GRAND CANYON TRUST

Northern Arizona Uranium Mining
FACT SHEET

Uranium mining is permanently harming aquifers that feed Grand Canyon springs and streams.

The U.S. Geological Survey and Environmental Protection Agency have documented and acknowledged multiple instances of soil and water contamination and devastating impacts to the region's people caused by uranium mines.[1] For instance, the abandoned Orphan uranium mine permanently contaminated groundwater and polluted Horn Creek within Grand Canyon National Park and has already cost taxpayers $15 million dollars for just the first phase of remediating surface contamination.

Four uranium mines threaten to continue contaminating Grand Canyon watersheds (please see map):

- Canyon Mine is located in the Kaibab National Forest, six miles from the South Rim entrance to Grand Canyon National Park. It is within the groundwater basin that provided Havasupai people with their sole source of drinking water and the Red Butte "traditional cultural property," which is sacred to Havasupai and Zuni people.
- Arizona 1, Pinenut, and Kanab North uranium mines are located north of Grand Canyon in the Kanab Creek watershed and are administered by the Bureau of Land Management.

Water samples summarized by the U.S. Geological Survey (USGS) in 2010 showed that 15 springs and 5 wells contained dissolved uranium concentrations in excess of U.S. Environmental Protection Agency standards for drinking water. The USGS report concluded that these contaminated sites "are related to mining processes."

In 2013, the National Park Service said that the "regional aquifer groundwater wells at the Canyon, Pinenut, and Hermit mines as well as the sumps at the base of Pigeon and Hermit mines have all exhibited dissolved uranium concentrations in excess of drinking water standards (30 micrograms per liter), with sump concentrations at Hermit Mine exceeding 36,000 micrograms per liter."

In the 2009 *Pinenut Mine Non-Stormwater Impoundment Contingency Plan*, the mine operator estimated that 8.76 acre-feet (2.85 million gallons) of water had accumulated in the mine. Energy Fuels Resources recorded pumping a total of 1,056,560 gallons of water from the mine shaft in 2011. Four samples of pond water indicated contamination, with the highest level of uranium recorded at 1.530 mg/L. An additional 419,570 gallons of water was pumped from Pinenut's mine shaft in 2012 and 7,461 in 2013. Lab analyses of Pinenut's pond water recorded uranium levels at 2.41mg/L.

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[1] *Hydrological, Geological, and Biological Site Characterization of Breccia Pipe Uranium Deposits in Northern Arizona.* http://pubs.usgs.gov/sir/2010/5025/

These reports suggest that water continues to flow into the mine shaft and that the level of uranium contamination is increasing well beyond the .03 mg/L that is considered an upper limit for safe drinking water. They raise the possibility that contaminated water is seeping into regional aquifers. Highly contaminated water is harming birds and other wildlife that drink from these uncovered uranium ponds.

Nonetheless, the U.S. Forest Service and Bureau of Land Management have refused to amend plans of operations for the four existing mines to adopt compliance measures[2] that the five cooperating agencies prepared upon completing the Northern Arizona Proposed Withdrawal EIS. Included in these measures would be requirements to sink several monitoring wells at each of the mines to detect contamination and to cover the contaminated mines to prevent use by wildlife.

[2] "Best Management Practices and Compliance Measures for Breccia Pipe Uranium Mining Activities in Northern Arizona," submitted by U.S. Fish and Wildlife Service comments to Arizona State Land Department, Re: "Wate Mining Company, LLC Lease No. 11-116806", May 6, 2013.