



Memo

To: Chief Administrative Officer

Subject: Water Treatment Plant

Date: November, 2021

From: Superintendent, Public Works, and Engineering Services

The Lake Cowichan Water Treatment Plant (WTP) is operating according to requirements established under the Operating Permit.

No water quality warnings or advisories are currently in place for the Lake Cowichan water supply. The following link is the Island Health website for up to date advisories or notices pertaining to water systems under its authority.

https://www.healthspace.ca/Clients/VIHA/VIHA_Website.nsf/Water-List-Boil?OpenView&count=100

All water suppliers in British Columbia are required to monitor water that reaches the consumer for total coliform bacteria and Escherichia coli (E. coli) regularly. The monitoring is a part of the requirement to ensure safe drinking water.

If you are on the Lake Cowichan water system, water samples are collected from various locations for testing, and you may review the results on the following Island Health site:

https://www.healthspace.ca/Clients/VIHA/VIHA_Website.nsf/Water-Samples-FacilityHistory?OpenView&RestrictToCategory=1310821&Count=30&FacilityDocumentID=MVVE-55LV9Z

Attached for your information, also, is the November monthly report for the WTP.



Jas Sandhu



TOWN OF LAKE COWICHAN WATER TREATMENT PLANT



November 2021 Operations Performance Report



TOWN OF LAKE COWICHAN WATER TREATMENT REPORT

NOVEMBER 2021

Wednesday, November 3 – Flushed polymer system. Cleaned and flushed filter #1 effluent turbidity analyzer.

Tuesday, November 16 – Monthly sampling.

Wednesday, November 17 – ESC onsite to connect HVAC. Flushed polymer system.

Thursday, November 18 – Historic heavy rains result in Raw Water Turbidity of 11.35. Increased coagulant dosage from 17.0 mg/L to 20.0 mg/L. Cleaned and flushed filter effluent turbidity analyzers. Manually backwashed filters.

Friday, November 19 – Raw water turbidity 12.69 at start of shift. Reduced B/W cycle time from 60 to 40 hours.

Performance Standards

The Operating Permit for the Town of Lake Cowichan Water System dated October 21, 2020 stipulates the following performance requirements:

PARAMETER	GUIDELINE
Turbidity	≤ 0.3 NTU in $\geq 95\%$ of samples
	Never to exceed 1 NTU
<i>Giardia and Cryptosporidium</i>	2.5-Log (99.7%) removal coagulation, flocculation and filtration
	1-Log (90%) inactivation via UV
Viruses	1-Log (90%) removal coagulation, flocculation and filtration
	3-Log (99.9%) inactivation via UV
Free Available Chlorine	Sufficient for CT_{CALC} and not to exceed 4.0 mg/L
Trihalomethane (THM)	≤ 0.100 mg/L
Haloacetic Acid (HAA)	≤ 0.080 mg/L
Total Aluminum	≤ 0.1 mg/L
pH	Be between 7.0 and 10.5
Microcystin-LR	≤ 1.5 $\mu\text{g/L}$



TOWN OF LAKE COWICHAN
WATER TREATMENT REPORT

NOVEMBER 2021

Water Quality Results

Monthly Testing Results

	Raw Al (mg/L)	Treated Al (mg/L)	TN (mg/L)	TP (µg/L)	Microcystin (µg/L)	THM (µg/L)	HAA (µg/L)
OG/MAC		0.10*				100	80.0
Oct 27, 2020	-	0.049	0.047	4.70	0.06	20.4	10.71
Nov 24, 2020	-	0.157	-	-	-	-	-
Dec 08, 2020	-	0.264	0.380	2.47	-	-	-
Jan 05, 2021	0.190	0.196	0.175	3.70	0.00	27.3	10.9
Jan 19, 2021	0.104	0.129	-	-	-	-	-
Feb 16, 2021	0.095	0.136	0.111	4.50	0.00	-	-
Mar 02, 2021	0.136	0.242	0.069	23.50	0.00	29.6	2.29
Mar 16, 2021	0.129	0.171	-	-	-	-	-
Mar 31, 2021	0.125	0.352	-	-	-	-	-
Apr 13, 2021	0.130	0.255	0.011	8.00	0.00	<0.100	<0.100
May 11, 2021	0.119	0.171	0.034	-	-	-	-
Jun 8, 2021	0.074	0.150	0.030	6.00	ND**	ND	ND
Jul 6, 2021	0.074	0.065	ND	12.6	-	-	-
Aug 3, 2021	0.087	0.181	0.028	0.022	ND		
Aug 17, 2021	0.096	0.239	0.017	9.40	ND		
Sep 14, 2021	3.01	0.541	2.00	2.00	ND	16.1	11.4
Oct 12, 2021	<0.010	0.117	0.09	4.10	ND		
Nov 16, 2021	Pending						

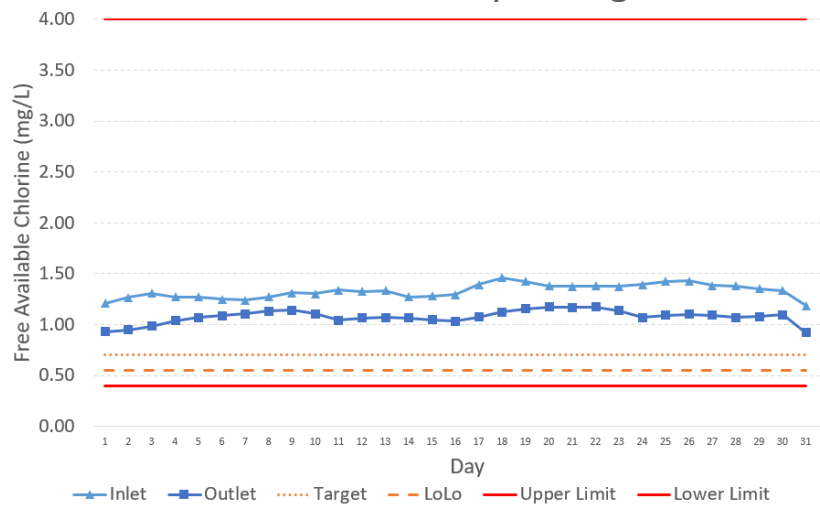
*AO – Aesthetic Objective; **ND – Not detected



Individual Parameter Charts

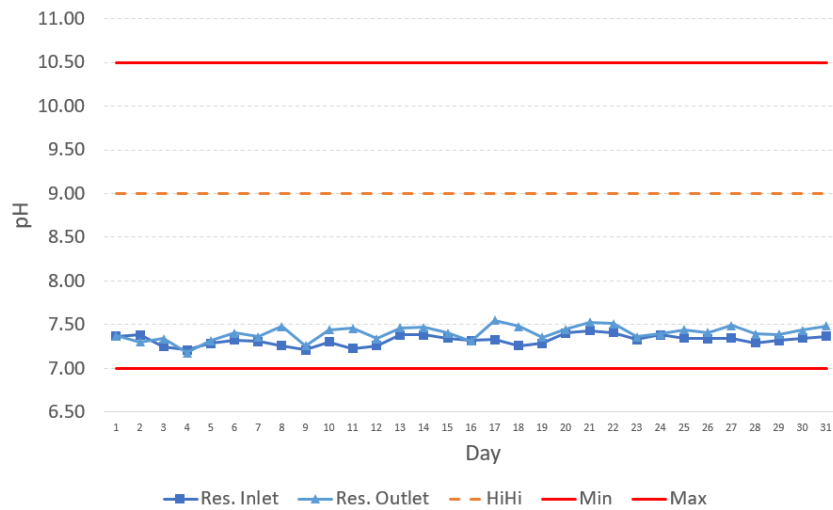
Free Available Chlorine (Nov 2021)

Source: SCADA Daily Averages



Reservoir pH (Nov 2021)

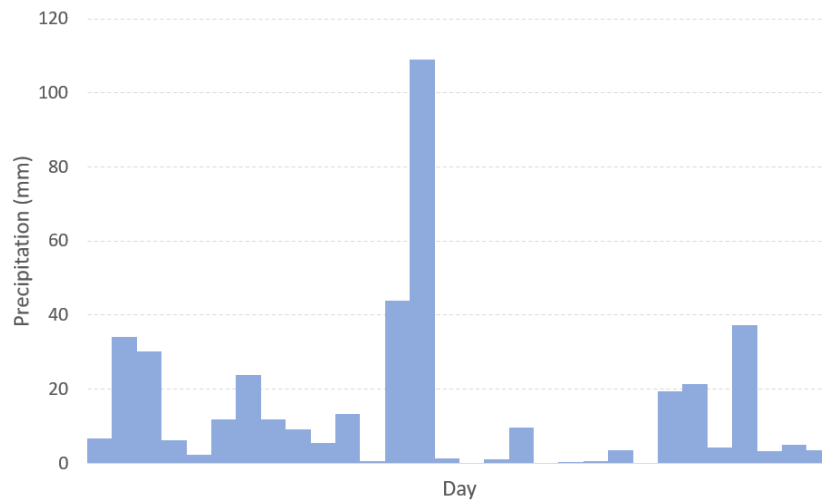
Source: SCADA Daily Averages





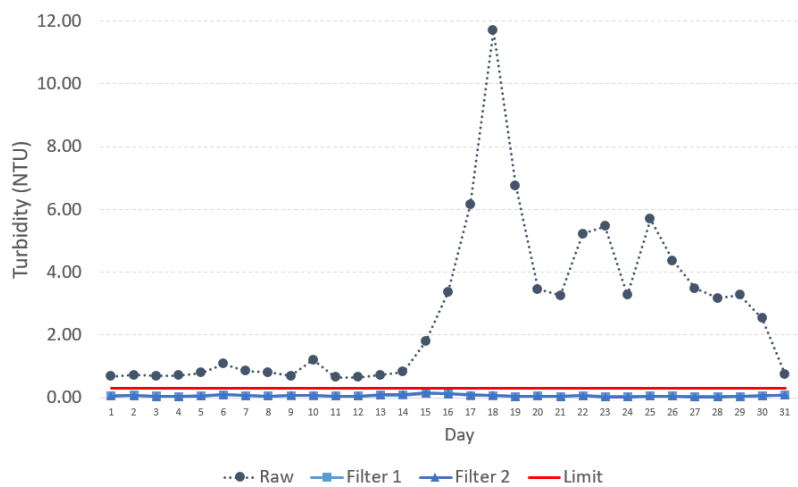
Total Precipitation (Nov 2021)

Source: Environment Canada - North Cowichan Station



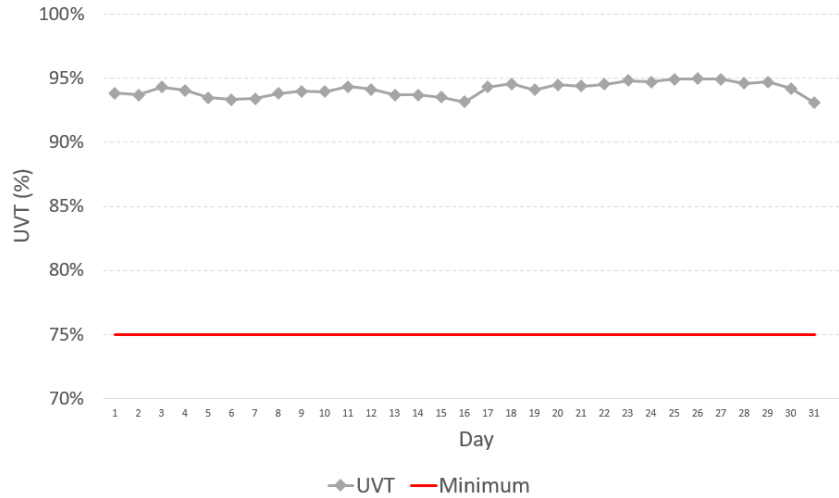
Turbidity (Nov 2021)

Source: SCADA Daily Averages





UV Transmittance (Nov 2021) Source: SCADA Averages



UV Dosage (Nov 2021) Source: SCADA Daily Averages

