

North Shore Water Utility Nelson Ltd. Monthly Report

To: Jennifer Beverly, Large Water Systems Environmental Health Officer, Interior Health Authority
From: Aqua Diversities Waterworks Inc.
Date: April 1st, 2025
Re: Monthly Report for North Shore Water Utility - **March 2025**

This document includes the following items as part of the monthly report for the North Shore Water Utility Nelson Ltd. (NSWU):

- 1.0 Daily Water Consumption**
- 2.0 Microbiological Test Results**
- 3.0 Operator Log Sheets and Water Quality Events**
- 4.0 Major Operational Events**
- 5.0 Records of Customer Feedback and Response**

Submission of this report is to enhance communication with the local Environment Health Officer (EHO) and meet requirements for status compliance on the conditions summarized in the Operating Permit.

1.0 Daily Water Consumption

Total water consumption in March was 5,156m³; average daily consumption was 166.32m³/day. The average flow was 6.93m³/hr.

2.0 Microbiological Test Results

A sample from both ends of the distribution system is collected and submitted to an accredited laboratory for bimonthly microbiological testing.

All monthly testing results satisfy the Maximum Allowable Concentration (MAC) standard as set out by the Guidelines for Canadian Drinking Water Quality (GCDWQ).

See **Appendix A** for Laboratory Results

3.0 Operator Log Sheets and Water Quality Events

NSWU continues to be tested on an every-other-day schedule as specified by the EHO. The log sheets include comments on the source, treatment, and distribution system events. Log sheets also include information on the weather for the corresponding test date, which helps correlate weather events to turbidity levels.

Throughout the month of March, chlorine residuals were maintained above 0.2 mg/L across the distribution system.

See **Appendix B** for Operator Log Sheets.

4.0 Major Operational Events

A pressure switch failed at the Isaac reservoir leading to a faulty chlorine residual reading, the pressure switch was replaced immediately causing the chlorine reading to go back to normal parameters.

Large dead trees and debris removal at Southerland intake & Isaac completed as well as intake cleaning.

5.0 Records of Customer Feedback and Response

There were no customer inquiries in the month of March.

Report Reviewed by:

Nicole Ward, BSc.P.Ag. Project Manager

Appendix A

Laboratory Results

ANALYTICAL RESULTS

Sample ID	Main Jet			Sample #	1
Date/Time Sampled	2025-03-11	11:00 AM	Matrix TW	Temperature on Receipt	3
Date/Time on Test	2025-03-11	4:30 PM			
<u>Analyses</u>		<u>Result</u>	<u>Units</u>	<u>RDL</u>	
Coliforms, Total		less than 1	CFU/100mL	1	
Verified E.coli		less than 1	CFU/100mL	1	

Sample ID	NCCS 570 Johnstone Rd.			Sample #	2
Date/Time Sampled	2025-03-11	11:00 AM	Matrix TW	Temperature on Receipt	4
Date/Time on Test	2025-03-11	4:35 PM			
<u>Analyses</u>		<u>Result</u>	<u>Units</u>	<u>RDL</u>	
Coliforms, Total		less than 1	CFU/100mL	1	
Verified E.coli		less than 1	CFU/100mL	1	

Glossary of Terms

Less than 1	Less than the Reportable Detection Limit, except under circumstances where the detection limit is higher due to interferences, insufficient sample volume, or dilutions.
APHA	American Public Health Association
CFU/100mL	Colony Forming Units per 100 milliliters
Matrix	SW = Surface water, TW = Treated water, DW = Distribution water, UGW = Untreated Ground water, RW = Raw water
RDL	Reportable Detection Limit

References

ANALYTICAL RESULTS

Sample ID	Main Jet			Sample #	1
Date/Time Sampled	2025-03-25	11:00 AM	Matrix DW	Temperature on Receipt	6
Date/Time on Test	2025-03-25	4:55 PM			
<u>Analyses</u>		<u>Result</u>	<u>Units</u>	<u>RDL</u>	
Coliforms, Total		less than 1	CFU/100mL	1	
Verified E.coli		less than 1	CFU/100mL	1	

Sample ID	NCCS 570 Johnstone Rd.			Sample #	2
Date/Time Sampled	2025-03-25	11:00 AM	Matrix DW	Temperature on Receipt	8
Date/Time on Test	2025-03-25	5:00 PM			
<u>Analyses</u>		<u>Result</u>	<u>Units</u>	<u>RDL</u>	
Coliforms, Total		less than 1	CFU/100mL	1	
Verified E.coli		less than 1	CFU/100mL	1	

Glossary of Terms

Less than 1	Less than the Reportable Detection Limit, except under circumstances where the detection limit is higher due to interferences, insufficient sample volume, or dilutions.
APHA	American Public Health Association
CFU/100mL	Colony Forming Units per 100 milliliters
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RDL	Reportable Detection Limit

References

Appendix B

Operator Log Sheet

Date	Time	CL2 pump duration	CL2 pump frequency	Raw Water Turbidity (Res.)	CL2 Residual (Res.)	CL2 Residual (Dist.)	CL2 Residual (Dist.)	Flow Meter Reading	Comments	Weather	Sampled By
MM/DD/YYYY	24:00:00			Isaac Cr. NTU	Isaac Cr. mg/L	mg/L	mg/L	m3/hr	Microbiological Sample Taken/Filter Change/Etc.	Precip./Temp.	
3/1/2024	8:00	7	10	-	0.77			100493	remote monitoring		OH
3/2/2024											
3/3/2024											
3/4/2024		7	10	0.96	0.81	0.67	0.47	101005	Tested north shore, added 2 carboys of cl2 to reservoir, turbidimeter is reading	10c	OH
3/5/2024											
3/6/2024											
3/7/2024	1:30	7	10	0.98	0.65	0.58	0.96	101450	tested north shore, tested turbidity	8C Sunny	OH
3/8/2024											
3/9/2024											
3/10/2024									tree removal at both intakes.		
3/11/2024	12:00	7	10	0.77	1.15	0.63	0.37	102129	added 2 carboys of chlorine to reservoir, cleaned overflow wier on intake, clean	5c cloudy	OH/FD
3/12/2024											
3/13/2024	1:30	7	10	4.14	0.54	0.57	0.59	102487	tested north shore, tested turbidity, checked intake,	4C cloudy	OH
3/14/2024											
3/15/2024	8:00	7	10	-	0.83	-	-	102912	Remote monitoring		OH
3/16/2024											
3/17/2024											
3/18/2024	11:00	7	10	0.98	0.53	0.57	0.32	103357	Testing north shore, checking reservoir	6C sunny	OH
3/19/2024											
3/20/2024											
3/21/2024											
3/22/2024	8:00	7	10	-	0.72	-	-	-	remote monitoring		OH
3/23/2024											
3/24/2024									Cleaned southern land intake, cleaned and shocked Southernland reservoir		OH/FD
3/25/2024	10:00			1.4	0.59	0.56	0.31	104586	Cleaned Isaac intake, topped up CL2, repaired intake roof, low chlorine in the evening increased		OH/FD
3/26/2024											
3/27/2024											
3/28/2024		10	12		0.83	0.53	0.35	105211	replaced pressure switch for cl2 booster pump		
3/29/2024											
3/30/2024	8:00	10	12	-	0.83	-	-	105583	remote monitoring		OH
3/31/2024								105649	pressure washed Sutherland reservoir		IT
Reading of flow meter for Sunny Side trailer court (to be recorded once a month)						9703800	March 4th				
							total flow	5156			

Appendix C

Field Memos

FIELD WORK MEMO

DATE: March 18-19 2025 TIME: FD 3hr, OH .5hr VEHICLE: PERSONAL ☐ COMPANY ☐ DISTANCE:
PROJECT: NSWU TYPE OF WORKS: Maintenance
WORKS REQUESTED: tree removal

FIELD TECH: FD SITE REP: ☐ YES / ☐ NO
MATERIALS: IN STOCK ☐ PURCHASED ☐ RECEIPTS: ☐ YES / ☐ NO

DESCRIPTION OF WORKS COMPLETED:

altitude came to remove 2 dead Douglas firs at Sutherland intake, Bucked, chipped and burned.
removed 5 dead Burch trees from Isaac intake.

PICTURES: ☐ YES / ☐ NO

WORKS COMPLETED: ☐ YES / ☐ NO

ANTICIPATED RETURN DATE:

FUTURE WORKS:

MATERIALS REQUIRED:

DO PARTS NEED TO BE ORDERED? ☐ YES / ☐ NO

ADDITIONAL NOTES/SKETCHES:

one of the Birch trees above Isaac intake fell onto the intake roof causing damage, this was repaired the next day.

FIELD WORK MEMO

DATE: March 24 2025	TIME: OH 3.5, FD 2.5	VEHICLE: PERSONAL <input type="checkbox"/> COMPANY <input type="checkbox"/>	DISTANCE:
PROJECT: NSWU	TYPE OF WORKS: O&M		
WORKS REQUESTED: Clean and shock Sutherland reservoir			
FIELD TECH: OH,FD	SITE REP: <input type="checkbox"/> YES / <input type="checkbox"/> NO		
MATERIALS: IN STOCK <input type="checkbox"/> PURCHASED <input type="checkbox"/>	RECEIPTS: <input type="checkbox"/> YES / <input type="checkbox"/> NO		
DESCRIPTION OF WORKS COMPLETED:			
clean Sutherland intake, sweep and clean mud from Sutherland reservoir, Filled reservoir slowly and added 1.5 carboys of chlorine to get <100ppm let reservoir sit for 48 hours to get optimal disinfection, drain and dechlorinate with de chore pucks.			
WORKS COMPLETED: <input type="checkbox"/> YES / <input type="checkbox"/> NO			PICTURES: <input type="checkbox"/> YES / <input type="checkbox"/> NO
ANTICIPATED RETURN DATE:			
FUTURE WORKS:			
MATERIALS REQUIRED:		DO PARTS NEED TO BE ORDERED? <input type="checkbox"/> YES / <input type="checkbox"/> NO	
ADDITIONAL NOTES/SKETCHES:			
Sutherland intake will need more of a thorough clean next time it is done, including shoveling out silt and sand that has built up under the intake pipe.			

FIELD WORK MEMO

DATE: March 27 2025	TIME: FD 2.5, OH 1	VEHICLE: PERSONAL <input type="checkbox"/> COMPANY <input type="checkbox"/>	DISTANCE: <input type="text"/>
PROJECT: NSWU	TYPE OF WORKS: O&M		
WORKS REQUESTED: replace chlorine booster pump pressure switch failure			
FIELD TECH: OH,FD	SITE REP: <input type="checkbox"/> YES / <input type="checkbox"/> NO		
MATERIALS: IN STOCK <input type="checkbox"/> PURCHASED <input type="checkbox"/>	RECEIPTS: <input type="checkbox"/> YES / <input type="checkbox"/> NO		
2 pressure switches, pressure gauge, steel 1/2 nipple			
DESCRIPTION OF WORKS COMPLETED:			PICTURES: <input type="checkbox"/> YES / <input type="checkbox"/> NO
chlorine analyzer was reading low and was continuing to drop after the dose was increased, was determined the analyzer was not receiving any flow due to the pressure switch failing. new pressure switch and pressure gauge was replaced.			
WORKS COMPLETED: <input type="checkbox"/> YES / <input type="checkbox"/> NO			
ANTICIPATED RETURN DATE: <input type="text"/>			
FUTURE WORKS: <input type="text"/>			
MATERIALS REQUIRED:		DO PARTS NEED TO BE ORDERED? <input type="checkbox"/> YES / <input type="checkbox"/> NO	
ADDITIONAL NOTES/SKETCHES:			
the cycle on the pressure switch was set to short causing the the switch to cycle on and off frequently causing the contact to get hot and melt the plastic causing the contact to deform and not make clean contact.			