

IRON & SULPHUR BACTERIA



What is iron and sulphur bacteria?

Iron bacteria and sulphur bacteria are naturally occurring organisms in the environment, and are not usually a health concern.

Iron bacteria combine iron (or manganese) with oxygen to form large masses of orangey-brown or dark, foul-smelling slime. It can cause unpleasant odors, corrode plumbing equipment and clog well screens and pipes.

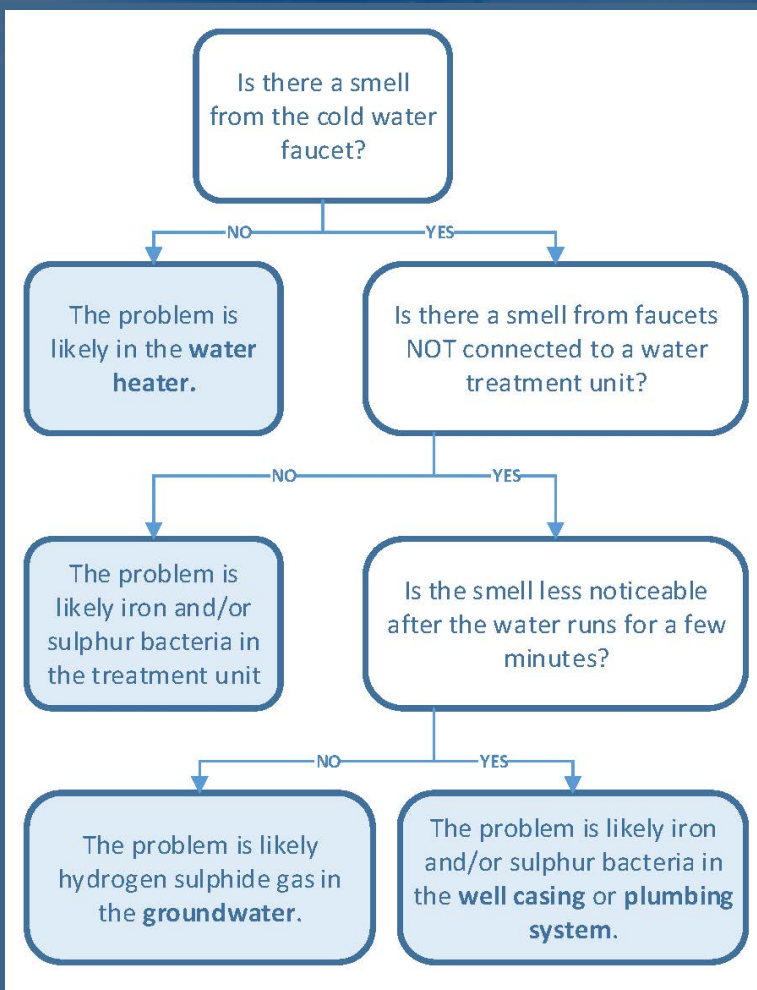
There are two types of sulphur bacteria: **sulphur-oxidizing bacteria**, which produces effects similar to iron bacteria and **sulphur-reducing bacteria (most common)** which breaks down the sulphur compounds producing hydrogen sulphide gas which has a distinctive "rotten egg" odor.

Hot Water Heaters

If the hydrogen sulphide odor is only noticeable when you are using hot water, your heaters anode/corrosion control rods may be the issue.

The magnesium rods that are common in newer hot water heaters can react with the bacteria in the water causing a "rotten egg" smell.

Replacement Aluminum rods may provide corrosion protection without contributing to the production of hydrogen sulphide gas.



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 <https://www.gov.nl.ca/ecc/waterres/quality/drinkingwater/>



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Treatment techniques

Physical Removal

Physical removal is usually the first step for very infected wells. A licensed well driller will:

- Remove and clean the pumping equipment.
- Scrub the well casing with brushes,
- Followed by chemical treatment.

Chemical Treatment

Disinfectants, such as chlorine, are the most commonly used chemical for treating iron or sulphur bacteria. Shock chlorination involves flushing the water system with large amounts of chlorine. Care must be taken to ensure all plumbing and fixtures are disinfected during the process.

It can be an effective way of controlling iron and sulphide bacteria, but may need to be repeated.

Guidelines for disinfecting dug and drilled wells can be found here:

<https://www.gov.nl.ca/ecc/waterres/cycle/groundwater/well/disinfecting/>

Solutions

Iron bacteria and sulphur bacteria are often difficult to tell apart, since their symptoms are similar and can often be present at the same time. Fortunately, both types of bacteria can be treated using the same treatment techniques.

Eliminating iron or sulphur bacteria can be extremely difficult and only partially successful once established in the well.

Treatment techniques used to remove or reduce iron or sulphur bacteria in Newfoundland and Labrador include physical removal, and chemical treatment.

If the problem persists

If treatment is ineffective then the problem could be hydrogen sulphide naturally present in the groundwater. Installing home water treatment to remove hydrogen sulphide gas will help. Treatment options include; Activated carbon filters, Oxidizing media filtration, Aeration and filtration, Chlorination and filtration, Ozonation and filtration.

Where can I find out more?

To find out more, please visit Environment and Climate Change's website at www.gov.nl.ca/ecc/water. You can also contact an Environmental Health Officer or Program Manager at the nearest Government Service Centre, NL Health Services, or a water resources official with ECC.

