

Lauren Renteria

Dear Arizona Department of Environmental Quality,

I have called the Sonoran Desert my home for 10 years and know how important it is to protect this one-of-a-kind ecosystem. As you know, water is our most precious resource. For thousands of years, plants, animals and humans alike have found innovative ways to thrive in the desert by respecting the land and living off the limited water that flows across our beautiful state.

However, our modern-day impacts on the environment have greatly changed the landscape and access to water. The effects of climate change are not small. The fact of the matter is that our state is in a water crisis that is projected to only get worse in the next few decades.

We don't have the luxury of wasting what little water we have left or taking the risk of contaminating water systems that we, as well as our plant and animal counterparts, need to survive.

In addition to this, the Sonoran Desert ecosystem is extremely fragile. This landscape is the only one of its kind in the world and more mining in the area would forever change the health of our beautiful desert.

I want this desert to thrive for generations to come and that's why I am urging you to deny South32's Hermosa permit (#AZ0026387) for discharge of mine water into Harshaw and Alum creeks.

Below, the Sky Island Alliance has outlined excellent reasons why you should reject this permit for the mine. I completely agree with the organization's assessment and hope you do too.

The proposed impacts are unacceptable and fall into two main categories: 1) dewatering due to the "cone of depression" that would be created around the mine and 2) disturbances that would come from dramatically increased flow rates in nearby creeks.

First, dropping the groundwater level in an area like this would be highly destructive. The change in hydraulic gradients around the mine would change the "paths of least resistance," where current springs emerge, permanently drying natural springs. It would also lead to significant loss of upland trees. The death of surrounding trees will decrease the landscape's overall resilience and could lead to the present ecosystem's radical transformation and potential collapse.

Expected harms from the water discharges are also deeply concerning. Up to 6 million gallons of water per day could be forced down Harshaw Creek and up to 172,000 gallons per day down Alum Creek. These volumes are significantly higher than current, intermittent, base flows. This will lead to severe erosion upstream, excessive sediment loads downstream, and the burial of several important water sources such as the seven rheocrene seeps and springs known in Harshaw Creek and the nine rheocrene seeps and springs known in Alum Creek. These harms are particularly concerning because springs are such unique ecosystems with high biodiversity. Their destruction will affect endemic species to an unknown degree because the sites haven't yet been adequately surveyed. Some estimates suggest that refugia like these support more than 20% of endangered and

threatened species, despite making up a much smaller proportion of the land surface area (Springs Stewardship Institute).

What's more, such intense flooding will lead to reduced tree recruitment for riparian species like cottonwoods and sycamores — over time, altering the landscape. Because the water discharges would be ongoing, the surrounding landscape will be more water-logged. This means a reduced capacity to absorb water during rains, and potential downstream flash flooding. And finally, the quality of the water being discharged in such high quantities is a concern. Its source will be deep underground in the Hermosa project, and although the mine has promised to treat the water before release, its quality could change unexpectedly over time.

Although water in the desert is a rarity, and one would think that increased flow would help our streams, because of the sensitive ecological balance of these riparian ecosystems, a change in flow regime this drastic could permanently alter the character and species composition of these areas.

For all these reasons, I urge you and the Arizona Department of Environmental Quality to deny the permit for this project.

Sincerely,

Lauren Renteria

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