

Update on Chromium-6 Monitoring

Previously, the water utility committed to voluntarily test all wells for chromium-6. The initial monitoring was completed in early January and showed chromium-6 levels ranging from 0.4 to 1.8 ug/L or parts per billion (ppb). Samples were collected from four wells with previous total chromium detections exceeding 1 ppb. Both raw groundwater and treated water (after chlorine and fluoride addition) were tested with additional samples collected in the distribution system.

In February, samples were collected from an additional 12 wells. Chromium-6 results ranged from non-detect to 1.4 ppb; the detection limit was 0.02 ppb. Similar to the results reported in January, the majority of total chromium found in the samples was in the chromium-6 state. The chromium-6 and total chromium results for all 16 wells are reported in the table below.

Source	Chromium-6 (ug/L)	Total Chromium (ug/L)
Well 7	0.02	0.02
Well 9	0.71	0.88
Well 11	0.95*	1.02*
Well 12	1.40	1.43
Well 13	0.79	0.86
Well 14	1.79	2.03
Well 15	0.53	0.53
Well 16	1.23*	1.24*
Well 18	0.41	0.41
Well 19	<0.02	0.01
Well 20	0.52	0.54
Well 24	<0.02	0.01
Well 25	0.41	0.50
Well 28	<0.02	0.01
Well 29	0.03	0.04
Well 30	0.04	0.01

* Average of two samples

Based on the monitoring conducted to date,

- Total chromium, which includes chromium-6, is well below the current regulatory limit of 100 ppb at all Madison wells.

- The occurrence of chromium-6 is spread over a wide area including in wells located in commercial as well as residential areas. This suggests that the source may be the rock formation itself.
- Chromium-6 is found at similar levels in wells with no prior history of man-made contaminants and those with man-made contaminants.
- Chromium in Madison-area groundwater and drinking water primarily exists as chromium-6.
- Treatment chemicals (chlorine and fluoride) and water age do not appear to affect the fraction of chromium that exists as chromium-6.
- Wells which are cased to the lower aquifer, which limits the impact of surface activities on water quality, and draw water from a different sandstone formation have the lowest levels of chromium-6.

Chromium is a metal that occurs in the environment and drinking water sources in two principal forms: chromium-3 and chromium-6 (also called hexavalent chromium or hex chrome). The sum of all chromium is called total chromium. Chromium-3 occurs naturally in food and is an essential dietary nutrient while chromium-6 is a more toxic form. Chromium can change from chromium-3 to chromium-6, and vice versa, depending on the physical environment.

A frequently asked question (FAQ) factsheet about chromium-6 is available on our [website](#).