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Comments: Comments are provided below and are also included as an attachment, for convenience.

JUNE 10, 2024

VIA ELECTRONIC DELIVERY

Kerwin S. Dewberry

Forest Supervisor, Coronado National Forest

ATTN: Hermosa Critical Minerals Project

300 West Congress Street

Tucson, AZ, 85701

Re: Comments in Response to U.S. Forest Service May 10, 2024, Notice of Intent to Prepare an Environmental Impact Statement for the Hermosa Critical Minerals Project

Dear Mr. Dewberry:

The Nature Conservancy (TNC) is a non-profit, non-governmental charitable organization whose mission is "conserving the lands and waters on which all life depends." In Arizona alone, TNC has protected more than 1.5 million acres of lands important to people and wildlife and has harnessed science and partnerships to keep Arizona rivers flowing and its forests and grasslands healthy for the people and wildlife that depend on them.

The Apache Highlands ecoregion, including the Sonoita Creek Watershed, has been a conservation priority for TNC Arizona for over five decades. Defined by the sky-island mountain complex, the Apache Highlands support some of the most exceptional biodiversity in the region and contain a high number of native aquatic species and other rare, imperiled species. In 2022, TNC Arizona developed a vision to "conserve the lands and waters of the Apache Highlands Ecoregion to ensure the long-term protection of Arizona's unique biodiversity and freshwater resources." By 2030 we aim to sustain 298 miles of ecologically significant waterways, improve the management of 25,000 acres of land, and increase the protection of 95,000 of ecologically significant land across the Apache Highlands ecoregion. To accomplish our vision and meet these goals, we will partner with land and water managers at all levels to implement work on the ground and develop supporting policies at state, local, and federal levels.

Over 50 years ago, in 1966, TNC purchased its first property in Arizona, the Patagonia-Sonoita Creek Preserve ("the Preserve"), which protects three miles of perennial Sonoita Creek in and just downstream from the Town of Patagonia. The Preserve has two land parcels, one at the confluence of Harshaw Creek and Sonoita Creek and the other about one-half mile downstream. See the enclosed map, Exhibit A. The 865-acre Preserve protects a remarkable example of rare Fremont cottonwood-Goodding willow riparian forest and contains one of the two unique ciénega habitats found within the watershed. Throughout the Preserve, Sonoita Creek supports an assemblage of native fishes, which are some of the last remaining of such species in the Santa Cruz River watershed. Sonoita Creek, is one of the very few streams in Arizona that supports four or more native fish species, which can be found both at and downstream of the Preserve. In addition, the Preserve provides habitat for federally listed threatened and endangered species, including the Huachuca Water Umbel, Mexican Garter Snake, Yellow-billed Cuckoo, and Gila Topminnow.

As Sonoita Creek's riparian forests support some of the highest breeding bird densities in the country, people

from all over the world visit the Preserve to watch for the 267 species that migrate, nest, and live in this truly special desert riparian habitat. A 2018 survey by Audubon Arizona shows that nearly 31,000 Arizona residents participate in outdoor recreation on or along Sonoita Creek, spending more than 103,000 visitor days on wildlife watching. In addition to birding, eco-tourism activities such as trail sports, fishing, and camping are growing in popularity in the Sonoita Creek Watershed and are a significant driver of the local economy. The Patagonia-Sonoita Creek Preserve is TNC's primary base of engaging visitors and community members in environmental education and citizen science efforts such as data collection and restoration. Collectively, this recreation and environmental engagement has a widespread and long-term impact on the stewardship of Sonoita Creek, its watershed, and our broader southwestern ecosystems.

Beyond the bounds of its property at the Preserve, TNC works collaboratively with other organizations, agencies, and private landowners to achieve effective conservation outcomes and ecosystem resilience across the greater Sonoita Creek watershed. TNC holds conservation easements on an additional 511 acres across the watershed in partnership with private landowners and is currently collaborating with additional landowners and partners to permanently protect the region's renowned landscape connectivity including internationally recognized wildlife migration corridors for species such as jaguar.

In 2020, TNC partnered with Borderlands Restoration Network, Tucson Audubon Society, and Circle Z Ranch to produce a "Sonoita Creek Watershed Conservation Plan" (Watershed Plan). The Watershed Plan outlines shared conservation targets and collective strategies to support those targets and maintain the incredible biodiversity of the watershed. Together the partners identified conservation targets that acknowledge the unique and diverse vegetation and habitat types unique to the Sonoita Creek Watershed, as well as "human well-being" targets such as flood protection and water security. We believe the conservation targets outlined in the Watershed Plan should be of great importance to the federal, state, and local resource and land managers. The Watershed Plan elements address: altered flood regimes, increased erosion and sedimentation, competition by non-native plants, increased predation on fish and birds, reduced groundwater levels, diversion of spring flow, impaired water quality, and the persistence of historic degradation.

Given TNC's mission, its conservation vision for the Sonoita Creek watershed, and its property interests in the Preserve, TNC is interested in the South32 Hermosa Inc. ongoing and proposed mineral exploration and mining as outlined in the South32 Hermosa Critical Minerals Exploration and Mine Plan of Operations dated December 1, 2023, Revised April 15, 2024. We understand that the South32 Hermosa Mine Plan of Operations (MPO) requires approval from the U.S. Forest Service (USFS) to use public National Forest lands and subsurface property for mineral exploration and mining, which is a major federal action affecting the environment that triggers the need for an Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA). TNC appreciates this opportunity to offer comments on the scope of the information and issues to be analyzed in the EIS. As with the rest of the public, TNC relies on the USFS and cooperating agencies, working with South32 Hermosa, to comprehensively identify, describe, and analyze the environmental consequences of the MPO, including its indirect and cumulative effects in relation to other projects in the region, especially South32 Hermosa's current operations and mineral exploration by others. TNC implores the project proponent, USFS, and U.S. Fish and Wildlife Service to adequately identify, describe, disclose, and mitigate the potential environmental impacts as required by NEPA. We hope that our comments meaningfully contribute to the EIS, its underlying analysis, and ultimately any USFS Record of Decision and MPO approval.

TNC has been engaging in community and regulatory processes to understand and evaluate environmental threats from the South32 Hermosa operation. However, whether undisclosed, unresolved, or not yet explored, there remain key uncertainties about the operation and its potential impacts on natural resources, ecosystems, and local communities. TNC has identified several issues of primary concern and interest for the EIS, as outlined below.

MPO and "Environmental Protection Measures"

The MPO outlines a proposal for a significant expansion of industrial operations in the Patagonia Mountains in the Sonoita Creek watershed on private and public lands and subsurface. The operations would involve mineral exploration, construction, extraction, beneficiation, transportation, and reclamation over an anticipated eight decades or more. While the South32 Hermosa Project is in a historic mining district, industrial activity of the type and on the scale outlined in the MPO to our knowledge has not occurred in the watershed for a long time, and not to this extent. The potential negative impacts of the proposed activities on surface and groundwater hydrology, surface and groundwater quality, air quality, wildlife breeding habitat and migration corridors, biodiversity, and scenic resources may be large and, in some cases such as sensitive groundwater-dependent ecosystems and the species that rely on them, irreversible.

While the MPO may meet USFS requirements for an administratively complete document under the 36 Code of Federal Regulations Part 228, it does not contain sufficient detail for the public and decisionmakers to understand the scope and scale of potential environmental impacts of the ongoing and proposed activities. TNC appreciates that the MPO incorporates certain "environmental protection measures" that would presumably become part of the proposed action as described in the EIS and ultimately acted upon by the USFS in a Record of Decision on the MPO. The MPO's environmental protection measures seem to include standards, best practices, and permits representing minimum or otherwise required activities and they do not necessarily represent environmental impact avoidance, minimization, and mitigation measures. Further, the activities the MPO identifies as "environmental protection measures" are activities that may have large environmental impacts, including for example, Tailings Storage Facility 2. Even to the extent the environmental protection measures may represent "above and beyond" strategies, the MPO's inclusion of environmental protection measures does not eliminate the environmental impacts of the MPO, nor do they diminish the need for a complete description and analysis of the MPO's potential environmental consequences. Further, the MPO's environmental protection measures may not meet the USFS environmental protection requirements of 33 Code of Federal Regulations § 228.8 and do not replace appropriate mitigation measures or conditions in the USFS Record of Decision or other permits required for the South32 Hermosa project.

#### Water Resources

Among those uncertainties, and with perhaps the most far-reaching impacts, involve the dewatering and redistribution of water across the Patagonia Mountains. Arizona law does not restrict groundwater use in the Sonoita Creek watershed, and the impacts of the proposed mine dewatering plan are unknown but may be large in scale. The water will be pumped from cracks and crevices deep within the Patagonia Mountains - from where it is very unlikely to ever be replenished. While we understand South32 Hermosa has developed a groundwater model to inform its proposed operations, the model is referenced in the MPO but has not been made available to the public for evaluation of impacts and exploration of pumping, discharge, and recharge scenarios. Without a review of a model or the underlying data and assumptions about subsurface geology, it is not possible to quantify the magnitude of impacts that the groundwater pumping, discharge, and recharge proposed in the MPO may have on regional water supplies, water quality, and critical habitats - including at the TNC Patagonia-Sonoita Preserve, and TNC offers the questions below for consideration in the EIS.

#### Groundwater Pumping and Recharge:

How will the dewatering proposed in the MPO impact groundwater flow through fractured Patagonia Mountain geology, including flow pathways that currently support Sonoita Creek, and upland tributaries? Is dewatering expected to impact Santa Cruz River headwaters in the San Rafael Valley? Without a modeled cone of depression, the area's complex geology presents real questions about the geographic extent of the impact. As another example, how far from dewatering points can we expect groundwater dependent springs, seeps, and other surface water emergence points to be impacted, and are those impacts expected to be permanent? Have the springs and seeps been inventoried, have baseline conditions been established, and will that data be shared

with interested stakeholders? Have their contributions to down-gradient hydrology been identified and their value as habitat been quantified?

South32 Hermosa proposes construction of two rapid infiltration basins (RIBs) on USFS land in six possible locations surrounding the proposed mine site. Will the water recharge to an alluvial aquifer that supports groundwater-dependent ecosystems, or would we expect flow pathways to channel water to a deeper aquifer or downstream drainages? How and to what extent are the two proposed RIBs expected to address the impacts of dewatering on springs and seeps? TNC appreciates that the MPO notes the intention for community engagement in the exploration of benefits of groundwater reuse, including recharge via RIBs, and is interested in participating in community exploration of this issue.

The potential permanent loss of Patagonia Mountain springs is a key issue that should be described and analyzed in the EIS using the mitigation hierarchy in the Record of Decision as appropriate and necessary.

#### Discharge:

The proposed discharge of 6.5 million gallons per day of water from Water Treatment Plant 2 (WTP2) will more than likely have a major impact on the flow regime of Harshaw Creek and thus a potential impact on the flow regime in Sonoita Creek and in the Preserve. Without a publicly accessible groundwater or surface flow model, it is difficult to anticipate the impacts of consistent and long-term discharge to the otherwise ephemeral and intermittent Harshaw Creek and associated hydrology. Questions regarding the saturation and infiltration capacity of the creek are paramount to the community, particularly with respect to flood risk, and offer several areas of consideration in the EIS process. As the Harshaw Creek streambed becomes saturated from constant discharge and infiltration capacity is reduced, what is the expected surface flow extent of the discharged water?

#### Water Quality:

The proposed discharge and recharge scenarios have various water quality implications that should be considered in the EIS process separate and apart from state permitting processes. In January 2024, TNC provided a comment letter to the Arizona Department of Environmental Quality (ADEQ) regarding a proposed Arizona Pollutant Discharge Elimination System (AZPDES) permit modification for South32 Hermosa operations. Comments are currently being reviewed by ADEQ.

Along with questions about the regional hydrologic impact of dewatering and discharge, TNC remains concerned about the potential impact of the permitted discharge to Harshaw Creek on water quality and chemistry in Harshaw Creek and Sonoita Creek, and its potential to degrade water quality in the perennial segment of Sonoita Creek in TNC's Preserve. ADEQ has issued an AZPDES permit authorizing the discharge from WTP2. Though the AZPDES permit incorporates water quality standards intended to protect Harshaw and Sonoita Creek, it should not be presumed by the USFS that standards protective of Sonoita Creek's designated uses at the confluence with Harshaw Creek ensure that the fish and other aquatic life in the perennial waters of the Preserve are fully and adequately protected. The EIS should identify and analyze all potential water quality impacts associated with the dewatering and discharge proposal, and TNC strongly suggests that the EIS analyze the water quality and chemistry impacts of the MPO on the Preserve's unique perennial water ecosystem.

TNC also understands that South32 Hermosa obtained an Aquifer Protection Permit (APP) from ADEQ that allows current mining and remediation activities on private property and the discharge from WTP2 to Harshaw Creek. TNC appreciates the acknowledgment in the MPO that the APP must be amended to include authorizations to construct, operate, and close other discharging mine facilities on private and public land, including Tailings Storage Facility 2 and the RIBs. The APP includes both technological requirements and aquifer water quality standards, including groundwater monitoring. Do the APP's technological requirements meet all USFS requirements for discharge on federal lands? Does the APP establish discharge limits and standards for all

groundwater contaminants of concern to the USFS? What are the environmental consequences of operating water treatment plants, including upset conditions and chemicals management? Again, the EIS should describe and analyze the full suite of potential water quality impacts from the MPO, rather than simply referencing the AZPDES and APP permit requirements.

Also, the MPO generally describes the dramatic increase in heavy truck and other vehicle traffic to support exploration, construction, mining, and reclamation activity. This includes heavy trucks hauling ore, engineered and other soils, fuel, chemicals, reagents, explosives, cement, and sewage and up to nearly 300 trips per day. The EIS should explore and analyze the risk for accidental releases of these chemicals to creeks and washes, land, and the subsurface from driver accidents and negligence. In addition, the EIS should explore the environmental impacts of the operation of up to 58 fossil-fueled generators, including the risks of spills.

Given the mineralized geology and that there are more than 400 abandoned mines sites throughout the Patagonia Mountains, the EIS should evaluate the likelihood and locations where discharge to Harshaw Creek or potential recharge scenarios may mobilize heavy metals and potentially transport contaminants to downstream water users and ecosystems.

#### Land Disturbance, Habitat Fragmentation, and Other Wildlife Impacts

The Nature Conservancy has a long history of land protection in the Sonoita Creek watershed, and new opportunities to protect critical land and water resources, as well as habitat connectivity and wildlife migration corridors, remain a high organizational priority. In alignment with TNC goals to sustain, protect, and improve the management of land and water throughout the watershed, the EIS should consider the potential impacts of proposed activities on landscape-scale connectivity. Further consideration should be provided on how proposed activities and their long-term effects may impede the movement of wildlife species, and how such impacts would be mitigated.

It seems the largest single land disturbance would relate to the approval of the construction, operation, and eventual Tailings Storage Facility 2, which would be entirely on USFS public land. According to the MPO, approximately 240 acres of public land would be permanently impacted by TSF2. The EIS should identify and quantify the impacts of TSF2, including its construction, fencing, and long-term operation, on wildlife habitat and migration corridors. Additionally, changes to water resources that affect surface waters available for wildlife use should be considered. The impact of new transmission lines, roads and facilities should be quantified and mitigated.

The proposed South32 Hermosa temporary and permanent road construction plan is expected to result in widespread and long-term impacts to habitat and ecological function. The impacts of road construction are first felt locally, where land disturbance and habitat fragmentation directly affect species living and migrating across the site. The proposed Primary Access Road is expected to have nearly 40,000 linear feet and more than 100 acres of permanent impact and thousands of feet and dozens of acres of long- and short term temporary impacts to the surface. How will these surface impacts impede or inhibit wildlife corridors, connectivity, and habitat?

TNC suggests the EIS consider multiple potential environmental impacts of temporary and permanent road construction. What will the impacts of road construction activity including noise (heavy equipment and blasting), lighting, traffic, possible helicopters, and other equipment have on wildlife? What will be the impact of the improved roads and their increased use during mine operations and reclamation activities? The wildlife impact analysis should extend to species listed as threatened or endangered under the Endangered Species Act (which we understand also will be the subject of ESA Section 7 consultation process slated for 2025). For example, South32 Hermosa's MPO does not provide allowance for a Limited Operating Period (LOP) for the federally listed Mexican Spotted Owl. As noise and night-lighting disturbance are expected on a temporary basis for 2 to 18 months at each exploratory site. The EIS (and accompanying ESA Biological Assessment) should evaluate the

need to implement an LOP during the species' breeding, nesting, and fledging period.

Land disturbance can trigger many types of environmental consequences. How will the clearing of native vegetation impact vegetative structure and soil stability? What impacts result from grubbing, excavation, and temporary storage during construction? If left on-site, what measures will be taken to ensure the materials do not wash away during rain events and impair downstream habitat? While the MPO recognizes that road construction may result in erosion with possible downstream impacts, multiple aspects of this proposed activity warrant further consideration in the EIS. It will be important to clarify and analyze the impacts related to the frequency and duration of road maintenance (including after closure), the thresholds and entity responsible for determining the need for additional sediment control structures, and the mechanism for action if closure and post-closure monitoring show continued degradation. If not adequately addressed, erosion can quickly worsen and become difficult to repair - especially given the intensity of southern Arizona's rain events. Soil erosion can cause loss of habitat, channel incision and deterioration of watershed function, downstream sediment and contaminant transport that degrade water quality, and impaired roads that limit access for management and recreation, among other issues. An institutional structure must exist for the monitoring and abatement of erosion, and the mitigation of erosion-related impacts, during and beyond the operational period of South32 Hermosa, and that third party reviews be considered throughout this period.

As the risk of noxious and invasive weed introduction is high upon land disturbance, TNC appreciates that the MPO identifies the need for a monitoring and management plan. The potential for increased noxious and invasive weed introduction resulting from proposed construction and reclamation activities should be described and the environmental consequences, including habitat impacts, species distribution and increased dust, should be analyzed. Given the potential for sediment transport down-gradient of road construction areas, it will be important for the EIS to consider invasive weed impacts and mitigation at locations beyond the identified project site. Further, beyond the potential for invasive vegetation at disturbed sites, the EIS should evaluate how impacts of the proposed operations may impair conditions for native species and create favorable conditions for invasive terrestrial, avian, and aquatic wildlife.

#### Wildfire

Impacts from catastrophic wildfires pose significant threats to the watershed. In the aftermath of such fires, it is common for flash floods to damage to human communities and riparian vegetation, as well as stream systems through erosion and sediment deposition that may impair or eliminate habitat for fish and other aquatic species. The EIS should consider the potential impacts of proposed activities, infrastructure, and increased frequency of exposure for increased potential and risk of wildfire starts. The EIS should explore and analyze the residual impacts of accidental wildfires on water quality and habitat loss.

In conclusion, TNC urges the USFS, cooperating agencies, and South32 Hermosa to think expansively and comprehensively about the scope of issues and environmental and community impacts from the proposed activities described in the MPO and comprehensive mitigation measure to address them. This should be reflected in the analysis of environmental consequences in the EIS. TNC looks forward to reviewing 8 Tucson Conservation Center Tel (520) 622-3861 nature.org 1510 E Fort Lowell Rd Tucson, AZ 85719 South32 Hermosa project EIS scoping comments from other interested stakeholders and requests that USFS prepare and issue a "scoping report" and summary for public review and reference. We understand that the draft EIS, ESA Section 7 consultation documents, and draft Clean Water Act Section 404 permits will all be prepared by the agencies and South32 Hermosa with no formal public role except the comments, such as these, that are submitted in response to the USFS notice of intent to prepare an EIS. Therefore, those parties have the important responsibility of ensuring full identification, disclosure, and analysis of environmental impacts from the South32 Hermosa MPO. TNC will also evaluate the draft EIS and related documents to identify whether the full suite of environmental impacts that could be avoided or mitigated are addressed comprehensively in the final EIS, USFS Record of Decision, and MPO approval. We look forward to continued engagement by USFS and South32 Hermosa to

identify impacts and protect TNC's Preserve and other interests in the Sonoita Creek watershed and Patagonia Mountains.

Sincerely,

Daniel Stellar  
Arizona State Director  
The Nature Conservancy