

Uranium Claims Inundate Canyon

—*Roger Clark*

“Our well of knowledge is bone dry,” quipped my hydrologist friend. I was demanding to know why one of my favorite springs in the Grand Canyon was disappearing after serving my backpacking needs for more than two decades. I wanted to know what was causing it to go dry and all the ferns around it to die.

“Good luck,” he said unsympathetically, “we know next to nothing about these springs and the aquifers that feed them.” The National Park Service (NPS) is more blunt: what affects “...the water quantity and quality of these delicate and rare ecosystems is unknown.”

Springs and seeps occur in less than 1/100th of one percent of the Grand Canyon’s parched landscape. The number of plant and animal species living near springs is 500 times more abundant than those surviving in spring-less surroundings. The NPS notes: “Without water not much would survive the rotisserie of Grand Canyon.”

How water behaves beneath the surface is fraught with uncertainty, allowing those who benefit from drilling more uranium mines within the region to speculate that such activities “will do no harm.” But our past experience has taught us to proceed with caution before we allow another bunch of uranium prospectors to plunder Grand Canyon’s pristine aquifers.

Claims Climb Exponentially

Concerns about groundwater mushroomed during the past three years as the price for uranium ore shot from \$7 per pound to more than \$90 per pound causing a deluge of uranium claims adjacent to Grand Canyon National Park.

Within five miles of the Park, there are now more than 1,100 uranium claims, compared with just ten in the beginning of January 2003. The Kaibab National Forest reported earlier this year that they had more than 2,100 claims filed in the Tusayan Ranger District. Thousands more claims have been staked on Bureau of Land Management Lands (BLM), north of the Grand Canyon in Kanab Creek drainage and House Rock Valley

Uranium in the Grand Canyon region is found in sedimentary layers, where the Coconino and Redwall formations serve as significant regional aquifers. Mining disturbs and mobilizes uranium and other elements that have been mineralized and encased in these rocks for millions of years. Once uranium is oxidized, it dissolves readily and becomes a persistent poison that can easily enter ground and surface water and move rapidly through faults and fractures, eventually discharging into springs within the Grand Canyon. Large aquifers such as those feeding Pipe Creek at Indian Gardens, Thunder River, and Havasu Creek then flow into the Colorado River.

In late 2007, the Kaibab National Forest approved a uranium exploration project without any analysis of its environmental impacts. Vane Minerals began drilling 39 test holes, some within two miles of the South Rim. The Grand Canyon Trust joined with the Center for Biological Diversity and Sierra Club in filing a suit to challenge the “categorical exclusion” granted by the government and its failure to assess effects of the exploratory drilling under the National Environmental Policy Act (NEPA).

Following an all-day hearing in April, the court issued a preliminary injunction halting any further drilling. The case was recently settled to the satisfaction of all parties when the Forest Service agreed to prepare environmental assessments for public review in full compliance with NEPA before authorizing any new drilling activities.

Legislative Withdrawal

To stem the tide of even more uranium prospecting, the Grand Canyon Trust launched a campaign to withdraw federal land surrounding the Park from future mining and mineral leases. The Coconino County Board of Supervisors passed a unanimous resolution asking Congress to withdraw lands managed by the BLM and U.S. Forest Service (USFS) from mineral entry. Arizona Governor Napolitano wrote a letter to Secretary of Interior Kempthorne requesting that lands adjacent to Grand Canyon be withdrawn from mineral entry. We then began to secure Congressional support for legislative withdrawal.

In March, Arizona Congressman Raul Grijalva introduced legislation to withdraw federal lands adjacent to the Grand Canyon from mineral exploration under the 1872 Mining Law. The Grand Canyon Watersheds Protection Act (H.R. 5583) has been referred to the Committee on Natural

Resources. When asked to comment on the legislation, Grand Canyon Superintendent Steve Martin said:

“There should be some places that you just do not mine. Uranium is a special concern because it is both a toxic heavy metal and a source of radiation. I worry about uranium escaping into the local water, and about its effect on fish in the Colorado River at the bottom of the gorge, and on the bald eagles, California condors and bighorn sheep that depend on the Canyon's seeps and springs. More than a third of the canyon's species would be affected if water quality suffered.”

The bill would withdraw from mining 628,886 acres in the Kanab Creek area and 112,655 acres in House Rock Valley managed by the Bureau of Land Management, as well as 327,367 acres in the Tusayan Ranger District of the Kaibab National Forest. The bill will not affect claims that were shown to contain economically developable uranium deposits prior to the date of the mineral withdrawal. Therefore, the Grand Canyon Trust will continue to press for assessing impacts from specific project applications and for considering the cumulative effects from thousands of uranium mines in the region.

Cumulative Effects

The Grand Canyon has been accumulating radioactive residues from our nation's nuclear policies and practices for more than five decades. On January 27, 1951, Leonard Heaton wrote in his journal, "At about 6:30 this morning I heard what I thought was two distant dynamite blasts or rocks rolling. Later while in Kanab and Orderville I learned of atomic bomb blast in Nevada at about that time, so believe it was atomic blasts." During the next 12 years, our government detonated 126 aerial bursts over the nearby test site.

As custodian of Pipe Springs National Monument, Mr. Heaton faithfully recorded the day-to-day activities of life and events among the rural residents living in the Kanab Creek watershed. Three years after the first atomic test, his journal entry noted "...a lot of prospectors going and coming through the monument hunting for that rare metal, Uranium....Several hundred acres have been staked to the west and southwest of the monument." Ten years later, the nearby town of Fredonia recorded "an unusually high number" of children diagnosed with leukemia.

That first wave of uranium prospectors eventually opened up six mines near Kanab Creek, which flows south into the Grand Canyon. In 1984, a massive flash flood washed tons of high-grade uranium ore into Kanab Creek. The Orphan Mine, located near the South Rim's Powell Point, continues to contaminate creeks below it, prompting the park service to post signs warning backpackers along the Tonto Trail not to use water from two drainages.

Between 1950 and 1980, hundreds of uranium mines and cancer-causing mills were developed along tributaries to the Colorado River on the Navajo Reservation. In 1979 an earthen dam in Church Rock, New Mexico released eleven hundred tons of radioactive mill wastes and ninety million gallons of contaminated liquid into a tributary to the Little Colorado River. The Nuclear Regulatory Commission acknowledges another ten accidental releases of tailings solutions into major watercourses in the region. Collectively, these events correlate with documented risks.

Today, the National Park Service advises against drinking and bathing in the Little Colorado River, Kanab Creek, and other waters in the Grand Canyon where excessive "radionuclides" have been found. While it is difficult to attribute contamination in these major waterways to any specific activity, there can be little doubt that the cumulative effects of mining, milling, and detonating radioactive materials are causing long-term, adverse impacts on water and water users within the Grand Canyon region.

Using Precaution

Nuclear energy continues to be championed by our government, which repeatedly assures us that uranium mining poses no risk to human or ecological health. But time and consequences belie these conclusions. In 2005, the Navajo Nation outlawed uranium mining and processing on its lands and Nevadans steadfastly reject federal plans to dump nuclear wastes in their state.

Navajo President Joe Shirley offered the following testimony in support of mineral withdrawal legislation during Congressman Grijalva's field hearing in Flagstaff:

“The tragedy of uranium’s legacy extends not only to those who worked in the mines, but to those who worked and lived near the mines that also experienced devastating illnesses. Decades later, the families who live in those same areas continue to experience health problems today. The remnants of uranium activity continue to pollute our land, our water, and our lives. It would be unforgivable to allow this cycle to continue for another generation.”

Hopi, Kaibab Paiute, Hualapai, and Havasupai leaders joined President Shirley in testifying to support legislation that would withdraw from new mineral development most of the remaining federal lands surrounding the Grand Canyon.

Abe Springer, Professor of Hydrogeology at Northern Arizona University, stated in a letter to the hearing committee, “Because there is potential harm to one of the most important natural wonders in the world, and to tribes which count on the water from the aquifers as a sole source of water, it makes good sense to exercise the precautionary principle.”

Using precaution in this case would mean doing no harm and preventing more damage, even though we barely understand how water winds its way through regional aquifers. It would require proponents to bear the burden of proof to show that mining uranium will not contaminate springs in the Grand Canyon or risk the well-being of lives they support.

Perhaps we will never know why a hanging garden of maidenhair fern, hidden deep within the Canyon’s heart, is failing to pump the lifeblood of water into my faithful pool. But grandchildren might honor our wisdom in preventing short-sighted speculators from poisoning Grand Canyon’s well-spring of sustenance.

A detailed map of uranium claims surrounding Grand Canyon is available on our website at: