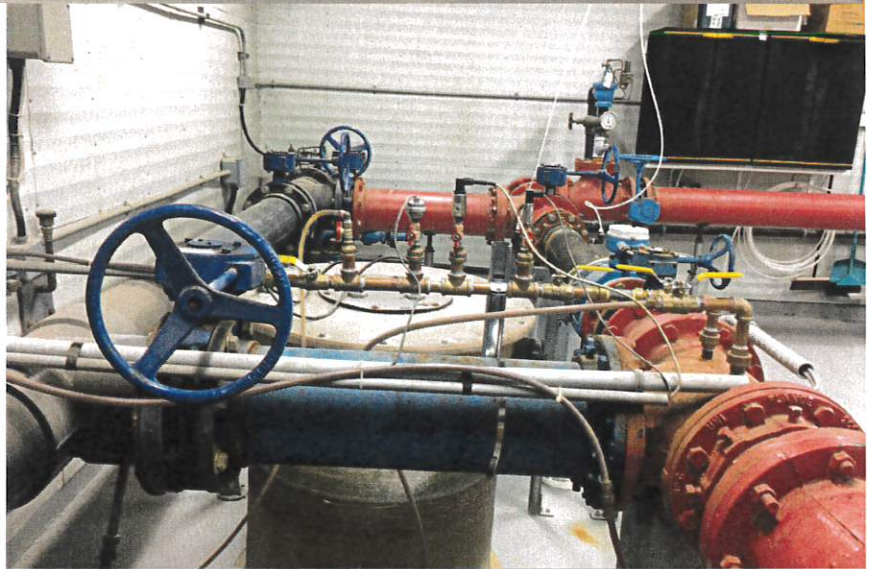
STONY MOUNTAIN WATER TREATMENT PLANT

Presenting

Layout of the Distribution Header,
Disinfection and Monitoring Equipment



Distribution Header

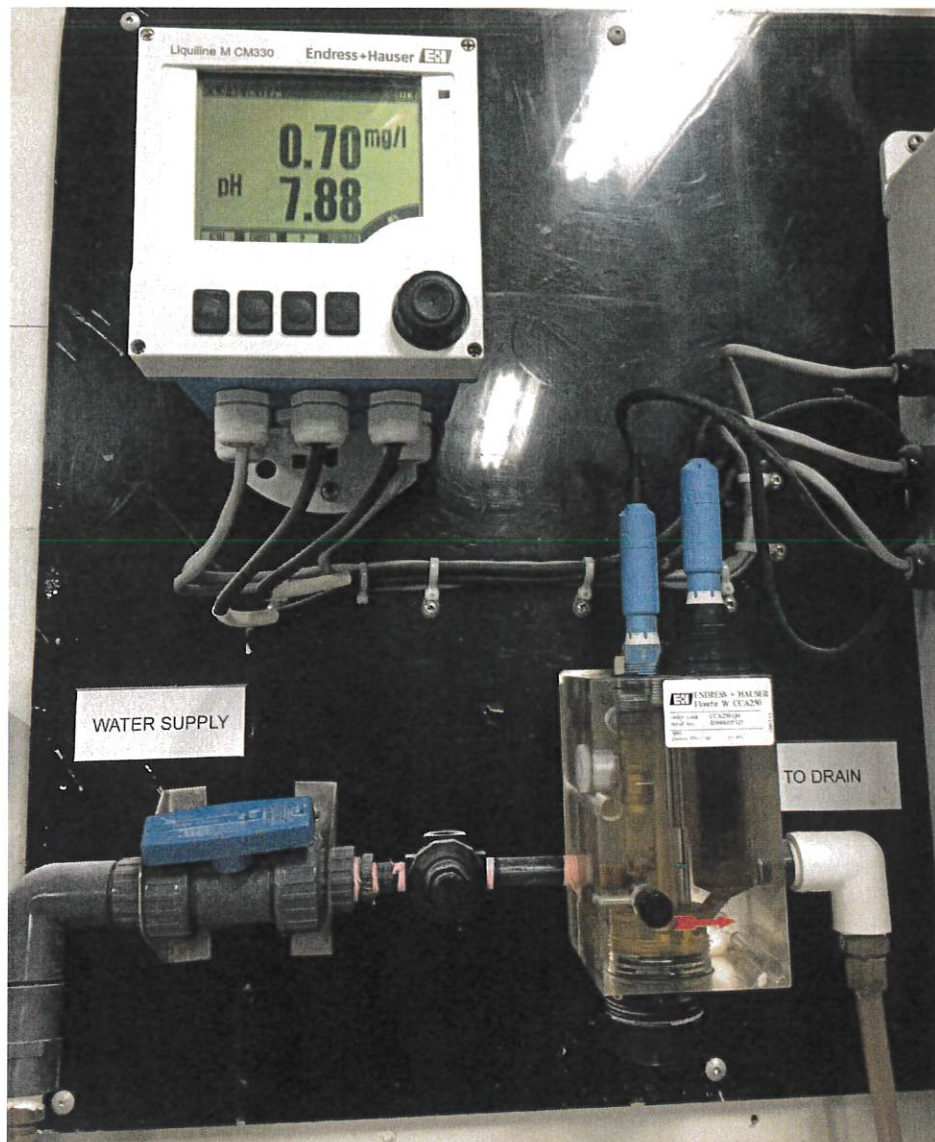


Data Recorder



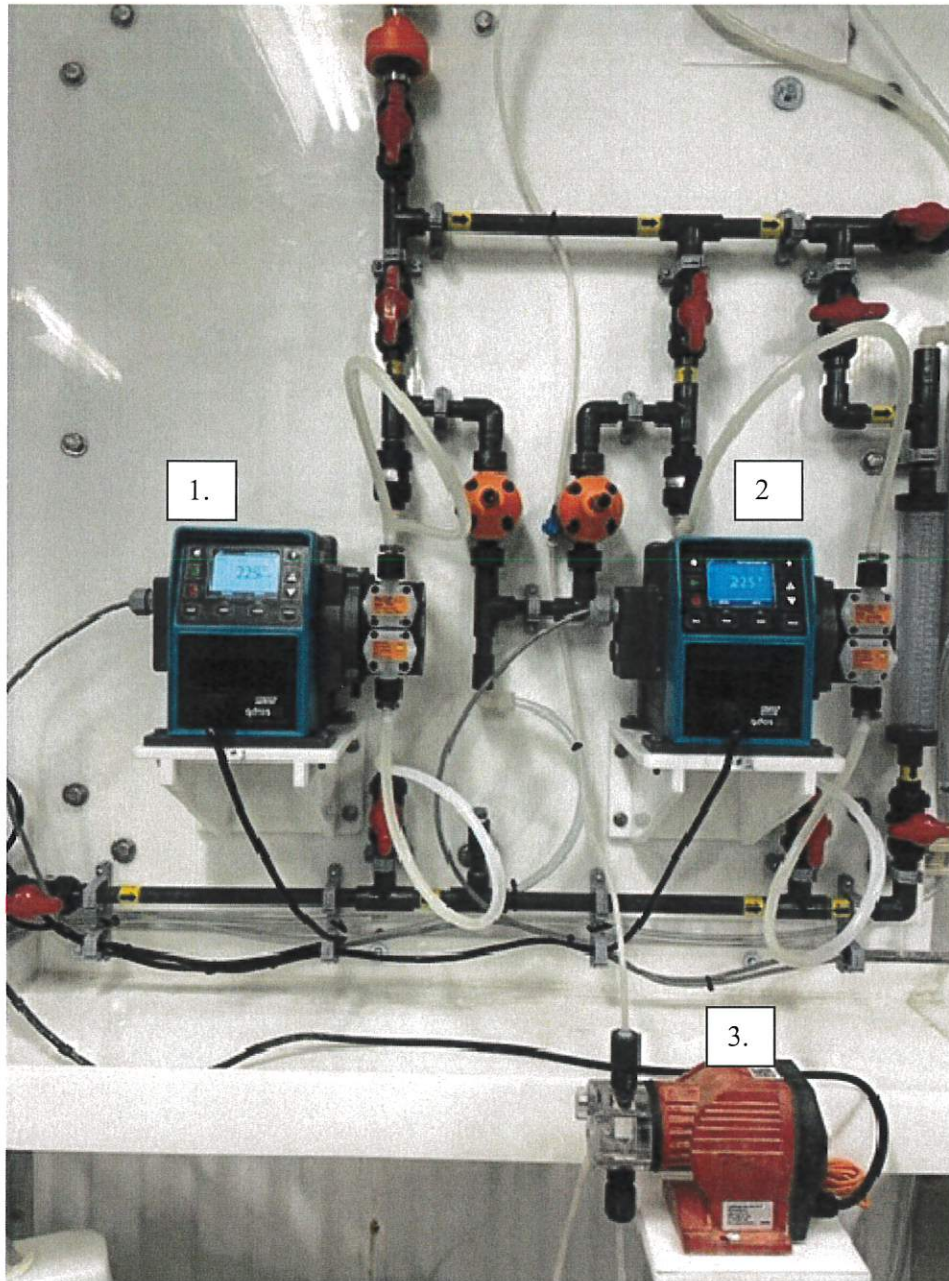
1. DATA RECORDER
2. FLOW METER (READ OUT)

Chlorine Analyzer



CHLORINE
ANALYZER
(Monitoring Chlorine Levels 24 Hours/Day)

Dual Peristaltic Chemical Pumps



1 & 2. PUMPS ALTERNATE ON A WEEKLY BASIS, AS SET BY THE OPERATOR.

3. CLEARHIB CHEMICAL PUMP



1. LIQUID CHLORINE

2. LIQUID CLEARHIB

Chemical Pump Control



CHLORINE PUMP CONTROL PANNEL /
AUTOMATIC SWITCH OVER

Genset



GENSET VIEW 1



GENSET VIEW 2

Water Treatment Building

