



# Oakland Township Iron Removal Information Session

Last Updated 8/27/2018

## Frequently Asked Questions

Below is a review of some of the major water chemistry and water treatment questions that were explained in this workshop today. For any additional questions or comments, contact Connie Sims with the Oakland County Water Resources Commissioner's Office at (248)-858-1441 or [simsc@oakgov.com](mailto:simsc@oakgov.com).

### **What is polyphosphate? What is Orthophosphate?**

Polyphosphate is a water treatment chemical that combines with dissolved minerals such as iron, manganese, calcium to trap or "sequester" them in their dissolved form. This prevents scale and rust in your water. Orthophosphate is a water treatment chemical that is used to inhibit corrosion and scale by coating the insides of pipes and fixtures.

### **Weren't phosphates banned in the 1970's?**

Restrictions on phosphorus in laundry detergents, dishwasher detergents, and other soaps have been imposed in the United States beginning in the 1970s and as recently as 2010 due to elevated levels of phosphorus in the Great Lakes and other waters of the U.S. Phosphates added to drinking water have not been identified as a major source of phosphorus input to the environment.

<https://pubs.usgs.gov/wri/wri994007/>

### **Are phosphates safe to drink?**

Yes. Carus 1000 and Carus 8100 are added to the water in Oakland Township at concentrations less than 8 mg per liter. NSF has established maximum use concentrations for these two additives at 28 mg/l and 23 mg/l respectively.

<http://info.nsf.org/Certified/PwsChemicals/Listings.asp?Company=45890&Standard=060>

Per the EPA's FAQ website, "The typical phosphate levels found in a liter of drinking water are about one hundred times lower than the phosphate levels found in the average American diet. For example, a person would have to drink ten to fifteen liters of water to equal the amount of phosphates in just one can of soda. People concerned about their health and phosphates added as a corrosion inhibitor to the drinking water, should contact their medical care provider."

<https://safewater.zendesk.com/hc/en-us/articles/211406008-Why-do-water-systems-add-phosphate-to-drinking-water-What-are-the-health-effects-of-drinking-water-containing-phosphates->

### **My plumber said my oxidizing iron filter doesn't work because of phosphate (polyphosphate/orthophosphate). Is that true?**

It is partially true. An iron filter will still remove all the iron from the municipal system that was already oxidized by chlorine before it reached your home. However, an oxidizing iron filter cannot remove iron that is sequestered with polyphosphate. The good news is polyphosphate will prevent much of the remaining sequestered iron from turning into rust. Unfortunately, some iron may still oxidize in your home.

**Is there an iron filter that can remove polyphosphate-sequestered iron?**

A traditional oxidizing iron filter will not remove iron that is sequestered with polyphosphate. Reverse osmosis water systems and well-maintained activated carbon filters can remove polyphosphate-sequestered iron.

**I live in the Southwest water system, what type of iron filter is recommended?**

An iron filter is not recommended if your water system contains chlorine; you should use a sediment filter instead. If you already have an iron filter, it is functioning as a sediment filter and you should continue to use it.

**My water doesn't have polyphosphate or chlorine in it, which oxidizing iron filter should I buy?**

Iron concentrations in Oakland Township are generally less than 1.5 mg/l and therefore any oxidizing filter will work to remove iron. Before buying, consider how much water is needed for a backwash cycle – self oxidizing filters do not need an extra chemical additive, but are generally heavier and require much more water to be wasted during a backwash cycle.

**Is it safe to drink water with iron?**

Absolutely! Your body needs iron and lots of other minerals to be healthy.

**Is it safe to drink hard water?**

Absolutely! Water "hardness" is mainly a measure of how much calcium and magnesium is in the water.

**Is it safe to drink soft water?**

For most people, yes. However, drinking water softened with sodium chloride is not advised for people on low-sodium diets. In this case, a water softener that uses potassium chloride would be preferred. Check with your doctor if you have specific concerns.

**Polyphosphate is added to our water so why do we still have so much rust?**

Polyphosphate will trap a lot of the soluble iron, but not all of it. Without polyphosphate, the rust problem would be much worse.

**Can we just add more polyphosphate to trap all the soluble iron?**

No, unfortunately. Adding more polyphosphate can actually reduce the effectiveness overall. An iron treatment system would be needed at the water source to improve municipal iron removal.

**Why does my water look dirty after the water mains were flushed? I wasn't home, so no one was using water.**

It is possible that unbeknownst to you, your automatic lawn sprinklers or your water softener were using water while the mains were being flushed.

**My softener has to backwash more often now than when it was new. Why?**

This is a symptom of iron fouling the softener resin or it could just be the age of the resin. A water softener cleaner may improve operation or the resin may need to be replaced.

**My plumber said polyphosphate damaged my water softener. Is that true?**

It is unlikely. Polyphosphate can be used in tandem with water softeners without interference. Most likely, your water softener was damaged by rust and age.

### **Can chlorine damage my water softener?**

Water softener resin will last up to 15 years on unchlorinated water, but may only last 10 years with chlorinated water.

### **What recommendation do you have for water softener resin?**

If your water softener no longer efficiently removes hardness from your water, if your softener is causing significant pressure loss, or you are finding small fragments of resin in your fixtures, you may need new resin. Water softener manufacturers design their systems based on the characteristics of a certain resin; therefore, always consult your softener manufacturer before purchasing a replacement resin or your softener may not function correctly after replacement.

### **Will polyphosphate-sequestered iron be removed if I use one or multiple sediment filters, for instance a 20 micron filter followed by a 5 micron filter?**

No, most sediment filters will only remove insoluble iron (also known as rust, iron oxide, or ferric iron). Iron that is sequestered with polyphosphate is trapped in its soluble form and will pass through most sediment filters.

The exception is a sediment filter that contains activated carbon. A Brita pitcher filter is an example of an activated carbon filter. Activated carbon filters can remove soluble iron, polyphosphate, and residual chlorine. Unfortunately, activated carbon filters can be very costly because they need frequent replacement to be effective.

### **What iron removal method would have been used had iron removal at the source passed?**

Oxidation followed by filtration is commonly used on systems with iron concentrations and flow rates comparable to those in the SE and SW systems. Polyphosphate might have been replaced with orthophosphate for corrosion control or may have been discontinued entirely. Specific technologies and processes would have been investigated had that project reached the design phase.

### **Who do I call to have water system flushed from house to curb?**

Per the Oakland County Water Resources Commissioner Well Water Supply System Flushing Frequently Asked Questions:

Contact our customer service unit at **248-858-1110** to schedule a low pressure flush. A low pressure flush consists of removing the meter in your home, attaching a hose to release the water outside while opening and closing valves to flush particles from your service line – the piping from the water main to your home. There is no charge for this service, but an adult must be home when we arrive because we need access to the meter. Low pressure flushes are scheduled on a first come, first served basis. We are in your area on certain days of the week, so the number low pressure flushes we can complete in one day is limited.