



## **IHA Turbidity Notification Program**

Brief to the Minister of Health, the Honourable George Abbott  
Salmon Arm, B.C.  
June 6, 2006

### **Introduction**

A primary goal of the Water Supply Association is the safety of the public water supply. To that end we support the Ministry of Health's *Action Plan for Safe Drinking Water in British Columbia*.

Over the years the WSA and health officials in the Southern Interior have enjoyed a productive and progressive approach to water supply issues based on consultation and cooperation. This close working relationship has developed highly effective public policies on water supply management that have served as a model elsewhere in the province and have helped shape provincial drinking water legislation.

Recently, however, the IHA has implemented a Turbidity Notification Program that the WSA maintain is ill-conceived, is being poorly implemented and actually threatens the health of the public it is intended to serve. We respectfully request the Minister review the actions of the health authority and take the appropriate steps to remedy this situation.

### **IHA Turbidity Notification Program**

IHA has imposed an alert based public notification program that requires water suppliers to use their emergency response plan protocol to issue water quality alerts based on elevated turbidity readings. The program was implemented in the spring of this year. This alert based system uses excessive water supplier resources, undermines confidence in the water supply and causes message fatigue. The program makes no effort to address the pathogen load in turbid water through source water protection and relies upon a highly disruptive alert based notification system.

This alert based system is a concern for a number of reasons:

- The program compels the lay public to make uninformed decisions about the relative risks of the water supply – these are decisions the general public are typically not qualified to make
- The program is fostering message fatigue (the tendency to ignore or tune out the message) with both the media and the public, increasing the risk to the public should there be a high risk event, such as a disinfection system failure
- The program is based on one factor, turbidity, ignoring other more critical parameters such as pathogen load, disinfection effectiveness, contact time,

and disinfection method. The program fails to recognize recent strides and improvements with enhanced disinfection and identification of risks in source water, effectively discounting significant progress made in public health protection

- The proliferation of alerts is undermining confidence in the public water supply
- IHA advocates the use of point-of-entry home treatment units that can, in fact, be a health risk if not operated and maintained properly
- The program is using valuable community resources with no net gain for public health and, in fact, has significant potential for a negative impact on public health
- The public, now highly sensitized to the potential for illness, are contacting water suppliers who refer them onto their doctors, increasing the burden on the public health care system
- The program has strained what was once a positive, consultative and progressive relationship between water suppliers and regional health officials

## **Examples of Program Impacts – Greater Vernon Water Services**

### **Media**

#### IHA's Efforts

IHA submitted a press release about the turbidity campaign on March 9<sup>th</sup>. This press release was not picked up by any paper in the North Okanagan. What news is published is an editor's choice. Only one ad has since been released by Interior Health in the local paper which was a 1/6 page ad in Section C.

#### Too Complicated

Local media have not bought into the program. Comments have been received from the media such as, "tell us when it is a Boil Water Notice". The media are unwilling to provide on-going program updates as a public service. Keeping the public informed on a regular basis through the media will require the purchase of advertising.

#### Message Fatigue

We have heard from many companies that the first few days of a boil notice the employees would not drink the water or use it for coffee, but rather use bottled water. The employees, however, would soon get tired of the ordeal and go back to their regular routine of using the tap water within a few days.

### **Hospitals**

Interior Health was not following their own guidelines for newborn and the immune compromised.

In May 2001 the Provincial Health Officer recommended that all immune compromised people should be drinking boiled water or a safe alternative when

drinking water comes from an unfiltered source. IHA facilities in the Vernon area, such as Noric house and the Vernon Jubilee Hospital do not currently treat the water that is provided to patients. These facilities are serviced by an unfiltered surface source.

As IHA facilities they should be following the strictest rules for drinking water.

### **Schools**

On April 11<sup>th</sup> three schools in the Greater Vernon area were informed they were on a Boil Water Notice. Principals of these schools turned off water fountains, sent notices to parents to inform them and brought in bottled water.

The Boil Water Notice was downgraded to a Water Quality Advisory on April 20<sup>th</sup>. At this point the water fountains were turned back on with a sign posted that a Water Quality Advisory was in effect and the principals distributed the information to all parents.

One parent was an Interior Health employee dealing with water quality issues and he objected to the process. He felt that children from kindergarten to grade 3 were not able to read well enough to make an informed decision. On April 25<sup>th</sup> he sent a letter to all Schools in District #22 advising that a Water Quality Advisory was to be applied with the same standards as a Boil Water Notice. This requires all drinking fountains be turned off and a safe alternative provided.

A Water Quality Advisory was placed on all schools in Greater Vernon on April 27<sup>th</sup>. This brings forward a number of issues from school principals:

1. We can not boil all the water the children consume so either a filtration system or bottled water has to be budgeted for.
2. Not all parents are providing their children with bottled or boiled water. This leads them to taking drinks out of the bathroom sink taps if they are thirsty.
3. There is considerable litter from paper cups provided for 20 litre bottled water.
4. Three schools in GVS area will be on a WQA for at least 8 months of the year.
5. Some schools have removed fountains completely due to concern of liability.

### **Capital Project Implications**

The first phase of the "Greater Vernon Mission Hill Water Treatment Plant" is expected to start up on July 12<sup>th</sup>. This innovative plant treats water from Kalamalka Lake adding Ultraviolet Light [UV] disinfection for most of the water customers of Greater Vernon Services. The project is the result of years of consultation with local governments, Interior Health, and the Province of BC. Support from IHA significantly contributed to the utility receiving almost \$4,000,000 from the province of the approximately \$6,000,000 project.

Kalamalka Lake is renowned for its clear water, and unusually blue tones. The blue is caused by a naturally occurring annual process where calcium carbonate dissolved in the water precipitates into very small particles when the lake warms

up in July. The precipitating “marl” also co-precipitates phosphorous reducing this key nutrient for algae growth. Unfortunately while this natural process helps purify the lake, it also spikes the turbidity upwards. Under the Turbidity Notification Program, this rise in turbidity will cause a Water Quality Advisory, or Boil Water Notice, despite the new UV treatment.

This Water Quality Advisory will coincide with the new treatment plant coming online and the public will certainly conclude their tax dollars were not well spent. Nothing could be further from the truth. Greater Vernon Services staff has shown conclusively the marl has no influence on the effectiveness of either the new UV treatment, or the chlorine disinfection.

If, at the time of design, the Turbidity Notification Program had been in effect, a water treatment plant including membrane filtration would have been required, more than tripling the cost. These costs would have forced the utility to delay the project.

### **Tourism Industry**

On Saturday May 20<sup>th</sup> 2006, a prospective client of a hotel in Vernon saw the “Water Quality Advisory” posted in their room, and immediately checked out. They indicated to the hotelier they were going to Kelowna. Parts of Kelowna are also on a Water Quality Advisory.

An e-mail arrived May 23<sup>rd</sup> at my desk – after the May long weekend.

*“To Whom It May Concern; I am the coach of a bantam girls fastball team that attended a tourney held recently in Vernon. We had the misfortune of being caught in the highway closure on the way there, but didn't let that wreck our weekend. We played 4 games in two days and finished out of the playoffs. We asked the tournament chair for a restaurant recommendation before we hit the road home.*

*She suggested \_\_\_\_\_ [a chain restaurant in Vernon] close to the diamonds. Our party of 15, 10 players and 5 parents took her suggestion. The boil water advisory was in effect, and all weekend we made sure no one drank tap water. We played a Monday night game on our return to Calgary. Five of us, including me were violently ill after the game. After talking to everyone on Wed. we found, everyone who ordered water in the restaurant was throwing up, and anyone who had their beverage with ice was nauseous.*

*I was only feeling better on Sun. May 21. Obviously, this restaurant served us tap water. I would appreciate this going to someone who can investigate, and penalize this eatery. Please forward to the appropriate party, if I have sent to the wrong spot.*

*Thank you.”*

This letter shows the complexity of this campaign. We have no way of knowing if this complaint was a result of drinking water at the restaurant, but clearly the visitor made this association.

1. Tourism is one of the largest economic inputs into the Okanagan. Greater Vernon is the home of many tournaments including Funtastic softball, Pee-

wee Hockey etc. This means there are many visitors -how do they make an informed decision?

2. Boil Water Notice – It was actually a Water Quality Advisory. Both sound like the same risk to a visitor.
3. Who is investigating these facilities and restaurants to make sure they have notices posted?

### **Other Examples**

At a coffee shop their supplier is not guaranteeing their filters due to Water Quality Advisory

A local restaurant has advised customers “We cannot serve water – We are on a boil Water Notice.” They were actually on a Water Quality Advisory, but many restaurants opted not to serve water at all for liability reasons.

### **Staffing and Resources**

Staff and consultants have put in over 400 hours into web improvements, letters that were distributed to public facilities, restaurants and other services, education information and data base improvements i.e. sensitive customer lists, fax, telephone and e-mail updates.

During a “Water Quality Advisories and Boil Water Notices” our front desk is swamped with customers asking which source they are on. We have three surface sources supplying water at this time, which will go to five in the summer.

## **Recommendations**

There are three parties involved with the implementation of the Turbidity Notification Program - IHA, the Ministry of Health, and the water suppliers within IHA jurisdiction.

The Ministry of Health sets provincial policy for implementation of the *Drinking Water Protection Act* and provides guidelines and directives in that regard for local health authorities to follow throughout the province.

Water suppliers respect IHA’s objective to improve the safety of our water supplies. Given the poor outcomes and counterproductive results of the Turbidity Notification Program to date, however, it is recommended the program be significantly altered before being continued within the IHA or implemented elsewhere in the province.

Specific suggestions include:

- **Clarify the message:** There are several messages provided to the public and the public must distinguish what is safe and what is not. Water that may or may not be safe is confusing to the public. This creates message fatigue and apathy by the general population. This results in the potential for a dangerous situation where the public will not take appropriate action when a real risk is occurring. The “*Water Quality Advisory*” message should be eliminated and the water is either safe to drink, or a “*Boil Water Notice*” or “*Do Not Drink the Water*” message should be issued. This must be a call made by water suppliers in consultation

with health officials and not the general public, who do not have the knowledge or expertise to assess this risk. A communications program is needed that informs the public about water issues without stress and confusion.

- **Use best practices:** The program must be based on the best available science that relies on turbidity plus our other indicators of risk. Turbidity by itself is just one indicator. Pathogen load, disinfection effectiveness, contact time, method of disinfection must all be considered. All of the strides and improvements in recent years with enhanced disinfection and identification of risks in our sources is pointless under the current program.
- **Allow flexibility:** The *DWPA* provides local health officials with the discretion to recognize unique local conditions and allow for local, affordable solutions to providing the public with a safe water supply. The IHA proposed standards of 0.10 NTU for all water systems in the Okanagan is not financially achievable without considerable provincial grant funding. The wisdom of these expenditures is questionable when measured against the funding needs of other public prevention and health care programs.
- **Point of use/bottled water:** The Interior Health Authority recommendations for Point-of-Use devices and bottled water as alternate sources of drinking water do not clearly advise of the associated health risks of these alternatives. Every time people spend money on these items, less money is available for treating of municipal drinking water. The Province and the Health Authorities should not be directing the public to these alternatives.
- **Identify high-risk areas:** Provide to the water suppliers technical information on GI sickness in communities so that the highest risk areas are known and improvements can be made. Some of this information is available, however it is rarely provided to the water suppliers to help them understand where the real risks lie.
- **Consultation:** Dialogue on enhanced disinfection versus full filtration must occur for two purposes, one is to educate IHA and the Water Suppliers, and two is so that we are sure we are moving in the proper direction with major capital expenditures. The protection of the source water in the province is a very cost effective and sustainable objective for the Province.

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