REGIONAL DISTRICT OF NANAIMO

Water Service Area Annual Report 2019

Englishman River Water Service Area

June 2020

REGIONAL DISTRICT OF NANAIMO
Water & Utility Services Department
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1.0 Introduction

The following annual report describes the Englishman River Community Water Service Area and summarizes the water quality and production data from 2019. This report also includes a summary of inquiries and complaints, completed and proposed maintenance activities, Operator Certification, the Emergency Response Plan, and the Cross Connection Control Program.

This report is to be submitted to Island Health by the spring of 2020.

2.0 Englishman River Water Service Area

The Englishman River Community Water Service Area was established in 2003 and comprises an area near the southern boundary of the City of Parksville between the Island Highway and the Englishman River. The water source for the Englishman River Community Water Service Area comes from a series of groundwater wells located nearby. The water source is chlorinated and stored in one reservoir. There are 151 water service connections in the Englishman River Water Service Area. A generator is available for emergency power outages. A map of the Englishman River Water Service Area is provided in Appendix A for reference.

2.1 Groundwater Wells

Groundwater production wells ER #2 and ER #3 are located at 2231 Rascal Lane, Parksville, B.C. Test well PW #1 is located on Peterson Road, and was converted to a monitoring well in 2005. Test Well PW #4 is located on Rivers Edge Drive and was converted to a provincial monitoring well in 2012.

Well / Name	Well Depth	In Use	Wellhead Protection	Treated/Untreated with Chlorine
ER #2	29.3 m	Yes	Yes	Treated
ER #3	32.6 m	Yes	Yes	Treated

2.2 Reservoirs

One dual-chambered concrete service reservoir is present at 890 Stonefly Close and has a capacity of 795 m^3 (175,000 imperial gallons).

2.3 Distribution System

The water distribution system is summarized in the table below. Fire hydrants (24) are located throughout the system.

Watermain Material	Length of mains in service area	Prevalence in Water Service Area
Asbestos-concrete	none	n/a
PVC: 150mm or smaller	3.6 km	28.8%
200mm or larger	8.9 km	71.2%

Note: 'PVC' is poly-vinylchloride (plastic)

3.0 Water Sampling and Testing Program

Water sampling and testing is carried out weekly in the distribution system. Notably, the chlorine residual levels are tested weekly to ensure the absence of bacterial regrowth in the watermains. The following table includes a summary of all testing:

Timing	Location	Tests
Weekly	RDN (in-house) Laboratory	Total coliforms, E.Coli, Temperature, pH, Conductivity, Chlorine residual, Salinity, TDS, Monthly- Iron and Manganese
Semi-Monthly	BC Centre for Disease Control	Total coliforms, E.Coli
Annual Source Water Testing (every Fall)	Bureau Veritas (formerly Maxxam)	Complete potability testing of raw well water (including T-Ammonia in 2012)
Annual Water System Testing (every Spring)	Bureau Veritas (formerly Maxxam)	Complete potability testing of distribution system (including T-Ammonia in 2012)

4.0 Water Quality - Source Water and Distribution System

Up-to-date water quality reports and lab data are posted monthly on the RDN website at https://www.rdn.bc.ca/englishman-river. Tables of water quality testing results for both the source water and distribution system are provided at the end of this report under Appendix B.

5.0 Water Quality Inquiries and Complaints

A few complaints and inquiries were received from the Englishman River Water Service Area in 2019, and were typically related to irrigation leaks, iron and manganese, and high water bills.

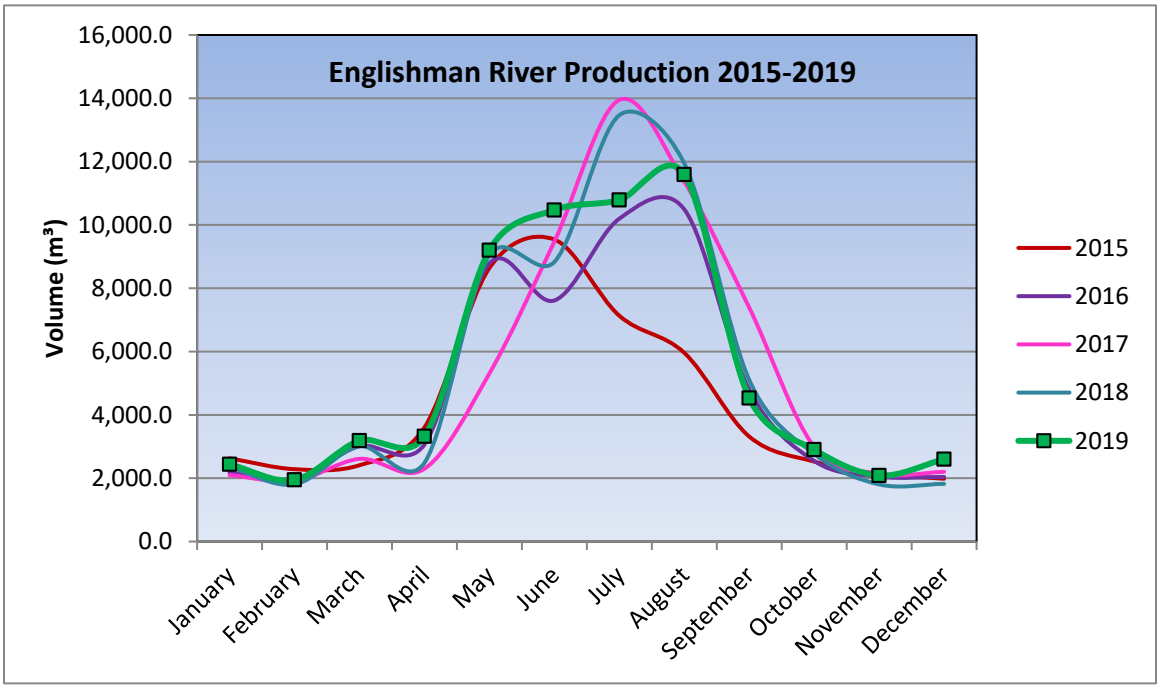
Water Sampling Station in Rivers Edge

A summary of the water system incidents in 2019 is given in the table below.

Activity in 2019	Date(s)	History/Notes
Boil Water Advisories	None	None, ever.
High Turbidity Events	None	None, ever.
Equipment Malfunction	None	None.
Water Main Breaks	None	None.
Pump Failures	None	Temp power outages.

6.0 Groundwater Production and Consumption

Monthly groundwater production in the Englishman River Water Service Area for the past 5 years is shown in the chart below. Peak summer production in 2019 was below average in comparison to the two previous years, likely due to a cooler, wetter summer season.



In the Fall/Winter of 2019, the average usage per home in the Englishman River Water Service Area was 0.54 cubic metres per day (118.8 imperial gallons). In the summer, the average water usage was 2.02 cubic metres per day (444.4 imperial gallons). Based on these figures, the annual consumption per capita is estimated to be 433 L/day (based on 2.4 people per household). This consumption is ***47% higher*** than the average of all the other RDN water systems of 295 L/day/capita for 2019.

7.0 Maintenance Program

A weekly pump station inspection is carried out to reduce or eliminate the risk of contamination and system failure, and to ensure the consistent application of chlorine for treatment purposes. Watermains are flushed once annually in the spring. Fire hydrants are serviced once per year (either 'A-level' or 'B-level' maintenance). The water storage reservoir is drained and cleaned as required, every 4-5 years. Twenty-four hour on-call coverage is in place to respond to water system emergencies and alarms.

8.0 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 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

9.0 Water Service Area Projects

9.1 2019 Completed Studies & Projects

- Corresponded with residents regarding water conservation;
- Enforced outdoor sprinkling regulations;
- Completed irrigation checks for high-water users;
- Advised residents regarding water leak repairs;
- Completed the 10-year Drinking Water Action Plan;
- Adopted a Cross Connection Control Bylaw;
- Created a Cross Connection Control webpage and educational brochure;
- Completed regular watermain flushing, and hydrant maintenance;
- Maintained a high level of water quality;
- Continued quality control through regular testing and monitoring of water system;
- Began a Water Systems SCADA Master Plan; and
- Began an overall Water System Condition Assessment.

9.2 2020 Proposed Projects & Upgrades

- Pursue source approval for Well No. PW-1 (drilled in 2005);
- Connect PW-1 to the Rivers Edge water system;
- Update asset database with new assets;
- Continue watermain flushing program and hydrant maintenance;
- Calibrate and service all Hach spectrophotometer lab equipment;
- Implement a Water Systems SCADA Master Plan;
- Review well protection plans;
- Complete a Water System Condition Assessment report;
- Begin the next 10-year DWWP Water Conservation Plan; and
- Continue to offer numerous water-saving incentives via rebates.

Rascal Lane Well Site

(Well #2 and Well #3)

10.0 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 2019, 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.

11.0 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. Two RDN Operators achieved their Backflow Assembly Tester re-certification in 2019. The RDN Manager of Water Services is the designated Cross Connection Control Manager.

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

12.0 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.

13.0 Closing

An annual report for the year 2020 will be prepared and submitted to Island Health in the spring of 2021. Annual reports are also available on our website at: https://www.rdn.bc.ca/englishman-river.

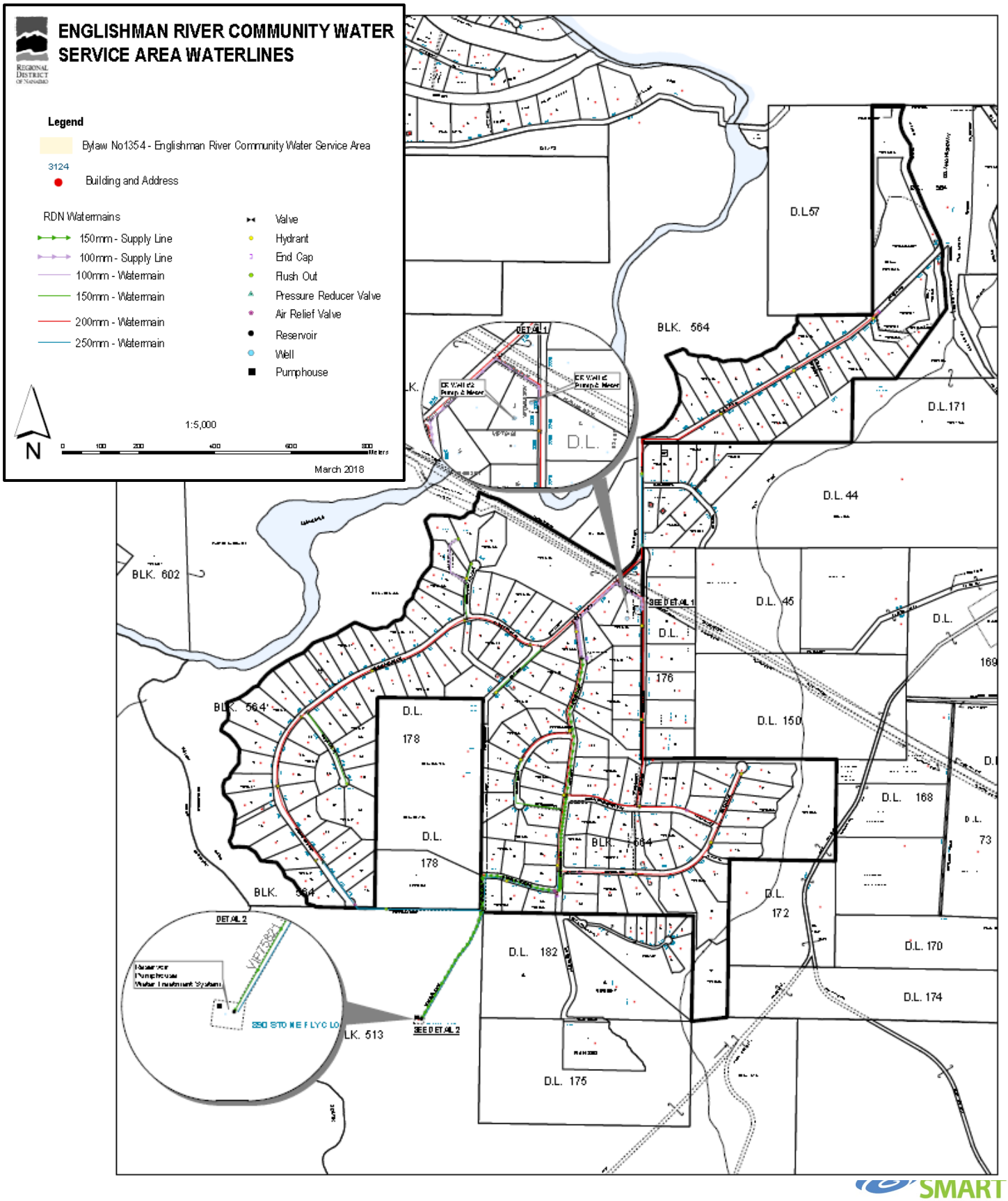
Water conservation sign for River's Edge Subdivision

APPENDIX A

MAP OF ENGLISHMAN RIVER

WATER SERVICE AREA

ENGLISH MAN RIVER WATER SERVICE AREA



APPENDIX B

WATER QUALITY TESTING RESULTS

ENGLISHMAN RIVER COMMUNITY WATER SYSTEM

Facility Location:
#8 1065 Herring Gull Way
Parksville

Facility Information: Facility Type: DWC

Facility Sampling History:

Location	Date	Total Coliform	E. Coli
Englishman River Community WWS, 2235 Rascal Ln	9-Dec-2019	L1	L1
Rivers Edge, 1969 Kaye Road, Parksville BC	2-Dec-2019	L1	L1
Englishman River Community WWS, 2235 Rascal Ln	18-Nov-2019	L1	L1
Rivers Edge, 1969 Kaye Road, Parksville BC	12-Nov-2019	L1	L1
Rivers Edge, 1969 Kaye Road, Parksville BC	4-Nov-2019	L1	L1
Rivers Edge, 1969 Kaye Road, Parksville BC	7-Oct-2019	L1	L1
Englishman River Community WWS 2235 Rascal Ln	2-Oct-2019	L1	L1
Englishman River Community WWS, 2235 Rascal Ln	9-Sep-2019	L1	L1
Rivers Edge, 1969 Kaye Road, Parksville BC	3-Sep-2019	L1	L1
Englishman River Community WWS, 2235 Rascal Ln	27-Aug-2019	L1	L1
Rivers Edge, 1969 Kaye Road, Parksville BC	6-Aug-2019	L1	L1
Englishman River Community WWS, 2235 Rascal Ln	9-Jul-2019	L1	L1
Rivers Edge, 1969 Kaye Road, Parksville BC	2-Jul-2019	L1	L1
Englishman River Community WWS, 2235 Rascal Ln	10-Jun-2019	L1	L1
Rivers Edge, 1969 Kaye Road, Parksville BC	5-Jun-2019	L1	L1
Englishman River Community WWS, 2235 Rascal Ln	21-May-2019	L1	L1
Rivers Edge, 1969 Kaye Road, Parksville BC	6-May-2019	L1	L1
Englishman River Community WWS, 2235 Rascal Ln	8-Apr-2019	L1	L1
Rivers Edge, 1969 Kaye Road, Parksville BC	1-Apr-2019	L1	L1
Englishman River Community WWS, 2235 Rascal Ln	11-Mar-2019	L1	L1
Rivers Edge, 1969 Kaye Road, Parksville BC	5-Mar-2019	L1	L1
Englishman River Community WWS, 2235 Rascal Ln	11-Feb-2019	L1	L1
Rivers Edge, 1969 Kaye Road, Parksville BC	4-Feb-2019	L1	L1
Englishman River Community WWS, 2235 Rascal Ln	14-Jan-2019	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