

Earthy/Musty Taste and Odor in Water

What Causes Earthy/Musty Taste and Odor in my Drinking Water?

- Zone 7 imports raw surface water for the Tri-Valley from the Delta through the South Bay Aqueduct to its water treatment plants. During the hotter, dryer months of the year when water temperatures are higher and river levels are lower, more organic materials are typically present. These organic materials cause an earthy/musty taste and odor you may notice in your drinking water. The earthy/musty odor is caused by compounds such as geosmin and methylisoborneol (MIB).
- While humans are typically not touted for their keen sense of smell, the human nose is *extremely* sensitive to geosmin and MIB and we can smell it even at trace levels, like the trace amounts in your drinking water. For context, a shark can smell blood at one part per million, whereas the human nose can smell geosmin at 15 parts per *trillion!* That means we're 15 million times more sensitive to geosmin.
- For most people, the threshold for detecting geosmin and MIB is 15 parts per trillion, though some with sensitive noses may even be able to detect lower levels. That is why Zone 7 proactively uses trigger levels of 4 and 9 parts per trillion respectively for geosmin and MIB in its raw water supply to initiate treatment to remove these compounds.

What Treatment does Zone 7 have Available to Mitigate this Issue?

- Thanks to the new raw water ozonation system at the Del Valle Water Treatment Plant we are now able to treat much of our water through this process. Ozone treatment is very effective at removing geosmin and MIB from the raw water. This system is used continuously throughout the year.
- The Patterson Pass Water Treatment Plant is in the process of installing its ozonation system which should come online by spring/summer of 2022. The plant currently uses powdered activated carbon (PAC) to control earthy/musty taste and odor.
- Ozone is also much better than other treatment processes, at treating other compounds such as cyanotoxins, as well as chemicals of emerging concern, including endocrine disruptors, pharmaceuticals and personal care products. Resulting in a safer finished product.

What are the Health Effects of Geosmin or MIB?

- While geosmin and MIB produce an earthy/musty smell and taste in drinking water, they are harmless at the trace levels present in your drinking water.

What Causes Increased Levels of Geosmin and MIB?

- During hot and sunny weather, there are higher levels of organic materials which cause algae to thrive. The presence of algae in reservoirs and streams (called algal blooms), and the increase in algae population, can cause an increase in geosmin and MIB at levels above the taste and odor thresholds.

How Often does Zone 7 Monitor for Geosmin and MIB?

- Zone 7 routinely monitors for geosmin and MIB levels throughout the year, with increased monitoring during the hot summer months when algae blooms are more common.

What Steps Can I Take to Deal with Earthy/Musty Taste and Odor?

- Adding a slice of lemon and/or chilling water can help to improve the taste of the water.

Zone 7 is committed to delivering a safe and reliable water supply to our customers. All water supplied to our customers meets the regulatory standards and guidance levels set by the state and federal governments and, in almost all cases, the quality is significantly better than required.

For more information, please contact Zone 7 at waterquality@zone7water.com