

# REGIONAL DISTRICT OF NANAIMO

## Water Service Area Annual Report 2018



### Rollo McClay Community Park Water System



June 2019

**REGIONAL DISTRICT OF NANAIMO**

*Water & Utility Services Department*

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Appendix A - Map of Rollo McClay Community Park Water System

Appendix B - Water Quality Testing Results

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## 1. Introduction

The following annual report describes the Rollo McClay Community 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 2018. This report is to be submitted to Island Health by the spring of 2019.

## 2. Rollo McClay Community Park Water System

The Rollo McClay Community Park was created in 1990 as part of a residential subdivision (Plan No. VIP51655). The park was operated and maintained by Gabriola Island residents until the Regional District acquired the park later in the 1990's. The park comprises an area of 7.8 hectares (19 acres) on the north side of Gabriola Island, and is accessed from McClay Way. Drinking water is trucked-in from Parksville and stored in one cistern on site. The water is only used for sinks and washrooms in the concession building. A map of the Rollo McClay Community Park Water System is provided in Appendix A for reference.

### 2.1 Groundwater Wells

The Rollo McClay Community Park well has not been used for several years, and as recently decommissioned. Please see the well closure log in Appendix B.

### 2.2 Reservoirs

One polyethylene cistern is located inside the concession stand building. The cistern has a capacity of 5.5 m<sup>3</sup> (1,200 imperial gallons).



**Rollo McClay  
Concession  
Building**

### 2.3 Distribution System

There is no water distribution system in Rollo McClay Park. The cistern located inside the concession building supplies potable water to the kitchen and bathrooms. There are no fire hydrants in this water system.

### 3. Water Sampling and Testing Program

Water sampling and testing is carried out monthly in the concession building. The following table includes a summary of all testing:

Timing	Location	Tests
Monthly: May-Oct (Closed: Nov-Apr)	BC Centre for Disease Control	Total coliforms, E.Coli
Annually (April)	Bureau Veritas (formerly Maxxam)	Complete potability testing of treated water (trucked-in, source is from San Pareil)

### 4. Water Quality - Distribution System

Drinking water is trucked-in to the Rollo McClay Park from an RDN-owned water system near Parksville, using an RDN-owned truck and tank. The delivery of potable water was determined to be less costly than using the well and water treatment system on-site. Trucking in water has been ongoing since 2015.

The trucked-in water has a chlorine residual upon arrival at Rollo McClay Park, and chlorine residuals are tested regularly by the park operator to ensure no bacterial regrowth occurs in the cistern. The water stored in the cistern does not have a high turnover rate, so the park operator adds liquid chlorine manually, as required.

Tap water test results are provided at the end of this report under Appendix B. Bacteriological results are posted on the Vancouver Island Health Authority (VIHA) website at: [http://www.healthspace.ca/Clients/VIHA/VIHA\\_Website.nsf/Water-Samples-Frameset?](http://www.healthspace.ca/Clients/VIHA/VIHA_Website.nsf/Water-Samples-Frameset?) , then click on [Gabriola Island](#), and then click [Rollo McClay Community Park Water](#).



Rollo McClay  
Water  
Cistern

## 5. Water Quality Inquiries and Complaints

No complaints were received from the Rollo McClay Community Park Water System users. RDN staff have a good line of communication with the park users and are notified if water is required during the normal shut-down period.

A summary of the water system incidents in 2018 is given in the table below.

Activity in 2018	Date(s)	History/Notes
Boil Water Advisories	None	None
High Turbidity Events	None	None
Equipment Malfunction	None	None
Water Main Breaks	None	None
Pump Failures	None	None

## 6. Groundwater Production and Consumption

The volume of water consumed at the concession stand is not metered. However, the volume of water trucked-in with the RDN tank is estimated to be 8 cubic meters per month (x 6 months/year).

## 7. Maintenance Program

Chlorine residuals are taken and recorded 2-3 times weekly by the local water system operator on Gabriola Island while the concession building is open (summer months only). The operator contacts RDN staff weekly to coordinate water hauling.

The water storage cistern is drained for the winter season, and cleaned/disinfected every Spring before being filled. 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

## 9. Water System Projects

### 9.1 2018 Completed Studies & Projects

- Decommissioned the Rollo McClay well (see Well Closure Report in Appendix B);
- Completed a Cross Connection Control Bylaw in draft format;
- Updated the online GIS Water Map for aquifer and watershed info;
- Maintained a high level of water quality;
- Continued quality control through regular testing and monitoring of water system;
- Updated the online GIS Water Map update for aquifer and watershed info;
- Initiated a New Drinking Water and Watershed Protection Action Plan;
- Completed Water Conservation Evaluation Report;
- Completed additional educational programs.



**Rollo McClay  
Wellhead  
Decommissioned**

### 9.2 2019 Proposed Projects & Upgrades

- Adopt Cross Connection Control Bylaw;
- Implement a Water Systems SCADA Master Plan;
- Complete Water Systems Condition Assessment project;
- Begin DWWP Water Conservation Plan development;
- Implement new Drinking Water and Watershed Protection Action Plan;
- Continue to offer numerous water-saving incentives via rebates;
- Develop Cross Connection Control educational material.

## 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 2018, 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

In 2017, a more robust Cross Connection Control Plan was prepared that fully defines the CCC program, including standard operating procedures, plumbing code references, reporting procedures, survey schedules, backflow prevention standards, detailed installation schematics, blank test forms, testing reminders, and non-compliance letters. A minimum of two RDN Operators are certified in Backflow Assembly Testing at all times. The RDN Manager of Water Services is the designated Cross Connection Control Manager.

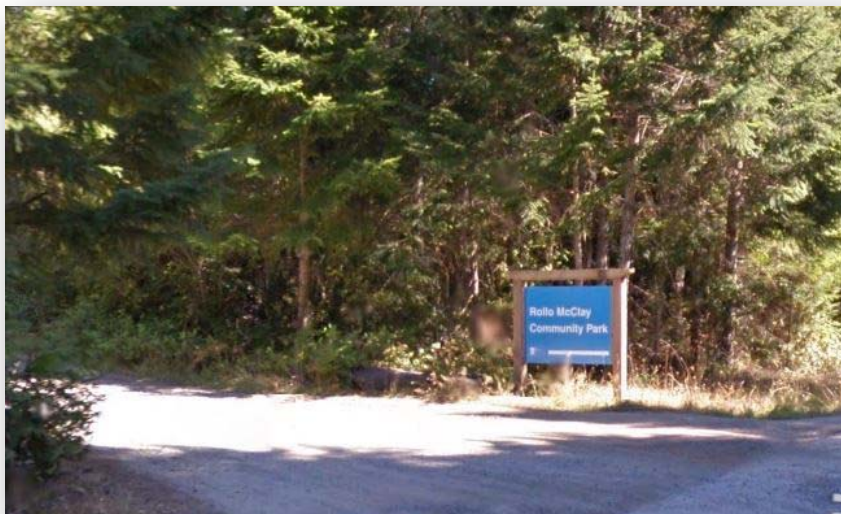
In 2019, a stand-alone Cross Connection Control Bylaw will be adopted that contains definitions, authorizations, applications, liability, rules, regulations, testing requirements, and reporting requirements. The bylaw will address retrofits, prohibitions, special circumstances, reclaimed water use, alternate water sources, failure to comply, inspections, testing, offences, penalties and more. A webpage will be established on the Water Services website that will educate RDN customers about cross connections and list the relevant links to current standards and resources.

### 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 2019 will be prepared and submitted to Island Health in the Spring of 2020. The Rollo McClay Community Park Water System Annual Report is also available on our website at <https://www.rdn.bc.ca/rollo-mcclay-community-park>.



Park Entrance

**APPENDIX A**

**MAP OF ROLLO McCLAY COMMUNITY  
PARK WATER SYSTEM**



MAP OF ROLLO McCLAY COMMUNITY PARK WATER SYSTEM



**APPENDIX B**  
**WATER QUALITY TESTING RESULTS**

# ROLLO McCLAY COMMUNITY PARK WATER



**Facility Location:**

1100 McClay Way  
Gabriola Island

**Facility Information:**

Facility Type: DWQ

**Facility Sampling History:**

<u>Location</u>	<u>Date</u>	<u>Total Coliform</u>	<u>E. Coli</u>
Kitchen, Gabriola	8-Nov-2018	L1	L1
Kitchen, Gabriola	6-Sep-2018	L1	L1
Kitchen, Gabriola	8-Aug-2018	L1	L1
Kitchen, Gabriola	11-Jul-2018	L1	L1
Kitchen, Gabriola	7-Jun-2018	L1	L1
Kitchen, Gabriola	8-May-2018	L1	L1
Rollo McClay Community Park Water - AUDIT, 1100 McCLAY WAY	8-May-2018	L1	L1
Kitchen, Gabriola	11-Apr-2018	L1	L1
Rollo McClay Community Park Water - AUDIT, 1100 McCLAY WAY	11-Apr-2018	L1	L1
Rollo McClay Community Park Water - AUDIT, 1100 McCLAY WAY	7-Mar-2018	L1	L1
Kitchen, Gabriola	7-Feb-2018	L1	L1

**Interpreting Sample Reports**

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

- L1 Less than 1 (no detectable bacteria) - Meaning: No bacteria present
- OG Overgrown - Meaning: Too many background bacteria to give an accurate count
- EST Estimated Count
- A Sample not tested; Too long in transit
- C Sample leaked/broken in transit
- D Sample not tested; No collection date given
- T Sample submitted unsatisfactory. Exceeded 30 hours holding time, please resample.
- NS No sample received with requisition

CDWG=Canadian Drinking Water Guidelines  
OG= Operational Guidance Value

MAC=Maximum Acceptable Concentration  
AO= Asthetic Objective.



Red font indicates non-compliance with Canadian Drinking Water Guidelines

	Units	CDWG		May 13 2014	May 19 2015	May 10 2016	May 10 2017	May 2 2018	
<b>Miscellaneous Inorganics</b>									
Fluoride	mg/L	1.5	MAC	<0.05	0.022	0.021	0.027	0.023	
Alkalinity (total as CaCO <sub>3</sub> )	mg/L			24	25.1	25.7	25.3	24.7	
<b>Anions</b>									
Dissolved Sulphate	mg/L	500	AO	1.7	1.91	1.95	1.88	2.2	
Dissolved Chloride	mg/L	250	AO	4.7	9	6	4.1	5	
Nitrite	mg/L	1	MAC	<0.05	<0.0050	<0.0050	<0.0050	<0.0050	
<b>Miscellaneous</b>									
Apparent Colour	Colour Unit			<5	<5	5	10	5	
<b>Nutrients</b>									
Total Ammonia	mg/L			<0.02	0.0071	0.014	0.2	<0.020	
<b>Physical Properties</b>									
Conductivity	µS/cm			69	82.9	72.3	66.9	64	
pH	pH	7.0:10.5	AO	6.7	7.41	7.26	7.43	7.25	
TDS	mg/L	500	AO	54	50	58	26	52	
Turbidity	NTU			<0.5	<0.10	<0.10	0.14	<0.10	
<b>Microbiological Parameters</b>									
E.coli	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	
Total Coliforms	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	
<b>Calculated Parameters</b>									
Total Hardness (CaCO <sub>3</sub> )	mg/L			22	29.7	23.6	22.6	20.6	
Nitrate	mg/L	10	MAC	0.08	0.05	0.05	0.06	0.042	
<b>Elements</b>									
Total Mercury	mg/L	0.001	MAC	<0.00001	<0.00001	<0.00001	<0.00001	0.0000021	
<b>Total Metals</b>									
Total Aluminum	mg/L	0.1	OG	<0.025	0.008	0.0104	0.0138	0.0152	
Total Antimony	mg/L	0.006	MAC	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
Total Arsenic	mg/L	0.01	MAC	<0.00025	<0.0001	<0.0001	<0.0001	<0.0001	
Total Barium	mg/L	1	MAC	0.00293	0.0035	0.0031	0.0034	0.0027	
Total Beryllium	mg/L			<0.00025	<0.0001	<0.0001	<0.0001	<0.0001	
Total Bismuth	mg/L			<0.0005	<0.001	<0.001	<0.001	<0.001	
Total Boron	mg/L	5	MAC	0.011	<0.05	<0.05	<0.050	<0.050	
Total Cadmium	mg/L	0.005	MAC	<0.00005	<0.00001	<0.00001	<0.00001	<0.00001	
Total Chromium	mg/L	0.05	MAC	<0.0025	<0.001	<0.001	<0.001	<0.001	
Total Cobalt	mg/L			<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	
Total Copper	mg/L	1	AO	0.0073	0.0026	0.00332	0.00428	0.00516	
Total Iron	mg/L	0.3	AO	0.021	0.016	0.0147	0.0185	0.0147	
Total Lead	mg/L	0.01	MAC	0.0007	0.00183	0.00053	0.0006	0.00089	
Total Manganese	mg/L	0.05	AO	<0.0050	0.0052	0.0034	0.0016	<0.001	
Total Molybdenum	mg/L			<0.00025	<0.001	<0.001	<0.001	<0.001	
Total Nickel	mg/L			<0.0010	<0.001	<0.001	<0.001	<0.001	
Total Selenium	mg/L	0.05	MAC	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	
Total Silicon	mg/L			3.21	3.7	3.46	3.56	3.07	
Total Silver	mg/L			<0.00025	<0.00002	<0.00002	<0.00002	<0.00002	
Total Strontium	mg/L			0.0292	0.0372	0.032	0.0304	0.0273	
Total Thallium	mg/L			<0.00005	<0.00005	<0.00005	<0.00001	<0.00001	
Total Tin	mg/L			<0.0005	<0.005	<0.005	<0.005	<0.005	
Total Titanium	mg/L			<0.0025	<0.005	<0.005	<0.005	<0.005	
Total Uranium	mg/L	0.02	MAC	<0.00005	<0.0001	<0.0001	<0.0001	<0.0001	
Total Vanadium	mg/L			<0.0005	<0.005	<0.005	<0.005	<0.005	
Total Zinc	mg/L	5	AO	0.0161	<0.005	<0.005	<0.005	<0.005	
Total Zirconium	mg/L				<0.0005	<0.0005	<0.0001	<0.0001	
Total Calcium	mg/L			7.19	9.87	7.6	7.38	6.55	
Total Magnesium	mg/L			0.93	1.23	1.13	1.03	1.04	
Total Potassium	mg/L			<0.5	0.212	0.197	0.194	0.189	
Total Sodium	mg/L	200	AO	4.3	4.52	4.4	4.15	4.34	
Total Sulphur	mg/L				<3.0	<3.0	<3.0	<3.0	



Ministry of Environment

- Well Construction Report
Well Closure Report
Well Alteration Report

Stamp company name/address/ phone/fax/email here, if desired.

Ministry Well ID Plate Number:
Ministry Well Tag Number: 13365
Confirmation/alternative specs. attached
Original well construction report attached

Red lettering indicates minimum mandatory information. See reverse for notes & definitions of abbreviations.

Owner name: NANAIMO REGIONAL DISTRICT

Mailing address: Town BC Postal Code

Well Location (see note 2): Address: Street no. Street name McCloy Way Town GABRIOLA

Legal description: Lot Park Plan 51655 D.L. Block Sec. 18 Twp. Rg. Land District

PID: and Description of well location (attach sketch, if nec.): ROLLO BALL PARK

NAD 83: Zone: UTM Easting: m Latitude (see note 4): N49° 10.730'
UTM Northing: m Longitude: W123° 48.815'

Method of drilling: air rotary dual rotary cable tool mud rotary auger driving jetting other (specify):

Orientation of well: vertical horizontal Ground elevation: ft (asl) Method (see note 5):

Class of well (see note 6): Sub-class of well:

Water supply wells: indicate intended water use: private domestic water supply system irrigation commercial or industrial other (specify):

Lithologic description (see notes 8-13) or closure description (see notes 14 and 15)

Table with columns: From ft (bgl), To ft (bgl), Surficial Material, Bedrock Material, Colour, Hardness, Water Content, Observations. Includes handwritten entries for layers like BETHONITE, PEA GRAVEL, BET, P.G.

Casing details

Table with columns: From ft (bgl), To ft (bgl), Dia in, Casing Material/Open Hole, Wall Thickness in, Drive Shoe

Surface seal: Type: Depth: ft
Method of installation: Poured Pumped Thickness: in
Backfill: Type: Depth: ft
Liner: PVC Other (specify):
Diameter: in Thickness: in
From: ft (bgl) To: ft (bgl) Perforated: From: ft (bgl) To: ft (bgl)

Screen details

Table with columns: From ft (bgl), To ft (bgl), Dia in, Type, Slot Size

Intake: Screen Open bottom Uncased hole
Screen type: Telescope Pipe size
Screen material: Stainless steel Plastic Other (specify):
Screen opening: Continuous slot Slotted Perforated pipe
Screen bottom: Bail Plug Plate Other (specify):
Filter pack: From: ft To: ft Thickness: in
Type and size of material:

Developed by:

Air lifting Surging Jetting Pumping Bailing
Other (specify): Total duration: hrs
Notes:

Well yield estimated by:

Pumping Air lifting Bailing Other (specify):
Rate: USgpm Duration: hrs
SWL before test: ft (btoc) Pumping water level: ft (btoc)

Obvious water quality characteristics:

Fresh Salty Clear Cloudy Sediment Gas
Colour/odour: Water sample collected:

Well driller (print clearly):

Name (first, last) (see note 19): DANIEL NORMAN WINDDECKER
Registration no. (see note 20): WDO5062307
Consultant (if applicable; name and company):

Final well completion data:

Total depth drilled: ft Finished well depth: ft (bgl)
Final stick up: in Depth to bedrock: ft (bgl)
SWL: ft (btoc) Estimated well yield: USgpm
Artesian flow: USgpm, or Artesian pressure: ft
Type of well cap: Well disinfected: Yes No
Where well ID plate is attached:

Well closure information:

Reason for closure: NO LONGER IN USE
Method of closure: Poured Pumped
Sealant material: BETHONITE Backfill material: PEA GRAVEL
Details of closure (see note 16):

Date of work (YYYY/MM/DD):

Started: 12-03-2019 Completed: 12-03-2019

Comments:

DECLARATION: Well construction, well alteration or well closure, as the case may be, has been done in accordance with the requirements in the Water Act and the Ground Water Protection Regulation.

Signature of Driller Responsible: On Winddecker

PLEASE NOTE: The information recorded in this well report describes the works and hydrogeologic conditions at the time of construction, alteration or closure, as the case may be. Well yield, well performance and water quality are not guaranteed as they are influenced by a number of factors, including natural variability, human activities and condition of the works, which may change over time.

white: Customer copy
canary: Driller copy
pink: Ministry copy
Sheet of