

Subject: Scoping Comments based on South32 Hermosa Inc., Critical Minerals Exploration and Mine Plan of Operations, dated DECEMBER 1, 2023; REVISED: APRIL 15, 2024

We are residents of the greater Patagonia area and Santa Cruz County. Our comments are for the health, safety and welfare of us, our community, county, and state. These comments are provided for the 30-day scoping process to identify issues that have not been addressed/studied or have not been adequately addressed/studied in the MPO for the Hermosa Mine owned by South 32.

We have many concerns not addressed or insufficiently addressed in the MPO and we would like additional detailed study of these issues in the EIS:

1. The Mine Plan of Operation largely does not study impacts outside of USFS lands. The impacts associated with the Hermosa mine are regional in scale. We believe the affected environment needs to be expanded to include the greater Patagonia region, Santa Cruz County and portions of Tucson/ Pima County if the Port of Tucson is the final delivery point until a future road is built. Even then, the impacts will remain at a regional scale. Transportation and safety impacts to SR 82, SR 83, SR 90 and I 19 are the basis for our concern.
 - a. Affected environment: Describes the environment of the area to be affected by the alternatives under consideration. The MPO barely mentions the current connections to SR 82 and the future Cross Creek Connector. It does propose a future road connection to SR 82 around the entrance to Lake Patagonia State Park as the alternate permanent route. Currently there is only one route and for the foreseeable future, it is the only viable route.
 - b. What does NEPA consider as an affected area in environmental assessments?
 - i. The National Environmental Policy Act (NEPA) defines an “affected area” as a geographic area that may be impacted by a proposed federal action. We submit there may have been actions that required a federal action but due to confusion in who owns the Forest Service roads, things may have been overlooked. The affected area can be local (USFS lands) and regional (greater Patagonia region, Nogales and Tucson/Pima/County), and may include:
 1. Human Environment: The human environment encompasses physical, biological, social, and cultural resources, including:
 - a. Physical: geology, soils, air, water
 - b. Biological: plants, animals

- c. Social: communities, economics
 - d. Cultural: archaeological and historic resources
2. Environmental Resources: Natural resources, such as:
 - a. Water bodies (rivers, lakes, oceans)
 - b. Landscapes (forests, grasslands, wetlands)
 - c. Ecosystems (habitats, wildlife corridors)
 - d. Natural habitats (wildlife, plants, insects)
 3. Communities: Communities that may be directly or indirectly affected by the proposed action, including:
 - a. Local communities (residential, commercial, industrial)
 - b. Regional communities (agricultural, recreational, tourism)
 - c. National communities (national parks, wildlife refuges, protected areas)
 4. The affected area may also include areas that are not directly adjacent to the proposed action but may still be impacted by it. Clearly the entirety of Santa Cruz County meets this criteria.

The NEPA process requires federal agencies to identify the affected area and assess the potential environmental impacts of a proposed action on that area. We believe that the direct, indirect, and cumulative impacts of this project are identifiable both in the current proposed affected area and the clearly greater region that should be included. A list of our concerns is below and are not inclusive but, in the time allowed, were the major ones we identified. We would note, at the scoping meetings in Patagonia and Nogales, the regional impacts of this project were not addressed.

2. Santa Cruz County's Nature Based Economy (Socioeconomics) (<https://economics.arizona.edu/nature-based-restorative-economy-santa-cruz-county-arizona>) is highly dependent on the natural capital, ecosystem services and biologically diverse region that goes well beyond the political boundaries of Santa Cruz County. The U.S. Fish & Wildlife Service and other scientific sources estimates the "Madrean Sky Island" bioregion harbors the greatest diversity of flora and fauna in North America.

Other regional socioeconomic efforts that are working hard to sustain and enhance the biodiversity and beauty of our region are listed below. Their efforts are in danger of being negatively affected by the South32's Hermosa Mine and its regional impacts:

- Santa Cruz River Urban National Wildlife Refuge (<https://santacruzriver.org/>)
- Santa Cruz Valley National Heritage Area (<https://santacruzheritage.org/>)
- Friends of San Rafael Valley
- Economic Impacts of the COVID-19 Pandemic and Pathways Forward
- Santa Cruz County Tourism Sector Prosperity Plan
- Santa Cruz County Housing Strategy 2022-2027
- Cuisine Tourism Initiative (underway)

Surface transportation, dewatering, habitat degradation, noise, light pollution, air and water quality impacts, may be detrimental to the regional peoples, visitors and economy. The EIS needs to analyze the potential impacts of the Hermosa Mine.

3. Currently the only ingress, egress, and regress to the Hermosa Mine is Harshaw Road, FS Road 58, and FS Road 49. While another road is being proposed in this EIS, for the foreseeable future these routes are the sole access to and from Hermosa. To date, this route has had construction on FS Roads and adjacent to them. A search of the Federal Register for South32 and Arizona Mineral Incorporated (AMI) reveals no NEPAs whether CE, EA or EIS. According to the Coronado National Forest Motor Vehicle Use Map and Coronado National Forest Atlas, they clearly show Harshaw transitions into FS 58 then FS 49 as it approaches the Hermosa Mine, and the labeling indicates they are forest service roads on a mix of forest service and private lands. Around 1907 or 1908 the US Forest Service claimed the roads under their ownership/jurisdiction. It appears the County has never filed a claim (RS 2477) for the road and subsequent act of congress. In addition, they do not appear to want ownership since the County does not have the resources to pay for the road. There apparently are cooperative agreements with the USFS for the operations and maintenance of said roads. Who will maintain and repair these roads when they suffer the impacts of heavy truck use? The damage has already begun. Federal actions appear to be warranted for past and future impacts and require EIS analysis/investigation.
4. Mine product, whether manganese, zinc, lead, or silver, has not been adequately addressed. Until the proposed long-term route is approved for construction by the USFS and other agencies, all mine production will be exiting the mine via FS 49 to FS 58 then Harshaw Road into Patagonia or using the future Cross Creek Connector to access SR 82. In either case, for the foreseeable future, the product theoretically be

making its way to the Port of Tucson according to the MPO but there is no requirement for the mine's hauling trucks to just make the right turn onto SR 82. Arizona state law states that any truck weighing 80,000 lbs. or less cannot be denied access to state highways. Therefore, they could go left onto SR 82 and travel through Patagonia and Nogales then head into Mexico to Guymas for smelting and processing.

The biggest health question for us is where is manganese processed? Manganese has significant health issues whether air borne, or water borne. Is it being shipped for processing at some facility in Tucson or Pima County? Or Sierra Vista or Cochise County? Or Nogales, Rio Rico or somewhere else in Santa Cruz County? South32 is building a small processing plant on its privately owned land that may later have the capability to be expanded for more production. For the foreseeable future, the ore or finished product will need to be shipped via FS 49 to FS 58 then Harshaw Road into Patagonia or using the future Cross Creek Connector to access SR 82 then possibly SR 83, SR 90, I 19 to locations unknown.

5. Safety – Intersections, Road Widths, Traffic Volumes. For the foreseeable future, all mine construction, servicing, and hauling will be done via FS 49 to FS 58 then Harshaw Road into Patagonia or using the future Cross Creek Connector. That intersection will be improved but the safety of the intersection is up for debate. Also the aforementioned roads are used by multiple users including border patrol, ems, bikes, hikers and private motor vehicles. These are rural roads not designed for the traffic generation outlined in the **Traffic Impact Study South32 Hermosa Project Cross Creek Connector Access Route, November 28, 2023.**
6. Air & Water Quality – Dust and other particulates/contaminants leaving the site, becoming airborne or introduced into the water table, surface, or subsurface water systems, especially manganese is of concern for health of people and the environment. Lead and zinc particulate matter are regulated by the EPA. Manganese is not well understood and there are inadequate federal or state safeguards in place for manganese. The EIS needs to analyze manganese and proposed scientifically supportable standards.

Brad A. Racette, MD, is the Kemper and Ethel Marley Professor and Chair of Neurology at Barrow Neurological Institute located in Phoenix AZ and is one of the most knowledgeable experts regarding the link of manganese and the impacts leading to Parkinson Disease-like issues. He is also affiliated with the Institute for Public Health at the Washington University in St. Louis. He should be a primary resource regarding manganese.

With the Hermosa Mines Surface discharge of water and groundwater pumping, we have significant concerns as we rely on well water for our drinking and culinary needs. Our well has already shown evidence of being lower than when it was first

drilled in the 1990s. We test the water every 1 – 2 years because of water quality concerns.

We would like the EIS to fully address the potential drawdowns of the water tables in the area and the potential for water quality impacts. To date South32 has assured the community at large they will not affect it but has refused to share its data for cross examination.

While the surface water, springs and seeps do not directly affect us, they will affect the public lands we enjoy and are critical to this biologically diverse area. We would like the EIS to address how significant areas of biologically rich public lands will not be affected by the proposed mine's dewatering plans.

7. Geology, Minerals, and Soils should be addressed by the EIS. Public lands should not be used for dry stack tailings storage. Additionally, the mining operation claims it will put a significant amount of the overburden back into the tunnels using a chemical mixture turning it into a paste. Once these filled tunnels harden, how will the water table and water flow be affected?
8. Wildlife, Fish, and Rare Plants will be most immediately affected by the proposed mine. It appears they already have been. The proposed dewatering operation will likely affect surface water, springs, and seeps that nurture this biologically diverse area. According to one estimate (South32 does not provide data for the potential impact) the radius may be as large as seven miles in diameter, covering 47 square miles. The EIS needs to evaluate the true impact of the mine's proposed dewatering scheme on the flora and fauna of the region.
9. Traffic, public health, and safety will all be affected by the mining operation and the current construction traffic has already done so. Noise by trucks, buses, and other vehicles ingressing, egressing and regressing the mine during construction and operations will not cease for a purported 60 years or more depending on world commodity prices. Construction already is impacting residents (We are already feeling the noise impacts at our home in Patagonia.) and wildlife around the clock and the impacts to the mental health of humans and disturbance of wildlife habitat are not addressed. And once the mine is in full operation, they are reporting trucks hauling materials and product 27/7.

The EIS needs to address traffic generation. In the **Traffic Impact Study South32 Hermosa Project Cross Creek Connector Access Route, November 28, 2023**, the proposed trip generation for the mine was developed by data provided by mine operations and discussions with CPE (an engineering firm). There has been no cross examination of the data used to develop the modeling. Reviews of the EISs for Rosemont and Resolution Copper showed multiple reviews of data sets leading to

new inputs for the modeling. A third-party contractor needs to model the traffic and trip generation numbers independently. Inputs to the independent model should come from a variety of sources. Federal Highways Administration was a cooperating agency in other EISs and should be a cooperating agency for this EIS given federal funds may be needed for road improvements and repairs to state roads and federal highways.

Further the EIS should address the safety of not only FS roads but roads including SR 82, SR 83, SR 90, Harshaw Road, I 19, and critical intersections such as the Cross Creek Connector and Sonoita SR 83-SR 82. The affected area of this mine's construction and operation will encompass the entire region, from Sierra Vista, Whetstone Junction, Benson, Tucson, and Nogales. These are largely rural roads, often designed with narrow shoulders and inadequate sight line distances, already seeing increasing amounts of traffic. In addition, there are many blind access points onto these highways. We are already experiencing potential vehicle conflicts between truck/vehicular traffic and bicycles. This increasing traffic includes large trucks using SR 82 to shortcut east and west to avoid going through Tucson.

10. Wildlife & Crossings – Wherever the mine's trucks, buses, vendors, servicers and product haulers drive, wildlife crossing impacts will be worsened. This will be especially true north of Patagonia along SR 82 where a wildlife corridor has been established based on study by the USFS and Arizona Game and Fish. Borderlands Restoration (<https://www.borderlandsrestoration.org/>) and Wildlife Corridors, LLC, have been active in this effort that continues to this day.
11. Transmission Line – After the powerline ignitions in CA, HI and other states there needs to be consideration of undergrounding powerlines. As noted in the scoping materials, “In recent years, most wildfires in the area have been attributed to human activities rather than natural causes, and fires have become more frequent.” Between the vehicular traffic associated with the mine and new powerlines, the potential for fires is greatly enhanced especially in our changing climate.
12. Recreation and Scenery are being affected by the mining operations. This is apparent mostly at night when the glow from the 24/7 mining construction and eventual operations take place. We can see night lighting bleeding off from the mine from our home. In addition, we go to the San Rafael Valley at least once a month and at night we can see to lights from the mine's construction and operation. The EIS should address this issue and mitigate it by night sky lighting compliance.
13. The MPO mentions monitoring many times, but it appears to be limited to the site. The effects of the mine on water quality, water quantity, air quality, noise, fish and wildlife will be regional and monitoring programs should be studied and recommended by the EIS as mitigation measures. Monitoring should be done by

third party contractors not employed or managed by South32 but paid for by South32 through an arrangement with a public agency. All monitoring results should be made public on a regular basis.