



REGION 9

SAN FRANCISCO, CA 94105

June 10, 2024

Kerwin S. Dewberry
Forest Supervisor
Coronado National Forest
Attn: Hermosa Critical Minerals Project
300 West Congress Street
Tucson, Arizona 85701

Subject: Notice of Intent to Prepare an Environmental Impact Statement for the Hermosa Critical Minerals Project, Santa Cruz County, Arizona

Dear Kerwin Dewberry:

The U.S. Environmental Protection Agency has reviewed the above-referenced document pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act. The CAA Section 309 role is unique to EPA. It requires EPA to review and comment on the environmental impact on any proposed federal action subject to NEPA's environmental impact statement requirements and to make its comments public.

The U.S. Forest Service's Coronado National Forest is considering an application from South32 Hermosa, Inc. proposing to expand the construction, operation, closure, and reclamation of an underground mine on adjacent privately owned land on or below National Forest System (NFS) lands. The proposed expansion would create a total surface disturbance of 480.5 acres, an underground disturbance of 223 acres, and restricted access to 353.4 acres on NFS lands located approximately six miles southeast of the town of Patagonia and eight miles north of the U.S.-Mexico international border in Santa Cruz County, Arizona. The primary minerals targeted by the project are manganese and zinc, both of which are listed as critical minerals on the 2022 Final List of Critical Minerals (87 FR 10381) and considered essential to the economic or national security of the United States by the Energy Act of 2020. The project would utilize a long-hole open stope mining method and include two lined dry-stack tailing storage facilities (TSF1 and TSF2), two water treatment plants (WTP1 and WTP2), beneficiation facilities, two rapid infiltration basins, and ancillary facilities sited on both private and NFS lands. The project targets recovery of two distinct deposits within one orebody with mining anticipated to take up to 30 years for the zinc sulfide deposit and up to 70 years for the manganese oxide portion.

The EPA is engaged as a Participating Agency on the Project under Fast-41. In advance of the Forest Service's NOI, we have been participating with the Forest Service and the project team in periodic meetings and coordinating on background materials, including resource reports that will inform the EIS. In addition to the input and recommendations we have provided to-date, please consider the attached detailed comments for the preparation of the Draft EIS. Topics include water resources, geochemistry, air quality, sensitive species and habitat, reclamation, closure, post-closure management, Tribal consultation, and environmental justice.

The EPA appreciates the opportunities to build relationships with the Forest Service, Cooperating Agencies, and other Participating Agencies through engagement on this project thus far. We find that limiting our involvement to what has been made available to "participating agencies" is not adequate to allow us to fulfill our FAST-41 responsibilities to identify significant environmental issues and consistency with EPA program requirements. We resubmit our request to become a Cooperating Agency under FAST-41 due to our NEPA expertise under Section 309 of the Clean Air Act and jurisdictional expertise under environmental statutory authorities.

We appreciate the opportunity to provide scoping comments and look forward to continued participation in the NEPA process. If you have any questions, please contact me at (415) 972-3502 or nelson.chloe@epa.gov.

Sincerely,

Chloe Nelson
Environmental Review Section 1

Enclosure: EPA's Detailed Comments

cc: Kathleen Tucker
Senior Regulatory Project Manager, U.S. Army Corps of Engineers

Heather Whitlaw
Arizona Field Office Supervisor, U.S. Fish and Wildlife Service

Erin Fernandez
Fish and Wildlife Biologist, U.S. Fish and Wildlife Service

Karla Murrieta
Air Quality Division Unit Manager - Permits, Arizona Department of Environmental Quality

Chris Montague-Breakwell
Water Quality Division Unit Manager – Permits, Arizona Department of Environmental Quality

Ty E. Gray
Director, Arizona Game and Fish Department

General Comments

Alternatives

The EPA encourages the Forest Service to include alternatives that avoid, minimize, and mitigate for adverse impacts to water, wetlands, air, wildlife, and other resources. The Plan of Operations (PoO) describes using environmental, socioeconomic, and technical criteria to inform the siting of the proposed tailings storage facility (TSF2) on NFS land, but it does not describe the analysis of these factors in detail or describe alternative locations considered (p. 3-1). The PoO also identifies six potential locations for rapid infiltration basins but does not include hydrologic characterization and infiltration testing that would be used to determine the final two selected for construction (p. 2-49). Additionally, the PoO identifies that siting approval was obtained from the Arizona Corporation Commission for construction of a new 138-kV power line that could replace generator power for the project (p. 2-88) and the Notice of Intent publication identifies this as a preliminary alternative, but an impacts assessment is not included. In accordance with 40 CFR 1501.14, we recommend that the Draft EIS:

- Identify a robust range of alternatives that avoid or minimize significant impacts and describe the thresholds of significance considering context and intensity of the action and its effects.
- Include appropriate baselines for the resources of concern or most 'at risk' before mitigation.
- Briefly discuss reasons for elimination of alternatives that are not evaluated in detail.
- Present the alternatives in comparative form, in whole or in combination, to show how they fulfill the project's purpose or address the direct, indirect, or cumulative impacts or consequences to the affected environment. Quantify the impacts of the alternative to the greatest extent possible.
- Identify the preferred alternative.

In addition, we recommend:

- Development of a range of alternatives consistent with alternatives developed to support Clean Water Act Section 401 permitting and CWA 404(b)(1) analysis.
- Development of alternatives responsive to issues identified during scoping and raised during tribal consultation and conversations with communities with environmental justice concerns.

Cumulative Impacts

Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.1(g)(3)). For example, identifying all previous, present, or expected mine operations within a mining district close to the project area would help inform decision makers and the public about what the cumulative impacts are likely to be. As such, the EPA recommends that the Draft EIS:

- Describe the potential cumulative impacts associated with the proposed project and past, present, and reasonably foreseeable actions within and near to the analysis area, including those outside of the Forest Service's jurisdiction.

The Council on Environmental Quality's (CEQ) [Considering Cumulative Effects Under the National Environmental Policy Act](https://ceq.doe.gov/publications/cumulative_effects.html)¹ and the EPA's Consideration of Cumulative Impacts in EPA Review of NEPA Documents² guidance documents may serve as useful resources to assess the adequacy of the cumulative impact assessment.

Concurrent and Integrated NEPA and Consultation

As directed by 40 CFR 1502.24, concurrent and integrated NEPA and other federal environmental law is advised to the fullest extent possible. Underground injection control (UIC) permits are required for in-situ solvent extraction operations and may be required for proposed cemented paste backfill activities. Based on early engagement, EPA understands that Class V UIC permitting needs will be informed by water modelling results and final project design. As such, the EPA recommends that the Draft EIS:

- Plan the NEPA process concurrently with the Endangered Species Act, National Historic Preservation Act, Clean Water Act, Clean Air Act, and Safe Drinking Water Act permitting, and any other applicable federal environmental law.
- Ensure that information from any applicable federal environmental law is integrated into this project's NEPA process, including any best management practices or permitting requirements.

Monitoring and Adaptive Management

The EPA supports the use of monitoring and adaptive management for decision-making where there is uncertainty about the level or length of impacts, the ability of a resource to respond to change, or the effectiveness of mitigation. Monitoring and adaptive management is particularly important for this project due to its 84+ year time horizon and amounts of water and wastes to be managed (p. 2-34). For monitoring and adaptive management associated with this project, the EPA recommends:

- Completing and appending the monitoring and adaptive management plan to the Draft EIS. In this document:
 - Clearly identify the specific goals and management objectives for each of the resources subject to monitoring and adaptive management.
 - Identify specific environmental thresholds which would trigger action.
 - Provide management alternatives and mitigation measures that would be implemented should a threshold be exceeded.
 - Establish an evaluation procedure for determining the effectiveness of the implemented mitigation.
 - Describe mechanisms for the public disclosure of monitoring data, its analysis, and related management decisions.
 - Specific temporal milestones to meet reclamation standards.

Mitigation

Disclosure of mitigation is required by 40 CFR 1502.14(e) and 1502.16(a)(7). To address these regulatory requirements, the EPA recommends that the Draft EIS:

- Identify and describe appropriate mitigation measures, and designation of the entity responsible for implementing the mitigation.

1 Council on Environmental Quality. (1997, January). *Considering Cumulative Effects Under the National Environmental Policy Act*. https://ceq.doe.gov/publications/cumulative_effects.html

2 U.S. Environmental Protection Agency. (1999, May). *Consideration of Cumulative Impacts in EPA Review of NEPA Documents*. <https://www.epa.gov/sites/production/files/2014-08/documents/cumulative.pdf>

- Identify how the Forest Service or another government entity would ensure that the mitigation would be monitored to ensure timely and correct implementation as well as timely maintenance; and
- Disclose the funding sources and the financial assurances established within any project permits.
- Describe the relative effectiveness of proposed mitigation at avoiding, minimizing, or compensating for the impact.

Mine Infrastructure

Underground Mine Workings

Mining and mine workings can adversely impact the environment if not appropriately designed and managed. The PoO describes long-hole open stope mining as the selected method for production (p. 2-40) which would require dewatering and utilization of sulfide ore tailings in cemented paste backfill to fill both sulfide and oxide stopes (p. 2-55). We appreciate the summary of explosives and hazardous material management in the PoO, but it does not specify which blasting agents are planned for use. The EPA recommends that the draft EIS:

- Describe blasting agents used, the extent and depth of the underground workings, and the characteristics of cemented past tailings backfill material and any amendments.
- Characterize the acid-generating and metal leaching potential of underground mine walls and how mine drainage would be managed.
- Include the description of mine dewatering and how dewatering water would be collected and managed (e.g., groundwater management wells).

Waste Rock Storage Facilities

Waste rock can be a source of toxic, reactive materials and acid rock drainage from metals leaching from the waste rock minerals and residuals from blasting agents. All of these can adversely impact aquatic and other organisms, as well as surface and ground waters and wetlands. In addition, dust from waste rock can impact soils, wetlands, and surface water. The PoO describes the deposition of waste rock as either placed in TSF1 or TSF2 if characterized as potentially acid generating (PAG), placed in a stockpile on private land if non-PAG and used to help provide armoring and later closure cover for TSF1 and TSF2, or maintained underground for use in void filling (p. 2-70). The PoO includes that while the sulfide ore would be crushed below ground and conveyed to beneficiation facilities on private land, that the oxide ore would be crushed above ground on private land and then trucked across NFS lands for beneficiation at an undetermined offsite location (p. 2-37). While some waste rock related to the mining of the oxide ore may be managed onsite, it is unclear how much spent ore would be produced from oxide ore beneficiation or what the potential environmental impacts may be for its management. The EPA recommends that the Draft EIS:

- Disclose how much waste rock would be produced over the life of the operation for both sulfide and oxide ore bodies and the overall sizes of the different waste rock disposal facilities planned for use.
- Characterize the acid-generating and metal leaching potential of waste rock that would be placed in TSF1 or TSF2 and include any management procedures related to its segregation or the handling of acid generating or metal leaching waste rock.
- Describe the methods for controlling contact between waste rock and surface or meteoric waters, (e.g., liners, stormwater diversions, run on/runoff channels, underdrains, seepage

collection, lining of collection areas), including monitoring and contingency plans if destabilization or contamination is detected.

- Include dust minimization and management methods.
- Discuss alternatives related to onsite waste rock disposal for both ore types to reduce impacts such as different waste rock facility locations or management measures, backfilling in mine workings, and concurrent reclamation. Include considerations made for offsite oxide ore waste rock disposal needs.

Ore Processing

Ores are processed to regulate size, remove unwanted constituents, and improve the quality, purity, or assay grade of desired products. Improvement of the grade of ores can be by milling, screening, flotation, sintering, gravity concentration, or other chemical and mechanical processes. Concentration or other preparation of ores for smelting can be by screening, drying, flotation, electrowinning, or gravity or magnetic separation.

Processing can affect air quality due to emissions from smelters, sprayers, crushers, ore roasters, autoclaves, refining operations, and tailings facilities. Before the modern use of scrubbers and stacks, significant amounts of sulfur were released to the atmosphere, creating sulfuric acid. Tailings, smelter slag, and processing solutions can be sources of acid drainage and also impact contaminate water quality from metal leaching and or the release of processing chemicals (See Air and Water Quality sections, below). The PoO describes the proposed sulfide ore beneficiation sequence as starting with crushing and grinding before going through pre-float, froth flotation, and finally filtration for concentrate production processing (p. 2-54). The PoO does not include the beneficiation process for the oxide ore to occur at an undetermined offsite location, although we understand from our site visit on May 23 that this would likely not occur on NFS lands and occur in Santa Cruz County. As a connected action, this information is needed in the Draft EIS and its impacts disclosed (40 CFR 1501.3(b)). The EPA recommends that the Draft EIS:

- Summarize information on all processing occurring on site and connected actions offsite, including ore improvement and concentration.
- Document the effects to air, surface, and ground water from ore processing. Include linked effects to wildlife, and document wildlife protections.

Tailings Facilities

Tailings can result in a variety of environmental impacts, including wildlife toxicity and contamination of groundwater or surface water. In addition, the stability and integrity of the tailings impoundment structure itself is important to prevent uncontrolled leakage or dam failures. The EPA appreciates the use of lined dry-stack tailings facilities for this project and South32 Hermosa's adherence to Arizona Department of Environmental Protection's Aquifer Protection Permit standards, the Global Industry Standard on Tailings Management (GISTM), and Australian National Committee on Large Dams guidelines (p. 2-56). The PoO describes that TSF2's design was based on the results of a detailed Failure Modes and Effect Analysis and on "As Low As Reasonable Practicable" measures to eliminate or minimize risks as required by GISTM and that a Tailings Management System was established in compliance with GISTM (p. 2-56). The EPA recommends that the Draft EIS:

- Describe the characteristics of the filtered tailings solids and entrained process water.

- Describe how tailings would be managed between TSF1 and TSF2 and provide updated information if new information from geotechnical investigations changes the current conceptual design of TSF2 on NSF land.
- Evaluate the potential for groundwater and surface water contamination from tailings facility runoff and seepage, and describe how tailings water would be collected, treated, and discharged, during operations, closure, and post closure.
- The PoO states that an Emergency and Crisis Management Plan would be implemented (p. 2-72). Consider outlining procedures to be taken in the event of destabilization or contamination detection in that plan or in a formal Emergency Action Plan (EAP).
- Describe monitoring and mitigation practices to ensure stability and integrity to protect against groundwater and surface water contamination and prevent failures.
- We encourage the Forest Service to require regular Independent Engineering Reviews of the tailings facility since this is a best practice of the GISTM.³

Reclamation, Closure, and Post-Closure

Specific descriptions of reclamation, closure, and post-closure design and plans are critical to an understanding of the environmental impacts of this project. The PoO includes that South 32 Hermosa has an approved reclamation plan for exploration activities on private land, but a modified or new reclamation plan would be required by Arizona state law for mining activities (p. 2-90). As such, the EPA recommends that the Draft EIS:

- Include detailed information on the measures that would be taken to decommission all components of the mine operations, including resizing water management systems (e.g., collection, conveyance, and treatment), and stabilizing and revegetating slopes, pits, waste rock and tailings facilities, beneficiation facilities, roads, and other disturbed areas.
- Describe whether covers and liners are needed and where they would be used. Describe the cover design, including growth media thickness, permeability standards, infiltration rates and media thickness estimates to demonstrate anticipated effectiveness in minimizing exposure of mined material to meteoric water than could mobilize contaminants.
- Describe how the mine would be closed to maintain hydraulic integrity and prevent public access.
- Describe the location and estimated acreage of the areas targeted for reclamation, intended future land uses or any restrictions, and degree of reclamation and treatment in each area.
- Disclose the timing of reclamation relative to mining operations, procedures for concurrent reclamation activities, and the estimated duration of reclamation or other treatments, including any long-term monitoring and water management, treatment, and discharges.
- Discuss all closure and post-closure activities for facilities listed above in the Mine Infrastructure section.
- Describe how tailings facilities would be closed to maintain long-term geotechnical stability, and the type and duration of any maintenance or monitoring.
- Describe the resiliency of the reclamation, closure, and post-closure activities to climate change and potential changes in precipitation.

³ United Nations. (2020, August). *Global Industry Standard on Tailings Management*. https://wedocs.unep.org/bitstream/handle/20.500.11822/36139/GISTM_En.pdf

- Provide the standards for determining, and methods for measuring and ensuring reclamation success.
- We recommend that the information above be included in a draft reclamation and closure plan and incorporated by reference into the Draft EIS.

Growth Media

For reclamation and closure of mine components that require growth media, the EPA recommends that the Draft EIS:

- Describe the availability, properties, and sources of growth media.
- Discuss how and when growth media would be applied to disturbed areas, and identify any additional measures (e.g., soil amendments, irrigation) that may be needed to ensure successful reclamation and revegetation of the project site.

Hazardous Materials

Because hazardous materials subject to 40 CFR Parts 260-271 may be used or generated in operations, closure, and post-closure, the EPA recommends that the Draft EIS:

- Identify hazardous waste types and volumes, how they would be managed including transportation to/from the mine operation and storage and disposal, and disclose the potential impacts.
- Discuss how accidental releases of hazardous materials would be handled and assess the need for a Spill Prevention, Control, and Countermeasure plan, Emergency Response Plan, and/or Ecological or Transportation Risk Assessments.
- Coordinate with the Arizona Department of Environmental Quality to ensure conformance with the Resource and Conservation Recovery Act.

Revegetation

In order to restore the ecosystem to as natural a state as possible after mine closure, the EPA recommends that the Draft EIS:

- Only use Forest Service-approved native species indigenous to the area.
- Monitor and enforce revegetation success for at least five years following reclamation.

Financial Assurance

The amount and viability of financial assurance are critical factors in determining the effectiveness of reclamation and closure activities. Therefore, the EPA recommends that the Draft EIS:

- Disclose the estimated cost to reclaim and close the site in a manner that achieves reclamation goals and post-mining land use objectives, including costs for long-term obligations such as water treatment, water supplementation, and dry-stack tailings facility maintenance.
- Identify the proposed financial assurance mechanisms and disclose costs associated with implementing the reclamation plan, including costs associated with reasonably foreseeable, but not specifically predicted outcomes. This disclosure informs the public and decision-makers of the financial risk to the public posed by conditions at the site, and this is crucial information to disclose to the public during the NEPA process.
- Ensure that financial assurances are protective of the public interest if a company is unable to implement contingency measures or perform long-term operation and maintenance at a closed mine site.

- Include assurance that active or passive methods for reclamation, treatments or maintenance would continue post-closure or while operations are suspended.

Water Resources

Water Quality

Adequate surface and ground water quality data for water resources in the analysis area is important to meaningfully describe the current conditions and evaluate changes to these conditions due to the proposed mining activities. Such information can then guide management for the Project, and also provide a baseline for future monitoring of impacts. The PoO includes that an Aquifer Protection Permit (APP) and an Arizona Pollution Discharge Elimination System (AZPDES) permit have already been obtained from ADEQ for water treatment and discharge into either Alum Gulch from WTP1 or Harshaw Creek from WTP2 for this project (p. 2-89). The EPA recommends that the Draft EIS:

- Summarize available information and monitoring data on surface and groundwater quality for the project area, including parameters such as total metals, total dissolved metals, total nitrogen, total dissolved solids, total suspended solids, temperature, and those contaminants of interest. Include data from wells, seeps, springs, and perennial streams for a sufficient radius around the project area.
- Identify any impaired waters in the project area and the basis for impairment (e.g., Harshaw Creek impaired for copper and pH, Alum Gulch impaired for cadmium, copper, lead, zinc, and pH).
- Provide past and current monitoring results and trends for surface water and groundwater quantity and quality in the proposed and existing mine areas and area of project alternatives. Describe how the data is representative and adequate for the analysis. Identification of any significant gaps in available water quality data may be helpful in developing a project-specific monitoring plan. If gaps are identified, then additional data collection may be needed before the draft EIS is issued.
- Append or provide links to the APP and AZPDES permit.

To address potential water quality impacts, the EPA recommends that the Draft EIS:

- Using information from the geochemical analysis, describe the predicted water quality of seepage and runoff from mine workings, waste rock, tailings, in collection ponds and other sources. Testing is described in the Geochemistry Section. Describe any uncertainties associated with these predictions. These predictions should be made for both operations and closure.
- Describe how project impacted waters would be managed and treated before discharging to the environment (Harshaw Creek, Alum Gulch, and RIBs). Describe the water treatment process WTP1 and WTP2, its effectiveness, and the treated water quality. Ideally site water management would be described in a water management plan available as a Draft EIS reference document.
- Describe changes to groundwater and surface water quality due to treated water discharges, seepages, and any other project-related discharges. Description of changes should include magnitude of concentration changes, the geographical extent, and duration during operations and closure.
- For modeling used to predict water quality changes, fully describe the model used including model inputs, assumptions, sensitivities, and uncertainties. See EPA guidance on environmental modeling.

- Describe how the changes in water quality impact other resources such as beneficial uses, adjacent wetlands, and wildlife.
- Assess the potential for runoff to modify sediment loads and introduce salts, heavy metals, and other pollutants into surface water as project mining progresses.
- Include detailed descriptions of current and planned operational water monitoring activities and operational water constituents, volumes, pH, and any onsite or downstream water handling systems.

Subsidence

While underground mining reduces the total amount of surface disruption for this project, the combination of groundwater drawdown and underground cavity creation as a result of open stope mining increase the potential for subsidence to occur. Subsidence can negatively impact soil water content and water geochemistry. The PoO describes satellite-InSAR and/or light detection and ranging technology to be used for monitoring (p. 3-2) and incorporation of roughly half of the sulfide ore tailings into cemented paste backfill to minimize the possibility of ground subsidence (p. 2-69). The EPA recommends that the Draft EIS:

- Discuss the magnitude, location, and timing of potential land subsidence that could result from dewatering and underground mining and how that could impact water quality.

Geochemistry

Accurate characterization of geochemistry is critical for properly predicting runoff, seepage and pit lake water quality and identifying the potential impacts and addressing them through facility design and mitigation measures. The PoO lists the methods used to characterize rock and tailings materials including acid-base accounting, net acid-generating pH and analysis of metals released during testing, synthetic precipitation leaching procedures, meteoric water mobility procedure, humidity cell testing, and EPA's Leaching Environmental Assessment Framework diffusion test, but the characterization data and subsequent analysis is not included (p. 2-25). The EPA recommends that the Draft EIS:

- Discuss the mineralogy, acid generation/neutralization, and metal leaching potential of waste rock, and historic/existing mine workings, filtered tailings, and cemented paste backfill for the listed methods. Additional types of geochemical analysis could include:
 - Multi-element analysis (e.g., inductively coupled plasma mass spectrometry).
 - Mineralogy by x-ray diffraction.
 - Petrographic analysis.
 - Short-term leach testing by the Meteoric Water Mobility Procedure, developed by the state of Nevada.
- Discuss whether sufficient materials are available to neutralize any acid-generating waste rock that might occur and identify a source of neutralizing material on- or off-site, if deemed necessary.
- Discuss facility designs and control measures to prevent leaching and release of contaminants and degradation of surface water and groundwater quality.

Water Quantity

It is important to consider all impacts to surface water and groundwater quantities from the proposed project and alternatives during operations, closure, and post-closure. We appreciate the inclusion in

the PoO of a water balance for the mine operation (p. 2-42). Ideally this would be included in the above-mentioned water management plan. The EPA recommends that the Draft EIS:

- Describe hydrologic and hydrogeological setting in the analysis area including seasonality.
- Include hydrologic and hydrogeologic flow modeling to describe the baseline conditions and changes to surface water flows and ground water conditions due to project activities. Include maps of drawdown during operations, closure, and post-closure periods. Identify the year and acreage of the maximum extent of groundwater drawdown resulting from the proposed project.
- Provide descriptions of modeling used to make predictions, assumptions, uncertainties, and sensitivities so that readers and decision-makers understand the level of confidence to place in the predictions.
- Identify impacts to surface water flow, water supply wells, wetlands, seeps and springs, vegetation, wildlife, and other groundwater dependent ecosystems that could occur as a result of groundwater pumping associated with the proposed project.
- Examine potential impacts to water quantities in the area, which may experience losses related to mine-derived subsidence.
- Discuss and commit to measures that can mitigate these impacts.

Stormwater and Contact Water Facilities Management

Changing precipitation patterns due to climate change may necessitate the need to provide additional protections beyond AZPDES permitted actions for stormwater and contact water facilities management during operations. Appendix B in the PoO describes design and strategies for stormwater management associated with activities proposed on NFS land to be incorporated into the project's Stormwater Pollution Prevention Plan (SWPPP) (p. B-1). Various design storm events were utilized to inform stormwater control structure design including 100-year/24-hour, 100-year/74-hour, and 1,000-year/24-hour events (p. B-2). Given the 84+ year timeline, more frequent and intense downpours could overwhelm the capacity of both operational stormwater and contact water handling facilities should a 500-year/24-hour event occur during the life of mine and adversely affect water quality. Therefore, the EPA recommends updating all proposed stormwater and contact water facilities to a minimum 500-year/24-hour event. The EPA recommends that the Draft EIS:

- Discuss the impact of ongoing and projected climate change on the project's infrastructure.
- Work with South32 Hermosa to include the following measures in the Applicant Committed Environmental Protection Measures:
 - Upsize all stormwater and contact water handling facilities to withstand a 500-year/24-hour event.
 - If upsizing to the 500-year/24-hour event is not feasible, document the justification.

Protection of Wetlands

The protection and restoration of wetlands and riparian areas is key to maintaining landscape and species diversity, supporting many aquatic and wildlife species, and are critical for protecting water quality and designated beneficial water uses. South32 Hermosa's Spring and Seep Catalog documents surveyed and sampled sites near the project area and the PoO proposed construction of two RIBs to help reduce impacts of groundwater drawdown to some seeps, springs, and groundwater wells in the Patagonia Mountains. (p. 2-49). Considering the rich biodiversity of the Patagonia Mountains, the EPA recommends that the Draft EIS:

- Coordinating with the USFWS and state and local agencies, identify wetland or riparian habitats, including seeps or springs, adjacent to or within the project area and describe the impacts that may result from project activities.
- Discuss alternatives and mitigation measures to avoid, minimize, and mitigate losses, and address strategies for improving the quality and quantity of these areas. If habitat would be adversely affected by the proposed project, we recommend that the Draft EIS include a detailed mitigation plan for habitat replacement.
- For assessment of impacts to jurisdictional waters and wetlands, consult with the U.S. Army Corps of Engineers to use their regional assessment methodology to ensure consistent impact assessment between the EIS and CWA 404(b)(1) Guidelines analysis.
- If wetlands on federal lands would be impacted, describe how the Forest Service intends “to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands” as described in Executive Order (E.O.) 11990 *Protection of Wetlands*, including how wetlands would be identified and avoided, and how unavoidable impacts would be mitigated. Assumptions regarding wetland quality and function should be field verified using the USACE state methodology and the results included in the EIS.
- Conduct post-project monitoring to ensure that the project achieves no negative effects to the function of wetlands within the Project area.
- Compensatory mitigation that could be required under a CWA 404 permit should be described in the EIS.

Air Quality

National Ambient Air Quality Standards

The PoO indicates that an Air Quality Permit was obtained from ADEQ indicating applicability compliance and demonstrating that the project would not interfere with the attainment or maintenance of any National Ambient Air Quality Standards (NAAQS) (p. 2-89). The EPA appreciates project plans to use electric vehicles and haul trucks, incorporate renewable energy, and work towards a net-zero operational greenhouse gas emissions goal by 2050. To ensure protection of human health and welfare under the NAAQS (40 CFR 50), the EPA recommends that the Draft EIS:

- Characterize existing background air quality and air quality related values (AQRV), including identification of:
 - Class I areas, which are afforded special protections under the Clean Air Act (e.g., Saguaro National Park and Wilderness, Chiricahua National Park & Wilderness, Chiricahua National Monument and Wilderness).
 - Sensitive receptors in the vicinity (such as population centers, nonattainment designations in and near the project area, and Class II areas with sensitive resources).
 - Airshed classifications and representative design values (background pollutant concentrations) based on the most recent monitoring data. Design value data are available to the public through EPA’s outdoor air monitor webpage,⁴ as well as through the EPA’s Air Quality System⁵ (AQS) for AQS users.

⁴ U.S. Environmental Protection Agency. (2023, August 22). *Interactive Map of Air Quality Monitors*. <https://www.epa.gov/outdoor-air-quality-data/interactive-map-air-quality-monitors>

⁵ U.S. Environmental Protection Agency. (2023, August 22). *Air Quality System*. <https://www.epa.gov/aqs>

- Any regional concerns in the area (e.g., ozone, visibility, resources sensitive to deposition, USFS Wildland/Urban Interface areas, seasonal wildfire smoke).
- Quantitatively summarize criteria pollutants emissions for each alternative and compare to regulatory standards. As part of this, generate a criteria air pollutant emissions inventory of all sources and activities associated with the project. Describe any uncertainties associated with the emissions estimates.
- Disclose impacts to AQRVs in potentially impacted Class I areas and any other relevant areas identified in collaboration with cooperating agencies and federal land managers.
- Discuss mitigation measures to minimize air pollutant emissions from the mine and include measures to address potential impacts to nearby residents, including sensitive receptors.
- Discuss whether and how air quality monitoring would be implemented to ensure project compliance with NAAQS.
- Coordinate with ADEQ regarding regulatory requirements and controls.

Hazardous Air Pollutants

Because hazardous air pollutants (HAPs) are known or suspected to cause cancer or other serious health effects, and redeposited HAPs can impact wetlands, water quality, and aquatic resources, the EPA recommends that the Draft EIS:

- Include a HAPs emissions inventory of all sources and activities associated with the construction and operation phases of the project, and quantitatively estimate potential releases of HAPs to air, soil, and water resources, including any off-site facilities instrumental to mine operations.
- Describe potential for redeposition of pollutants from HAPs, such as mercury, including the magnitude and extent of redeposition and how it could impact water quality, wetlands, and other resources.
- Discuss how HAPs would be controlled to reduce emissions as much as possible and describe how any captured HAPs would be disposed of.
- Describe HAPs monitoring, including locations and reporting requirements.

Fugitive Pollutant Sources

Diesel particulate matter (DPM) and other pollutants from fugitive sources at the mine can be reduced by implementing appropriate minimization and mitigation measures. EPA recommends incorporating dust suppression measures to address short-term construction-related emissions as well as permanent dust control post-construction. The PoO describes fugitive dust management considerations for potential fugitive dust generation from hauling, stockpiling, blasting, and drilling measures including water application on exposed surfaces, storage areas, and haul roads, dust suppressant applications, and water spray system on the primary crusher station feed hopper (2-37). The PoO also lists TSF2 siting and providing bussing for staff daily transport to and from the project as environmental protection measures aimed at reducing haul distances and minimize trips, respectively (p. 3-5).

Ensure the Draft EIS includes a comprehensive list of all best management practices and mitigations to be implemented to reduce project-related emissions. Example measures include, but are not limited to:

Fugitive Dust Control:

- Adhere to ADEQ's dust control rules for each project site.

- Supplement proposed mitigation measures for construction fugitive dust with the following measures from the *Western Regional Air Partnership (WRAP) Fugitive Dust Handbook*.⁶
 - Deploy sand fences.
 - Use washed rock 100 feet prior to exit onto pavement.
 - Water, or otherwise stabilize, exposed areas before high winds, using weather forecasts.
 - Erect 3-sided enclosures around storage piles.
 - Develop a construction fugitive dust monitoring and mitigation plan, with recordkeeping compliance tools from the WRAP Handbook.

Mobile and Stationary Source Controls:

- Require advanced pollution controls and clean fuels for new equipment, and for older equipment to be retrofitted. Use particulate filter traps and other appropriate controls to reduce emissions of DPM and other air pollutants.
- Lease or buy newer, cleaner equipment using the best available emissions control technologies that meets the most stringent of applicable federal or state standards.
 - Use lower-emitting engines and fuels, including electric, liquified gas, hydrogen fuel cells, and/or alternative diesel formulations, if feasible.
 - *On-Highway Vehicles* - On-highway vehicles should meet, or exceed, the U.S. EPA exhaust emissions standards for model year 2010 and newer heavy-duty on-highway compression-ignition engines (e.g., drayage trucks, long haul trucks, refuse haulers, shuttle buses, etc.).⁷
 - *Nonroad Vehicles and Equipment* - Nonroad vehicles and equipment should meet, or exceed, the U.S. EPA Tier 4 exhaust emissions standards for heavy-duty nonroad compression-ignition engines (e.g., nonroad trucks, construction equipment, cargo handlers, etc.).⁸
 - Low Emission Equipment Exemptions – The equipment specifications outlined above should be met unless: 1) a piece of specialized equipment is not available for purchase or lease within the United States; or 2) the relevant project contractor has been awarded funds to retrofit existing equipment, or purchase/lease new equipment, but the funds are not yet available.
- Maintain and tune engines per manufacturer’s specifications to perform at EPA certification levels, where applicable, and to perform at verified standards applicable to retrofit technologies. Prohibit any tampering with engines and require continuing adherence to manufacturer’s recommendations.⁹

⁶ Countess Environmental (2006, September) *WRAP Fugitive Dust Handbook*.

https://www.wrapair.org/forums/deif/fdh/content/FDHandbook_Rev_06.pdf

⁷ U.S. Environmental Protection Agency. (2016, March). *Heavy-Duty Highway Compression-Ignition Engines and Urban Buses: Exhaust Emission Standards*. <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockkey=P10009ZZ.pdf>

⁸ U.S. Environmental Protection Agency. (2016, March). *Nonroad Compression-Ignition Engines: Exhaust Emission Standards*. <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockkey=P1000A05.pdf>

⁹ U.S. Environmental Protection Agency. (2020, November). *EPA Tampering Policy*. <https://www.epa.gov/sites/default/files/2020-12/documents/epatamperingpolicy-enforcementpolicyonvehicleandenginetaampering.pdf>

- Use conveyors or rail, rather than haul trucks, where possible (e.g., for transporting ore or waste to appropriate processing areas).

Administrative Controls:

- Incorporate alternative energy components into the project (e.g., on-site solar, geothermal power generation).
- Employ periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications.
- Locate diesel engines, motors, and equipment staging areas as far as possible from residential areas and other sensitive receptors (e.g., schools, daycare centers, hospitals, senior centers).
- Prepare an inventory of all equipment prior to construction and identify the suitability of add-on emission controls for each piece of equipment before groundbreaking.¹⁰
- Develop a construction traffic and parking management plan that minimizes traffic interference and maintains traffic flow.
- Identify where implementation of mitigation measures is rejected based on economic infeasibility.

Valley Fever

The project may be in an area the Centers for Disease Control and Prevention has suspected is endemic for *Coccidioides immitis*, a fungus causing Valley fever (*Coccidioidomycosis*) in humans.¹¹ According to the CDC, rising temperatures have allowed the fungus to spread to new areas that previously were too cold and wet for it to survive, including the entire project area. As a result, fugitive dust could disperse *Coccidioides* spores, if present, to mine workers as well as nearby communities. To reduce the human health risk of contracting Valley fever, it will be important to identify how the Forest Service will educate mine workers and nearby communities about the risks of contracting Valley fever and its symptoms. The EPA recommends that the Draft EIS:

- Identify measures to prevent or reduce the risk of exposure to fugitive dust, including training for workers and supervisors on the potential presence of Valley Fever spores, methods to minimize exposure, and how to recognize symptoms.
- For mine workers, mitigation measures could include limiting workers' exposure to disease-endemic areas by directing them to remove dusty clothing after fieldwork and store in closed plastic bags until washed. When exposure to dust is unavoidable, provide approved respiratory protection to filter particles. For the community, mitigation measures could include ensuring air-conditioned buildings are available for community members without air-conditioning if fugitive dust would be present.

Climate Change

Predicting climate damage calculations and the social cost of greenhouse gases is needed in the EIS, as recommend by the Council on Environmental Quality's January 2023 interim guidance, *National*

¹⁰ Suitability of control devices is based on whether there is reduced normal availability of the construction equipment due to increased downtime and/or power output, whether there may be significant damage caused to the construction equipment engine, or whether there may be a significant risk to nearby workers or the public.

¹¹ Centers for Disease Control and Prevention. (2023, July). *Valley Fever (Coccidioidomycosis) Awareness*. <https://www.cdc.gov/fungal/features/valley-fever.html>

*Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change.*¹² We offer further details through the following comments. If the Forest Service needs assistance with predicting climate damage calculations and/or using EPA’s social cost of greenhouse gases workbook, as described below in detail, please contact Chloe Nelson, the EPA’s NEPA project lead for this project. She can connect Forest Service staff with EPA’s National Center for Environmental Economics.

Presentation of Greenhouse Gas Emissions

The CEQ’s January 2023 interim guidance states that “[a]gencies generally should quantify gross emissions increases or reductions (including both direct and indirect emissions) individually by greenhouse gas, as well as aggregated in terms of total CO₂ [carbon dioxide] equivalence.” As such, the EPA recommends that the Draft EIS:

- Disclose the impacts from GHG emissions and the impacts from climate change on the project and project’s impacts. Ensure that CO₂, methane (CH₄), nitrogen dioxide (N₂O), and CO₂-equivalents are disclosed as well as addressing both direct and indirect emissions, including downstream emissions.
- Utilize the following guidance documents using Executive Order (EO) 13990, *Protecting Public Health and the Environment and Restoring Science To Tackle the Climate Crisis* (January 20, 2021), which urges agencies to “consider all available tools and resources in assessing GHG emissions and climate change effects of their proposed actions, including as appropriate and relevant, the [CEQ’s] 2016 GHG Guidance.” In January 2023, CEQ updated its 2016 guidance and issued interim guidance to assist agencies in analyzing GHG and climate change effects of their proposed actions under NEPA.

Characterization of Greenhouse Gases

When evaluating the cumulative effects of GHG emissions from the project, CEQ’s interim guidance does not consider the project’s percentage of gross GHG emissions compared to the state percentage as an appropriate method for characterizing the extent of contributions to climate change. Representing the project as a percentage minimizes the project’s impacts and does not identify how “diverse individual sources of emissions each make a relatively small addition to global atmospheric greenhouse gas concentrations that collectively have a large effect.” Instead, CEQ’s guidance recommends that agencies should “place emissions in relevant context, including how they relate to climate action commitments and goals.” Therefore, the EPA recommends that the Draft EIS:

- Discuss how project emissions relate to climate action commitments and goals.

Monetized Climate Damages

CEQ’s January 2023 interim guidance recommends “that agencies provide additional context for GHG emissions, including through the use of the best available social cost of GHG (SC–GHG) estimates, to translate climate impacts into the more accessible metric of dollars, allow decision makers and the public to make comparisons, help evaluate the significance of an action’s climate change effects, and better understand the tradeoffs associated with an action and its alternatives.” In other words, the SC-

¹² Council on Environmental Quality. (2023, January 9). *National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change*. <https://www.energy.gov/sites/default/files/2023-01/2023-01-CEQ%20interim%20guidance%20on%20GHG%20emissions%20and%20climate%20change.pdf>

GHG estimates can provide useful information in the NEPA environmental process review to help the public interpret GHG emissions. Therefore, the EPA recommends that the Draft EIS:

- Estimate the SC-GHG for all the reasonably foreseeable direct and indirect greenhouse gas emissions of the project.

Lifetime Climate Damages

To correctly estimate climate damages, CO₂, CH₄ and N₂O emissions from ~2025 to 2109 annual and lifetime calculations are needed in the EIS. To correctly estimate climate damages, CO₂, CH₄ and N₂O emissions from 2024 to 2109 need to be multiplied by the respective SC-CO₂, SC-CH₄ and SC-N₂O values for each year at each discount rate. Before these estimates are included in the analysis, the monetized values of climate damages over time must be discounted to the present. In order to promote better public understanding of the climate damages of the project, the EPA recommends including the following information in the Draft EIS:

- Estimate the total SC-GHG for each type of greenhouse gas emissions over the expected lifetime of the project.
- Calculate the SC-GHG by multiplying the CO₂, CH₄ and N₂O emissions for each year between ~2025 to 2109 by the corresponding SC-CO₂, SC-CH₄ and SC-N₂O values.
- Include tables that report the monetized climate change damages separately for each greenhouse gas and provide sufficient descriptions of data and methods on computing the monetized climate damages to allow them to be reproduced by a qualified individual.

Application of EPA's Social Cost of Greenhouse Gas Estimates and 2023 Update

In November 2023, the EPA published the *Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances*.¹³ This report provides updated estimates of the SC-GHGs that reflect advancements in the scientific literature on climate change and its economic impacts and incorporate recommendations made by the National Academies of Science, Engineering, and Medicine (National Academies 2017). In this update, the methodology underlying each of the four components, or modules, of the SC-GHG estimation process – socioeconomics and emissions, climate, damages, and discounting – is developed by drawing on the latest research and expertise from the scientific disciplines relevant to that component. Regarding discounting, EPA's report presents updated estimates of the SC-GHG at multiple discount rates. Considering the multiple lines of evidence on the appropriate certainty-equivalent near-term rate, the modeling results presented in this report consider a range of near-term target rates of 1.5%, 2.0%, and 2.5%. This range of rates allows for a symmetric one point spread around 2.0%. The updated SC-GHG estimates have also undergone an expert peer review and a public comment process.

The EPA has recently released a Microsoft Excel "Workbook for Applying SC-GHG Estimates" spreadsheet to better assist lead agencies with the utilization of these updated estimates, and it can be accessed at <https://www.epa.gov/environmental-economics/scghg>. This workbook presents a straightforward tool for applying the updated SC-GHG values to monetize project SC-GHG emissions for the EIS. The EPA recommends that the Draft EIS:

¹³ U.S. Environmental Protection Agency. (2023, November) *Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances*. https://www.epa.gov/system/files/documents/2023-12/epa_scghg_2023_report_final.pdf

- Monetize greenhouse gas emission using EPA’s updated SC-GHG estimates to reflect the latest science on the impacts of climate change using EPA’s Workbook for Applying SC-GHG Estimates.

Include Measures to Mitigate GHG Emissions

Identify and include measures to avoid, reduce and minimize GHG emissions. Many air quality mitigation measures for criteria pollutants have the co-benefits of reducing GHGs. For this project, the EPA recommends the following practicable measures to reduce mobile sources:

- Idling best management practices (BMPs) to limit truck and equipment idling on site, including strict enforcement of idling limits. At the same time, the practice would result in fuel savings.
- Require advanced pollution controls and clean fuels for new equipment, and for older equipment to be retrofitted. Use particle traps and other appropriate controls to reduce emissions of DPM and other air pollutants. Traps control approximately 80 percent of DPM, and specialized catalytic converters (oxidation catalysts) control approximately 20 percent of DPM, 40 percent of carbon monoxide emissions, and 50 percent of hydrocarbon emissions.
- Lease or buy newer, cleaner equipment (2010 or newer model).
- Employ periodic, unscheduled inspections to ensure that construction equipment is properly maintained at all times and does not unnecessarily idle, is tuned to manufacturer's specifications, and is not modified to increase horsepower except in accordance with established specifications.

Design and operational elements that could minimize air pollutant emissions could include.

- Use conveyors rather than haul trucks where possible, e.g., for transporting ore or placing materials.
- Incorporate alternative energy components into the project, such as on-site solar.
- Offer ride sharing or shuttle opportunities for mine employees commuting to the site from both nearby and distant communities.

Consider estimating the emissions reduction from these measures. For unavoidable emissions, consider including project elements to offset carbon (carbon offsets) or the voluntary purchase of carbon offset credits.

Environmental Justice

Section 3 (b)(i) of Executive Order 14096, *Revitalizing Our Nation’s Commitment to Environmental Justice for All* (April 21, 2023),¹⁴ directs the EPA, in carrying out its Clean Air Act Section 309 responsibilities, to assess whether each agency analyzes and avoids or mitigates disproportionate human health and environmental effects on communities with environmental justice concerns. As such, the EPA recommends that the Draft EIS adequately address these communities and concerns as well as appropriately consider mitigation measures, through our following recommendations.

Demographic Data

EJScreen, EPA’s environmental justice screening and mapping tool, offers a variety of data and mapping capabilities that enable users to understand demographic details about the population of an

¹⁴ *Executive Order 14096, Revitalizing Our Nation’s Commitment to Environmental Justice for All.* (April 21, 2023). <https://www.whitehouse.gov/briefing-room/presidential-actions/2023/04/21/executive-order-on-revitalizing-our-nations-commitment-to-environmental-justice-for-all/>

area and the environmental conditions in which they live. For this project, assessing data from EJScreen is a useful first step in identifying people of color¹⁵ and low-income populations within and in proximity to the project area. At a minimum, the EPA recommends that the Draft EIS:

- Use EJScreen or other U.S. Census Bureau data to identify low-income and minority populations by using block groups. Using larger tracts, such as cities and counties, often dilute the presence of these populations.
- Identify the presence of linguistically isolated populations and medically underserved areas, as well as any other critically relevant demographic information.
- Supplement data with state and county level reports and local knowledge.

Identifying Disproportionate and Adverse Impacts

E.O. 14096 Section 3(a)(ix)(B) directs agencies to carry out NEPA reviews in a manner that considers the best available science and information on any disparate health effects arising from exposure to pollution and other environmental hazards, such as information on race, national origin, age, disability status, among others, of the individuals exposed. In addition, Section (3)(a)(i) also directs agencies to “identify, analyze, and address disproportionate and adverse human health and environmental effects (including risks) and hazards of Federal activities, including those related to climate change and cumulative impacts of environmental and other burdens on communities with environmental justice concerns.” Under NEPA and E.O. 14096’s direction, direct, indirect, and cumulative impacts to communities with environmental justice concerns is needed in the Draft EIS.

Disproportionate and adverse impacts may not be inherently clear as impacts for all populations may appear similar; however, the social determinants of health, or “the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life”,¹⁶ play a large role in assessing disproportionate and adverse impacts. When deciding whether an impact may be disproportionate and adverse, the EPA recommends that the Draft EIS:

- Identify baseline characteristics, including existing environmental burdens and health and social conditions, of impacted individuals and communities with environmental justice concerns, such as existing environmental pollution, current or past industrial activities, the percentage of persons with disabilities, socioeconomic stressors, and asthma and cancer rates in the affected environment section.
- Discuss additional direct, indirect, and cumulative impacts to communities with environmental justice concerns that may result due to baseline characteristics.
- Describe any unique conditions of the potentially affected minority populations and low-income populations that may be affected by the proposed action, including:
 - Human health vulnerabilities (e.g., heightened disease susceptibility, health disparities).
 - Socioeconomic vulnerabilities (e.g., reliance on a particular resource that may be affected by the proposed action, disruptions to community mobility and access as a result of infrastructure development).

¹⁵ When identifying people of color populations, please note that, according to CEQ’s *Environmental Justice: Guidance Under the National Environmental Policy Act*, a 50 percent standard does not apply if the percentage of people of color is “of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.”

¹⁶ U.S. Center for Disease Control and Prevention. (2022, December). Social Determinants of Health at CDC. <https://www.cdc.gov/about/sdoh/index.html>

- Cultural vulnerabilities (e.g., traditional cultural properties and resources).
- Apply methods from the *Promising Practices for Environmental Justice Methodologies in NEPA Reviews*.¹⁷ This report provides guidance in assessing the potential direct and indirect impacts of a project, as well as the potentially increased vulnerabilities certain populations may have due to the cumulative impacts of environmental harm.
- Identify any communities with concerns outside the environmental justice area of analysis that may be along the transportation access path or the hazardous waste and solid waste area of analysis that were not discussed in the environmental justice analysis.
- In the analysis of the project's disproportionate adverse impacts to communities and individuals with environmental justice concerns, discuss how cumulative impacts and the foreseeable future effects of climate change in the area may magnify disproportionate effects in these communities through the life of the project, including post-closure.
- Develop alternatives and/or mitigation to prevent, minimize, or compensate for disproportionate and adverse impacts.

Meaningful Public Engagement

E.O. 14096 includes specific directives for federal agencies to address in NEPA environmental reviews, including providing opportunities for early and meaningful involvement in the environmental review process with communities with environmental justice concerns potentially affected by a proposed action (E.O. 14096 Section 3(a)(ix)(C)). Beyond NEPA-specific directives, several opportunities for meaningful engagement that E.O. 14096 describes in Section 3(a)(vii)(A)-(D) include but are not limited to: providing notice and engaging in outreach to potentially affected individuals who do not typically participate in Federal decision-making; providing accessible information on Federal activities for individuals with limited English proficiency and individuals with disabilities; providing technical assistance, tools and resources to assist in facilitating meaningful and informed participation; and fully considering public input provided as part of the decision-making process. As such, the EPA recommends that during the NEPA process the Forest Service:

- Provide early and frequent outreach and engagement opportunities prior to publishing the Draft EIS to collect and incorporate community feedback throughout the NEPA process. This may include, but is not limited to:
 - Providing translation services to accommodate linguistically isolated populations, as applicable.
 - Addressing technology barriers that may prohibit participation from affected communities.
 - Ensuring that meetings are scheduled at a time and location that is accessible for community participants, including scheduling meetings after work hours and on weekends as appropriate and providing opportunities for hybrid meetings.
 - Providing ample notice of meetings and commenting opportunities so that community members have sufficient time to prepare and participate.
 - Promoting engagement opportunities within appropriate outlets used by affected communities, such as newspapers, radio, and social media.

¹⁷ Federal Interagency Working Group on Environmental Justice and NEPA Committee (2016, March). Promising Practices for EJ Methodologies in NEPA Reviews. https://www.epa.gov/sites/production/files/2016-08/documents/nepa_promising_practices_document_2016.pdf

- Ensuring that all project-related information is conveyed using plain language so that community members of varied reading proficiencies can readily understand the project-related information.
- Early in the NEPA process develop an EJ Outreach Plan and proactively reach out to communities with EJ concerns to make them aware of funding that is available to support their capacity and ability to engage in the NEPA process. Such funding may include EJ grants, etc.
- Establish outreach deliverables focused on ensuring adequate opportunities for and meaningful quality of public engagement.
- Review and consider community feedback provided during the NEPA process.
- Compile a Scoping Report from completed engagement and share this directly with communities for project tracking and transparency.

The EPA recommends that the Draft EIS:

- Document actions taken by the Forest Service to provide opportunities for meaningful public engagement.
- Discuss methodology employed to ensure execution of an EJ Outreach Plan or other community engagement planning and future outreach not yet developed (e.g., establish timelines, status meetings, progress reports, quality checks).
- Disclose any community concerns, even those outside the jurisdiction of the Forest Service.
- Describe how community feedback and preferences are reflected in the Forest Service's NEPA decision-making process, including alternatives development, identification of the environmental preferable alternative, and the selected alternative and mitigation.
- Specify whether the Draft EIS meets the environmental justice requirements of the U.S. Department of Agriculture's Strategic Plan for Fiscal Years 2022-2026.

Job Creation and Workforce Training

Since E.O. 14096 section 3(a)(v) directs federal agencies to assess their legal authorities and, as available and appropriate, take steps to provide opportunities for workforce training and to support the creation of jobs for individuals who are part of communities with environmental justice concerns, the EPA recommends that the Draft EIS:

- Discuss South 32 Hermosa's commitments and available Forest Service authority to create opportunities for workforce training and support job creation for people who are part of communities with environmental justice concerns, and whether the Forest Service would provide such opportunities.
- Consider disclosing and summarizing any workforce and community benefits agreements being prepared with regards to the proposed alternatives.

Consultation with Tribal Governments

It is important that formal government-to-government consultation under E.O. 13175 take place early, regularly, and meaningfully and that additional consultation under Section 106 of the National Historic Preservation Act also take place early to ensure that issues of Tribal concerns and interests are adequately addressed in the NEPA process. During consultation, the Forest Service can provide awareness of grants and other available funding opportunities to help build capacity and support Tribal participation.

The EPA recommends that the Draft EIS:

- Summarize the results of tribal consultation and identify the main concerns expressed by Tribes (if any), and how those concerns were addressed. Identify how consultation influenced the decision-making process including the selected alternative and mitigation to avoid, minimize, or compensate for impacts to Tribes.
- Discuss how the Forest Service would avoid or minimize or mitigate adverse effects on the physical integrity, accessibility, or use of cultural resources or archaeological sites, including traditional cultural properties, throughout the project area.
- Utilize the Section 106 review process to ensure that the requirements of E.O. 13007 *Indian Sacred Sites* (May 24, 1996) are fulfilled.¹⁸

The National Association of Tribal Historic Preservation Officers' *Tribal Consultation: Best Practices in Historic Preservation*¹⁹ and the Advisory Council of Historic Preservation's *Consultation with Indian Tribes in the Section 106 Review Process: The Handbook*²⁰ guidance documents may serve as useful resources.

Indigenous Knowledge

Since Indigenous Knowledge is often unique and specific to a Tribe and may exist in a variety of forms, consultation and collaboration with Tribes is critical to ensuring that Indigenous Knowledge is collected and applied in the NEPA process. The EPA recommends that the Draft EIS:

- Identify, include, and integrate Indigenous Knowledge into the analysis. We recommend that the need for IK and any information gaps be identified early so that IK can be collected and included in the Draft EIS.
- Collection of IK can include the collection of local and traditional knowledge concerning the affected environment, anticipated impacts from the project and alternatives, and traditional hunting, gathering and land use patterns in the area. Collection of IK may entail anthropological research and interviews with Tribes and knowledge bearers. The Forest Service should work closely with the tribes on any IK collection activities and in determining how to use IK in the EIS.
- The Draft EIS should discuss IK associated with the affected environment and potential impacts and how IK was used in decision-making (alternatives, mitigation).

CEQ's *Guidance for Federal Departments and Agencies on Indigenous Knowledge*²¹ is a useful resource to address Indigenous Knowledge in the Draft EIS.

¹⁸ It is important to note that a sacred site may not meet the NRHP criteria for a historic property and that, conversely, a historic property may not meet the criteria for a sacred site. It is also important to note that sacred sites may not be identified solely in consulting with tribes located within geographic proximity of the project. Tribes located outside the direct impact area the plan area may also have religiously significant ties to lands within the plan area and should be included in the consultation process.

¹⁹ National Association of Tribal Historic Preservation Officers. (2005, May). *Tribal Consultation: Best Practices in Historic Preservation*. http://www.nathpo.org/PDF/Tribal_Consultation.pdf

²⁰ Advisory Council of Historic Preservation. (2021, June). *Consultation with Indian Tribes in the Section 106 Review Process: The Handbook*. <https://www.achp.gov/sites/default/files/2021-06/ConsultationwithIndianTribesHandbook6-11-21Final.pdf>

²¹ Council on Environmental Quality. (2022, November 30). *Guidance for Federal Departments and Agencies on Indigenous Knowledge*. <https://www.whitehouse.gov/wp-content/uploads/2022/12/OSTP-CEQ-IK-Guidance.pdf>

Biological Resources

Special Status Species

The EPA suggests working closely with the U.S. Fish and Wildlife Service (USFWS) and the Arizona Game and Fish Department to determine potential impacts of the project on species listed under the Endangered Species Act or Forest Service sensitive species. The PoO identifies USFWS designated critical habitat in and around the project vicinity for jaguar, Mexican spotted owl, yellow-billed cuckoo, and beardless chinchweed (p. 3-13). To effectively address special status species, the EPA recommends that the Draft EIS:

- Identify and quantify which species and/or critical habitat might be directly, indirectly, or cumulatively affected by each alternative.
- Summarize the USFWS's biological assessment/opinion and include all USFWS recommendations from the biological assessment/opinion as Applicant Committed Environmental Protection Measures.
- Demonstrate that the preferred alternative is consistent with the USFWS's biological assessment/opinion and Forest Service's biological evaluation.
- Discuss mitigation measures to minimize impacts to special status species and indicate how they would be implemented and enforced.

Migratory Birds

The project area is located within the Pacific Flyway bird migration route and near various nature and wildlife preserves (e.g., Borderlands Wildlife Preserve, Paton Center for Hummingbirds). To address conformance with the Migratory Bird Treaty Act and potential impacts to migratory birds within the plan boundary, the EPA recommends that the Draft EIS:

- Includes protection measures approved by Forest Service biologists.
- Ensures that ground disturbing activities must occur within 14 days of clearance surveys.

Bald and Golden Eagles

Due to potential occurrence in the project area, the EPA recommends that the Draft EIS:

- Discloses assessment of direct take (mortality) and indirect take (loss of productivity from other mitigation (e.g., if requesting nest removals).
- Includes avoidance, minimization measures, and or mitigation (e.g., nest buffers, Avian Power Line Interaction Committee suggested practices, creation of new nests, etc.).
- Summarizes Eagle Protection Plans, as applicable.

Invasive Species

We encourage the Forest Service to promote integrated weed management, prioritizing management techniques that focus on non-chemical treatments first. Early recognition and control of new invasive species infestations is critical to stop the spread of the infestation and avoid wider future use of herbicides, which could have indirect impacts on biodiversity, water quality, and aquatic resources. The EPA recommends that the Draft EIS:

- Include measures that are consistent with E.O.s 13112 *Invasive Species* and 13751 *Safeguarding the Nation from the Impacts of Invasive Species* and any existing Forest Service direction for noxious weed management.

- Discuss measures that would be implemented to reduce the likelihood of introduction and spread of invasive species within the proposed project area, such as native seed mix for reclamation.

Communications Planning

It is important to disclose methods of communication to alert surrounding communities about project reporting/monitoring and emergency response. Community members may be interested in seeing reports such as quarterly air and groundwater monitoring. In addition, being able to quickly reach external stakeholders at the appropriate level can help reduce concerns related to mine operations in the event of an emergency. The EPA recommends that the Draft EIS:

- Append the Emergency and Crisis Management Plan.
- Ensure that surrounding communities would be notified of impacts in the event of an emergency or spill, including:
 - Identifying where project reporting/monitoring would be available to allow community members access.
 - Disclosing South32 Hermosa's community relations manager's contact information in communication plans and announcements.