20 April 2026

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

Re: Objection to Hermosa Critical Minerals Project Final Environmental Impact Statement

Dear Forest Supervisor Dewberry,

This document is an objection submitted pursuant to 36 CFR Part 218 regarding the Hermosa Critical Minerals Project Final Environmental Impact Statement (EIS) and Draft Record of Decision (ROD) for the project, which is located on the Coronado National Forest. The responsible official for the project is Kevin S. Dewberry, Forest Supervisor of the Coronado National Forest. This objection identifies and discusses the very same issues and problems provided to the Forest Service in two comments submitted by me, John Nordstrom, during the 2024 and 2025 Public Comment periods. As the objector, my name, address, and phone number are:

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214.695.0044

This objection satisfies and complies with requirements of 36 CFR Part 218.8(d), with my name, address, and telephone number; my signature, at the end of this objection; the name of the proposed project; the name and title of the proposed project; the name of the National Forest on which the proposed project would be implemented; a description of those aspects of the proposed project addressed by the objection, including specific issues related to the proposed project; a description of how the environmental analysis violates law, regulation, and policy; suggested remedies that would resolve the objection; supporting reasons for the Responsible Official to consider; and a statement that demonstrates connection between prior specific written comments on the project and the content of the objection.

Objection: The Final EIS violates NEPA by failing to analyze surface and groundwater interactions, and by failing to provide accurate scientific information, transparency, and analysis in decision-making by mischaracterizing and omitting effects relating to surface and groundwater interactions.

NEPA requires federal agencies to take a "hard look" at the direct, indirect, and cumulative environmental impacts of proposed actions.[1] To do so, federal agencies must prepare an environmental impact statement (EIS) for all "major Federal actions significantly affecting the quality of the human environment."[2] An EIS must "provide [a] full and fair discussion of significant environmental impacts" associated with a federal decision and "inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment."[3] Taking the required "hard look" requires agencies to "use... the best available scientific information."[4]

NEPA's review obligations are more stringent and detailed at the project level, or "implementation stage," given the nature of "individual site-specific projects."[5] "[G]eneral statements about possible effects and some risk do not constitute a hard look, absent a justification regarding why more definitive information could not be provided."[6]

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[1] *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989).

[2] 42 U.S.C. § 4332(2)(C); *see also* 40 C.F.R. § 1501.4.

[3] 40 C.F.R. § 1502.1 (1978).

[4] *Colo. Envtl. Coal. v. Dombeck*, 185 F.3d 1162, 1171 (10th Cir. 1999).

[5] *Ecology Ctr., Inc. v. United States Forest Serv.*, 192 F.3d 922, 923 n.2 (9th Cir. 1999); *see also Friends of Yosemite Valley v. Norton*, 348 F.3d 789, 800-01 (9th Cir. 2003); *New Mexico ex rel Richardson v. Bureau of Land Management*, 565 F.3d 683, 718-19 (10th Cir. 2009) (requiring site-specific NEPA analysis when no future NEPA process would occur); *Colo. Envtl. Coal. v. Ofc. of Legacy Mgmt.*, 819 F. Supp. 2d 1193, 1209-10 (D. Colo. 2011) (requiring site-specific NEPA analysis even when future NEPA would occur because "environmental impacts were reasonably foreseeable").

[6] *Or. Natural Res. Council Fund v. Brong*, 492 F.3d 1120, 1134 (9th Cir. 2007) (citation omitted); *see also Or. Natural Res. Council Fund v. Goodman*, 505 F.3d 884, 892 (9th Cir. 2007) (holding the Forest Service's failure to discuss the importance of maintaining a biological corridor violated NEPA.

Analyzing and disclosing site-specific impacts is critical because where (and when and how) activities occur on a landscape strongly determines that nature of the impact. As the Tenth Circuit Court of Appeals has explained, the actual "location of development greatly influences the likelihood and extent of habitat preservation. Disturbances on the same total surface area may produce wildly different impacts on plants and wildlife depending on the amount of contiguous habitat between them."[7] The Court used the example of "building a dirt road along the edge of an ecosystem" and "building a four-lane highway straight down the middle" to explain how those activities may have similar types of impacts, but the extent of those impacts – in particular on habitat disturbance – is different.[8] Indeed, "location, not merely total surface disturbance, affects habitat fragmentation,"[9] and therefore location data is critical to the site-specific analysis NEPA requires.

NEPA further mandates that the agency provide the public "'the underlying environmental data' from which the Forest Service develop[ed] its opinions and arrive[d] at its decisions."[10] "The agency must explain the conclusions it has drawn from its chosen methodology, and the reasons it considered the underlying evidence to be reliable."[11] In the end, "vague and conclusory statements, without any supporting data, do not constitute a 'hard look' at the environmental consequences of the action as required by NEPA."[12]

NEPA requires that agencies ensure the scientific integrity and use of reliable data in analyzing the impacts of agency actions. The statute itself states:

- "utilize a systematic, interdisciplinary approach which will ensure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision-making which may have an impact on man's environment." 42 U.S.C. § 4332(A);

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explaining that "[m]erely disclosing the existence of a biological corridor is inadequate" and that the agency must "meaningfully substantiate [its] finding").

[7] *New Mexico ex rel Richardson*, 565 F.3d at 706.

[8] *Id.* at 707.

[9] *Id.*

[10] *WildEarth Guardians v. Mont. Snowmobile Ass'n*, 790 F.3d 920, 925 (9th Cir. 2015).

[11] *N. Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1075 (9th Cir. 2011) (citation omitted).

[12] *Great Basin Mine Watch v. Hankins*, 456 F.3d 955, 973 (9th Cir. 2006).

- "ensure the professional integrity, including scientific integrity, of the discussion and analysis in an environmental document." *Id.* § 4332(D);

- "make use of reliable data and resources in carrying out this Act." *Id.* § 4332(E); and

- "initiate and utilize ecological information in the planning and development of resource-oriented projects." *Id.* § 4332(K).[13]

Final EIS Objections

The following sections describe aspects of and specific issues relating to the proposed project that the Final EIS does not adequately address in analysis, in violation of the above enumerated standards of NEPA. Objections are enumerated here and described below:

1. Water Discharge Method
2. Additional Mitigation Measures and Management Plans
3. Monitoring and Mitigation Plan for Groundwater-dependent Ecosystems and Water Wells

Water Discharge Method (Final EIS Section 2.2.3.4)

Water Trans-migration

The Final EIS does not address surface water – groundwater interaction (water trans-migration); it treats groundwater (3.17.2 Groundwater Resources), surface water (3.17.3 Surface Water Resources), and seeps and springs (3.17.4 Springs) as distinct hydrologic entities. All hydrologic assumptions and decisions presented in the Final EIS are invalid without the completion of a water trans-migration study across the full Cone of Depression.

Groundwater and surface water are dynamically interconnected through a process known as water transmigration, where water continuously moves between these two systems. This exchange occurs via infiltration, seepage, and flow driven by differences in hydraulic head (water pressure). Surface water can recharge groundwater when the water table is lower than the surface-water level, such as during rainy seasons or when rivers overflow. Conversely, groundwater discharges into surface water bodies like streams, lakes, and wetlands when the water table is higher, sustaining flow during dry periods—this is often referred to as baseflow.

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[13] *See also* CEQ Feb. 2025 NEPA Guidance at 2-3 (describing provisions of NEPA following Congress's 2023 amendments) (available at https://ceq.doe.gov/docs/ceq-regulations-and-guidance/CEQ-Memo-Implementation-of-NEPA-02.19.2025.pdf).

Key mechanisms include:

1. Gaining streams: Water flows from groundwater into streams.
2. Losing streams: Surface water infiltrates into the ground, recharging aquifers.
3. Transpiration: Plants near water bodies draw groundwater directly, lowering the water table and sometimes reversing flow direction (e.g., surface water moving into the subsurface during the day).
4. Seasonal shifts: Flow direction often changes with seasons—surface water recharges groundwater in wet periods, while groundwater sustains surface water in dry periods.

This interaction is critical for maintaining ecosystem health, water quality, and reliable water supplies. Human activities like groundwater pumping can disrupt this balance, causing streams to lose flow or contaminating aquifers through surface water infiltration. Understanding these dynamics is essential for effective water resource management, especially in regions with increasing water demand and scarce available water supply. Legal and environmental frameworks are inseparable link between surface and groundwater.

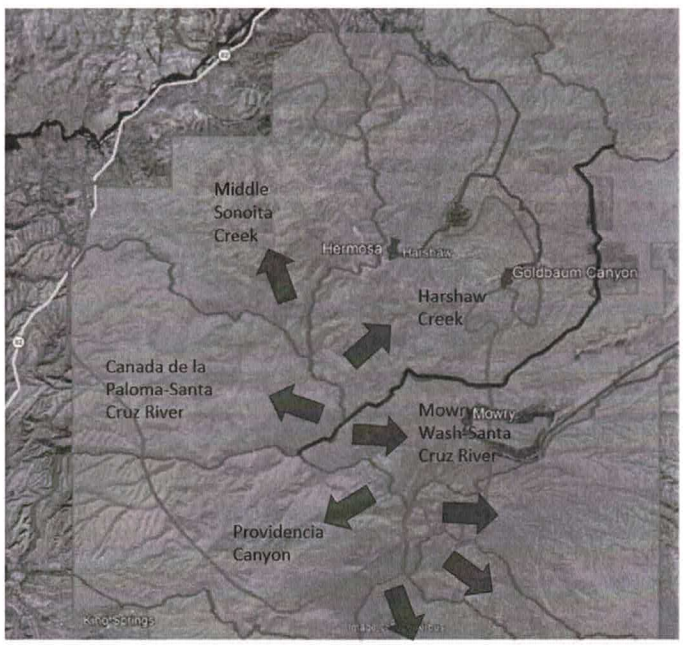
A water trans-migration study is needed to identify distinct geologic domains throughout the Cone of Depression. Characteristics of geologic domains may include, but are not limited by, soil type, depth, and lateral extent, rock type, depth and lateral extent, topography, stratigraphy, structural elements, porosity, permeability, and depth to dewatering zone.

The distinct geologic domains are then used to identify catchment basin(s) (Diagram 1) that will benefit from the introduction of cleaned mine discharge water. Factors affecting a decision to select catchment basins for discharge may include, but are not limited by, soil type, depth, and lateral extent, rock type, depth, and lateral extent, topography, stratigraphy, structural elements, porosity, permeability, and degree to which water will wick[i] from stream bed laterally and uphill. Goals should include:

1. Meet EPA water quality standards
2. achieves broad, distributed recharge across the full Cone of Depression as needed to offset impacts to USFS land, springs, seeps and downstream users (Minimizes water waste, erosion and environmental impact
3. Promotes onsite water storage and maximizes utility across catchment basins
4. Ensures structures are not visually obtrusive, can be modified as needed, and are regularly maintained

Diagram 1

Legend:
Cone of Depression boundary
Catchment Basin boundaries
USFS land
USFS allotment boundaries
Red proposed discharge locations
Red newly-created perennial streams
Blue ridgeline separating catchment basins
direction of water flow direction



Perennial Streams

The Final EIS does not achieve broad, distributed recharge across the full Cone of Depression as needed to offset impacts to USFS land, springs, seeps and downstream users. Under Alternative 3, as described in the Final EIS, USFS is authorizing the creation of 34+ km of perennial streams at the Hermosa mine site, Goldbaum Canyon, and Mowry Wash locations (see Diagram 2).

Diagram 2

Streams[1], Cone of Depression[2], Discharge Locations, Perennial Streams

Legend:
Cone of Depression boundary
Green pin – South32 Hermosa Project
Blue lines - streams
Red pins – discharge locations
Red lines – perennial streams

Hermosa discharge
- newly created 14.5km perennial stream

Goldbaum discharge
- will add 6.5km perennial stream

Mowry discharge
- will add 14km perennial stream

1: WATERS (Watershed Assessment , Tracking and Environmental Results System), provided by the U.S. Environmental Protection Agency (EPA)

2: Hermosa Critical Minerals Project Draft Environmental Impact Statement

Prior to 18 August 2025, I shared a water discharge presentation/proposal with Brianna Dean who circulated it internally at USFS. My presentation described discharging water at multiple points throughout the Forest. In a phone conversation with Ms. Dean on 18 August 2025, we discussed my presentation, and she stated that Steve Bluemer liked my proposal and that South32 'would not go for that'. I responded that USFS decides where water should be discharged, not South32.

In a face-to-face meeting with Doug Ruppel and Tom Runyon on 17 October, 2025, Mr. Ruppel stated that USFS does not want to discharge water on the Forest as it will create perennial streams.

Hermosa Mine Discharge

The Hermosa Mine discharge location represents the lowest-cost discharge location for South32; it creates a 14+km perennial stream originating on South32 private land and then crossing Forest Service, including Brush Hill Ranch (owned by South32), and private land as it makes its way toward the Town of Patagonia.

The Hermosa Mine discharge effectively subsidizes South32's private stock watering operation at Brush Hill Ranch using publicly permitted mine water rather than achieving broad, distributed recharge across the full Cone of Depression as needed to offset impacts to USFS land, springs, seeps and downstream users.

Goldbaum Canyon Discharge

The Goldbaum Canyon discharge location discharges water on the Hale Ranch (owned by South32) and creates a 6.5+km perennial stream which contributes additional water to the Hermosa mine site discharge perennial stream.

The Goldbaum Canyon discharge effectively subsidizes South32's private stock watering operation at the Hale Ranch using publicly permitted mine water rather than achieving broad, distributed recharge across the full Cone of Depression as needed to offset impacts to USFS land, springs, seeps and downstream users.

Mowry Wash Discharge

The Mowry Wash discharge location creates a 14+km perennial stream and is located outside the Cone of Depression. South32 does not want to create a water discharge / recharge loop by discharging water within the Cone of Depression.

Clearly, there is more to the USFS position than not just wanting to create perennial streams. The Final EIS water discharge method is intentionally discharging water outside the Cone of Depression and is not broadly distributing recharge across the full Cone of Depression as needed to offset impacts to USFS land, springs, seeps and downstream users.

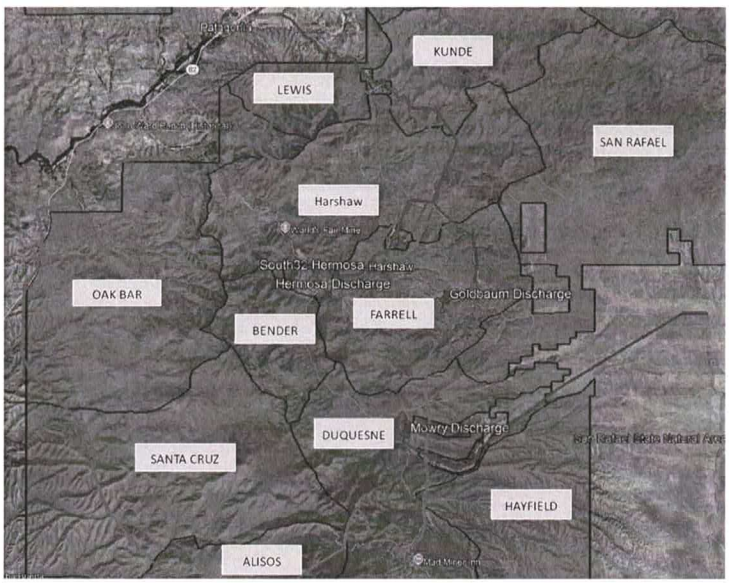
Beneficial Use

The Final EIS does not achieve broad, distributed recharge across the full Cone of Depression as needed to offset impacts to USFS land, springs, seeps and downstream users. South32 owns the Brush Hill and Hale ranches and holds the USFS cattle allotments tied to these ranches (Harshaw and Farrell respectfully) (see Diagram 3).

Diagram 3

US Forest Service Allotments

Legend:
Cone of Depression boundary
Green pin – South32 Hermosa Project
Green shaded region – National Forest
Non-shaded region – private land
Black lines – allotment boundaries
Red pins – discharge locations
Red lines – perennial streams



Source: USDA Forest Service

The South32 dewatering practice — pumping groundwater from the aquifer, treating it and discharging it at the Hermosa and Goldbaum discharge locations for the benefit of cattle grazing / ranching operations South32 owns — is officially framed as a "beneficial use" and raises significant legal questions under Arizona water law, federal land management rules, and environmental permitting.

Under Arizona law, all waters are public and subject to appropriation only for beneficial use (A.R.S. § 45-141), which explicitly includes stock watering, mining operations and wildlife / recharge purposes. The USFS Final changes EIS and Draft Record of Decision approved the Goldbaum Canyon and Mowry Wash discharge locations specifically to "recharge the aquifer and provide water for wildlife" as part of the Mine Plan of Operations on National Forest System land, in addition to the existing Harshaw Creek discharge on private land. This is presented as mitigation for the project's Cone of Depression and creating new perennial streams (totaling ~34+km across public / private lands).

The discharged water directly benefits South32 grazing operations using publicly permitted mine water rather than achieving broad, distributed recharge across the full Cone of Depression as needed to offset impacts to USFS land, springs, seeps and downstream users.

The USFS Final EIS water discharge plan confers a specific private benefit to South32's cattle operations and does not fulfill the "beneficial use" intent for public environmental mitigation to achieve broad, distributed recharge across the full Cone of Depression as needed to offset impacts to USFS land, springs, seeps and downstream users.

The USFS is required under NEPA / FLPMA to avoid authorizing public-land discharges that disproportionately benefit a single private operator's grazing allotment.

Vegetation (Final EIS Section 3.15)

The Final EIS does not quantify the number or value of vegetation associated with habitat loss and/or destruction within the Cone of Depression.

A minimum surface water elevation change impact of 10-feet, as described in the Final EIS, will create a large-scale die-off of trees across the Cone of Depression area.

Oak tree roots, for example, usually extend no more than 3 feet below the soil and no more than 2 feet below the surface in shallow soil. Most of the active root mass, including fine roots for nutrient absorption, is concentrated in the top three feet of soil, typically residing 18 inches below the surface.

Wildlife (Final EIS – missing)

The Final EIS contains no wildlife information.

Fire and Fuels (Final EIS Section 3.6)

The Final EIS does not adequately address the increased risk of wildfires across the Cone of Depression. A minimum surface water elevation change impact of 10-feet at the perimeter of the Cone of Depression, as described in the Final EIS, will create a large-scale die-off of vegetation across the Cone of Depression area. The Final EIS does not provide a fire management plan to deal with this increased fire risk, and no provision is being made to augment fire response equipment inventory or provide for additional water sources.

Hydrologic Modeling Inputs, Assumptions and Calibration Data

The Final EIS does not disclose Hydrologic Modeling Inputs, Assumptions and Calibration Data used in the creation of the Final EIS. NEPA requires disclosure of underlying data and the Final EIS does not provide it.

Suggested Remedies to Resolve the Objection

1. Require preparation of a Supplemental Environmental Impact Statement to address omitted analyses of surface–groundwater interaction (trans-migration), perennial stream creation, beneficial use of discharge water, vegetation and wildlife impacts, fire management plan, and substantive requirements.

2. Require the Forest Service to disclose all hydrologic modeling inputs, calibration datasets, assumptions, and sensitivity analyses used to support Final EIS conclusions and re-evaluate impacts based on transparent data.
3. Require an independent scientific peer review panel to evaluate the hydrologic, ecological, and groundwater modeling used in the Final EIS, consistent with NEPA's scientific integrity requirements.
4. Require an independent scientific peer review panel to designate vegetation species (5), wildlife species (6), and springs, seeps, and riparian habitats (7) to be inventoried.
5. Require a baseline inventory of vegetation within the Cone of Depression, the financial value thereof, followed by impact modeling and mitigation and remediation plans, including implementation cost.
6. Require a baseline inventory of wildlife within the Cone of Depression, the financial value thereof, followed by impact modeling and mitigation and remediation plans, including implementation cost.
7. Require a baseline inventory of all springs, seeps, riparian zones, and dependent species within the Cone of Depression, followed by impact modeling and mitigation planning, including implementation cost.
8. Require the Forest Service to develop, analyze, and cost out alternative water discharge locations for each catchment basin within the Cone of Depression.
9. Require a Mitigation Monitoring and Adaptive Management Plan with measurable performance standards, triggers for corrective action, and public reporting requirements.
10. Establish enforceable groundwater drawdown thresholds and require mandatory mitigation actions if monitoring shows impacts exceeding Final EIS projections.
11. Require a Fire Management Plan, including implementation cost, to address increased fuel loads and vegetation mortality associated with groundwater decline.
12. Require a 'beneficial use' determination under FLPMA's multiple-use mandate to determine whether the selected discharge locations disproportionately benefit private grazing operations rather than public environmental mitigation.
13. Require creation of a public hydrologic monitoring dashboard showing real-time groundwater levels, streamflow, and discharge volumes.

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[i] Water can travel laterally and uphill through capillary action (also known as wicking), a process where adhesive forces between water molecules and soil and/or rock, combined with cohesive forces between water molecules.

Key factors influencing lateral and uphill water movement include:

1. Soil and rock properties
2. Distance and gradient
3. Evaporation
4. Water and ground temperature