

Type: Either presentation or poster

Abstract

Previous studies have claimed that arsenic concentrations in the water of bedrock wells from the highlands of eastern Connecticut are controlled, in part, by bedrock lithology. To verify this conclusion, this study compared arsenic concentrations from 225 sampled wells in the Eastern Highlands Health District, which consists of 10 towns, with standardized testing and reporting requirements. Results from an analysis of this data support previous conclusions. However, this study found only one bedrock formation (Hebron Formation), and only one area within that formation, with a clearly defined consistently elevated level of arsenic that might pose a risk to public health. This means that the valid arsenic detections in water are approaching or above the recently lowered Maximum Contaminant Level (MCL) of 10 µg/L. This study explored the link between arsenic concentrations and potential geochemical processes. The majority of water samples that contained arsenic also had a higher average pH. The wells with elevated arsenic also occurred, on average, at higher topographic elevations than wells without arsenic detected. A pattern was observed of a cluster of high arsenic concentrations in a small geographic area within the Hebron Formation. This cluster was proximal to the proposed axial surface of a synclinal feature in the Merrimack Synclinorium, though any causal relationship remains unconfirmed. More local research is needed as there could be another geologic layer or features, such as plutons or faults that are not yet mapped in the vicinity causing elevated arsenic levels in the well water.

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