

## ABSTRACT

### GROSS ALPHA LEVELS IN PRIVATE DRINKING WATER WELLS IN FOOTHILL AREAS OF THE SIERRA NEVADA OF CALIFORNIA

Alpha particles, when absorbed, are known to have carcinogenic effects on the human body. As a result, the United States EPA has set a limit for gross alpha particle contamination of drinking water at 15 pCi/L. This restriction applies to community water systems. However, private wells are rarely tested for gross alpha contamination.

The principal focus of this study was to evaluate private wells in four sample areas in the Sierra Nevada for gross alpha contamination. Special interest was devoted to whether these wells were above the MCL and whether there was a difference in gross alpha levels between the areas tested.

Using a one-tailed t-test and one-way ANOVA, the study determined that there was sufficient evidence, at the 0.05 level of significance, that one area out of the four sampled was over the MCL and statistically different from the other sample areas.

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