



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 10

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April 8, 2008

David G. Shaff, Administrator  
Portland Water Bureau  
1120 SW Fifth Ave  
Room 600  
Portland, Oregon 97204

Dear Mr. Shaff:

The purpose of this letter is to summarize and clarify several questions that arose during the meeting on February 20, 2008 with the Portland Water Bureau Administration and key stakeholders to explore the feasibility of applying for a variance from the Long Term 2 Enhanced Surface Water Treatment Rule (LT2) requirements.

You asked whether the City could use a combination of epidemiology/public health surveillance and source water monitoring to demonstrate that it is entitled to a variance pursuant to Section 1415(a)(1)(B) of the Safe Drinking Water Act (SDWA) from the LT2 Rule's requirement that all unfiltered public water systems (PWSs) provide at least 2-log *Cryptosporidium* inactivation. This section of the SDWA allows for a variance if "the public water system applying for the variance demonstrates to the satisfaction of the State (or EPA if the State does not have primacy) that such treatment technique is not necessary to protect the health of persons **because of the nature of the raw water source**".

Additionally, the question arose as to whether or not the City would have to meet the specified endpoint of 0.000075 oocysts/liter to demonstrate that Portland's raw water source is protective of public health. These questions arose from variations in the interpretation of the language in the final rule cited below which describes the conditions under which a variance from the LT2 may be granted:

... "If an unfiltered PWS could show a raw water *Cryptosporidium* level 3-log lower than the Bin 1 cutoff for filtered PWSs (i.e., below 0.075 oocysts/1,000L) this could demonstrate that no treatment for *Cryptosporidium* is necessary. The unfiltered PWS would already be achieving public health protection against *Cryptosporidium* equivalent to filtered PWSs due to the nature of the raw water source.

*In practice, EPA has not identified an approach that is economically or technologically feasible for a PWS to demonstrate such a low level of *Cryptosporidium* to support granting a variance. This is due to the extremely large volume and number of samples that would be necessary to make such a demonstration with confidence. However, unfiltered PWSs may choose to pursue the development and implementation of monitoring programs to apply for a variance from *Cryptosporidium* inactivation requirements based on the nature of the raw water source. A sufficient monitoring program may be feasible in site-specific circumstances or with the use of innovative approaches."* [FR vol. 71 No 3, p. 729]

As clearly stated in the final rule, the only basis the Environmental Protection Agency has identified for a variance from the *Cryptosporidium* treatment requirement for unfiltered systems in the LT2 rule is a demonstration that the raw water *Cryptosporidium* level is below 0.000075 oocysts/liter. Only at this level would the unfiltered PWS be achieving public health protection against *Cryptosporidium* equivalent to that achieved by filtered PWSs as cited in the above excerpt from the final rule.

While EPA recognizes that demonstrating such low levels of *Cryptosporidium* is a challenge that requires analyzing very high volumes of water, the Agency is also aware that monitoring techniques and detection methods do change and improve. As a result, previous monitoring methods/techniques viewed as challenging could be feasible on a site-specific basis using innovative techniques now or in the near future.

For example, high volume filters for *Cryptosporidium* analysis, essential to high volume monitoring have been developed. Raw waters vary in their tendency to clog such filters. Some raw water clog filters quickly, but others don't. If a system had raw water that was amenable to high volume filtration and used innovative high volume filters; then demonstrating a raw water *Cryptosporidium* level to achieve a variance might be feasible in that specific situation. The flexibility is in the monitoring and detection methods available to unfiltered public water systems.

A combination of limited source water monitoring and public health surveillance is not an option for demonstrating entitlement to a variance and there is nothing in the rule that supports this type of approach. Public health surveillance was never used as a basis for establishing the treatment requirements. *"EPA does not regard the absence of Cryptosporidiosis cases attributed to drinking water in a particular community as evidence that no treatment for Cryptosporidium is needed."* [FR vol. 71 No 3, p. 683] Consequently, EPA has no basis from which to consider a variance approach that is based, even partially, on public health surveillance. Both sentences in the final rule that leave the door open to a variance explicitly refer to monitoring only of the raw water.

In conclusion, in order to receive a variance the Portland Bureau would have to meet the above endpoint (0.000075 oocysts/liter) and public health surveillance studies cannot be accepted in order to demonstrate the raw water source is *Cryptosporidium* free. If you have questions, please feel free to give me a call at 206-553-1893.

Sincerely,

Marie Jennings  
Drinking Water Unit Manager

cc: David Leland, Program Manager  
Oregon Drinking Water Program