

Martha Fisher

As a property owner in Patagonia I object to the ADEQ proposal to renew the Arizona Pollutant Discharge Elimination Permit No. AZ0026387 for South32's Hermosa Project mines.

I was a Hydrologist with USGS for 10 years performing water quality and quantity studies. Our well is 40 feet deep in coarse sands and gravels. It is within 100 ft of the Sonoita Creek bed. This is true for many of the wells providing drinking water to the citizens of Patagonia. Please protect our drinking water from further impairment and pollution from these historic and proposed new mines as is your mandate through the Clean Water Act.

The increased flows of ~ 6 million gallons per day in a creek bed that is largely dry and already impaired will further release pollutants embedded in the upstream impaired tributary creeks Harshaw and Alum. Also as our climate is rapidly changing, we can anticipate even further flooding and dispersion of historic and proposed mine polluting wastes. Please work to reduce our community's drinking water exposure to fewer pollutants rather increased pollutant loads.

Access to our home and that of all of our neighbors is across the Sonoita Creek bed. There is no bridge for access during flooding. With daily flows of 6 million gallons per day for decades, how will we access our homes? What will happen to our property values? Who will be responsible to reimburse us for our loss of healthy drinking water, our health, and the value offer homes?

As a former hydrogeologist from USGS trained in groundwater modeling from University of Waterloo I am horrified that mining companies are exempted from all groundwater regulations. Santa Cruz County has been determined to be an area of Extreme Drought Conditions by the U.Z. Drought Monitor. How can ADEQ allow 6 million gallons per day and more to be dewatered from a huge area of our watershed for 60 years by South32? That is unconscionable. What will happen to our long stored aquifer resources? What will happen to our drinking water supplies? What will happen to all the native flora and fauna living within our watershed?

The Sky Islands in the Coronado National Forest have received national and international recognition for it's conservation value. The World Wildlife Fund recognized the Chihuahuan Desert Region as globally outstanding in its biological distinctiveness and named the ecoregion a top continent-level conservation target. Conservation International has recognized the sky islands as a conservation hotspot. How many acres of our pristine sky islands ecotone will be destroyed by this massive dewatering for decades?

I concur with all of the legal statutory objections as noted in the attached PARA response to the Proposed AZDES Discharge Permit.

I beg you to fulfill your statutory duties to "Act to protect the environment", promote "protection and enhancement of the quality of water resources", provide for the "prevention and abatement of all water and air pollution", and "ensure the preservation of natural beauty" in our state. A.R. S. 49-204(A)(1),(7),(9), and (10)

**Summary of Proposed Comments to ADEQ On Proposed Renewal of AZPDES
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The proposed Permit would allow for dangerous discharges of mine water to Harshaw Creek, Alum Gulch, and Sonoita Creek, threatening the health of local residents and the environment in violation of the Federal Clean Water Act and Arizona's laws relating to surface water quality. The issuance of the Permit, as written, is also contrary to ADEQ's own statutory duties which require, among other things, that ADEQ "act to protect the environment", promote "the protection and enhancement of the quality of water resources", provide for the "prevention and abatement of all water and air pollution"; and "[e]nsure the preservation and enhancement of natural beauty" in our state. A.R.S. § 49-204(A)(1), (7), (9) and (10).

Instead of doing its job to enforce the discharge provisions of the Clean Water Act to protect human health and the environment as required by law, ADEQ appears to have instead spent a great deal of time and effort during permit drafting attempting to avoid these core obligations and responsibilities.

Under controlling law, the Permit cannot issue until, among other things, ADEQ updates or first prepares the Total Maximum Daily Load (TMDL) studies and necessary waste load allocations required by the Clean Water Act so that the impaired (contaminated) surface waters of Harshaw Creek, Alum Gulch, and Sonoita Creek can finally be returned to good health. Section 303(d) of the Clean Water Act requires states to identify waters that are impaired by pollution, even after application of pollution controls. For those waters, states must establish a TMDL of pollutants to ensure that water quality standards can be attained. A TMDL is both a quantitative assessment of pollution sources and pollutant reductions needed to restore and protect U.S. waters and a planning process for attaining water quality standards. The TMDL program is a core element of overall efforts to protect and restore water quality to surface waters across the United States and here in Arizona. ADEQ's concerted efforts to avoid or trivialize its TMDL obligations in the Permit is astounding.

HARSHAW CREEK

The AZPDES Permit would allow discharge of up to 6.48 million gallons of mine water per day into Upper Harshaw Creek. This water will be produced from deep and destructive mine dewatering wells, and it will include historic and new seepage from the mine's tailings piles, core cuttings, and potentially acid-generating (PAG) rock from mine shaft development. The waters of Upper Harshaw Creek are impaired (contaminated) with elevated levels of copper, and low pH (acidity) that can result in heavy metal contamination. Despite documented impairments in the receiving waters of Harshaw Creek, ADEQ takes the position that it need not prepare a TMDL analysis to regulate South32's discharges into these impaired surface waters so that water quality standards can be achieved. This violates the Clean Water Act.

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Public records also show that ADEQ has already been allowing South32 to discharge mine water into Harshaw Creek (under its expired AZPDES permit) for the last few months – since at least August 2023. The Draft Permit and public fact sheet totally fail to acknowledge this fact, and ADEQ denies that discharge data is available in calculating critical numeric permit limits in the draft.

- **COMMENT:** ADEQ claims without basis that the discharge location (Outfall 002) is in Lower Harshaw Creek. However, PARA has provided ADEQ with extensive evidence and documentation showing that Outfall 002 is actually constructed in Upper Harshaw Creek which is listed as impaired for various pollutants under Arizona's Clean Water Act 303(d) list. Accordingly, ADEQ must revise its grossly outdated TMDL for Upper Harshaw Creek before issuing this renewed Permit.
- **COMMENT:** ADEQ must acknowledge the impairments in Lower Harshaw Creek and prepare a TMDL for Lower Harshaw before it can issue the proposed AZPDES permit.
- **COMMENT:** ADEQ must acknowledge the true extent of the ongoing discharge to Harshaw and revise this Permit accordingly to include this discharge data in calculating permit limits – before issuing this renewed permit.

ALUM GULCH

The AZPDES Permit would allow South32 to discharge up to 172,000 gallons of mine water per day into Alum Gulch. The waters of Alum Gulch are impaired (contaminated) with elevated levels of cadmium, copper, zinc, lead, and low pH (acidity) that can result in heavy metal contamination. ADEQ must prepare a new TMDL for lead (since no TMDL has ever been prepared for lead) and it must update its outdated TMDL for the other contaminants. This is required by the Clean Water Act to demonstrate that South32's discharges will not further contaminate or degrade these surface waters but rather, will support the future restoration of water quality in Alum Gulch.

ADEQ appears to have no plans to complete this work. Instead, ADEQ has written the Permit to simply avoid these requirements in violation of the Clean Water Act. This threatens human health and the health of the environment.

- **COMMENT:** The outdated TMDL must be updated and a new TMDL study must be completed on the new lead impairment in Alum Gulch – before ADEQ issues the renewed Permit.

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- **COMMENT:** ADEQ’s workaround proposal to only allow discharge from “historic tailings” into Alum Gulch is absurd. It ignores documented facts about how South32 has operated this mine site for years. It also disregards the well-known fact documented by both South32 and ADEQ that the tailings pile and mine seepage from this pile includes dangerous new sources of pollutants. Indeed, the tailings pile has, for years, been used by South32 to hold many tons of new waste rock, exploration rock, treatment plant waste, and potentially acid-generating material. ADEQ’s tortured analysis and conclusion that the only mine seepage that will be discharged to Alum Gulch from the tailings pile will come from historic tailings is wildly inaccurate and misleading to the public. ADEQ must revise this provision – before issuing this renewed Permit.

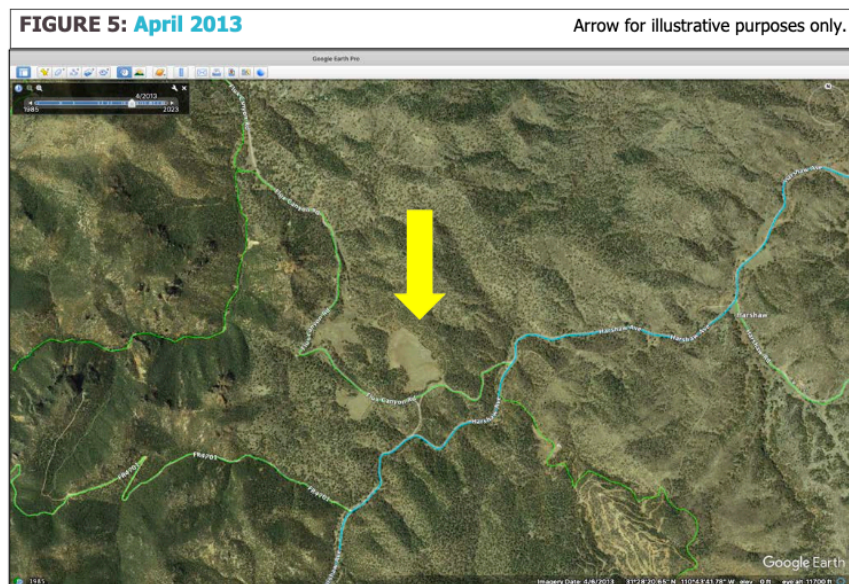
SONOITA CREEK

Both Alum Gulch and Harshaw Creek are tributaries to Sonoita Creek. PARA’s hydrology experts have demonstrated that the significant discharges of mine water to these tributaries will reach the waters of Sonoita Creek. The waters of Sonoita Creek are impaired for zinc, however ADEQ has never completed the required TMDL study for this impairment. The Draft Permit and Fact Sheet never acknowledge this key fact.

- **COMMENT:** ADEQ must complete a TMDL for the zinc impairment in Sonoita Creek – before issuing this renewed Permit.
- **COMMENT:** ADEQ must perform a waste load allocation for the discharges to Sonoita Creek. This is required by the Clean Water Act so that South32’s discharges will not further contaminate or degrade these downstream surface waters but rather can support the future restoration of water quality in the Creek.

THE HERMOSA PROJECT IS A BRAND-NEW MINE

The historic activities that took place many decades ago at the Trench Camp mine in no way resemble the large-scale industrial mine being developed by South32 today. When the mining company bought the abandoned mine through the ASARCO Custodial Trust in 2016, not a single building or structure remained, except for contaminated historic tailings and mine shafts that were managed for remediation purposes only.



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- **COMMENT:** ADEQ must determine these new facilities to be legal “new sources” of discharge – before issuing this renewed Permit.
- **COMMENT:** ADEQ must revise the Permit to acknowledge that this mine is expected to go into production during the life of this Permit.
- **COMMENT:** As a new source, the mine is subject to all modern performance standards and requirements of the Clean Water Act.

MANGANESE AND SULFATE MUST BE MONITORED

ADEQ has the discretion to revise the Draft Permit to include monitoring for a certain (secondary) category of contaminants which includes manganese and sulfate. Elevated levels of these contaminants can cause noticeable odors, tastes, and smells in the water. They also have the potential to harm human health and damage and corrode water pipes, fixtures, and other infrastructure, and have destroyed entire water systems leaving them unusable. As the Hermosa Project is a zinc, lead, silver, and manganese mine, these contaminants are likely to be present in the discharged wastewater.

- **COMMENT:** ADEQ must revise the Draft Permit to require monitoring for manganese and sulfate in order to protect human health and the drinking water

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As ADEQ is aware, the Town of Patagonia and many local residents only treat their water with chlorinating disinfectant prior to use. We are extremely concerned about the potential effects on human health from contaminants at elevated levels like arsenic, cyanide, cadmium, lead, mercury, uranium in our water, which may go undetected due to insufficient monitoring requirements.

- **COMMENT:** ADEQ must revise the Draft Permit to require this important monitoring be done at least monthly.

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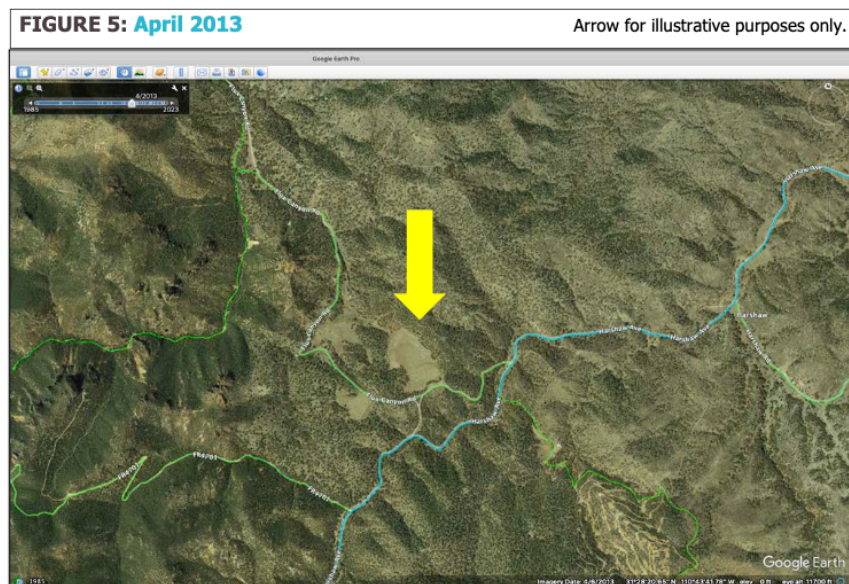
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