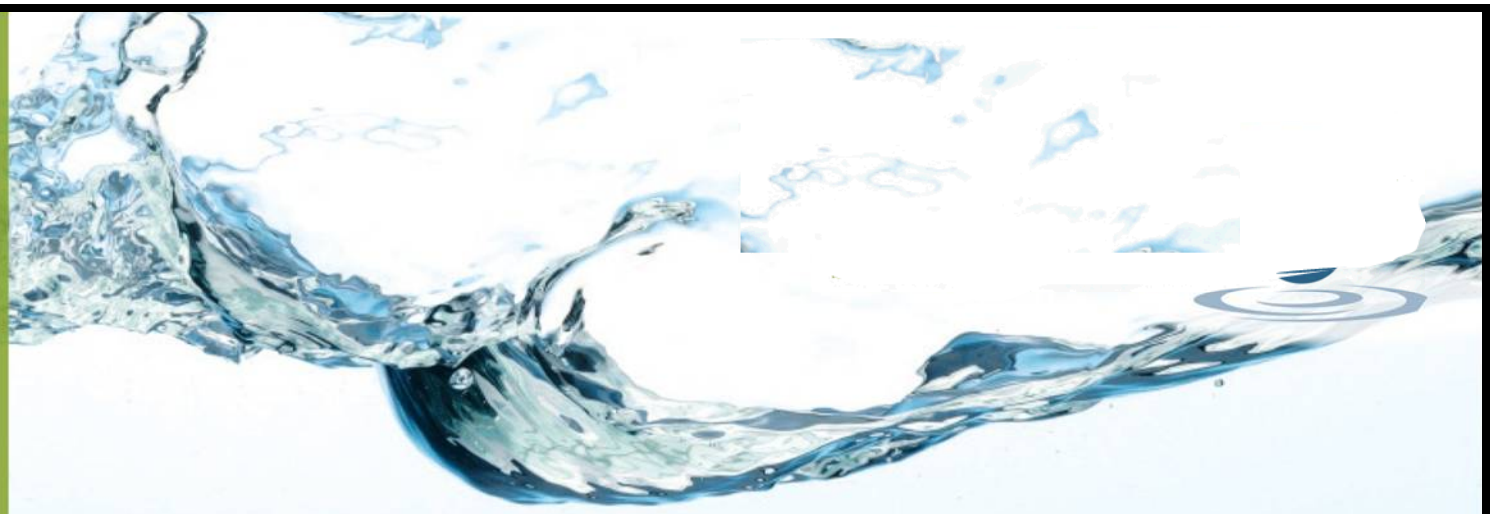

FRENCH CREEK

Water Service Area Annual Report 2010

Prepared by:

REGIONAL DISTRICT OF NANAIMO
Water Services Department
June 2011

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Appendix A - Map of French Creek Water Service Area

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1. Introduction

The following annual report describes the French Creek Water Service Area and summarizes the water quality and production data from 2010. This report also includes a summary of inquiries and complaints, completed and proposed maintenance activities, the Emergency Response Plan, and the Cross Connection Control Program.

This report is to be submitted to the Vancouver Island Health Authority by the Spring of 2011.

2. French Creek Water Service Area

The French Creek Water Service Area was established in 1980 and comprises an area west of Drew Road and south of the Island Highway between the City of Parksville and the Town of Qualicum Beach. There are 235 water service connections in the water French Creek Water System. The water source comes from a series of groundwater wells located within the Sandpiper subdivision. The water supply is chlorinated and stored in one reservoir. In the event of a power failure or water system emergency, back-up water supply is immediately provided by the Town of Qualicum Beach through a pressure-sensing valve located on Ormonde Road. A map of the French Creek Water Service Area is provided in Appendix A for reference.

2.1 Groundwater Wells

Six groundwater production wells are present in the French Creek Water Service Area.

Well / Name	Well Depth	In Use	Wellhead Protection In Place	Treated/Untreated with Chlorine
#1	39.6 m	No	Yes	n/a
#2	40.5 m	Yes	Yes	Treated
#4	40.2 m	Yes	Yes	Treated
#5	50.3 m	No	Yes	n/a
#6	52.4 m	No	Yes	n/a
#7	39.6 m	Yes	Yes	Treated

French Creek Well #1 has not been used for several years due to low production and high iron levels. Well #1 is expected to be converted to a monitoring well in 2011. Wells #5 and #6 are temporarily not in use due to elevated levels of iron and manganese.

2.2 Reservoirs

One service reservoir (steel construction) is present at 1225 Sunrise Drive, Parksville, B.C. and has a capacity of 364 m^3 (80,000 imperial gallons).

2.3 Distribution System

The water distribution system in the French Creek Water Service Area is summarized in the table below. Fire hydrants (68) are located throughout the water service area.

Watermain Material	Length of mains in service area	Prevalence in service area
Asbestos-concrete:		
150mm or smaller	3.5 km	52%
200mm or larger	0.8 km	12%
PVC:		
150mm or smaller	0.9 km	14%
200mm or larger	1.5 km	22%

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

3. Water Sampling and Testing Program

Water sampling and testing is carried out weekly in the distribution system. 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 (Health Dept. Requirement)	BC Centre for Disease Control	Total coliforms, E.Coli
Monthly	RDN (in-house) Laboratory	Total Iron and Manganese
Annual Source Water Testing	North Island Labs	Complete potability testing of raw well water (every Fall)
Annual System Water Testing	North Island Labs	Complete potability testing of distribution system (every Spring)

4. Water Quality - Source Water and Distribution System

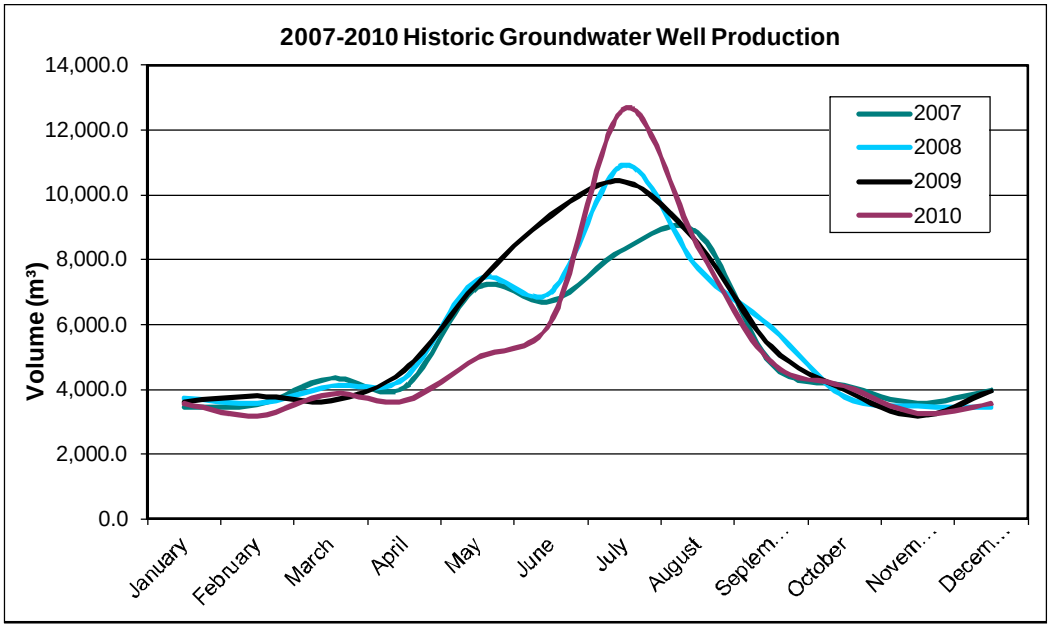
Up-to-date water quality reports and lab data are posted monthly on the RDN website at www.rdn.bc.ca in the Environmental/Water section, under "Water Service Areas" then "WaterSmart Communities". Tables of water quality testing results for both the source water and distribution system are provided at the end of this report under Appendix B.

5. Water Quality Inquiries and Complaints

A few complaints and inquiries were received from the French Creek water service area in 2010, and were typically related to isolated incidents of iron discolouration in the water.

6. Groundwater Production and Consumption

The monthly groundwater production in the French Creek Water Service Area for the past 4 years is shown in the chart below. There are 234 water service connections in French Creek. Groundwater production in 2010 was average in comparison to previous years.



Consumption

In the Fall/Winter of 2010, the average usage per home in French Creek was 0.49 cubic metres per day (107 imperial gallons). In the summer, the average water usage was 1.07 cubic metres per day (235 imperial gallons). Based on these figures, the annual consumption per capita is estimated to be 285 L/day (based on 2.4 people per household). This consumption is 7% less than the RDN system average of 305 L/day/capita for 2010.

7. Maintenance Program

Weekly pump station inspections are 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 twice annually: once in the Spring and once in the Fall.

Fire hydrants are serviced once per year (either 'A-level' or 'B-level' maintenance). The water storage reservoir is drained and cleaned once every two years.

Twenty-four hour on-call coverage is in place to respond to water system emergencies and alarms.

French Creek Main Pumphouse and Reservoir

8. Water Service Area Projects

8.1 2010 Completed Studies & Projects

- Completed a hydrogeological review of RDN wells in French Creek;
- Completed screen maintenance and redevelopment of FC Well No.7;
- Drained and cleaned the water storage reservoir;
- Installed a chlorine analyzer;
- Installed stand-alone water sampling stations;
- Updated the outdoor sprinkling regulations;
- Completed annual B-service fire hydrant maintenance;
- Prepared a Draft Cross-Connection Control Bylaw;
- Carried out a comprehensive water conservation campaign (Team WaterSmart);
- Updated and improved the RDN website at www.rdn.bc.ca;
- Updated the Emergency Response Plan;
- Utilized the Auto E-message service to notify member residents of water service disruptions and upcoming maintenance activities;
- Applied the low-flush toilet incentive;
- Maintained a high level of water quality;
- Maintained excellent customer complaint and service request response times;
- Continued quality control through regular testing and monitoring of our water systems; and,
- Completed additional educational programs

8.2 2011 Proposed Projects & Upgrades

- Convert one unused production well to a monitoring well;
- Review water treatment costs for the French Creek Water Service Area;
- Complete the Cross-Connection Control Bylaw, and establish a procedure for reviewing commercial and industrial properties for water system risks;
- Install a new pump controller and wiring and,
- Construct a new chlorine storage building/kiosk

9. 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, and pump failure. The ERP was reviewed and updated in 2010, 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.

10. Cross Connection Control

A formalized Cross Connection Control Program was initiated in 2007. Cross connection controls in-place include dual check valves at each service connection, fire hydrant use permits, and water supply bylaws noting discontinued service if a threat to the water supply is perceived by staff.

In 2008, a review and comparison of successful cross-connection control programs in other small Water Service Areas nearby was undertaken. A database of commercial customers was set-up in order to keep track of the maintenance history of testable backflow prevention assemblies at each site. Three RDN Operations staff achieved Backflow Prevention Tester's certification.

In 2010, a Draft Cross-Connection Control Bylaw was prepared, and is anticipated to be finalized in 2011. Additionally, the program in 2011 will include:

- A formal survey of existing and potential cross-connections, and
- An audit of RDN-owned facilities in each water service area.

11. Closing

An annual report for the year 2011 will be prepared and submitted to the Vancouver Island Health Authority in the Spring of 2012. Annual reports are also available on our website at www.rdn.bc.ca in the Environmental/Water section, under "Water Service Areas" then "WaterSmart Communities".

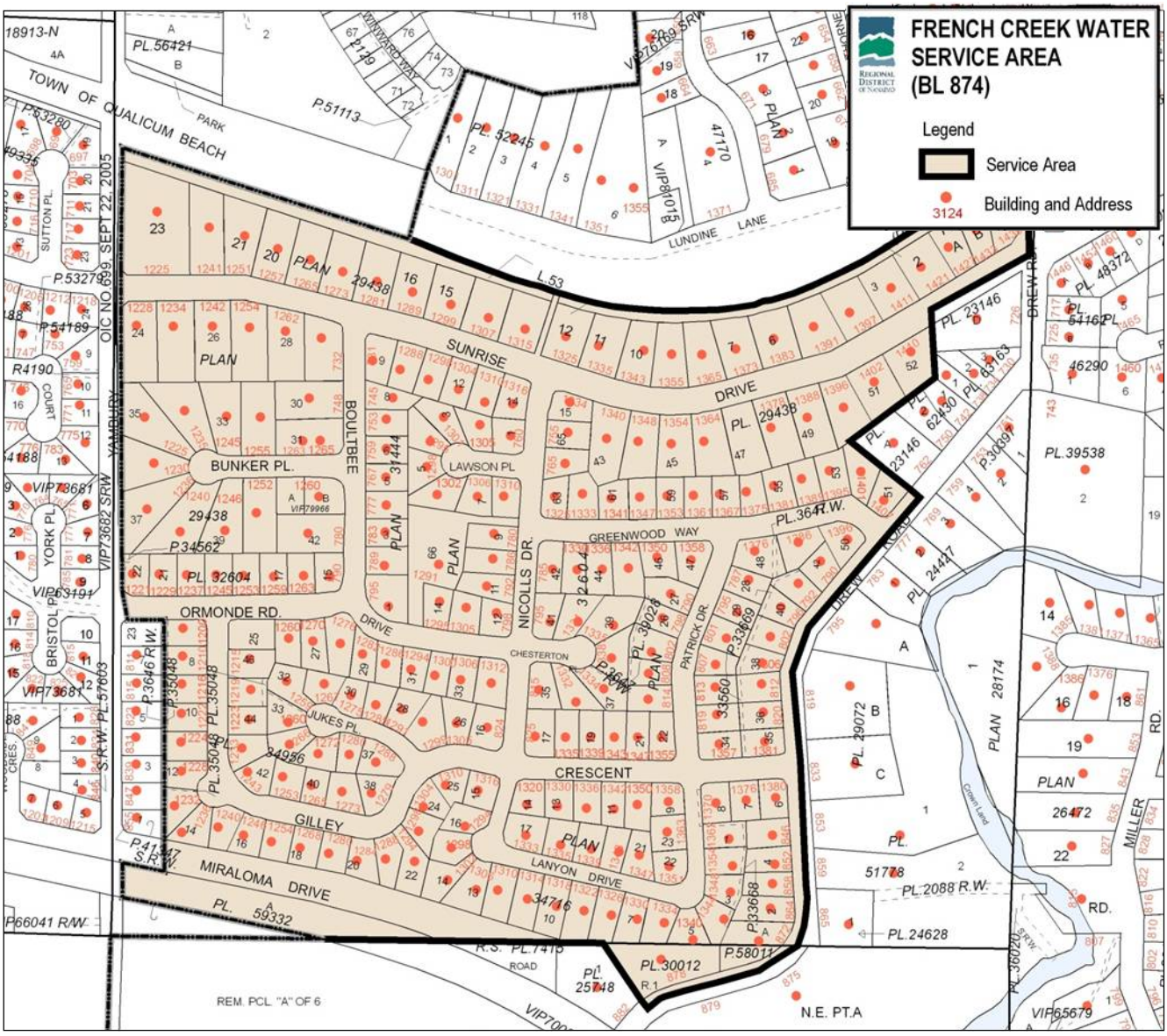
APPENIDX A

MAP OF FRENCH CREEK

WATER SERVICE AREA

FRENCH CREEK

WATER SERVICE AREA



APPENDIX B

WATER QUALITY TESTING RESULTS

French Creek Distribution Water Analysis Results

Location: 1228 Sunrise Drive

Canadian Drinking Water Guidelines Package
*samples collected at French Creek Pumphouse

MAC=Maximum Acceptable Concentration IMAC=Interim Maximum Acceptable Concentration AO=Aesthetic Objective
CDWG=Canadian Drinking Water Guidelines BCAWQG=British Columbia Approved Water Quality Guidelines
Red font indicates non-compliance with Canadian Drinking Water Guidelines

Parameters	Water Quality Guidelines				17-Nov	29-Nov	28-Jun	06-Mar	23-Apr		20-Apr	17-May	22-May	27-May	13-May	19-May
	Units	CDWG	BCAWQG		1999*	2000	2001*	2002*	2003	2004	2005	2006	2007	2008	2009	2010
Color	CU	15	</=15	AO	25	5	37	7	22	39	60	20	7	17	6	14
Conductivity	uS		700	MAC	279	309	324	281	326	327	311	309	309	312	330	333
TDS	mg/L	500	</=500	AO	172	190	167	153	173	200	150	193	182	208	246	206
Hardness (CaCO3)	mg/L	80-100	</=500	AO	103	115.2	124.9	136	116.3	120	120	140	140	130	200	140
pH	pH units	6.5-8.5	6.5-8.5	AO	8.03	7.83	7.72	7.95	7.9	7.8	7.8	8.1	8	8.15	8.2	8.3
Turbidity	NTU's	5	1	MAC	0.96	0.63	0.85	0.22	0.69	1.3	2.3	0.9	0.6	0.7	0.5	1.1
Alkalinity	mg/L				137	135	134	131	138	130	140	150	130	140	140	150
Chloride	mg/L	250	</=250	AO	5.7	6.07	9.2	5.21	10.91	14.4	13	7.2	7.1	7.6	15.2	9.5
Fluoride	mg/L	1.5	1.5	MAC	0.1	0.14	0.12	0.13	0.09	<1.0	<1.0	0.1	<1.0	<1.0	<1.0	<1.0
Sulfate	mg/L	500	</=500	AO	5.1	5	7.61	12.07	6.74	48.6	5.4	11.3	9.9	10.4	4.9	6
Nitrate	mg/L	10	10	MAC	0.06	5.89	<.004	0.03	0.06	0.2	<0.1	<0.01	<0.1	<0.1	2.7	0.6
Nitrite	mg/L	1			0.05	0.08	<.002	0.03	<0.01	<0.1	<0.1	<0.01	<0.1	<0.1	<0.1	<0.1
T-Aluminum	mg/L		0.2	MAC	0.007	0.04	0.017	<.009	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	0.008
T-Antimony	mg/L		0.006	MAC			<.006	<.006	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002
T-Arsenic	mg/L	0.025	0.025	IMAC		<.01	<.01	<.01	0.0006	0.0007	0.0009	0.0002	<0.0002	<0.001	<0.0002	0.0002
T-Barium	mg/L	1.0	1	MAC	0.008	0.01	0.0139	0.0159	0.01	0.015	0.014	0.015	0.016	0.01	0.011	0.016
T-Boron	mg/L	5.0	5	MAC		0.041	0.036	0.022	0.037	0.039	0.034	0.018	0.023	<0.02	0.013	0.024
T-Cadmium	mg/L	0.005				<.0006	<.0006	<.0006	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.0003	<0.00001	0.00007
T-Calcium	mg/L					28	29.9	33.3	27.1	28.9	28.2	33.5	34.3	30.6	49.1	33.6
T-Chromium	mg/L	0.05	0.05	MAC		<.0009	<.0009	<.0009	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.003	0.0006	<0.0004
T-Copper	mg/L	1.0	</=1	MAC		<.001	0.002	<.001	0.004	0.002	0.001	0.002	0.002	<0.005	0.049	0.002
T-Iron	mg/L	0.3	</=0.3	AO	0.2	0.41	0.461	0.203	0.4	0.5	1	0.1	0.1	0.12	0.03	0.094
T-Lead	mg/L	0.01	0.01	MAC		<.002	0.002	<.002	0.0002	0.0002	0.0002	<0.0001	0.0002	<0.0005	0.0008	0.0003
T-Lithium	mg/L														0.001	<0.001
T-Magnesium	mg/L		</=700	AO	10.4	11	12.2	12.8	11.8	11.9	11.7	12.6	13.6	12.3	17.7	13.4
T-Manganese	mg/L	0.05	</=0.05	AO	0.13	0.17	0.213	0.152	0.174	0.385	0.34	0.124	0.136	0.13	0.0013	0.132
T-Mercury	mg/L	0.001	0.001	MAC		<.0001	<.0001	<.0001	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.01	<0.01	<0.01
T-Nickel	mg/L														0.001	<0.001
T-Phosphorus	mg/L														0.012	0.302
T-Potassium	mg/L					<4	2.2	204	2.4	2.5	2	2.4	2.3	2.2	1.1	2.6
T-Selium	mg/L	0.01	0.01	MAC		<.004	0.005	<.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.003	<0.0006	<0.0006
T-Silver	mg/L														<0.00001	0.00004
T-Sodium	mg/L	200	</=200	AO		15	20.2	11.9	19.6	21	20	12.5	12.9	13.4	7.72	13.7
T-Uranium	mg/L	0.1	0.1	MAC		<.06	<.06	<.02	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0004	<0.0004
T-Zinc	mg/L	5	<5	AO		0.0069	0.0027	0.0034	0.005	0.012	0.009	0.004	0.011	<0.005	0.118	0.003
Total Coliform	cfu/100ml	<1	<1	cfu/100ml	<1	<1	<1	n/a	n/a	<1	<1	<1	<1	<1.0	<1.0	<1.0
Fecal Coliform	cfu/100ml	<1	<1	cfu/100ml	<1	<1	<1	n/a	n/a	<1	<1	<1	<1			
E.coli	cfu/100ml	<1	<1	cfu/100ml								<1	<1	<1.0	<1.0	<1.0
Tannins & Lignins					n/a	n/a	0.28	<.1	n/a	n/a	n/a	n/a	n/a			
Trihalomethanes	mg/l	0.1		MAC	n/a	n/a	3.1	n/a	n/a	n/a	n/a	0.009	n/a			

REGIONAL DISTRICT OF NANAIMO

French Creek Raw Water Analysis Results

French Creek Well #2: Behind 1221 Ormonde Road

Canadian Drinking Water Guidelines Package

MAC=Maximum Acceptable Concentration IMAC= Interim Maximum Acceptable Concentration AO= Asthetic Objective
CDWG=Canadian Drinking Water Guidelines BCAWQG=British Columbia Approved Water Quality Guidelines
Red font indicates non-compliance with Canadian Drinking Water Guidelines
* raw well water

Parameter	Units	CDWG	BCAWQG		2000	2001	16-Oct 2002	22-Oct 2003	26-Oct 2004	19-Oct 2005	24-Oct 2006	24-Oct 2007	8-Oct 2008	14-Oct 2009	27-Oct 2010
Total Ammonia (N)	mg/L														0.25
Color	CU	15	</=15	AO	<5		4	<5	<5	6	<5	<5	<5	13	<5
Conductivity	µS		700	MAC	267		289	285	294	283	285	280	315	299	282
Total Dissolved Solids	mg/L	500	</=500	AO	179		160	180	180	164	6	247	186	198	168
Hardness (CaCO3)	mg/L	80-100	</=500	AO	**132.7**		**124.2**	**134.0**	**140.0**	**130.0**	**63.0**	**130.0**	**150.0**	**150**	**120.0**
pH	pH units	6.5-8.5	6.5-8.5	AO	8.11		8.14	7.90	8.10	8.10	8.20	8.08	7.90	8.2	8.20
Turbidity	NTU's	5	1	MAC	0.29		0.11	0.54	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5
Alkalinity	mg/L				126		132	130	140	140	130	130	120	130	130
Chloride	mg/L	250	</=250	AO	2.7		2.58	3.3	3.3	3.1	3.3	3.7	5	3.8	3.2
Fluoride	mg/L	1.5	1.5	MAC	0.17		0.13	<0.60	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0
Sulfate	mg/L	500	</=500	AO	14.89		12.88	1.70	16.50	11.80	9.60	9.70	21.30	19.1	13.40
Nitrate (N)	mg/L	10	10	MAC	<0.002		<0.01	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.1	<0.1
Nitrite (N)	mg/L	1			<0.006		<0.01	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.1	<0.1
T-Aluminum	mg/L		0.2	MAC	0.015		0.009	<0.005	0.010	0.046	<0.01	0.009	0.013	<0.005	<0.005
T-Antimony	mg/L		0.006	MAC			<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0002
T-Arsenic	mg/L	0.025	0.025	IMAC	<0.01		<0.0002	<0.0002	<0.0002	0.0002	<0.0004	0.0002	<0.0002	0.0003	<0.0002
T- Barium	mg/L	1.0	1	MAC	0.0147		0.015	0.015	0.016	0.015	0.020	0.016	0.018	0.016	0.014
T-Boron	mg/L	5.0	5	MAC	<0.002		1.015	0.018	0.022	0.020	0.022	0.021	0.021	0.019	0.020
T-Cadmium	mg/L	0.005			<0.0006		<0.00001	<0.00001	<0.00001	<0.00001	<0.00002	0.00001	<0.00001	<0.00001	<0.00001
T-Calcium	mg/L				32.7		29.8	32.1	34.2	32.2	15.4	30.8	36.2	35.8	30.7
T-Chromium	mg/L	0.05	0.05	MAC	<0.0009		<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0004	<0.0004	<0.0004
T-Copper	mg/L	1.0	</=1	MAC	0.002		0.010	0.002	0.002	0.015	<0.002	0.005	0.005	0.001	0.002
T-Iron	mg/L	0.3	</=0.3	AO	0.142		<0.1	0.2	0.1	0.1	<0.1	0.1	0.1	0.124	0.072
T-Lead	mg/L	0.01	0.01	MAC	<0.002		0.0005	0.0001	0.0001	0.0018	<0.0002	0.0012	0.0003	<0.0001	0.0002
T-Lithium	mg/L													<0.001	<0.001
T-Magnesium	mg/L		</=700	AO	12.4		12.1	13.0	13.7	11.8	6.0	11.7	14.0	13.8	11.6
T-Manganese	mg/L	0.05	</=0.05	AO	**0.132**		**0.126**	**0.125**	**0.132**	**0.130**	**0.060**	**0.119**	**0.137**	**0.127**	**0.125**
T-Mercury	mg/L	0.001	0.001	MAC	<0.0001		<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<0.01	<0.01	<0.00001
T-Nickel	mg/L													0.001	<0.001
T-Phosphorus	mg/L													0.304	0.291
T-Potassium	mg/L				2.1		2.0	2.2	2.3	2.3	1.1	2.2	2.3	2.3	2.2
T-Selenium	mg/L	0.01	0.01	MAC	<0.004		<0.0002	<0.0002	<0.0002	<0.0002	<0.0004	<0.0002	<0.0006	<0.0006	<0.0006
T-Silver	mg/L													<0.00001	<0.00001
T-Sodium	mg/L	200	</=200	AO	8.3		7.90	7.90	8.60	9.00	4.50	8.80	8.69	9.41	16.00
T-Uranium	mg/L	0.1	0.1	MAC	<0.06		<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0004	<0.0004	<0.0004
T-Zinc	mg/L	5	<5	AO	0.0367		0.031	0.021	0.029	0.026	0.007	0.074	0.016	0.013	0.011
Total Coliform	cfu/100ml	<1	<1	cfu/100ml	***163**				***50**	<1	<1	<1	<1	<1	<1.0
Fecal Coliform	cfu/100ml	<1	<1	cfu/100ml	<1				<1	<1	<1	<1	<1		
E.coli	cfu/100ml	<1	<1	cfu/100ml							<1	<1	<1	<1	<1.0

*Resampled and had <1 for all Coliforms

Note: Total coliforms can be an indicator of adverse water quality if the result in the re-sample is confirmed positive. (United States Environmental Protection Agency (EPA), 2008) RDN Water samples are always tested for Fecal coliform bacteria at the same time as Total coliforms to rule out the presence of harmful pathogens.

REGIONAL DISTRICT OF NANAIMO

French Creek Well Water Analysis Results

French Creek Well #4: SE of 785 York Place

Canadian Drinking Water Guidelines Package

water SMART zero waste

MAC=Maximum Acceptable Concentration IMAC= Interim Maximum Acceptable Concentration AO= Asthetic Objective.
CDWG=Canadian Drinking Water Guidelines BCAWQG=British Columbia Approved Water Quality Guidelines
Red font indicates non-compliance with Canadian Drinking Water Guidelines
* raw well water

Parameter	Units	CDWG	BCAWQG		2000	2001	16-Oct 2002	22-Oct 2003	26-Oct 2004	19-Oct 2005	24-Oct 2006	24-Oct 2007	8-Oct 2008	14-Oct 2009	27-Oct 2010
Total Ammonia (N)	mg/L														0.38
Color	CU	15	</=15	AO	<5		4	<5	<5	8	<5	5	<5	14	6
Conductivity	µS		700	MAC	271		300	310	310	304	295	297	317	289	288
Total Dissolved Solids	mg/L	500	</=500	AO	182		173	173	190	146	200	193	152	182	168
Hardness (CaCO3)	mg/L	80-100	</=500	AO	**135.9**		**130**	**140**	**150**	**136**	**130**	**130**	**150**	**130**	**120**
pH	pH units	6.5-8.5	6.5-8.5	AO	8.06		8.18	7.94	7.8	8.1	8.2	8.15	7.9	8.2	8.1
Turbidity	NTU's	5	1	MAC	<0.05		0.1	0.56	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Alkalinity	mg/L				134		143	150	150	150	140	130	150	130	130
Chloride	mg/L	250	</=250	AO	2.52		2.49	3.2	3.1	3.5	3.9	3.4	5.2	4.3	3.9
Fluoride	mg/L	1.5	1.5	MAC	0.12		0.13	<0.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Sulfate	mg/L	500	</=500	AO	7.26		13.62	12	13.6	13.2	11.1	9.9	21.3	12	10.7
Nitrate (N)	mg/L	10	10	MAC	<0.002		<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrite (N)	mg/L	1			<0.006		<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
T-Aluminum	mg/L		0.2	MAC	0.015		0.005	<0.005	0.006	<0.005	0.006	<0.005	0.01	<0.005	<0.005
T-Antimony	mg/L		0.006	MAC			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
T-Arsenic	mg/L	0.025	0.025	IMAC	<0.01		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002
T- Barium	mg/L	1.0	1	MAC	0.0129		0.013	0.014	0.014	0.014	0.013	0.014	0.017	0.012	0.012
T-Boron	mg/L	5.0	5	MAC	<0.002		0.016	0.021	0.024	0.023	0.024	0.024	0.019	0.021	0.021
T-Cadmium	mg/L	0.005			<0.0006		<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
T-Calcium	mg/L				33		30.8	32.9	34.8	33.2	30.8	31.6	36.1	31.7	29.9
T-Chromium	mg/L	0.05	0.05	MAC	<0.0009		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.003	<0.0004	<0.0004	0.0006
T-Copper	mg/L	1.0	</=1	MAC	<0.001		0.001	<0.001	0.004	<0.001	0.002	0.002	0.002	<0.001	<0.001
T-Iron	mg/L	0.3	</=0.3	AO	0.134		0.1	0.1	0.1	0.1	0.1	0.2	0.08	0.114	0.108
T-Lead	mg/L	0.01	0.01	MAC	<0.002		<0.0001	0.0001	0.0004	0.0002	0.0008	0.0008	0.0002	0.0001	0.0002
T-Lithium	mg/L													<0.001	<0.001
T-Magnesium	mg/L		</=700	AO	13		12.9	14	14.6	12.8	12.6	12.5	13.9	13.1	11.8
T-Manganese	mg/L	0.05	</=0.05	AO	**0.15**		**0.147**	**0.142**	**0.159**	**0.15**	**0.14**	**0.143**	**0.129**	**0.134**	**0.142**
T-Mercury	mg/L	0.001	0.001	MAC	<0.0001		<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<0.01	<0.01	<0.00001
T-Nickel	mg/L													0.001	<0.001
T-Phosphorus	mg/L													0.381	0.354
T-Potassium	mg/L				2.3		2.3	2.4	2.6	2.5	2.5	2.4	2.2	2.4	2.3
T-Selenium	mg/L	0.01	0.01	MAC	<0.004		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0006	<0.0006
T-Silver	mg/L													<0.00001	<0.00001
T-Sodium	mg/L	200	</=200	AO	10.2		9.4	9.6	10.2	10.6	10.2	10	8.57	10.3	16.9
T-Uranium	mg/L	0.1	0.1	MAC	<0.06		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0004	<0.0004	<0.0004
T-Zinc	mg/L	5	<5	AO	0.0107		0.005	0.014	0.015	0.015	0.009	0.043	0.008	0.009	0.02
Total Coliform	cfu/100ml	<1	<1	cfu/100ml	***39**				<1	<1	<1	<1	<1	<1	<1.0
Fecal Coliform	cfu/100ml	<1	<1	cfu/100ml	<1				<1	<1	<1	<1	<1		
E.coli	cfu/100ml	<1	<1	cfu/100ml							<1	<1	<1	<1	<1.0

*Resampled and had <1 for all Coliforms

Note: Total coliforms can be an indicator of adverse water quality if the result in the re-sample is confirmed positive. (United States Environmental Protection Agency (EPA), 2008) RDN Water samples are always tested for Fecal coliform bacteria at the same time as Total coliforms to rule out the presence of harmful pathogens.

Regional District of Nanaimo - Water Services Department

French Creek Water Analysis - 2010 Monthly Report

		Health Department		In-House									
Date	Sample Location (Address)	Fecal Coliform *	Total Coliform *	Fecal Coliform *	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)
5-Jan-10	1228 Sunrise Dr	0	0	0	0	10	8.1	1.02	145	0.1	306	0.17	0.244
12-Jan-10	1334 Lanyon	0	0	0	0	9	7.3	0.13	143	0.1	302		
20-Jan-10	1228 Sunrise Dr			0	0	10		0.37	141	0.1	298		
26-Jan-10	1334 Lanyon			0	0	8	6.8	0.59	145	0.1	305		
	Average	0	0	0	0	9.3	7.4	0.53	143.5	0.1	302.8	0.17	0.244
	Maximum	0	0	0	0	10	8.1	1.02	145	0.1	306	0.17	0.244
	Minimum	0	0	0	0	8	6.8	0.13	141	0.1	298	0.17	0.244

Red font indicates non-compliance with Canadian Drinking Water Guidelines

Aesthetic Objective for Iron is • 0.3 mg/L **Aesthetic Objective for Manganese is • 0.05mg/L**

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

Yellow Column Coliform tests are completed by Health Department

Blue column tests are completed by RDN

Comments:

Iron and manganese are found naturally in drinking water. Levels found in these samples are not a health concern.

Regional District of Nanaimo - Water Services Department

French Creek Water Analysis - 2010 Monthly Report

		Health Department		In-House									
Date	Sample Location (Address)	Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS)	Total Iron (mg/L)	Manganese (mg/L)
9-Feb-10	1228 Sunrise Dr	0	0	0	0	10	6.9	0.15	134	0.1	282	0.08	0.222
17-Feb-10	1334 Lanyon Dr	0	0	0	0	8	6.8	0.08	135	0.1	285		
23-Feb-10	1228 Sunrise Dr			0	0	9	7.3	0.45	144	0.1	303		
	Average	0	0	0	0	9.0	7.0	0.23	137.7	0.1	290.0	0.08	0.222
	Maximum	0	0	0	0	10	7.3	0.45	144	0.1	303	0.08	0.222
	Minimum	0	0	0	0	8	6.8	0.08	134	0.1	282	0.08	0.222

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Aesthetic Objective for Iron is • 0.3 mg/L **Aesthetic Objective for Manganese is • 0.05mg/L**

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

Yellow Column Coliform tests are completed by Health Department

Blue column tests are completed by RDN

Comments:

Iron and manganese are found naturally in drinking water. Levels found in these samples are not a health concern.

Regional District of Nanaimo - Water Services Department

French Creek Water Analysis - 2010 Monthly Report

		Health Department		In-House									
Date	Sample Location (Address)	Fecal Coliform *	Total Coliform *	Fecal Coliform *	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)
3-Mar-10	1334 Lanyon			0	0	10	7.3	0.46	144	0.1	303	0.11	0.224
9-Mar-10	1228 Sunrise			0	0	10	6.9	0.68	147	0.1	310		
17-Mar-10	1334 Lanyon	0	0	0	0	10	7	0.81	147	0.1	307		
24-Mar-10	1228 Sunrise	0	0	0	0	10	7.2	0.52	144	0.1	303		
29-Mar-10	1334 Lanyon			0	0	9	6.8	0.13	136	0.1	289		
	Average	0	0	0	0	9.8	7.0	0.52	143.6	0.1	302.4	0.11	0.224
	Maximum	0	0	0	0	10	7.3	0.81	147	0.1	310	0.11	0.224
	Minimum	0	0	0	0	9	6.8	0.13	136	0.1	289	0.11	0.224

Red font indicates non-compliance with Canadian Drinking Water Guidelines

Aesthetic Objective for Iron is • 0.3 mg/L **Aesthetic Objective for Manganese is • 0.05mg/L**

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

Yellow Column Coliform tests are completed by Health Department

Blue column tests are completed by RDN

Comments:

Iron and manganese are found naturally in drinking water. Levels found in these samples are not a health concern.

Regional District of Nanaimo - Water Services Department

French Creek Water Analysis - 2010 Monthly Report

		Health Department		In-House									
Date	Sample Location (Address)	Fecal Coliform *	Total Coliform *	Fecal Coliform *	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)
7-Apr-10	1228 Sunrise Dr	0	0	0	0		6.8	0.74	144	0.1	304	0.08	0.173
13-Apr-10	1334 Lanyon Dr	0	0	0	0	9	6.8	0.09	142	0.1	299		
20-Apr-10	1228 Sunrise Dr			0	0	12	7.3	0.24	141	0.1	297		
27-Apr-10	1334 Lanyon Dr			0	0	12	7.3	0.42	143	0.01	302		
	Average	0	0	0	0	11.0	7.1	0.37	142.5	0.1	300.5	0.08	0.173
	Maximum	0	0	0	0	12	7.3	0.74	144	0.1	304	0.08	0.173
	Minimum	0	0	0	0	9	6.8	0.09	141	0.01	297	0.08	0.173

Red font indicates non-compliance with Canadian Drinking Water Guidelines

Aesthetic Objective for Iron is • 0.3 mg/L **Aesthetic Objective for Manganese is • 0.05mg/L**

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

Yellow Column Coliform tests are completed by Health Department

Blue column tests are completed by RDN

Comments:

Iron and manganese are found naturally in drinking water. Levels found in these samples are not a health concern.

Regional District of Nanaimo - Water Services Department

French Creek Water Analysis - 2010 Monthly Report

		Health Department		In-House									
Date	Sample Location (Address)	Fecal Coliform *	Total Coliform *	Fecal Coliform *	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)
3-May-10	1228 Sunrise Dr	0	0	0	0	12	6.9	0.32	150	0.1	317	0.08	0.154
12-May-10	1334 Lanyon	0	0	0	0	12	6.9	0.15	150	0.1	316		
17-May-10	1228 Sunrise Dr			0	0	13	7	0.87	154	0.2	324		
25-May-10	1334 Lanyon			0	0	n/a	7	1.11	158	0.2	332		
	Average	0	0	0	0	12.3	7.0	0.61	153.0	0.2	322.3	0.08	0.154
	Maximum	0	0	0	0	13	7	1.11	158	0.2	332	0.08	0.154
	Minimum	0	0	0	0	12	6.9	0.15	150	0.1	316	0.08	0.154

Red font indicates non-compliance with Canadian Drinking Water Guidelines

Aesthetic Objective for Iron is • 0.3 mg/L **Aesthetic Objective for Manganese is • 0.05mg/L**

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

Yellow Column Coliform tests are completed by Health Department

Blue column tests are completed by RDN

Comments:

Iron and manganese are found naturally in drinking water. Levels found in these samples are not a health concern.

Regional District of Nanaimo - Water Services Department

French Creek Water Analysis - 2010 Monthly Report

		Health Department		In-House									
Date	Sample Location (Address)	Fecal Coliform *	Total Coliform *	Fecal Coliform *	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)
9-Jun-10	1228 Sunrise Dr	0	0	0	0		7.9	0.94	152	0.2	321	0.08	0.378
15-Jun-10	1334 Lanyon Dr	0	0	0	0		7.6	0.1	151	0.1	317		
21-Jun-10	1381 Gilley			0	0		7.8	1.28	154	0.2	325		
29-Jun-10	1228 Sunrise Dr			0	0		6.9	1.26	154	0.2	309		
	Average	0	0	0	0	#DIV/0!	7.6	0.90	152.8	0.2	318.0	0.08	0.378
	Maximum	0	0	0	0	0	7.9	1.28	154	0.2	325	0.08	0.378
	Minimum	0	0	0	0	0	6.9	0.1	151	0.1	309	0.08	0.378

Red font indicates non-compliance with Canadian Drinking Water Guidelines

Aesthetic Objective for Iron is • 0.3 mg/L **Aesthetic Objective for Manganese is • 0.05mg/L**

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

Yellow Column Coliform tests are completed by Health Department

Blue column tests are completed by RDN

Comments:

Iron and manganese are found naturally in drinking water. Levels found in these samples are not a health concern.

Regional District of Nanaimo - Water Services Department

French Creek Water Analysis - 2010 Monthly Report

		Health Department		In-House									
Date	Sample Location (Address)	Fecal Coliform *	Total Coliform *	Fecal Coliform *	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)
6-Jul-10	1334 Lanyon	0	0	0	0		7.6	0.86	153	0.2	321	0.08	0.131
13-Jul-10	1381 Gilley			0	0		7.4	0.54	151	0.1	318		
21-Jul-10	1228 Sunrise	0	0	0	0		7.7	0.66	146	0.1	306		
27-Jul-10	1381 Gilley			0	0		7.6	0.24	148	0.1	309		
	Average	0	0	0	0	#DIV/0!	7.6	0.58	149.5	0.1	313.5	0.08	0.131
	Maximum	0	0	0	0	0	7.7	0.86	153	0.2	321	0.08	0.131
	Minimum	0	0	0	0	0	7.4	0.24	146	0.1	306	0.08	0.131

Red font indicates non-compliance with Canadian Drinking Water Guidelines

Aesthetic Objective for Iron is • 0.3 mg/L **Aesthetic Objective for Manganese is • 0.05mg/L**

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

Yellow Column Coliform tests are completed by Health Department

Blue column tests are completed by RDN

Comments:

Iron and manganese are found naturally in drinking water. Levels found in these samples are not a health concern.

Regional District of Nanaimo - Water Services Department

French Creek Water Analysis - 2010 Monthly Report

		Health Department		In-House									
Date	Sample Location (Address)	Fecal Coliform *	Total Coliform *	Fecal Coliform *	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)
4-Aug-10	1334 Layon	T	T	0	0		7.9	0.16	146	0.1	308	0.06	0.101
11-Aug-10	1381 Gilley			0	BG	17	7.7	0.15	151	0.2	319		
12-Aug-10	1381 Gilley			0	0								
16-Aug-10	1228 Sunrise	T	T	0	0		7.7	0.06	144	0.1	301		
23-Aug-10	1334 Layon			0	0	17	7.6	0.12	145	0.1	305		
31-Aug-10	1228 Sunrise			0	0	13	8	0.3	147	0.1	309		
	Average	#DIV/0!	#DIV/0!	0	0	15.7	7.8	0.16	146.6	0.1	308.4	0.06	0.101
	Maximum	0	0	0	0	17	8	0.3	151	0.2	319	0.06	0.101
	Minimum	0	0	0	0	13	7.6	0.06	144	0.1	301	0.06	0.101

Red font indicates non-compliance with Canadian Drinking Water Guidelines

T-Transport time was too long to laboratory.

Aesthetic Objective for Iron is • 0.3 mg/L

Aesthetic Objective for Manganese is • 0.05mg/L

BG-Background levels of bacteria.

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

Yellow Column Coliform tests are completed by Health Department

Blue column tests are completed by RDN

Comments:

Iron and manganese are found naturally in drinking water. Levels found in these samples are not a health concern.

Regional District of Nanaimo - Water Services Department

French Creek Water Analysis - 2010 Monthly Report

		Health Department		In-House									
Date	Sample Location (Address)	Fecal Coliform *	Total Coliform *	Fecal Coliform *	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)
8-Sep-10	1334 Lanyon	0	0	0	0	16	7.6	0.13	151	0.1	316	0.05	0.106
15-Sep-10	1228 Sunrise	0	0	0	0	13	7.1	0.35	151	0.1	317		
20-Sep-10	1334 Lanyon			0	0	17	7.7	0.16	148	0.1	311		
28-Sep-10	1381 Gilley			0	0		7.7	0.28	152	0.2	318		
	Average	0	0	0	0	15.3	7.5	0.23	150.5	0.1	315.5	0.05	0.106
	Maximum	0	0	0	0	17	7.7	0.35	152	0.2	318	0.05	0.106
	Minimum	0	0	0	0	13	7.1	0.13	148	0.1	311	0.05	0.106

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Aesthetic Objective for Iron is • 0.3 mg/L **Aesthetic Objective for Manganese is • 0.05mg/L**

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

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Comments:

Iron and manganese are found naturally in drinking water. Levels found in these samples are not a health concern.

Regional District of Nanaimo - Water Services Department

French Creek Water Analysis - 2010 Monthly Report

		Health Department		In-House									
Date	Sample Location (Address)	Fecal Coliform *	Total Coliform *	Fecal Coliform *	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)
5-Oct-10	1334 Lanyon	0	0	0	0		7.6	0.09	151	0.1	316	0.07	0.110
12-Oct-10	1381 Gilley			0	0	12	7.1	0.16	152	0.2	322		
18-Oct-10	1228 Sunrise	0	0	0	0		8.2	0.4	145	0.1	306		
25-Oct-10	1381 Gilley			0	0	13	8.3	0.3	142	0.1	307		
	Average	0	0	0	0	12.5	7.8	0.24	147.5	0.1	312.8	0.07	0.11
	Maximum	0	0	0	0	13	8.3	0.4	152	0.2	322	0.07	0.11
	Minimum	0	0	0	0	12	7.1	0.09	142	0.1	306	0.07	0.11

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Aesthetic Objective for Iron is • 0.3 mg/L **Aesthetic Objective for Manganese is • 0.05mg/L**

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

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Comments:

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Regional District of Nanaimo - Water Services Department

French Creek Water Analysis - 2010 Monthly Report

		Health Department		In-House									
Date	Sample Location (Address)	Fecal Coliform *	Total Coliform *	Fecal Coliform *	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)
2-Nov-10	1228 Sunrise	0	0	0	0	10	7.5	0.28	146	0.1	306	0.08	0.16
8-Nov-10	1334 Lanyon	0	0	0	0	12	7.6	0.07	149	0.1	323		
15-Nov-10	1381 Gilley			0	0	11	8	0.06	147	0.1	313		
24-Nov-10	1334 Lanyon			0	0	10	7.1	0.1	150	0.1	312		
30-Nov-10	1228 Sunrise			0	0	9	8	0.35	144	0.1	304		
	Average	0	0	0	0	10.4	7.6	0.17	147.2	0.1	311.6	0.08	0.16
	Maximum	0	0	0	0	12	8	0.35	150	0.1	323	0.08	0.16
	Minimum	0	0	0	0	9	7.1	0.06	144	0.1	304	0.08	0.16

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Aesthetic Objective for Iron is • 0.3 mg/L **Aesthetic Objective for Manganese is • 0.05mg/L**

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

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Regional District of Nanaimo - Water Services Department

French Creek Water Analysis - 2010 Monthly Report

		Health Department		In-House									
Date	Sample Location (Address)	Fecal Coliform *	Total Coliform *	Fecal Coliform *	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)
7-Dec-10	1334 Lanyon	0	0	0	0	8	7.5	0.11	147	0.1	313	0.07	0.140
14-Dec-10	1228 Sunrise	0	0	0	0		7.4	0.07	148	0.1	313		
21-Dec-10	1334 Lanyon			0	0		7.6	0.36	146	0.1	308		
29-Dec-10	1228 Sunrise			0	0		7.4	0.13	159	0.2	336		
	Average	0	0	0	0	8.0	7.5	0.17	150.0	0.1	317.5	0.07	0.14
	Maximum	0	0	0	0	8	7.6	0.36	159	0.2	336	0.07	0.14
	Minimum	0	0	0	0	8	7.4	0.07	146	0.1	308	0.07	0.14

Red font indicates non-compliance with Canadian Drinking Water Guidelines

Aesthetic Objective for Iron is • 0.3 mg/L **Aesthetic Objective for Manganese is • 0.05mg/L**

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

Yellow Column Coliform tests are completed by Health Department

Blue column tests are completed by RDN

Comments:

Iron and manganese are found naturally in drinking water. Levels found in these samples are not a health concern.

APPENDIX C

EMERGENCY RESPONSE PLAN

EMERGENCY RESPONSE PLAN

REGIONAL DISTRICT OF NANAIMO

WATER SYSTEMS

REVISION DATE - JUNE 2011

REGIONAL DISTRICT OF NANAIMO

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  - Emergency Response and Recovery Actions
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Prime Responsibilities

- Provide safe drinking water.
- Provide potable water for sanitation purposes.
- Provide water for fire suppression.
- Prevent unnecessary loss of stored water.
- Restore the integrity of the entire water system as soon as possible.
- Maintain integrity and quality of supply.

Emergency Response and Recovery Actions

- Analyze the type and severity of the emergency.
- Provide emergency assistance to save lives.
- Reduce the probabilities of additional injuries or damage.
- Provide situational reporting to appropriate agencies as required.
- Perform emergency repairs based on priority demand.
- Return system to normal levels. (recovery)
- Evaluate response and preparedness plan.
- Revise plan as necessary.
- Provide maps, notices, and direction necessary for water recovery.

Communication Check List

In an emergency it will be important to contact the key people shown below. This will help reduce confusion and assist in ensuring any important messaging is done so correctly and quickly.

IF REQUIRED, CONTACT P.E.P or V.I.H.A. BEFORE MAKING THE FOLLOWING CONTACTS AS PER THE EMERGENCY PLANS

RDN Priority Contacts

MANAGER OF WATER SERVICES.....MIKE DONNELLY
(250) 390-6560

G.M. REGIONAL & COMMUNITY UTILITIES.....JOHN FINNIE
(250) 390-6560

COMMUNICATIONS COORDINATOR..... ADRIENNE MERCER
(250) 390-4111

EMERGENCY COORDINATOR.....JANI THOMAS
(250) 713–2057(cell)

Key Communication Options

Management Support

- Contact Electoral Area Director
- Contact the local radio station and provide a brief message if public health and safety are at risk. Follow up with a press release.

Field Staff Support

- Post notices on household front doors.
- Attach warning signs to existing Water Sprinkling Regulation signs in each community.
- Put up roadside signage at the entrance to the community.

Administrative Support

- Provide information message on the RDN web site.
- Review after hours office and voice mail messaging.
- Provide notification to other RDN staff.

Emergency Contact Numbers

Personnel Contacts

Name	*Position*	*Phone*
Dave	**Chief Operator**	**(250) 248-4914**
Randy	**Operator II**	**(250) 248-4914**
Heather	**Operator III**	**(250) 248-4914**
Brian	**Operator III**	**(250) 248-4914**
Brad	**Operator II**	**(250) 248-4914**
Lyndon	**Operator II**	**(250) 248-4914**
Mike Donnelly	**Manager of Water Services**	**(250) 390-6560**
Deb Churko	**Engineering Technologist**	**(250) 390-6560**
Jack Eubank	**Bylaw Officer**	**(250) 390-6560**
John Finnie	**General Manager**	**(250) 390-6560**

Electoral Area Directors

Electoral Area	*Director*	*Phone*	*email address*
A	Joe Burnett	722-2656	quaillanding@shaw.ca
B	Gisele Rudischer	247-8795	giselerudischer@gmail.com
C	Maureen Young	754-5896	Maureen_young@shaw.ca
E	George Holme	468-7237	gholme@shaw.ca
F	Lou Biggemann	248-9078	lwb@shaw.ca
G	Joe Stanhope	248-6401	jstanhope@shaw.ca
H	Dave Bartram	757-9737	dwbartram@shaw.ca

Government Agency Contacts

Ministry of Environment	Nanaimo	(250)	751-3100
Department of Fisheries and Oceans	Nanaimo		754-0230
Provincial Emergency Preparedness (PEP)			
and Dangerous Goods Spills	Victoria		1-800-663-3456
Environmental Health Office	Parksville		947-8222
Bill Wrathall, Env. Health Officer	Parksville		947-8222
Environmental Health Office	Nanaimo		755-6215
Murray Sexton, Public Health Engineer	Nanaimo		755-6293
Medical Health Officer	Nanaimo		740-6988
		or after hours	1-800-204-6166
City of Parksville Public Works	Parksville		248-5412
Town of Qualicum Beach Public Works	Qualicum Beach		752-6921
District of Lantzville	Lantzville		390-4006

Emergency

Hospital	- Nanaimo	754-2141
	- Parksville phone number (Nanaimo hospital)	248-2332
Ambulance	- Parksville	911 or 248-3511
	- Nanaimo	911 or 758-8181
Police	- Parksville	911 or 248-6111
	- Nanaimo	911 or 754-2345
Fire Department	- Parksville	911 or 248-3242
	- Nanoose Bay	911 or 468-7141
	- Qualicum Beach	911 or 752-6921
	- Cedar	911 or 722-3122

Priority Services

BC Hydro (Qualicum Beach number)	**(250)**	**752-8012 *or***
BC Hydro– Derek Leik 755-4734		**1-888-769-3766**
Telus		**811-2323 *or***
Telus- Paul McGrath cell 248-0983		**741-7713 *or* 741-7716**
Teresen Gas		**248-4880**
Shaw Cable (Nanaimo)		**754-5571**
CP Rail		**1-800-716-9132**
French Creek Pollution Control Centre		**248-5794**
Chlorine Manufacturer (Brentagg)		**1-800-661-1830**

Community Contacts

District 69 School Board Office	**248-4241**
Nanoose Bay School	**468-7414**
Nanoose Children's Centre	**468-1784**
Nanoose Place	**468-5339**
Nanoose Post Office	**468-7722**
Naval Base (Department of National Defense)	**756-5021 *or* 468-5004**

Excavation Services

Shoreline Equipment (Doug Penny)	**468-7759 *or***
	755-9502 (cell)
Lundine Backhoe Service (Jim Lundine)	**752-6808 *or***
	951-1508 (cell)

Electrical Contractors

Canem Electric	**468-1887**
East Isle Power (Harvey Sommerfeld)	**821-0415 *or***
	954-7463 (cell)
TC Trades (Tom Frenette)	**756-0077 *or***
	250-668-0078

Other Services

Plumbing Services (Maci Motor – Pump Repair)	**(250)**	**248-4423**
Bulk water supply (BC Water Service)		**954-3628**
Bottled water supply (Water Pure & Simple)		**752-1373**
EPCOR (Parksville)		**951-2460**
Sand and Gravel (Ozero)		**752-1482**
Sand and Gravel (Luissier & Sons)		**468-9994**
Pump Trucks (Action Tank Service)		**248-3833**
Pump Trucks and Toilet Rentals (A-1 Septic)		**248-4438**
Portable Washrooms (Coast Toilet Rentals)		**753-7552**
Running Water Enterprises (Water Hauling Service)		**947-5197**
Woods Water Hauling		**758-2677**
Fyfe's Well and Water Services		**752-4986** ***or*** ***248-0830 (cell)***

Suppliers

Four Star Waterworks (piping)	**954-3546**
Hwy Four Rentals (equipment & pumps)	**248-1100**
Iritex Pumps and Irrigation – (pumps)	**248-7028**
Windsor Plywood (miscellaneous building supplies)	**752-3122**
Albertsons Hardware (miscellaneous building supplies)	**248-6888**
Robinson Rentals	**753-2465**
United Rentals	**758-3911**

Media Services

Adrienne Mercer, RDN Communications Coordinator	**1-877-607-4111** ***or*** ***713-1075 (cell)***
Radio Station (CKWV) Nanaimo and Parksville	**758-1131**
TV Station (CHEK)	**383-2435**
Newspaper (PQ News and The Weekender)	**248-4341**
The Oceanside Star	**954-0600**
Nanaimo Daily News / Harbour City Star	**729-4212**

Emergency Response Plans

Contamination of Source (Spills,Accidents,Vandalism)

Actions:
Shut down pump
Notify Provincial Emergency Program (PEP)
Notify Health Unit
Notify all users if necessary under direction of Health Unit
Contact government agencies for advice and assistance
Contact local media for public service announcements
Post signs and deliver notices to homes and businesses. (See attached samples)
Arrange alternate source if necessary – i.e., bottled or bulk water
Advise RDN supervisory personnel

Contacts:
Local Health Unit (Environmental Health Department)
Provincial Emergency Preparedness, Police, Ministry of Environment
All schools and community centres – *see "Priority Contacts" List*
RCMP if there has been vandalism

Loss of Source – Loss Of Reservoir or Supply Lines

Actions:
Ensure pumps are shut off. (To protect pump)
Notify all users
Contact government agencies for advice and assistance
Arrange alternate source – i.e., bottled water, bulk water, storage tank
Advise RDN supervisory personnel if necessary

Contacts:
Local Health Unit (Environmental Health Department) and Ministry of Environment

Flood Conditions

Actions:
Notify all users regarding the potential for water contamination, loss of pump, power, etc, Users should be advised to store some drinking water in advance, and to boil any suspect water for two minutes or disinfect with chlorine when flood conditions exist
Phone government contacts
Contact local media for public service announcement when customers can not be reached by phone
Post signs or deliver notices if necessary. (See attached samples)
Arrange alternate source if possible – i.e. bottled water, bulk hauler or storage tank
Advise RDN supervisory personnel

Contacts:
Local Health Unit (Environment Health Department), Provincial Emergency Preparedness, and Ministry of Environment

Broken Water Main

Actions:
Shut pump off when backflow conditions have been prevented
Call for repairs as required – i.e. excavator, backhoe
Notify all users of interruption of service
Advise local Public Health office
Arrange alternate source if necessary
Advise RDN supervisory personnel

Contacts: Advise local Public Health office. (Environmental Health Department)

Chlorination Failure

Actions:
Advise local Public Health Office
Shut off well pumps. Monitor reservoir levels.
Notify all users to boil water for two minutes or take other disinfection procedures in accordance with recommendations of local health officials
Post signs or deliver notices if necessary. (See attached samples)
Arrange chlorinator repairs
Advise RDN supervisory personnel

Contacts:
Local Health Unit (Environmental Health Officer)
Chlorinator manufacturer

Pump Failure

Actions:
Notify all users of interruption of service
Call for repairs: pump manufacturer if necessary
Advise local Public Health office (if interruption not short term)
Arrange alternate source if necessary – bottled or bulk water, etc.
Advise RDN supervisory personnel if necessary

Contacts: Local Health Unit (Environmental Health Department)

Power Failure

Actions:
Call BC Hydro. Find out when power will be restored
Start back-up generator or arrange to get one
Notify all users about interruption of service if backup not capable of maintaining supply
Post signs or deliver notices if necessary. (See attached samples)
Advise local Public Health Office
Arrange alternate source if necessary – bottled or bulk water, etc.
Advise RDN supervisory personnel

Contacts: Local Health Unit (Environmental Health Department)

Backflow or Back Siphonage

Actions:
Advise Medical Health Officer at local Health unit
Notify all users to boil water for two minutes or take other disinfection procedures in accordance with recommendations of local health officials
Purge and disinfect lines as directed, after corrections have been made
Post signs or deliver notices if necessary. (See attached samples)
Advise RDN supervisory personnel

Contacts: Local Health Unit (Environmental Health Department)

Bacteria Count (RDN Lab)

Actions:
Advise Medical Health Officer at local Health unit
Follow procedures in accordance with recommendations of local health officials
Post signs or deliver notices if necessary. (See attached samples)
Advise RDN supervisory personnel

Contacts: Local Health Unit (Environment Health Department)

APPENDICES

Boil Water Advisory Notice 10
Boil Water Order Notice 11
Unfit for Drinking Notice 12
Service Interruption Notice 13

Sample

NOTICE

Boil Water Advisory

Effective date: _____

Please note that all water used for domestic purposes (drinking, cooking, etc.) should be boiled before consumption. The boiling should be at a rolling boil and for a minimum of one minute.

RDN Water Services staff are continually monitoring the water supply system and will provide updates as they become available.

Watch for information updates at www.rdn.bc.ca (WaterSmart) and listen to your local radio station for more information.

This advisory will be in effect until further notice.

For further information contact the

Regional District of Nanaimo at:
1-877-607-4111 or 1-250-390-4111
Water Services Field Office: 1-250-248-4914

Sample

NOTICE

Boil Water Order

Effective date: _____

Please note that all water used for domestic purposes (drinking, cooking, etc.) should be boiled before consumption. The boiling should be at a rolling boil and for a minimum of two minutes.

RDN Water Services staff are continually monitoring the water supply system and will provide updates as they become available.

Watch for information updates at www.rdn.bc.ca (WaterSmart) and listen to your local radio station for more information.

This order will be in effect until further notice.

For further information contact the

Regional District of Nanaimo at:
1-877-607-4111 or 1-250-390-4111
Water Services Field Office: 1-250-248-4914

WARNING

Sample

This Water is Considered Unfit for Drinking or Domestic Use

Effective date: _____

For further information contact the

Regional District of Nanaimo at:
1-877-607-4111 or 1-250-390-4111
Water Services Field Office: 1-250-248-4914

Sample

NOTICE

Water Supply Service Interruption

Effective date: _____

Please be advised that your water service may be interrupted or off for periods during the day.

When service is resumed, the water may be discoloured. This is due to disturbed deposits in the pipes and is not harmful.

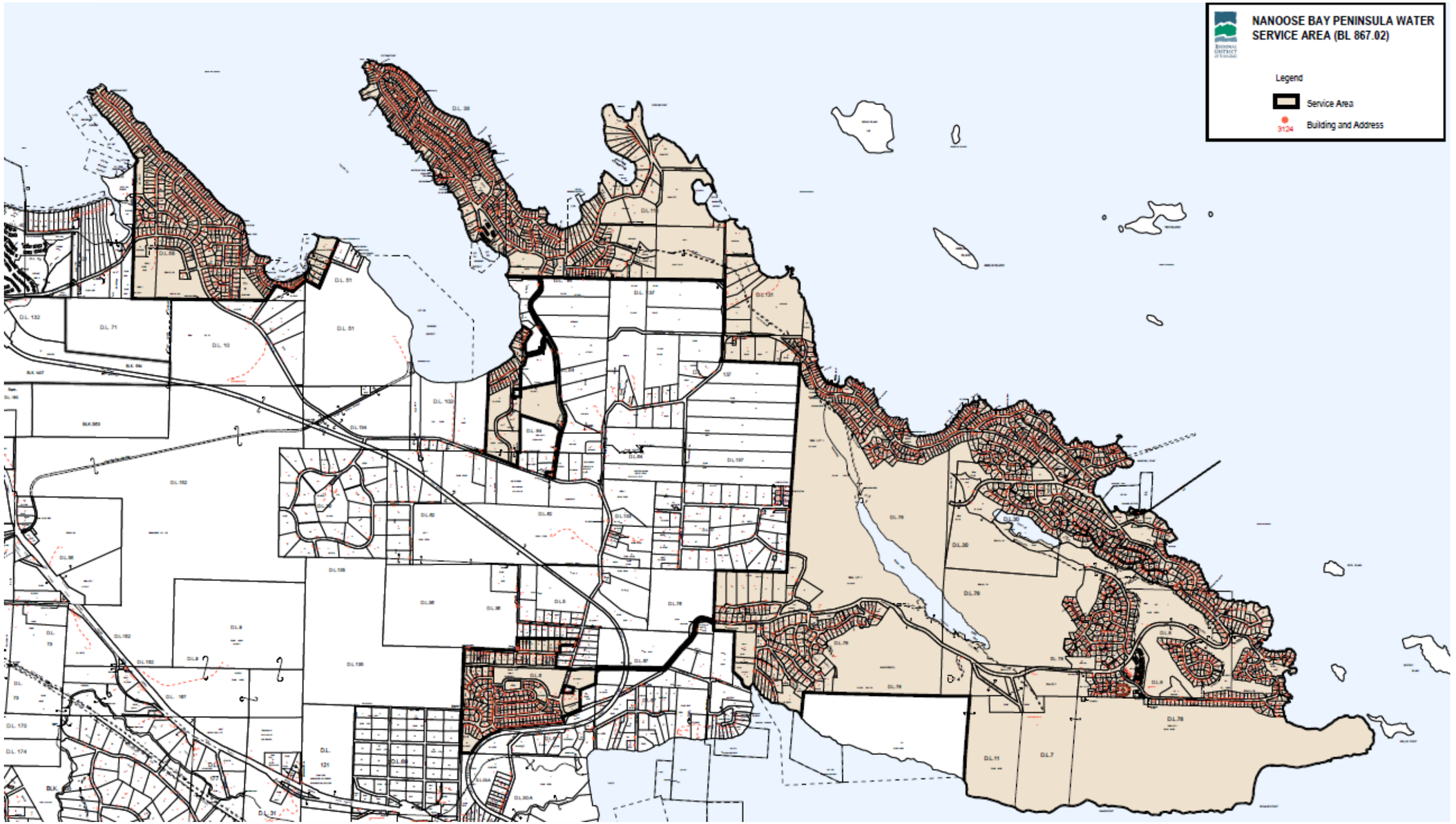
This advisory will be in effect until further notice.

For further information contact the

Regional District of Nanaimo at:
1-877-607-4111 or 1-250-390-4111
Water Services Field Office: 1-250-248-4914

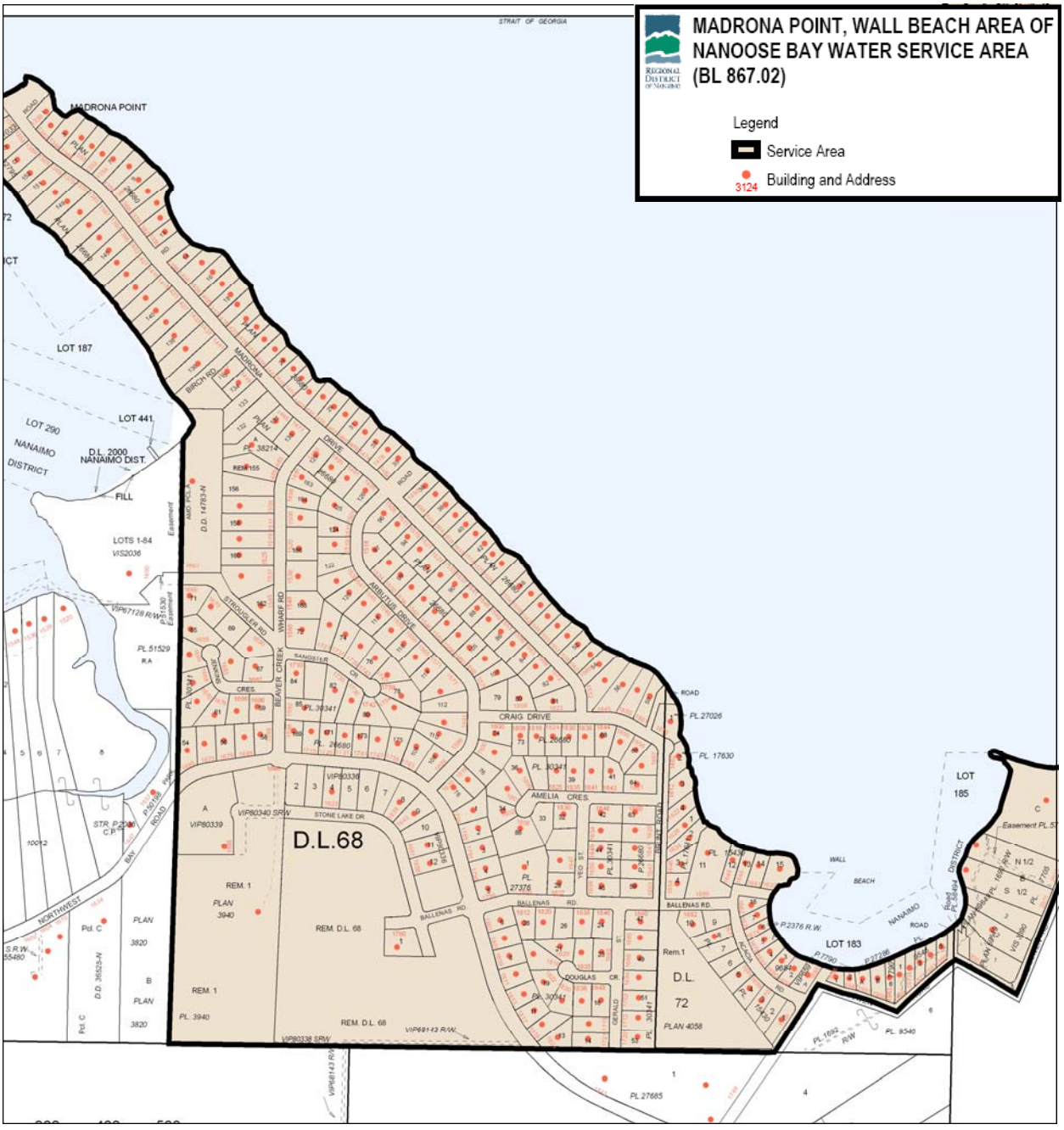
MAPS
Water Service Areas

Nanoose Bay Peninsula Water Service Area		Map 1
Neighbourhoods:	Madrona/Wall Beach	Map 2
	Fairwinds	Map 3
	Arbutus Park	Map 4
	West Bay	Map 5
	Driftwood	Map 6
French Creek Water Service Area		Map 7
Surfside Water Service Area		Map 8
San Pareil Water Service Area		Map 9
Englishman River Water Service Area		Map 10
Melrose Water Service Area		Map 11
Decourcey Water Service Area		Map 12
Whiskey Creek Water Service Area		Map 13



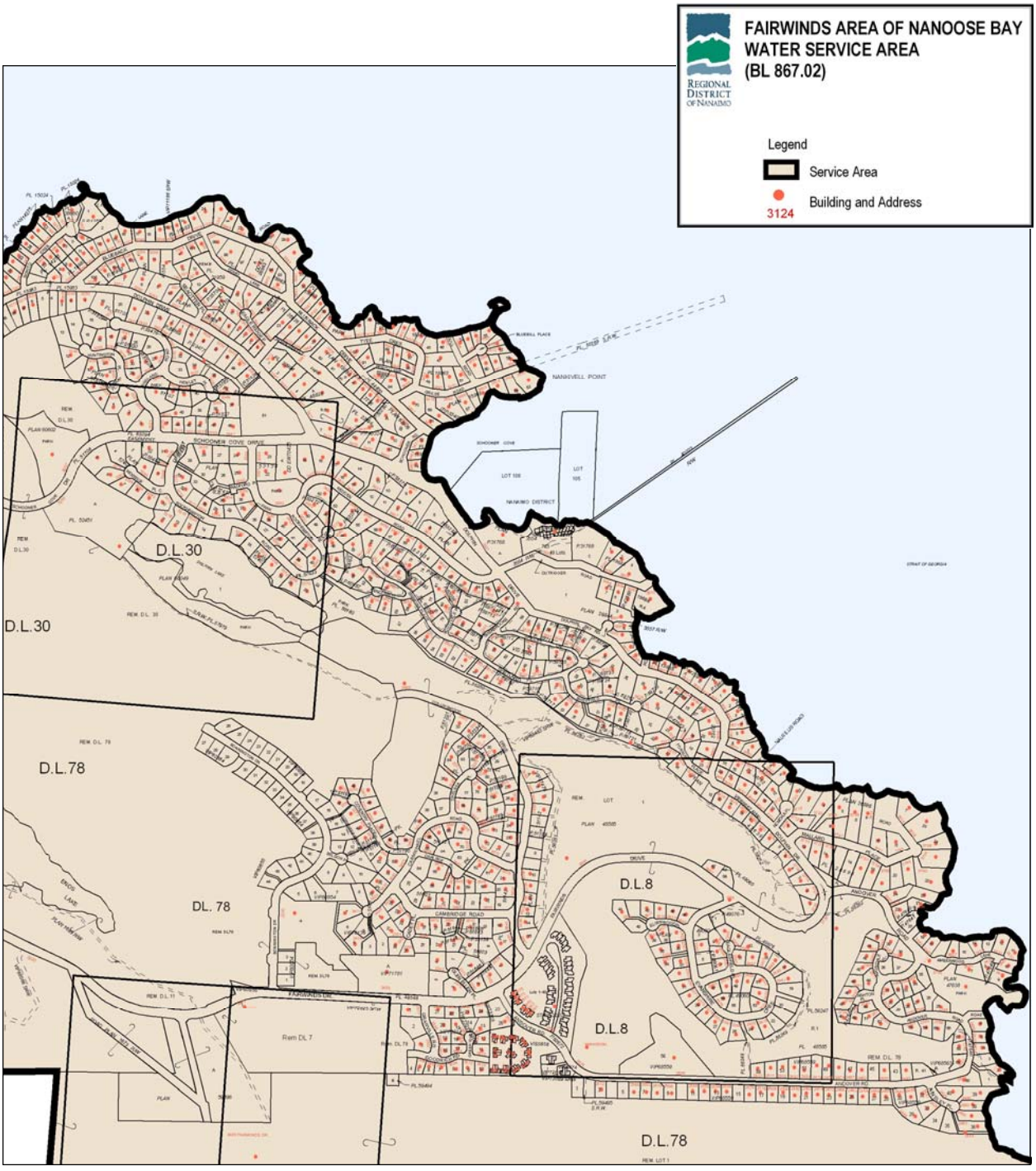
MAP 1 NANOOSE BAY PENINSULA

MAP 2 MADRONA / WALL BEACH



REGIONAL DISTRICT OF NANAIMO

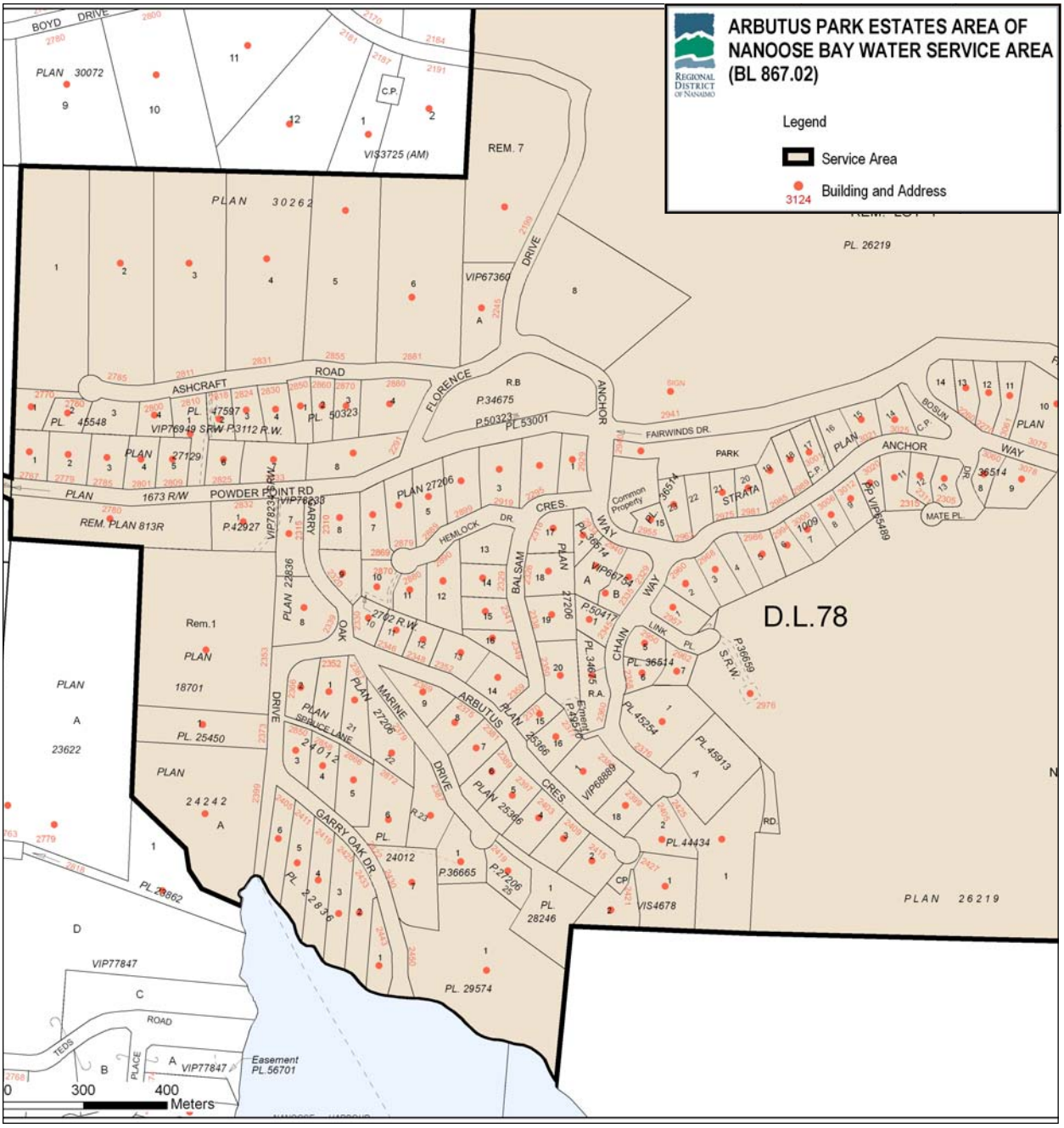
EMERGENCY RESPONSE PLAN
WATER SYSTEMS



MAP 3 FAIRWINDS

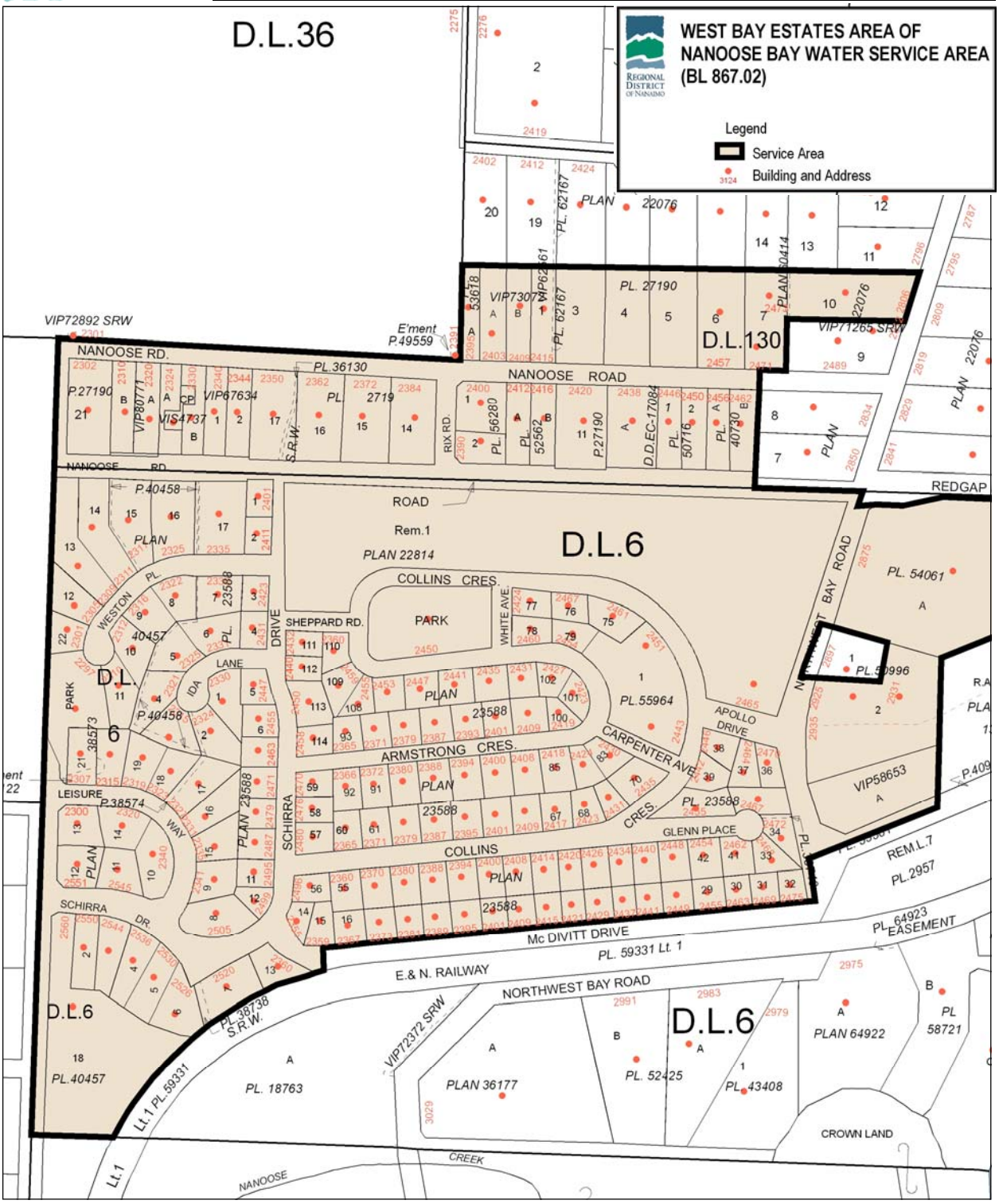
waterSMART zero waste

MAP 4 ARBUTUS PARK



REGIONAL DISTRICT OF NANAIMO

EMERGENCY RESPONSE PLAN
WATER SYSTEMS

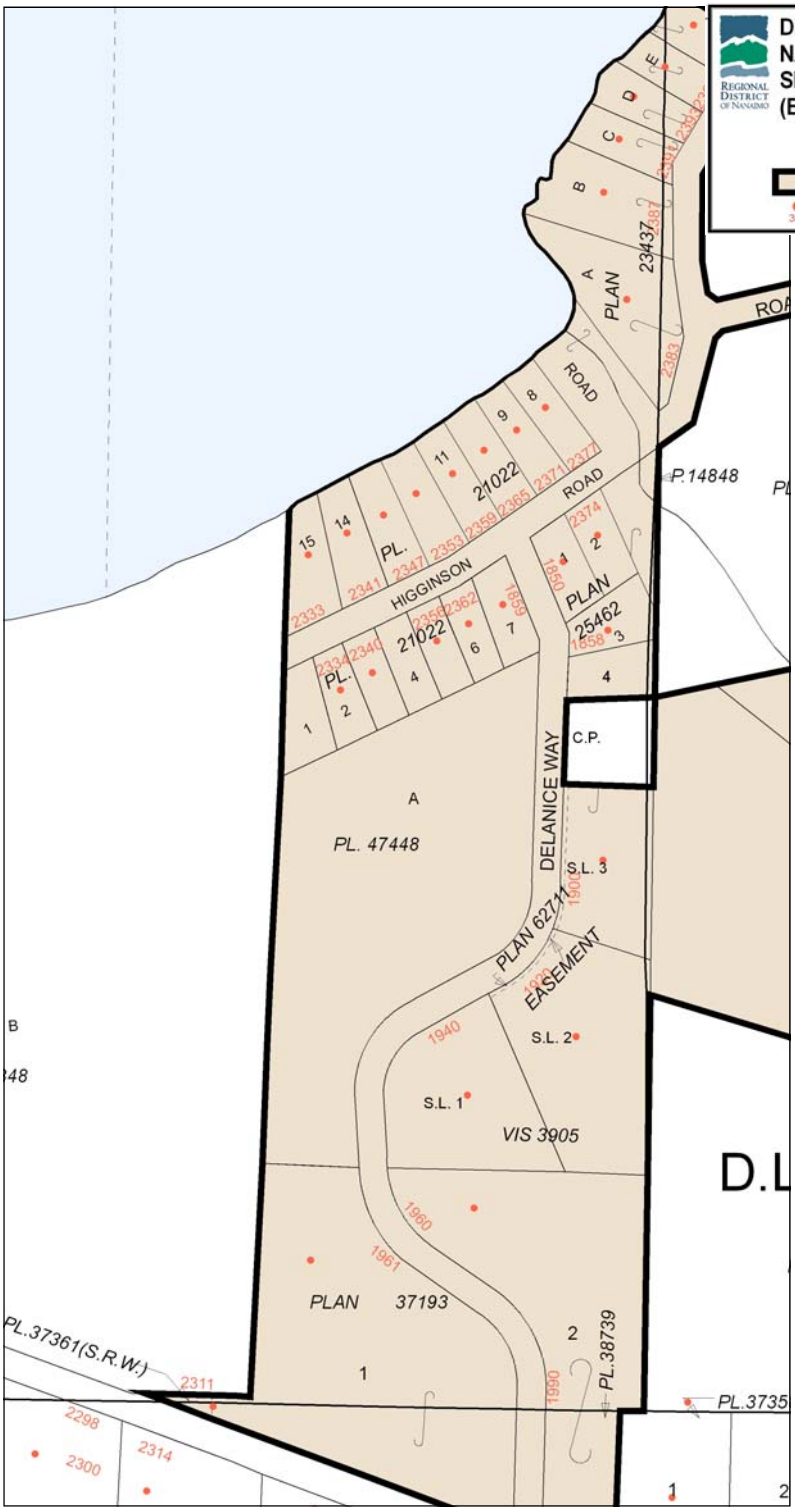


MAP 5 WEST BAY

water SMART zero waste

REGIONAL DISTRICT OF NANAIMO

EMERGENCY RESPONSE PLAN
WATER SYSTEMS

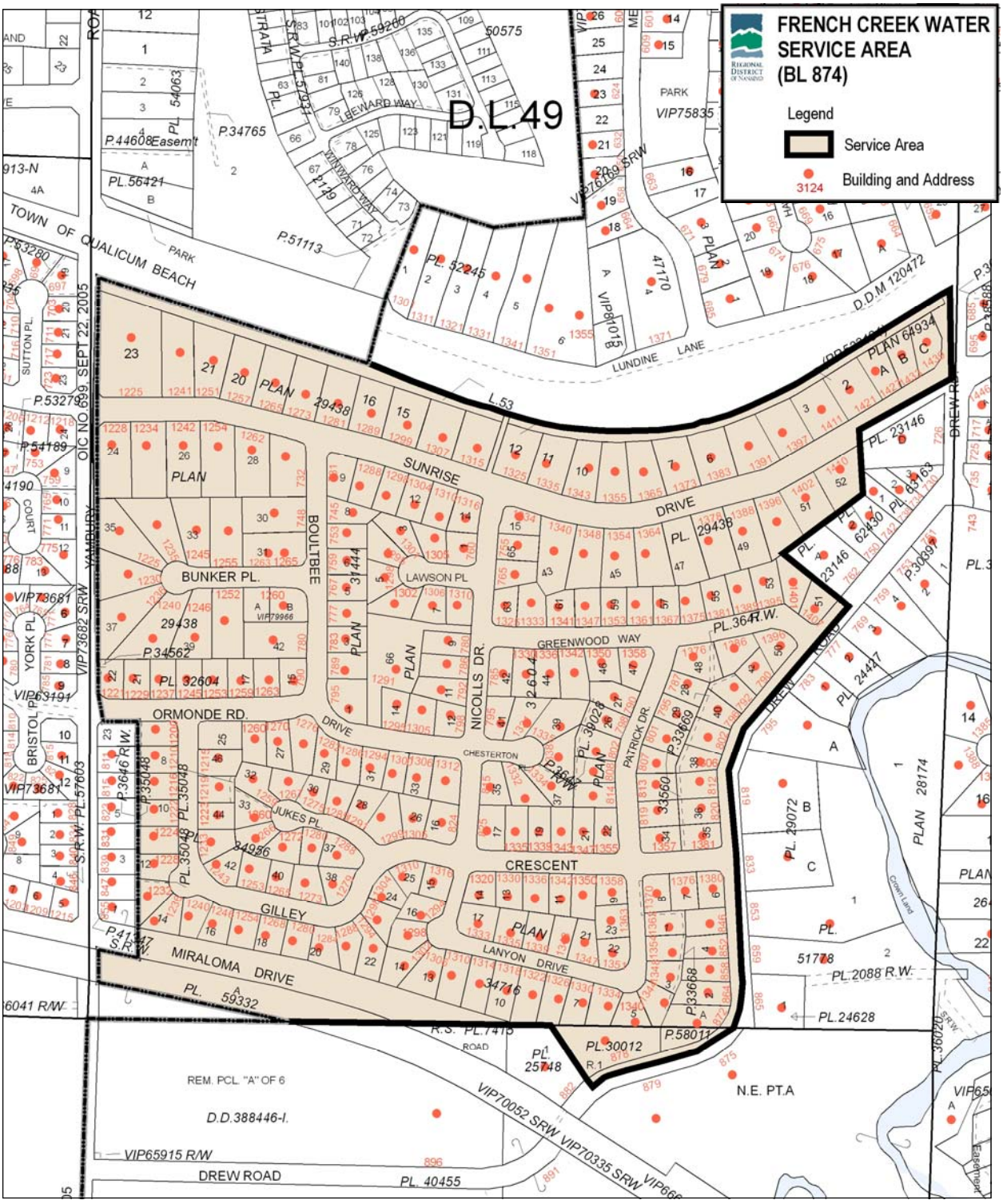


MAP 6 DRIFTWOOD

water SMART zero waste

REGIONAL DISTRICT OF NANAIMO

EMERGENCY RESPONSE PLAN
WATER SYSTEMS

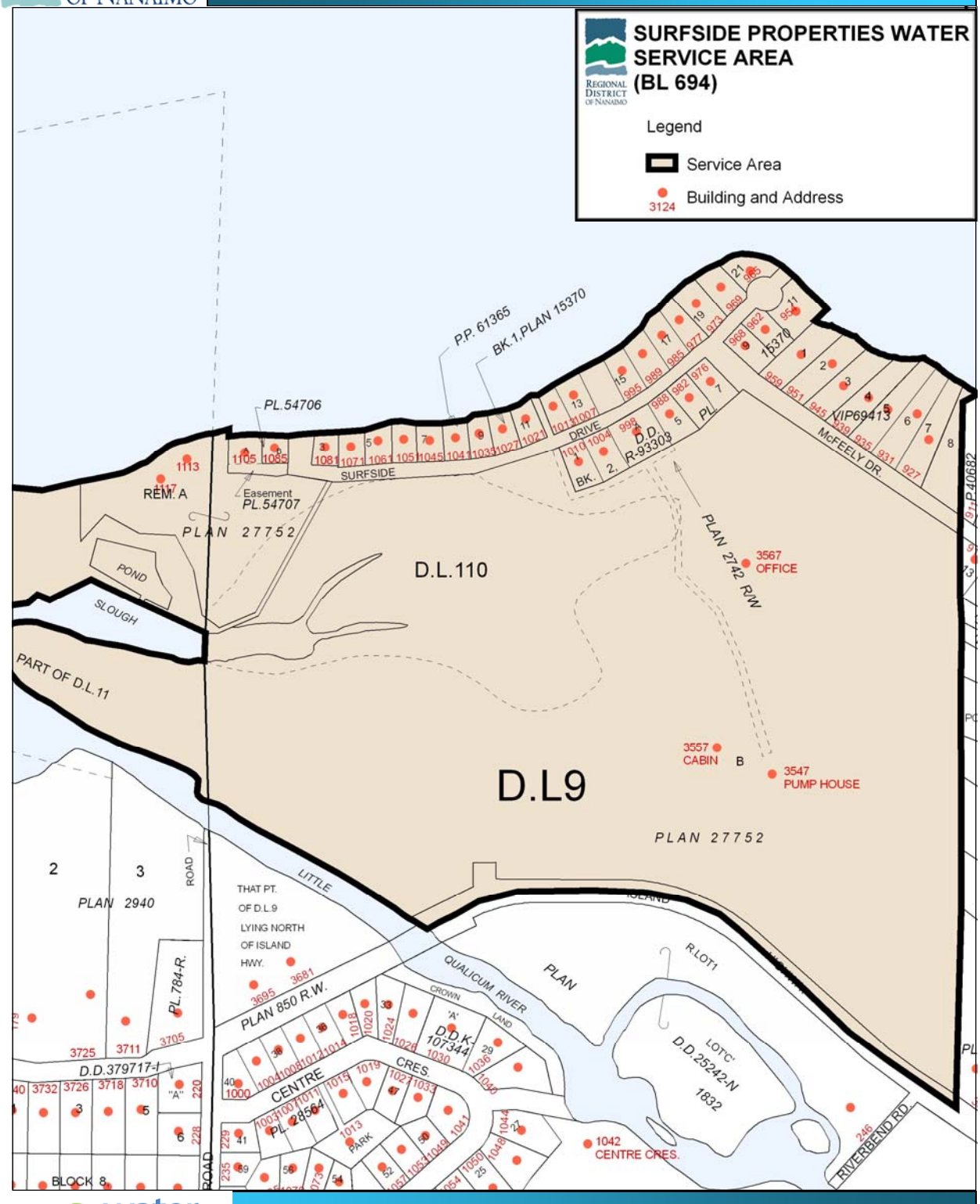


MAP 7 FRENCH CREEK

waterSMART zero waste

REGIONAL DISTRICT OF NANAIMO

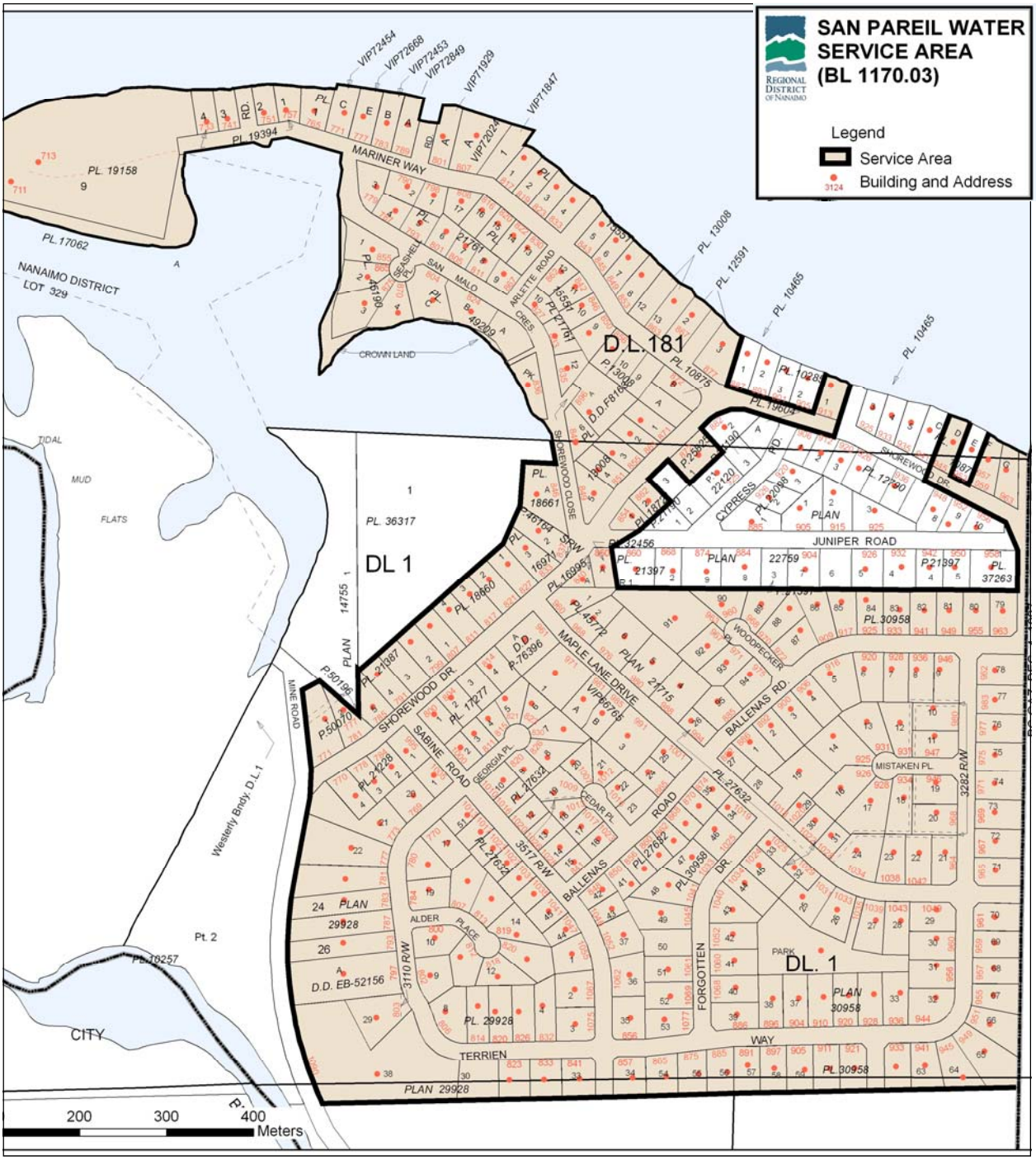
EMERGENCY RESPONSE PLAN
WATER SYSTEMS



MAP 8 SURFSIDE

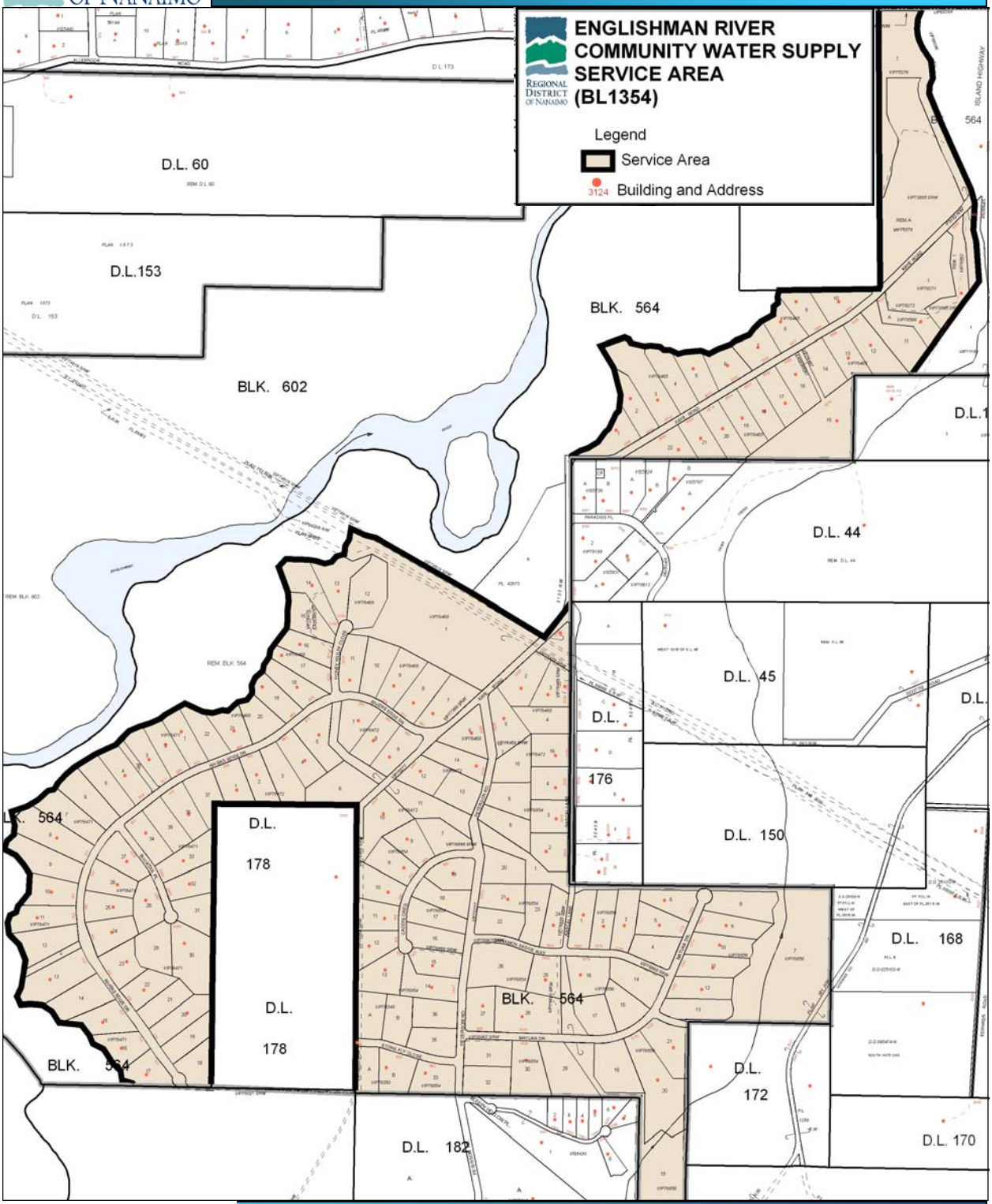
waterSMART zero waste

MAP 9 SAN PAREIL



REGIONAL DISTRICT OF NANAIMO

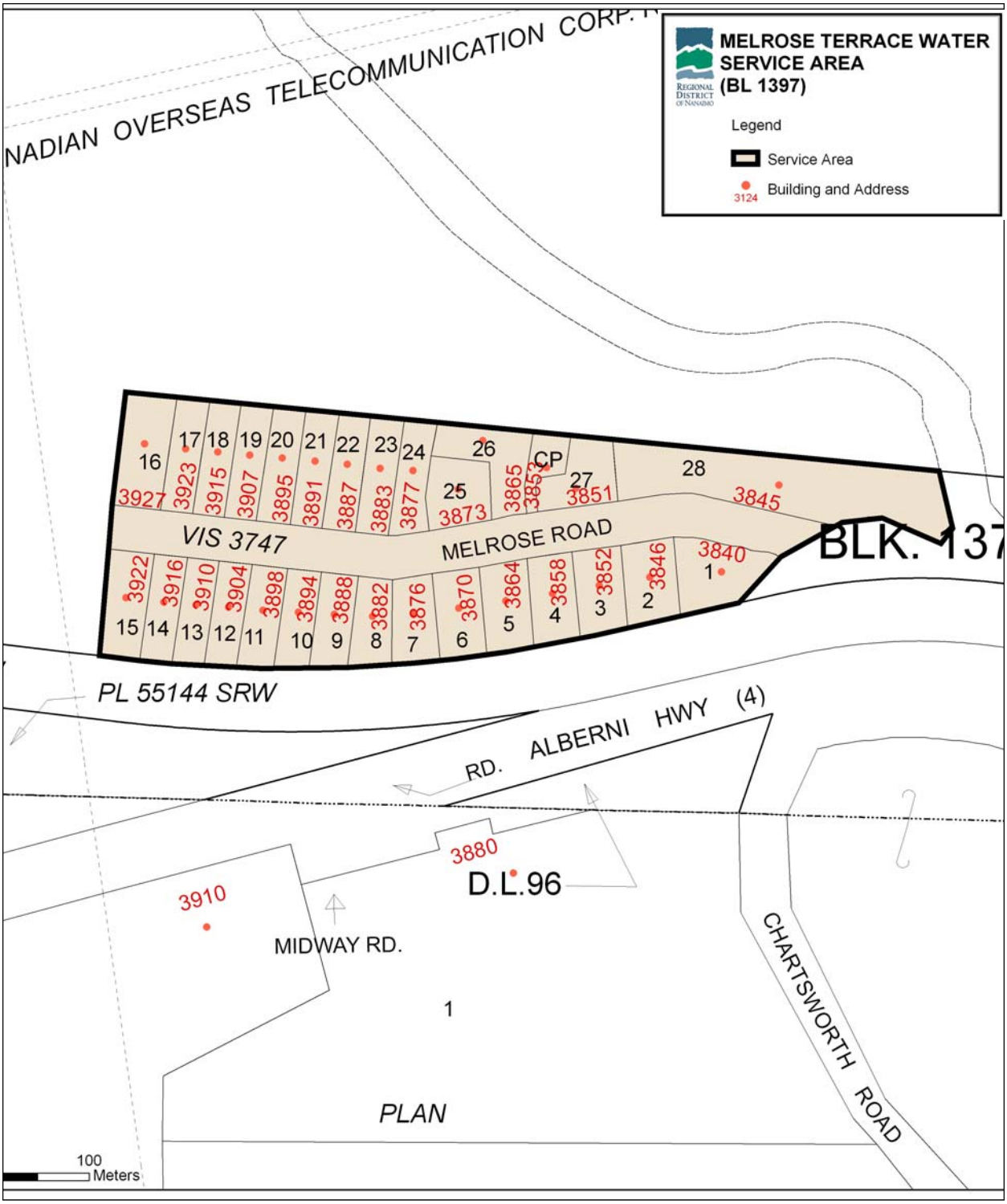
EMERGENCY RESPONSE PLAN
WATER SYSTEMS



MAP 10 ENGLISHMAN RIVER

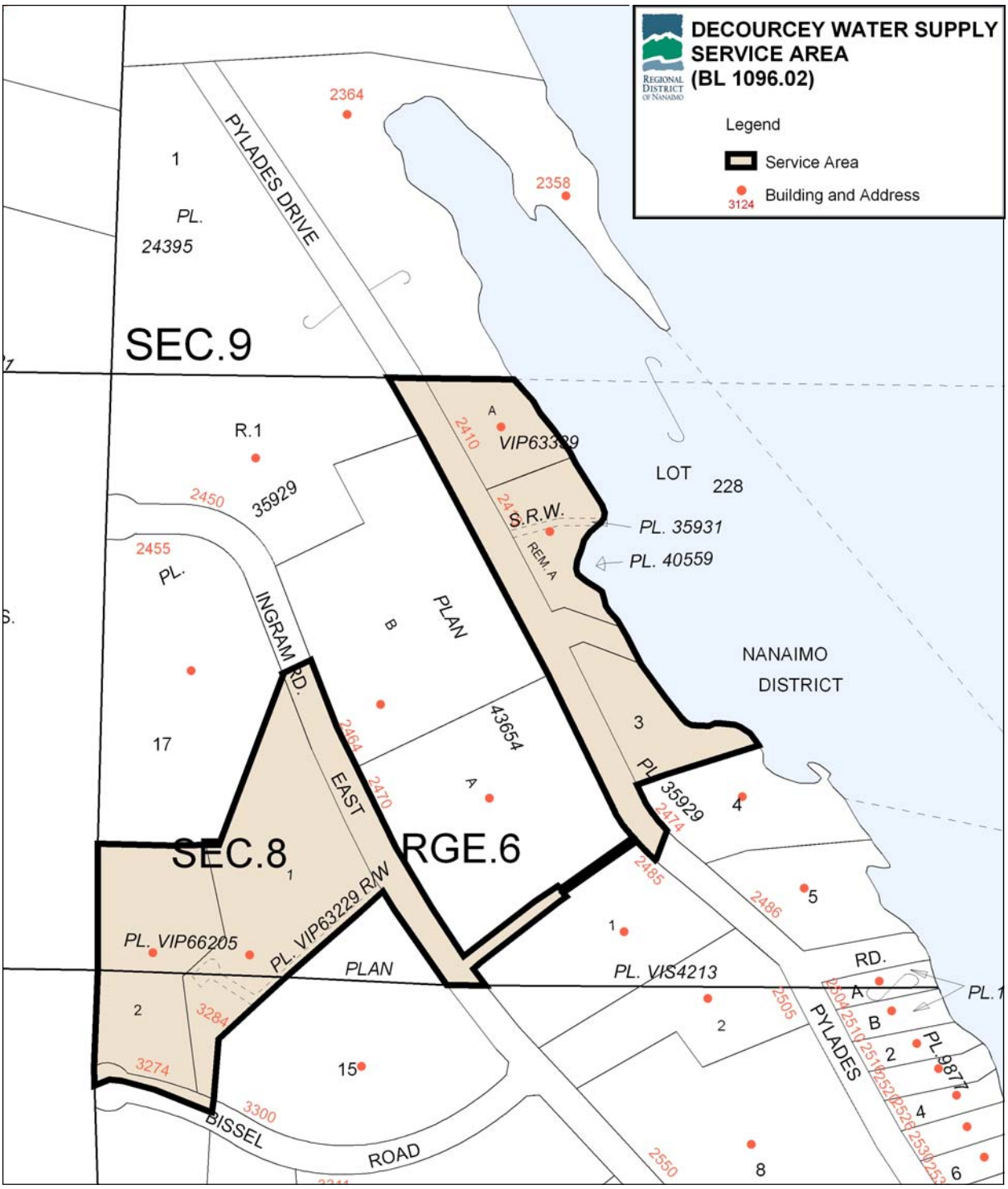
waterSMART zero waste

MAP 11 MELROSE



REGIONAL DISTRICT OF NANAIMO

EMERGENCY RESPONSE PLAN
WATER SYSTEMS



MAP 12 DECOURCEY

waterSMART zero waste

MAP 13 WHISKEY CREEK