

# GEOCHEMICAL MODELING OF URANYL SORPTION AT A COLORADO TEST SITE<sup>1</sup>

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**Abstract:** Geochemical modeling was conducted in order to compare laboratory results with a hypothesis of what processes were taking place at the Rifle Integrated Field Research (IRFC) site. The conceptual model for this project has three main features: 1) Since we can see that ferrihydrite colloids were formed in the laboratory from site samples, they are considered present. 2) In general, uranium is known to sorb to ferrihydrite colloids, which leads to the question 3) Do uranium ions sorb to ferrihydrite colloids at the Rifle IFRC site? According to the laboratory data presented above, uranium ions should not sorb to ferrihydrite colloids at the Rifle IFRC site. A simple geochemical model was run in order to compare the laboratory results to conditions at the Rifle IFRC site based on this conceptual model.

**Additional Key Words:** Uranium, Mining, Hydrology, Geochemistry

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