

Grand Canyon Uranium Mining: High Risk, Little Reward  
*Will Include photos - water drifting offsite at Canyon, Kanab North*

### The Risks

- **Scientific uncertainty**
  - The hydrogeology (groundwater flow speed and direction) of the Grand Canyon Region is not well understood (cite)
  - Breccia Pipe mining is unique to the Grand Canyon region. Knowing whether or not it is safe
  - Burden to prove risk rests on the public
  - Uranium mining has inherent risks. The Grand Canyon shouldn't be a guinea pig
- **Uranium Mines have left an expensive and toxic legacy on the Colorado Plateau.**
  - Inadequate sureties,
  - Superfund sites
  - Millions of dollars in settlements
- **Uranium mines are still unsafe: Post Atomic Era mining has made strides in worker safety, but not in environmental health protection.**
  - Reclamation plans are required, but mines are allowed to sit on standby for decades with no deadline to mandate reclamation and no requirement for monitoring wells.
    - Pinenut Mine on the North Rim sat idle for two decades. When the mine owner tried to reopen the mine in 2009, 2.85 million gallons of water had flooded the mineshaft and had become radioactively contaminated. It's unknown where the water came from, how long it sat there, and where it may have been traveling underground. With no monitoring wells, there's no way of knowing the direction of groundwater flow or whether nearby groundwater has been polluted.
- **Uranium Mining leads to water waste and permanent loss from the hydrologic cycle due to irreversible contamination.**
  - Uranium half life is large - 159,000 and 4.5 billion years depending on the isotope.

### The Myths

- **Mining is important to the Northern Arizona and Statewide economies. False. They are driven by travel, tourism and outdoor recreation.**
  - **Regional Jobs**
    - Northern Arizona travel and tourism generated over 18,000 jobs in 2016.
    - Canyon Mine, the only currently operating uranium mine, is expected to employ 60 people at full operation.
    - General (not necessarily only uranium) mining jobs in Northern Arizona totalled 195 in 2014.
  - **Statewide Jobs**
    - Statewide, the outdoor recreation industry in Arizona creates 201,000 direct jobs.
    - Statewide, the general Arizona mining industry creates 12,000 direct jobs. But based on output, uranium mining comprises a mere portion of 1% of the Arizona mining industry.

- **Regional Economy**
  - Northern Arizona travel and tourism generated \$160 million in state and local tax revenue in 2016.
  - Northern Arizona sees \$0 in royalties from uranium or other hardrock mining done under the 1872 Mining Law.
- **State Economy**
  - Statewide, outdoor recreation has generated \$1.4 billion in state and local taxes annually.
  - Statewide, the general Arizona mining industry directly pays \$206 million in business tax dollars. But based on output, uranium mining comprises a mere portion of 1% of the Arizona mining industry.
- **We don't need Grand Canyon Uranium**
  - There is a glut of uranium on global markets, the current price of uranium is at least \$30/lb below the minimum threshold for economic feasibility.
  - The U.S. Department of Energy has an excess inventory of uranium in the approximate amount of 153 million pounds of U3O8 (58.9 metric tons).
- **At least some Grand Canyon claims/mines owned by international companies.**
  - Energy Fuels Resources (EFR) has an office in Lakewood, CO, but is a Canadian Company. EFR owns Canyon Mine, the White Mesa Mill and several claims and closed or standby uranium mines near the Grand Canyon and across the Colorado Plateau.