

SAN JUAN BASIN public health

Data Report: Well Testing in the Animas Valley

Since the fall of 2016, San Juan Basin Public Health (SJBPH) has been offering free testing of private drinking water wells to residents of the Animas River valley north of Durango. SJBPH is comparing test results to established health standards and advisory levels to inform residents of the quality of the groundwater that supplies their wells. SJBPH tests these wells for several different metals, nitrates (which can cause serious illnesses in infants), fluoride, and other chemicals, as well as coliform bacteria. The only way to ensure that a well is safe for drinking is to perform an individual well test.

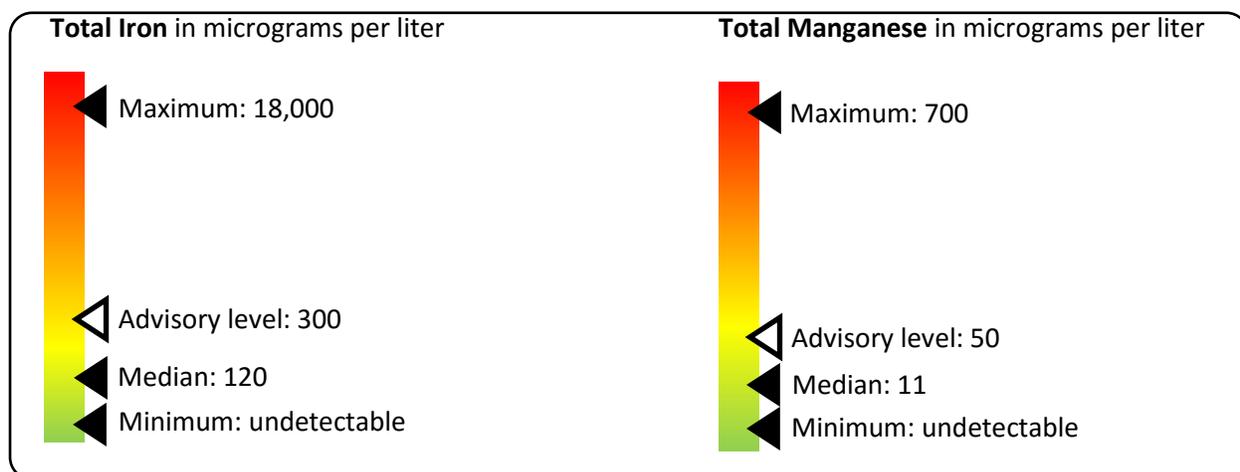
SJBPH has completed testing and analysis for about 60 wells. The data collected emphasize the importance of getting an individual private well test: you cannot make assumptions about the quality of your drinking water based on what your water looks or smells like. Neither can you make assumptions based on your proximity to the Animas River: SJBPH found elevated metals and nutrient results in all different areas of the valley.

Test Results: High Variability, Many Elevated Results

Wells in the valley show high variability in the levels of heavy metals, nitrates, and other chemicals, but more than half of the wells tested so far had some measurements that were outside the desired ranges that protect human health, plumbing integrity and fixtures and appliances.

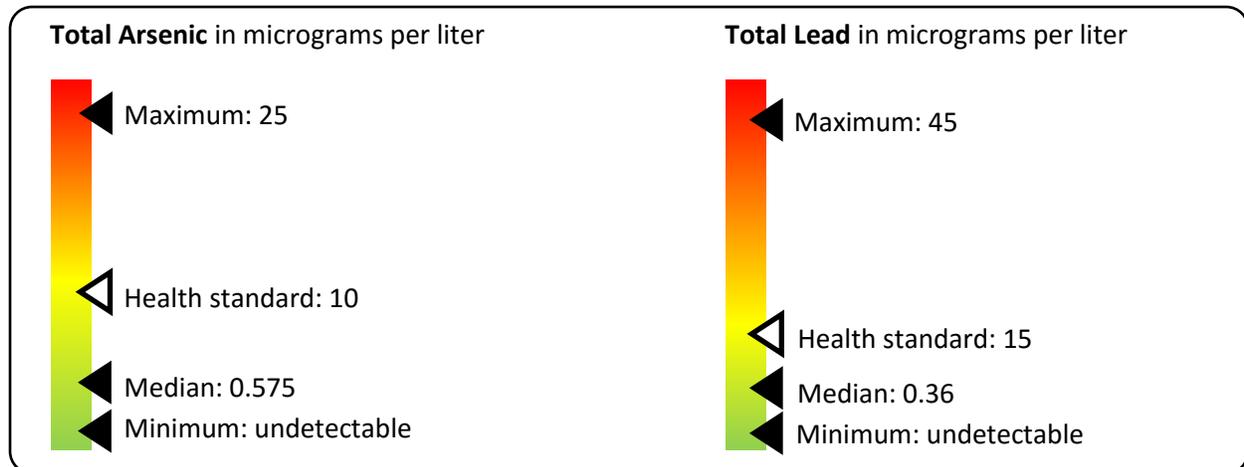
So far, the following measurements or substances were outside of normal parameters in at least one well, and may cause health or nuisance problems: five metals (aluminum, arsenic, iron, lead, and manganese), nitrate/nitrite, fluoride, pH, and coliform bacteria.

By far, the most frequent pollutants found in Animas Valley wells are iron and manganese. These metals, in high enough concentrations, can damage plumbing, stain fixtures and appliances, and discolor water that is not properly treated. In some wells, iron levels are sixty times higher than the nuisance advisory level published by the Environmental Protection Agency. Meanwhile, a handful of wells showed no detectable iron at all. This is a consequence of our naturally mineralized geology and different natural levels of iron and manganese in different parts of the local aquifer.



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Three wells (about five percent of the sample) showed elevated levels of lead or arsenic, extremely toxic metals that require carefully maintained treatment systems. The highest measured levels were between double and triple the federal health standard for these metals. If this proportion is representative, more than two dozen households could be using wells with unsafe levels of these metals. The remainder of the wells in the study showed arsenic and lead levels below the nationwide health standard - but even most of these showed detectable levels of both arsenic and lead, which means properly treating well water is still important even in relatively “clean” wells.



About one-third of wells tested so far were found to have coliform bacteria. For many of these wells, there may be bacteria in an outdoor spigot where the testing occurred but not in the well itself. Three wells were found to have *E. coli*, a bacterium that comes from human or animal feces. While *E. coli* and other bacteria are not always harmful, safe drinking water will always be treated so there is no coliform bacteria or *E. coli* present.

Geography of Results: No Visible Patterns

So far, there has been no correlation between geographic location of a well and its testing results. Proximity to the Animas River, location up or down valley, and depth that the well is drilled do not seem to influence the test results in a consistent way. The study found unsafe metals levels on both banks of the river as well as farther away from the river as the ground starts to slope upwards toward the cliffs.

Keeping Your Water Safe: Well Testing

The only way to be sure if your well is safe for drinking is to have an individual test done of your water. SJBPH recommends that first-time testers include in their testing order coliform bacteria, arsenic, iron, lead, manganese, nitrate/nitrite, and fluoride. Coliform bacteria and nitrate/nitrite testing, as well as any tests that show elevated results, should be repeated annually.

There are a very limited number of slots available in SJBPH's free Animas Valley well testing program, but for residents in other areas or who miss this opportunity for free testing should still get a well test done. Basic testing for the substances listed above can be done for two to three hundred dollars, and the recommended annual test for less than that.