



# Regional District of Nanaimo - Water Services Department

## Englishman River Water Analysis - 2021 Monthly Report

Date	Sample Location (Address)	BC Centre for Disease Control		RDN In-House Laboratory & Spectrophotometer								Bureau Veritas Lab	
		E. coli *	Total Coliform *	E.coli *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
07-Dec-21	2235 Rascal			0	0	8	7.12	0.68	264.0	0.26	545.0	0.0218	0.0123
14-Dec-21	1969 Kaye			0	0	7	7.38	0.58	261.0	0.26	539.0	0.0102	0.0056
20-Dec-21	1969 Kaye			0	0	6	7.56	0.74	256.0	0.26	528.0		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	0.02 AO 0.12 MAC

**Legend:**

\* Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

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

**Comments:**

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.	<b>Health Basis of MAC:</b> Effects on neurological development and behaviour; deficits in memory, attention, and motor skills. <b>Other:</b> 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.

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01-Nov-21	2235 Rascal	0	0	0	0	11	8.05	0.51	270.0	0.27	556.0		
08-Nov-21	1969 Kaye	0	0	0	0	10	7.67	0.50	268.0	0.27	553.0		
15-Nov-21	2235 Rascal			0	0	9	7.76	0.64	275.0	0.28	564.0		
22-Nov-21	2235 Rascal			0	0	8	8.03	0.67	266.0	0.27	550.0		
29-Nov-21	1969 Kaye			0	0	9	7.89	0.61	229.0	0.25	561.0		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	0.02 AO 0.12 MAC

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04-Oct-21	2235 Rascal	0	0	0	0	14	7.99	0.50	277.0	0.28	571.0		
13-Oct-21	2235 Rascal			0	0	13	7.87	0.47	276.0	0.27	569.0		
18-Oct-21	1969 Kaye			0	0	13	7.97	0.40	271.0	0.27	559.0		
27-Oct-21	2235 Rascal	0	0	0	0	13	7.91	0.49	265.0	0.27	566.0		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	0.02 AO 0.12 MAC

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07-Sep-21	2235 Rascal	0	0	0	0	14	7.89	0.77	210.4	0.24	500.0		
13-Sep-21	1969 Kaye	0	0	0	0	16	7.91	0.64	219.0	0.26	519.0	0.0131	0.01
20-Sep-21	2235 Rascal			0	0	16	8.09	0.60	274.0	0.27	566.0	0.0124	0.0142
27-Sep-21	2235 Rascal			0	0	14	8.01	0.53	277.0	0.26	571.0		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	0.02 AO 0.12 MAC

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03-Aug-21	2235 Rascal	0	0	0	0		8.10	0.83	273.0	0.28	562.0		
09-Aug-21	1969 Kaye	0	0	0	0	17	7.99	0.92	276.0	0.28	567.0		
16-Aug-21	2235 Rascal			0	0	15	8.03	0.79	273.0	0.27	562.0		
23-Aug-21	2235 Rascal			0	0	14	8.33	0.75	274.0	0.27	564.0		
30-Aug-21	1969 Kaye			0	0	17	8.05	0.71	278.0	0.28	572.0		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	0.02 AO 0.12 MAC

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06-Jul-21	2235 Rascal	0	0	0	0	14	8.25	0.60	272.0	0.27	560.0		
13-Jul-21	1969 Kaye	0	0	0	0	16	8.21	0.67	270.0	0.27	556.0		
19-Jul-21	2235 Rascal			0	0	14	8.20	0.75	271.0	0.27	558.0		
27-Jul-21	2235 Rascal			0	0	17	8.16	0.80	274.0	0.27	564.0		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	0.02 AO 0.12 MAC

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01-Jun-21	2235 Rascal			0	0	12	7.71	0.70	264.0	0.26	544.0		
07-Jun-21	1969 Kaye	0	0	0	0	12	7.97	0.75	265.0	0.26	537.0		
14-Jun-21	2235 Rascal			0	0	12	7.22	0.66	262.0	0.26	540.0		
22-Jun-21	2235 Rascal			0	0	13	7.55	0.60	266.0	0.26	544.0	0.0181	0.0233
29-Jun-21	1969 Kaye	0	0	0	0	16	7.19	0.64	266.0	0.27	548.0	0.0197	0.0224
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	0.02 AO 0.12 MAC

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03-May-21	1969 Kaye	0	0	0	0	9	7.42	0.56	262.0	0.26	541.0		
10-May-21	2235 Rascal	0	0	0	0	10	7.29	0.52	261.0	0.26	538.0		
17-May-21	1969 Kaye			0	0	11	7.22	0.46	261.0	0.26	539.0		
25-May-21	2235 Rascal			0	0	11	7.31	0.83	255.0	0.24	540.0		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	0.02 AO 0.12 MAC

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07-Apr-21	1969 Kaye	0	0	0	0	7	7.35	0.40	261.0	0.26	540.0		
12-Apr-21	2235 Rascal	0	0	0	0	9	7.14	0.41	254.0	0.25	524.0		
19-Apr-21	1969 Kaye			0	0	9	7.46	0.57	253.0	0.25	522.0		
26-Apr-21	2235 Rascal			0	0	9	7.50	0.49	261.0	0.26	538.0		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	0.02 AO 0.12 MAC

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08-Mar-21	2235 Rascal	0	0	0	0	7	7.77	0.58	259.0	0.26	535.0		
15-Mar-21	1969 Kaye			0	0	6	7.40	0.51	255.0	0.25	526.0		
22-Mar-21	2235 Rascal			0	0	7	7.80	0.60	239.0	0.24	501.0	0.0147	0.0103
28-Mar-21	1969 Kaye			0	0	6	7.31	0.58	254.0	0.25	524.0	0.0138	0.0047
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08-Feb-21	2235 Rascal	0	0	0	0	7	7.77	0.70	256.0	0.26	528.0		
17-Feb-21	1969 Kaye	0	0	0	0	6	8.03	0.76	256.0	0.26	528.0		
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Date	Sample Location (Address)	BC Centre for Disease Control		RDN In-House Laboratory & Spectrophotometer								Bureau Veritas Lab	
		E. coli *	Total Coliform *	E.coli *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
04-Jan-21	1969 Kaye	0	0	0	0	7.5	7.40	0.59	253.0	0.25	522.0		
11-Jan-21	2235 Rascal	0	0	0	0	8	7.89	0.75	254.0	0.24	525.0		
18-Jan-21	1969 Kaye			0	0	7	7.75	0.68	255.0	0.26	527.0	0.0112	0.0057
25-Jan-21	2235 Rascal			0	0	7	7.69	0.66	254.0	0.25	524.0	0.0093	0.0025
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	0.02 AO 0.12 MAC

### Legend:

\* Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

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

### Comments:

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.	<b>Health Basis of MAC:</b> Effects on neurological development and behaviour; deficits in memory, attention, and motor skills. <b>Other:</b> 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.