



SMALL WATER USERS ASSOCIATION OF BRITISH COLUMBIA

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EXECUTIVE DIRECTOR'S REPORT

The Small Water Users Association of BC seems to be better known these days, since I now get about half of our general enquiries (emails & telephone calls) from non-members.

Since our last newsletter (January 2010), I participated in the development of the agenda for the British Columbia Water & Waste Association (BCWWA) small water system symposium at their annual conference. The conference took place in Whistler in May, and I chaired the afternoon session of the symposium. There were over 100 attendees, though not all represented small systems.

Also in May I was in Vancouver to attend the Board meeting of RES'EAU WaterNET. Now in the second year of a five year program, RES'EAU WaterNET is a multi-university research network trying to develop affordable solutions for providing safe drinking water to small, rural communities and First Nations communities. If interested, you can find more information about RES'EAU WaterNET at: www.reseauwaternet.ca.

In March I attended a British Columbia Groundwater Association (BCGWA) conference in Kelowna. Several of our affiliate members had booths at the conference,

which is attended primarily by well drilling firms, pump installers and hydrogeological engineers. Later that same month I was in Victoria for meetings with the Ministry of Healthy Living & Sport and the Sustainable Infrastructure Society and to attend a First Nations drinking water conference held at the University of Victoria.

The British Columbia Water & Waste Association (BCWWA) recently published an article I wrote entitled "Small Water Systems, Nine Years after the DWPA". For those who did not see it, a copy of the article is included with this newsletter .

Lastly, I am pleased to announce that Ron Craig has agreed to serve as a Director of our Association. Ron has an extensive background working with small water systems, most recently as a drinking water officer with Northern Health in Terrace. He recently retired from Northern Health, but continues to assist small systems in the Terrace area with environmental assessments, source-to-tap reviews and water quality studies. Ron's email address is flourish@telus.net.

This month's newsletter is quite lengthy and contains information on a wide variety of subjects. I hope that there will be at least a few items of interest to each of our members. As always, your feedback and comments are most welcome.

Denny Ross-Smith
Executive Director

GROUNDWATER VIOLATION TICKETS

In Newsletter #6 (November, 2007), we reported on changes to the Offence Act, Violation Ticket Administration and Fines Regulation concerning offences related to the Drinking Water Protection Act for which violation tickets could be issued. In January, 2010 the Offence Act was again amended to include a number of new offences under the Water Act, specifically relating to groundwater. The fines for these offences range from \$115.00 to \$575.00. A partial list of these offences and fines is included in Appendix 1. For the complete list, including offences under the Drinking Water Protection Act, we suggest that you 'Google': 'violation ticket administration and fines regulation', and then go to section 2.

It is interesting to note that regional staff within the Water Stewardship Division of the Ministry of Environment (e.g. ground water protection officers) cannot issue tickets under the Water Act – they must be issued by a conservation officer.

IHA POINT OF ENTRY/POINT OF USE TREATMENT POLICY

In May, 2010, Interior Health presented a document entitled: "Point of Entry and Point of Use (POE/POU) Treatment Policy". Quite frankly we find many aspects of the policy to be confusing; often without a clear distinction between what is required vs. what is merely desirable. For example, one part states that water supply systems using POE/POU *are expected to meet* both 43210 objectives and the Guidelines for Canadian Drinking Water Quality (GCDWQ). Yet elsewhere it states that POE/POU treatment systems should be considered as an interim measure, e.g. if they incorporate 1 micron

filtration plus UV disinfection which ‘will substantially reduce risk to users *even though they may not meet potable water standards in all situations*’.

In any case, the advice we provided in Newsletter #9 still stands: before committing to any significant expenses on POE or POU, or for that matter on central treatment, discuss your plans in detail with both your drinking water officer and your public health engineer. Any members who would like to have the IHA POE/POU Treatment Policy please contact us and we will be pleased to mail or email you a copy.

UPCOMING EVENTS

WSABC (Water Supply Association of BC): Annual general Meeting & Conference, October 21-22, 2010, Spirit Ridge Vineyard Resort & Spa, Osoyoos

CWWA (Canadian Water & Waste Association): 14th Canadian National Conference & 5th Policy Forum on Drinking Water, October 30 – November 3, 2010, Sheraton Cavalier Hotel, Saskatoon

BCWWA annual conference & tradeshow: April 16-20, 2011, Delta Grand Okanagan Resort & Conference Center, Kelowna

GWUDI

A “Guidance Document for Determining Ground Water at Risk of Containing Pathogens Including Ground Water under the Direct Influence of Surface Water” (GWUDI Document) was presented in March at a meeting of the BC Groundwater Association in Kelowna. The GWUDI Document suggests an approach to be taken by the health authorities that could have serious cost implications for many small ground water systems. You can read the entire document (draft 5, 52 pages) by Goggling the title.

In brief summary, the document suggests a screening tool for drinking water officers to use for preliminary determinations of ground water at risk. Some 12 factors are considered, covering:

- water quality results,
- source type & location,
- well construction details, and,
- aquifer type & setting

If any one or more of the 12 factors suggests that the water is at risk of containing pathogens, and if the water supplier does not agree to undertake remediation, the drinking water officer can order a preliminary hydrogeological investigation. An investigation can also be ordered if the drinking water officer is unable to determine the risk status. Depending on the results of the preliminary investigation, an advanced hydrogeological investigation may be required. Needless to say this could have serious cost implications, even for a preliminary investigation.

The GWUDI document is presently being reviewed within the provincial government, and may undergo further revisions. As further information becomes available we will keep you informed.

SOME INTERESTING STATISTICS

A report entitled “Progress on the Action Plan for Safe Drinking Water in British Columbia 2008” (Office of the Provincial Health Officer) contained the following statistics which some of you may find interesting:

Health Authority	# of Public Health Inspectors *	# of Drinking Water Systems	# of Boil Orders**	Boil Orders as % of Total Systems
VCH	3.5	279	32	11.5
FHA	6	484	11	2.2
VIHA	6	945	52	5.5
IHA	20	1778	367	20.6
NHA	5	1105	46	4.1
TOTAL	37.5	4591	508	11.0

* Most are not entirely assigned to drinking water systems

**Updated to 2010

The report also notes that there were no outbreaks of waterborne disease reported between April 2005 and March 2007. Furthermore, the rates of reported diseases that are often linked to drinking water have been steadily declining in B.C., as per the following table:

Disease	1998	2003	2007
Giardiasis rates per 10,000 population	27.0	17.9	14.9
Total reports	1075	742	649
Cryptosporidiosis rates per 10,000 population	3.5	3.9	2.0
Total reports	139	162	87
Campylobacteriosis rates per 10,000 population	69.3	41.2	37.6
Total reports	2760	1712	1640

WATER ACT MODERNIZATION

The BC Water Act is under review by the Ministry of Environment, and earlier this year they presented a “BC Water Act Modernization Discussion Paper” for public review. Some of you likely attended the information sessions which were held around the province. The Discussion Paper is available on the Living Water Smart website (www.livingwatersmart.ca). The four goals for review were:

1. Protect steam health and aquatic environments.
2. Improve water governance arrangements.
3. Introduce more flexibility and efficiency in the water allocation system.

4. Regulate groundwater extraction and use in priority areas and for large withdrawals.

The British Columbia Water & Waste Association (BCWWA) provided an extensive response to the Water Act Modernization Discussion Paper, with input from our Association. Their response is available on their website www.bcwwa.org for those who may be interested.

OPERATOR TRAINING COURSES

MTS Maintenance Training Systems Inc. offers a series of water system operator training courses at their Vernon facility. Information on these courses can be obtained by calling them at 250-503-0893 or on their website at www.mtsinc.ca. They can also provide on-site hands-on training via a mobile training trailer, for which the cost per person is \$600.00 for two days, and \$775.00 for three days. For on-site training MTS requires a minimum of 6 operators per session (maximum of 8). We would suggest that you let MTS know if you have an interest in the mobile training program, and if enough people in one area respond they can arrange an on-site course. The following is an excerpt from an email we received from MTS regarding this on-site program:

Many other opportunities are available for operator training. An excellent source of information on the available courses may be found at the new Training Registry on the Environmental Operators Certification Program (EOCP) website www.eocp.org.

TYPES OF WATER SYSTEMS IN BRITISH COLUMBIA *

Many of our members are unaware that there are quite a few different types of water supply systems in British Columbia, with different governance models and differing government oversight. According to the Ombudsman's Report (and drawing on information from the Provincial Health Officer and the regional health authorities), there are approximately 5,000 to 6,000 water systems in B.C. that fall under the provisions of the Drinking Water Protection Act & Regulation. Aside from municipal water systems, they fall under the following five different categories:

1. Regional Districts (RDs)

- RDs are incorporated under the Local Government Act, and are regulated by the Ministry of Community & Rural development (MoCRD).
- Some RDs own & operate as many as 15 or more small systems.
- RDs have varying attitudes towards acquiring small systems – some are willing and able, with acquisition policies in place, while others are reluctant or opposed.
- RDs are able to apply for federal/provincial infrastructure grants for up to 2/3 of the cost of capital projects, including water treatment.
- The number of small systems owned and operated by the 27 regional districts is somewhere around 200-250.

2. Improvement Districts (IDs), (includes Waterworks Districts & Irrigation Districts)
 - IDs are incorporated under the Local Government Act and are regulated by the Ministry of Community & Rural development.
 - IDs may be able to obtain long term financing (loans) from the Ministry of Finance.
 - IDs are ineligible for federal/provincial infrastructure grants unless acquired by a municipality or regional district.
 - IDs account for ~200 of the water systems in BC.
3. Water Users' Communities (WUCs)
 - All WUCs are surface water systems whereby 6 or more users incorporate under Section 51 of the Water Act (Certificate of Incorporation issued by the Comptroller of Water Rights).
 - WUCs fall under the jurisdiction of the Ministry of Environment (MoE), however there is very little direct ministerial oversight.
 - WUCs are Ineligible for infrastructure grants unless acquired by a municipality or regional district.
 - The MoE website lists some 150 WUCs, however quite a few are inactive or have been disbanded.
4. Water Utilities
 - A water utility is formed by a person or business (usually a developer) supplying domestic water to 5 or more people for compensation.
 - Water utilities are regulated by the MoE under the Water Utilities Act and the Utilities Commission Act.
 - Developers require a Certificate of Public Convenience & Necessity (CPCN) issued by the Comptroller of Water Rights.
 - Water utilities are ineligible for infrastructure grants unless acquired by a municipality or regional district.
 - The MoE currently regulates about 178 water utilities.
5. Private Water Supply Systems
 - This category includes everything else: private water societies, mobile home parks, RV parks, campgrounds, resorts, lodges, restaurants, B&Bs, shared wells, etc., that have their own water supply.
 - Many private systems are unknown to the provincial health authorities and consequently do not have an operating permit.
 - Private systems are ineligible for infrastructure grants unless acquired by a municipality or regional district.
 - This category includes the vast majority of water systems that fall under the provisions of the Drinking Water Protection Act & Regulation. The total number likely exceeds 5,000.

In addition to the ministries mentioned above, the Ministry of Healthy Living and Sport has responsibility for the development of drinking water legislation and other matters related to drinking water. The five regional health authorities are responsible for

enforcing the Drinking Water Protection Act & Regulation. And the Ministry of Environment, Water Stewardship Division, is responsible for enforcing the Water Act, Groundwater Protection Regulation.

Confused? – We don't blame you. Where else but in B.C.!

*Disclaimer: The above may contain some factual errors however it describes what is to the best of our knowledge the current situation in B.C. With so many government ministries and other agencies involved with drinking water it is very difficult for small water system owners/managers/operators, not to mention us, to understand which Acts and Regulations apply to whom and where your actual responsibilities lie.

NEW AFFILIATE MEMBERS

Our affiliate members include equipment vendors, consulting engineering firms, water test laboratories, and educational institutions. We appreciate their support for our Association. Each affiliate member has a listing on our website with information about their products or services. However if you do not wish to scroll through the list to find what you are looking for, just give us a call or email us and we'll suggest who to contact. New affiliate members since publication of our last newsletter include:

Aqua-Bility Projects Ltd., Kelowna
Mainstream Water Solutions Inc., Regina
Waterline Resources Inc., Nanaimo
Wolseley Waterworks Group, Langley

THE SUSTAINABLE INFRASTRUCTURE SOCIETY

The Sustainable Infrastructure Society, a non-profit organization set up to help community water supply systems (WSS) to access affordable resources, has created a range of programs and tools to help WSS to operate effectively. The following is a brief description of these resources, however you can learn more by visiting their new website at www.WaterBC.ca:

Asset Management & Rate Setting: The deterioration of infrastructure is a problem for many water supply systems. An asset management plan allows you to systematically manage assets, and schedule replacement or rehabilitation before it becomes a problem. The schedule in turn enables you to predict financing needs well into the future, and that in turn tells you how much you need to charge for water. SIS has industry partners who can help you with asset management and rate setting.

Water System Mapping: SIS is creating a way of making affordable scale plans of community water systems using the latest in computer and mapping tools, including geographic information system (GIS) technology. Such plans showing, for example, the position of pipes, reservoirs, and other items can help you to manage maintenance and control costs.

Point of Entry Water Treatment: If you are considering Point of Entry (POE) instead of central treatment, SIS can assist you to plan for and procure a POE water treatment system.

Access to Loans: SIS, in partnership with a credit union, is evaluating an access to loans program for water supply systems that need to arrange long term financing for infrastructure improvements. They are seeking several systems for a pilot project, and will assist them with the application process (with no guarantee, however, that a loan will be approved).

Networked Monitoring: SIS offers a Networked Monitoring service that keeps track of water system parameters (such as pump runtimes and reservoir levels) at regular intervals and archives the data for later use. The service helps maximize the effectiveness of management and operations and is much more affordable than a full SCADA (Supervisory Control & Data Acquisition) system. The operator can review data at any time using an Internet browser to identify patterns, analyze trends in the system and detect symptoms of problems at an early stage. Reports are automatically generated, converting operational data into useful information, and sent by email to designated individuals.

Insurance for Water Supply Systems: A few years ago SIS introduced an affordable Commercial General Liability insurance package for water supply systems in conjunction with Industry Partners: Aon Reed Stenhouse and Capri Insurance. SIS is pleased to now offer Property Insurance, Directors & Officers Insurance, and Boiler & Machinery insurance as well.

For more information on all the resources above please contact the Sustainable Infrastructure Society: www.WaterBC.ca, Email: vjrogers@shaw.ca, Tel: 250-472-8660

"In the long run men hit only what they aim at. Therefore, though they should fail immediately, they had better aim at something high."

-Henry David Thoreau

"Start by doing what's necessary, then do what's possible, and suddenly you are doing the impossible."

-St. Francis of Assisi

APPENDIX 1: GROUND WATER OFFENCES UNDER THE WATER ACT (VIOLATION TICKET ADMINISTRATION AND FINES REGULATION)

<u>Water Act Provision</u>	<u>Contravention</u>	<u>Ticketed Amount</u>
section 93 (2)(w)	Destroy, injure or tamper with an identification plate	\$115
section 93 (2) (x)	Construct a well without the required qualifications	\$403
section 93 (2) (x)	Close a well without the required qualifications	\$403
section 93 (2) (x)	Disinfect a well without the required qualifications	\$115
section 93 (2) (y)	Construct a well in contravention of the Act or regulations	\$403
section 93 (2) (y)	Close a well in contravention of the Act or regulations	\$403
section 93 (2) (y)	Deactivate a well in contravention of the Act or regulations	\$115
section 93 (2) (y)	Disinfect a well in contravention of the Act or regulations	\$115
section 93 (2) (z)	Wilfully fail to stop constructing a well	\$575
section 93 (3) (a)	Install a well pump or well head without the required qualifications	\$403
section 93 (3) (a)	Maintain a well pump or well head without the required qualifications	\$230
section 93 (3) (a)	Repair a well pump or well head without the required qualifications	\$230
section 93 (3) (a)	Test a well pump or well head without the required qualifications	\$230
section 93 (3) (a)	Conduct a flow test without the required qualifications	\$230
section 93 (3) (b)	Install a well pump or well head in contravention of the Act or regulations	\$403
section 93 (3) (b)	Maintain a well pump or well head in contravention of the Act or regulations	\$230
section 93 (3) (b)	Repair a well pump or well head in contravention of the Act or regulations	\$230
section 93 (3) (b)	Conduct a flow test in contravention of the Act or regulations	\$230
section 93 (3) (c)	Tamper with a groundwater sample	\$575
section 93 (3) (d)	Fail to take or cause to be taken a ground water sample	\$230
section 93 (3) (d)	Fail to have ground water sample analyzed	\$230
section 93 (3) (d)	Fail to submit results of analysis of ground water sample	\$230
section 93 (3) (e)	Site a well in contravention of the Act or regulations	\$403
section 93 (3) (e)	Flood proof a well in contravention of the Act or regulations	\$403
section 93 (3) (f)	Fail to attach a well identification plate	\$115
section 93 (3) (f)	Fail to remove and return a well identification plate	\$115

section 93 (3) (g)	Fail to deactivate a well	\$230
section 93 (3) (g)	Fail to close a well	\$403
section 93 (3) (h)	Fail to secure a well cap or well cover	\$230
section 93 (3) (h)	Fail to replace a well cap or well cover	\$230
section 93 (3) (i)	Fail to stop or bring the flow of a flowing artesian well under control	\$403
section 93 (3) (i)	Fail to take steps to stop or control an artesian well that is likely to flow periodically	\$403
section 93 (3) (j)	Operate a well in contravention of the Act or regulations	\$403
section 93 (3) (k)	Operate a well contrary to section 78	\$403
section 93 (3) (l)	Wilfully submit a false or misleading log, record, report, form or return	\$575
section 93 (3) (l)	Wilfully record false or misleading information	\$575
section 93 (3)(m) (m)	Fail to submit a log, record, report, form or return	\$403
section 93 (3) (m)	Fail to produce a log, record, report, form or return	\$115
section 93 (3) (m)	Fail to retain a log, record, report, form or return	\$115
section 93 (3) (n)	Fail to obtain a drilling authorization	\$403
section 94 (1) (e)	Introduce into a well anything contrary to section 79	\$575
section 94 (1) (e)	Cause or allow introduction into a well of anything contrary to section 79	\$575
section 94 (1) (g)	Unlawfully place or use channel obstruction	\$230
section 94 (1) (h)	Wilfully contravenes Act or an order	\$230
section 94 (1) (i)	Unlawfully drill a well	\$575
section 94 (1) (i)	Unlawfully alter a well	\$575
section 94 (1) (i)	Unlawfully install a well pump	\$575
section 94 (1) (i)	Unlawfully conduct a flow test	\$575

“Nine years after the Drinking Water Protection Act”

By Denny Ross-Smith (article published in the fall 2010 issue of Watermark magazine).

SMALL SYSTEM COMPLIANCE

The B.C. government, with the best of intentions, aims to protect its citizens from the various risks associated with untreated drinking water. To this end, the Drinking Water Protection Act and the Drinking Water Protection Regulation set out certain requirements, and drinking water officers are given wide latitude as to what additional requirements they may wish to impose in order to achieve the stated goal of ‘potable water’ (defined in the legislation as: ‘water provided by a domestic water system that meets the standards prescribed by regulation, and is safe to drink and fit for domestic purposes without further treatment’). Large water systems have been the primary focus of the regional health authorities, and good progress has been made to improve the overall level of treatment for many municipal and regional district water systems (albeit with the assistance in most cases of generous government grants). The statistics for enteric disease attributable to water borne pathogens appear to be steadily declining, with fewer large outbreaks being recorded.

Meanwhile, nine years after the introduction of the Drinking Water Protection Act not a whole lot seems to have changed for small systems (estimated by various sources to number some 3,500-4,500). Although many small systems have partially or fully complied with the legislation, the number of boil water notices has increased by 50%, from 338 in 2002 to 508 in 2010. While this can be partially explained by increased system inspections, it is nevertheless a clear indicator that small system compliance is well below government expectations. But this is hardly surprising. The present approach is clearly not working very well, and is unlikely to ever really succeed except on a fairly limited scale. Many if not most small systems, in particular those on surface water, simply cannot afford the cost of meeting 43210 or similar expectations, at least not without the type of financial assistance available to municipalities and regional districts. Some people have suggested that the answer might be for regional districts to acquire most of these small systems. In practical terms this is impossible. Still others have suggested that small systems amalgamate in order to take advantage of potential cost savings resulting from economies of scale. In practical terms this is unrealistic for the majority of small systems. One partial solution might be the development and availability of low cost treatment technology suitable for a substantial number of small system applications, coupled with an approval process that reduces or eliminates the need for the involvement of a professional engineer in the design phase of the treatment plant. The former might be accomplished with treatment trains or packaged treatment plants using certified components, pre-tested and pre-approved for certain typical ranges of inlet water quality. Such an approach would likely not be popular with the engineering firms, many of the equipment vendors or the Public Health Engineers. The usual argument against this approach is that every situation is different, and treatment must be specifically designed for each supposedly unique inlet water quality. At the very least this assumption should be challenged.

This is not to say that there hasn’t been some progress. The approach taken by the health authorities has not been consistent, and their results have varied, with greater success having occurred in some regions than in others. Too often, though, priority attention has been focused on the larger water systems, and little practical advice or help has been offered to small systems. It will be interesting to see if this changes over the next few years as the health authorities respond to the recommendations contained in the 2008 Ombudsman’s report ‘Fit to Drink, Challenges in providing safe Drinking Water in British Columbia’. It is doubtful, however, if the threat of orders, tickets and fines will accomplish much. At a minimum the health authorities should dedicate more drinking water officers to inspect and, more importantly, provide advice to assist small systems. It would be better still if this could be coupled with an approach similar to that used by INAC with the native drinking water systems: circuit riders knowledgeable in water treatment and operations, who can meet with small systems to provide ongoing practical advice and help.

OPERATOR TRAINING AND CERTIFICATION

On a related matter, it is surprising that more concern has not been expressed about the change to the drinking water legislation in 2005 whereby small water system operators are no longer required to be certified, and training is not specified. While small system operators may be (and usually are) ordered by the health authorities to take some level of training, the fact that they are usually not required to write the EOCP certification exam is disturbing. One has to wonder how seriously a new operator will take a training course knowing that he/she will not have to pass an exam. Equally importantly, the small system operator is not required to obtain continuing education credits (CEUs), as is the case for a certified operator. This has the potential to increase the risk of operator error on small systems in compliance with the legislation, where the users assume that their water is completely safe to drink.

SHOULD INDIVIDUAL RESPONSIBILITY AND DECISION MAKING FOR CERTAIN TYPES OF SMALL SYSTEMS BE AN OPTION?

Many of the small water supply systems in BC, such as water users' communities and private water societies, are both owned and managed by the end users. These end users directly decide (usually by vote) on all matters regarding water treatment and system operations. In many such cases these end users, or at least the majority of them, are by no means convinced that the potential risks involved are serious enough to warrant the costs of full treatment as expected by the health authorities (e.g. 43210 for surface water and GWUDI). In addition, many are convinced (not without reason) of the dangers of chlorine, even though they may have little real understanding about disinfection by products. Providing that such systems do not serve the general public, an argument could be made that the users should be entitled to decide for themselves on the appropriate level of treatment, as is presently the case for property owners with their own individual water supply system. Some might boil their water, while others might use 5 gallon bottled water containers for drinking, vegetable washing, etc., while still others could elect to install point-of-entry or point-of use treatment.

This approach is somewhat analogous to the decisions people make at home regarding various other potentially dangerous situations, such as fire protection (smoke alarms), hazardous chemicals or drugs (safe storage), etc. By the same token, it should be expected that the drinking water legislation be fully enforced for those systems where the end users have no direct input to decisions regarding their water supply, such as municipal and regional district systems, water utilities, and all systems that directly serve the public such as restaurants, rest stops, lodges, etc.

WHERE TO FROM HERE?

The likelihood is that not much will change over the next five years or so. Governments are strapped for cash, and there is little chance that they will introduce financial assistance programs (grants or loans) beyond what is currently available to local government. There may be some greater consistency in the approach taken by the regional health authorities, and some shift in staff resources from large systems to small systems. Both of these would be welcome changes, however they would do little to address the fundamental issue of financing. Some small systems will manage to raise their user fees substantially and negotiate a time frame with their drinking water officer within which to bring their system up to compliance. This is a sensible approach to take, but a difficult one to 'sell' to the users, particularly in low income rural areas of the province or for those systems where the majority of users remain unconvinced that their untreated water poses a real health risk. If the potential threat is as serious as we are led to believe, one action the provincial government could take is to provide information on these risks directly to the rural public so that they will be better informed and thus presumably more willing to pay for the cost of full compliance.