



Confluence of the Animas and San Juan Rivers, Farmington, New Mexico, 2016.

# WHAT RIVERS KNOW

## Gold King Mine Spill Animas and San Juan Rivers

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Colorado, New Mexico, and Arizona

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photos by Basia Irland unless otherwise noted

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Special thanks to Dr. Clifford Villa, Professor,  
University of New Mexico Law School.

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WHOA, have you ever seen a river flow bright orange? Instead of a shade of blue or muddy brown, there was a time when my body turned the sickening color of orange juice, or Tang, or mustard -- not a healthy hue for any river. I caught people's attention around the world due to my dramatic color. This is the consequence of an extractive industry and is what an environmental disaster looks like.

On August 5, 2015, this Gatorade-colored plume was caused by approximately three million gallons of wastewater and sludge spewing from the dormant Gold King mine into Cement Creek, one of my tributaries, ten miles north of Silverton, Colorado. The water had backed up in the mine behind a plug formed when part of the mine's ceiling had collapsed sometime earlier. Environmental Protection Agency (EPA) workers had planned to install a pipe to drain the water so that they could eventually plug the mine, keeping the contaminated water inside it -- and out of my body. Instead, they ended up accidentally breaching the dam, releasing a concoction of major contaminants including mercury, silver, lead, cobalt, nickel, iron, magnesium, copper, zinc, aluminum, arsenic, chromium, vanadium, and beryllium. In the first hours after the spill, EPA officials downplayed the impacts and failed to notify those downstream. I feel so bad that I was the one to deliver all this poisonous mess to the communities along my shore.

Three kayakers on the orange-juice colored Animas River near Durango, Colorado. Photo by Jerry McBride, Durango Herald/Polaris, 2015.

When the plume of toxins reached Durango, Colorado, sixty miles downstream, a somber group of people stood on the bridge to view the encroaching brightly colored contamination,



and exclaimed how sad, tragic, and angry they were that this was happening to their river. I could hear them talking, but I wonder if they had any idea how I felt having this happen to ME! The pollution flowing into my water was not new, although the huge quantity was. Miners began digging for minerals in the 1870's, and I have been the victim of their pollution ever since. Mines simply poured their tailings directly into me until, in the 1930s, downstream farmers forced mining companies to stop. The mine is located at 11,480 feet and so because of the steep gradient, gravity pulls me quickly at the beginning of my journey and slows down when reaching flatter stretches, so that the average I move is about two miles-per-hour. A healthy drinking water quality pH level is around 7.7, but during the toxic flow, my pH level dropped all the way down to 2.9. In chemistry, pH is a measure of the acidity of a solution: The lower the number, the more acidic the liquid.

This kind of event is not new. In June 1975, a huge tailings pile on my banks northeast of Silverton was breached, dumping over 50,000 tons of heavy-metal-loaded tailings into my body. Whew, sometimes I wish I could just pack up and move to a new location, away from all these mines, and away from the people who are so careless with what gets dumped into my gut. I am a perfectly wonderful river with a lot to give to everyone, yet I am often mistreated and abused. It seems like it is not until something tragic like this happens that citizens all of a sudden wish to assist me. It is like they become doctors and want to help me get well, but what about the ancient Chinese way of practicing medicine where it is the doctor's responsibility to be sure that the patient stays healthy all the time, instead of waiting until they are sick and need to be treated?

The problems are so complex and massive. Many agencies became involved including universities, federal, state and tribal organizations, with efforts that included four states, three Environmental Protection Agency regions, two tribes, and numerous local and municipal agencies, and public water systems. At a public meeting in Durango held just hours after the plume reached town, David Ostrander, EPA's emergency response director declared. "I'm very sorry for what happened. This is a huge tragedy. We typically respond to emergencies, not cause them."

The impacts of the spill on the Navajo Nation were substantial, and included damage to crops, home gardens, and cattle herds. Their concerns included cultural and spiritual significance to the

Diné way of life. Direct contact with river sediment pigments are used on the body for ceremonial purposes. Cake used in ceremonies is baked underground. As a part of the Diné cosmology micro-organisms are important. Lead, arsenic and manganese at low exposure over a long period of time can be harmful and the impact on future generations is unknown. Tó'titso, "the water is yellow," was heard among native Diné speakers.



Warning Sign,  
Farmington,  
New Mexico.

Dr. Karletta Chief, a Diné hydrologist and an Associate Professor at the University of Arizona, specializes in the Gold King Mine Spill impacts to her tribe. An important challenge of trying to inform the communities about the scientific data related to the toxic mine spill was how to translate this data into the Diné language. Karletta and her assistants worked with the people in each Chapter House, collecting samples of water, soil, blood and urine, in order to determine the effects of the toxins transported in my water. When it came time to communicate this data back to the community meetings, there needed to be a new way to envision all the important scientific information. A traditional graph would not work. So, Perry Charlie, Navajo EPA, and a teacher at Shiprock helped to devise a new vocabulary that could be more easily comprehended by non-scientists.

The Navajo Nation ceased irrigating their crops from the San Juan River on August 7, 2015. While San Juan County in New Mexico lifted the ban on my water from the San Juan River on

August 15, 2015, the President of the Navajo Nation, Russell Begaye, who had ongoing concerns about the water's safety, did not lift the Navajo Nation's ban until August 21, 2015. During this time, the US EPA had water delivered to tribal households. An estimated 2,000 Navajo farmers and ranchers were affected directly by the closing of the irrigation canals after the spill. While water was trucked into the area to provide water to fields, many home gardens and some remote farms did not receive any assistance, therefore they suffered widespread crop damage.

Unfortunately, six years later, in 2021, there was still little effort to address this mining site and many others that continue to leach toxins into rivers, creeks and streams. An estimated 23,000 abandoned mines in Colorado (with about 500,000 hard rock abandoned mines in the U.S.) that need to be cleaned up are still awaiting action from Congress with continual bureaucratic roadblocks and issues about how to fund the cleanups. Once the Animas and San Juan Rivers returned to their normal color, the urgency began to wear off. Due to the enormous volume of waste typical in mining disasters there usually are no quick solutions. Where is the mess stored and how safe will it be? What community wants thousands of truckloads of toxic waste driving through their neighborhoods during the disposal? There are limited resources, especially from the Environmental Protection Agency's Superfund program. The town of Silverton, Colorado was ground zero for the mine disaster and since the EPA contractors were responsible for the spill, there has been hesitation about what the agency might actually accomplish.

Dr. Clifford Villa, Professor in the Law School at the University of New Mexico, who has written lengthy articles about my plight, knows it will take a long time for the cleanup to occur. He writes; "From the perspective of a river or other geologic features, maybe thirty years or more for cleanup is indeed 'fast.' If there is one thing we might learn from a river, perhaps it is patience."

And the Navajo Nation continues to suffer the consequences of the toxins that flowed downstream contained within my body. The elders are culturally attached to the land and water. Even though there has been research showing that not too much of the contamination got into the irrigation system and onto the farms, there is still mistrust of outside institutions and an unwillingness to plant corn and other crops. The Shiprock Farmers market stopped for three years due to the disaster. Currently, the farmers market posts flyers with EPA and local data stating that the produce is safe. I am still sometimes called the "Contanimas River." There is a continuing issue of lead being high when my current swells. A computer system has been installed that monitors water quality and can shut off flow when heavy metal levels rise. I am hoping that this kind of toxic mine spill will not occur again and that I can continue to flow clean, although I am wary and weary from this experience.