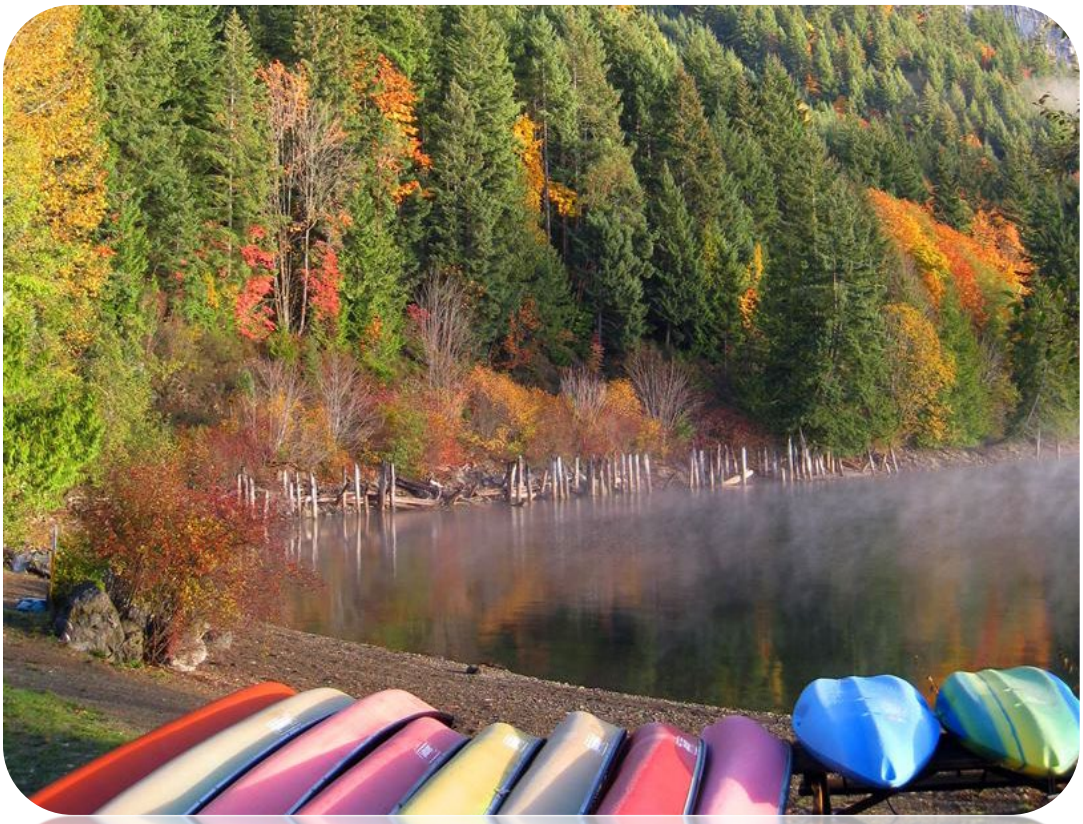
REGIONAL DISTRICT OF NANAIMO

Water Service Area Annual Report 2020



Horne Lake Regional Park Water System

June 2021

REGIONAL DISTRICT OF NANAIMO
Water & Utility Services Department
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1. Introduction

The following annual report describes the Horne Lake Regional Park Water System and summarizes the water quality, the completed and proposed maintenance activities, Operator Certification, the Emergency Response Plan, and the Cross Connection Control Program for the year 2020. This report is to be submitted to Island Health by the Spring of 2021.

2. Horne Lake Regional Park Water System

The Horne Lake Regional Park and campground was acquired by the RDN in 2002 and comprises an area of 109 hectares (269 acres) on the west side of Horne Lake, near Central Vancouver Island. The park is located at 3890 Horne Lake Caves Road and is split into 'North Park' and 'South Park'. The water sources come from shallow wells located within the park. The water supply to the staff residence and yard hydrant is filtered, chlorinated and distributed via a small pressure tank. An on-site generator is present as BC Hydro electrical service is not available at the site. The water system operates all year round as a caretaker lives at the staff residence. Maps of the Horne Lake Regional Park Water System are provided in Appendix A for reference.

2.1 Groundwater Wells

The well for the staff residence and yard hydrant in North Park is located approximately 10 metres east of the staff residence. The well is 12 metres deep and is treated using multi-stage pre-filtration, reverse osmosis, iron filtration, and chlorination.

There is one hand-pump for the campground, located in the South Park. The water supply to the hand pump comes from a shallow well directly under the hand pump. The water available from this hand-pump is not potable, and there are posted signs indicating the hand-pump water is not to be used for drinking or cooking. Potable water is only available in the North Park at the staff residence and yard hydrant.

2.2 Reservoirs

Two small water storage reservoirs are present at Horne Lake Regional Park. Drinking water from the well near the staff residence is filtered, chlorinated, and pumped to a small 50 gallon holding tank inside the Sea Can container during the winter. Then the drinking water is pumped via a pressure tank to the staff residence and yard hydrant on demand.

An alternate, larger, 500 gallon outdoor water storage tank is present on the ground outside and adjacent to the Sea Can container. This reservoir is used in the summer when the demand for water is greater. Both the summer and winter storage reservoirs are composed of white PVC plastic. These reservoirs are drained and cleaned alternately before use each season.

Summer water storage tank at Horne Lake Regional Park

2.3 Distribution System

The water distribution system is comprised of 50 metres of 1-inch polyethylene (black, flexible) pipe. The distribution system consists of the well supply to the Sea Can, and then from the Sea Can to the staff residence and yard hydrant. There are no fire hydrants in this water system.

3. Water Sampling and Testing Program

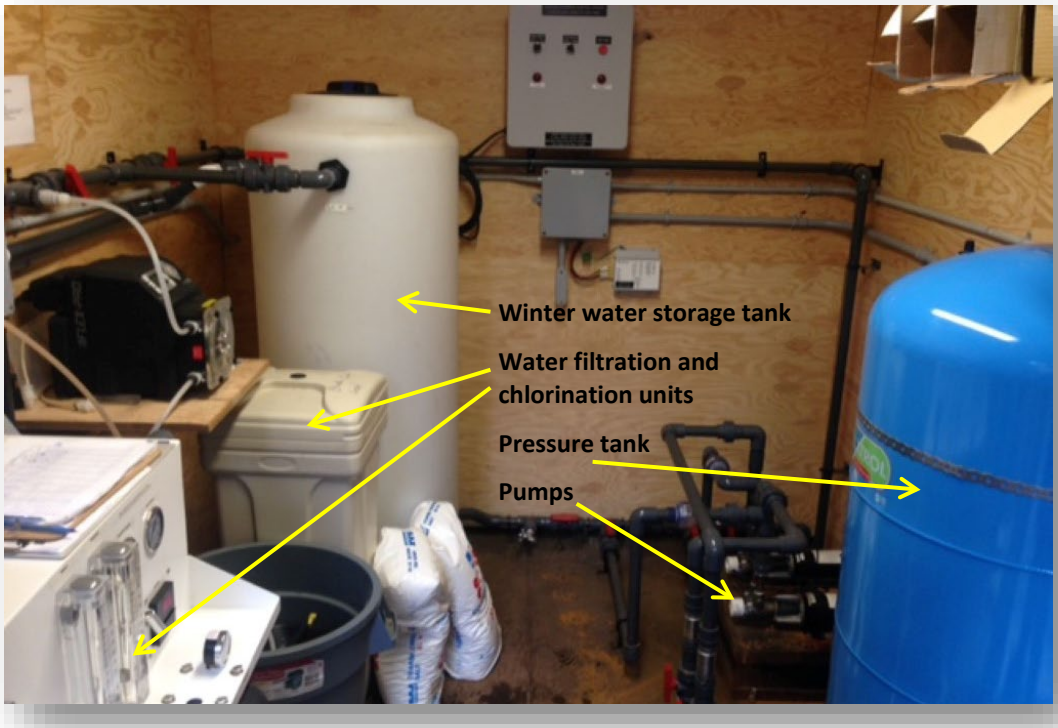
Water sampling and testing is carried out monthly from a standpipe in the water system. The following table includes a summary of all testing:

Timing	Location	Tests
North Park Standpipe: 1/month April -Sept 2/month Oct-March	BC Centre for Disease Control	Total coliforms, E.Coli
South Park Hand Pump: 2/month April-Sept (Closed Oct-March)	BC Centre for Disease Control	Total coliforms, E.Coli
Bi-Annually (twice/yr) (May and October)	Bureau Veritas	Complete potability testing of raw well water at wellhead
Bi-Annually (twice/yr) (May and October)	Bureau Veritas	Complete potability testing of treated water

4. Water Quality - Source Water and Distribution System

Water quality testing results for both the source water and distribution system are provided at the end of this report under Appendix B. Bacteriological results are posted on the RDN website at: https://www.rdn.bc.ca/horne-lake-regional-park-water-system

Photo depicting the inside of the Sea Can container at Horne Lake Regional Park



5. Water Quality Inquiries and Complaints

No complaints or inquiries were received from the Horne Lake Regional Park Water System in 2020. A summary of the water system incidents in 2020 is given in the table below.

Activity in 2020	Date(s)	History/Notes
Boil Water Advisories	Ongoing	Only at the hand-pump in the South Park
High Turbidity Events	None	None.
Equipment Malfunction	None	None.
Water Main Breaks	None	None.
Pump Failures	None	None.

6. Groundwater Production and Consumption

The campground is only used seasonally, but a caretaker lives in the staff residence year-round. A water meter was installed in 2020 to record the volume of groundwater pumped from the Horne Lake North Park Well. The volume of groundwater pumped in 2020 was 109 cubic metres for the entire year. The volume of water used at the South Park Well (hand pump only) is not monitored.

7. Maintenance Program

In the summer season, a pump station inspection is carried out three times per week to reduce or eliminate the risk of contamination and system failure. In the winter (off-season), a pump station inspection takes place once per week, or sooner if required. The water storage cisterns are drained and cleaned alternately in the summer/winter seasons. Twenty-four hour on-call coverage is in place to respond to water system emergencies.

8. Operator Certification

The Regional District Water & Utility Services staff is comprised of one Manager, one Project Engineer, one Engineering Technologist, one Engineering Technician, one Chief Operator, and seven certified operators. The Park Operator has the Small Water Systems Operator certification. The operators receive ongoing training and certification in:

- ✓ Water Treatment
- ✓ Water Distribution
- ✓ Wastewater Collection
- ✓ Cross Connection Control
- ✓ Asbestos Awareness
- ✓ Chlorine Handling
- ✓ WHMIS (Workplace Hazardous Material Information System)
- ✓ TDG (Transportation of Dangerous Goods)
- ✓ Confined Space Awareness
- ✓ Traffic Control
- ✓ Fall Protection
- ✓ First Aid
- ✓ Silica Awareness

9. Water System Projects

9.1 2020 Completed Studies & Projects

- Installed a water meter to measure groundwater production; and
- Calibrated and serviced all RDN Hach spectrophotometer lab equipment.

9.2 2021 Proposed Projects & Upgrades

- Review well protection plan; and
- Implement the next 10-year DWWP Water Conservation Plan.

10. Emergency Response Plan

The Regional District Emergency Response Plan (ERP) contains procedures and contact information to efficiently respond to water system emergencies such as contamination of water supply, loss of supply, pump failure, and drought management. The ERP was reviewed and updated in 2020, and copies are available on our website, at each RDN office, in each pumphouse, and in each Water Services vehicle. A copy of the ERP is also attached to this report in Appendix C.

11. Cross Connection Control

The RDN's Cross Connection Control Program was put in place to protect the public health by reducing the risk of contaminants flowing back into the public water supply. The RDN Manager of Water Services is the designated Cross Connection Control Manager.

The RDN's Cross Connection Control Program addresses cross connection threats through operating policies and procedures, as well as assisting customers with backflow preventer selection, installation, testing, maintenance and reporting. The program receives its authority from *RDN Cross Connection Control Regulation Bylaw No. 1788*, and the *British Columbia Building Code*, Part 7, which requires that potable water be protected from contamination. Additionally, a webpage has been established at https://rdn.bc.ca/cross-connection-control-program to educate RDN water service customers about cross connection hazards, and lists the relevant links to current standards and resources. Two of the RDN's water system operators received certification as backflow assembly testers through the British Columbia Water & Waste Association (BCWWA).

12. Cyber Security

The RDN uses a multi-level approach to cyber-security. Corporate network security is employed via a universal threat management gateway that implements various methods of data security, which includes daily definition updates to block known cyber threats. In addition, all RDN PC's are protected with anti-virus software. RDN water systems are connected to the corporate network via IP-Sec VPN's for remote management by information technology and equipment operators. Future infrastructure upgrades will see our water systems located on segregated networks to limit the vulnerability from cybersecurity threats.

13. Closing

An annual report for the year 2021 will be prepared and submitted to Island Health in the spring of 2021. The Horne Lake Regional Park Water System Annual Reports are also available on our website at: www.rdn.bc.ca/horne-lake-regional-park-water-system.

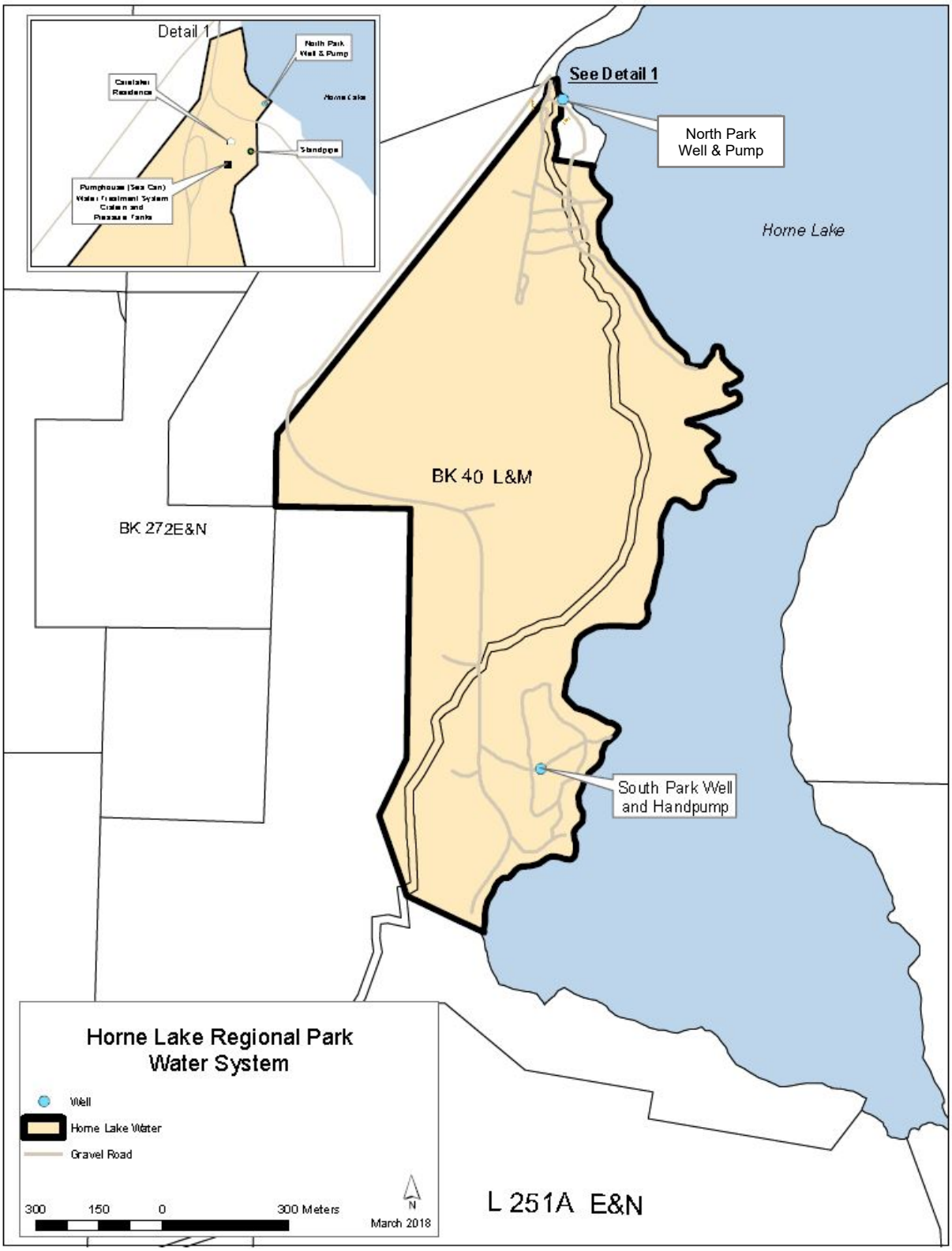
Sign above the hand-pump in the South Park campground

APPENDIX A

MAP OF HORNE LAKE REGIONAL PARK

WATER SYSTEM

HORNE LAKE REGIONAL PARK WATER SYSTEM



APPENDIX B

WATER QUALITY TESTING RESULTS

HORNE LAKE REGIONAL PARK WATER SYSTEM

Facility Location:
Horne Lake, Vancouver Island

Facility Information: Facility Type: 2-14 connections DWS

Facility Sampling History:

Location	Date	Total Coliform	E. Coli
CARETAKER'S TAP, CARETAKER'S HOUSE - NORTH PARK	25-Nov-2020	LT1	LT1
CARETAKER'S TAP, CARETAKER'S HOUSE - NORTH PARK	13-Oct-2020	LT1	LT1
Horne Lake Regional Park - Seasonal North Park Stand Pipe	21-Sep-2020	LT1	LT1
Horne Lake Regional Park, South Park Hand Pump	25-Aug-2020	LT1	LT1
Horne Lake Regional Park - Seasonal North Park Stand Pipe	25-Aug-2020	LT1	LT1
Horne Lake Regional Park, South Park Hand Pump	4-Aug-2020	LT1	LT1
Northpark Standpipe, Horne Lake	4-Aug-2020	LT1	LT1
Northpark Standpipe, Horne Lake	27-Jul-2020	LT1	LT1
Horne Lake Regional Park, South Park Hand Pump	27-Jul-2020	LT1	LT1
Northpark Standpipe, Horne Lake	30-Jun-2020	REJCT DELAY3	REJCT DELAY3
Horne Lake Regional Park, South Park Hand Pump	30-Jun-2020	REJCT DELAY3	REJCT DELAY3
Northpark Standpipe, Horne Lake	10-Jun-2020	LT1	LT1
Horne Lake Regional Park, South Park Hand Pump	10-Jun-2020	LT1	LT1
Horne Lake Regional Park, South Park Hand Pump	25-May-2020	LT1	LT1
Horne Lake Regional Park - Seasonal North Park Stand Pipe	25-May-2020	LT1	LT1
CARETAKER'S TAP, CARETAKER'S HOUSE - NORTH PARK	29-Apr-2020	LT1	LT1
Northpark Standpipe, Horne Lake	29-Apr-2020	OIE	OIE
CARETAKER'S TAP, CARETAKER'S HOUSE - NORTH PARK	17-Mar-2020	LT1	LT1
Northpark Standpipe, Horne Lake	12-Feb-2020	LT1	LT1
CARETAKER'S TAP, CARETAKER'S HOUSE - NORTH PARK	8-Jan-2020	L1	L1

Interpreting Sample Reports

In VIHA, the results of drinking water sampling are reported using the following coding system:

LT1 Less than 1 (no detectable bacteria) - Meaning: No bacteria present
REJCT DELAY3 Sample was not tested as it took too long in transit to the lab
OIE Ordered in error
L1 Less than 1 (no detectable bacteria) - Meaning: No bacteria present

REGIONAL DISTRICT OF NANAIMO

Horne Lake Raw Well Water Analysis
Horne Lake Regional Park

CDWG=Canadian Drinking Water Guidelines
OG= Operational Guidance Value
MAC=Maximum Acceptable Concentration
AO= Asthetic Objective.

Orange font indicates non-compliance with the Aesthetic Objective (AO) in the Canadian Drinking Water Guidelines (CDWG)

Red font indicates non-compliance with the Maximum Acceptable Concentration (MAC) in the CDWG

	Units	CDWG		Feb. 25 2015	October 21 2015	May 11 2016	October 12 2016	April 12 2017	Nov 22 2018	Dec 4 2019	Feb 25 2021
Miscellaneous Inorganics											
Fluoride	mg/L	1.5	MAC	0.026	0.03	0.036	0.027	0.039	0.037	<0.05	<0.05
Alkalinity (total as CaCO)	mg/L			76.5	81	83.2	77.1	<0.50	57.8	72	66
Anions											
Dissolved Sulphate	mg/L	500	AO	6.73	6.41	5.74	5.8	8.71	4.1	4.6	4.9
Dissolved Chloride	mg/L	250	AO	2.2	3.1	3.3	4	1.6	3.6	4.2	3.9
Nitrite	mg/L	1	MAC	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.005	<0.005
Miscellaneous											
Apparent Colour	Colour Unit			5	5	10	5		15	5	10
Nutrients											
Total Ammonia	mg/L			0.0061	0.03	0.012	0.067	0.021	<0.020	0.05	<0.015
Physical Properties											
Conductivity	µS/cm			166	179	181	176	520	132	160	150
pH	pH	7.0:10.5	AO	7.57	7.77	7.58	7.8	**3.27**	7.6	7.13	**6.26**
TDS	mg/L	500	AO	92	112	100	104	90	66	92	68
Turbidity	NTU			2.82	0.89	1.84	2.58	0.68	1.23	4.3	2.6
Microbiological Parameters											
E.coli	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	**118.4**	<1	<1.0	0	0
Total Coliforms	MPN/100mL	<1	MAC	<1.0	**1**	**40.6**	**>200.5**	**7.5**	<1.0	0	0
Calculated Parameters											
Total Hardness (CaCO)	mg/L			79.5	88.4	87.9	80	79.4	59.5	74	66.7
Nitrate	mg/L	10	MAC	0.146	0.089	0.106	0.099	0.263	0.054	0.089	0.092
Elements											
Total Mercury	mg/L	0.001	MAC	<0.000010	<0.00001	<0.00001	<0.00001	<0.00001	<0.000002	<0.000002	<0.0000019
Total Metals											
Total Aluminum	mg/L	0.1	OG	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Total Antimony	mg/L	0.006	MAC	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Total Arsenic	mg/L	0.01	MAC	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Barium	mg/L	1	MAC	0.019	0.0213	0.0212	0.0195	0.0198	0.015	0.0172	0.0169
Total Beryllium	mg/L			<0.0001	<0.0001	<0.0001	<0.0001		<0.0001	<0.0001	<0.0001
Total Bismuth	mg/L			<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001
Total Boron	mg/L	5	MAC	<0.050	<0.05	<0.050	<0.050	<0.050	<0.050	<0.05	<0.05
Total Cadmium	mg/L	0.005	MAC	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Total Chromium	mg/L	0.05	MAC	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0011	<0.001
Total Cobalt	mg/L			<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
Total Copper	mg/L	1	AO	0.00489	0.00752	0.00411	0.00222	0.00271	0.00764	0.00763	0.0151
Total Iron	mg/L	0.3	AO	0.0911	0.108	0.193	0.203	0.0929	1.33	1.03	0.195
Total Lead	mg/L	0.01	MAC	<0.0002	<0.0002	0.00125	<0.0002	<0.0002	0.00044	0.00086	0.00081
Total Manganese	mg/L	0.02 0.12	AO MAC	0.0014	<0.001	0.0019	<0.001	0.0015	0.0053	0.004	0.0055
Total Molybdenum	mg/L			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Nickel	mg/L			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0011
Total Selenium	mg/L	0.05	MAC	0.00017	0.00014	0.00019	0.00018	0.0002	0.00013	0.00014	0.00014
Total Silicon	mg/L			5.5	5.45	5.61	4.53		4.39	4.95	4.85
Total Silver	mg/L			<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Total Strontium	mg/L			<0.0722	0.0876	0.0862	0.0801		0.0554	0.0661	0.0649
Total Thallium	mg/L			<0.00005	<0.00005	<0.00005	<0.00005		<0.00001	<0.00001	<0.00001
Total Tin	mg/L			<0.005	<0.005	<0.005	<0.005		<0.005	<0.005	<0.005
Total Titanium	mg/L			<0.005	<0.005	<0.005	<0.005		<0.005	<0.005	<0.005
Total Uranium	mg/L	0.02	MAC	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Vanadium	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Zinc	mg/L	5	AO	<0.005	0.0067	<0.005	<0.005	<0.005	<0.005	0.0099	0.0186
Total Zirconium	mg/L			<0.0005	<0.0005	<0.0005	<0.0005		<0.0001	<0.0001	<0.0001
Total Calcium	mg/L			25.1	28.3	28	24.8	25.2	18.8	23.6	20.7
Total Magnesium	mg/L			4.09	4.31	4.37	4.38	4	3.05	3.68	3.66
Total Potassium	mg/L			0.173	0.203	0.211	0.188	0.192	0.158	0.163	0.175
Total Sodium	mg/L	200	AO	2.72	3.8	3.14	3.47	2.6	2.33	2.34	2.29
Total Sulphur	mg/L					<3.0	<3.0	<3.0	<3.0	<3	<3.0

Notes below about Manganese (2019) from: https://www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/water-quality/guidelines-canadian-drinking-water-quality-summary-table.html

Type	Parameter (published, reaffirmed)	MAC (mg/L)	Other value (mg/L)	Common sources of parameter in water	Health considerations	Comments
I = Inorganic chemical parameter	Manganese (2019)	0.12	AO: <0.02	Dissolution of naturally-occurring minerals commonly found in soil and rock. Other sources include industrial discharge, mining activities and leaching from landfills.	**Health Basis of MAC:** Effects on neurological development and behaviour; deficits in memory, attention, and motor skills. **Other:** Formula-fed infants (where water containing manganese at levels above the MAC is used to prepare formula) may be especially at risk.	AO based on minimizing the occurrence of discoloured water, consumer complaints and staining of laundry.

REGIONAL DISTRICT OF NANAIMO

Horne Lake Distribution (Tap Water) Analysis
Horne Lake Regional Park

CDWG=Canadian Drinking Water Guidelines
OG= Operational Guidance Value
MAC=Maximum Acceptable Concentration
AO= Asthetic Objective

Orange font indicates non-compliance with the Aesthetic Objective in the Canadian Drinking Water Guidelines (CDWG)

Red font indicates non-compliance with the Maximum Acceptable Concentration (MAC) in the CDWG

	Units	CDWG		October 21 2015	May 11 2016	October 12 2016	April 12 2017	Nov. 29 2018	April 17 2019	May 28 2020
Miscellaneous Inorganics										
Fluoride	mg/L	1.5	MAC	0.018	<0.010	<0.010	0.013	<0.020	<0.02	<0.05
Alkalinity (total as CaCO)	mg/L			5.22	3.38	1.96	2.02	4.2	5.4	3.7
Anions										
Dissolved Sulphate	mg/L	500	AO	0.69	<0.50	<1.0	0.52	<1.0	<1	<1
Dissolved Chloride	mg/L	250	AO	3.6	2	1.1	1.7	3.1	2	5
Nitrite	mg/L	1	MAC	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.005	<0.005
Miscellaneous										
Apparent Colour	Colour Unit			5	10	<5		<5.0	5	5
Nutrients										
Total Ammonia	mg/L			0.0085	0.0068	0.11	0.023	<0.020	0.044	0.02
Physical Properties										
Conductivity	µS/cm			22.5	11.7	9.9	10.6	19	15.9	26
pH	pH	7.0:10.5	AO	**6.64**	**6.52**	**6.44**	**6.53**	**6.65**	**6.61**	**6.4**
TDS	mg/L	500	AO	14	12	16	<10	10	14	12
Turbidity	NTU			<0.10	<0.10	<0.10	<0.10	0.16	0.63	<0.1
Microbiological Parameters										
E.coli	MPN/100mL	1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	0	0
Total Coliforms	MPN/100mL	1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	0	0
Calculated Parameters										
Total Hardness (CaCO)	mg/L			0.63	<0.50	1.05	<0.50	3.59	<0.5	2.69
Nitrate	mg/L	10	MAC	<0.020	<0.020	<0.020	0.022	<0.020	<0.02	<0.02
Elements										
Total Mercury	mg/L	0.001	MAC	<0.00001	<0.00001	<0.00001	<0.00001	<0.000002	<0.000002	<0.0000019
Total Metals										
Total Aluminum	mg/L	0.1	OG	<0.003	<0.003	<0.003	<0.003	0.0066	<0.003	<0.003
Total Antimony	mg/L	0.006	MAC	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Total Arsenic	mg/L	0.01	MAC	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Barium	mg/L	1	MAC	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Beryllium	mg/L			<0.0001	<0.0001	<0.0001		<0.0001	<0.0001	<0.0001
Total Bismuth	mg/L			<0.001	<0.001	<0.001		<0.001	<0.001	<0.001
Total Boron	mg/L	5	MAC	<0.05	<0.050	<0.050	<0.050	<0.050	<0.05	<0.05
Total Cadmium	mg/L	0.005	MAC	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Total Chromium	mg/L	0.05	MAC	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Cobalt	mg/L			<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
Total Copper	mg/L	1	AO	0.0865	<0.0002	0.0094	0.0003	0.0168	0.0165	0.0202
Total Iron	mg/L	0.3	AO	0.0237	<0.005	0.0053	<0.005	<0.005	<0.005	<0.005
Total Lead	mg/L	0.01	MAC	0.00203	<0.0002	0.00024	<0.0002	0.00049	0.00097	0.00651
Total Manganese	mg/L	0.02 0.12	AO MAC	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Molybdenum	mg/L			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Nickel	mg/L			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Selenium	mg/L	0.05	MAC	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Silicon	mg/L			0.122	<0.100	0.138		0.279	0.29	0.18
Total Silver	mg/L			<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Total Strontium	mg/L			<0.001	<0.001	0.0012		0.0032	<0.001	0.0024
Total Thallium	mg/L			<0.00005	<0.00005	<0.00005		<0.00001	<0.00001	<0.00001
Total Tin	mg/L			<0.005	<0.005	<0.005		<0.005	<0.005	<0.005
Total Titanium	mg/L			<0.005	<0.005	<0.005		<0.005	<0.005	<0.005
Total Uranium	mg/L	0.02	MAC	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Vanadium	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Zinc	mg/L	5	AO	0.317	<0.005	0.0071	<0.005	0.0151	0.015	0.0433
Total Zirconium	mg/L			<0.0005	<0.0005	<0.0005		<0.0001	<0.0001	<0.0001
Total Calcium	mg/L			0.253	<0.050	0.327	<0.050	1.15	<0.05	0.865
Total Magnesium	mg/L			<0.050	<0.050	0.056	<0.050	0.173	<0.05	0.129
Total Potassium	mg/L			<0.050	<0.050	<0.050	<0.050	<0.050	<0.05	0.069
Total Sodium	mg/L	200	AO	4.33	2.1	2.3	2.02	2.32	3.1	3.3
Total Sulphur	mg/L			<3.0	<3.0	<3.0	<3.0	<3.0	<3	<3