Drinking Water Quality in British Columbia: The Public Health Perspective
### Health Goals for British Columbia

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Provincial Health Officer’s Annual Report 2000
## Drinking Water Quality and the B.C. Health Goals

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<td>Objective 3.2: Improve and maintain the quality and safety of water throughout British Columbia.</td>
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<td>Objective 6.12: Reduce waterborne and foodborne diseases.</td>
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Figure 2: Enteric (Intestinal) Disease Rates, 1986 - 1998

Reported cases per 100,000 population

Year

A Report on the Health of British Columbians

Provincial Health Officer’s Annual Report 2000

Drinking Water Quality in British Columbia: The Public Health Perspective

British Columbia Ministry of Health Planning
Office of the Provincial Health Officer

October 2001
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Inventory of B.C.’s Water Systems

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• 3,016 water systems under provincial jurisdiction.
• 468 First Nations water systems.
• Half the population gets their water from the two largest systems: Greater Vancouver and Capital districts.
• Two-thirds of provincial systems are “small” systems.
• Three-quarters of systems use surface water.
• 304 boil-water advisories in August 2001.
• 29 waterborne outbreaks in B.C. in past 20 years, caused by parasites, bacteria, and viruses.
• Arsenic, nitrates, and turbidity affect water in certain areas of the province.
Figure 3: Boil-Water Advisories, B.C., 1986 - 2001

This chart shows the number of advisories in place at one point in time each year. In August 2001, there were 304 advisories, affecting about 10 per cent of the 3,016 water systems and one per cent of the provincial population. The increase in boil-water advisories in recent years is due in part to the Safe Drinking Water Regulation and increased emphasis on testing and reporting, which leads to identification of more unsafe water supplies. Source: Public Health Protection, B.C. Ministry of Health Services.
Information Gaps

• How many water systems are there in B.C. today?
• How many systems are “orphans”?
• What types of water treatment are in use?
• How many log reductions does the treatment provide against viruses, *Giardia, Cryptosporidium*?
• How many systems comply with the B.C. Safe Drinking Water Regulation?
• How many systems have staff who have undergone operator training and certification?
• Other than during outbreaks, what is the level of water-related illness in B.C.?
Eight Key Messages

1. All surface water is susceptible to contamination.
2. A multi-barrier approach is the best assurance of safe drinking water.
3. Water System management requires risk assessment, risk management, and a culture of continuous quality improvement.
4. Protecting water sources is important, but there are limits to what such measures can achieve. Pathogens such as *Giardia* and *Cryptosporidium* (because of the sources in wildlife) will always be present in B.C. watersheds.
Eight Key Messages (continued)

5. All surface water requires disinfection.
7. British Columbia needs a database that reports on water system characteristics, water system performance, and the occurrence of water-related illnesses.
8. If we want to improve drinking water quality in B.C., we will have to find ways to pay for it.
Blueprint for Action on Drinking Water Quality

32 Recommended Actions

1. Commitment to drinking water quality
   1. Legislated authority*
   2. Size of regulated programs*
   3. New and orphaned water systems
   4. Groundwater
   5. Cross-connection control
   6. Inter-ministry coordination*
   7. Drinking water specialists
   8. First Nations water systems
   9. Standards and guidelines
   10. Microbiological treatment standards*
   11. Fluoridation
   12. Additional resourcing
   13. Access to capital funds

2. Risk assessment and information gathering
   14. Multiple barriers and critical control points
   15. Hazard identification and risk assessment
   16. Surveillance for waterborne disease
   17. Standardized data-set and provincial database for drinking water quality

3. Planning for risk management
   18. Risk management plans
   19. Triggering of boil-water advisories
   20. Regional action plans

4. Quality assurance and good management practice
   21. Laboratory accreditation
   22. Testing of raw water sources
   23. Terms and conditions of operating permits
   24. Operator training and certification
   25. Practice guidelines – local health officials

5. Public involvement and education
   26. Community involvement
   27. Public education

6. Accountability
   28. Performance measures*
   29. Public reporting*

7. Research and evaluation
   30. Watershed and groundwater research
   31. Walkerton Inquiry report
   32. Long-term review of results

* Priority recommendations
Priority Recommendations

• Provide legislative authority that establishes the safety of drinking water as the priority consideration where there are competing water uses (recommendation 1).
• Consider establishing various levels of regulation, depending on the size of the water system and the population served (recommendation 2).
• Make a commitment to coordination in the regulation and management of water systems (recommendation 6).
• Require microbiological treatment standards (recommendation 10).
• Establish a set of performance measures for drinking water systems, along with methods for public reporting of results (recommendations 28 and 29).