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*The Minnie Lynch: A Comparative Study in the Affects of Parent Material on Water Quality in Ephemeral Streams*

Is the parent material of the Rawley andesite/Bonanza Tuff Contact, which contains permanent and ephemeral stream flows, a contributing factor in compromised water quality in the Minnie Lynch drainage? The hypothesis looked at was ephemeral streams flowing from the Rawley Andesite/Bonanza Tuff Contact contain minerals and metals, however they are not in high enough concentrations to compromise the water quality of the Minnie Lynch Drainage. The source of the contamination at the drainage is strictly due to the mining practices and untreated tailing piles of the area. The data collected for this project matched the same pattern of the data collected in 2010. The waters closest to the adit of the Minne Lynch Drainage had extremely acidic pH's, inadequate TDS and conductivity levels, and decreasing metal concentrations. Then as the stream continued the metals concentrations began to increase, and the pH, conductivity, and TDS levels began to neutralize. Then as the waters reached the alluvial fan the metal concentrations decreased once again, the pH levels became more acidic, and the TDS and conductivity levels worsened.

The samples taken from the spring were the ones that most interest results. Data from the water collected from the springs showed that there were high concentrations of elements such as Zinc, Manganese, and Aluminum. This spring is located relatively close to the part of the stream where metal concentrations began to spike. The hypothesis was not supported; load data water quality sampling and geologic back grounding showed the ephemeral and permanent springs as source of contamination.