

Emily Kachorek

Dear Arizona Department of Environmental Quality,

I am a current resident of Patagonia, AZ and am extremely worried, horrified and saddened by the current and possible future plans for the South 32 Mine in Patagonia. The proposed plans of South 32s Hermosa Mine will destroy one of the most, if not the most, biologically diverse areas in the entire US!!! Water will be contaminated, water use will deplete and drain the aquifer, lead to increase risk of flooding, greatly impact wildlife populations, harm endangered species, damage the overall ecosystem, create light and noise pollution, desecrate ancestral lands, historically important landscapes and, very importantly, IS WASTING ONE OF OUR MOST PRECIOUS RESOURCES IN THE WEST - WATER!!!! South 32 will not pay a cent for contaminated and wasting water that can support the much needed communities in the area. If the cost of the water was taken into consideration, its value to the communities for drinking water would FAR outweigh the theoretical benefits the heavy metals that will be extracted.

I'm writing DESPERATELY urging you to deny South32's Hermosa permit (#AZ0026387) for discharge of mine water into Harshaw and Alum creeks. The proposed impacts are completely 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 and I am horrified about the likely outcomes. 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, PLEASE, PLEASE, PLEASE, DENY the permit for this project.

Sincerely,

Emily Kachorek