REGIONAL DISTRICT OF NANAIMO

DECOURCEY

Water Local Service Area

Annual Report

2008

water SMART zero waste

Table of Contents

1. Introduction

The following annual report describes the Decourcey Water Local Service Area and summarizes the water quality and production data from 2008. 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 2009.

2. Decourcey Water System

The Decourcey Water Service Area was established in 1998 in a rural area south of Nanaimo, and comprises two properties on Bissel Road and two properties on Pylades Drive. The water source for the Decourcey Water Service Area comes from one groundwater well located nearby. The water supply is stored in one reservoir and is chlorinated manually. A map of the Decourcey Water System is provided in Appendix A for reference.

2.1 Groundwater Wells

One groundwater production well is present at 3284 Bissel Road, Cedar, B.C.

Well / Name	Well Depth	Wellhead Protection	Treated/Untreated with Chlorine
#1	61.0 m	Yes	Treated

2.2 Reservoirs

One steel reservoir is present at 3280 Bissel Road, and has a capacity of 136 m^3 (30,000 imperial gallons).

2.3 Distribution System

The water distribution system in Decourcey is comprised entirely of 150mm PVC watermains. Four fire hydrants are located throughout the system.

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 Total Dissolved Solids Iron, Manganese
Weekly (Health Dept. Requirement)	North Island Labs	Total, Fecal coliforms
Monthly	North Island Labs	Chloride, Fluoride
Quarterly	North Island Labs	Tri-halomethanes
Annual Source Water Testing	North Island Labs	Complete potability testing of each well
Annual System Water Testing	North Island Labs	Complete potability testing of distribution system

4. Water Quality - Source Water and Distribution System

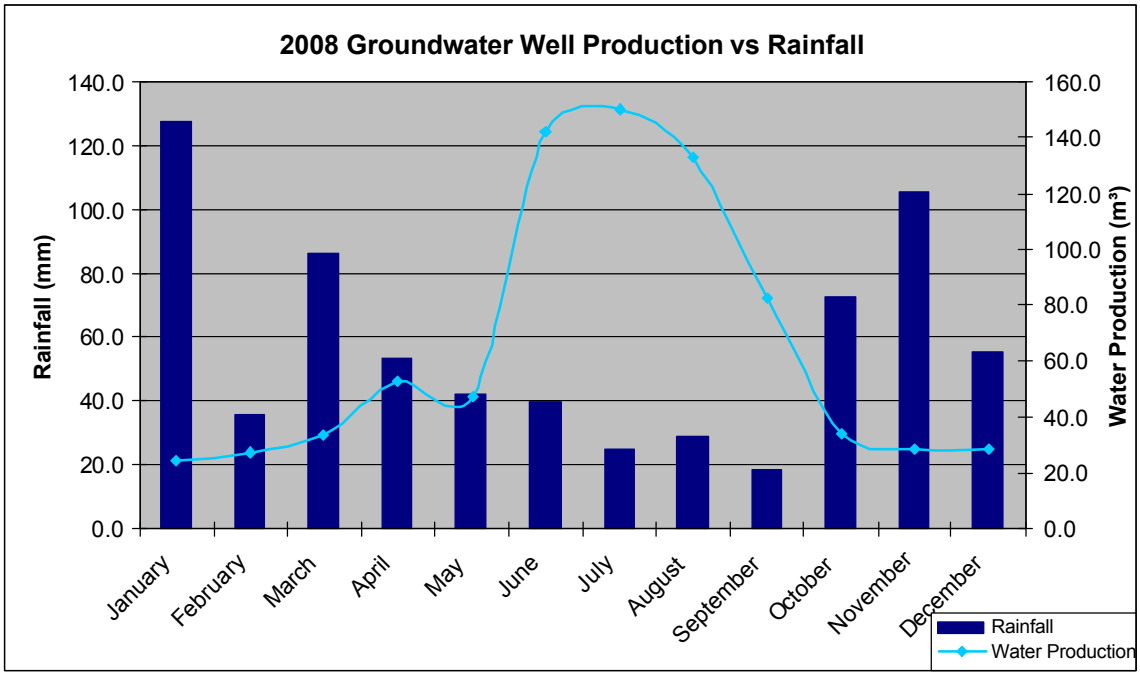
Up-to-date water quality reports and lab data are posted monthly on the RDN website at www.rdn.bc.ca in the WaterSmart section, under "Communities". Tables of water quality testing results for both the source water and distribution system are provided at the end of this report under Appendix B.

5. Water Quality Inquiries and Complaints

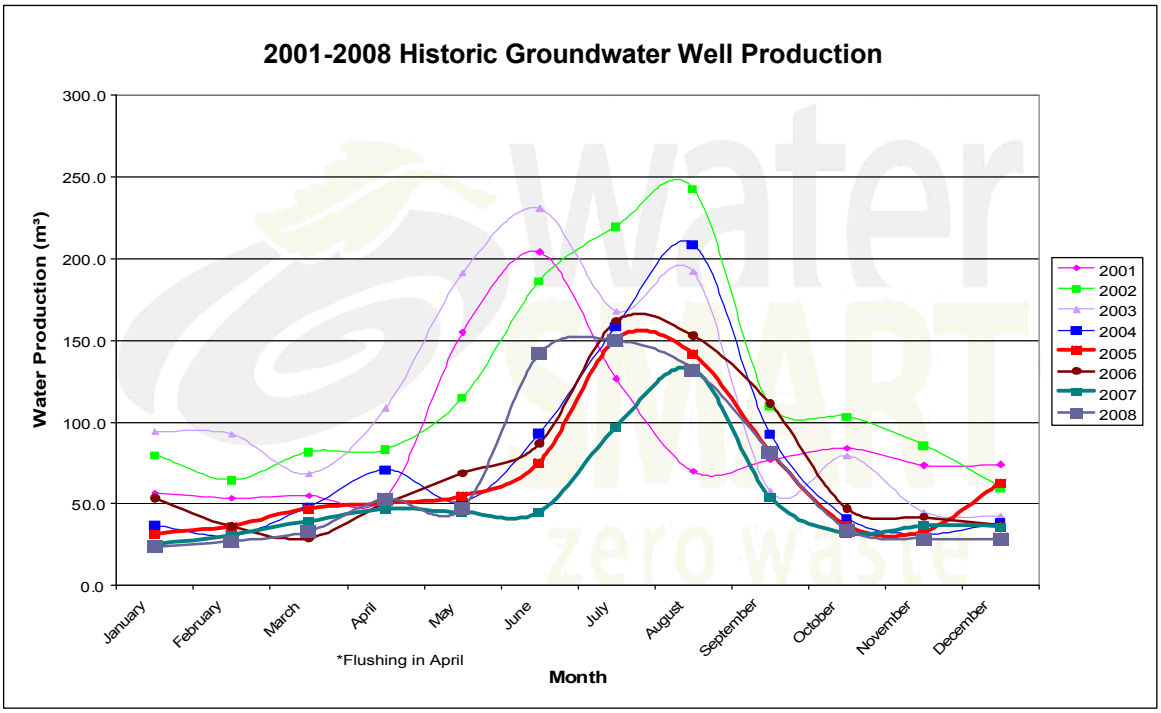
Very few complaints and inquiries were received from the Decourcey water service area, and were typically related to power outages.

6. Groundwater Production and Consumption

The 2008 monthly groundwater production for the Decourcey water service area is shown in the chart below. The Decourcey system is comprised of four residential water service connections. Groundwater production has been charted against rainfall data from the Nanaimo Weather website to show the correlation between rainfall and water consumption.



The monthly groundwater production in the Decourcey system for the past 8 years is shown in the chart below. Groundwater production in 2008 was typically lower than previous years.



Consumption
In the Fall/Winter of 2008, the average water usage per home in the Decourcey system was 0.29 cubic metres per day (64 imperial gallons). In the summer, the average water usage was 0.93 cubic metres per day (205 imperial gallons). Based on these figures, the annual consumption per capita is estimated to be 216 L/day. This consumption is 38% less than the RDN system average of 298.4 L/day/capita for 2008.

7. Maintenance Program

Regular maintenance and inspections are completed around the wellhead areas to reduce or eliminate the risk of contamination and system failure. Watermains are flushed once annually; in the Spring.

8. Water System Projects

8.1 2008 Completed Studies & Projects

- Replaced all facility signs.
- Began keyless door entry installation (card lock) at the Water Services field office, and all pumphouse sites.
- Re-keyed all gates and points of entry.
- Established electrical connections for the mobile generator at key sites.
- Completed 'B' fire hydrant maintenance.
- Completed annual watermain flushing.
- Completed a comprehensive water conservation program (**Team WaterSmart**) from May to October.
- Initiated the WaterSmart school program in partnership with Nanaimo Recycling Exchange.
- Updated and improved the RDN **WaterSmart** website.
- Updated the Emergency Response Plan.
- Expanded the Operating Procedures binder.
- Completed the SCADA (Supervisory Control and Data Acquisition) Study.
- Completed the Innovative Water Supply and Re-Use study.
- Completed the *Action for Water* referendum process.
- Achieved Backflow Prevention Tester's Certification for 3 Operations staff.
- Created the Auto E-Message notification sign-up on the RDN website.

8.2 2009 Proposed Projects & Upgrades

- Establish the Drinking Water Protection Advisory Committee.
- Review the SCADA report and options for implementation.
- Complete the keyless door entry installations at all field sites.
- Commence the 2009 **Team WaterSmart** education program.
- Develop a rebate / incentive program.
- Develop the *Well Aware* well safety program.
-

8.3 2009 Proposed Studies

- Complete the well re-development study.

9. Emergency Response Plan

The Emergency Response Plan (ERP) was reviewed and updated in 2008. A copy of the ERP is attached 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 systems 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.

The program in 2009 will include:

- A survey of existing and potential cross-connections,
- An audit of RDN-owned facilities in each water service area,
- The preparation of a draft bylaw to allow enforcement of the Cross Connection Control Program.

11. Closing

An annual report for the year 2009 will be prepared and submitted to the Vancouver Island Health Authority in the Spring of 2010. Annual reports are also available on our website at www.rdn.bc.ca in the WaterSmart section, under "Communities".

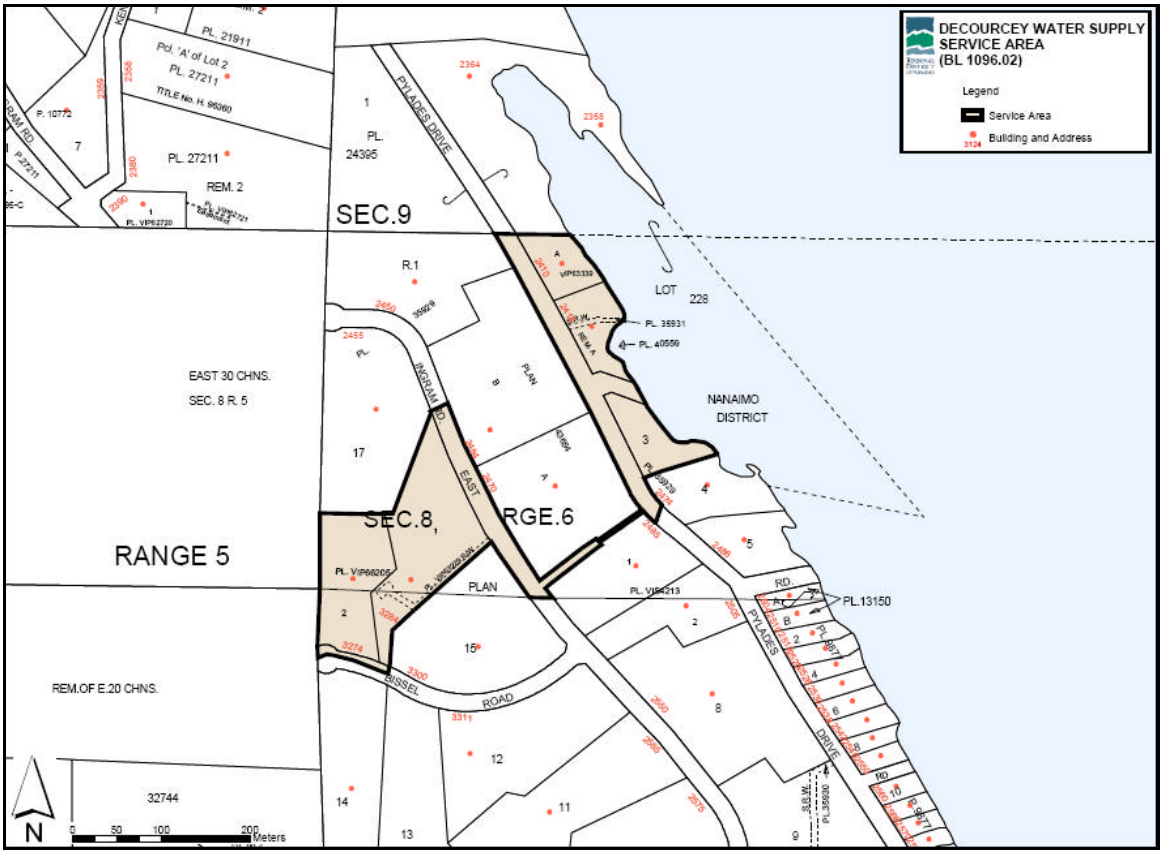
APPENIDX A

MAP OF DECOURCEY

WATER LOCAL SERVICE AREA

DECOURCEY

WATER LOCAL SERVICE AREA



APPENDIX B

WATER QUALITY TESTING RESULTS

Distribution Potability Test Results - Decourcey

(Treated Drinking Water)

Test	Water Quality Guidelines				Date									
	Units	CDWG	BCAWQG		1999	2000	2001	2002	2003	2004	2005	May 17 2006	May 22 2007	May 26 2008
Color	CU	15	</=15	AO				2	3	7	<5	<5	10	<5
Conductivity	uS		700	MAC				521	527	529	543	569	563	584
TDS	mg/L	500	</=500	AO				267	307	320	310	353	322	338
Hardness (CaCO3)	mg/L	80-100	</=500	AO				37.5	34.7	36	39	37	40	37
pH	pH units	6.5-8.5	6.5-8.5	AO				7.49	7.69	7.8	7.7	7.9	7.8	8.03
Turbidity	NTU's	5	1	MAC				<.05	0.16	0.6	<0.5	<0.5	<0.5	<0.5
Alkalinity	mg/L							199	227	200	210	210	200	190
Chloride	mg/L	250	</=250	AO				33.04	33.4	28.2	35.4	38.6	41.9	47.6
Fluoride	mg/L	1.5	1.5	MAC				0.19	0.15	<1	<1.0	1.8	<1	<1.0
Sulfate	mg/L	500	</=500	AO				28.98	23.6	32.6	20.5	22.3	20.8	19.6
Nitrate	mg/L	10	10	MAC				0.03	0.05	<0.1	<0.1	0.04	<0.1	<0.1
Nitrite	mg/L	1						<.006	<0.01	<0.1	<0.1	<0.01	<0.1	<0.1
T-Aluminum	mg/L		0.2	MAC				<.009	0.011	0.008	0.006	<0.005	<0.005	<0.05
T-Antimony	mg/L		0.006	MAC				<.006	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001
T-Arsenic	mg/L	0.025	0.025	IMAC				<.01	0.0003	0.0002	0.0007	0.0004	0.0003	0.002
T-Barium	mg/L	1.0	1	MAC				0.0126	0.013	0.009	0.02	0.031	0.019	0.02
T-Boron	mg/L	5.0	5	MAC				0.019	0.153	0.144	0.14	0.12	0.121	0.1
T-Cadmium	mg/L	0.005						<.0006	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.0003
T-Calcium	mg/L							11.7	10.8	11.5	12	11.8	12.4	11.5
T-Chromium	mg/L	0.05	0.05	MAC				<.0009	<0.0005	<0.0005	0.0008	<0.0005	<0.0005	<0.003
T-Copper	mg/L	1.0	</=1	MAC				0.005	0.005	0.005	0.01	0.013	0.013	0.02
T-Iron	mg/L	0.3	</=0.3	AO				0.026	<0.1	<0.1	<0.1	<0.1	<0.1	0.1
T-Lead	mg/L	0.01	0.01	MAC				0.004	0.0004	0.0003	0.0006	0.0006	0.0006	<0.0005
T-Magnesium	mg/L		</=700	AO				2.02	1.9	1.8	2.1	1.9	2.2	2
T-Manganese	mg/L	0.05	</=0.05	AO				0.0051	0.006	<0.005	<0.005	<0.005	<0.005	0.006
T-Mercury	mg/L	0.001	0.001	MAC				<.0001	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.01
T-Potassium	mg/L							0.8	0.5	0.7	0.8	0.6	0.6	0.6
T-Selium	mg/L	0.01	0.01	MAC				<.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.003
T-Sodium	mg/L	200	</=200	AO				111	114	111	108	6.7	112	126
T-Uranium	mg/L	0.1	0.1	MAC				<.02	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002
T-Zinc	mg/L	5	<5	AO				0.0494	0.042	0.071	0.108	0.115	0.116	0.099
Total Coliform	cfu/100ml	<1	<1	cfu/100ml				n/a	n/a	<1	<1	<1	<1	<1.0
Fecal Coliform	cfu/100ml	<1	<1	cfu/100ml				n/a	n/a	<1	<1	<1	<1	
E.coli	cfu/100ml	<1	<1	cfu/100ml								<1	<1	<1.0
Tannins & Lignins								<.1	n/a	n/a	n/a	n/a	n/a	n/a
Trihalomethanes	mg/l	0.1		MAC				n/a	n/a	n/a	n/a	0.123	n/a	n/a

BCAWQG - BC approved water quality guidelines
MAC - maximum acceptable concentrations
IMAC - interim maximum acceptable concentrations
AO - aesthetic objective
Red font indicates non-compliance.

REGIONAL DISTRICT OF NANAIMO

Decourcey Well Water Analysis Results

Canadian Drinking Water Guidelines Package

water SMART zero waste

Red font indicates non-compliance with Canadian Drinking Water Guidelines
MAC=Maximum Acceptable Concentration.
IMAC= Interim Maximum Acceptable Concentration.
AO= Asthetic Objective.

Parameter	Units	CDWG	BCAWQG		2002	2003	2004	2005	2006	2007	2008
Color	CU	15	</=15	AO	5	10	<5	<5	<5	10	8
Conductivity	µS		700	MAC	564	226	408	611	514	433	558
Total Dissolved Solids	mg/L	500	</=500	AO	327	120	220	327	300	270	370
Hardness (CaCO3)	mg/L	80-100	</=500	AO	**35.7**	82	**44**	**23**	**13**	**43**	**18**
pH	pH units	6.5-8.5	6.5-8.5	AO	7.6	6.56	7.3	7.9	8.1	7.38	8.3
Turbidity	NTU's	5	1	MAC	<0.05	0.56	0.6	0.7	<0.5	0.6	<0.5
Alkalinity	mg/L				224	90	200	230	230	170	230
Chloride	mg/L	250	</=250	AO	6	5	8.4	44.8	22.5	19.6	36
Fluoride	mg/L	1.5	1.5	MAC	0.21	<0.6	<1.0	<1.0	<1.0	<1.0	<1.0
Sulfate	mg/L	500	</=500	AO	29.74	11.5	11.2	20.2	10.6	14.1	13
Nitrate (N)	mg/L	10	10	MAC	<0.01	0.6	0.1	<0.1	<0.1	0.3	<0.1
Nitrite (N)	mg/L	1			<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
T-Aluminum	mg/L		0.2	MAC	0.007	0.03	0.031	0.061	0.015	0.013	0.001
T-Antimony	mg/L		0.006	MAC	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002
T-Arsenic	mg/L	0.025	0.025	IMAC	0.0003	<0.0002	0.0003	0.0004	0.0003	0.0002	0.0004
T- Barium	mg/L	1.0	1	MAC	0.01	0.005	0.006	0.006	0.003	0.006	0.003
T-Boron	mg/L	5.0	5	MAC	0.132	0.02	0.166	0.187	0.234	0.105	0.193
T-Cadmium	mg/L	0.005			<0.00001	0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
T-Calcium	mg/L				11	26.1	14.4	7.4	4.2	13.6	5.74
T-Chromium	mg/L	0.05	0.05	MAC	<0.0005	<0.0005	<0.0005	0.0009	<0.0005	<0.0005	0.0008
T-Copper	mg/L	1.0	</=1	MAC	0.001	0.009	0.007	0.026	0.007	0.011	0.008
T-Iron	mg/L	0.3	</=0.3	AO	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.04
T-Lead	mg/L	0.01	0.01	MAC	0.0009	0.0014	0.0007	0.0011	0.0003	0.0007	0.0002
T-Magnesium	mg/L		</=700	AO	2	4.1	1.9	1.1	0.5	2.1	0.94
T-Manganese	mg/L	0.05	</=0.05	AO	**0.085**	0.009	0.008	0.009	<0.005	<0.005	0.0005
T-Mercury	mg/L	0.001	0.001	MAC	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<0.01
T-Potassium	mg/L				0.6	<0.4	<0.4	<0.4	<0.4	0.4	0.2
T-Selenium	mg/L	0.01	0.01	MAC	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	0.0002	0.0008
T-Sodium	mg/L	200	</=200	AO	125	13.7	81.2	124	116	76.6	113
T-Uranium	mg/L	0.1	0.1	MAC	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0004
T-Zinc	mg/L	5	<5	AO	0.003	0.032	0.022	0.019	0.014	0.035	0.011
Total Coliform	cfu/100ml	<1	<1	cfu/100ml			***11**	<1	<1	***360**	<1
Fecal Coliform	cfu/100ml	<1	<1	cfu/100ml			<1	<1	<1	***7**	<1
E.coli	cfu/100ml	<1	<1	cfu/100ml					<1	***7**	<1

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.

*Resampled and had <1 for all Coliforms

Decourcey Lab Analysis

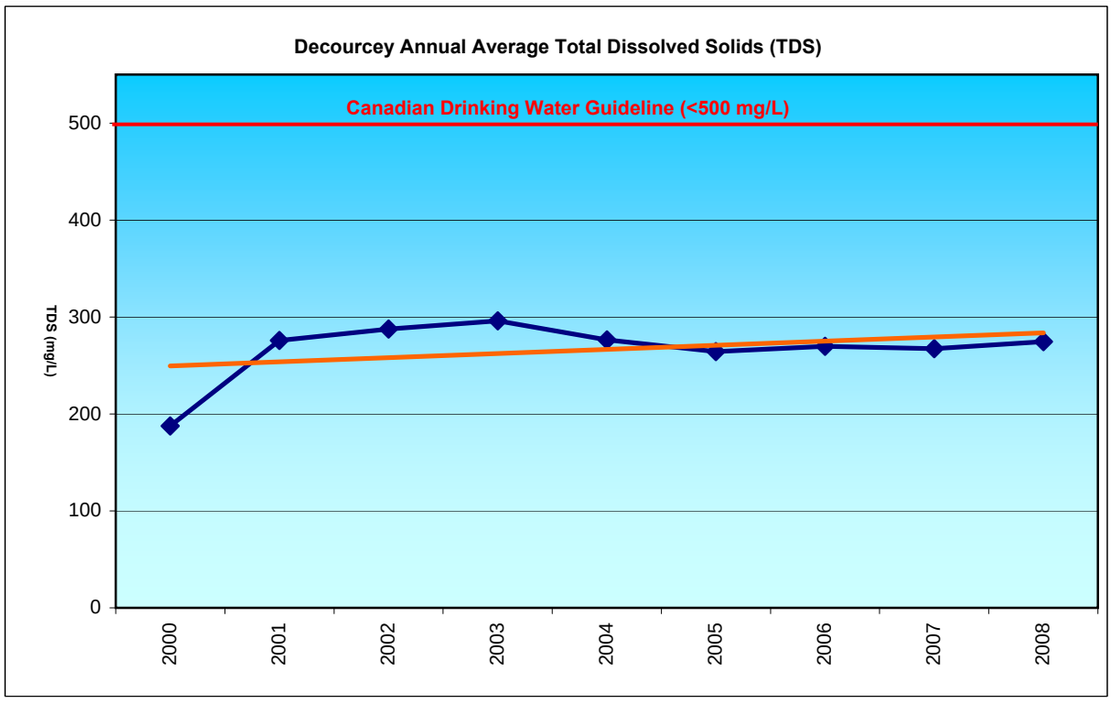
Annual TDS - Conductivity - Salinity Comparison

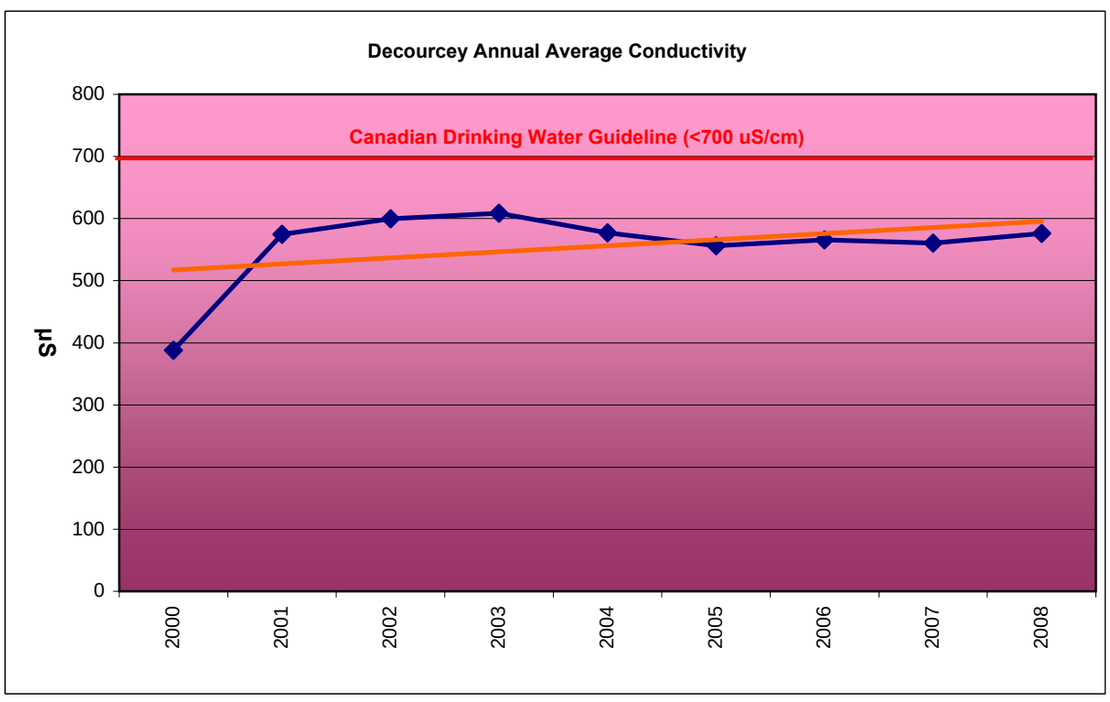
TDS - CDWG = <500 mg/L

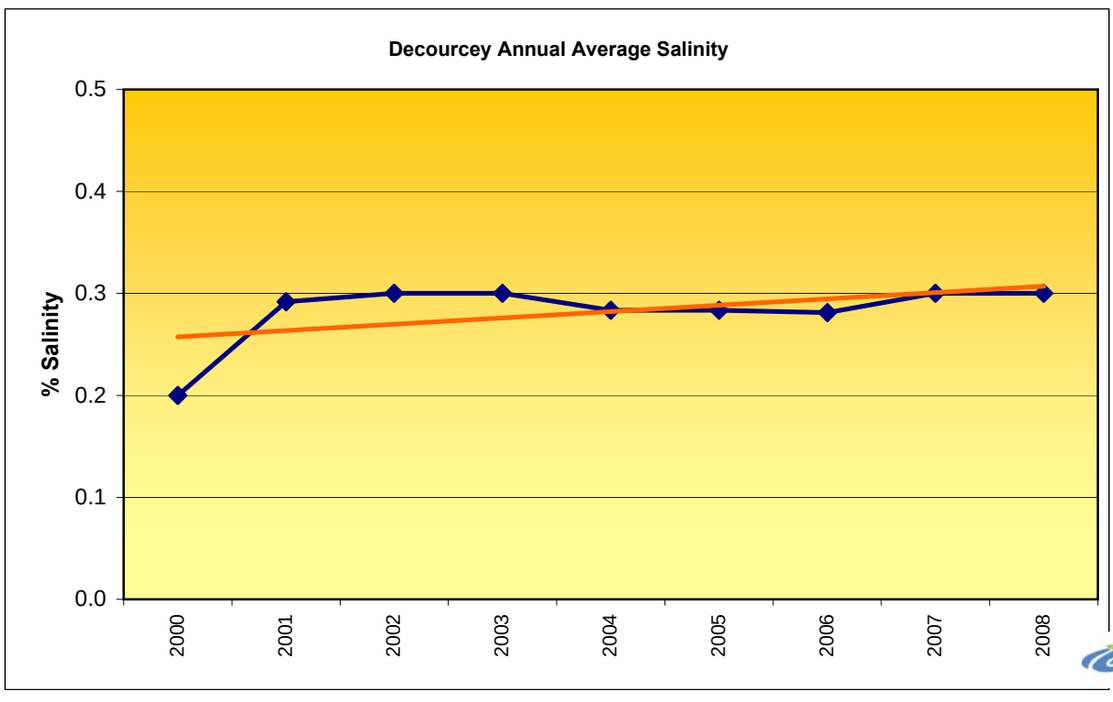
Cond. - CDWG = <700 uS/cm

SAL. - CDWG = N/A

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
TDS	187.43	275.71	287.54	296.08	276.36	264.28	269.58	267.39	274.57
Conductivity	388.05	574.83	599.84	608.38	577.12	556.48	565.61	560.68	576.11
Salinity	0.20	0.29	0.30	0.30	0.28	0.28	0.28	0.30	0.30







REGIONAL DISTRICT OF NANAIMO

Decourcey Lab Analysis

Monthly **TDS - Conductivity - Salinity Comparison**

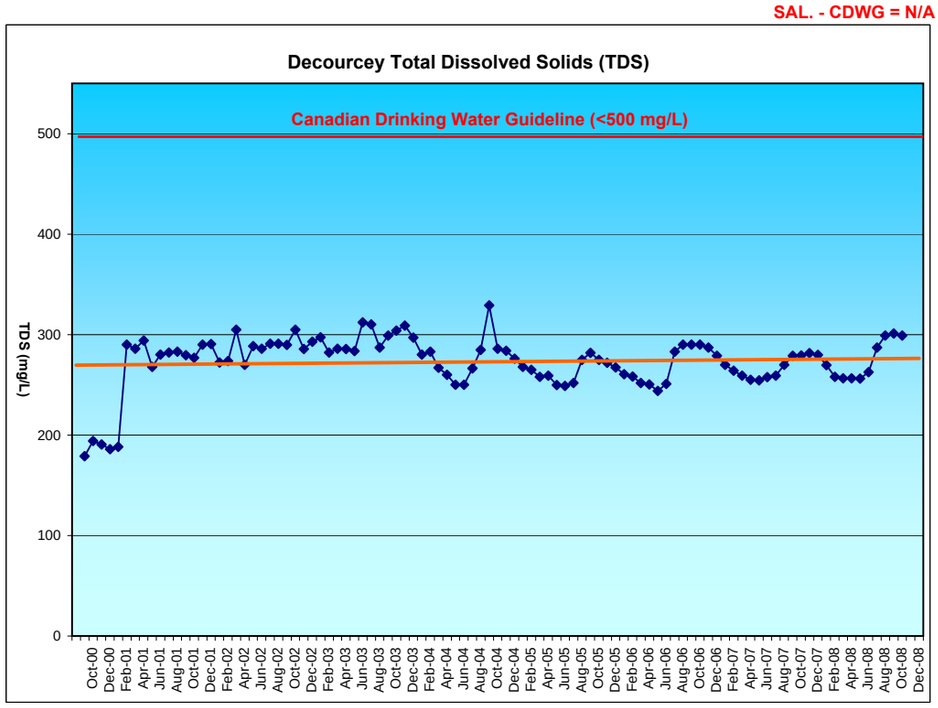
TDS - CDWG = <500 mg/L

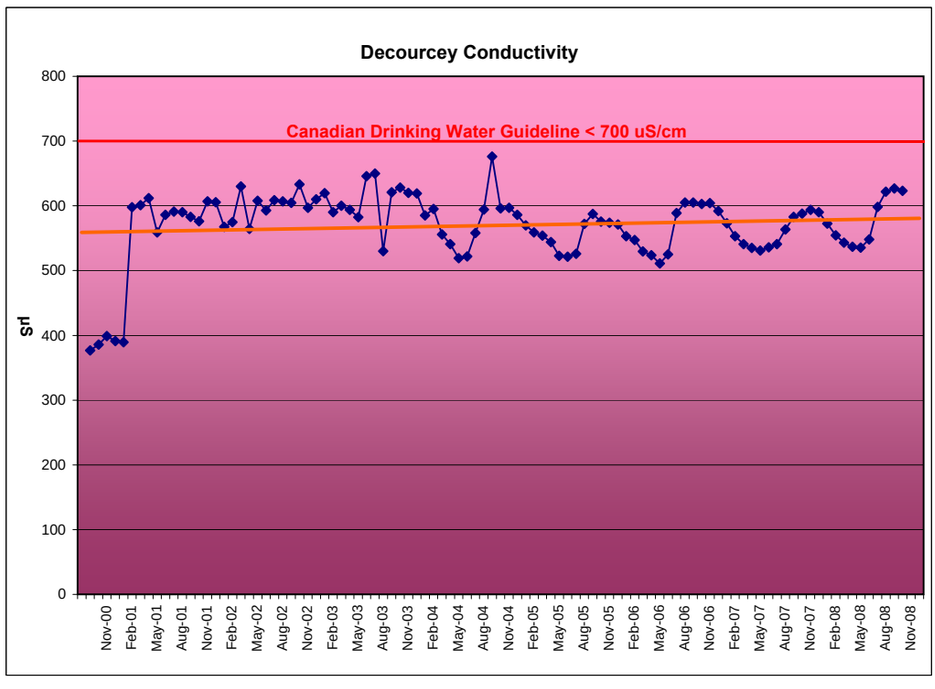
Cond. - CDWG = <700 uS/cm

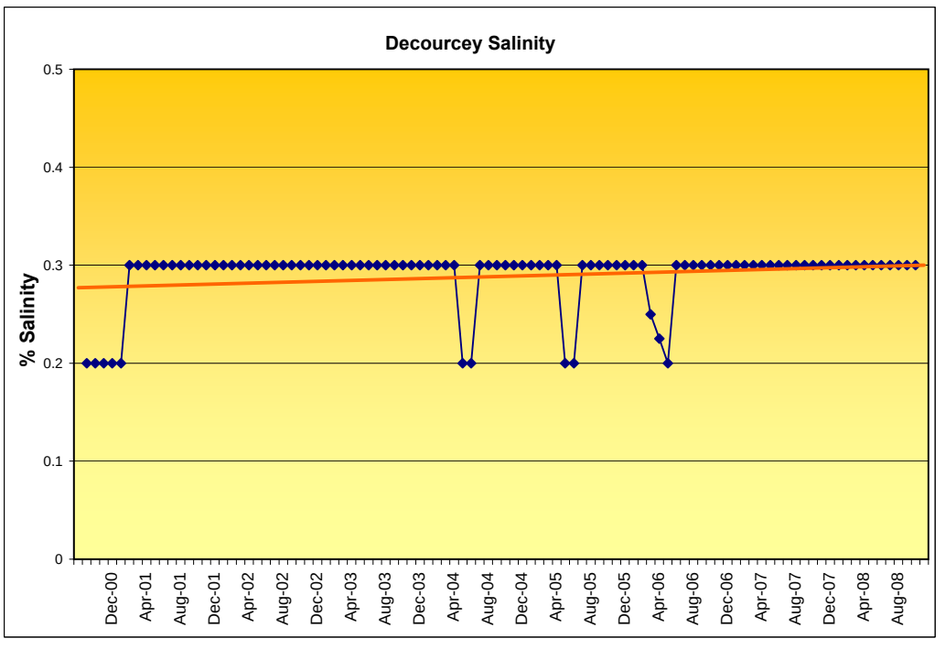
SAL. - CDWG = N/A

Average monthly readings (Sampled weekly)

Date	TDS	Cond.	Salinity
Sep-00	179.00	376.5	0.2
Oct-00	194.00	385.7	0.2
Nov-00	190.70	399.0	0.2
Dec-00	186.00	391.0	0.2
Jan-01	188.30	389.3	0.2
Feb-01	290.00	598.0	0.3
Mar-01	286.00	601.0	0.3
Apr-01	294.00	612.0	0.3
May-01	268.00	559.0	0.3
Jun-01	280.00	586.0	0.3
Jul-01	282.00	591.0	0.3
Aug-01	283.00	590.0	0.3
Sep-01	279.50	583.0	0.3
Oct-01	277.00	576.0	0.3
Nov-01	290.00	607.0	0.3
Dec-01	290.70	605.7	0.3
Jan-02	272.30	567.7	0.3
Feb-02	273.70	574.7	0.3
Mar-02	305.00	630.0	0.3
Apr-02	269.80	564.5	0.3
May-02	288.50	608.0	0.3
Jun-02	285.80	592.8	0.3
Jul-02	291.00	608.8	0.3
Aug-02	291.00	607.0	0.3
Sep-02	289.80	604.5	0.3
Oct-02	305.00	633.0	0.3
Nov-02	285.60	597.1	0.3
Dec-02	293.00	610.0	0.3
Jan-03	297.30	619.7	0.3
Feb-03	282.00	590.3	0.3
Mar-03	286.00	600.3	0.3
Apr-03	285.70	593.7	0.3
May-03	283.70	582.7	0.3
Jun-03	312.30	646.0	0.3
Jul-03	310.00	650.0	0.3
Aug-03	287.00	529.8	0.3
Sep-03	299.00	621.0	0.3
Oct-03	304.00	628.0	0.3
Nov-03	309.00	620.0	0.3
Dec-03	297.00	619.0	0.3
Jan-04	280.00	585.0	0.3
Feb-04	283.00	595.0	0.3
Mar-04	267.00	556.0	0.3
Apr-04	260.00	541.0	0.3
May-04	250.00	519.0	0.2
Jun-04	250.00	522.0	0.2
Jul-04	266.50	558.0	0.3
Aug-04	284.80	594.4	0.3
Sep-04	329.00	676.0	0.3
Oct-04	286.00	596.0	0.3
Nov-04	284.00	597.0	0.3
Dec-04	276.00	586.0	0.3
Jan-05	268.00	570.0	0.3
Feb-05	265.00	559.0	0.3
Mar-05	258.00	554.0	0.3
Apr-05	259.00	544.0	0.3
May-05	249.80	522.8	0.2
Jun-05	249.00	521.3	0.2
Jul-05	251.80	526.0	0.3
Aug-05	274.80	572.0	0.3
Sep-05	281.80	587.5	0.3
Oct-05	274.80	575.8	0.3
Nov-05	272.00	574.0	0.3
Dec-05	267.30	571.3	0.3
Jan-06	260.60	553.0	0.3
Feb-06	258.33	547.0	0.3
Mar-06	251.75	529.8	0.3
Apr-06	250.25	523.8	0.2
May-06	244.00	510.8	0.2
Jun-06	251.00	525.0	0.3
Jul-06	283.00	589.0	0.3
Aug-06	290.00	605.0	0.3
Sep-06	290.00	605.0	0.3
Oct-06	290.00	603.0	0.3
Nov-06	287.00	604.0	0.3
Dec-06	279.00	592.0	0.3
Jan-07	270.00	573.0	0.3
Feb-07	264.00	553.0	0.3
Mar-07	259.00	541.0	0.3
Apr-07	255.00	535.0	0.3
May-07	254.40	531.0	0.3
Jun-07	257.80	535.8	0.3
Jul-07	259	541	0.3
Aug-07	270	563.3	0.3
Sep-07	279	583	0.3
Oct-07	279.3	588	0.3
Nov-07	281.5	593.8	0.3
Dec-07	279.7	590.3	0.3
Jan-08	269.7	572.7	0.3
Feb-08	258	554.3	0.3
Mar-08	256.5	543.3	0.3
Apr-08	256.5	537	0.3
May-08	256.3	535.3	0.3
Jun-08	262.7	548	0.3
Jul-08	287	598.5	0.3
Aug-08	299	622	0.3
Sep-08	301	627	0.3
Oct-08	299	623	0.3
Nov-08			
Dec-08			



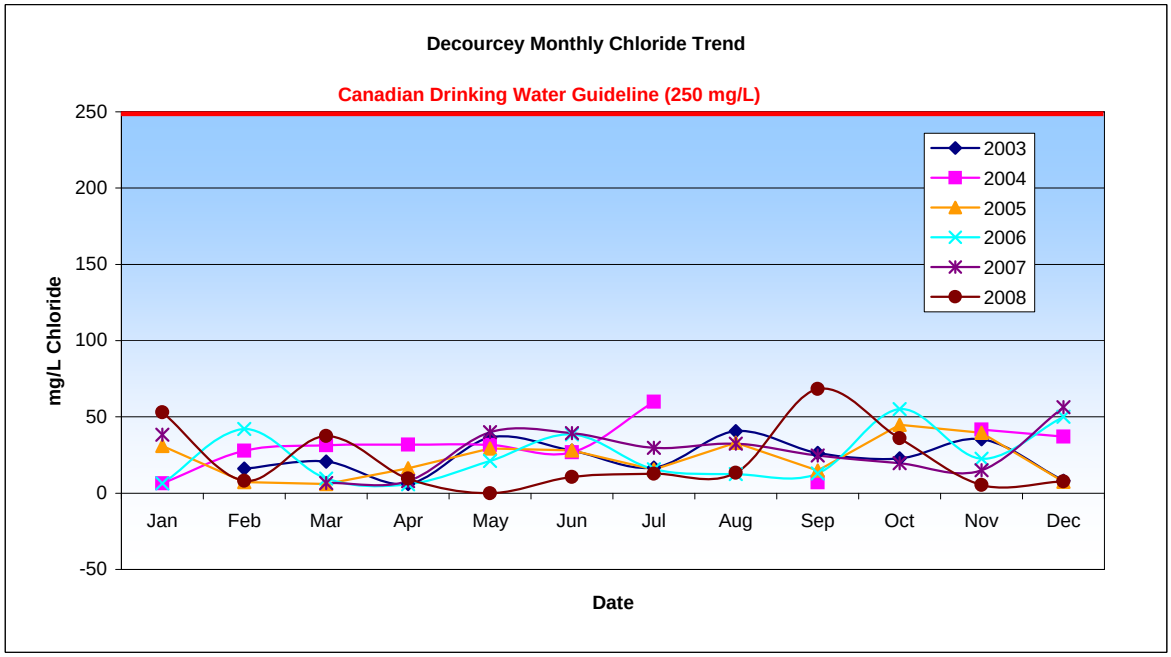


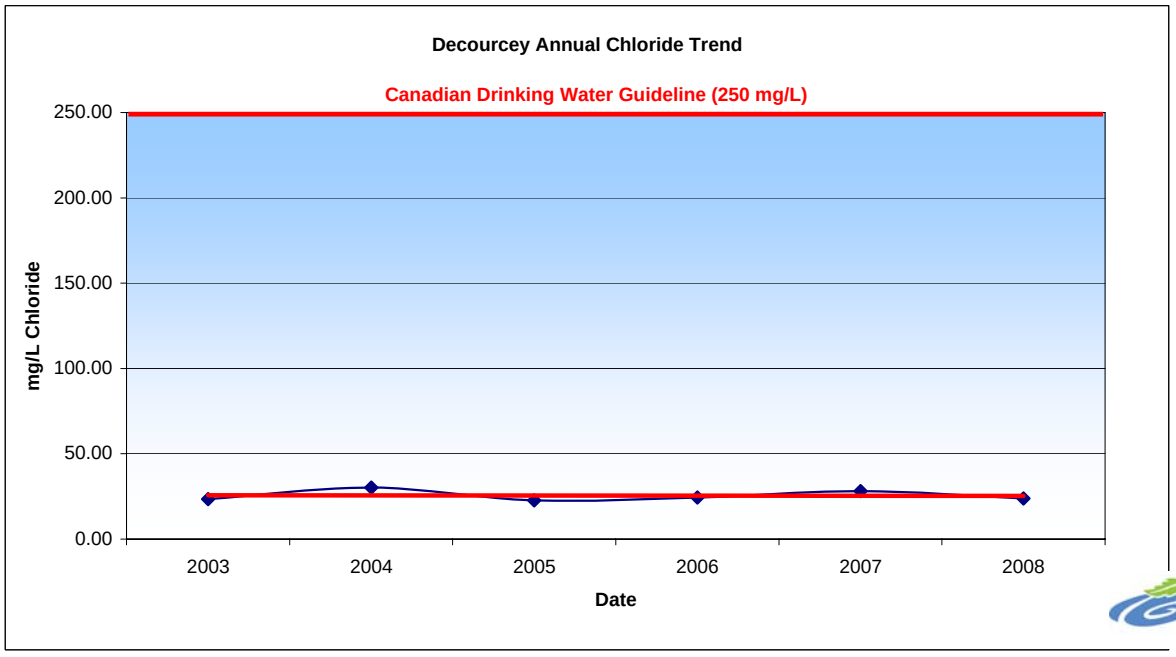


water SMART zero waste

Decourcey Monthly Well Testing — Chloride (mg/L)

Date	Chloride (mg/L)					
	2003	2004	2005	2006	2007	2008
Jan		6.4	31.0	6.5	38.4	53.1
Feb	16.06	27.8	7.2	42.0		8.1
Mar	20.71	31.5	6.0	9.5	6.6	37.5
Apr	6.06	31.8	16.3	5.8	7.9	9.6
May	36.4	31.7	29.4	21.1	39.9	<2.0
Jun	27.8	26.8	28.1	38.5	39.4	10.6
Jul	16.7	60	15.4	15.7	29.7	12.7
Aug	40.7		33.0	12.6	32.4	13.4
Sep	26.4	7	14.9	13.0	24.6	68.4
Oct	22.9		44.8	55.1	19.6	36
Nov	35.4	41.7	39.6	22.5	15.0	5.3
Dec	8.2	37	7.4	50	56.3	7.7
Avg	23.39	30.17	22.76	24.36	28.16	23.85

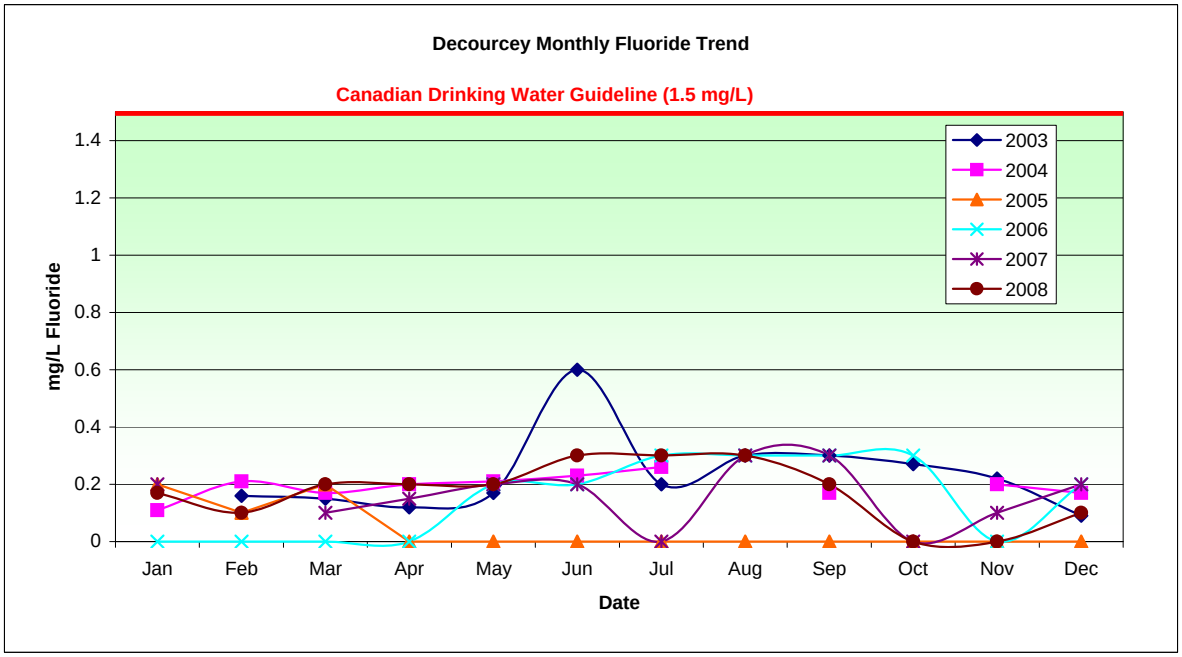


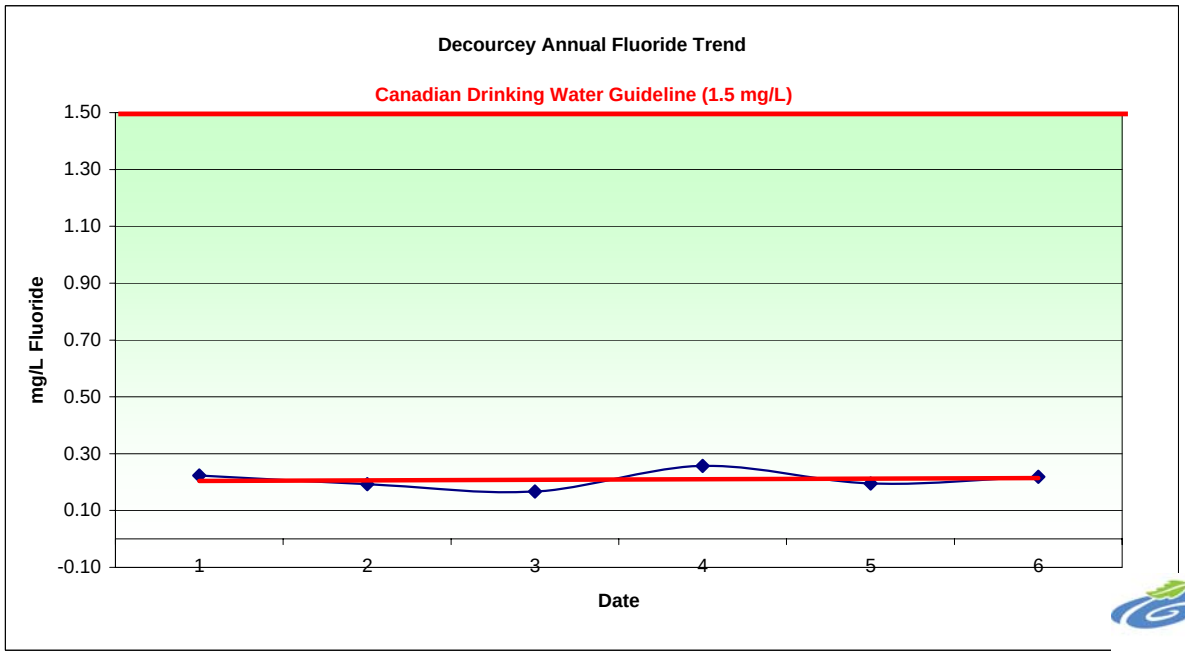


REGIONAL DISTRICT OF NANAIMO

Decourcey Monthly Well Testing — Fluoride (mg/L)

Date	Fluoride	mg/L				
	2003	2004	2005	2006	2007	2008
Jan		0.11	0.2	<1.0	0.2	0.2
Feb	0.16	0.21	0.1	<1.0		0.1
Mar	0.15	0.17	0.2	<1.0	0.1	0.2
Apr	0.12	0.2	<1.0	<.1	0.2	0.2
May	0.17	0.21	<0.1	0.2	0.2	0.2
Jun	0.6	0.23	<1.0	0.2	0.2	0.3
Jul	0.2	0.26	<1.0	0.3	<0.1	0.3
Aug	0.3		<0.1	0.3	0.3	0.3
Sep	0.3	0.17	<0.1	0.3	0.3	0.2
Oct	0.27		<1.0	0.3	<1.0	<1.0
Nov	0.22	0.2	<1.0	<1.0	0.1	<0.1
Dec	0.09	0.17	<1.0	0.2	0.2	0.1
Avg	0.22	0.19	0.17	0.26	0.2	0.2



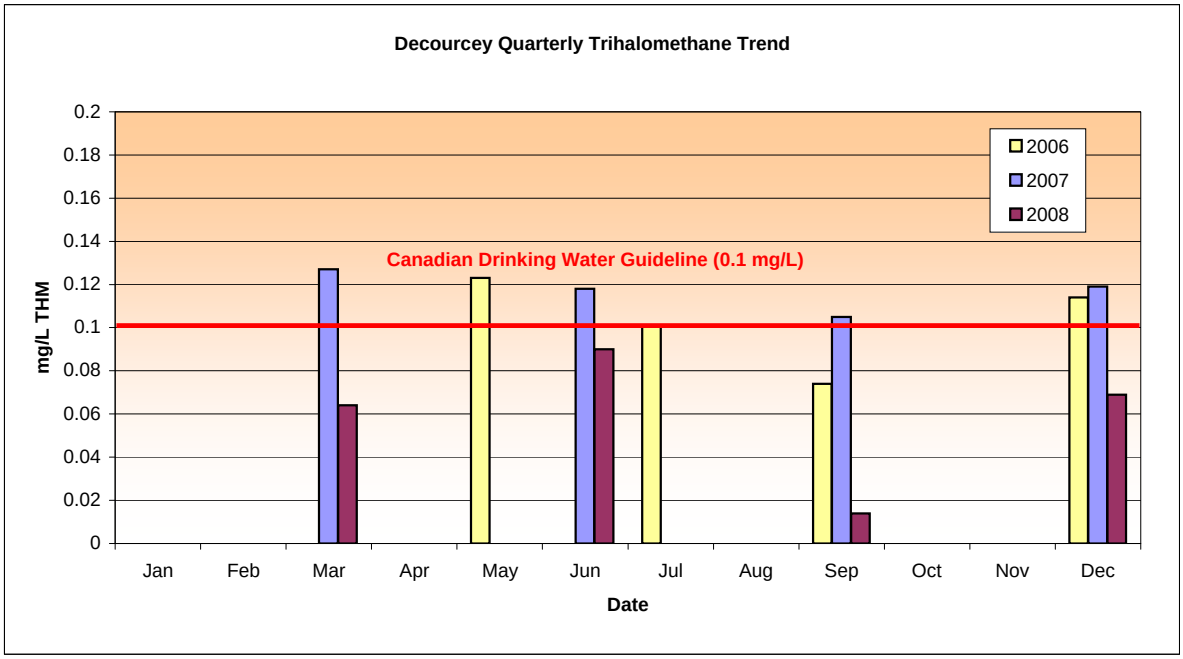


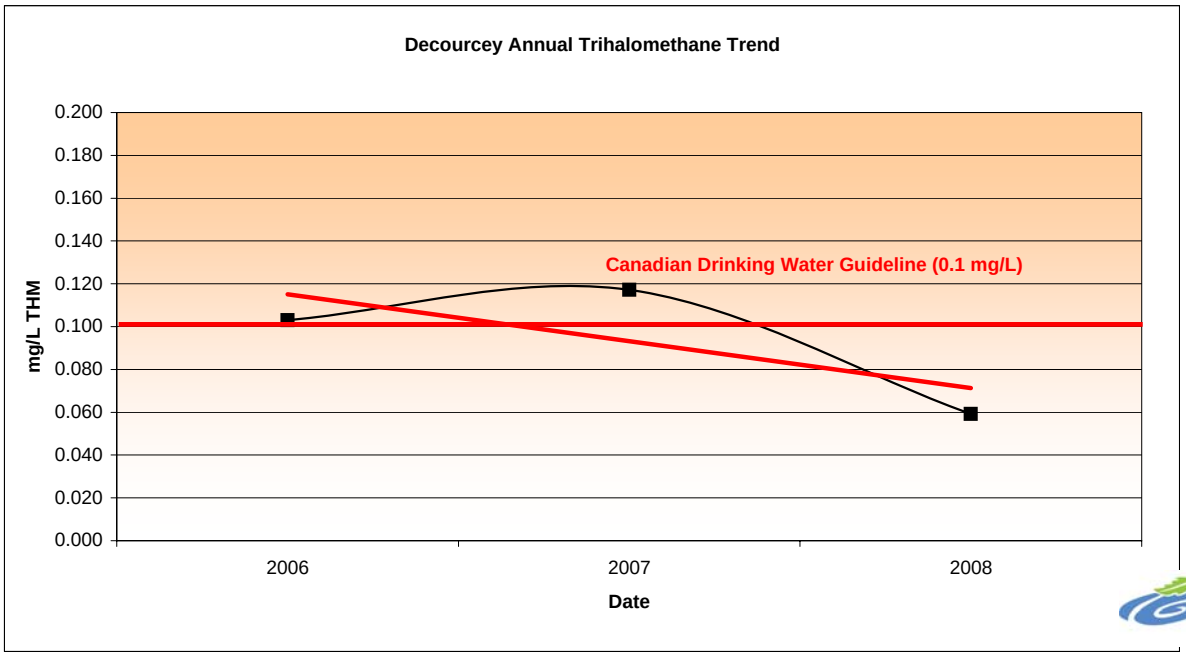
water SMART zero waste

REGIONAL DISTRICT OF NANAIMO

Decourcey Quarterly Well Testing — Trihalomethanes (mg/L)

Date	THM	mg/L				
	2003	2004	2005	2006	2007	2008
Jan						
Feb						
Mar					0.127	0.064
Apr						
May				0.123		
Jun					0.118	0.09
Jul				0.101		
Aug						
Sep				0.074	0.105	0.014
Oct						
Nov						
Dec				0.114	0.119	0.069
Avg				0.103	0.117	0.059





water SMART zero waste

Regional District of Nanaimo - Utilities Department

Decourcey Water Analysis - Monthly Report

Date Jan-08	Sample Location (Address)	Fecal Coli * Health Dep	Total Coli * Health Dep	Total Coli RDN	E Coli RDN	Temp ^{o} C	pH	Cl_2 ppm	TDS ppm	Sal %	Cond uS/cm	Fe ppm	Mn ppm
08-Jan	2418 Pylades	0	0	0	0	6	7	0.03	274	0.3	579	0.07	0.002
15-Jan	2418 Pylades			0	0	6	6.8	0.02	269	0.3	571		
22-Jan	2418 Pylades					6	7	0.02	266	0.3	568		
	Average	0	0	0	0	6.0	6.9	0.02	269.7	0.3	572.7	0.07	0.002
	Maximum	0	0	0	0	6	7	0.03	274	0.3	579	0.07	0.002
	Minimum	0	0	0	0	6	6.8	0.02	266	0.3	568	0.07	0.002

Red font indicates non-compliance with Canadian Drinking Water Guidelines / BC Approved Water Quality Guidelines
Coliforms are measured in colony forming units (CFU) per 100 millilitres of water
* Yellow Column Coliform tests are done by Health Department
Green 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 - Utilities Department

Decourcey Water Analysis - Monthly Report

Date Feb-08	Sample Location (Address)	Fecal Coli * Health Dep	Total Coli * Health Dep	Total Coli RDN	E Coli RDN	Temp ^{o} C	pH	Cl_2 ppm	TDS ppm	Sal %	Cond uS/cm	Fe ppm	Mn ppm
05-Feb	2418 Pylades Dr	0	0	0	0	4	7.1	0.01	265	0.3	564	0.08	0.002
12-Feb	2418 Pylades Dr			0	0	5	7	0.01	263	0.3	560		
20-Feb	2418 Pylades Dr			0	0	6	6.9	0.02	258	0.3	552		
26-Feb	2418 Pylades Dr			0	0	7	7	0.03	246	0.3	541		
	Average	0	0	0	0	5.5	7.0	0.02	258.0	0.3	554.3	0.08	0.002
	Maximum	0	0	0	0	7	7.1	0.03	265	0.3	564	0.08	0.002
	Minimum	0	0	0	0	4	6.9	0.01	246	0.3	541	0.08	0.002

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Coliforms are measured in colony forming units (CFU) per 100 millilitres of water
* Yellow Column Coliform tests are done by Health Department
Green 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 - Utilities Department

Decourcey Water Analysis - Monthly Report

Date Mar-08	Sample Location (Address)	Fecal Coli * Health Dep	Total Coli * Health Dep	Total Coli RDN	E Coli RDN	Temp ^{o} C	pH	Cl_2 ppm	TDS ppm	Sal %	Cond uS/cm	Fe ppm	Mn ppm
04-Mar	2418 Pylades Dr	0	0	0	0	7	6.9	0.04	256	0.3	545	0.06	0.004
12-Mar	2418 Pylades Dr			0	0		6.9	0.03	260	0.3	548		
18-Mar	2418 Pylades Dr			0	0	7	7	0.02	256	0.3	540		
26-Mar	2418 Pylades Dr					8	6.9	0.02	254	0.3	540		
	Average	0	0	0	0	7.3	6.9	0.03	256.5	0.3	543.3	0.06	0.004
	Maximum	0	0	0	0	8	7	0.04	260	0.3	548	0.06	0.004
	Minimum	0	0	0	0	7	6.9	0.02	254	0.3	540	0.06	0.004

Red font indicates non-compliance with Canadian Drinking Water Guidelines / BC Approved Water Quality Guidelines
Coliforms are measured in colony forming units (CFU) per 100 millilitres of water
* Yellow Column Coliform tests are done by Health Department
Green 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 - Utilities Department

Decourcey Water Analysis - Monthly Report

Date Apr-08	Sample Location (Address)	Fecal Coli * Health Dep	Total Coli * Health Dep	Total Coli RDN	E Coli RDN	Temp ^{o} C	pH	Cl_2 ppm	TDS ppm	Sal %	Cond uS/cm	Fe ppm	Mn ppm
02-Apr	2418 Pylades Dr			0	0	7	7	0.08	259	0.3	540	0.07	
08-Apr	2418 Pylades Dr			0	0	8	6.9	0.04	256	0.3	536		
15-Apr	2418 Pylades Dr			0	0	9	6.9	0.06	258	0.3	539		0.001
22-Apr	2418 Pylades Dr	0	0	0	0	9	6.9	0.05	253	0.3	533		
	Average	0	0	0	0	8.3	6.9	0.06	256.5	0.3	537.0	0.07	0.001
	Maximum	0	0	0	0	9	7	0.08	259	0.3	540	0.07	0.001
	Minimum	0	0	0	0	7	6.9	0.04	253	0.3	533	0.07	0.001

Red font indicates non-compliance with Canadian Drinking Water Guidelines / BC Approved Water Quality Guidelines
Coliforms are measured in colony forming units (CFU) per 100 millilitres of water
* Yellow Column Coliform tests are done by Health Department
Green 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 - Utilities Department

Decourcey Water Analysis - Monthly Report

Date May-08	Sample Location (Address)	Fecal Coli * Health Dep	Total Coli * Health Dep	Total Coli RDN	E Coli RDN	Temp ^{o} C	pH	Cl_2 ppm	TDS ppm	Sal %	Cond uS/cm	Fe ppm	Mn ppm
06-May	2418 Pylades Dr	0	0	0	0	11	7.1	0.04	256	0.3	534	0.06	0.003
21-May	2418 Pylades Dr			0	0	12	7	0.03	257	0.3	538		
27-May	2418 Pylades Dr			0	0	14	6.9	0.04	256	0.3	534		
	Average	0	0	0	0	12.3	7.0	0.04	256.3	0.3	535.3	0.06	0.003
	Maximum	0	0	0	0	14	7.1	0.04	257	0.3	538	0.06	0.003
	Minimum	0	0	0	0	11	6.9	0.03	256	0.3	534	0.06	0.003

Red font indicates non-compliance with Canadian Drinking Water Guidelines / BC Approved Water Quality Guidelines
Coliforms are measured in colony forming units (CFU) per 100 millilitres of water
* Yellow Column Coliform tests are done by Health Department
Green 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 - Utilities Department

Decourcey Water Analysis - Monthly Report

Date Jun-08	Sample Location (Address)	Fecal Coli * Health Dep	Total Coli * Health Dep	Total Coli RDN	E Coli RDN	Temp ^{o} C	pH	Cl_2 ppm	TDS ppm	Sal %	Cond uS/cm	Fe ppm	Mn ppm
04-Jun	2418 Pylades Dr			0	0	14	6.9	0.02	255	0.3	533	0.06	0.002
11-Jun													
17-Jun	2418 Pylades Dr	0	0	0	0	14	6.9	0.04	263	0.3	549		
24-Jun	2418 Pylades Dr					15	6.8	0.04	270	0.3	562		
	Average	0	0	0	0	14.3	6.9	0.03	262.7	0.3	548.0	0.06	0.002
	Maximum	0	0	0	0	15	6.9	0.04	270	0.3	562	0.06	0.002
	Minimum	0	0	0	0	14	6.8	0.02	255	0.3	533	0.06	0.002

Red font indicates non-compliance with Canadian Drinking Water Guidelines / BC Approved Water Quality Guidelines
Coliforms are measured in colony forming units (CFU) per 100 millilitres of water
* Yellow Column Coliform tests are done by Health Department
Green 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 - Utilities Department

Decourcey Water Analysis - Monthly Report

Date Jul-08	Sample Location (Address)	Fecal Coli * Health Dep	Total Coli * Health Dep	Total Coli RDN	E Coli RDN	Temp ^{o} C	pH	Cl_2 ppm	TDS ppm	Sal %	Cond uS/cm	Fe ppm	Mn ppm
02-Jul	2418 Pylades Dr	0	0										
09-Jul	2418 Pylades Dr			0	0	17	7	0.05	278	0.3	579	0.05	0.003
15-Jul	2418 Pylades Dr			0	0	17	7	0.02	286	0.3	598		
22-Jul	2418 Pylades Dr			0	0	18	6.9	0.02	292	0.3	609		
29-Jul	2418 Pylades Dr			0	0	18	6.8	0.02	292	0.3	608		
	Average	0	0	0	0	17.5	6.9	0.03	287.0	0.3	598.5	0.05	0.003
	Maximum	0	0	0	0	18	7	0.05	292	0.3	609	0.05	0.003
	Minimum	0	0	0	0	17	6.8	0.02	278	0.3	579	0.05	0.003

Red font indicates non-compliance with Canadian Drinking Water Guidelines / BC Approved Water Quality Guidelines
Coliforms are measured in colony forming units (CFU) per 100 millilitres of water
* Yellow Column Coliform tests are done by Health Department
Green 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 - Utilities Department

Decourcey Water Analysis - Monthly Report

Date Aug-08	Sample Location (Address)	Fecal Coli * Health Dep	Total Coli * Health Dep	Total Coli RDN	E Coli RDN	Temp ^{o} C	pH	Cl_2 ppm	TDS ppm	Sal %	Cond uS/cm	Fe ppm	Mn ppm
06-Aug	2418 Pylades Dr	0	0	0	0	18	6.9	0.02	296	0.3	615	0.06	0.003
12-Aug	2418 Pylades Dr			0	0	18	6.9	0.02	298	0.3	623		
19-Aug	2418 Pylades Dr			0	0	18	6.8	0.02	299	0.3	621		
26-Aug	2418 Pylades Dr			0	0	18	7	0.02	301	0.3	627		
	Average	0	0	0	0	18.0	6.9	0.02	298.5	0.3	621.5	0.06	0.003
	Maximum	0	0	0	0	18	7	0.02	301	0.3	627	0.06	0.003
	Minimum	0	0	0	0	18	6.8	0.02	296	0.3	615	0.06	0.003

Red font indicates non-compliance with Canadian Drinking Water Guidelines / BC Approved Water Quality Guidelines
Coliforms are measured in colony forming units (CFU) per 100 millilitres of water
* Yellow Column Coliform tests are done by Health Department
Green 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 - Utilities Department

Decourcey Water Analysis - Monthly Report

Date Sep-08	Sample Location (Address)	Fecal Coli * Health Dep	Total Coli * Health Dep	Total Coli RDN	E Coli RDN	Temp ^{o} C	pH	Cl_2 ppm	TDS ppm	Sal %	Cond uS/cm	Fe ppm	Mn ppm
16-Sep	2418 Pylades Dr	0	0	0	0	17	6.9	0.03	301	0.3	627	0.06	0.004
	Average	0	0	0	0	17.0	6.9	0.03	301.0	0.3	627.0	0.06	0.004
	Maximum	0	0	0	0	17	6.9	0.03	301	0.3	627	0.06	0.004
	Minimum	0	0	0	0	17	6.9	0.03	301	0.3	627	0.06	0.004

Red font indicates non-compliance with Canadian Drinking Water Guidelines / BC Approved Water Quality Guidelines
Coliforms are measured in colony forming units (CFU) per 100 millilitres of water
* Yellow Column Coliform tests are done by Health Department
Green 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 - Utilities Department

Decourcey Water Analysis - Monthly Report

Date Oct-08	Sample Location (Address)	Fecal Coli * Health Dep	Total Coli * Health Dep	Total Coli RDN	E Coli RDN	Temp ^{o} C	pH	Cl_2 ppm	TDS ppm	Sal %	Cond uS/cm	Fe ppm	Mn ppm
07-Oct	2418 Pylades Dr	0	0	0	0	15	6.9	0.02	296	0.3	619	0.05	0.004
15-Oct	2418 Pylades Dr			0	0	13	6.9	0.03	296	0.3	619		
21-Oct	2418 Pylades Dr			0	0	12	6.9	0.03	300	0.3	625		
29-Oct	2418 Pylades Dr			0	0	11	6.8	0.03	305	0.3	629		
	Average	0	0	0	0	12.8	6.9	0.03	299.3	0.3	623.0	0.05	0.004
	Maximum	0	0	0	0	15	6.9	0.03	305	0.3	629	0.05	0.004
	Minimum	0	0	0	0	11	6.8	0.02	296	0.3	619	0.05	0.004

Red font indicates non-compliance with Canadian Drinking Water Guidelines / BC Approved Water Quality Guidelines
Coliforms are measured in colony forming units (CFU) per 100 millilitres of water
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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 - Utilities Department

Decourcey Water Analysis - Monthly Report

Date Nov-08	Sample Location (Address)	Fecal Coli * Health Dep	Total Coli * Health Dep	Total Coli RDN	E Coli RDN	Temp ^{o} C	pH	Cl_2 ppm	TDS ppm	Sal %	Cond uS/cm	Fe ppm	Mn ppm
04-Nov	2418 Pylades Dr	0	0	0	0	11	7	0.02	296	0.3	621	0.06	0.008
12-Nov	2418 Pylades Dr			0	0	11	7	0.02	296	0.3	622		
18-Nov	2418 Pylades Dr			0	0	10	6.9	0.02	294	0.3	613		
25-Nov	2418 Pylades Dr			0	0	11	6.8	0.02	296	0.3	620		
	Average	0	0	0	0	10.8	6.9	0.02	295.5	0.3	619.0	0.06	0.008
	Maximum	0	0	0	0	11	7	0.02	296	0.3	622	0.06	0.008
	Minimum	0	0	0	0	10	6.8	0.02	294	0.3	613	0.06	0.008

Red font indicates non-compliance with Canadian Drinking Water Guidelines / BC Approved Water Quality Guidelines
Coliforms are measured in colony forming units (CFU) per 100 millilitres of water
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Green 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 - Utilities Department

Decourcey Water Analysis - Monthly Report

Date Dec-08	Sample Location (Address)	Fecal Coli * Health Dep	Total Coli * Health Dep	Total Coli RDN	E Coli RDN	Temp ^{o} C	pH	Cl_2 ppm	TDS ppm	Sal %	Cond uS/cm	Fe ppm	Mn ppm
02-Dec	2418 Pylades Dr	0	0	0	0	9	6.9	0.02	293	0.3	615	0.05	0
09-Dec	2418 Pylades Dr			0	0	9	6.8	0.02	288	0.3	608		
16-Dec	2418 Pylades Dr			0	0								
	Average	0	0	0	0	9.0	6.9	0.02	290.5	0.3	611.5	0.05	0
	Maximum	0	0	0	0	9	6.9	0.02	293	0.3	615	0.05	0
	Minimum	0	0	0	0	9	6.8	0.02	288	0.3	608	0.05	0

Red font indicates non-compliance with Canadian Drinking Water Guidelines / BC Approved Water Quality Guidelines
Coliforms are measured in colony forming units (CFU) per 100 millilitres of water
* Yellow Column Coliform tests are done by Health Department
Green 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 not included in Public Copy.