

Regional District of Nanaimo

**MELROSE
TERRACE**

**Water Local Service Area
Annual Report**

2007



Table of Contents

| | | |
|-----|---|---|
| 1. | Introduction..... | 1 |
| 2. | Melrose Water System..... | 1 |
| 2.1 | Groundwater Wells | 1 |
| 2.2 | Reservoirs..... | 1 |
| 2.3 | Distribution System..... | 1 |
| 3. | Water Sampling and Testing Program..... | 2 |
| 4. | Water Quality - Source Water and Distribution System..... | 2 |
| 5. | Water Quality Inquiries and Complaints | 2 |
| 6. | Groundwater Production and Consumption..... | 3 |
| 7. | Maintenance Program..... | 4 |
| 8. | Water System Projects..... | 4 |
| 8.1 | 2007 Completed Studies & Projects..... | 4 |
| 8.2 | 2008 Proposed Projects & Upgrades | 4 |
| 8.3 | 2008 Proposed Studies..... | 4 |
| 9. | Emergency Response Plan..... | 4 |
| 10. | Cross Connection Control..... | 5 |
| 11. | Closing..... | 5 |

Appendix A - Map of Melrose Water Local Service Area

Appendix B - Water Quality Testing Results

Appendix C - Emergency Response Plan

1. Introduction

The following annual report describes the Melrose Water Local Service Area and summarizes the water quality and production data from 2007. 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 2008.

2. Melrose Water System

The Melrose Water Service Area was established in April 2005 when the RDN acquired the existing Melrose Terrace Strata Plan VIS3747 water system. The water service area is comprised of 28 residential properties on Melrose Road located near the Alberni Highway southwest of Coombs. The water source for the Melrose Water Service Area comes from one groundwater well located nearby. The water is chlorinated and stored in a single reservoir. The water is then filtered through sand and charcoal filters, and re-chlorinated before entering the distribution system. A map of the Melrose Water System is provided in Appendix A for reference.

2.1 Groundwater Wells

One groundwater production well is present at the reservoir site on Melrose Road, west of Qualicum Beach, B.C.

| Well / Name | Well Depth | Wellhead Protection | Treated/Untreated with Chlorine |
|-------------|------------|---------------------|---------------------------------|
| #1 | 26.2 m | Yes | Treated |

2.2 Reservoirs

One service reservoir (steel structure) is present at 3853 Melrose Road, and has a capacity of 136 m³ (30,000 imperial gallons).

2.3 Distribution System

The water distribution system in Melrose is comprised of 150mm PVC watermains. There are no fire hydrants located within 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 |
| 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

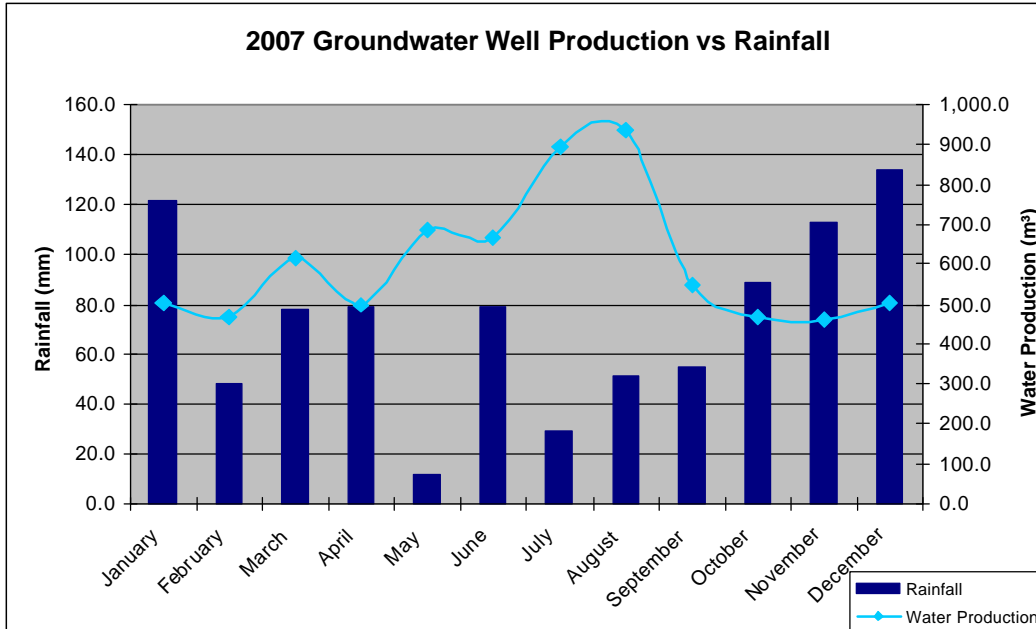
Up-to-date water quality reports and lab data are posted monthly on the RDN website at www.rdn.bc.ca in the WaterSmart section, under “Communities”. Tables of water quality testing results for both the source water and distribution system are provided at the end of this report under Appendix B.

5. Water Quality Inquiries and Complaints

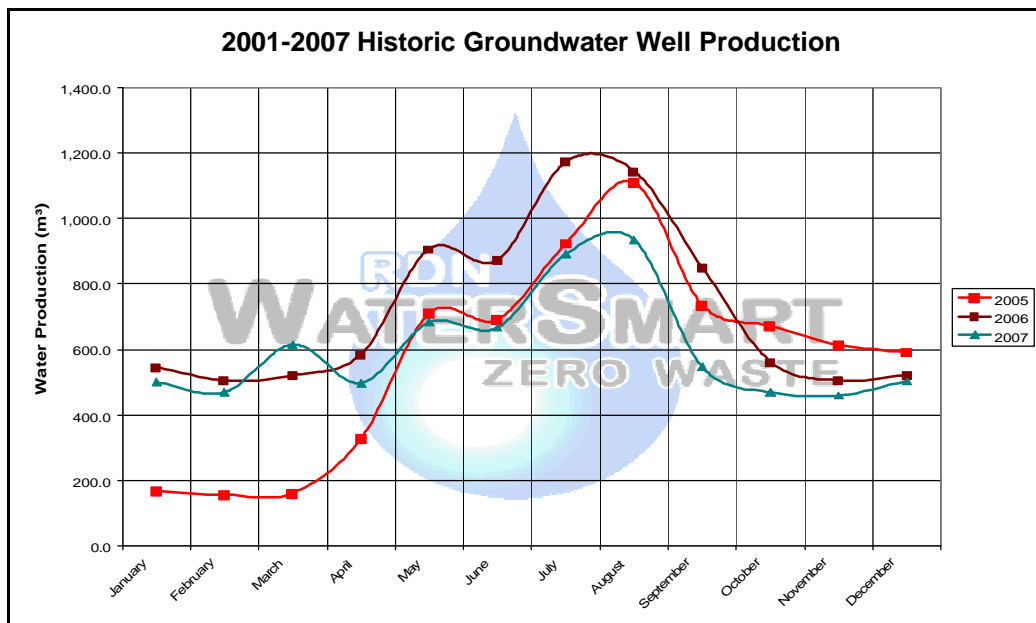
Very few complaints and inquiries were received from the Melrose water service area, and were typically related to power outages.

6. Groundwater Production and Consumption

The 2007 monthly groundwater production for the Melrose water service area is shown in the chart below. There are 28 water service connections in the Melrose water service area. Groundwater production has been charted against rainfall data from the City of Parksville website to show how rainfall affects the amount of groundwater pumped.



The monthly groundwater production for the Melrose water service area for the past 3 years is shown in the chart below. Groundwater production in 2007 was typically lower than previous years.



Consumption

In the Fall/Winter of 2007, the average usage per home in the Melrose water service area was approximately 0.58 cubic metres per day (128 imperial gallons). In the summer, the average water usage was 0.73 cubic metres per day (160 imperial gallons).

7. Maintenance Program

Regular maintenance and inspections are completed around the wellhead area to reduce or eliminate the risk of contamination and system failure. Watermains are flushed once annually; in the Spring. There are no fire hydrants on the system.

8. Water System Projects

8.1 2007 Completed Studies & Projects

- A Drinking Water - Watershed Protection Action Plan was completed.
- An Innovative Water Use and Re-Use Study was completed.
- A Water Use Bylaw - Best Practices Review was completed.
- A formalized Cross Connection Control Program was initiated.
- A comprehensive water conservation program ([WaterSmart](#)) was carried out from May to October.
- The RDN [WaterSmart](#) website was updated and improved.
- The Emergency Response Plan was reviewed and updated.
- A SCADA (Supervisory Control and Data Acquisition) Study was initiated.
- The annual watermain flushing was completed.

8.2 2008 Proposed Projects & Upgrades

- Radio Meter Pilot Study (for water meters)
- Upgrades to flush-outs
- New signage for all Utilities facilities
- Re-keying all locked facilities
- Implement innovative use and re-use technology
- Stand-alone water testing stations to be installed
- Promote Cross Connection Control awareness and facility audits

8.3 2008 Proposed Studies

- Complete SCADA study and integrate into 2009 budget
- Rainwater management strategy
- Sodium hypochlorite vs. on-site chlorine generation
- Comprehensive capital plan development

9. Emergency Response Plan

The Emergency Response Plan (ERP) was reviewed and updated in 2007. 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.

A consultant who specializes in municipal Cross Connection Control was hired to enhance the RDN Cross Connection Control Program in 2007/2008. The program in 2008 will include:

- A review and comparison of successful cross-connection control programs implemented by other small water systems nearby,
- A survey of existing or potential cross-connection risks for each category of RDN customer (i.e., residential, commercial, industrial, institutional, etc.),
- 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,
- The set up of a customer database with a maintenance history of testable backflow prevention assemblies at each facility, and
- Staff training and certification in Backflow Assembly Testing (BCWWA certified).

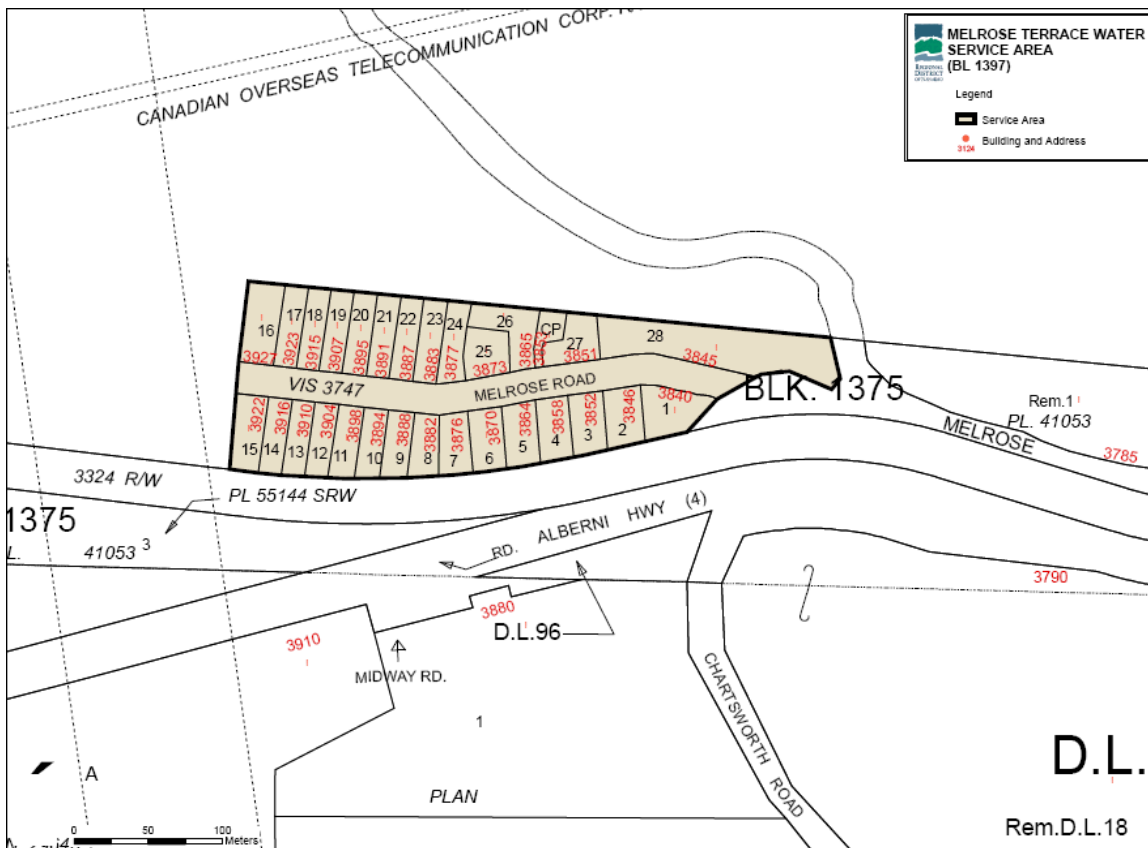
11. Closing

An annual report for the year 2008 will be prepared and submitted to the Vancouver Island Health Authority in the Spring of 2009. Annual reports are also available on our website at www.rdn.bc.ca in the WaterSmart section, under “Communities”.

APPENIDX A

**MAP OF MELROSE
WATER LOCAL SERVICE AREA**

MELROSE WATER LOCAL SERVICE AREA



APPENDIX B

WATER QUALITY TESTING RESULTS

APPENDIX C

EMERGENCY RESPONSE PLAN