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Sent via email and BLM National NEPA Register

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Re: Comments on the Environmental Assessment DOI-BLM-CA-D080-2022-0010-EA for the Ash Meadows POO Modification

Dear Ms. Livingood:

These comments are submitted on behalf of the Center for Biological Diversity (the "Center"), Amargosa Conservancy, Friends of the Amargosa Basin, Basin and Range Watch, Western Watersheds Project, Earthworks, National Parks Conservation Association, Conservation Lands Foundation, CalWild, and Sierra Club Toiyabe Chapter regarding the BLM's Environmental Assessment ("EA") for St. Cloud Mining's proposed Ash Meadows Mine Exploratory Drilling Project (the "Project") on public lands in Inyo County, California. These comments are timely submitted on May 3rd, 2024, within the time provided by BLM for public review and comment.

As detailed below, the EA for the Project is incomplete and inadequate. Reliance on this EA would violate a number of federal laws, including the Federal Land Policy Management Act ("FLPMA"), the National Environmental Policy Act ("NEPA"), the Endangered Species Act ("ESA"), and applicable regulations. Specifically, as these comments make clear, the EA violates FLPMA by failing to: analyze the impacts to and objectives of the Amargosa North Area of Critical Concern; adhere to applicable land use plans; prevent unnecessary or undue degradation of public land resources; prevent undue impairment in the California Desert Conservation Area ("CDCA"); and ensure that the Project's ground disturbances would be fully reclaimed. The EA also violates NEPA by failing to: fully analyze direct, indirect and cumulative impacts of the projects on sensitive biological resources, water resources, groundwater dependent ecosystems, water rights, visual resources, and invasive species; fully obtain and review all baseline conditions, including but not limited to baseline information concerning groundwater, environmental justice, and biological resources; explore and evaluate all reasonable alternatives; and include an adequate mitigation plan under NEPA and BLM mining regulations. Last,

because of the Project's potential impacts on ESA-listed species, including those that may be affected by impacts to groundwater, the BLM must initiate consultation with the U.S. Fish and Wildlife Service.

Due to the likely potential for significant impacts, BLM must prepare a full Environmental Impact Statement ("EIS") for this Project or, at a minimum, revise the EA in order to adequately address the deficiencies in its environmental review.

I. Overview of Commenters

The Center is a nonprofit, public interest environmental organization dedicated to the protection of native species and their habitats through science, policy, and environmental law. The Center has over 1.7 million members and online activists throughout California and the United States. The Center has worked for many years to protect and preserve the California Desert ecosystem, including the public lands and sensitive species in the Amargosa River Basin, where the Project is located.

Amargosa Conservancy is a 501(c)(3) non-profit based in Shoshone, California. For over 20 years and with the help of over 1,900 supporters, Amargosa Conservancy has pursued its mission of working toward a sustainable future for the Amargosa River watershed through science, stewardship, and advocacy.

Friends of the Amargosa Basin, is a 501(c)(3) non-profit based in the greater Death Valley region in Shoshone, California. Its mission is to support the diversity of life in the Amargosa Basin by protecting its land, water and beauty. In this aim, Friends of the Amargosa Basin advocates for enhanced land protections, for the intactness of ecosystems and habitats, and for the healthy maintenance of key systems, such as hydrological flows, that sustain our thriving communities and abundant wildlife.

Basin and Range Watch is a non-profit organization working to conserve the deserts of Nevada and California and to educate the public about the diversity of life, culture, and history of the ecosystems and wild lands of the desert. Co Founder Kevin Emmerich has lived in the Death Valley region for 34 years and was employed as a National Park Service Ranger in Death Valley National Park for 12 years.

The mission of Western Watersheds Project (WWP) is to protect and restore western watersheds and wildlife through education, public policy initiatives, and legal advocacy. Staff and members have decades of experience working in the Amargosa River watershed, as well as recreating and exploring these special public lands.

Earthworks protects communities and the environment from the adverse impacts of mineral and energy development while promoting sustainable solutions. Earthworks is driven by its commitment to collaborate with communities on the frontline, using science in innovative ways, and building people power to ensure a more just and livable future. Earthworks fights for clean air, water and land, healthy communities, and corporate accountability. Earthworks works for solutions that protect the Earth's resources, the climate, and our communities. Its work in

California aims to protect communities and ecosystems throughout the California desert, including the Death Valley area, from the impacts of mining and mineral exploration.

The National Parks Conservation Association (NPCA) has been advocating for the California desert for over two decades. NPCA works to protect and enhance our national parks and the public lands that make up the landscape surrounding them. These areas as equally as important in maintaining cultural landscapes and proper ecological function in the California desert overall. NPCA feels strongly that this area must remain as unaltered and intact as possible. The groundwater in this area is vital to the existence of life in Death Valley National Park and NPCA fully supports efforts to preserve and protect this important area.

The Conservation Lands Foundation (CLF) is a non-profit organization that promotes environmental conservation through support of the National Conservation Lands and preservation of the outstanding historic, cultural, and natural resources of those public lands. CLF works to protect, restore, and expand the National Conservation Lands through education, advocacy, and partnerships. CLF achieves its mission by working with and supporting the Friends Grassroots Network (FGN), which includes Amargosa Conservancy and Friends of the Amargosa Basin, organizations located in the Death Valley area. Members of the FGN organize and conduct a wide range of conservation-related activities, including clean-up projects, trail maintenance and rebuilding, riverbank and stream restoration, removal of invasive species, closure of illegal roads, water quality monitoring, enhancement of wildlife habitat, policy advocacy, and improvement of recreational access.

CalWild is a California non-profit that was established in 1976. Its work primarily focuses on protecting and conserving wild lands and waters in California that are managed by the Bureau of Land Management and U.S. Forest Service. CalWild has a particular interest in the Death Valley region and the proposed project because of its active involvement in the region since at least 1994. CalWild (then known as the California Wilderness Coalition) actively participated in seeking the passage of the California Desert Protection Act of 1994, Public Law 111-11 (Omnibus Public Land Management Act of 2009), as well as the California Desert Protection and Recreation Act all of which made substantial conservation designations in the Amargosa region. In addition, CalWild was extremely active in advocating for the designation and/or enlargement of the California Desert National Conservation Lands and Areas of Critical Environmental Concern in the Death Valley region during the years that it participated in the BLM's Desert Renewable Energy and Conservation Plan planning process. CalWild's staff as well as a number of its hundreds of members also enjoy visiting and spending time in the Death Valley region, and in particular in the Amargosa Basin.

The Toiyabe Chapter of the Sierra Club consists of over 6,000 Sierra Club members in Nevada and in the Eastern Sierra, where this project is located. Its members work to protect wildlife and wild places, ensure clean air and water for all, and fight the devastating effects of climate change. Sierra Club’s Toiyabe appreciates being able to comment on the Ash Meadows POO Modification.

II. Factual Background

A. Hydrogeologic setting of the Amargosa River Basin[1]

The Amargosa River Basin is one of the most unique hydrologic provinces in North America. At the southwestern terminus of the Great Basin carbonate rock aquifer system, the springs that define the river are formed from a series of interconnected carbonate aquifers which discharge at the surface at faults.[2] Groundwater flow in the basin trends from north and east to south and west, generally, with recharge from surface and groundwater sources coming from the Spring Mountains in southern Nevada and mountains to the north and east into central Nevada.[3]

The Amargosa River Basin spans two states, Nevada and California. While it is nominally centered around the Amargosa River, the regional groundwater flow system is considerably more extensive than the Amargosa River topographic watershed. This is because precipitation (snowmelt and rainfall) occurring in other mountains of southern and central Nevada flows underground and ultimately recharges the carbonate aquifer underlying the Amargosa River Basin.[4] This area is also called the Death Valley Regional Flow System, and the best available science points to the boundaries from Halford & Jackson 2020 depicted in **Figure 1**.

[1] Because the EA provides no data to substantiate its conclusion that the proposed exploratory drilling is unlikely to encounter groundwater, these comments provide important information regarding groundwater flow in the Amargosa River Basin. The studies and information cited herein should be included in the BLM's analysis of the proposed Project's impacts to groundwater resources.

[2] Zdon A. 2020. 2020 Amargosa State of the Basin Report. Prepared for the Amargosa Conservancy, Shoshone, CA. 197 pp. Page 3.

[3] Zdon 2020, p. 4; Halford KJ & Jackson TR. 2020. Groundwater characterization and effects of pumping in the Death Valley regional groundwater flow system, Nevada and California, with special reference to Devils Hole. U.S. Geological Survey Professional Paper 1863. 178 pp. Page 37.

[4] Planert M & Williams JS. 1995. Ground Water Atlas of the United States: Segment 1, California, Nevada. U.S. Geological Survey Report 730B. 28pp. Page B10; Halford & Jackson 2020, p. 18.

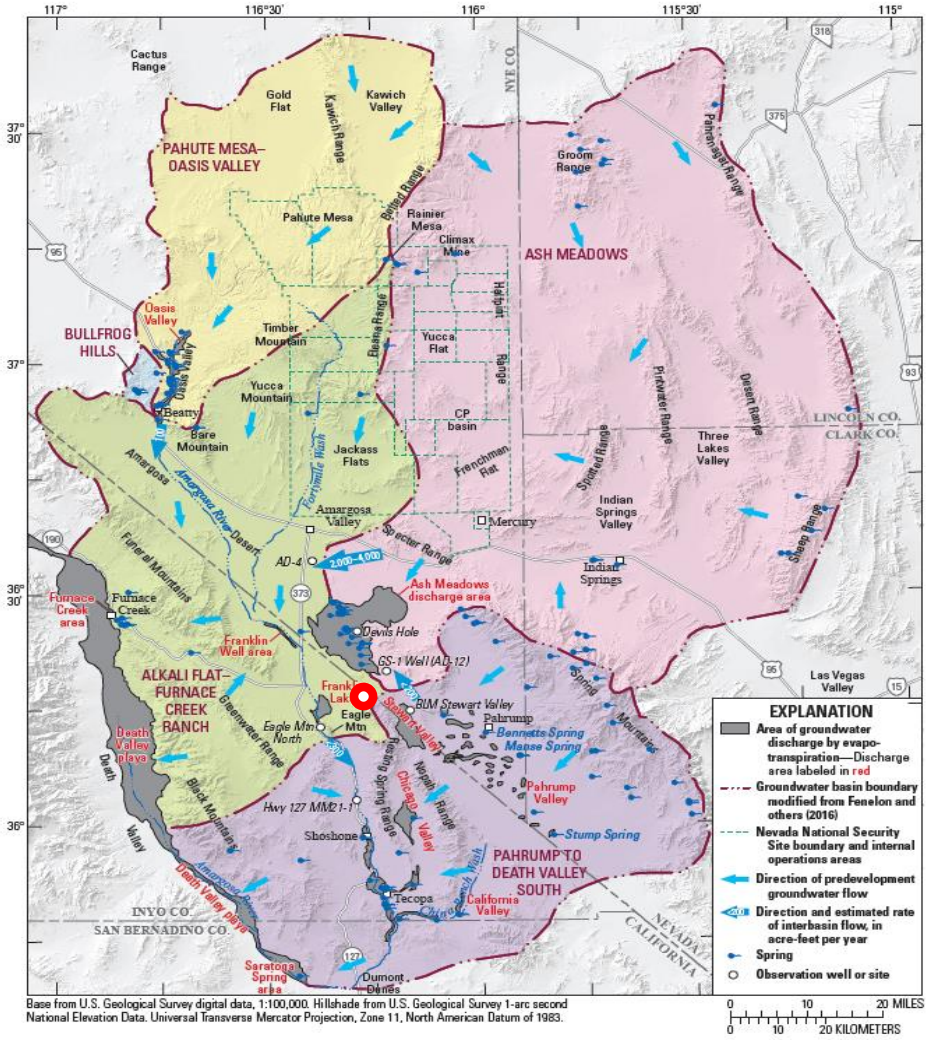

Figure 6. Groundwater basins and major discharge areas in the study area, Nevada and California.

Figure 1: *Death Valley Regional Flow System delineation and pre-development groundwater flow model. The project site is marked with a red dot.*[5]

The Amargosa River is within the Basin and Range geomorphic province, an area characterized by basins of internal drainage with considerable topographic relief. The topography alternates between narrow faulted mountain chains and flat arid valleys or basins. The ranges generally trend north-northwest parallel to the regional geologic structures. The geology of the Amargosa River Basin is very diverse containing Precambrian, Paleozoic, and Mesozoic metamorphic and sedimentary rocks, Mesozoic-aged igneous rocks, Tertiary and Quaternary-aged volcanic rocks, as well as playa, fluvial, and alluvial deposits.[6]

[5] Halford & Jackson 2020, p. 18.

[6] Planert & Williams 1995, p. B9-B10.

In the Amargosa River Basin, the principal water-bearing hydrogeologic units consist of unconsolidated valley fill materials, volcanic rocks (primarily in Nevada near Beatty), and the carbonate rock (limestone) aquifer.[7]

Groundwater flow in carbonate rocks can be very complex. Where solution channels or fractures develop primarily in one direction, permeabilities are highly oriented in specific directions. Therefore, the groundwater movement may not be predictable simply by drawing flow lines perpendicular to regional groundwater surface contours.[8] Although the carbonate rock aquifer likely transmits large volumes of groundwater in the region, permeability is limited to areas of fracturing which proportionally makes up a small portion of the carbonate rock volume.[9] Therefore, despite the potential for wells to obtain large yields from the carbonate rocks, that success is dependent on intersecting those fractured zones.

On a regional basis, the Amargosa River rises as spring flow from the southwest side of Pahute Mesa in Nevada. From there, the river emerges as springs in Oasis Valley and flows generally southwest toward Beatty, Nevada, and after passing through the Amargosa Narrows where water is forced to the surface, enters the Amargosa Desert. A significant tributary flow to the mainstem Amargosa comes from the large number of springs discharging at Ash Meadows. After crossing the border into California, the river generally runs southward along a valley that follows the trend of the Furnace Creek Fault Zone, adjacent to California State Highway 127 near Death Valley Junction. Here, the river meets with Carson Slough, which drains Ash Meadows and is the chief tributary to the Amargosa River in Nevada. The river then continues its southward route passing to the east of the community of Shoshone, where it rises at a number of springs with continued surface flow southward to Tecopa Hot Springs and the Amargosa Canyon. After rounding into Death Valley at Dumont Dunes it rises again at Saratoga Springs in Death Valley National Park, before its final, mostly dry, descent into the terminal sink at Badwater Basin, where it evaporates off.

As described earlier, except during runoff events from rainstorms, the perennial flow in these sections of the river is completely supplied by groundwater.[10] The perennial reach of the tributary springs of the Amargosa River flowing in the Amargosa Desert in Nevada was designated as Ash Meadows National Wildlife Refuge in 1984.[11] The perennial reach of the Amargosa River between Shoshone and Dumont Dunes was designated as a National Wild and Scenic River in 2009.[12]

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[7] Halford & Jackson 2020, p. 53.

[8] Zdon 2020, p. 22.

[9] *Id.*

[10] Zdon 2020, p. 24.

[11] 67 FR 54229

[12] 16 U.S.C. § 1274(a)(196).

Groundwater that flows to Ash Meadows and surfaces as springs and wetlands is sourced from a large area to the north and east, which reaches what's called the Gravity Fault in Amargosa Valley, bringing the water to the surface.[13] There is close hydrologic connectivity between the Ash Meadows groundwater basin and the Alkali Flat-Furnace Creek Ranch groundwater basin to the west of the Gravity Fault, with carbonate water surfacing and transmitting through the basin-fill.[14] There is also likely water contributed to the Ash Meadows groundwater basin from Pahrump Valley via Stewart Valley.[15] This flowpath comes very near to the project area for the Ash Meadows Zeolite Mine ("Project Area").

It was formerly assumed that groundwater within the Middle Amargosa River Basin moved directly through the carbonate aquifer southwest from the Spring Mountains and beneath Pahrump Valley toward the Tecopa – Shoshone – Chicago Valley – California Valley areas.[16] However, based on more recent aqueous geochemistry investigations[17] and detailed mapping by the USGS,[18] it appears that the mechanism by which groundwater moves from the Spring Mountains/Pahrump Valley area toward the Shoshone-Tecopa area may be more complicated. Groundwater flow paths toward the Middle Amargosa River Basin include: Spring Mountain recharge moving toward Ash Meadows through carbonate rocks and valley fill, then southward toward the Shoshone-Tecopa area; via carbonate rocks at the north end of the Nopah Range into Chicago Valley then toward the Amargosa River Basin near Shoshone and Tecopa; and from Pahrump Valley via the shallow divide into California Valley then toward the Amargosa River.[19]

These deeper flowpaths are most likely influential for the spring flows and discharge to the alluvium. The deeper flowpath beneath the northern Nopah Range was previously discussed[20] as a potential source for Twelvemile Spring. These flowpaths are consistent with those previously proposed by others. As described earlier, beyond the Middle Amargosa River

[13] Halford & Jackson 2020, p. 18.

[14] Halford & Jackson 2020, p. 17.

[15] Zdon 2020, p. 17.

[16] Faunt CC, D'Agnese FA, and O'Brien GM. 2004. Hydrology. Chapter in Belcher, W.R., ed., 2004, Death Valley regional ground-water flow system, Nevada and California—Hydrogeologic framework and transient ground-water flow model: U.S. Geological Survey Scientific Investigations Report 2004-5205, 408 pp. Page 156.

[17] Zdon A. 2014. State of the basin report, Amargosa River basin, Inyo and San Bernardino Counties, California and Nye County, Nevada: Report prepared for the Nature Conservancy, Pasadena, CA. 90 pp. Page 30; Zdon, A., M. Davisson and A. Love. 2015. Testing the Established Hydrogeologic Model of Source Water to the Amargosa River Basin, Inyo and San Bernardino Counties, California. Environmental Forensics 16(4): 344-355.

[18] Workman JB, Menges CM, Page WR, Taylor EM, Ekren EB, Rowley PD, Dixon GL, Thompson RA, & Wright LA. 2002. Geologic Map of the Death Valley ground-water model area, Nevada and California. U.S. Geological Survey Miscellaneous Field Studies MF-2381.

[19] Zdon 2020, p. 17.

[20] Zdon 2014, p. 30.

Basin, groundwater moves west toward the Death Valley Basin, then north, and augmented by underflow from the Owlshead Mountains area, to the Death Valley playa at Badwater.

While Halford & Jackson 2020 (also known as DV3) provides the best available science for ascertaining the effects of pumping in the Amargosa Desert area on Devils Hole and environs, it is not sufficient for understanding the effects of pumping on the Death Valley Regional Flow System as a whole.[21] In particular, it seems that DV3 underestimates flow down-gradient from Ash Meadows and Alkali Flat to the Middle Amargosa Basin in Shoshone.[22] Well ARHS-01, drilled in the river channel north of Shoshone, revealed a veritable river of 35°C water 111 feet down.[23] This directly challenges the conceptualization in DV3 that there is negligible flow southward from Ash Meadows and Alkali Flat. This has significant ramifications on the discussion in the EA about hydrogeology in the region of the southern Amargosa Desert, where the Ash Meadows Zeolite Mine is located, since there is evidence that groundwater in this area is in fact flowing through the area southward toward the Middle Amargosa Basin and the Wild and Scenic River.

B. Endemic Biodiversity of the Amargosa River Basin

There are over 69 groundwater dependent endemic species in the Amargosa River Basin, the most of any watershed in North America.[24]

Ash Meadows National Wildlife Refuge is one epicenter of this biodiversity, with 26 species endemic to the Refuge and another dozen or so which are endemic to the watershed. There are twelve federally listed species at Ash Meadows:[25]

Endangered:
Devils Hole pupfish (*Cyprinodon diabolis*)
Ash Meadows Amargosa pupfish (*Cyprinodon nevadensis mionectes*)
Warm Springs Amargosa pupfish (*Cyprinodon nevadensis pectoralis*)
Ash Meadows speckled dace (*Rhinichthys osculus nevadensis*)
Amargosa niterwort (*Nitrophila mohavensis*)[26]

[21] Zdon A. & McNab W. 2022. Applications of Death Valley 3 Groundwater Model for Understanding Area Flow System Components, County of Inyo – Yucca Mountain. Prepared for Inyo County Planning Department, Independence, CA. 25 pp.

[22] *Id.*, p. 4-5.

[23] Zdon 2014, Table 2-1, p. 5.

[24] See App'x A.

[25] U.S. Fish and Wildlife Service. 1990. Recovery plan for the endangered and threatened species of Ash Meadows, Nevada. U.S. Fish and Wildlife Service, Portland, Oregon. 123 pp.

[26] The Amargosa niterwort is also protected under the California Endangered Species Act ("CESA"). Cal. Code Regs. tit. 14, § 670.2(a)(9)(B).

Threatened:
Ash Meadows naucorid (*Ambrysus amargosus*)
Ash Meadows milkvetch (*Astragalus phoenix*)
Ash Meadows sunray (*Enceliopsis nudicaulis* var. *corrugata*)
Ash Meadows gumplant (*Grindelia fraxino-pratensis*)
Ash Meadows ivesia (*Ivesia kingii* var. *eremica*)
Ash Meadows blazing star (*Mentzelia leucophylla*)
Spring-loving centaury (*Zeltnera namophila*)

The Refuge has a mixture of spring habitats, riparian habitats, mesquite bosque and cottonwood-willow gallery forests, open meadow-wetlands, and upland habitats. The springs in the Refuge collectively discharge approximately 17,000 acre-feet per year of water to support those habitats.[27]

Just downstream from Ash Meadows is Lower Carson Slough on the California/Nevada state line. Lower Carson Slough is a seasonally inundated alkali flat. Lower Carson Slough has the stronghold population of the Amargosa niterwort,[28] as well as populations of the Ash Meadows gumplant and the Spring-loving centaury.[29]

Positioned to the east of Lower Carson Slough, on the north slope of the Resting Spring Range and just on the Nevada side of the border is Grapevine Spring. Grapevine Spring is perched along a small escarpment and extends approximately one half mile east to west, discharging surface water and supporting a small riparian ecosystem including wetlands and mesquite. The Ash Meadows gumplant and the spring-loving centaury have both been documented at Grapevine Spring (**Figure 2**).

[27] Mayer T, Stachan S, Prososki J, Pilson S. 2014. Ash Meadows National Wildlife Refuge Water Resource Inventory and Assessment. U.S. Fish and Wildlife Service. 47 pp.

[28] Fraga NS, Miller AL, De Groot SJ, Lee C, Lund CL, and Moore-O'Leary K. 2021. Status of the Amargosa niterwort (Amaranthaceae) in California and Nevada. California Fish and Wildlife Special CESA Issue:78-95. doi.org/10.51492/cfwj.cesasi.4.

[29] Fraga NS, Jesus M, Sale B, Perez A, Soto A. 2022. Recovery actions and conservation strategies for three federally listed plant species in the Amargosa River Basin, Inyo County, California: Amargosa niterwort (Nitrophila mohavensis; Amaranthaceae), Ash Meadows gumplant (Grindelia fraxinipratensis; Asteraceae), and spring loving centaury (Zeltnera namophila; Gentianaceae). Report prepared for California Department of Fish and Wildlife- Desert Inland Region 6. 58 pp.

Figure 2*: Ash Meadows gumplant (Grindelia fraxino-pratensis) at Grapevine Spring, photo taken October 22, 2021 at 36.3301081, -116.3125319.*

Shoshone, California is the next major oasis on the River downstream from Ash Meadows, where several spring discharge upwards of 1,000 gallons per minute, supporting a small community and an extensive mesquite bosque and wetland. Shoshone is home to the rare Shoshone pupfish (*Cyprinodon nevadensis shoshone*) (a California Species of Special Concern).[30] It is also home to a population of the Amargosa vole (*Microtus californicus scirpensis*), which is federally listed as endangered.[31]

Downstream in Tecopa is the largest population of the Amargosa vole. It is one of the most endangered mammals in North America, with its population of just a few hundred barely hanging on in the Tecopa Marsh.[32] Below Tecopa the River constricts into a relatively narrow canyon, with surface flow for 12 miles down to Dumont Dunes. Here lives the Amargosa pupfish

[30] Shoshone Pupfish, *Cyprinodon nevadensis Shoshone*, https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=104375&inline; U.S. Dep't of the Interior, Bureau of Land Management, 2019. Designation of Sensitive Species, CA IB-2020-006. https://www.blm.gov/policy/ca-ib-2020-006; U.S. Dep't of the Interior, Bureau of Land Management. 2019. Special Status Animals in California, Including BLM Designated Sensitive Species. https://www.blm.gov/sites/default/files/docs/2023-10/BLM-CA_WILDLIFE_Special_Status%20_Species_November_2019_508.pdf; Castleberry DT, Williams JE, Sato GM, Hopkins TE, Brasher AM, Parker MS. Status and Management of Shoshone Pupfish, Cyprinodon nevadensis shoshone (Cyprinodontidae), at Shoshone Spring, Inyo County, California. Bulletin of Southern California Academy of Sciences 89(1): 19-25.

[31] 50 C.F.R. § 17.11.

[32] Castle ST, Foley P, Clifford DL, Foley J. 2020. A stochastic structured metapopulation model to assess recovery scenarios of patchily distributed endangered species: Case study for a Mojave Desert rodent. PLoS ONE 15(8): e0237516. https://doi.org/10.1371/journal.pone.0237516.

(*Cyprinodon nevadensis amargosae*) (a California Species of Special Concern and BLM Special Status Species)[33] and the Amargosa Canyon speckled dace (*Rhinichthys osculus ssp. 1*) (a California Species of Special Concern and BLM Special Status Species),[3435] both of which are vulnerable to perturbations in the groundwater system.[36] Below the River flows into Death Valley, where there are numerous other endemic species.[37]

C. Water Rights on the Amargosa

Ash Meadows is situated in Nevada Hydrographic Basin 230 (Amarosa Desert). Basin 230 is a part of a combined basin management unit encompassing Basin 225 (Mercury Valley), 226 (Rock Valley), 227A (Fortymile Canyon-Jackass Flats), 228B (Fortymile Canyon-Buckboard Mesa), 228 (Oasis Valley), 229 (Crater Flat), and 230 (Amargosa Desert). The total perennial yield for these basins combined is set at 24,000 acre feet per year.[38] Total allocated groundwater rights are 26,744 acre feet per year, with 24,782 in Basin 230,[39] 1,216 in Basin

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[33] Amargosa River Pupfish, *Cyprinodon nevadensis amargosae*, https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=104269&inline; U.S. Dep't of the Interior, Bureau of Land Management. 2019. Designation of Sensitive Species, CA IB-2020-006. https://www.blm.gov/policy/ca-ib-2020-006; U.S. Dep't of the Interior, Bureau of Land Management. 2019. Special Status Animals in California, Including BLM Designated Sensitive Species. https://www.blm.gov/sites/default/files/docs/2023-10/BLM-CA_WILDLIFE_Special_Status%20_Species_November_2019_508.pdf.

[34]Amargosa Canyon Speckled Dace, *Rhinichthys osculus ssp.*, https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=104264&inline; U.S. Dep't of the Interior, Bureau of Land Management. 2019. Special Status Animals in California, Including BLM Designated Sensitive Species. https://www.blm.gov/sites/default/files/docs/2023-10/BLM-CA_WILDLIFE_Special_Status%20_Species_November_2019_508.pdf.

[35] New taxonomic information concerning the endangered Ash Meadows speckled dace (*Rhinichthys nevadensis nevadensis*) extends the range of the federally listed subspecies to include the Amargosa Canyon population of speckled dace along with two other isolated populations in the Death Valley region. This new research concludes that the Ash Meadows population, along with the Amargosa Canyon, Owens Valley, and Oasis Valley populations, belong to a single subspecies, properly classified as the endangered *R. osculus nevadensis*. Moyle PB, Buckmaster N, & Su Y. 2023. Taxonomy of the Speckled Dace Species Complex (Cypriniformes: Leuciscidae, Rhinichthys) in California, USA. *Zootaxa* 5249(5): 501-539.

[36] Moyle PB, *et al*. 2023; Stillwater Sciences. 2021. Amargosa River Canyon Fisheries Monitoring 2020 Report. Prepared by Stillwater Sciences, Davis, California for Bureau of Land Management, Barstow, California.

[37] U.S. National Park Service, Death Valley, Endemic Plants and Animals (last accessed May 2, 2024), https://www.nps.gov/deva/learn/nature/endemic-plants-and-animals.htm.

[38] Nevada Division of Water Resources [NDWR]. 2023a. Hydrographic Area Summary for Basin 230 - Amargosa Desert. https://water.nv.gov/DisplayHydrographicGeneralReport.aspx?basin=230.

[39] *Id.*

228,[40] and 746 in Basin 229.[41] Thus the basin is overappropriated by 2,744 acre feet per year. Actual pumpage in water year 2022 was 17,704 acre-feet, including exempt domestic wells.[42] When data from DV3 simulations showing anticipated groundwater declines in Ash Meadows at current pumping levels is considered,[43] it strongly implies that the 24,000 acre foot established as the perennial yield of the combined basins far exceeds the actual recharge rate.

The U.S. Fish and Wildlife Service has approximately 17,000 acre-feet of certificated water rights from the state of Nevada at Ash Meadows National Wildlife Refuge – the total surface discharge from the springs within the Refuge.[44]

However, there are also significant federal reserved water rights on the River. For instance, Devils Hole, a nearby unit of the National Park Service, has an established federally reserved water right. The principle of federal reserved water rights is that when the federal government sets aside lands for a particular purpose, they reserve a sufficient amount of unappropriated water to support that purpose.[45] The concept of federal reserved water rights has already played an important role in the management of water in the Amargosa Basin, as the landmark Supreme Court ruling in *Cappaert v. United States*[46] found that the government could reserve surface or groundwater rights in order to provide for the preservation of a primary purpose for designation, in this case maintaining sufficient groundwater levels to provide habitat for the Devils Hole pupfish. This ruling, which has been highly consequential for the management of water resources in the western United States, ultimately led to a series of court decisions and state engineer orders which limited new or change applications in Basin 230 to protect Devils Hole.[47]

However, Devils Hole is not the only significant federal reserved water right of concern in the Amargosa Basin. Death Valley National Park (other than Devils Hole), the Amargosa Wild and Scenic River, the Nopah Range Wilderness, and the Kingston Range Wilderness are areas with federal reserved water rights along the Amargosa River.

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[40] Nevada Division of Water Resources [NDWR]. 2023b. Hydrographic Area Summary for Basin 228 – Oasis Valley. https://water.nv.gov/DisplayHydrographicGeneralReport.aspx?basin=228.

[41] Nevada Division of Water Resources [NDWR]. 2023c. Hydrographic Area Summary for Basin 229 – Crater Flat. https://water.nv.gov/DisplayHydrographicGeneralReport.aspx?basin=229.

[42] Nevada Division of Water Resources [NDWR]. 2023d. Amargosa Desert Hydrographic Basin 14-230 Groundwater Pumpage Inventory for Water Year 2022.

[43] Halford & Jackson 2020.

[44] Mayer et al. 2014.

[45] See *Winters v. United States* 207 U.S. 564 (1908), affirming federal reserved water rights; *Arizona v. California* 373 U.S. 546 (1963), and extending reserved water rights to federal lands.

[46] 426 U.S. 128 (1976).

[47] Nevada State Engineer Order 1197 (2008); Nevada State Engineer Order 1197a (2018); Nevada State Engineer Order 1330 (2022).

Notable is the Amargosa Wild and Scenic River, which was designated by act of Congress on March 30, 2009, and amended with additional protected mileage on March 12, 2019.[48] The Amargosa Wild and Scenic River protects 29.7 river miles from the town of Shoshone, California to where the River crosses highway 127 into Death Valley National Park near Dumont Dunes, including Tecopa Marsh and the Amargosa Canyon. The Wild and Scenic Rivers Act declares it to be the policy of the United States "that certain select rivers… shall be preserved in free-flowing condition, and that they… shall be protected for the benefit and enjoyment of present and future generations."[49] Wild and Scenic River designation entails or implies a federal reserved water right sufficient to accomplish the purposes of the Act.[50]

Two California desert Wilderness Areas also have federal reserved water rights. The Kingston Range Wilderness and the Nopah Range Wilderness were designated on October 31, 1994 in the California Desert Protection Act (CDPA).[51] The CDPA contained specific language creating federal reserved water rights to accomplish the purposes of the Act: "with respect to each wilderness designated by this Act, Congress hereby reserves a quantity of water sufficient to fulfill the purposes of the Act. The priority date of such reserved water rights shall be October 31, 1994."[52] The Kingston Range Wilderness includes approximately 5 miles of the Amargosa River within the Amargosa Canyon. The Nopah Range Wilderness includes Twelvemile Spring in Chicago Valley.

While there is a relatively small human population in the Shoshone-Tecopa area in California, there are private entities which hold water rights and depend on them for their business and survival. Shoshone Village is an eco-resort which is dependent on sustained flows from Shoshone Spring for their business. Tecopa Hot Springs Campground and Pools, Delight's Resort, Tecopa Palms Resort and Tecopa Hot Springs Resort are four enterprises in Tecopa which derive their whole business from sustained flows from hot springs and wells in Tecopa. China Ranch Date Farm is a thriving agricultural operation under a permanent conservation easement from The Nature Conservancy which relies on sustained flows from Willow Creek, a tributary of the Amargosa River, for survival.

D. Environmental Justice in the Amargosa River Basin

The Amargosa Basin is home to some 40,000 people in the communities of Beatty, Amargosa Valley, Crystal, and Pahrump in Nevada; and Charleston View, Death Valley Junction, Shoshone, Tecopa, and Furnace Creek in California. Per 2020 census data, 93.4% of Amargosa Basin residents live in Pahrump, Nevada. All of these people are reliant on the same surface and/or groundwater that comprise the river for their survival. These communities tend to be socio-economically disadvantaged, with poverty rates 15-30% above the national average,

[48] 16 U.S.C. § 1274 (a)(196).

[49] 16 U.S.C. § 1271.

[50] 16 U.S.C. § 1284; *see also Potlatch Corp. v. United States*, 12 P.3d 1256 (Idaho 2000).

[51] Pub. L. 103–433, title I, § 102(32) & § 102(40), Oct. 31, 1994, 108 Stat. 4477.

[52] 16 U.S.C. § 410aaa-76(a).

and median household incomes 30-55% less than the national average. Tourism based around the Amargosa River and the protected places in the Amargosa Basin is a main economic driver for the communities here. Agriculture is also a significant component of the economy in Amargosa Valley. And Pahrump derives significant economic benefit acting as a bedroom community for Las Vegas. In all cases, sustained supplies of groundwater, and sustained flow at the surface water features that groundwater creates, are essential to the continued economic productivity and livelihoods of people in the Amargosa Basin.

III. The EA Violates FLPMA

A. The EA Fails to Address the Amargosa North Area of Critical Environmental Concern's Standards.

The Amargosa North Area of Critical Environmental Concern ("ACEC"), which also includes lands designated as California Desert National Conservation Lands ("CDNCL") in 2016, are managed to protect ground water and biological values, including habitat quality, populations of sensitive species, and landscape connectivity while providing for compatible public uses.[53]

The Federal Land Policy Management Act ("FLPMA") requires that public lands be managed under multiple use principles "*except* that where a tract of such public land has been dedicated to specific uses according to any other provisions of law it shall be managed in accordance with such law."[54] Because the Project is located within the Amargosa North ACEC, it will significantly impact nationally significant values therein, including cultural, ecological, and scientific resources of this area. These values and the allowable uses/management actions are detailed in the DRECP Appendix B regarding the Kingston-Amargosa Subregion ACEC Units.

Although the EA references the overarching goals of the Amargosa North ACEC, it fails to consider how these goals would be met if the Project is approved.[55] Applicable Objectives for the Amargosa North ACEC lands are also not analyzed in the EA. By way of example, the EA fails to adequately address or analyze the following Objectives:

- Retain existing flow regime and volume;
- Conserve and protect water resources essential to maintenance of other valued resources and habitats;
- Conserve soils and soil properties in the unit;
- Maintain or improve condition of vegetation communities;
- Monitor the condition of vegetation to inform adaptive management of vegetation in the unit;
- Protect populations and habitats of listed and rare plant species;

[53] EA at 19.

[54] 43 U.S.C. § 1732(a) (emphasis added).

[55] EA at 19–20.

- Protect threatened and endangered (listed) species and their habitat by preventing irreparable damage;
- Limit motorized vehicle impacts; and
- Protect biological and cultural resources.[56]

Indeed, the EA fails to address or analyze *any* of objectives for the Amargosa North ACEC: Section 3.1.3 of the EA, titled "Environmental Impacts – Alternative B (Proposed Action)" is blank.[57]

B. The EA Violates FLPMA By Failing to Adhere to Applicable Land Use Plans.

FLPMA is the basic "organic act" for management of the BLM public lands. In accordance with FLPMA, BLM must develop land use plans for the public lands under its control,[58] and all resource management decisions must "conform to the approved [land use] plan."[59] BLM must "take appropriate measures . . . to make operations and activities under existing permits, contracts, cooperative agreements or other instruments for occupancy and use, conform to the approved [land use] plan . . . ."[60]

If a proposed action is not clearly consistent with the land use plan, BLM must either deny the proposed action or amend the plan, complying with NEPA and allowing for public participation.[61] As the IBLA has recognized, this "consistency" requirement reflects the mandatory duty to fully and strictly comply with the governing land management plans.[62]

Complying with the governing land management plan is required by both the general land use conformity requirement of FLPMA as well as BLM's duty under FLPMA to "prevent

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[56] U.S. Dep't of the Interior, Bureau of Land Management, DRECP, Appendix B, Kinston-Amargosa Subregion ACEC Units, https://eplanning.blm.gov/public_projects/lup/66459/133476/163150/Kingston_Amargosa_Subregion_AppB.pdf.

[57] EA at 20.

[58] 43 U.S.C. § 1712.

[59] *Id*. § 1732(a); 43 C.F.R. §1610.5-3(a). *See also Norton v. S. Utah Wilderness Alliance*, 542 U.S. 55, 69 (2004) (this requirement "prevent[s] BLM from taking actions inconsistent with the provisions of a land use plan"); *Ore. Natural Res. Council Fund v. Brong*, 492 F.3d 1120, 1128 (9th Cir. 2007) (holding that BLM project components "are inconsistent with the Plan and, consequently, violate FLPMA."); *W. Watersheds Project v. Salazar*, 843 F.Supp.2d 1105, 1114 (D. Id. 2012) (reversing BLM decisions as inconsistent with land use plans); *W. Watersheds Project v. Bennett*, 392 F.Supp.2d 1217, 1227 (D. Id. 2005) (same).

[60] *See* 43 C.F.R. § 1610.5-3(b).

[61] *See* 43 C.F.R. §§ 1610.5-3, 1610.5-5. *See also National Parks and Conservation Ass'n v. FAA*, 998 F.2d 1523, 1526 (10th Cir. 1993) (nonconforming land use required RMP amendment).

[62] *See, e.g., Jenott Mining Corp*., 134 IBLA 191, 194 (1995); *Uintah Mountain Club*, 112 IBLA 287, 291 (1990); *Marvin Hutchings v. BLM*, 116 IBLA 55, 62 (1990); *Southern Utah Wilderness Alliance*, 111 IBLA 207, 210-211 (1989).

unnecessary or undue degradation" ("UUD") of the public lands.[63] Conditions, activities, or practices that do not comply with the performance standards in 43 C.F.R. § 3809.420 are, by BLM's own definition, UDD.[64] The performance standards require that "operations and post-mining land use . . . comply with the applicable BLM land-use plans."[65] Thus, failure to comply with the land-use plan constitutes UUD.

Mining operations are not exempt from FLPMA's requirement to comply with applicable land use plans. For example, in in *Western Exploration v. U.S. Dept. of the Interior*, 250 F. Supp. 3d 718, 747 (D. Nev. 2017), the court held that in the mining context, as well as for other potential uses of public land, resource management plan standards to protect the Greater Sage Grouse must be met to comply with BLM's duty to "prevent unnecessary or undue degradation" under FLPMA. The court rejected a challenge from the mining industry and others and agreed with the Interior Department that meeting the plan's requirements was part of the UUD mandate:

> Defendants [Interior Department et al.] contend that the "unnecessary or undue degradation" standard in the statute does not preclude the agency from establishing a more protective standard that seeks improvements in land conditions that "go beyond the status quo." The FEIS states that "if actions by third parties result in habitat loss and degradation, even after applying avoidance and minimization measures, then compensatory mitigation projects will be used to provide a net conservation gain to the sage-grouse." The Agencies' goals to enhance, conserve, and restore sage-grouse habitat and to increase the abundance and distribution of the species, they argue, is best met by the net conservation gain strategy because it permits disturbances so long as habitat loss is both mitigated and counteracted through restorative projects. If anything, this strategy demonstrates that the Agencies allow some degradation to public land to occur for multiple use purposes, but that degradation caused to sage-grouse habitat on that land be counteracted. The Court fails to see how BLM's decision to implement this standard is arbitrary and capricious.[66]

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[63] 43 U.S.C. §1732(b).

[64] 43 C.F.R. § 3809.5 (defining UUD as including failure to comply with "Federal and state laws related to environmental protection."). As BLM regulations make clear, "[a]ll future resource management authorizations and actions … shall conform to the approved plan." 43 C.F.R. §1610.5-3(a). BLM defines "conformity" as requiring that "a resource management action shall be specifically provided for in the plan, or if not specifically mentioned, shall be clearly consistent with the terms, conditions, and decisions of the approved plan or plan amendment." *Id.* §1601.0-5(b). "Consistent" is defined as requiring that decisions "will adhere to the terms, conditions, and decisions of officially approved and adopted resource related plans." *Id.* §1601.0-5(c).

[65] *Id.* § 3809.420(a)(3).

[66] *Western Exploration*, 250 F. Supp. 3d at 747 (internal citations omitted). *See also Mineral Policy Center v. Norton*, 292 F. Supp. 2d 30, 49 (D.D.C. 2003) ("when BLM receives a proposed plan of operations under the 2001 rules, pursuant to Section 3809.420(a)(3), it assures that the proposed mining use conforms to the terms, conditions, and decisions of the applicable land use plan, in full compliance with FLPMA's land use planning and multiple use policies.").

The BLM's mitigation policy, as detailed by the Interior Solicitor, acknowledges the need to ensure compliance with a resource management plan as part of its mitigation duties under the FLPMA UUD standard. In discussing the previous rulemaking with approval, the Solicitor reiterated "the operator's responsibility to comply with applicable land use plans and BLM's responsibility to specify necessary mitigation measures."[67] The 2016 Mitigation Opinion was temporarily revoked in 2017, but was subsequently reinstated by the Solicitor.[68] This new Opinion noted that the 2017 Opinion (M-37046) "expresses no views regarding the merits of the legal analysis or conclusions contained in the [2016 Opinion]."[69]

The Solicitor noted that "in the hardrock mining context, the BLM has long recognized that the UUD requirement creates a 'responsibility [for the BLM] to specify necessary mitigation measures' when approving mining plans of operations."[70] "The BLM regulations addressing surface management of hardrock mining operations on public lands have consistently included mitigation as a requirement for preventing UUD, including as part of the general performance standards in the current regulations."[71]

As detailed below, the proposed Project does not comply with the management requirements and prescriptions of the DRECP.

1. Fugitive Dust Impacts to Air Quality (LUPA-AIR-2 & 3)

"Because fugitive dust is the number one source of PM10 and PM2.5 emissions in the Mojave and Sonoran Desert," CMA LUPA-AIR-3 requires the BLM to analyze fugitive dust impacts to air quality for all activities/projects requiring an EA and EIS.[72] The requisite analysis regarding the Project's fugitive dust impacts was not done here. Instead, the EA simply mentions dust minimization measures. Specifically, the EA notes a cap on vehicle speeds to "minimize the potential for fugitive dust emissions to maintain operational safety and protect wildlife present" and the utilization of water as needed to control drill cuttings dust.[73] The EA is void of any baseline information or analysis regarding the impacts fugitive dust will have on air quality.

The lack of analysis is underscored by the EA's reference to the Project's compliance with Imperial County Air District rules for fugitive dust emissions and greenhouse gas emissions.[74] As LUPA-AIR-2 requires, "air quality standards for fugitive dust may not exceed

[67] M-37039, The Bureau of Land Management's Authority to Address Impacts of its Land Use Authorizations through Mitigation, 20, n. 115 (Dec. 21, 2016) (Mitigation Opinion).

[68] M-37075, Withdrawal of M-37046 and Reinstatement of M-37039 (April 15, 2022).

[69] M-37075 at 2.

[70] M-37039, at 19 (citations omitted).

[71] *Id.*

[72] EA App'x A at 40.

[73] EA at 13.

[74] EA at 13; *see also* § VII, *infra*.

local standards and requirements."[75] There is no indication that the dust emission standards applicable to Inyo County were considered or that the requisite analysis was conducted to assess compliance with those standards.

2. General Closure and Decommissioning Standards (LUPA-BIO-8)

In accordance with CMA LUPA-BIO-8, all "activities that are required to close and decommission the site . . . will specify and implement project-specific closure and decommissioning actions that meet the approval of BLM." One of the mandatory closure and decommissioning actions includes timing, *e.g.*, "criteria for triggering closure and decommissioning actions."[76]

Here, the EA notes that in order to prevent unnecessary or undue degradation of public lands, "concurrent reclamation is required, including proper abandonment of each drill hole prior to continuation of exploration."[77] However, the EA fails to adequately address when the remainder of the requisite reclamation, *e.g.*., drying and backfilling of sumps and revegetation, would be triggered.[78] Since the drill holes lie within the overland routes, it's unclear when the drill holes will actually be revegetated.

3. Groundwater Impacts Near Sensitive Protected Areas (LUPA-SW-33 & 35)

The EA fails to comply with CMA LUPA-SW-33 and LUPA-SW-35, which are intended to protect sensitive groundwater dependent resources adjacent to proposed actions within the CDCA.

LUPA-SW-33 applies to any development scenario within 25 miles of Devils Hole; the Project Area is less than 8 miles from Devils Hole. This CMA requires that the project "include a plan to achieve *zero-net* or *net-reduced* groundwater pumping to reduce the risk of adversely affecting senior federal reserved water rights, the designated critical habitat of the endangered Devils Hole pupfish, and the free-flowing requirements of the Wild and Scenic Amargosa River."[79] The EA in Appendix A incorrectly states that this CMA does not apply because the "[p]roject is not located in or near the area specified in the CMA." This is incorrect. The Project will include some impacts to groundwater, due to pumping for supplying an undisclosed amount of water for drilling and dust suppression, and potentially due to intersecting the water table by drilling. Thus, the EA fails to comply with FLPMA by not applying CMA LUPA-SW-33. The Project must include a plan to offset any pumping of water within 25 miles of Devils Hole. If drilling water is sourced from Pahrump Valley, then it's just as likely that CMA LUPA-SW-34 would apply.

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[75] EA App'x A at 39.

[76] EA App'x A at 8.

[77] EA at 17.

[78] EA at 15–18.

[79] EA App'x A at 70.

LUPA-SW-35 applies to "activities in the vicinity of Death Valley National Park…"[80] The project site is within 8 miles of Devils Hole, a satellite parcel of Death Valley National Park, and is also within 8 miles of Death Valley National Park proper, with Park Service lands across the highway from Eagle Mountain lying within 8 miles of the project site. This CMA entails a number of required disclosures and analyses including analyzing impacts on water balances of groundwater basins, mapping all potentially impacted surface waters, analysis of impacts on surface waters, and analysis of any changes to drainage or other water flow variables. The CMA also requires that "BLM will consult with the National Park Service on this process." The EA fails to comply with FLPMA by not applying CMA LUPA-SW-35. None of the required measures happened and no consultation with the Park Service occurred.

4. Groundwater Supply Assessment (LUPA-SW-23)

The BLM's environmental review must provide a Groundwater Supply Assessment in conjunction with its analysis of the proposed Project under NEPA. By failing to do so here, the EA does not comply with the Plan requirements and FLPMA. The BLM does not provide an explanation for its assertion that the Groundwater Supply Assessment CMA, LUPA-SW-23, does not apply to the Project. That said, it generally asserts that groundwater is "not affected to a degree that detailed analysis is required" and that other groundwater CMAs are not applicable because the land use does not occur on the project site.[81] BLM's response leaves unaddressed critical questions regarding whether and how the use of groundwater for this Project may affect resources and whether mitigation is needed.

As CMA LUPA-SW-23 states:

> A Water (Groundwater) Supply Assessment shall be prepared in conjunction with the activity's NEPA analysis and prior to an approval or authorization. This assessment must be approved by the BLM in coordination with USFWS, CDFW, and other agencies, as appropriate, prior to the development, extraction, injection, or consumptive use of any water resource. The purpose of the Water Supply Assessment is to determine whether over-use or over-draft conditions exist within the project basin(s), and whether the project creates or exacerbates these conditions. The Assessment shall include an evaluation of existing extractions, water rights, and management plans for the water supply in the basin(s) (i.e., cumulative impacts), and whether these cumulative impacts (including the proposed project) can maintain existing land uses as well as existing aquatic, riparian, and other water-dependent resources within the basin(s) (i.e., cumulative impacts), and whether these cumulative impacts (including the proposed project) can maintain existing land uses as well as existing aquatic, riparian, and other water-dependent resources within the basin(s).[82]

[80] EA App'x A at 71.

[81] EA at 12; EA App'x A at 64, 67.

[82] DRECP, LUPA at 142–43.

The Water Supply Assessment must also address:

- Estimates of the total cone of depression considering cumulative drawdown from all potential pumping in the basin(s), including the project, for the life of the project through the decommissioning phase
- Potential to cause subsidence and loss of aquifer storage capacity due to groundwater pumping
- Potential to cause injury to other water rights, water uses, and landowners
- Changes in water quality and quantity that affect other beneficial uses
- Effects on groundwater dependent vegetation and groundwater discharge to surface water resources such as streams, springs, seeps, wetlands, and playas that could impact biological resources, habitat, or are culturally important to Native Americans
- Additional field work that may be required, such as an aquifer test, to evaluate site specific project pumping impacts and if necessary, establish trigger points that can be used for a Groundwater Water Monitoring and Mitigation Plan
- The mitigation measures required, if there are significant or potentially significant impacts on water resources include but are not limited to, the use of specific technologies, management practices, retirement of active water rights, development of a recycled water supply, or water imports.[83]

The EA should have addressed the above regardless of whether groundwater is obtained on-site or off-site. Its failure to do so violates the Plan requirements, FLPMA, and NEPA.

5. Desert Tortoise (LUPA-BIO-IFS-1)

Per the DRECP, the Project Area is located within the "DVNP to Nevada Test Site" desert tortoise linkage corridor.[84] It has been described by the USFWS Desert Tortoise Recovery Office as a "least-cost corridor" linking existing tortoise conservation areas, making it a priority for conservation.[85] However, the EA fails to apply CMA LUPA-BIO-IFS-1, incorrectly stating that the Project is "not on federal lands with this designation."[86] LUPA-BIO-IFS-1 requires an analysis of the linkage area as a whole. "The analysis will consider the amount of suitable habitat, including climate refugia, required to ensure long- term viability within each linkage given the linkage's population density, long- term demographic and genetic needs, degree of existing habitat disturbance/impacts, mortality sources, and most up-to-date population viability

[83] EA App'x A at 66–67.

[84] DRECP LUPA Appendix D Figure D-16.

[85] Averill-Murray RC, Darst CR, Strout N, & Wong M. 2013. Conserving Population Linkages for the Mojave Desert Tortoise (Gopherus agassizii). *Herpetological Conservation and Biology* 8(1):1 – 15.

[86] EA App'x A at 27.

modeling."[87] "Activities that would compromise the long-term viability of a linkage population or the function of the linkage," are prohibited under this CMA.[88]

The EA fails to conduct any analysis of the "DVNP to Nevada Test Site" linkage area, or the Project's impacts to the linkage area, as required in LUPA-BIO-IFS-1.

C. The Project Fails to Prevent Unnecessary or Undue Degradation of Public Land Resources or Undue Impairment in the CDCA.

As mentioned above, FLPMA requires that the BLM "take any action necessary to prevent unnecessary or undue degradation of the lands."[89] This mandatory duty to "prevent undue degradation" is "the heart of FLPMA [that] amends and supersedes the Mining Law."[90] "FLPMA, by its plain terms, vests the Secretary of the Interior [and the BLM] with the authority—indeed the obligation—to disapprove of an otherwise permissible mining operation because the operation, though necessary for mining, would unduly harm or degrade the public land."[91]

FLPMA's mandate to prevent unnecessary or undue degradation ("UUD") is implemented through two primary regulations: (1) the definition of UDD; and (2) the Performance Standards in 43 C.F.R. § 3809.420.[92] The Performance Standards mandate, in part, that all operations "take mitigation measures specified by BLM to protect public lands."[93] "FLPMA's requirement that the Secretary prevent UUD supplements requirements imposed by other federal laws and by state law."[94] The BLM complies with this mandate "by exercising case-by-case discretion to protect the environment through the process of . . . approving or rejecting individual mining plans of operation."[95]

"Mitigation measures fall squarely within the actions the Secretary can direct to prevent unnecessary or undue degradation of the public lands. An impact that can be mitigated, but is

[87] *Id*.

[88] *Id.*

[89] 43 U.S.C. § 1732(b).

[90] *Mineral Policy Center v. Norton*, 292 F.Supp.2d 30, 42 (D.D.C. 2003).

[91] *Id*.

[92] 43 C.F.R. § 3809.5.

[93] 43 C.F.R. § 3809.420(a)(4).

[94] *Center for Biological Diversity v. Dept. of Interior*, 623 F.3d 633, 644 (9th Cir. 2010).

[95] *Id.* at 645 (quoting *Mineral Policy Center v. Norton*, 292 F. Supp. 2d 30, 44 (D.D.C. 2003).

not, is clearly unnecessary."[96] If UUD cannot be prevented through mitigation measures, BLM must reject the plan of operations.[97]

In undertaking environmental review of the proposed plan of operations, BLM must consider whether mitigation measures can protect the species, habitats, soils, and water, and other resources affected by the Project in order to prevent UUD. That analysis must include detailed identification of direct and indirect impacts as well as cumulative impacts. It must identify specific mitigation measures that address each impact and also include an analysis of the effectiveness of each measure in order to meet the BLM's duties under NEPA as well as FLPMA.

In addition to FLPMA's general mandate that public lands be managed to prevent unnecessary or undue degradation, FLPMA further requires the Secretary in the context of mining to promulgate regulations to "protect the scenic, scientific, and environmental values of the public lands of the California Desert Conservation Area against undue impairment, and to assure against pollution of the streams and waters within the California Desert Conservation Area."[98] FLPMA therefore requires the BLM to apply an even higher standard of protection—the "undue impairment" standard—to mining related proposals on CDCA lands than that which applies to public lands generally. FLPMA also requires the BLM to manage public lands in the CDCA in particular in a manner that will maintain environmental quality.[99]

Here, the EA fails to even mention FLPMA's "undue impairment" standard for the CDCA, let alone requirement measures to "protect the scenic, scientific, and environmental values of the public lands of the California Desert Conservation Area against undue impairment.[100] As detailed below, the EA also fails to adequately address environmental impacts and as a result has failed to show it has taken steps to prevent UUD.

D. Ground Disturbance Is Not Fully Reclaimed

As the EA recognizes, the disturbance cap established for the Amargosa North ACEC is already exceeded.[101] The Amargosa North ACEC has a disturbance cap of 1% and the current disturbance level is at 1.7%.[102]

Because the ACEC disturbance cap is already exceeded, "the cap functions as an objective, triggering the specific ground disturbance mitigation requirement."[103] Per the DRECP,

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[96] 65 Fed. Reg. 69998, 70052 (Nov. 21, 2000).

[97] *Kendall's Concerned Area Residents*, 129 IBLA 130, 138 (1994) ("If unnecessary or undue degradation cannot be prevented by mitigation measures, BLM is required to deny approval of the plan.").

[98] 43 U.S.C. §1781(f).

[99] 43 U.S.C. § 1781(b).

[100] 43 U.S.C. §1781(f).

[101] EA at 15.

[102] EA at 15.

mitigation ratios of 3:1 are required for the portions of the proposed activity that are located on undisturbed land.[104] The EA states that the applicable ground disturbance mitigation requirement for off-site mitigation is inapplicable[105] and concludes that the Project's surface disturbance would not change the percentage of total disturbed area "upon successful on-site restoration."[106] However, BLM has not shown that the *on-site* mitigation, reclamation and restoration will be sufficient or successful. First, as explained in more detail herein, the disturbance calculation for the Project does not include all sumps that may be needed and the reclamation requirements do not have a set timeline for restoring all sump areas. As a result, the additional disturbance in the ACEC from the Project is not adequately quantified and may not be timely reclaimed.

Second, the EA ignores the well documented fact that "[a]fter initial disturbance, the effects of soil compaction can persist for years, even centuries, before natural soil-loosening processes can restore the soil's texture."[107] Indeed, Congress recognized that these lands are "extremely fragile, easily scarred, and slowly healed" when it designated the California Desert Conservation Area as part of FLPMA. 43 U.S.C. § 1781(a)(2). By failing to ensure sufficient on-site mitigation, reclamation and restoration measures so that the ground disturbance in the ACEC is not increased due to the Project and failing to provide a clear timeframe for the mitigation measures, the EA fails to comply with the Plan standards, FLPMA and BLM's obligation to meet the heightened, "undue impairment" standard of protection that applies to mining related proposals on CDCA lands.[108]

IV. The EA Violates NEPA

NEPA requires federal agencies to take a "hard look" at the environmental consequences of their proposed actions.[109] To take this "hard look," agencies must prepare an EIS for all "major Federal actions significantly affecting the quality of the human environment."[110] The standard for when an agency must prepare an EIS is a "low standard."[111]

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[103] DRECP, LUPA at 174.

[104] *Id*. at 178.

[105] EA at 15.

[106] EA at 15.

[107] Ouren, Douglas S., et al. 2007. "Environmental Effects of Off-Highway Vehicles on Bureau of Land Management Lands: A Literature Synthesis, Annotated Bibliographies, Extensive Bibliographies, and Internet Resources." US Geological Survey, Open-File Report 1353: 225. https://scholar.archive.org/work/n66cffps3bdgrdnyeyevedu7ni/access/wayback/https://pubs.usgs.gov/of/2007/1353/report.pdf.

[108] *See* 43 U.S.C. § 1781(f).

[109] *Kleppe v. Sierra Club*, 427 U.S. 390, 410 n.21 (1976); *Blue Mountain Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1211 (9th Cir. 1998).

[110] 42 U.S.C. § 4332(C).

[111] *Klamath Siskiyou Wildlands Ctr. v. Boody*, 468 F.3d 549, 562 (9th Cir. 2006).

The Council on Environmental Quality (CEQ) establishes NEPA regulations, which are binding on every federal agency.[112] The original regulations implementing NEPA were published by CEQ in 1978.[113] These implementing regulations were subsequently revised in 2020 and again in 2022 and 2024.[114] The 2022 revisions apply here along with the majority of the 1978 NEPA CEQ guidelines.

Under NEPA, if an agency is unsure whether a proposed action may have significant environmental effects, it may prepare an "environmental assessment" to determine whether an EIS is necessary.[115] To avoid preparing an EIS, the agency's EA and FONSI must provide a "convincing statement of reasons" why a project's impacts are insignificant.[116]

The scope of NEPA review is broad. The BLM must evaluate and disclose the direct, indirect, and cumulative effects of the proposed action and its alternatives on ecological, aesthetic, historic, cultural, economic, social, and health interests.[117] That did not happen here. The following sections provide details on the EA's failure to comply with NEPA.

A. The EA Fails to Fully Analyze Direct, Indirect and Cumulative Impacts of the Project.

1. The EA Fails to Consider the Project's Impacts on Sensitive Biological Resources.

The EA fails to conduct the required "hard look" at the Project's impacts, including the impacts on sensitive biological resources. Under NEPA, BLM must consider all direct, indirect, and cumulative environmental impacts of the proposed action.[118] Direct effects are caused by the action and occur at the same time and place as the proposed project.[119] Indirect effects are caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable.[120] Both types of impacts include "effects on natural resources and on the components, structures, and functioning of affected ecosystems," as well as "aesthetic, historic, cultural, economic, social or health [effects]."[121]

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[112] 40 C.F.R. § 1500.3(a) (2020).

[113] *See* 40 Fed. Reg. 55978 (Nov. 29, 1978).

[114] *See* 85 Fed. Reg. 43304 (July 16, 2020); 87 Fed. Reg. 23453 (April 20, 2022); 89 Fed. Reg. 35442 (May 1, 2024).

[115] 40 C.F.R. § 1501.4(c) (1978); 40 C.F.R. § 1501.5 (2020).

[116] 40 C.F.R. §§ 1501.4, 1508.9, 1508.13 (1978); 40 C.F.R. § 1501.6.

[117] 40 C.F.R. § 1508.1(g).

[118] 40 C.F.R. §§ 1502.16, 1508.8, 1508.25(c).

[119] 40 C.F.R. § 1508.8(a).

[120] 40 C.F.R. § 1508.8(b).

[121] *Id.*

a. *Desert tortoise*[122]

The EA assumes "[d]esert tortoises . . . occur on lands adjacent to the project and along the access route" and recognizes that they "may wander into the work area."[123] According to a recent survey in April 2024, eight desert tortoise burrows were documented, indicating the Project area may recently have been occupied by desert tortoises and still provides viable habitat for them. These and other observations can be seen in Attachment 1.[124]

As the EA notes, tortoises in and around the vicinity of the project "can be injured or killed through vehicle strikes."[125] The EA also notes the impacts noise, mishandling, and habitat loss may have on the tortoises.[126] Although the EA identifies some impacts the Project may have on desert tortoise, it fails to identify or assess all potential impacts on the desert tortoise and other wildlife resources, including impacts from mining exploration-related environmental contaminants, drilling fluids, and the use of imported water from an undisclosed source.

Further, although the BLM determined that the proposed action "may affect and is likely to adversely affect the desert tortoise," it has not consulted with the U.S. Fish and Wildlife Service ("USFWS") in accordance with Section 7(a)(2) of the ESA.[127] Instead, the BLM relies on an existing programmatic biological opinion issued by the USFWS (1-8-94-F28R) 30 years ago (Biological Opinion for Small Mining and Exploration Operations in the California Desert), and notes that tortoise or tortoise burrow relocation or movement is not authorized unless the BLM consults with USFWS.[128] The BLM ignores that the USFWS recommended in 2016 that this BO for "small mining" be revised.[129] Because the referenced programmatic biological opinion was not provided with the EA and does not appear to be publicly available, it is unclear whether the BLM has complied with its obligations under Section 7 of the ESA. [130] However, given that tortoise movement and relocation would trigger consultation, it is likely that the

[122] The desert tortoise (*Gopherus agassizzii*) is listed as threatened under the Endangered Species Act and as endangered under CESA. 50 C.F.R. § 17.11; Cal. Code Regs. tit. 14, § 670.5(b)(4); Travis Schlepp, California designates Mojave desert tortoise as endangered (Apr. 18, 2024), available at: https://ktla.com/news/california/california-designates-mojave-desert-tortoise-as-endangered/ (report on recent uplisting of the desert tortoise under CESA).

[123] EA at 21.

[124] Attachment 1, April 27, 2024 Field Observations at St. Cloud Zeolite Mining by Laura Cunningham.

[125] EA at 22.

[126] EA at 22.

[127] EA at 21–22.

[128] EA at 21–22.

[129] U.S. Fish and Wildlife Service, Biological Opinion on the Proposed Land Use Plan Amendment under the Desert Renewable Energy Plan at 178, https://eplanning.blm.gov/public_projects/lup/66459/133471/163141/Appendix_3_Biological_Opinion.pdf.

[130] *See* 16 U.S.C. §1536(a)(2).

Project's other adverse impacts on the desert tortoise would also trigger the agency's duty to consult with the USFWS.

b. *Fugitive dust impacts on rare plants*

The EA violates NEPA by failing to address or analyze the effects of fugitive dust on nearby rare plants. While plant surveys did not reveal threatened and endangered species on site, there are known occurrences of the Ash Meadows gumplant and spring-loving centaury within 1.25 miles of the project site at Grapevine Spring; in addition there is the critical habitat for the Amargosa niterwort within 1.25 miles of the project site. Notably, the dirt road which provides access to the project site starts within the niterwort critical habitat (See **Figure 3**).

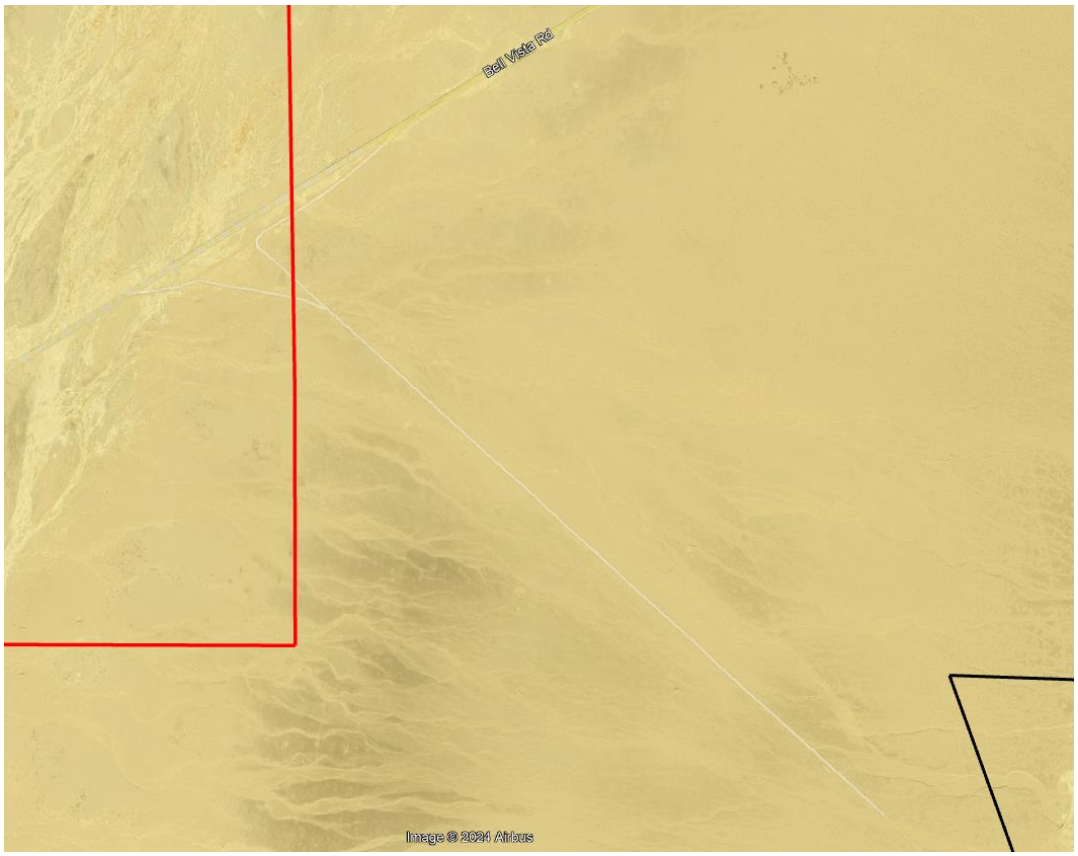

Figure 3*: The dirt road access to the project site is depicted starting on the northwest side of this map off of Bell Vista Road/Stateline Road, and traveling southeast to the project site (depicted in black). The beginning of this road is directly within the critical habitat for the Amarogsa niterwort (depicted in red).*

Fugitive dust emissions can cause significant impacts to plants. Dust deposition can impact plant health by limiting reproduction, reducing light availability, CO^2 assimilation, and thus reducing photosynthetic capacity.[131] It can also reduce transpiration leading to higher leaf

[131] Wijayratne U.C., S.J. Scoles-Sciulla, and L.A. Defalco. 2009. Dust deposition effects on growth and physiology of the endangered *Astragalus jaegerianus* (Fabaceae). Madroño. 56L 81-88. *See also* Padgett,

temperatures and reduced water use efficiency.[132] Ambient dust has also been correlated with plant stress symptoms such as water stress, plant die-back, and smaller leaf size.[133] Dust deposition in the Mojave Desert of Nevada has been shown to cause plant defoliation and shoot death in the common shrub *Larrea tridentata* (creosote bush).[134] Local conditions can exacerbate dust deposition including precipitation, temperature, geologic substrate, and wind speed.[135] One study found plants growing within 400 meters of mining disturbance, including unprotected stockpiles, occurred in habitats that were degraded due to dust deposition.[136] Plants further away, but in areas that are exposed to prevailing winds were also negatively impacted by dust deposition.

The lands surrounding the Project Area are known to be subject to high winds, with wind gusts of 40-50 mph regularly reported from the Ash Meadows, Nevada weather station, located approximately 6.5 miles north of the project site.[137] The Project has the potential to greatly increase dust deposition on rare plants at Grapevine Spring and Carson Slough from the use of access roads, cross-country travel by vehicles and the drill rig, and due to drilling activities. The Project would also substantially increase daily road traffic at the site, which is currently near zero, likely by several orders of magnitude, not just due to access by workers and equipment but also numerous daily trips from water trucks, increasing the potential for dust deposition on plants throughout the lifetime of the project. Even if some dust suppression measures are implemented during on-site activities, the amount of dust in the air will increase overall due to the Project.

Dust is a significant concern for the federally and state listed Amargosa niterwort, and the federally listed Ash Meadows gumplant and spring-loving centaury. Ambient dust has been shown to negatively affect the ability of plants to set fruit, and also affects the number of seeds per plant and mean seed weight, meaning that dust has widespread effects on plant reproduction.[138] Ambient dust has also been correlated with plant stress symptoms such as water

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P.E., Dobrowolski, W.M., Arbaugh M.J., Eliason, S.A. 2007. Patterns of carbonate dust deposition: implications for four federally listed endangered plant species. Madroño. 54: 275-285.

[132] Sharifi, M.R., A.C. Gibson and P.W. Rundel. 1997. Dust Impacts on Gas Exchange in Mojave Desert Shrubs. Journal of Applied Ecology. 34: 837-846. *See also* USFWS, 2022, Species Status Assessment for Tiehm's buckwheat *(Eriogonum Tiehmii*).

[133] Talley, T.S., Holyoak, M., 2006. "The Effects of Dust on the Federally Threatened Valley Elderberry Longhorn Beetle." *Environmental Management* 37(5): 647-658.

[134] Beatley, J. C. 1965. Effects of radioactive and non- radioactive dust upon Larrea divaricata Cav., Nevada Test Site. Health Physics 11:1621–1625.

[135] Padgett, *et al.*, 2007.

[136] *Id.*

[137] Data from the Western Regional Climate Center's Remote Automatic Weather Station Network, Ash Meadows Nevada Station, https://wrcc.dri.edu/cgi-bin/wea_daysum.pl?nvNASH.

[138] Lewis, M.B., Schupp, E.W., Monaco, T.A., 2017. "Road Dust Correlated with Decreased Reproduction of the Endangered Utah Shrub *Hesperidanthus suffrutescens*." *Western North American Naturalist*, 77(4):430-439.

stress, plant die-back, and smaller leaf size.[139] Dust deposition at a different mine site had "a significant effect on photosynthesis and gas exchange," under both high and low dust deposition regimes.[140] Appreciable changes to the species composition of shrubland communities have been associated with significant dust deposition.[141] In short, dust can have effects on plant species and communities.

2. The EA Fails to Consider the Project's Impacts Due to Water Consumption.

The EA fails to take a "hard look" at the impacts of St. Cloud Mining's exploration on water resources, particularly because BLM failed to examine or disclose: the source of the water needed for the Project's exploration, dust control/mitigation, and revegetation; the amount of water that would be needed for the Project's exploration, dust control/mitigation, and revegetation; the environmental impacts of procuring the water and trucking it onto the Project site; the hydrogeologic setting of the project; sensitive groundwater-dependent resources likely to have a hydrologic connection to groundwater at the drill sites; the potential for drilling to intersect groundwater; and the potential likelihood of drilling encountering artesian flow and the consequences should that occur.

The BLM erred first in failing to disclose the source of the water to be used in St. Cloud Mining's exploration work. Instead, the EA assumes that water will be available for the Project, noting that "[w]ater for the project will be trucked to the site."[142] If, for example, the water sourced off-site comes from the groundwater aquifer of the Amarosa Basin then it would entail groundwater pumping and thus some level of environmental impacts. The same is true wherever the water may be sourced. The EA must disclose and analyze the definitive source of water needed for the Project and the impacts that would occur due to pumping groundwater for the project's water supply.

BLM also failed to document how much water will be required for drilling operations. The EA states, "Water would be utilized as needed during drilling, to control drill cuttings dust and would be trucked to the site."[143] The EA also states that drilling would be accomplished using a reverse circulation drill rig.[144] Some amount of water is always required for drilling as drilling fluids with a reverse circulation drill rig.[145] The Plan of Operations does not offer any clarity. Under the "water supply" section, it states, "If water is needed during drilling e.g., to

[139] Talley & Holyoak, 2006.

[140] Padgett *et al*., 2007.

[141] Farmer, A.M., 1993. "The effects of dust on vegetation – a review." *Environmental Pollution 79*(1993): 63-75.

[142] EA at 25.

[143] EA at 13.

[144] EA at 13.

[145] Nash W. 2017. The Basics of Reverse Circulation Drilling. *The Driller*. https://www.thedriller.com/articles/90897-the-basics-of-reverse-circulation-drilling

control dust, the water expelled from the drill hole into five feet by five feet by one-foot-deep hand dug sump to retain the fine particles, prevent sediment discharge, and to recycle the water."[146] This section is confusing because some amount of water is always required for drilling, and given that the plan talks about recycling water, it implies that the operator is already stating that water will be required for operations. The EA also fails to discuss the amount of water needed for dust suppression. Although the BE mentions the use of water as an avoidance, minimization, and mitigation measure (AMM) for dust control, both the BE and the EA fail to disclose or analyze the amount of water needed.[147] The EA must disclose how much water is required for the proposed exploratory drilling, dust suppression, and revegetation.

BLM also failed to disclose and analyze the impacts of transporting water to the site. If water was to be trucked in from other places, it could entail dozens or even hundreds of miles of driving heavy trucks in each direction, which would of necessity entail carbon emissions. This would increase vehicular traffic through sensitive habitats and along the access road to the project site. This could include an increased likelihood of vehicle/wildlife collisions and increased fugitive dust emissions. There would also, as discussed above, be impacts to the source groundwater aquifer that the water was procured from.

In short, the EA must disclose and analyze where water would be sourced from, how much water would be required for the Project, and what the environmental impacts of pumping that water and trucking it to the site would be.

3. The EA Fails to Consider the Project's Impacts to Groundwater Resources and Groundwater Dependent Ecosystems.

The EA contains no analysis of the impacts of the Project on groundwater resources and groundwater dependent ecosystems, including the potential for drilling to intersect the groundwater table, and for drilling to cause uncontrolled artesian flow from the groundwater aquifer.

The EA states several times, without substantiation, that drilling would not encounter groundwater. "The drill holes would not exceed a depth of 200 feet (70 meters). Based upon past drilling in the area, it is not expected that the holes would intersect the groundwater table."[148] Despite making this assertion, the EA later states, "Based on USGS data and other studies, it has been determined that the groundwater is relatively shallow near the project site (<200' in some locations), however, it is not anticipated drilling activities will intersect the water table."[149] This is restated later in the document: "Water table levels in this area have been measured in the past at or below 200 below ground surface. Based on current and historical groundwater data, it is not anticipated that the water table will be reached during drilling…"[150]

[146] EA App'x D at 11, § 3.4.7.

[147] EA App'x B at 74.

[148] EA at 14.

[149] EA at 17.

[150] EA at 25.

However, the EA provides no substantiation for these statements, or any hydrologic evidence whatsoever that the drilling is unlikely to encounter groundwater. The only attempt at providing evidence is made in Appendix F (Table of Resources and Issues Considered), where reference is made to a 44-year-old study by "Hydro Search Inc" which found that "ground water occurs at a depth of about 100 ft."[151] This document was not provided, nor was any identifying reference information about this document provided. It seems stunning that, given that the groundwater resources of the Amargosa River Basin have been heavily studied by numerous government agencies in the intervening 44 years, that BLM could not provide a more current reference than an obscure 1980 report which the public cannot access. In addition, the statement that depth to groundwater is 100 feet contradicts the EA's assertions that drilling will not intersect groundwater drilling up to 200 feet deep.

This contradiction is further illuminated when examining the record of USGS monitoring site number 361840116184005, site name 230 025N006E10N03S USGS GA-08E.[152] This well is called "Pit Wall" and is literally on the wall of the existing surface mine site proximate to the Project Area. There are only five data points for depth to groundwater – in 1984 it was measured at 102.2 feet, in 1993 it was measured at 103.4 feet twice and 103.5 feet once, and in 2018 it was measured at 97.93 feet. It's very troubling that, despite the almost assured fact that St. Cloud Mining is aware of the existence of this well, it was not mentioned and the data was not reported in the EA.

Even a cursory analysis of the hydrogeology of the area yields enough questions about whether drilling will in fact encounter groundwater that it warrants detailed analysis in the EA and likely a full EIS. The project site elevation is roughly 2200 feet.[153] Approximately 1.25 miles to the north-northeast from the project site, Grapevine Spring has surface discharge of groundwater along an escarpment at roughly 2280 feet.[154] 4 miles to the north-northeast of the project site, springs in Ash Meadows National Wildlife Refuge are somewhat lower than Grapevine – for instance, Big Spring is at 2242 feet.[155] 1.25 miles to the northwest of the project site, there is surface discharge of groundwater and an extensive area of evapotranspiration at Lower Carson Slough, at roughly 2040 feet.[156] This area forms the critical habitat for the endangered Amargosa niterwort.

In addition, a recent survey found a previously undocumented wetland half a mile away from the project site, directly upslope at 2132 feet (**Figure 4**). This wetland is approximately 1.25 acres in size, and includes populations of *Distichlis spicata, Juncus* sp., and *Sporobolus*

[151] EA App'x F at 3.

[152] U.S.G.S., National Water Information System: Web Interface, Groundwater levels for the Nation: https://nwis.waterdata.usgs.gov/nwis/gwlevels?site_no=361840116184005.

[153] EA App'x B - Biological Evaluation at 11.

[154] U.S.G.S. Bole Spring 7.5" Quadrangle Map.

[155] *Id.*

[156] *Id.*

airoides (**Figures 5 & 6**). In hyperarid environments such as the Death Valley region, these species are indicative of perennial wetlands. Since the localized topographic drainage basin above this wetland extends only as far as the top of Shadow Mountain, which is too low at 5069 feet to bring down significant precipitation or snowfall, it's highly likely that this wetland is sourced from the same carbonate aquifer that gives rise to Grapevine Spring and the springs in Ash Meadows, and sustains shallow groundwater at Lower Carson Slough. This wetland is approximately 100 feet higher in elevation than the project site. If the drilling was to go down 200 feet, the bottom of the boreholes would be approximately 300 feet below the water table which feeds this wetland.

Figure 4: *Newly discovered wetland (whitish oblong area in foreground) with existing mine (bright white area in midground) and the Project Area (to the left of the existing mine site). The wetland is approximately 100' above and one-half mile from the drilling sites.*

Figure 5*: Saltgrass in the newly documented wetland, looking west toward the project site. Photo taken at 36.3118577, -116.3130822.*

Figure 6*: Juncus sp. in the newly documented wetland. Juncus sp. are wetland-obligate plants. Photo taken at: 36.3120635, -116.3136239.*

This survey also revealed an extensive area of groundwater discharge among unconsolidated sediments north of the wetland. Alkali evaporitic crust appears in patches on hills and ridges above and within washes, and these areas are fringed with *Suaeda nigra*, a wetland

obligate plant (**Figure 7**).[157] It's quite unusual to find *Suaeda* in an area with topography and at higher elevation. This plant indicates an area of extremely shallow groundwater. This area of shallow groundwater extends northward from the newly documented wetland toward Grapevine Spring (**Figure 8**). This provides further evidence that there may be a direct hydrologic connection between the project site and springs which sustain threatened and endangered species.

Figure 7*: Suaeda nigra and alkali crust, both indicating shallow groundwater, in the hills north of the newly documented wetland. Photo taken at 36.3140922,-116.3141792.*

[157] *Suaeda nigra* is ranked as "OBL" by the Army Corps of Engineers, meaning it "almost always occur in wetlands." U.S. Army Corps of Engineers. (2023). 2022 National Wetland Plant List, version 3.6. U.S. Army Engineer Research and Development Center, Vicksburg, MS. http://wetland-plants.usace.army.mil/.

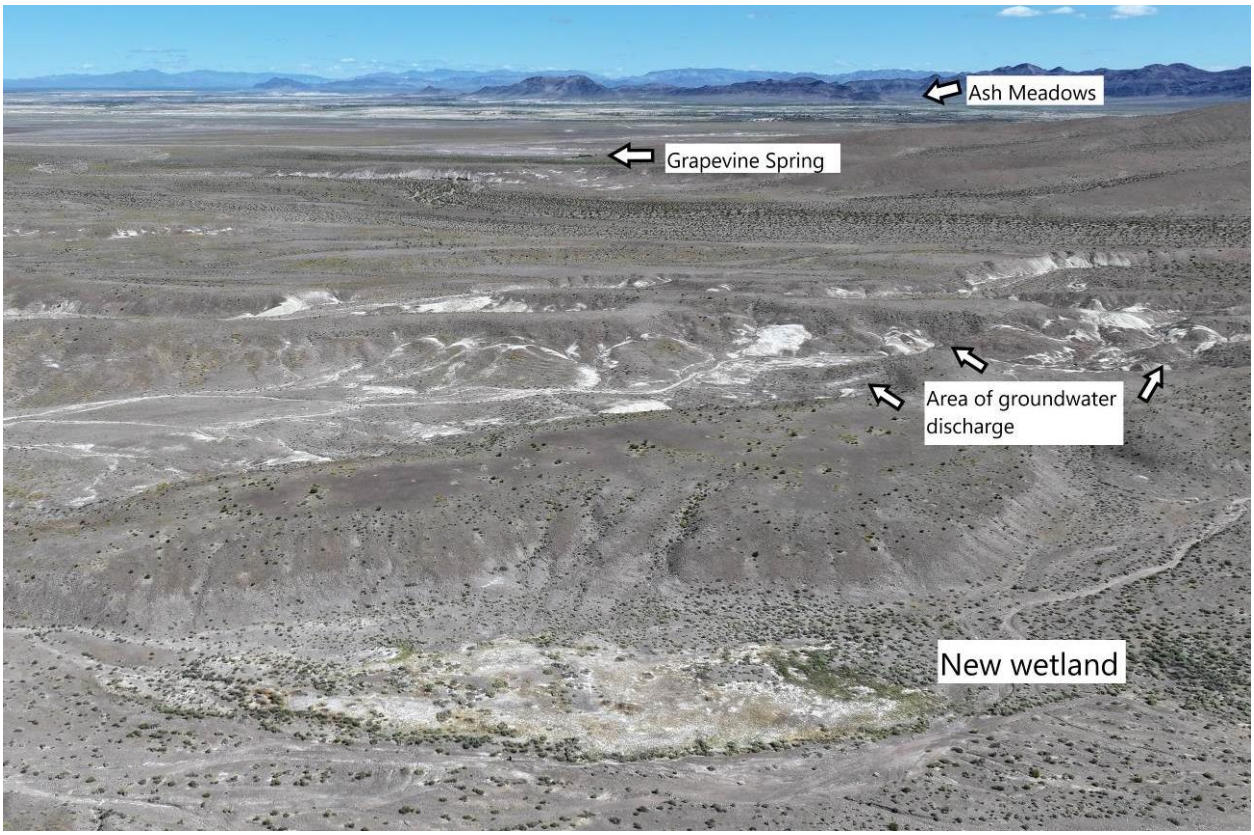

Figure 8*: Aerial photograph looking northward, depicting the newly documented wetland, the area of shallow groundwater discharge with Suaeda nigra, Grapevine Spring, and Ash Meadows beyond.*

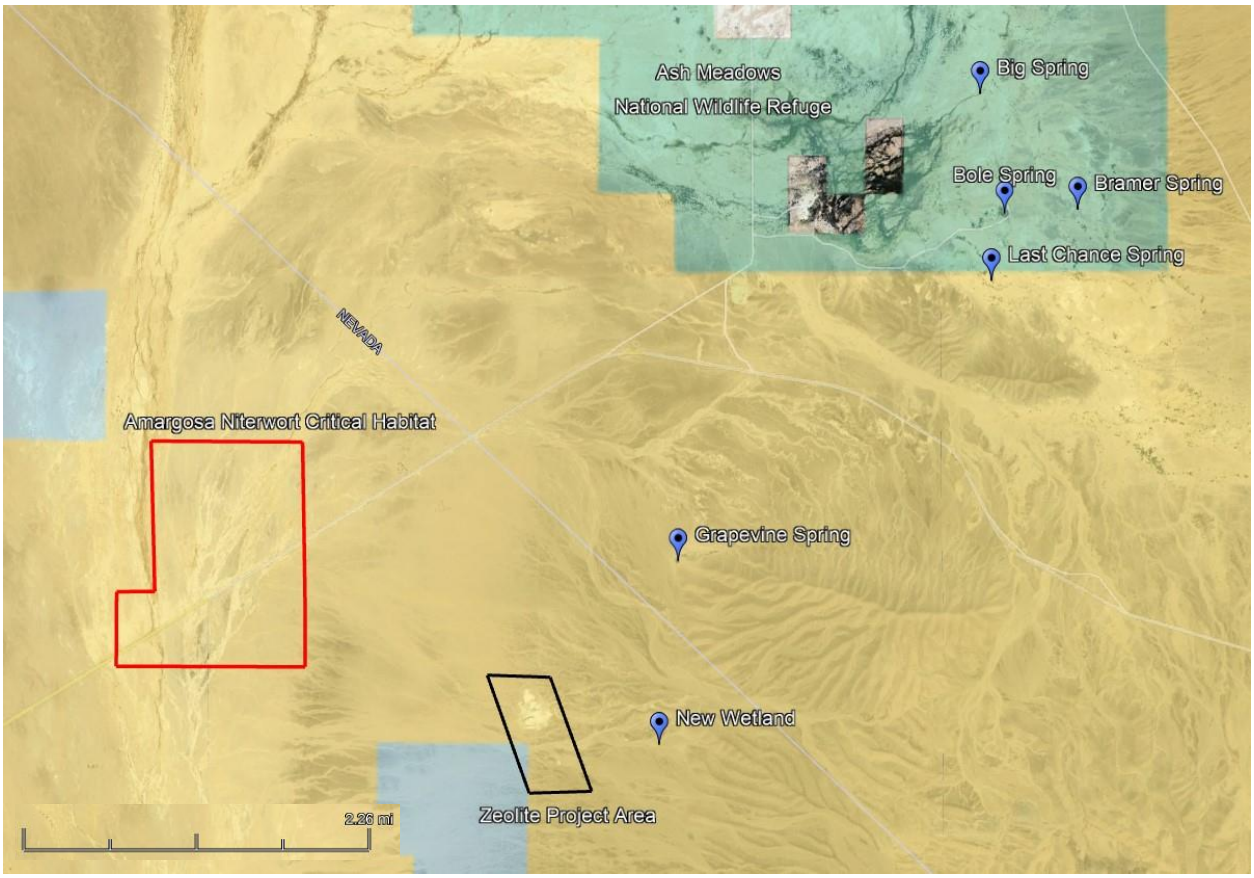

Figure 9*: Map showing the Project Area in black, Amargosa niterwort critical habitat in red, Ash Meadows National Wildlife Refuge in green, and nearby water features with blue points.*

Based on the preponderance of evidence, and counter to assertions made in the EA, it seems extremely likely that drilling 200 foot deep boreholes at the project site would encounter groundwater. Areas at comparable, higher and lower elevations to the northwest, northeast, and due east all have groundwater discharge at varying levels (**Figure 9**). The northernmost Resting Spring Range near Shadow Mountain is comprised of Cambrian to Neoproterozoic siliciclastic rocks, which are defined as the principle confining aquitard in the Amargosa region (**Figure 10**).[158] This area includes thick layers of quartzite which form a significant barrier to groundwater flow.[159] Therefore it's entirely possible that generalized southward flow in the aquifer encounters resistant rock in the Resting Spring Range and shunts to the west, rising to the surface at Grapevine Spring and again at the new wetland.

[158] Belcher, W.R., and Sweetkind, D.S., eds., 2010, Death Valley regional groundwater flow system, Nevada and California—Hydrogeologic framework and transient groundwater flow model: U.S. Geological Survey Professional Paper 1711, 398 pp. Figure B-31.

[159] Workman et al. 2002.

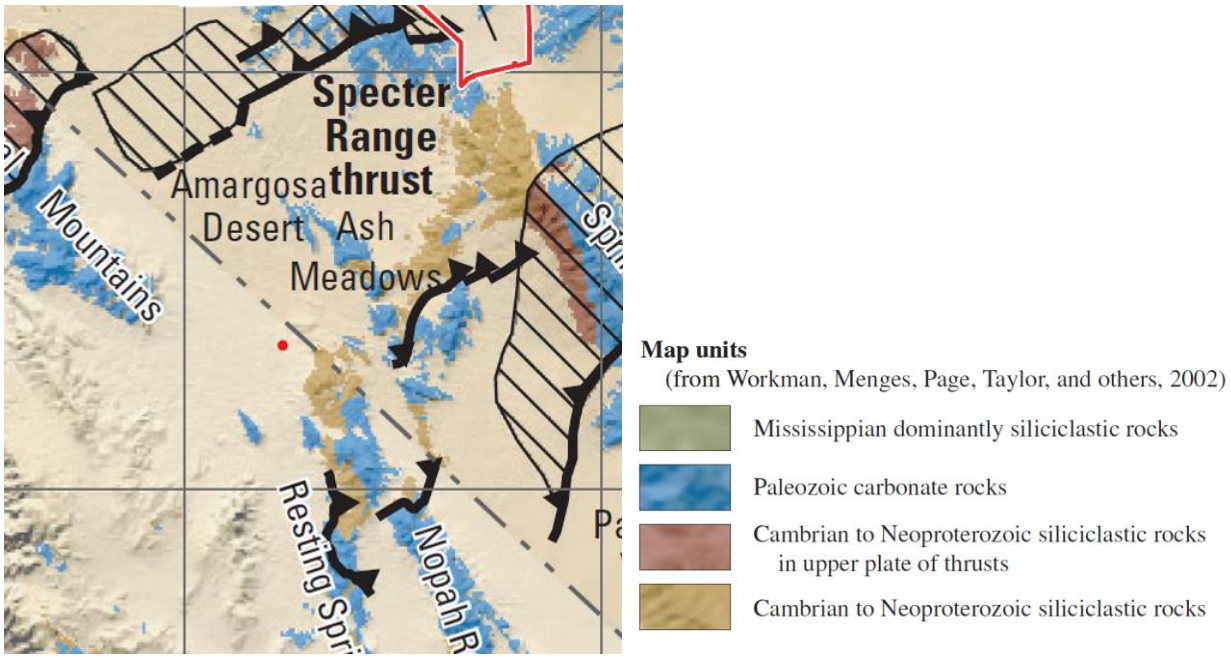

***Figure 10**: Figure B-31 from Belcher & Sweetkind 2010, with a red dot added indicating the Project Area. Siliciclastic rocks upslope in the Resting Spring Range may cause water to shunt westward toward the project site, possibly giving rise to Grapevine Spring and the newly document wetland.*

One final piece of evidence of shallow groundwater is the presence of a seemingly perennial pool of water on the east side of the berm that forms the east wall of the existing mining operation (**Figure 11**). This pool is surrounded by a robust population of tamarisk, indicating that there is shallow groundwater year-round which the tamarisk is able to access. This pool and the tamarisk have been present for decades (**Figures 12 & 13**). There are a number of reasons this pool of perennial water could be present. One includes shallow groundwater flowing down the wash from the newly discovered wetland above, encountering resistance at the wall of the mining area and rising to the surface. Another could be that the actual water table in that area is extremely high. Either way, it is indicative that there is shallow groundwater in this system and thus the Project bears close scrutiny to see how it may interact with groundwater.

Figure 11: *Standing pool of water surrounding by tamarisk on the east side of the existing zeolite mining area. Satellite photo from Google Earth taken December 2023.*

Figure 12*: Pool of water and tamarisk trees visible on Google Earth satellite imagery from April 2006.*

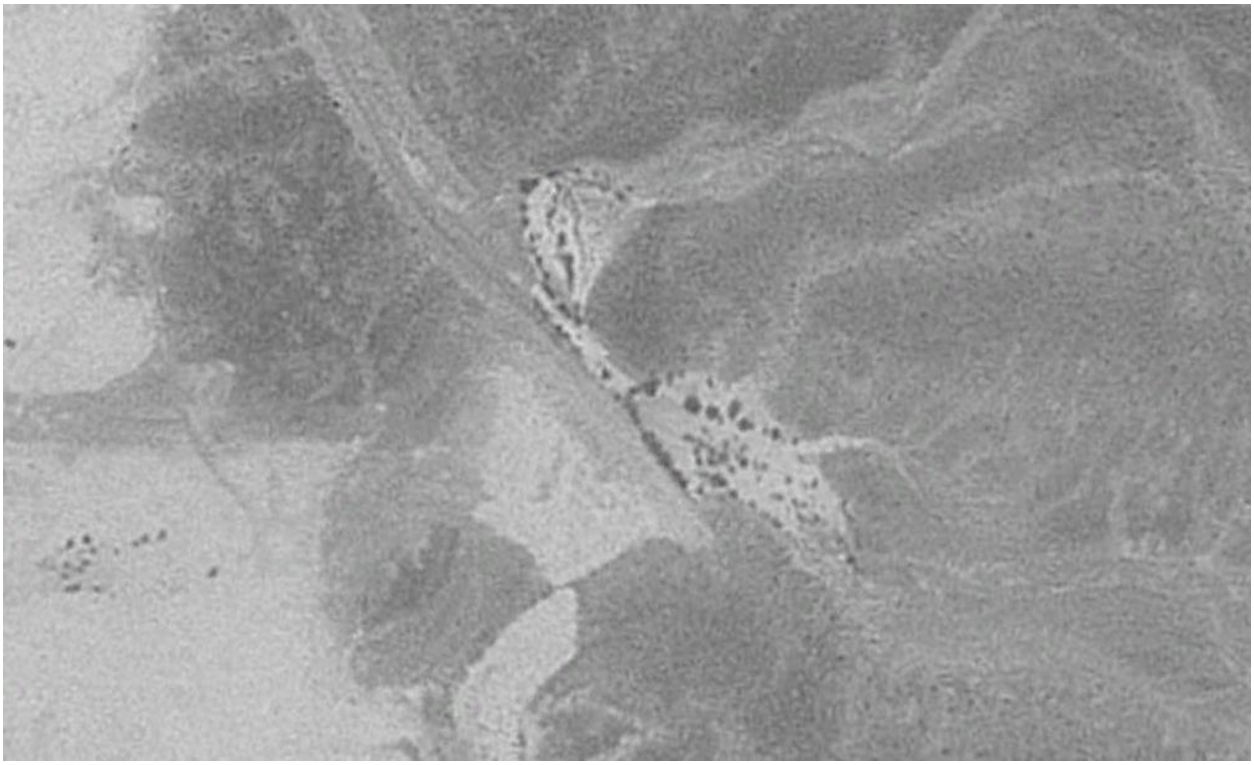

Figure 13: *Pool of water and tamarisk trees visible on Google Earth satellite imagery from May 1994.*

No matter the mechanism, it's clear that there is at the very least the *potential* for shallow groundwater to be encountered during drilling operations. The EA failed to provide any evidence for its assertions that drilling would not encounter groundwater. The EA must provide a coherent hydrologic analysis examining whether the drilling would encounter groundwater and the potentially significant impacts if that occurs.

Whether or not the drilling encounters groundwater is not an academic exercise. The groundwater aquifer which underlies this area supports groundwater dependent ecosystems that harbor dozens of endemic species including a dozen listed under the Endangered Species Act in the immediate vicinity of the Project Area, and several others further downstream along the Amargosa River. Maintaining the integrity of this aquifer is essential to the conservation of these species and ecosystems. Indeed, as the BLM acknowledged in an April 2023 Notice to Cease and Desist, use of water from four wells approximately 5 miles north of Death Valley Junction (and approximately 10 miles from the proposed Project site) would "extract[] water which is needed for the Amargosa Wild and Scenic River and surrounding wildlife."[160]

There was a recent controversy regarding an exploratory mining drilling proposal on the north side of Ash Meadows National Wildlife Refuge. There, a Canadian mining company called Rover Metals proposed drilling boreholes within just a few thousand feet of the Refuge. Hydrogeologist Andy Zdon prepared a memorandum regarding this drilling, detailing the risks posed by drilling into aquifers which may be under pressure when sensitive groundwater dependent resources are nearby.[161] In particular, Zdon cites the example of Borehole Spring, down the Amargosa River in Tecopa, which was formed by a mining company doing exploratory drilling when they encountered a pressurized aquifer that caused artesian flow which they were unable to stop. To this day, Borehole Spring continues to flow unabated, and has likely caused significant impacts to adjacent natural springs, up to and including the complete desiccation of Thom Spring, among others. This is important information directly relevant to the current proposal and it shows the need for BLM to fully analyze the potential impacts to ground water when considering this proposal that would allow drilling into this sensitive aquifer system. The EA must analyze the potential for unexpected artesian conditions to result in an uncontrolled flow, which could cause significant perturbation to the aquifer and associated groundwater dependent ecosystems and species.

Following a lawsuit, the proposed Rover Metals drilling ended up being rejected by BLM. In their letter rescinding approval for the drilling, BLM stated, "the agency has concluded that proposed operations are likely to result in disturbance to localized groundwaters that supply the connected surface waters associated with Threatened and Endangered (T&E) species in local springs in the Ash Meadows National Wildlife Refuge (NWR), and perhaps cause significant

[160] Letter from Marc Stamer, Barstow Field Manager, BLM to Robert Ford, ABC Recycling Industries (Apr. 27, 2023).

[161] Zdon A. 2023. Proposed Ash Meadows Lithium Exploration. 12 pp.

impacts to other identified T&E species in and around the Notice area."[162] The letter additionally stated, "BLM concludes that the operator cannot prevent unnecessary or undue degradation based on the record before it." Part of BLM's justification for rescinding approval of the drilling was the fact that a nearby previously drilled USGS well had encountered artesian flow of approximately 36 gallons per minute, indicating the aquifer is under pressure.

There is an artesian well on Lower Carson Slough, called the Hog Farm Well,[163] which flows at less than 5 gallons per minute and is at an elevation of 2017 feet.[164] Hog Farm Well is approximately 3 miles due west of the Project Area, and roughly 200 feet below the Project Area. This is additional evidence that drilling in this area could result in significant impacts to groundwater resources that requires further identification and analysis under NEPA before the BLM can approve the Project.

While the hydrogeologic situation at the south end of Ash Meadows, where the project site is located, is somewhat different from that at the north end of Ash Meadows, nonetheless, the evidence shows that potential impacts to groundwater from the Project requires a full analysis in the EA or possibly in an EIS. The existing EA is inadequate and does not take the requisite "hard look" at the impacts of St. Cloud Mining's exploration on groundwater resources and groundwater dependent ecosystems. Accordingly, the BLM lacks sufficient information to ensure the Project does not cause unnecessary or undue degradation of public land resources.

4. The EA Fails to Consider the Project's Effects on Water Rights.

Given the discussion above, it's entirely possible and/or likely that the Project will impact existing water rights, including federal reserved water rights and privately held water rights.[165] As the BLM's April 2023 cease and desist notice to ABC Recycling Industries illustrates, issues regarding water rights in and around of the Project area are complex and cannot be glossed over. Following BLM's inability to confirm ABC Recycling Industries' authorization for use and access of four wells approximately 5 miles north of Death Valley Junction, the agency demanded that the company cease and desist all activity associated with the withdrawal and storage of water at BLM wells. [166] In so doing, the agency acknowledged that the use of water from wells would "extract[] water which is needed for the Amargosa Wild and Scenic River and surrounding wildlife."[167]

Despite the complexities of existing water rights in the Project area, the EA fails to identify and analyze the Project's potential impacts on existing water rights.

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[162] U.S. Dep't of the Interior, Bureau of Land Management. 2023. Recission of Acknowledgement of Notice and Requirement for Plan of Operations. Letter to Rover Metals (USA), Inc. (July 19, 2023).

[163] Referred to on the U.S.G.S. Death Valley Junction 7.5" quadrangle as "Hog Ranch."

[164] Zdon 2020, Table 1.

[165] *See* § II.C, *supra*.

[166] Letter from Marc Stamer, Barstow Field Manager, BLM to Robert Ford, ABC Recycling Industries (Apr. 27, 2023).

[167] *Id*.

5. The Project's Surface Disturbance is Likely to Exceed One Acre.

The EA concludes that the proposed action would "result in approximately 0.947 acres of disturbance."[168] This estimate includes anticipated disturbances from the repeated use of cross-country driving routes and the drilling disturbance areas, which are expected to be along the cross-country access footprint.[169] Critically, the estimated surface disturbance does not appear to include anticipated disturbance from other project activities, including disturbances from an undetermined number of five feet by five feet by one-foot-deep hand dug sumps.

The EA needs to be revised to analyze and adequately address all surface disturbance impacts from the proposed drilling project.

6. The EA Fails to Consider the Project's Impacts to Visual Resources.

The Environmental Assessment makes no analysis of how this project would impact Visual Resources. According to the Desert Renewable Energy Conservation Plan (DRECP) Record of Decision, the project site is located on BLM land designated as VRM Class II, and it lies adjacent to the Resting Springs Range Wilderness Area areas which is managed as VRM Class I. VRM Class 2 has a management objective of, "retain[ing] the existing character of the landscape. The level of change to the characteristic landscape should be low should be very low… [and] should not… attract attention."[170] Additionally, one of the nationally significant values of the Amargosa North ACEC is: "This unit includes some of the most intact viewsheds in the California Desert which protects the historical integrity of tribally significant landscapes…"

The exploration project has the potential to impact not only the visual resources on the site but the visual resource and VRM Class objectives for the adjacent wilderness areas. The BLM is responsible for managing lands in a manner that will protect the quality of scenic values. FLPMA mandates that public lands "[shall] be managed in a manner that will protect the qualify of… scenic… values;" [171] and it identifies "scenic values" as resources for public management.[172] FLPMA also identifies scenic qualities of public lands as a resource to be inventoried, included in land-use planning, and managed alongside all other resources and within BLM's multiple-use and sustained yield mandate for present and future generations.

There are several factors which from the project which could impact visual resources and warrant analysis. The Death Valley region is known for dark skies, but the EA fails to disclose what the lighting plan for the project will be and whether any nighttime operations will include

[168] EA at 13.

[169] EA at 14.

[170] DRECP LUPA at 88.

[171] 43 USC §1701(a).

[172] 43 USC §1702(c).

overnight lighting. The EA fails to disclose how long equipment will be on the site, how many truck trips will be required, and how such industrial activity will impact the VRM values of the site. The EA must include an analysis of the impacts of the project on visual resources.

7. The EA Fails to Adequately Document the Project's Risks to Spread Invasive Species.

Invasive species are a major concern to special status species and habitats such as those in the Amargosa North ACEC. The Project has the potential to introduce invasive species from off-site and to cause disturbance providing a vector for invasive species proliferation.

The EA states there are only two invasive species on site, Russian thistle and tamarisk.[173] However plant surveys have documented six invasive plant species: pickly lettuce (*Lactuca serriola*), tumbleweed (*Salsola* sp.), filaree (*Erodium cicutarium*), red brome (*Bromus rubens*), Arabian grass (*Schismus arabicus*), and tamarisk (*Tamarix ramosissma*).[174]

Disturbance such as that from the Project could cause a vector for new invasions or the proliferation of existing invasive species. It's been found that roads and trails are significant vectors for invasive species movement and proliferation.[175] At the local level, disturbance such as that from cross-country travel and drilling, can provide a vector for further invasions.[176] Density of *Schismus* has been found to increase in areas in the Mojave Desert with disturbed soils.[177] In particular, activities like cross-country travel by heavy equipment and drilling could create "vegetation gaps that create new opportunities for rapid colonization by non-native plants."[178] Disturbances such as cross-country vehicle use "appear to be positively associated with species richness and biomass of alien plants in the Mojave Desert."[179]

Mining exploration in particular can cause new invasive species proliferation. Documentation over several years at the Rhyolite Ridge project in central Nevada found invasion from *Halogeton glomeratus*, *Salsola* sp., and *Amaranthus albus* followed mining exploration

[173] EA at 26.

[174] See Attachment 2, plant survey list.

[175] Mortensen DA, Rauschert ESJ, Nord AN, Jones BP. Forest Roads Facilitate the Spread of Invasive Species. *Invasive Plant Science and Management 2009* 2:191-199.

[176] Shea K & Chesson P. 2002. Community ecology theory as a framework for biological invasions. Trends in Ecology & Evolution, 17(4), 170–176. doi:10.1016/s0169-5347(02)02495-3.

[177] Suazo AA, Spencer JE, Engel EC, Abella SR. 2012. Responses of native and non-native Mojave Desert winter annuals to soil disturbance and water additions. *Biological Invasions 14:*215-227.

[178] Gioria M, Hulme PE, Richardson DM, Pysek P. 2023. Why Are Invasive Plants Successful? *Annual Review of Plant Biology 74*: 635-670.

[179] Brooks ML & Berry KH. 2006. Dominance and environmental correlates of alien annual plants in the Mojave Desert, USA. *Journal of Arid Environments* 67, Supplement, Pages 100-124.

activities and these species have proliferated within rare plant habitat there.[180] Roads bladed for mining exploration have been found to be colonized with invasive plants years after activities end.[181]

The EA fails to adequately assess the potential impacts of further invasion resulting from the Project and the mitigation measures in place do not adequately limit the prospects for further invasion. By crushing vegetation and creating disturbed gaps between existing native flora, the Project stands the high likelihood of introducing new invasive species or increasing the proliferation of existing invasives.

8. The EA Fails to Consider the Project's Cumulative Impacts.

BLM must fully review the cumulative impacts, *i.e.*, all impacts from all "past, present, and reasonably foreseeable future actions." Cumulative effects/impacts are defined as:

> effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.[182]

In a cumulative impact analysis, an agency must take a "hard look" at all actions. An EA's analysis of cumulative impacts must give a sufficiently detailed catalogue of past, present, and future projects, and provide adequate analysis about how these projects, and differences between the projects, are thought to have impacted the environment. . . . Without such information, neither the courts nor the public . . . can be assured that the [agency] provided the hard look that it is required to provide.[183]

NEPA's mandate to analyze cumulative impacts applies to all "past," "present," and "reasonably foreseeable future actions."[184] BLM must include "mine-specific or cumulative data."[185] It must also provide a detailed "quantified" analysis of other projects combined

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[180] Fraga N. 2021. Non-native plant species observations impacting Tiehm's buckwheat (Eriogonum tiehmii) habitat in the Rhyolite Ridge Area, Esmeralda County, Nevada. Report submitted to the U.S. Fish and Wildlife Service. 7 pp.

[181] Federman A. 2020. This is the Wild West Out Here. *Politico Magazine.* https://www.politico.com/news/magazine/2020/02/09/nevada-lithium-mine-environmental-investigation-bureau-land-management-100595.

[182] 40 CFR § 1508.1(g)(3).

[183] *Te-Moak Tribe of Western Shoshone v. U.S. Dept. of Interior*, 608 F.3d 592, 603 (9th Cir. 2010) (rejecting BLM-issued EA for mineral exploration that had failed to include detailed analysis of impacts from nearby proposed mining operations).

[184] 40 C.F.R. §1508.1(g)(3).

[185] *Great Basin Resource Watch v. BLM*, 844 F.3d 1095, 1105 (9th Cir. 2016), quoting *Great Basin Mine Watch v. Hankins*, 456 F.3d 955, 973 (9th Cir. 2006).

environmental impacts, and "identify and discuss the impacts that will be caused by each successive project, including how the combination of those various impacts is expected to affect the environment."[186]

Here, the EA fails to adequately analyze the cumulative impacts from the other proposed activities within the cumulative effects study area on environmental justice, groundwater, wildlife, recreation, air quality, and other potentially affected resources. The EA is void of any detailed analysis of these and other past, present, and reasonably foreseeable future activities within the potentially affected areas that may cumulatively affect these resources. Indeed, the EA only mentions cumulative impacts regarding invasive species, groundwater, and tortoise, but it is silent as to the cumulative impacts on the Amargosa North ACEC and fails to consider any other projects in the Barstow Field Office.[187] For example, the cumulative impacts analysis makes no mention of St. Cloud Mining's existing unreclaimed zeolite mine site, Ash Meadows Mine, which is adjacent to the proposed Project.[188] It likewise fails to consider known projects within the Barstow Field Office's jurisdiction including, for example, the Ivanpah Control Transmission Line Project and ongoing tamarisk management on the Amargosa River.[189] Such a cursory analysis does not satisfy BLM's obligations under NEPA. The EA also fails to account for the numerous development projects proposed across the state line in Nevada. Mining, solar energy, and geothermal energy are all proposed for elsewhere in the Amargosa Desert region and all could cause impacts to groundwater, air quality, environmental justice, or other factors. BLM Barstow's responsibility for cumulative impacts analysis does not end at the state line. The EA must include a comprehensive assessment of the cumulative impacts from this and other proposed activities.

B. The EA Fails to Fully Review All Baseline Conditions.

The establishment of the baseline conditions of the affected environment is a fundamental requirement of the NEPA process whether an EA or EIS is prepared. "Without establishing the baseline conditions, there is no way to determine what effect the proposed action will have on the environment and, consequently, no way to comply with NEPA."[190]

Similarly, the CEQ explained: "[t]he concept of a baseline against which to compare predictions of the effects of the proposed action and reasonable alternatives is critical to the

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[186] *Great Basin Resource Watch*, 844 F.3d at 1105.

[187] EA at 19, 20, 24, 25, 27.

[188] *See* EA App'x B at 1.

[189] *See* BLM National NEPA Register (DOI-BLM-CA-D010-2022-0002-EIS), https://eplanning.blm.gov/eplanning-ui/project/2019363/510; BLM, Field Office, Fire and Fuels Reports, Desert Advisory Council (Dec. 2023), https://www.blm.gov/sites/default/files/docs/2023-11/December_2023_DAC_Report_508.pdf.

[190] *W. Watersheds Project v. BLM*, 552 F. Supp. 2d 1113, 1126-27 (D. Nev. 2008) (citing *Half Moon Bay Fisherman's Marketing Ass'n v. Carlucci,* 857 F.2d 505, 510 (9th Cir. 1998).

NEPA process."[191] "NEPA requires that the agency provide the data on which it bases its environmental analysis. Such analyses must occur before the proposed action is approved, not afterward."[192] Baseline information and analysis must be part of the environmental review and be subject to public review and comment under NEPA. Federal courts have repeatedly rejected EAs for mineral exploration project that do not contain detailed analysis of baseline conditions for all potentially affected resources, such as wildlife, groundwater conditions, etc.[193]

Here, the EA failed to obtain this baseline information on all potentially affected resources, including groundwater resources, environmental justice, and biological resources.

1. Groundwater Resources

The EA fails to provide any baseline information on conditions and presence of groundwater potentially affected by St. Cloud Mining's exploratory drilling. The EA does not provide any description of the hydrogeologic setting for the project, nor does it provide documentation of the hydrologic conditions at the project site. The EA omits readily available information about existing hydrologic monitoring in the area, and it fails to relate key information such as depth to groundwater, which would be necessary to substantiate statements the EA makes about the likelihood of the Project encountering groundwater. The establishment of the baseline conditions of the affected environment is a fundamental requirement of the NEPA process because an inadequate environmental baseline precludes an accurate assessment of project impacts.[194]

Courts have held this baseline requirement applies equally to groundwater resources. In *Idaho Conservation League v. U.S. Forest Service*, conservation groups challenged the Forest Service's approval of a hardrock mining exploration project, arguing the Forest Service's environmental review failed to provide any baseline information on groundwater.[195] In response, the Forest Service argued detailed information on groundwater resources was unnecessary because, in its judgment, the mine exploration would have "no impact" on groundwater resources. The district court disagreed, and held that NEPA requires more than "conclusory

[191] Council of Environmental Quality, Considering Cumulative Effects under the National Environmental Policy Act (May 11, 1999).

[192] *Northern Plains v. Surf. Transp. Brd.,* 668 F.3d 1067, 1083 (9th Cir 2011) (concluding that an agency's "plans to conduct surveys and studies as part of its post-approval mitigation measures," in the absence of baseline data, indicate failure to take the requisite "hard look" at environmental impacts).

[193] *See Gifford Pinchot Task Force v. Perez*, 2014 WL 3019165, **27-33 (D. Or. 2014) (BLM EA for mineral exploration failed to analyze baseline groundwater conditions); *Cascade Forest Conservancy v. Heppler*, 2021 WL 641614, *17–20 (D. Oregon 2021); *ICL v. U.S. Forest Serv*., 2012 WL 3758161, *14–17 (D. Idaho 2012); *ICL v. U.S. Forest Serv*., 429 F. Supp. 3d 719, 730-32 (D. Idaho 2019).

[194] *Oregon Nat. Desert Ass'n v. Jewell* 823 F.3d 1258 (9th Cir. 2016) (without accurate baseline information the agency cannot accurately assess project impacts); *N. Plains Resource Council v. Surface Transp. Board*, 668 F.3d 1067 (9th Cir. 2011) (reversing decision because inadequate baseline information).

[195] *Idaho Conservation League v. U.S. Forest Service*, 2012 WL 3758161 (D. Idaho 2012).

assertions that an activity will have only an insignificant impact on the environment."[196] Instead, the Court required detailed baseline data, including "a baseline hydrogeologic study to examine the existing density and extent of bedrock fractures, the hydraulic conductivity of the local geologic formations, and [measures of] the local groundwater levels to estimate groundwater flow directions."[197]

Here, the EA's groundwater analysis (or lack thereof) similarly fails to comply with NEPA. Like in *Idaho Conservation League,* the BLM failed to examine any baseline studies on groundwater, and the EA contains no analysis of the potential impacts of St. Cloud Mining's exploratory drilling on groundwater resources. Indeed, the full extent of BLM's groundwater analysis simply assumes that the Project will have no impact on groundwater:

> Groundwater is of significant importance to this area. Water table levels in this area have been measured in the past at or below 200 below ground surface. Based on current and historical groundwater data, it is not anticipated that the water table will be reached during drilling; however, if it were to be reached, abandonment of the well in accordance with Bulletin 74-81 of the California Department of Water Resources would be implemented.[198]

BLM cannot meet its NEPA obligations by foregoing collection of baseline data, and, instead, "anticipat[ing]" that the impacts of a proposed decision will be insignificant.[199] Indeed, the starting point of any NEPA analysis is the collection and description of baseline data, because, "without establishing . . . baseline conditions . . . there is simply no way to determine what effect [an action] will have on the environment, and consequently, no way to comply with NEPA."[200] As discussed above, the lack of baseline data for groundwater then leaves BLM unable to render an analysis of potential impacts to groundwater. This is a significant omission and means the EA does not adhere to NEPA.

2. Environmental Justice

The EA fails to document the environmental justice communities which could be affected by the Project. The only mention of environmental justice is in a table determining the issue

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[196] *Id*. at *14 (quoting *Ocean Advocates v. U.S. Army Corps of Eng'rs*, 402 F.3d 846, 864 (9th Cir. 2005).

[197] *Id.* at *16. *See also Shoshone-Bannock Tribes of Fort Hall Reservation v. U.S. Dept. of Interior*, 2011 WL 1743656, at *10 (D. Idaho 2011) (rejecting agency analysis of impacts of mine on groundwater).

[198] EA at 25.

[199] *Half Moon Bay Fishermans' Mktg. Ass'n v. Carlucci,* 857 F.2d 505, 510 (9th Cir. 1988); *See also Gifford Pinchot Task Force v. Perez*, 2014 WL 3019165, *28 (D. Or. 2014) (USFS/BLM EA for mineral exploration project failed to obtain and analyze baseline water quality data in violation of NEPA) ("Ninth Circuit cases acknowledge the importance of obtaining baseline condition information before assessing the environmental impacts of a proposed project.")

[200] *Half Moon Bay Fishermans' Mktg. Ass'n,* 857 F.2d at 510. *See also Ctr. for Biological Diversity v. BLM*, 422 F. Supp. 2d 1115, 1163 (N.D. Cal. 2006) (baseline is the "heart of the EIS" and must "be accurate and complete").

would not be analyzed, stating, "No minority or economically disadvantaged communities are present which could be affected by the Proposed Action."[201] This is false. The project site is within southeast Inyo County, California. Southeast Inyo is in the 75th percentile for people in households where income is less than or equal to twice the federal poverty level, qualifying it as "disadvantaged" by the federal government.[202] Southeast Inyo is in Inyo County Census Tract 8, which qualifies as a "possibly high poverty area," with 16% of the population below poverty level.[203] This census tract includes the more affluent communities in western Inyo County. When we look specifically at the community of Tecopa, where a majority of southeast Inyo residents live, we see that the poverty rate is 33%, almost triple that of California as a whole.[204] Median household income in Tecopa, California is $31,563, compared to $71,159 nationally and $91,551 in California. Tecopa residents are also much older on average, with 56% of residents above age 65, as compared with 16% above age 65 in California as a whole. Only 10% of Tecopa residents have a bachelor's degree or higher, less than one third the rate of California as a whole. The employment rate in Tecopa is 11.8%, approximately one fifth of the rate of California as a whole. By any conceivable metric, southeast Inyo County is a disadvantaged community.

The EA also fails to analyze impacts on Native American communities, in particular the Timbisha Shoshone Nation. The Timbisha Shoshone have trust lands at Death Valley Junction, approximately five miles from the project site. The Timbisha have a small agricultural and retail operation on these trust lands, and rely on a sustained source of groundwater for their businesses. In addition, the Timbisha's main reservation lands are at Furnace Creek in Death Valley National Park. Water which discharges at Furnace Creek and sustains the reservation is sourced from groundwater that underlies the Alkali Flat-Furnace Creek Ranch groundwater basin, which is where the project is located. There is the distinct possibility of the project causing impacts to the Timbisha Shoshone, but the EA fails to document them as an environmental justice community and analyze the impacts of the project to that community.

3. Desert Tortoise

The EA provides inadequate baseline information regarding the desert tortoise. On a recent field survey in April 2024, eight desert tortoise burrows were documented, indicating this area may recently have been occupied by desert tortoises and still provides viable habitat for them. These and other observations can be seen in Attachment 1.[205]

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[201] EA App'x F at 3.

[202] Council on Environmental Quality, Climate and Economic Justice Screening Tool, https://screeningtool.geoplatform.gov/en/#7.53/36.431/-116.455.

[203] U.S. Census Bureau data: https://mtgis-portal.geo.census.gov/arcgis/apps/experiencebuilder/experience/.

[204] U.S. Census Bureau, Tecopa CDP, California, https://data.census.gov/profile/Tecopa_CDP,_California?g=160XX00US0678050.

[205] Attachment 1, April 27, 2024 Field Observations at St. Cloud Zeolite Mining by Laura Cunningham.

4. Plants and Rare Plants

The EA relies on baseline plant and rare plant surveys which provide a stark illustration of the problems with out-of-season plant surveys. The October 2022 plant survey conducted by St. Cloud's consultants yielded 27 taxa. The supplemental April 2023 plant survey conducted by St. Cloud's consultants yielded 65 taxa, an increase of almost 250%. A survey conducted by volunteers in April 2024 yielded 83 taxa, which is a further 27% greater than the April 2023 survey.

Notably, the April 2024 survey did detect one rare plant, *Sibara deserti*, which has a California Rare Plant Ranking of 4.3. The full plant list can be seen in Attachment 2.[206]

C. The EA Fails to Review All Reasonable Alternatives.

NEPA requires the agency to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources."[207] It must "rigorously explore and objectively evaluate all reasonable alternatives" to the proposed action.[208] NEPA requires the environmental review to "present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public."[209] Whether an EA or EIS is prepared, BLM must "rigorously explore and objectively evaluate all reasonable alternatives" including alternatives that are "not within the [lead agency's] jurisdiction."[210] "While a federal agency need not consider all possible alternatives for a given action in preparing an EA, it must consider a range of alternatives that covers the full spectrum of possibilities."[211]

In this case, the EA only considers two alternatives: the proposed Project and the no action alternative. In so doing, the EA fails to fully consider other reasonable alternatives including, for example: (1) reducing the depth of drill holes to ensure they do not encounter groundwater; (2) including only a single drill hole to collect data in order to inform a future drilling project; or 3) limiting the timing of Project activities to occur only outside of tortoise active seasons.

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[206] Attachment 2, plant survey list for survey conducted by N. Fraga, P.L. Pipkin, C. Novak on April 27, 2024.

[207] 42 U.S.C. § 4332(E); 40 C.F.R. § 1502.14.

[208] *City of Tenakee Springs v. Clough*, 915 F.2d 1308, 1310 (9th Cir. 1990).

[209] *League of Wilderness Defs.-Blue Mts. Biodiversity Project v. United States Forest Serv.*, 689 F.3d 1060, 1069 (9th Cir. 2012).

[210] *Id*. at 1071 (citing 40 C.F.R. § 1502.14(a), (c)).

[211] *Ayers v. Espy*, 873 F.Supp. 455, 473 (D. Colo. 1994).

V. The BLM Must Consult With the U.S. Fish and Wildlife Service Regarding ESA-Listed Species in the Amargosa River Basin.

The BLM relies on the out-of-date small mining progammatic biological opinion regarding impacts to the desert tortoise, even though USFWS itself has said that biological opinion needs to be updated, and the BLM entirely failed to consult regarding the impacts to other ESA listed species that may be affected by impacts to groundwater and other project activities. For both of these reasons, the BLM must initiate consultation with the USFWS for this specific Project and conclude that consultation before it can move forward with a decision.

There is abundant evidence, presented above, that the project could cause impacts to federally listed species in the Amargosa River Basin including the twelve listed species at Ash Meadows National Wildlife Refuge and listed species downstream including the Amargosa vole. However, BLM failed to analyze the potential for these impacts in the biological evaluation (BE) for the project. While the BE provided information indicating that federally listed species do not occur in the Project Area, it does not analyze federally listed species which rely on groundwater that is connected to the groundwater underlying the Project Area. Since it's entirely possible that drilling could encounter groundwater, *see* §§ IV.A.3, IV.B.1, *supra*, and the groundwater aquifer also sustains federally listed species, the BE and EA should analyze the potential for impacts to federally listed species which occur outside of the Project Area but within an area of potential hydrologic impacts. Additionally, the access road for this project, which will be a source of dust, runs through critical habitat for the Amargosa niterwort. The BE and EA should analyze the impacts of the Project to critical habitat for this species.

Section 7 of the Endangered Species Act mandates that, "Each Federal agency shall, in consultation with and with the assistance of the Secretary, insure that any action authorized… by such agency… is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of [critical] habitat of such species…"[212] Furthermore, "a Federal agency shall consult with the Secretary on any prospective agency action… if the applicant has reason to believe that an endangered species or a threatened species may be present in the area affected by his project and that implementation of such action will likely affect such species."[213] The BLM must also ensure that the proponent receives all necessary permits from the California Department of Fish and Wildlife for species listed under CESA, including, for example, the desert tortoise and Amargosa niterwort,[214] and complies with other State laws which may include obtaining a lake and streambed alteration agreement before any on-site activities can be authorized.

There is ample evidence that threatened and endangered species are present in the area affected by the Project, per the discussion above. Groundwater-dependent listed species occur within 1.25 miles of the Project, which is likely to encounter groundwater. The project also directly impacts Amarogsa niterwort critical habitat. Despite this, the BLM fails to demonstrate

[212] 16 U.S.C. §1536(a)(2).

[213] 16 U.S.C. §1536(a)(3).

[214] *See* Cal. Code Regs. tit. 14, §§ 670.2(a)(9)(B), 670.5(b)(4).

how the exploratory drilling will not jeopardize the continued existence of, or adversely modify the critical habitat of, ESA-listed species. In accordance with NEPA, the BLM should address and analyze how the proposed Project would affect the groundwater-dependent ESA-listed species discussed herein and their habitat. Because the Project has potential to adversely impact federally protected groundwater-dependent species and their habitat, the BLM must also initiate consultation with the U.S. Fish and Wildlife Service.

VI. The EA Fails to Include an Adequate Mitigation Plan Under NEPA and BLM Mining Regulations.

The EA does not have an adequate plan to mitigate the significant impacts to environmental resources, as required by NEPA, FLPMA, and BLM regulations (*e.g.*, Part 3809). For example, the EA fails to adequately plan to mitigate impacts to the Amargosa North ACEC, to sensitive biological resource, and from surface disturbances.

Under NEPA, the agency must have an adequate mitigation plan to minimize or eliminate all potential project impacts. NEPA requires the agency to include: (1) "appropriate mitigation measures not already included in the proposed action or alternatives";[215] and (2) discussions of "[m]eans to mitigate adverse environmental impacts (if not already covered under 1502.14(e))."[216] NEPA regulations define "mitigation" as a way to avoid, minimize, rectify, or compensate for the impact of a proposed action.[217] "[O]mission of a reasonably complete discussion of possible mitigation measures would undermine the 'action-forcing' function of NEPA. Without such a discussion, neither the agency nor other interested groups and individuals can properly evaluate the severity of the adverse effects."[218] NEPA requires that the agency discuss mitigation measures, with "sufficient detail to ensure that environmental consequences have been fairly evaluated."[219]

An essential component of a reasonably complete mitigation discussion is an assessment of whether the proposed mitigation measures can be effective.[220] The Supreme Court has required a mitigation discussion precisely for the purpose of evaluating whether anticipated

[215] 40 CFR § 1502.14(e).

[216] 40 CFR § 1502.16(a)(9).

[217] 40 C.F.R. § 1508.1(s).

[218] *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 353 (1989) ("*Methow Valley*").

[219] *Methow Valley*, 490 U.S. at 352.

[220] *Compare Neighbors of Cuddy Mountain v. U.S. Forest Service*, 137 F.3d 1372, 1381 (9th Cir.1998) (disapproving an EIS that lacked such an assessment) *with Okanogan Highlands Alliance v. Williams*, 236 F.3d 468, 477 (9th Cir. 2000) (upholding an EIS where "[e]ach mitigating process was evaluated separately and given an effectiveness rating").

environmental impacts can be avoided.[221] A mitigation discussion without at least some evaluation of effectiveness is useless in making that determination.[222]

Here, the EA fails to adequately discuss detailed mitigation for several critical resources including ACEC lands, *see* Section III.A., *supra*, biological resources, invasive species/noxious weeds, and soils. For example, the EA fails to require that hand dug sumps associated with the drill sites be eliminated in favor of removable tanks or, at the very least, lined sumps (to avoid impacts to surface lands and associated resources and groundwater),[223] and the EA provides no mechanism to ensure birds and other wildlife do not access the water in the sumps which can contain toxic fluids and other contaminants from drilling. The EA also fails to address reasonable mitigation measures, such as partially deflating vehicle tires, to reduce impacts to surface lands caused by cross-country access to drill sites.

Where mitigation is noted, the EA fails to analyze the effectiveness of each mitigation measure. Simply listing or briefly mentioning mitigation measures violates NEPA. Because the EA fails to discuss how likely proposed or required mitigation measures are to reduce impacts, as well as any environmental impacts from any mitigation measure, it violates NEPA. The EA must be revised to provide actual mitigation for impacts to the resources, and to analyze the effectiveness of each mitigation measure.

VII. The EA References Incorrect or Irrelevant Information Indicative of Improper Pro Forma NEPA Compliance.

The inadequacy of the EA is further illustrated by its references to agency standards and a company that have no bearing on the Project. For example, the EA notes that the Project would "comply with . . . *Imperial County Air District rules* for fugitive dust emissions and greenhouse gas emissions," which are not applicable here. [224] Additionally, the DRECP Conservation and Management Actions ("CMAs)" appended to the EA twice reference compensation obligations of the Iron Age Mine, a company that does not appear to be associated with the Project.[225]

At least one substantive section of the EA was left entirely blank. There is *no* analysis regarding the environmental impacts of Alternative B, *i.e.*, the Project, on ACECs or the California Desert National Conservation Lands.[226]

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[221] *Methow Valley*, 490 U.S. at 351–52 (citing 42 U.S.C. § 4332(C)(ii)).

[222] *South Fork Band Council v. Dept. of Interior*, 588 F.3d 718, 727 (9th Cir. 2009) (rejecting EIS for failure to conduct adequate review of mitigation and mitigation effectiveness in mine EIS).

[223] *See, e.g.*, EA at 11.

[224] *See* EA at 13 (emphasis added).

[225] *See* EA App'x A at 82 ("DRECP mitigation not applicable to mining law actions. ESA consultation was completed in 2015 with the issuance of a biological opinion. *Iron Age Mine* will comply with the compensation required by the Endangered Species Act." (emphasis added)); *see also* EA App'x A at 36–37.

[226] EA at 20.

These errors raise questions about whether the BLM simply copied and pasted information from prior EAs without taking the requisite hard look at the environmental consequences of the Project. As courts have made clear, "the procedural requirements prescribed in NEPA and its implementing regulations are to be strictly interpreted to the fullest extent possible in accord with the policies embodied in the Act. Grudging, pro forma compliance will not do."[227]

VIII. Conclusion

Thank you for the opportunity to submit comments on this project. Due to the numerous violations of FLPMA, NEPA, and the ESA, the BLM must revise the EA or prepare an EIS in order to adequately address the deficiencies in its environmental review.

Please include the individuals listed below on the BLM's notice list for all future updates and notices associated with the Project and its environmental review, and do not hesitate to contact us with any questions at the emails listed below.

Sincerely,

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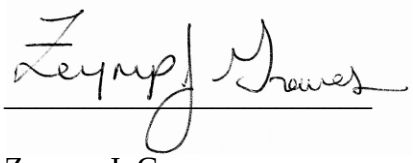

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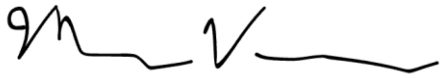
[227] *California v. Block*, 690 F.2d 753, 769 (9th Cir. 1982) (citations and internal quotation marks omitted).



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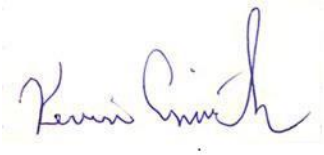

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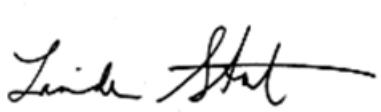

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All references cited in these comments are available for download via the OneDrive link below: References.

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