THE VILLAGE OF ASHCROFT
FAQ #1 – WATER TREATMENT PLANT CONCERNS

1. Is our drinking water at risk?

The answer is yes our drinking water is at risk of containing pathogens such as E. coli and Giardia (aka Beaver Fever). Many components of our water are very good – the pH level is around 7.5, the level of minerals is very low and the taste is good. But our water is not adequately treated and does not remove the pathogens in our water. To ensure the public safety we are required to provide further treatment to ensure our drinking water is safe.

2. What are pathogens?

Pathogens are micro-organisms that pose risks to human health. The three main types found in drinking water are viruses, bacteria and protozoa. There isn't one treatment that is effective on all three hazards so a multi-barrier (or multiple forms of treatment) approach is required.

Viruses in water can cause illness in humans and animals. With surface water sources such as ours viruses can be introduced from run off as well as other entry points. Virus reduction can be achieved by physically removing the virus from the system by filtration. Some viruses are inactivated by chlorine disinfection and others by exposure to UV light. This is why one type of treatment is not sufficient.

Bacteria is usually found in drinking water in the form of E. coli, fecal coliform or total coliform. This bacteria can cause intestinal illnesses. These are usually successfully controlled using chlorination or UV.

Protozoa such as Giardia and Cryptosporidium are relatively large micro-organisms that multiply in the gastrointestinal tract of humans and animals. These can be responsible for severe, and sometimes, fatal cases of illness. Not all protozoa are inactivated by chlorine or by UV so multiple treatment forms including filtration are required.

Turbidity is when the water becomes cloudy from sediment. This usually happens during the spring when run off and ice melt is in the largest volume. When turbidity is low we can control it with chlorine but when the turbidity increases the number of protozoa increases and the chlorine is no longer effective in removing all of the pathogens. This results in the issuing of a *Water Quality Advisory* (WQA) or in more severe cases a *Boil Water Notice* (BWN). While we have had very few BWN we do issue WQA every spring and they remain in effect until the fall.

3. What type of treatment is Ashcroft looking at?

Ashcroft will be installing a filtration system but we have not yet made a decision on which one. There are two types in common use – direct filtration using sand and membrane filtration.

Sand filtration has been around forever however it requires a lot of hands on by the plant operator, requires a larger footprint and still has the possibility of contaminates getting through. UV may be required to ensure that any remaining pathogens are removed or inactivated.

Membrane filtration is more automated, requires less hands on by the operator and guarantees that the pathogens are removed because they cannot pass through the membrane. UV is not required with a membrane filtration system.

Council is reviewing both options taking into account the up-front capital costs vs. the long term operating costs. In both cases, the Village would continue to use chlorination and the filtration would eliminate not only the protozoa contamination but also the turbidity concerns that we have every spring through the

summer. The plant will be sized to service current needs but will be designed to allow additional filtration modules as we grow.

4. Why do we have to do this?

The BC Drinking Water Protection Act and the Drinking Water Protection Regulation clearly specify water quality standards, monitoring schedules and treatment aimed at reducing the risks from pathogens. Our water has been closely monitored for over 10 years as we experience periods of high turbidity and low river levels. While we are not aware that anyone has fallen ill from our water in the past we don't want to wait until someone does become seriously ill or dies due to a lack of filtration and other treatment of our water.

5. What will this cost us?

The budget for this project was estimated to be $8.5 million dollars. Over the past few months with the decline in the Canadian dollar and the increase in the price of equipment, Council feels that they should expect the costs to be closer to $10 million. The Village applied for Federal and Provincial funding through the Gas Tax Program and were successful in receiving $5.7 million. Council will be seeking approval from the electorate to borrow up to $4.1 million to cover our costs of the project.

The $4.1 million loan will be paid back over 30 years. The payments will be raised from the taxpayers by way of the water frontage taxes. An average 60 foot lot will see their water frontage taxes increase from $78 to $145 per year – an increase of $5.58 per month.

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