

Uranium Abatement in Water

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Purpose of Study

The purpose of this study is to provide a simple, easily managed, affordable, and environmentally friendly solution to removing uranium from drinking water, especially in isolated and remote homes. Preliminary data indicates that modified soil sorbents developed by the researcher can remove uranium from solution.

Study Underway

Processed soil materials are used to obtain pure water. The modified soil sorbents are manageable for safe transportation and disposal. The researchers will use ion-exchange and binding site energy distribution studies to provide a model for uranium sorption. With the cooperation of New Mexico State University's Department of Chemistry and the Plant and Environmental Sciences department, the researchers will test the efficiency of the soil sorbents using a fluorimeter and ICP-MS. The data obtained will be used to help build future uranium removal systems.

Benefits

With less uranium in the water, people's health and quality of life will be greatly improved. This will especially benefit isolated or rural areas, such as the Navajo Nation.



Above: This photo shows contaminated water near US-491 at the Shiprock Fairgrounds. Water samples were collected and will be analyzed for uranium contamination. Left: Nick working in the Instrumental Laboratory analyzing uranium samples using the LS 55 Luminescence Spectrometer that takes measurements of fluorescence, and phosphorescence. Nick is from Gallup, New Mexico and is pursuing an interdisciplinary Ph.D. with an emphasis in environmental awareness, particularly research in uranium abatement in potential drinking water. He received a B.S. degree in biology from NMSU in December 2008.

