

Water Policy Information Bulletin 1/2011

Granting of exemption from 4-log virus reduction under the Standards and Guidelines for Municipal Waterworks, Wastewater & Storm Drainage Systems (2006)

Purpose

1. The purpose of this Information Bulletin is to provide advice regarding the Granting of exemption from 4-log virus reduction under the Standards and Guidelines for Municipal Waterworks, Wastewater & Storm Drainage Systems (January 2006) section 1.2.2.

Scope

2. The scope of this Information Bulletin is confined to those systems operating under the provisions of the Code of Practice for Waterworks Systems using High Quality Groundwater (effective April 1, 2009).

Background

3. Many human viruses capable of causing gastroenteritis can be transmitted via water. These viruses are highly infectious, extremely small (25 – 100 nm) and can persist for weeks to months in the aquatic environment. The extremely small size of waterborne gastroenteritis viruses facilitates their transport through groundwater with travel distances of hundreds to thousands of meters from sources of pollution. In the developed world the over-whelming majority of waterborne viral gastroenteritis originates from the ingestion of human calicivirus (predominantly norovirus) with rotavirus, astrovirus, adenovirus, emerging viruses and enteroviruses also contributing to the cases of waterborne gastroenteritis.

4. There is a growing body of evidence around the occurrence of human pathogenic viruses in groundwater systems. While the evidence is growing there is still uncertainty over probable virus survival times in groundwater and over viral travel times/distances/pathways even when conservative tracers are used. There is also evidence in the literature that confined aquifers do not afford levels

of protection from viruses that have been previously assumed. Traditional “high quality” groundwater systems may be at risk from human pathogenic viruses¹.

Detail

5. On the basis of the current evidence for the presence of human pathogenic viruses in groundwater that would likely be classified as “high quality groundwater” no exemption from the requirement for 4-log reduction for waterworks systems using high quality groundwater will be granted.

Enquiries

6. Enquiries on this Information Bulletin should be addressed to the Drinking Water Specialist, Provincial Programs Section, Regional Integration Branch (Dr Donald Reid, Donald.Reid@gov.ab.ca, telephone number 780-644-8061).

¹ The current requirements for characterizing groundwater used as a source for drinking water supplies is set out at section 1.2.1.4 in the Standards and Guidelines for Municipal Waterworks, Wastewater & Storm Drainage Systems (January 2006).