



Water Purveyor Working Group: Regional District of Nanaimo

A Workshop on:

Small Scale Water Treatment Options and Financing

GROUP DISCUSSION NOTES

27 June 2012

Quality Resort Bayside, Parksville, BC

The workshop included several group discussions, in which participants formed groups of 3 – 6 people. After each discussion the groups were invited to share interesting points from their discussion. Below is a summary of the points that were shared for each of the discussion questions.

WHAT SOURCES OF WATER CONTAMINATION EXIST FOR SMALL SYSTEMS?

- Agricultural run-off
 - o Fertilizer
 - o Manure
 - o Pesticides (e.g. PCP)
- Floodplain
- Septic systems
- Transportation
- Storm water
- Bio-hazard spills
- Oil dumping
- Airborne pollutants
- Industrial activities
- Stagnant ponds
- Aquifer Storage Recovery (ASR)
- Beaver Fever (giardiasis, from surface water)
- Turbidity
- Chlorine
- Tourism
- Terrorists

WHAT OPTIONS ARE THERE FOR AVOIDING CONTAMINATION?

- Awareness of risks and surroundings
- Security of system
- Monitoring
- Restricting access
- Water treatment

WHAT ARE THE BENEFITS OF THE TYPE OF TREATMENT YOU USE?

- Chlorine
 - o 6% is safe to use, and cheap at Walmart
- Reverse Osmosis / desalination
 - o Low maintenance
 - o Reliable
 - o Relatively simple
- No treatment
 - o Zero costs!

WHAT ARE THE CHALLENGES WITH THE TYPE OF TREATMENT YOU USE?

- UV
 - o Cleaning lenses
- Chlorine
 - o Variation in residual
- Ozone
 - o Hard to manage, high maintenance
- Filtration
 - o Expensive for small systems
 - o Require monitors, pressure gauges
- Sand filtration
 - o Back-flushing is a hassle
- Reverse Osmosis / desalination
 - o Large capital costs

HOW CAN YOUR TYPE OF WATER TREATMENT BE IMPROVED / OPTIMIZED?

- UV
 - o Include a back-flush pre-treatment, to reduce cartridge filter plug-up
 - o Chlorine for residual treatment in the distribution system
- Chlorine
 - o Rotating monitoring locations through the system
 - o Automated monitoring (expensive)

WHAT QUESTIONS DO YOU STILL HAVE ABOUT YOUR TYPE OF TREATMENT?

- What are some good pre-treatments for removing manganese and iron?
 - o Green sand filters?
 - o Water softener hasn't worked – clogged up
- Multi-barrier methods
 - o What are the long term health effects of such sterile water?

HOW WOULD YOU FINANCE A MAJOR WATER TREATMENT INVESTMENT?

- Loan from a bank
- Development Cost Charges (DCC's)
- Government Grants – not available for micro-systems currently
- Water users – now or later

This meeting was a continuation of the activities of the RDN Water Purveyor Working Group (WPWG), the first meeting of which was in December 2010 and the second in September 2011. The purposes of the WPWG include the provision of opportunities for the members to exchange operating experience and to learn about best practices concerned with the operation of community water supply systems.
