April 2, 2021

Submitted via USFS comment portal
https://cara.ecosystem-management.org/Public/CommentInput?project=55719

Sierra Vista Ranger District
District Ranger, c/o Rick Goshen
Coronado National Forest
4070 S. Avenida Saracino
Hereford, AZ 85615

Re: **Comments on Draft EA, Sunnyside Exploration Drilling Project**

Dear Sierra Vista Ranger District:

Per the U.S. Forest Service's ("USFS") February 25, 2021 "Dear Friends" public comment notice, this letter (and attachments) contains comments on the Draft Environmental Assessment ("EA" or "Draft EA") for the Sunnyside Exploration Project (proposed by Arizona Standard, LLC) ("Project" or project). *See* U.S. Forest Serv., Sunnyside Exploration Drilling Comment Period Notice Letter (Feb. 25, 2021), https://www.fs.usda.gov/nfs/11558/www/nepa/111128_FSPLT3_5599120.pdf. These comments are submitted on behalf of the Town of Patagonia, Patagonia Area Resource Alliance ("PARA"), Defenders of Wildlife, Arizona Mining Reform Coalition, Center for Biological Diversity, Save the Scenic Santa Ritas, Tucson Audubon Society, Friends of Santa Cruz River, Borderlands Restoration Network ("BRN"), Sky Island Alliance, Friends of Sonoita Creek, and Earthworks and supplement and incorporate any prior or related comments, including attachments to those comments, from these organizations and/or individual members of these organizations regarding this Project or the related mining proposals submitted by Arizona Standard and/or previous operators/applicants regarding mineral operations associated with, or known as the Sunnyside Project.

The **Town of Patagonia** is proud of our history and distinctive character. Visitors tell us that Patagonia's unique spirit is easily perceived and is their reason to stay or to return. Situated at over 4,000 feet elevation between the Santa Rita and Patagonia Mountains in the riparian corridor of Sonoita Creek, Patagonia is spectacularly rich in both natural and human assets. The distinguishing vision of our community is to protect and build sustainably upon these assets, and continuously develop our Nature Based Economy.

Patagonia Area Resource Alliance ("PARA") is a grassroots organization of volunteer community members committed to protecting and preserving the Patagonia, Arizona area. It is a watchdog organization that monitors the activities of industrial developers such as mining corporations, as well as government agencies, to make sure their actions have long-term, sustainable benefits to our public lands, our watershed, and our regional ecosystem.

Defenders of Wildlife is a national, nonprofit membership organization dedicated to the protection of all native animals and plants in their natural communities. Defenders is committed to protecting wild lands and wildlife in Arizona, and its Southwest office is located in Tucson, Arizona.

Arizona Mining Reform Coalition works in Arizona to improve state and federal laws, rules, and regulations governing hard rock mining to protect communities and the environment. AMRC works to hold mining operations to the highest environmental and social standards to provide for the long term environmental, cultural, and economic health of Arizona.

The **Center for Biological Diversity** is a non-profit public interest organization with an office located in Tucson, Arizona, representing more than 825,000 members and supporters nationwide dedicated to the conservation and recovery of threatened and endangered species and their habitats. The Center has long-standing interest in projects of ecological significance undertaken in the National Forests of the Southwest, including mining projects.

Save the Scenic Santa Ritas is a non-profit organization that is working to protect the Santa Rita and Patagonia Mountains from environmental degradation caused by mining and mineral exploration activities.

Tucson Audubon is a 501(c)(3) member-supported community organization established in 1949. The organization promotes the protection and stewardship of southern Arizona's biological diversity through the study and enjoyment of birds and the places they live. Tucson Audubon provides practical ways for people to protect and enhance habitats for birds and other wildlife.

The **Friends of Santa Cruz River** is a non-profit organization dedicated to ensuring the continued flow of the Santa Cruz River, the life-sustaining quality of its waters, and the protection of the riparian biological community it supports.

Borderlands Restoration Network ("BRN") is a small, Patagonia-based nonprofit that works to grow a local restorative economy by rebuilding healthy ecosystems, restoring habitat for plants and wildlife, and reconnecting our border communities to the land through shared learning. Our work is primarily focused on protecting and restoring wildlife corridors and the surface waters of Sonoita Creek and surrounding watersheds.

Sky Island Alliance is a regional conservation nonprofit dedicated to protecting and restoring the diversity of life and lands in the Sky Island region of the U.S. and Mexico. Its mission is to ensure the Sky Islands—mountain ranges primarily in Arizona and Sonora that rise out of arid grasslands—are a place where nature thrives, open space and clean water are available to all, and people are connected to the region's innate ability to enrich lives.

The **Friends of Sonoita Creek** is a non-profit organization dedicated to protecting and restoring the water and natural habitat of the Sonoita Creek Watershed. We inform residents and visitors about its importance to life forms and relationship to the geography through hands on activities, presentations, hikes and collaboration with kindred organizations.

Earthworks is a nonprofit organization dedicated to protecting communities and the environment from the adverse impacts of mineral and energy development while promoting sustainable solutions. Earthworks stands for clean air, water and land, healthy communities, and corporate accountability. We work for solutions that protect both the Earth's resources and our communities.

SUMMARY

"Arizona Standard's Sunnyside Exploration Drilling Project (SED Project) would include drilling on up to 30 constructed drill pads within three drill areas on National Forest System (NFS) lands. During the exploration drilling, no more than two drill sites at a time would be active. Drilling would be undertaken on a 24/7 rotational work schedule with intermittent breaks, seven days a week for up to seven years. Drill holes would have a maximum depth of approximately 6,500 feet from the surface." Draft EA at 1.

The USFS should not approve the Sunnyside Project using an Environmental Assessment ("EA") and Finding of No Significant Impact ("FONSI") and instead should prepare an Environmental Impact Statement ("EIS") that collects data and establishes current baselines for resources likely to be affected by the project. The EIS should identify and analyze alternatives to the proposed action, analyze cumulative impacts of all past, present, and reasonably foreseeable future actions in the project area and beyond, particularly of other mining activities, and identify needed mitigation measures. The project is likely to have significant adverse impacts on several species listed under the Endangered Species Act ("ESA") that will be harmed by direct, indirect, and cumulative impacts from present and reasonably foreseeable mining and other projects, as detailed herein. As a result, the USFS should consult with the U.S. Fish and Wildlife Service regarding the Project's impacts on listed species, including the threatened Mexican spotted owl and its critical habitat (including Protected Activity Centers ("PACs") that overlap part of the Project area), threatened western yellow-billed cuckoo, endangered jaguar and its critical habitat, endangered ocelot, threatened Chiricahua leopard frog, endangered Sonora tiger salamander, and endangered Gila topminnow.

If the agency decides to prepare an EA first, a complete NEPA analysis must be conducted, with full public opportunity to review in a revised Draft EA (as the current Draft is legally and factually inadequate to satisfy NEPA's public and agency review requirements), and include at a minimum:

1. Collection and analysis of data to establish baseline conditions for resources that may be affected, including but not limited to wildlife (including ESA-listed species and other species and habitat that may be affected), air quality, vegetation/plants, surface and ground-water quality and quantity (including not only the water to be directly, indirectly or cumulatively affected by the drilling, but also the sources of water to be used for the project), recreation, transportation/traffic, economic activity/resources, and cultural/historical resources (with extensive government-to-government consultation with all Native American Tribes that may have current and/or historical ties to the area).

2. Detailed analysis of cumulative impacts from all mining and other projects/activities in the area that may affect resources, including but not limited to wildlife, vegetation, water quality/quantity, air quality, recreation, transportation/traffic, and cultural resources.

3. Development of alternatives and in-depth analysis of these alternatives.

4. Identification of appropriate and adequate mitigation (and its effectiveness) to offset impacts on the above resources and others that might be negatively affected.

As shown in more detail below, the USFS's review contained in the Draft EA and attachments contains numerous legal and factual errors and as such should be revised in order to comply with federal law. In addition, any USFS plan to continue its review or approval of the Plan of Operations ("PoO") must comply with federal law as detailed herein.

I. NATURAL RESOURCES THAT MAY BE AFFECTED BY THE PROJECT

A. Water Resources

The Patagonia Mountains are headwaters for Sonoita Creek and its tributaries, Alum Gulch and Harshaw Creek, waterways that provide essential water to downstream ecosystems and human communities. The creeks and their watersheds are recharge areas for groundwater aquifers. Residents of the Town of Patagonia and approximately 300 individual well users in the surrounding communities are entirely dependent on the water supply originating in these mountains. As authorized by 36 C.F.R. § 251.9, the Town of Patagonia applied to the Coronado National Forest to designate a region abutting and possibly overlapping the Project area as its municipal watershed in August 2011. On March 4, 2014 a participating agreement was signed between the Town of Patagonia and the Coronado National Forest to "document the cooperation to monitor and measure the water quantity and quality of the Patagonia municipal supply watershed within the boundaries of the Coronado National Forest." The April 2018 Coronado National Forest Land and Resource Management Plan makes multiple references to the Patagonia municipal supply watershed. *See*, *e.g.*, U.S. Forest Serv., Coronado National Forest Land and Resource Management Plan, at 139 & 145 (Apr. 2018), https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd583208.pdf [hereinafter Coronado NF Plan]. Because the proposed drilling operations are either very near or overlap the watershed, and because traffic supporting the drilling will travel through the watershed, this places on the USFS a duty to ensure the continued safety and adequacy of the Town of Patagonia water supply.

Historic mining operations in the Patagonia Mountains have created long-term copper, acidity, arsenic, fluoride, lead, and other water-quality problems for Alum Gulch, Sonoita Creek, Harshaw Creek, and their tributaries. The Project's proposed drill sites are within the drainage of Alum Gulch, water from which drains into Sonoita Creek. Alum Gulch, immediately downstream of Humboldt Canyon, is subject to an EPA approved Total Maximum Daily Load calculation for cadmium, copper, zinc, and acidity. See Sonoita Creek Watershed Management Plan

Phase 1, at part 3, 16–17 (May 12, 2017), http://patagonia-az.gov/wp-content/uploads/2015/12/Final-Phase-1-Sonoita-Creek-WMP-5-12-17.pdf; S. Shafiqullah, Hydrology Report for the Sunnyside Exploration Plan of Operation (Jan. 24, 2014).

Not surprisingly, further downstream, Sonoita Creek is also a state-designated impaired waterway for aquatic life and wildlife uses as a result of zinc contamination. Because the quality of these waters has already been compromised by previous mining activity, particular care should be taken when considering permits for any projects associated with mining. As detailed below, a complete analysis of the baseline conditions of these waters, and a full analysis of all cumulative impacts to these waters (and all potentially affected waters) must be completed and submitted for public review during the NEPA process.

Exploratory drilling involves significant quantities of water to cool drilling equipment inside the borehole. The Draft EA does not establish the source of all the water needed for the Project, as it should under NEPA. Contaminated wastewater from drilling is typically collected in open pits (sumps) near the drill site and allowed to evaporate. The project proposes to construct on each drill pad an approximately 10-feet-wide by 15-feet-long by four-feet-deep sump to collect drill cuttings and fluids. If improperly designed or maintained, such sumps may leak and overflow with subsequent contamination of soil and water. For example, statistics from New Mexico's Oil Conservation Division show that pit overflows and liner leaks are the most common causes of drilling wastewater spills in New Mexico. *See* Yusuke Kuwayama et al., Pits versus Tanks: Risks and Mitigation Options for On-site Storage of Wastewater from Shale Gas and Tight Oil Development, Resources for the Future Discussion Paper 15-53 (Dec. 2015), https://media.rff.org/archive/files/document/file/RFF-DP-15-53.pdf.

The summer monsoon season that provides drenching rainfalls to the Patagonia Mountains could result in wastewater pit overflows that could contaminate Alum Gulch surface or subsurface waters. One waste sump on the Hermosa site adjacent to the Sunnyside site overflowed in approximately 2013.

Given these risks, water stored in sumps should be analyzed in terms of historic frequencies of spills and possible harm to surface water rather than accepting at face value the company's assertion that containment will be adequate, particularly given the possibility of severe monsoon precipitation, which in 2013 caused adits from abandoned mines in the area to overflow, contaminating Harshaw Creek with acidic waste. Any sumps must be lined with an impermeable liner and fully reclaimed upon completion of the activity.

The PoO states that "baseline water quality samples will be taken at nearby ephemeral or intermittent water sources prior to any disturbance activities; during drilling, and after the completion of drilling activities to document any changes in baseline water quality conditions in the Project Area." Arizona Standard LLC, Plan of Operations, Sunnyside Exploration Drilling Project, Santa Cruz County, at 30 (Feb. 28, 2021), https://www.fs.usda.gov/nfs/11558/www/nepa/111128_FSPLT3_5599116.pdf [hereinafter PoO]. Yet, under NEPA as detailed herein, this critical baseline data and analysis should have been provided in an adequate Draft EA (for all potentially affected resources) to allow for adequate public review under NEPA. Moreover, particular attention should be made for the baseline conditions and protection for downstream

populations of species of special concern, notably the federally protected Mexican garter snake (*Thamnophis eques*) and Huachuca water umbel (*Lilaeopsis schaffneriana* ssp. recurva), both documented on the Nature Conservancy Patagonia-Sonoita Creek Preserve.

In addition to adverse effects for surface waters, exploratory drilling can contaminate, impede, or redirect the flow of groundwater. "[A] potential risk to impact groundwater quality and quantity through potential water exchange between aquifers. Deep boreholes drilled through the groundwater system could create a preferred pathway for groundwater in deeper formations to migrate upward and intermingle with the shallow parts of the system. A potential issue would be a risk of water exchange between aquifers as a result of the proposed drilling program." PoO at 31.

The PoO proposes to drill over a mile deep: "Coring drill holes will have depths of up to approximately 6,500 feet from the surface." PoO at 17. "Drill holes would have a maximum depth of approximately 6,500 feet from the surface." EA at 1. As noted, this will intersect the aquifer(s). For these reasons, further study of the baseline quality and quantity of ground and surface waters is essential for the USFS to make an informed decision about the proposed Project. See, e.g., Idaho Conservation League v. U.S. Forest Serv., 2012 WL 3758161, *14–17 (D. Idaho Aug. 29, 2012); Gifford Pinchot Task Force v. Perez, 2014 WL 3019165, *25–33 (D. OR. 2014) (BLM/USFS EA for mineral exploration violated NEPA by failing to obtain and analyze baseline groundwater quality conditions).

> A segment of Alum Gulch and all segments of Harshaw Creek are listed as being impaired under Category 4a (impaired waters with EPA-approved total maximum daily load [TMDL]); the impaired sections of the streams are shown in Figure 3-9. The upper portion of Alum Gulch is impaired for cadmium, copper, zinc, and acidity. Harshaw Creek is impaired for copper and acidity (ADEQ 2003a). A third unnamed ephemeral drainage within the project area and west of Alum Gulch, is also listed as impaired for zinc and copper (Arizona Standard 2020). ADEQ and USGS have completed environmental studies on water quality and sources of contributions of acidity and heavy metals (ADEQ 2003a, 2003b). These studies concluded there is a clear contribution from historical mining activities, including mining wastes and adits. The reports also recognized that there is a substantial natural background component to the impaired water quality observed.

Draft EA at 84. The USFS has not shown that these conditions will be analyzed, rectified and public resources protected under the 1897 Organic Act, NEPA, and related laws.

B. Listed Species

The Project area and nearby affected lands contain numerous federally listed threatened, endangered, and USFS special status species known to occur in and/or near the project area, now or in the past, according to the Arizona Game and Fish Department's list of Endangered Species of Patagonia. See Appendix A of this letter.

These species include, among others, the federally threatened Mexican spotted owl and western yellow-billed cuckoo, and the area provides important habitat for the endangered jaguar and ocelot. Both the Mexican spotted owl and jaguar have designated critical habitat in and around the Project area. Consultation with the U.S. Fish and Wildlife Service ("USFWS") is required (and according to the Draft EA, is still ongoing) for these species, given the presence of both birds on or near the Project site, the presence of jaguar critical habitat on the site, and the historic occurrence of ocelot. See 50 C.F.R. § 402.14. In addition, for all potentially affected species and their habitat, including the threatened Chiricahua leopard frog, endangered Sonora tiger salamander, and endangered Gila topminnow (for which consultation should occur), the current baseline conditions for populations, movement, trends, and habitat conditions must be fully analyzed prior to issuance of the revised Draft EA/EIS for public review.

A scientifically unsupported assumption runs through the Draft EA's analysis of the effects on species, to wit that individual animals, for example jaguars or Mexican spotted owls, can simply shift their activities away from the area of human disturbance and activity. "[I]t is more likely that jaguars and ocelots would shift their activities to avoid areas with increased human activities, such as drill areas, laydown areas, or water storage tank sites." Draft EA at 55. "[I]t is more likely that owls would shift their activities within their existing home ranges to avoid areas with increased human activities." Draft EA at 52 "[W]ildlife species that are more sensitive to fragmentation and disturbance may shift their habitat use to other areas while drilling operations are ongoing." Draft EA at 31. These pollyannaish assertions assume that there is no or trivial cost to individuals and populations if individuals are forced to move or forgo portions of their territories. But, in fact, there are almost certainly associated costs that may include increased mortality and decreased reproductive success. Many studies have demonstrated that there are significant fitness costs to animals that are forced to relocate—mortality rates have consistently been found higher for dispersing individuals than resident ones in a multitude of species, including ocelots. See generally Aaron M. Haines et al., Survival and Sources of Mortality in Ocelots, Journal of Wildlife Management 69: 255–263 (Jan. 2005); Xavier Bonnet et al., The Dangers of Leaving Home: Dispersal and Mortality in Snakes, Biological Conservation 89(1): 39–50 (1999). The USFS cannot assume without scientific analysis that the costs of moving are trivial for either individuals or populations. Such analysis must be part of the cumulative effects analysis because multiple projects on the landscape, each of which causes individuals to "shift," could collectively cause significant mortality and deprive a population of enough habitat to sustain itself.

We also question the assertion that "[n]oise and visual disturbance associated with reclamation monitoring and maintenance (if needed) would not have an effect on jaguars and ocelots. The reclamation monitoring and reclamation activities would occur infrequently and would be indistinguishable from the pickup truck traffic and recreational use ongoing in the project area." Draft EA at 55. Reclamation activities would be additive to ongoing "pickup truck traffic and recreational use" and therefore would be an additive stressor. Draft EA at 53. This statement in the EA confuses type of effect with scale. Even if the effects of reclamation are similar to those of truck traffic and recreational use, the cumulative scale may be great enough to have a significant negative effect. The USFS must analyze such cumulative effects before it can conclude that restoration "would not have an effect."

1. Mexican spotted owl (*Strix occidentalis lucida*)

As proposed, the entire project area falls within designated critical habitat for the Mexican spotted owl. Draft EA at 48. The Draft EA specifically states that the "Project would occur in areas that are known to be used by the Mexican spotted owls for breeding, roosting, foraging, and dispersal." Draft EA at 52. Further, road and other construction and drilling would occur within and adjacent to three Protected Activity Centers ("PACs") for the Mexican spotted owl (PAC # 03-020; PAC # 03-024; PAC # 03-025) and vehicle and equipment travel would occur along Harshaw Road within two PACs for the species (PAC # 03-018; PAC # 03-008). Draft EA at 52. In general, Mexican spotted owls return to the same nesting locations year after year, and most owls remain near their nesting territory in the non-breeding season, meaning that they would likely be adversely affected by drilling activities even during the non-breeding season, e.g., by noise and lights. See U.S. Fish & Wildlife Serv., Mexican Spotted Owl Recovery Plan, First Revision (*Strix occidentalis lucida*), at 26 (Sept. 5, 2012), https://www.fws.gov/southwest/es/arizona/Documents/SpeciesDocs/MSO/2012MSO_Recovery_Plan_First_Revision_Final.pdf. Moreover, owls hunt almost exclusively at night relying on their keen hearing to detect prey, and hearing is an important part of their social communication. Id. at 56.

"A number of MSO detections and active roost sites have been documented within the Project Area. Project Area is within several PACs and suitable nesting and feeding habitat for this species exists within the Project Area." PoO at 38 (Table 6).

The Project's drills will operate 24 hours a day and generate significant noise and light pollution near and inside the designated PAC and in the surrounding foraging habitat. Further, proposed road improvements and other construction, including clearing and grubbing, dredge and fill, dust control, etc., will occur within the owl's designated critical habitat and PACs. Therefore, the proposed Project may have significant adverse effects for owls and their habitat, including, but not limited to causing the owls to relocate to a less suitable territory, increasing stress, decreasing foraging success, and decreasing breeding success.

The Project would remove up to 180 trees greater than 5-inch diameter-at-breast-height (dbh) or 5-inch diameter root collar (drc). Draft EA at 11. Trees of this size constitute an important component of owl habitat, with larger trees providing roost and nest sites, and perches for hunting. Because restoration of this habitat could take decades, the USFS should evaluate the effects of this loss.

We note that, as for the jaguar and ocelot discussed below, maintaining connectivity between suitable habitat patches is an essential component of Mexican spotted owl recovery. The proposed Project may contribute to the deterioration of connectivity in this region, especially when considered in light of the numerous other drilling and mining projects proposed in the Patagonia Mountains.

2. Western yellow-billed cuckoo (*Coccyzus americanus*)

The western distinct population segment of the yellow-billed cuckoo is listed under the Endangered Species Act as a threatened species. 79 Fed. Reg. 59,992 (Oct. 3, 2014). Critical

habitat was designated in 2014. 79 Fed. Reg. 71,373 (Dec. 2, 2014). "Yellow-billed cuckoos were previously detected on surveys conducted in 2012 along portions of nearby Harshaw Creek, Hermosa Canyon, Goldbaum Canyon, Coral Canyon, and Willow Spring Canyon, suggesting that they are likely to occur within the Project Area." Id.

"A number of YBCU detections have been documented within the Project Area. Suitable nesting and feeding habitat for this species exists within the Project Area." PoO at 38 (Table 6). Although normally associated with riparian forest, the 2012 survey found the species in Hermosa Canyon outside the riparian area, indicating that in the project area cuckoos might use "untypical" non-riparian habitat. See generally Jonathan Horst, Expert Statement, western Yellow-billed Cuckoo at the San Antonio Project Site (2020).

We note the following inadequacies in the 2015 Revised Biological Assessment ("RBA") for a previously requested Sunnyside Exploratory Drilling Permit to advise against making similar conclusions in the EA for the current project. The San Antonia project's RBA stated "Suitable habitat for yellow-billed cuckoos is lacking in the San Antonio Exploration Drilling project area and it is unlikely that cuckoos would be affected by the project." As pointed out in our scoping comment letter dated October 17, 2020, recent studies have shown that riparian habitat is not necessary for cuckoo presence and have found nesting cuckoos in arid ephemeral drainages, including habitat consisting of grassland and shrublands in the Patagonia Mountains and other Sky Islands, similar to the project site and surroundings. Compared to the riparian habitats that have long been considered typical for western yellow-billed cuckoos, the southern Arizona upland habitats where cuckoos nest, away from rivers and perennial streams, are much more varied. The variety of these upland habitats is reflected in the range of nest trees used by cuckoos, including oak, hackberry, juniper, Arizona ash, acacia, and Arizona cypress. These upland habitats used by nesting yellow-billed cuckoos range from extensive Madrean Encinal oak woodlands to low, arid mesquite flats and areas of desert scrub. The Madrean Encinal habitats are found at mid elevations and are broad and extensive, with oak woodland along dry canyons and on adjacent slopes. The woodland may have interspersed grassland, savanna mixtures of grass and trees, and scattered ash, sycamore, and other riparian species immediately along dry stream channels. A strong summer monsoon in this southern Arizona region brings thunderstorms and higher humidity levels, which may directly or indirectly affect yellow-billed cuckoo use of the upland habitats such as the project area. The Forest Service must determine whether cuckoos are present or would be affected by including upland potential habitat in its analysis. We refer you to the 2020 Expert Statement by Jonathan Horst, previously submitted in support of scoping comments on the San Antonia project and submitted with our comments here, based on cuckoo surveys he and associates conducted from 2014 to 2020.

3. Jaguar (*Panthera onca*) and Ocelot (*Leopardus pardalis*)

Overview

The Patagonia Mountains are critical for the recovery and movement of jaguars and ocelots, both as core habitat and as a wildlife corridor. The Patagonia range crosses the international border, creating a bridge for species movement and providing an excellent wildlife

corridor for species migrating north or south. According the Arizona Game and Fish Department (see Appendix A of this letter), the Project falls within the designated Patagonia-Santa Rita Linkage Wildlife Corridor. Moreover, the Patagonia Mountains' closeness to other ranges (e.g., the Huachucas and Santa Ritas) where jaguars and ocelots have been found, sets this range right in the heart of potential habitat and makes the area critical for connectivity. Because the Project is located within the Patagonia range, it will degrade and fragment northern jaguar and ocelot habitat.

The PoO contains several misunderstandings about these cats and their habitat, stating that: "The lack of any documented occurrences of jaguars and ocelots suggests that the Patagonia Mountains do not support resident populations of these species. Therefore, it is unlikely that jaguars or ocelots would occur in the Project vicinity and any individuals that were to be present would likely be transient individuals from Mexico." PoO at 37.

First, lack of recent documentation does not mean that jaguars and/or ocelots do not use the Patagonia Mountains—it is difficult to prove absence. Second, even if neither of these cats are currently present in the Patagonia Mountains, this does not mean that they might not use the habitat in future if it is not degraded by mining. Third, the habitat is high quality for either of these cats, as evidenced by its inclusion in the relatively small amount of critical habitat designated by USFWS for jaguars. Fourth the designation of critical habitat means that the USFWS believes this habitat is "essential for the conservation of the species," meaning that by definition the section of the Patagonia Mountains is essential for the species. In turn, the designation requires that Federal agencies must "ensure that actions they plan to undertake, fund, or authorize do not destroy or adversely modify that habitat" in the Patagonia Mountains. USFWS 2019. Critical Habitat. https://www.fws.gov/endangered/what-we-do/critical-habitats.html. Fifth, the PoO mischaracterizes U.S. jaguars and ocelots as "transient individuals from Mexico" when several are known to have resided in the United States for years. For example, El Jefe, a jaguar resided primarily in the Santa Ritas, part of the same critical habitat unit as the Patagonias, from at least 2011 to 2016. It is possible that he could have visited the Patagonias during this period. A male ocelot is known to have lived in the Arizona mountains for at least 5 years. Rosane, 2019. "Rare Footage of Arizona Ocelot Shows What Could Be Lost by Border Wall." Ecowatch. https://www.ecowatch.com/mark-rutte-bikes-to-work-2640672478.html.

As reviewed in the Draft Jaguar Recovery Plan (FWS 2016a), opinions about the relative importance of peripheral populations vary, but some studies have suggested that they may be more important for the long-term survival of species than central populations. For example, Channell and Lomolino (2000) assessed 245 species that had lost large portions of their ranges, often due to human activity, and concluded that, overall, species at risk persist best in peripheral areas that may be less affected by people. R. Channell & M. V. Lomolino, Dynamic biogeography and conservation of endangered species, Nature 403: 84-86. (2000). Thus, recovery of U.S. jaguars and ocelots may be an important contribution to conservation of these cats overall, and this recovery depends on preserving sufficient habitat, which means in the case of jaguars at minimum conserving all its critical habitat. Culver and Hein (2016) found that jaguars from Arizona and Sonora possessed mitochondrial DNA haplotypes found nowhere else. M. Culver, & A. Ochoa Hein, Jaguar taxonomy and genetic diversity for southern Arizona,

United States, and Sonora, Mexico: U.S. Geological Survey Open-File Report 2016-1109 (2016). They hypothesized that northern jaguars may be pre-adapted to hot, arid conditions, which are expected to become more prevalent with climate change. It is clear that borderlands jaguars may experience unique ecological conditions when compared to its overall range in the Americas. Thus, a U.S. population might preserve unique genes that could provide long-term survival benefits for the species in the face of climate change. Although not studied, it's possible the same could be true for ocelots.

Jaguar

The Sky Island mountain ranges that line the U.S.-Mexico border, including the Patagonia, Baboquivari, Atascosa, Huachuca, and Peloncillo Mountains, as well as several additional ranges in Arizona and Sonora, are historical and potential habitat for the federally endangered jaguar. Accordingly, the USFWS included the Patagonia Mountains in its March 5, 2014 designation of jaguar critical habitat, along with the nearby Santa Rita, Empire, and Huachuca Mountains and the Grosvenor and Canelo Hills. See 79 Fed. Reg. 12,572 (Mar. 5, 2014). Together these form critical habitat Unit 3, habitat patches with connectivity for jaguars to travel from one to patch to another.

The Patagonia Mountains contain the physical and biological features essential to jaguar conservation. They provide remote, unfragmented, Madrean evergreen woodland habitat that connects jaguar populations in Sonora, Mexico, with jaguar habitat in the Patagonias and in other adjacent mountain ranges in southeast Arizona—the Santa Ritas, the Whetstones, the Canelo Hills, and the Huachucas. The current nighttime view from Red Mountain at the northern end of the Patagonia range is of darkened, uninhabited wild lands extending into Mexico. The region is highly rugged, with sufficient surface waters and minimal human population density, and has historically been a hotspot for jaguar occurrences in Arizona.

In the critical habitat rule, the USFWS identified as essential "expansive open spaces in the United States of at least 100 square km [32 to 37 square miles]," "with adequate connectivity to Mexico that contain a sufficient native prey base and available surface water, have suitable vegetative cover and rugged topography to provide sites for resting, are below 2,000 m (6,562 feet (ft)), and have minimal human impact, id. at 12,583, all features currently found in the Patagonia Mountains. Also essential are areas with "minimal to no human population density, no major roads, or no stable nighttime lighting over any 1- km2(0.4-mi2) area, likewise descriptive of the Patagonia Mountains. The USFWS stressed that habitat connectivity is crucial, stating that "connectivity between expansive open areas of habitat for the jaguar in the United States is necessary if viable habitat for the jaguar is to be maintained," and "[t]his is particularly true in the mountainous areas of Arizona and New Mexico. . . ." Id. at 12,607. It is clear that 24/7 lighting for drilling and/or other mine development would undermine key qualities that resulted in the Patagonia Mountains being designated critical habitat, e.g., "no stable nighttime lighting over any over any 1- km2(0.4-mi2) area."

The USFWS called special attention to the threat posed by mining activity to jaguar habitat in mountain ranges such as the Patagonias: "Jaguar habitat and the features essential to their conservation are threatened by the direct and indirect effects of increasing human influence

into remote, rugged areas, as well as projects and activities that sever connectivity to Mexico. These may include . . . mineral extraction and mining operations . . . and human disturbance related to increased activities in or access to remote areas." Id. at 12,588.

Mining and the increased human disturbance that accompanies a mining project "may render an area unsuitable for jaguars." Id. at 12,573. Due to these impacts, the USFWS concluded that "[f]uture projects should avoid (to the maximum extent possible) areas identified as meeting the definition of critical habitat for jaguars, and if unavoidable, should be constructed or carried out to minimize habitat effects." Id. at 12,617. Brown and Lopez-Gonzales (2001, page 6, Table 1) list at least seven jaguars reportedly killed or photographed in the Patagonia Mountains area, dating from 1904 (2 jaguars), 1926 (1, maybe two jaguars), 1932/33 (1 jaguar), 1948 (1 jaguar), and one from 1965. Additionally, given the wide ranges that jaguars occupy and move through, it is critically important to consider the jaguar's recent presence in mountain ranges near the Patagonias. In the last decade (from 2001–2007), McCain and Childs (2008) monitored at least two jaguars ("Macho A" and "Macho B") on several mountain ranges (the Atascosa, Tumacacori, and Baboquivari Mountains) west of the Patagonia Mountains (30–60 miles away). In 2010 and 2011, Sky Island Alliance documented two different jaguars 40 miles south of the Patagonia Mountains. In 2016 two jaguars were recorded by trail cameras, one in the Santa Rita Mountains approximately 20 miles north of the Patagonias, and one in the Huachuca Mountains approximately 40 miles east. Considering that the estimated minimum home range of a northern jaguar can be up to 525 square miles, the Patagonia Mountain area is highly important at a regional level for habitat connectivity, movement corridors, and potential territories to be established completely or in part in the Patagonia Mountains.

That jaguars can travel between the Sky Islands Mountains is evidenced by the fact that El Jefe, the jaguar photographed in the Santa Rita Mountains in 2016 had been previously photographed in the Whetstone Mountains, 30 miles from Patagonia, and the jaguar photographed in the Huachuca Mountains in 2016 was subsequently killed in Mexico in 2018.

Ocelot

Even though critical habitat has not yet been designated for the ocelot, many of the habitat and connectivity requirements associated with jaguars are also applicable to ocelots, so much of the above in the section on jaguars also pertains to ocelots. The Project sits 30 to 40 miles from locations where ocelots have been documented, both in Arizona and Sonora, Mexico. Sky Islands Alliance (SIA) has systematically documented ocelots 40 miles to the southeast, in the Sierra Azul Mountains, since 2007. Similarly, in 2009, SIA documented an ocelot in Cochise County, 20-30 miles to the northeast of the Patagonia Mountains. In February and May 2011, the Arizona Game and Fish Department documented two separate ocelot sightings approximately 20 miles from the proposed mine area, in the Huachuca Mountains. The habitat type, elevation, and physical characteristics of each place are extremely similar, leading biologists to believe that the project area is also potential ocelot habitat.

To the best of our knowledge, no long-term monitoring efforts have been conducted in the Patagonia Mountains to determine the presence of ocelots. However, there are historical records that document ocelots in the Patagonia Mountains (1960), the Huachuca Mountains

(1964), and the San Pedro River Valley (1980). Through the use of remote sensing cameras, from 2007 through 2011, the ocelot has been recorded as close as 40 miles south of the Patagonia Mountains. To date, SIA has confirmed the northernmost known breeding population (presence of males, females, and kittens) of this tropical feline within short distances of the United States, suggesting that ocelots may be traveling northward or currently residing in southern Arizona. Estimated dispersal distances for ocelots in south Texas are between 3 to 20 miles (Caso, 1994; Crawshaw, 1995), which is similar to the distance between the northernmost breeding population and sightings in Arizona.

Ocelots are notoriously difficult to detect, particularly in low densities such as they exist in their northern range. It is possible that all of these occurrences of ocelots are connected by existing corridors and are part of an established population. It is highly probable that ocelots documented in northern Sonora and in Arizona are connected by migration corridors, including the Patagonia Mountains, and therefore these ocelot occurrences potentially represent localities of an established trans-boundary population. This possibility is based on observations of open lands in northern Sonora and southern Arizona, where extensive patches of undeveloped lands—including both private ranches and public lands—contain suitable habitat and prey species to support a healthy cross-border ocelot meta-population. Even though these recently documented ocelots in Arizona could represent dispersing males, and there has not been enough field research to determine the source population, their preferred habitats, their migrating corridors, or even existence of established ocelot populations along the borderlands. Despite the lack of research, one reasonable explanation of the recent occurrences of ocelots in southern Arizona is that they may have originated from a breeding population somewhere south of the U.S. border, and used the Patagonia Mountains as a travel corridor.

4. Chiricahua leopard frog (*Rana chiricahuensis*)

The USFS must analyze effects of the project on the federally threatened Chiricahua leopard frog. The Draft EA deals summarily with the frog, with analysis restricted to two tables. Table E-1 states that "No records of Chiricahua leopard frog exist in the Patagonia Mountains," Draft EA at E-1 (Appendix E), and Table 6 of the Plan of Operations states that "No known records occur within or near the Project Area. Suitable aquatic habitat for this species in the form of cienegas, springs, pools, cattle tanks, streams, and rivers is generally lacking within the Project Area." PoO at 39. The PoO also states that the species is "unlikely to occur within or near the Project Area and that there will be "no effect." PoO, at 36.

The statement that "no records of Chiricahua leopard frog exist in the Patagonia Mountains" is false. *See* Draft EA at E-1 (Appendix E). For example, the 2010 Final Environmental Assessment, Redrock Canyon Renovation Project list a location record from 1998 at Harshaw Creek near the Harshaw town site. U.S. Forest Serv., Final Environmental Assessment, Redrock Canyon Renovation Project, 97 (Appendix B) (Sept. 2010). This statement is further contradicted by the 2014 Hermosa Drilling Project draft Environmental Assessment, for a similar project neighboring the proposed Sunnyside project area. The Hermosa draft EA's Table 14 concluded that "[p]roject area contains suitable habitat. . . . [and the species is] [k]nown to occur within 1 mile of the project area." U.S. Forest Serv., Hermosa Drilling Project, Draft Environmental Assessment, at 44–45 (Mar. 2014) [hereinafter Hermosa Draft EA]. Moreover,

Table 6 of the Plan of Operations makes the dubious claim that "[s]uitable aquatic habitat for this species in the form of . . . streams . . . is generally lacking within the Project Area." PoO at 39. Given that Harshaw Creek falls into the category of "stream," a category that may constitute "suitable habitat" (PoO, Table 6), and given that Harshaw Creek will be affected by the project activities, it is clear that habitat is present in the Project Area.

The Draft EA notes that drilling, road building, and related activities could result in release of artisanal flows and increased sediment runoff into Harshaw Creek: "Aggrading or degrading sediment deposition in surface waters could degrade stream morphology, floodplain function, and wetland/riparian resources." Draft EA at 10.

Moreover, cumulative impacts must be analyzed including the huge releases of produced water expected by the neighboring Hermosa Project. The Draft EA states that the Hermosa Project proposes to discharge "treated water from the exploratory declines to Harshaw Creek." Draft EA at 43. If large volumes of water are discharged into Harshaw Creek by the Hermosa project, this water would mix with artisanal releases and sediment runoff caused by the Sunnyside Project.

These cumulative flows will change the hydrology, geomorphology, and vegetation form and composition of Harshaw Creek, thereby affecting any frogs that may be present. Moreover, water discharge into Harshaw Creek will ultimately enter Sonoita Creek where it would have similar effects on hydrology, geomorphology, and vegetation. It is important to note that the 2007 Final Recovery Plan for the Chiricahua leopard frog designated Recovery Unit 2, the Santa Rita-Huachuca-Ajos/Bavispe Recovery Unit to include "Sonoita Creek downstream of Patagonia," the confluence of Harshaw and Sonoita creeks. U.S. Fish & Wildlife Serv., Final Recovery Plan for the Chiricahua Leopard Frog, at B-14 (Apr. 2007), https://www.fws.gov/southwest/es/arizona/Documents/SpeciesDocs/CLF/Final_CLF_Plan.pdf. The recovery plan goes on to say, "Chiricahua leopard frogs are still well-represented in RU 2, including populations on the eastern slope of the Santa Rita Mountains, Patagonia Mountains, Canelo Hills . . . ." Id. Therefore, it is clear that the project would affect habitat and possibly extant populations of this threatened species. Prior to approving this project, USFS must do a thorough baseline survey to identify possible presence in both Harshaw and Sonoita creeks, and must analyze potential adverse effects.

5. Sonoran tiger salamander (*Ambystoma tigrinum stebbinsi*)

As for the endangered Sonoran tiger salamander, the draft EA concludes without evidence that the species is "unlikely to occur within or near the Project Area" and that there will be "no effect" on the species or its habitat as a result of the proposed action. Draft EA at 36. However, this conclusion is also contradicted by the 2014 Hermosa Drilling Project draft Environmental Assessment. The Hermosa draft EA's Table 14 concluded that "[p]ortions of the project area contain suitable habitat [and the species is] [k]nown to occur within one mile of the project area." Hermosa Draft EA at 45. The same arguments pertain to this species as for the leopard frog, namely that direct effects of the Sunnyside Project, and the combined cumulative effects of the Sunnyside and Hermosa projects, could significantly alter the habitat of the salamander. Prior to approving this project, USFS must do a thorough baseline survey to identify

possible presence in both Harshaw and Sonoita creeks, and must analyze potential adverse effects.

6. Gila topminnow (*Poeciliopsis occidentalis*)

The PoO concludes that there will be "no effect" on the endangered Gila topminnow because "[b]ased on the range, general habitat requirements, potential for occurrence, and/or survey results, the . . . Gila topminnow [is] unlikely to occur within or near the Project Area. PoO, at 36. However, USFS should conduct a baseline analysis of the Harshaw Creek potential topminnow habitat and the existing population in Sonoita Creek.

The 1998 Gila topminnow revised recovery plan (1998) identified Harshaw Creek as one of the "known habitats available for reestablishment of Gila topminnow" as part of the overall recovery strategy. U.S. Fish & Wildlife, Gila Topminnow, *Poeciliopsis occidentalis*, Revised Recovery Plan, at 31 (Dec. 1998), https://www.fws.gov/southwest/es/arizona/Documents/SpeciesDocs/GilaTopminnow/gtop94fn.pdf (listed in Table 3). Given that Harshaw Creek was identified as a potentially important habitat in recovering the topminnow, USFS should analyze its suitability for reintroducing the topminnow and the effects of this project on that suitability.

Further, the topminnow inhabits Sonoita Creek downstream from Patagonia and below the point where Harshaw Creek joins Sonoita Creek. As described in the section on the Chiricahua leopard frog, drilling and road building associated with the project may cause changes in "stream morphology, floodplain function, and wetland/riparian resources" in Harshaw Creek. *See* Draft EA at 10. Because Harshaw Creek connects to Sonoita Creek above the creek's topminnow population, these changes, including sediment deposition, could affect the topminnow. Water pollution is one of the factors impeding this species' recovery, and further mining-related contamination of the headwater tributaries of Sonoita Creek would likely be deleterious. USFS should analyze possible effects to the species. Moreover, as in the case of the leopard frog, USFS must analyze the cumulative effects of this project with that of the Hermosa Project's proposed water discharge, which will reach Sonoita Creek after being discharged into Harshaw Creek.

4. Other Listed Species

In addition to the above species, the Patagonia Mountains are known habitat for another endangered nocturnal species, the lesser long-nosed bat, which roosts in the nearby Patagonia bat cave. This species will likely also be affected by the noise and light pollution from the proposed drilling operations. Human activity associated with the Project may also destroy agave plants, the species' primary food source in the region. Moreover, particular attention should be made for the baseline conditions and protection for downstream populations of species of special concern, notably the threatened Mexican garter snake (*Thamnophis eques*) and the endangered Huachuca water umbel (*Lilaeopsis schaffneriana var. recurva*), both documented on the Nature Conservancy Patagonia-Sonoita Creek Preserve.

Finally, numerous imperiled plant species occurring the Patagonia Mountains are listed in Appendix A of this letter. The proposed Project may directly threaten a specimen of willow-leaf

oak in Humboldt Canyon that represents one of only a handful of occurrences of this species in the United States. See T.R. Van Devender et al., Northern Distributional Limits of the Mexican Willow Oak (*Quercus viminea* Trel.) in Arizona, Sonora, and Chihuahua, 48 Phytoneuron 1 (2013), http://aaronflesch.com/sites/default/files/publications/northern-distributional-limits-of-the-mexican-willow-oak-quercus-viminea-in-arizona-sonora-and-chihuahua-van-devender-2013.pdf. The USFWS has also identified that Bartram's stonecrop (*Graptopetalum bartramii*)—which was proposed for listing in 2019—may also be in the Project area and may be affected by the Project if present. Draft EA at 51.

5. Sensitive Wildlife Species

In addition to impacts to species listed under the ESA, the Draft EA and proposed action also fail to adequately protect sensitive species and comply with the requirements of the Forest Plan and agency manuals, policies and directives requiring protection of sensitive species. As stated in the Final EIS for the revised Forest Plan (2018):

> The regional forester's sensitive species program is the Forest Service's dedicated initiative to conserve and recover plant and animal species according to Forest Service policy found in Forest Service Manual 2670. The Coronado National Forest improves habitat and restores ecosystems for sensitive species through vegetation treatments and management practices. Sensitive species are those plant and animal species identified by the regional forester for which population viability is a concern, as evidenced by the following:
>
> - significant current or predicted downward trends in population numbers or density
> - significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution
>
> "Other forest planning species" are not listed as threatened, endangered, or sensitive but still have species-specific threats to their population viability that are not addressed by the coarse-filter analysis.

U.S. Forest Serv., Final Programmatic Environmental Impact Statement for Revision of the Coronado National Forest Land and Resource Management Plan, at 251 (Apr. 2018), https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd583210.pdf [hereinafter FEIS]. FEIS Table 73 has the Coronado's list of sensitive species, including those in the Huachuca Ecosystem Management Area, which covers the project area. *See* FEIS at 252–54. At a minimum, the Draft EA does not analyze how the project's impacts, alone and cumulatively with other past, present, and reasonably foreseeable activities that may affect these species, complies with these requirements.

Nor does the Draft EA contain the required analysis of the baseline conditions, numbers, and habitat for these species (the same is true for ESA-listed species) in the lands/waters potentially affected by the project, in violation of both NEPA, the NFMA, and agency manuals, policies and directives.

II. THE NEED FOR ADEQUATE NEPA REVIEW OF THE SUNNYSIDE PROJECT

A. The Impacts of this Project, Especially Added to Other Cumulative Projects, Will Be Significant

Given the relatively large scope of this Project, and the fact that it will be occurring in the context of other substantial mining operations in the immediate area, we urge that the USFS require an EIS to fully explore the possible effects, particularly cumulative effects with other ongoing and reasonably foreseeable projects. The activities described in the scoping notice and Draft EA, drilling at several test sites 24 hours a day, seven days a week, with enlargement of access roads and increased human and vehicular traffic, continuing for over seven years, will likely result in significant environmental impacts, which must be adequately analyzed in an EIS before the project moves forward. Furthermore, many similar impacts have already been observed on private land in the area where operations have been ongoing, so the USFS should know that the impacts will not be insignificant

B. The Draft EA Failed to Fully Analyze All Direct, Indirect, and Cumulative Impacts

Under the National Environmental Policy Act ("NEPA"), the USFS must fully review the impacts from all "past, present, and reasonably foreseeable future actions." These are the "cumulative effect/impacts" under NEPA. To comply with NEPA, the USFS must consider all direct, indirect, and cumulative environmental impacts of the proposed action. 40 C.F.R. §§ 1502.16, 1508.8, 1508.25(c).[1] Direct effects are caused by the action and occur at the same time and place as the proposed project. 40 C.F.R. § 1508.8(a). Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. 40 C.F.R. § 1508.8(b). 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]." Id. Cumulative effects are defined as:

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

[1] "On July 16, 2020, the Council on Environmental Quality (CEQ) published a Final Rule updating the regulations implementing NEPA (CEQ 2020); the updated regulations took effect on September 14, 2020. Projects initiated prior to September 14, 2020 have the option of proceeding under the 1978 NEPA implementing regulations, as amended (40 C.F.R. Parts 1500–1508). This analysis and NEPA documentation is being prepared pursuant to the 1978 implementing regulations." Draft EA at 6.

40 C.F.R. § 1508.7. 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.

Te-Moak Tribe of Western Shoshone v. U.S. Dept. of Interior, 608 F.3d 592, 603 (9th Cir. 2010) (rejecting EA for mineral exploration that had failed to include detailed analysis of impacts from nearby proposed mining operations). A cumulative impact analysis must provide a "useful analysis" that includes a detailed and quantified evaluation of cumulative impacts to allow for informed decision-making and public disclosure. Kern v. U.S. Bureau of Land Management, 284 F.3d 1062, 1066 (9th Cir. 2002); Ocean Advocates v. U.S. Army Corps of Eng'rs, 361 F.3d 1108 1118 (9th Cir. 2004). The NEPA requirement to analyze cumulative impacts prevents agencies from undertaking a piecemeal review of environmental impacts. Earth Island Institute v. U.S. Forest Serv., 351 F.3d 1291, 1306–07 (9th Cir. 2003). The NEPA obligation to consider cumulative impacts extends to all "past," "present," and "reasonably foreseeable" future projects. Blue Mountains, 161 F.3d at 1214–15; Kern, 284 F.3d at 1076; Hall v. Norton, 266 F.3d 969, 978 (9th Cir. 2001) (finding cumulative analysis on land exchange for one development failed to consider impacts from other developments potentially subject to land exchanges); Great Basin Mine Watch v. Hankins, 456 F.3d 955, 971–74 (9th Cir. 2006) (requiring "mine-specific . . . cumulative data," a "quantified assessment of their [other projects] combined environmental impacts," and "objective quantification of the impacts" from other existing and proposed mining operations in the region). NEPA regulations also require that the agency obtain the missing "quantitative assessment" information 40 C.F.R. § 1502.22. "If there is 'essential' information at the plan- or site-specific development and production stage, [the agency] will be required to perform the analysis under § 1502.22(b)." Native Village of Point Hope v. Jewell, 740 F.3d 489, 499 (9th Cir. 2014).

Thus, in this case, the USFS must fully consider the cumulative impacts from all past, present, and reasonably foreseeable future projects in the region on, at a minimum, water and air quality including ground and surface water quantity and quality, recreation, cultural/religious, wildlife, transportation/traffic, scenic and visual resources, etc. At a minimum, this requires the agency to fully review, and subject such review to public comment in a revised Draft EA or EIS, the cumulative impacts from all other mining, grazing, recreation, energy development, roads, etc. in the region.

The Draft EA is based on a seriously deficient view regarding its duties to review these impacts. The agency admits that there are large-scale mineral operation active and proposed in the area (Hermosa and San Antonio projects). This includes current exploration activities as well as anticipated mining projects (in the case of the Hermosa and San Antonio projects). See generally Ariz. Dep't of Envtl. Quality, Draft Statement of Basis for Major Modification of Arizona Pollutant Discharge Elimination System Permit No. AZ0026387 (2021),

https://static.azdeq.gov/pn/210205_azmin_sb.pdf; Ariz. Dep't of Envtl. Quality, Draft Authorization to Discharge Under the Arizona Pollutant Discharge Elimination System Permit No. AZ0026387 (2021), https://static.azdeq.gov/pn/210205_azmin_dp.pdf; U.S. Forest Serv., SOPA: Plan of Operations, Minerals Exploration, Hermosa Drilling Project, https://www.fs.usda.gov/project/?project=41158 (last visited Apr. 1, 2021); IC Exploration, LLC, Plan of Operations, San Antonio Exploratory Drilling Project, Santa Cruz County, Arizona (June 3, 2020), https://www.fs.usda.gov/nfs/11558/www/nepa/114239_FSPLT3_5343449.pdf; U.S. Forest Serv., SOPA: San Antonio Drilling Project, https://www.fs.usda.gov/project/?project =58629 (last visited Apr. 1, 2021). The impacts from the nearby proposed Rosemont Copper Mine Project on wildlife, transportation/traffic, and other potentially affected resources was also not analyzed.

The Ninth Circuit has clearly held that proposed mining projects must be fully reviewed in NEPA documents for nearby projects. See Te-Moak Tribe of Western Shoshone v. U.S. Dept. of the Interior, 608 F.3d 592, 603 (9th Cir. 2010) (rejecting EA for mineral exploration that had failed to include detailed analysis of impacts from nearby proposed mining operations). Even projects that have not reached the formal proposal stage (which is not the case here) are considered "reasonably foreseeable" and must be reviewed in this EA or EIS. Northern Plains Resource Council, Inc. v. Surface Transp. Bd., 668 F.3d 1067, 1078–79 (9th Cir. 2011).

The Draft EA contains a cursory cumulative effects/impacts section, mostly focusing on impacts to listed species. Although Table 3-3 lists a number of projects that will result in cumulative impacts, no details about the actual impacts are provided. The Table merely lists the projects, their locations, and what resources will be affected. Such a listing was expressly found to violate NEPA in Great Basin Mine Watch v. Hankins, 456 F.3d 955, 971–74 (9th Cir. 2006) (requiring mine-specific cumulative data, quantified assessment of combined environmental impacts of other projects, and objective quantification of the impacts from other existing and proposed mining operations in the region). Yet for each of these resources/impacts, none of the required analysis regarding other existing and proposed activities in the region is provided.

As other examples of the deficient cumulative impacts and baseline analysis, the Draft EA acknowledges the dewatering and water discharges expected from the Hermosa Project (on the regional aquifer and Harshaw Creek). "South 32 [Hermosa] intends to treat the water collected from the declines and discharge it to Harshaw Creek at a rate of up to 4,500 gallons per minute, which represents an approximately 40-fold increase over current stream flow." Draft EA at 94.

There is no detailed analysis, as NEPA requires, of the baseline conditions of these affected resources and of these impacts on water quality and quantity, streamflow, erosion, wildlife and habitat, transportation/traffic, sedimentation, recreation, and other impacted resources. For example, there is little/no analysis of the water-related impacts from the Project and other reasonably foreseeable activities on sediment in Harshaw Creek (and on other water quality baseline conditions, resources and impacts) along Harshaw Road, and other roads, such as increased sediment loading from Project and other activities, along with the increased water discharges (and other pollutant loadings in Harshaw Creek and downstream waters). The fact that Arizona Standard may apply for a state discharge permit does not substitute for the USFS's

NEPA duties for full public and agency analysis. As one example, there is no analysis of the baseline conditions for sediment conditions in Harshaw Creek, nor the expected sediment and other pollutant loading from the Project along with the other current and reasonably foreseeable projects that may affect the Creek and downstream waters (such as Sonoita Creek).

C. The Draft EA Fails to Fully Analyze All Baseline Conditions

The Project proposes an extensive network of roads, drilling sites, and support facilities across a large area. These activities will adversely impact a number of critical public resources such as air, water (surface and ground, quantity and quality), wildlife, recreation, visual/scenic, transportation/traffic, cultural/religious, historical, etc. As noted above, each of these potential impacts must be fully reviewed, not just in the immediate location of the impact, but on a regional scale. In addition, the agency must prepare for public review a detailed analysis of the current baseline conditions for all potentially affected resources, both at the immediate site locations, but also nearby and regionally (e.g., for all the resources within the Cumulative Effects Analysis Area, CEAA).

The USFS is required to "describe the environment of the areas to be affected or created by the alternatives under consideration." 40 C.F.R. § 1502.15. The establishment of the baseline conditions of the affected environment is a fundamental requirement of the NEPA process:

> "NEPA clearly requires that consideration of environmental impacts of proposed projects take place before [a final decision] is made." LaFlamme v. FERC, 842 F.2d 1063, 1071 (9th Cir.1988) (emphasis in original). Once a project begins, the "pre-project environment" becomes a thing of the past, thereby making evaluation of the project's effect on pre-project resources impossible. Id. Without establishing the baseline conditions which exist in the vicinity . . . before [the project] begins, there is simply no way to determine what effect the proposed [project] will have on the environment and, consequently, no way to comply with NEPA.

Half Moon Bay Fisherman's Mktg. Ass'n v. Carlucci, 857 F.2d 505, 510 (9th Cir. 1988). "In analyzing the affected environment, NEPA requires the agency to set forth the baseline conditions." Western Watersheds Project v. BLM, 552 F. Supp. 2d 1113, 1126 (D. Nev. 2008). "The concept of a baseline against which to compare predictions of the effects of the proposed action and reasonable alternatives is critical to the NEPA process." Council of Environmental Quality, Considering Cumulative Effects under the National Environmental Policy Act (May 11, 1999).

Such baseline information and analysis must be part of the EA/EIS and be subject to public review and comment under NEPA. The lack of an adequate baseline analysis fatally flaws an EA or EIS. "[O]nce a project begins, the pre-project environment becomes a thing of the past and evaluation of the project's effect becomes simply impossible." Northern Plains v. Surface Transp. Bd., 668 F.3d 1067, 1083 (9th Cir. 2011). "[W]ithout [baseline] data, an agency cannot carefully consider information about significant environment impacts. Thus, the agency fail[s] to

consider an important aspect of the problem, resulting in an arbitrary and capricious decision." Id. at 1085.

Here, as noted above, the PoO and Draft EA admit that groundwater may be adversely affected by the Project: a potential risk to impact groundwater quality and quantity through potential water exchange between aquifers. Deep boreholes drilled through the groundwater system could create a preferred pathway for groundwater in deeper formations to migrate upward and intermingle with the shallow parts of the system. A potential issue would be a risk of water exchange between aquifers as a result of the proposed drilling program.

Yet, the Draft EA admits that: **"No groundwater quality samples have been collected in the project area and the quality of groundwater in the project area is unknown (SRK 2020).**" Draft EA at 83 (emphasis added).

The USFS's failure to require baseline groundwater studies, analysis and mitigation measures in reviewing a mining/exploration plan under NEPA and the 228 regulations has been ruled illegal by the federal courts. In Idaho Conservation League, 2012 WL 3758161 (D. Idaho 2012), the Idaho federal court concluded that the USFS acted arbitrarily and capriciously by authorizing exploratory hardrock mineral drilling without fully analyzing the baseline groundwater and hydrology. Id. at *17. Such analysis should include "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." Idaho Conservation League, 2012 WL 3758161, at *16; see also Shoshone-Bannock Tribes of Fort Hall Reservation v. U.S. Dep't of the Interior, 2011 WL 1743656, at *10 (D. Idaho 2011).

Further, relying on mitigation measures to reduce drilling impacts does not satisfy the USFS's duty to fully analysis the baseline conditions of all potentially affected resources. Idaho Conservation League, 2012 WL 3758161, at *17. This holds true for potential impacts to all resources from the proposed project, not just groundwater (e.g., wildlife and habitat, recreation, air quality, surface water, etc.).

The federal courts have reiterated the NEPA requirement for a detailed groundwater baseline analysis. "Ninth Circuit cases acknowledge the importance of obtaining baseline condition information before assessing the environmental impacts of a proposed project." Gifford Pinchot Task Force v. Perez, 2014 WL 3019165, at *28 (D. Or. 2014) (USFS/BLM EA for mineral exploration project failed to obtain and analyze baseline water quality data in violation of NEPA).

Here, at a minimum, prior to considering or approving any exploration, the USFS must first obtain this required baseline information for all potentially affected resources and subject the information and analysis to public review and comment in a revised Draft EA or EIS. "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." Northern Plains, 668 F.3d at 1083 (internal citations omitted) (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). This requirement applies not only to ground and surface waters, but any potentially affected resource such as air quality, recreation, soils, cultural/historical, wildlife, etc.

D. The Draft EA Fails to Include an Adequate Analysis of Mitigation Measures, and Their Effectiveness

Under NEPA, the agency must have an adequate mitigation plan to minimize or eliminate all potential project impacts. NEPA requires the agency to: (1) "include appropriate mitigation measures not already included in the proposed action or alternatives," 40 C.F.R. § 1502.14(f); and (2) "include discussions of: . . . Means to mitigate adverse environmental impacts (if not already covered under 1502.14(f))." 40 C.F.R. § 1502.16(h). NEPA regulations define "mitigation" as a way to avoid, minimize, rectify, or compensate for the impact of a potentially harmful action. 40 C.F.R. §§1508.20(a)–(e). "[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." Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 353 (1989). NEPA requires that the agency discuss mitigation measures, with "sufficient detail to ensure that environmental consequences have been fairly evaluated." Id. at 352.

> An essential component of a reasonably complete mitigation discussion is an assessment of whether the proposed mitigation measures can be effective. 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"). The Supreme Court has required a mitigation discussion precisely for the purpose of evaluating whether anticipated environmental impacts can be avoided. Methow Valley, 490 U.S. at 351–52, 109 S. Ct. 1835 (citing 42 U.S.C. § 4332(C)(ii)). A mitigation discussion without at least some evaluation of effectiveness is useless in making that determination.

South Fork Band Council v. Dept. of Interior, 588 F.3d 718, 727 (9th Cir. 2009) (rejecting EIS for mining project for failure to conduct adequate review of mitigation and mitigation effectiveness in EIS). "The comments submitted by [plaintiff] also call into question the efficacy of the mitigation measures and rely on several scientific studies. In the face of such concerns, it is difficult for this Court to see how the [agency's] reliance on mitigation is supported by substantial evidence in the record." Wyoming Outdoor Council v. U.S. Army Corps of Eng'rs, 351 F. Supp. 2d 1232, 1251 n. 8 (D. Wyo. 2005). See also Dine Citizens v. Klein, 747 F. Supp. 2d 1234, 1258–59 (D. Colo. 2010) (finding "lack of detail as the nature of the mitigation measures" precluded "meaningful judicial review").

The Draft EA is devoid of any detailed analysis of the effectiveness of the purported mitigation measures. It is impossible for the USFS to contend that it fully reviewed the effectiveness of mitigation measures—as required by NEPA—when the EA lacks any reference

to such analysis. Simply referring generally to potential mitigation measures, as the EA does, does not comply with NEPA. As held recently by the federal courts, an EA violates NEPA if it "fails to address the effectiveness of the mitigation measures." Gifford Pinchot Task Force v. Perez, 2014 WL 3019165, at *39 (D. Or. 2014). As in Gifford Pinchot, no analysis, let alone mention, of how effective these mitigation measures will be is contained in the EA. As such the EA violates NEPA. In addition, because the agency relies on these purported mitigation measures to allegedly meet its responsibilities under the Organic Act and Part 228 regulations to "minimize adverse impacts," the failure to adequately support these measures also violates these requirements.

E. The Draft EA Failed to Fully 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." 42 U.S.C. § 4332(E); 40 C.F.R. § 1508.9(b). It must "rigorously explore and objectively evaluate all reasonable alternatives" to the proposed action. City of Tenakee Springs v. Clough, 915 F.2d 1308, 1310 (9th Cir. 1990). The alternatives analysis is considered the heart of a NEPA analysis. 40 C.F.R. § 1502.14. The alternatives analysis should present the environmental impacts in comparative form, thus sharply defining important issues and providing the public and the decisionmaker with a clear basis for choice. Id. The lead agency must "rigorously explore and objectively evaluate all reasonable alternatives" including alternatives that are "not within the [lead agency's] jurisdiction." Id.

Even if an EA leads to a FONSI, it is essential for the agency to consider all reasonable alternatives to the proposed action. Bob Marshall Alliance v. Hodel, 852 F.2d 1223, 1228–29 (9th Cir. 1988) (citations omitted, emphasis in original). "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." Ayers v. Espy, 873 F. Supp. 455, 473 (D. Colo. 1994).

Here, the Draft EA only considers an alternative to the proposed project of helicopter access. Draft EA at 23–24. Yet that is not the only reasonable alternative to American Standard's proposal. For example, regarding access, the revised Draft EA/EIS should consider not upgrading Flux Canyon road and rely on Harshaw Road for drilling access (which is certainly reasonable based on the Draft EA maps).

The Draft also never considers other restrictions to protect public resources, as required by the 1897 Organic Act, such as not allowing 24/7 day operations, as well as further seasonal restrictions to protect wildlife, water resources (from flood impacts for example), and recreation.

In addition, the Draft EA or EIS must consider, at a minimum, the following reasonable alternatives:

- Approval of only activities on current existing roads.
- Reduction in the amount, scope, and impact of each activity or group of activity.

- Timing restrictions to protect wildlife, recreation, and other public resources;
- Avoidance of any impact to recreational users of the Arizona Trail (visual, scenic, noise, etc.).
- Avoidance of cultural and historic areas.
- Review of Project under the correct legal regime as noted above, with mitigations to protect the public interest from adverse impacts.

The Draft EA asserts that alternatives that would reduce Arizona Standard's desired scope of work and "purpose and need" required the rejection of alternatives. However, the agency cannot circumscribe its duty to fully review "all reasonable alternatives" in this manner. The CEQ regulations warn that a NEPA document is not to be used to justify a decision already made. 40 C.F.R. § 1502.2(g). Thus, "an agency may not define the objectives of its action in terms so unreasonably narrow that only one alternative . . . would accomplish the goals of the agency's action, and the EIS would become a foreordained formality." Citizens Against Burlington, Inc. v. Busey, 938 F.2d 190, 196 (D.C. Cir. 1991), cert. denied, 502 U.S. 994, 112 S. Ct. 616 (1991). See Muckleshoot Indian Tribe v. U.S. Forest Serv., 177 F.3d 800, 814 n.7 (9th Cir. 1999); Friends of Southeast's Future v. Morrison, 153 F.3d 1059, 1066 (9th Cir. 1998).

III. THE FOREST SERVICE FAILED TO MINIMIZE ALL ADVERSE IMPACTS AND ENSURE COMPLIANCE WITH ALL ENVIRONMENTAL AND PUBLIC LAND LAWS

On the National Forests, the Organic Act requires the USFS "to regulate their occupancy and use and to preserve the forests thereon from destruction." 16 U.S.C. § 551. "[P]ersons entering the national forests for the purpose of exploiting mineral resources must comply with the rules and regulations covering such national forests." Clouser v. Espy, 42 F.3d 1522, 1529 (9th Cir. 1994). The USFS mining regulations require that "all [mining] operations shall be conducted so as, where feasible, to minimize adverse environmental impacts on National Forest resources." 36 C.F.R. § 228.8. In addition, the operator must fully describe "measures to be taken to meet the requirements for environmental protection in § 228.8." 36 C.F.R. § 228.4(c)(3). The agency "can reject an unreasonable plan and prohibit mining activity until it has evaluated the plan and imposed mitigation measures." Siskiyou Regional Education Project v. Rose, 87 F. Supp. 2d 1074, 1086 (D. Or. 1999), citing Baker v. U.S. Dep't of Agriculture, 928 F. Supp. 1513, 1518 (D. Idaho 1996). "This court does not believe the law supports the Forest Service's concession of authority to miners under the General Mining Act in derogation of environmental laws and regulations." Hells Canyon Preservation Council v. Haines, 2006 WL 2252554, at *6 (D. Or. 2006) (finding violation of Organic Act in Forest Service's failure to minimize adverse impacts to streams).

In addition to ensuring compliance with all applicable environmental standards (which has not been shown here due to the inadequate NEPA compliance), the USFS has a mandatory duty to require "all practicable measures to maintain and protect fisheries and wildlife habitat which may be affected by the operations" under 36 C.F.R. § 228.8(e)). See Rock Creek Alliance v. Forest Service, 703 F.Supp.2d 1152, 1170 (D. Mont. 2010) (Forest Service violated Organic Act and 228 regulations by failing to protect water quality and fisheries in approving mining PoO). "Under the Organic Act the Forest Service must minimize adverse environmental impacts

where feasible and must require [the operator] to take all practicable measures to maintain and protect fisheries and wildlife habitat." Id. at 1170. This duty applies to all wildlife, not just indicator, sensitive, threatened, and endangered species.

Additionally, a simple and generalized reduction of impacts does not equate to the strict requirements for minimization of impacts and protection of resources. The USFS's duty to minimize impacts is not met simply by somewhat reducing those impacts. Trout Unlimited v. U.S. Dep't of Agriculture, 320 F. Supp. 2d 1090, 1110 (D. Colo. 2004). In interpreting the Federal Land Policy and Management Act's ("FLPMA") duty on the agency to "minimize damage to . . . fish and wildlife habitat and otherwise protect the environment," 43 U.S.C. § 1765(a), the court specifically stated the agency's finding that mitigation measures would "reasonably protect" fisheries and habitat failed to meet its duty to "minimize" impacts. Id.

The agency must demonstrate that all feasible means have been required to minimize all adverse impacts to all potentially affected resources. For example, the Ninth Circuit Court of Appeals recently held that the USFS had the authority to strictly limit mining claimants' vehicular access to mining claims. Pub. Lands for the People v. U.S. Dep't of Agriculture, 697 F.3d 1192 (9th Cir. 2012). As held by the court:

> The Secretary of Agriculture has the right to restrict motorized access to specified areas of the national forests, including mining claims. [Clouser v. Espy, 42 F.3d at 1530 (citing 16 U.S.C. § 551)] (means of access "may be regulated by the Forest Service"). More specifically, we have upheld Forest Service decisions restricting the holders of mining claims to the use of pack animals or other non-motorized means to access their claims. Id. at 1536–38. Relatedly, we have rejected the contention that conduct "reasonably incident[al]" to mining could not be regulated. United States v. Doremus, 888 F.2d 630, 632–33 (9th Cir. 1989). Our precedent thus confirms that the Forest Service has ample authority to restrict motor vehicle use within the ENF [El Dorado National Forest].

Id. at 1197.

Thus, in this case, in order to minimize all adverse impacts, the agency must, among other restrictions to protect wildlife and the environment, limit project activities to existing roads, etc. Also, as noted herein, the agency must fully consider such limitations as reasonable alternative(s) under NEPA.

IV. VIOLATION OF THE NATIONAL FOREST MANAGEMENT ACT

The Draft EA and proposed project approval also do not ensure that all requirements of the Coronado National Forest Plan and Regional requirements will be met at all times, in violation of the National Forest Management Act ("NFMA"), 16 U.S.C. § 1601 *et seq.* Among other mandates, the NFMA requires the USFS to prepare a land and resource management plan, or "forest plan," for each National Forest. 16 U.S.C. § 1604(a). Each plan must include standards, guidelines, and other requirements stating how the forest shall be managed. 16 U.S.C. §§ 1604(c), (g)(2), & (g)(3).

Once a forest plan is adopted, all resource plans, permits, contracts, and other instruments for use of the lands, such as Special Use Permits, Road Use Permits, mining plan approvals, etc., must be consistent with the plan. 16 U.S.C. § 1604(i). "It is well-settled that the Forest Service's failure to comply with the provisions of a Forest Plan is a violation of NFMA." Native Ecosystems Council v. Dombeck, 304 F.3d 886, 961 (9th Cir. 2002); see also Save Our Cabinets v. U.S. Dept. of Agric., 254 F. Supp. 3d 1241, 1258–59 (D. Mont. 2017) (USFS approval of mining plan of operations that would not meet the Forest Plan's "desired conditions" protecting water quality violated the NFMA).

Failing to follow, or to evaluate and document compliance with, a Forest Plan provision is also a NEPA violation. *See* ONDA v. BLM, 625 F.3d 1092, 1110–11 (9th Cir. 2010) (NEPA analysis must include "considerations made relevant by the substantive statute driving the proposed action"); Westlands Water Dist. v. U.S. Dep't of the Interior, 376 F.3d 853, 866 (9th Cir. 2004) ("[w]hen an action is taken pursuant to a special statute, the objectives of that statute serve as a guide by which to determine the reasonableness of alternatives" examined under NEPA).

As stated in the Coronado National Forest Plan, the agency must ensure that the desired conditions, objectives, standards, and guidelines must be met for every action taken by the agency (which includes approval of mining exploration projects such as the Sunnyside Project):

> **Desired conditions** set forth the desired social, economic, and ecological attributes of the Coronado National Forest. They attempt to paint a picture of what we (the public and Forest Service) desire the national forests to look like and the goods and services we desire them to provide. Desired conditions are normally expressed in broad, general terms and are timeless in that there is no specific date by which they are to be completed. Desired conditions may only be achievable over a long timeframe (in some cases, several hundred years). In some cases, a desired condition matches the current condition, and the goal is to maintain it. Desired conditions are aspirations and are not commitments or final decisions to approve projects[.]
>
> To be consistent with the desired conditions of the plan, a project or activity, when assessed at the appropriate spatial scale described in the plan (such as landscape scale), must be designed to meet one or more of the following conditions:
>
> - Maintain or make progress toward one or more of the desired conditions of a plan without adversely affecting progress toward, or maintenance of, other desired conditions; or
> - Be neutral with regard to progress toward plan desired conditions; or
> - Maintain or make progress toward one or more of the desired conditions over the long term, even if the project or activity would adversely affect progress toward or maintenance of one or more desired conditions in the short term; or
> - Maintain or make progress toward one or more of the desired conditions over

the long term, even if the project or activity would adversely affect progress toward other desired conditions in a negligible way over the long term.

The project documentation should explain how the project is consistent with desired conditions and describe any short-term or negligible long-term adverse effects the project may have on the maintenance or attainment of any desired condition.

Objectives are concise, time-specific statements of measurable planned results that make progress toward or maintain desired conditions. An objective forms the basis for further planning to define the precise steps to be taken and the resources to be used in achieving desired conditions. The objectives represent just some of the expected outcomes or actions required to accomplish movement toward desired conditions. Not every action or objective the Coronado National Forest may initiate is identified in the plan, just the primary ones.

Variation in achieving objectives may occur during the next 15 years because of changes in environmental conditions, available budgets, and other factors. Objectives are strongly influenced by recent trends, past experiences, anticipated staffing levels, and short-term budgets.

A project or activity is consistent with the objectives of the plan if it contributes to or does not prevent the attainment of any applicable objectives. The project documentation should identify any applicable objective(s) to which the project contributes and document that the project does not prevent the attainment of any objectives. If there are no applicable objectives, the project must be consistent with the objectives decisions of the plan, and the project document should state that fact.

Standards are constraints upon project and activity decisionmaking. A standard is an absolute requirement to be met in the design of projects and activities. A project or activity is consistent with a standard when its design is in accord with the explicit provisions of the standard; variance from a standard is not allowed except by plan amendment.

Guidelines are components with which a project or activity must be consistent, in either of two ways:

- The project or activity is designed exactly in accord with the guideline; or
- A project or activity design varies from the exact words of the guideline, but is as effective in meeting the purpose of the guideline to contribute to the maintenance or attainment of the relevant desired conditions and objectives.

Guidelines must be followed, but they may be modified somewhat for a specific project if the intent of the guideline is followed and the deviation is addressed in a

decision document with supporting rationale. When deviation from a guideline does not meet the original intent, however, a plan amendment is required.

Coronado NF Plan at 11–12.

As shown herein, the Project, alone and in cumulatively with other past, present, and reasonably foreseeable activities in the area (discussed herein) will result in significant adverse environmental impacts and the proposed activities are not consistent with and not in compliance with, the Desired Conditions, Objectives, Standards, Guidelines of the Forest Plan. The following are some examples of these NFMA violations:

Riparian Areas

Guidelines

1. New road construction in riparian areas should be avoided, except to cross drainages, unless alternate routes have greater overall resource impacts. If road construction in riparian areas is unavoidable, it should be designed and implemented to minimize effects to natural waterflow, aquatic species, channel morphology, and native vegetation communities.

2. Management activities should only be allowed in riparian areas if soil function and structure, hydrologic function and riparian plant communities (except noxious and/or invasive plants) are kept the same or improved.

Coronado NF Plan at 52–53. As shown herein, the proposed drilling, road reconstruction/construction and other project activities do not adequately protect riparian areas nor comply with these requirements.

Watersheds

Desired Conditions

Surface runoff, sheet, rill, and gully erosion, and subsequent sedimentation into connecting waters downstream is minimal. . . .

Coronado NF Plan at 57.

Natural Water Sources

Desired Conditions

Landscape Scale
Watersheds, streams, wetlands, springs ecosystems, and riparian areas have characteristics, processes, and features in low departure from reference condition. . . . Vegetation conditions (as described in each section above) contribute to

maintaining downstream water quality, quantity, and aquatic habitat features. Upland soil erosion contributes sediment in amounts that do not impair stream function or water quality.

Mid-Scale
. . . High and low flow events maintain a normal and expected sediment and water balance between streams and their watersheds. … Water quality meets or exceeds relevant State of Arizona, State of New Mexico, and Environmental Protection Agency standards for designated uses. Water quality meets critical needs of aquatic species. Nonpoint-source loading of streams and lakes from sediment, excessive nutrients, or hazardous chemicals does not reduce water quality below the State standards for Arizona and/or New Mexico.

Coronado NF Plan at 59.

Guidelines

1. Projects in upland habitats adjacent to streams should be designed to minimize input of sediment to streams.
2. Water quality, quantity, soil function and structure, and wildlife habitat (including aquatic species habitat) should be protected or enhanced at natural springs and seeps.

. . .

4. Management activities should not impair soil moisture recharge at outflows of natural water sources.

. . .

7. New road construction near springs and seeps should be avoided, unless alternate routes have greater overall resource impacts. If road construction near springs and seeps is unavoidable, it should be designed and implemented to minimize effects to natural water flow and aquatic species.
8. Projects affecting perennial streams should be designed and constructed to allow for natural instream movement of aquatic species, except where barriers are necessary to preclude the movement of nonnative species.

Coronado NF Plan at 60.

As shown herein, the proposed drilling, road reconstruction/construction and other project activities do not adequately protect watersheds and natural waters nor comply with these requirements.

<u>Animals and Rare Plants</u>

The Coronado National Forest has the highest biological diversity of any national forest in the western United States. This is because it is situated at a convergence zone of ecological regions, and has a wide variety of vegetation communities and steep elevation gradients. Biological diversity is further

enhanced by a long growing season, bimodal precipitation, and the evolutionary consequences of isolation in the sky island mountain ranges.

The number of species inhabiting the Coronado National Forest and adjoining lands is not precisely known, and new species are periodically described. Conservative estimates include about 2,100 species of plants, 466 species of birds, 110 species of mammals, 91 species of reptiles, over 240 species of butterflies, and nearly 200 species of mollusks.

Coronado NF Plan at 65.

Desired Conditions
Naturally occurring native ecosystems are present and sustainable across the Coronado National Forest, providing habitat to support a full complement of plants and animals, including sensitive and rare species. Habitats are interconnected within the national forest boundary while the interspaces between ecosystem management areas allow for movement of wide-ranging species and promote natural predator-prey relationships.

Forest boundaries are permeable to animals of all sizes and offer consistent, safe access for ingress and egress of wildlife. In particular, segments of the national forest boundary identified in figure 3 remain critical interfaces that link wildlife habitat on both sides of the boundary.

Coronado NF Plan at 65.

Guidelines
Guidelines for protecting animals and rare plants are also found in various other sections of chapters 2, 3, and 4.

1. Activities occurring within federally listed species habitat should apply habitat management objectives and species protection measures from approved recovery plans.

Coronado NF Plan at 67.

As shown herein, the proposed drilling, road reconstruction/construction and other project activities do not adequately protect wildlife and wildlife habitat nor comply with these requirements.

V. FAILURE TO COMPLY WITH THE NATIONAL HISTORIC PRESERVATION ACT, AND OTHER REQUIREMENTS FOR THE PROTECTION OF HISTORICAL, CULTURAL, AND RELIGIOUS SITES AND RESOURCES

The USFS failed to fully comply with the National Historic Preservation Act ("NHPA"). It would be a violation of the NHPA and NEPA to complete a Draft EA before consultation and a

complete review of cultural/historical resources has been completed. Yet that has happened here, as the agency admits:

> Arizona Standard proposed additional improvements to Flux Canyon Road after the cultural resources inventory and consultation process had been completed. As a result, **additional cultural surveys and consultation will be necessary.** Once surveys are completed, the Proponent will develop additional design features to minimize or avoid impacts to any cultural resources identified, if necessary. Although the Tohono O'odham Nation requested a more detailed evaluation of impacts to the cultural landscape of the Patagonia Mountains, such a study is beyond the scope of the Section 106 process for this project.

Draft EA at 29 (emphasis added).

Under the NHPA, a federal agency must make a reasonable and good faith effort to identify historic properties, 36 C.F.R. § 800.4(b); determine whether identified properties are eligible for listing on the National Register based on criteria in 36 C.F.R. § 60.4; assess the effects of the undertaking on any eligible historic properties found, 36 C.F.R. §§ 800.4(c), 800.5, 800.9(a); determine whether the effect will be adverse, 36 C.F.R. §§ 800.5(c), 800.9(b); and avoid or mitigate any adverse effects, 36 C.F.R. §§ 800.8[c], 800.9(c). The federal agency must confer with the State Historic Preservation Officer ("SHPO") and seek the approval of the Advisory Council on Historic Preservation ("Council"). Muckleshoot Indian Tribe v. U.S. Forest Service, 177 F.3d 800, 805 (9th Cir. 1999); see also 36 C.F.R. § 800.8(c)(1)(v) (agency must "[d]evelop in consultation with identified consulting parties alternatives and proposed measures that might avoid, minimize or mitigate any adverse effects of the undertaking on historic properties and describe them in the EA.")

NHPA § 106 ("Section 106") requires federal agencies, prior to approving any "undertaking," such as approval of the Project, to "take into account the effect of the undertaking on any district, site, building, structure or object that is included in or eligible for inclusion in the National Register." 16 U.S.C. § 470(f). Section 106 applies to properties already listed in the National Register, as well as those properties that may be eligible for listing. See Pueblo of Sandia v. United States, 50 F.3d 856, 859 (10th Cir. 1995). Section 106 provides a mechanism by which governmental agencies may play an important role in "preserving, restoring, and maintaining the historic and cultural foundations of the nation." 16 U.S.C. § 470.

If an undertaking is the type that "may affect" an eligible site, the agency must make a reasonable and good faith effort to seek information from consulting parties, other members of the public, and Native American tribes to identify historic properties in the area of potential effect. See 36 C.F.R. § 800.4(d)(2); see also Pueblo of Sandia, 50 F.3d at 859–63 (agency failed to make reasonable and good faith effort to identify historic properties). Consultation "must be initiated early in the undertaking's planning, so that a broad range of alternatives may be considered during the planning process for the undertaking." Pit River Tribe v. U.S. Forest Service, 469 F.3d 768, 787 (9th Cir. 2006) (internal quotations omitted).

The NHPA also requires that federal agencies consult with any "Indian tribe . . . that attaches religious and cultural significance" to the sites. 16 U.S.C. § 470(a)(d)(6)(B). Consultation must provide the tribe "a reasonable opportunity to identify its concerns about historic properties, advise on the identification and evaluation of historic properties, including those of traditional religious and cultural importance, articulate its views on the undertaking's effects on such properties, and participate in the resolution of adverse effects." 36 C.F.R. § 800.2(c)(2)(ii). "The agency official **shall ensure that the section 106 process is initiated early in the undertaking's planning**, so that a broad range of alternatives may be considered during the planning process for the undertaking." 36 C.F.R. § 800.1(c) (emphasis added).

Under NEPA, the NHPA, and the other laws, policies and requirements noted herein, the USFS cannot approve this Project until a full Ethnographic Study has been completed and subject to public review (as part of the NEPA process) and full government-to-government consultation with all potentially affected tribes. The NHPA requires that consultation with tribes "recognize the government-to-government relationship between the Federal Government and Indian tribes." 36 C.F.R. § 800.2(c)(2)(ii)(C); see also Presidential Executive Memorandum entitled "Government-to-Government Relations with Native American Tribal Governments" (April 29, 1994), 59 Fed. Reg. 22,951, and Presidential Executive Order 13007, "Indian Sacred Sites" (May 24, 1996), 61 Fed. Reg. 26,771.

The USFS must also protect archeological and grave resources, Sacred Sites and Native American religious and cultural uses pursuant to the above laws and requirements as well as: (1) the American Indian Religious Freedom Act ("AIFRA"), 42 U.S.C. 1996 et seq.; (2) the Archaeological Resources Protection Act ("ARPA"), 16 U.S.C. § 470aa–mm ; and (3) the Native American Graves Protection and Repatriation Act ("NAGPRA"), 25 U.S.C. § 3001 et seq.

CONCLUSION

We appreciate the opportunity to comment on this Project. Please include the Town of Patagonia, Patagonia Area Resource Alliance, Defenders of Wildlife, Arizona Mining Reform Coalition, Center for Biological Diversity, Save the Scenic Santa Ritas, Tucson Audubon Society, Friends of Santa Cruz River, Borderlands Restoration Network, Sky Island Alliance, Friends of Sonoita Creek, and Earthworks as interested parties and direct all future public notices and documents to us at the addresses below.

Sincerely,

Ron Robinson, Town Manager
Town of Patagonia
310 McKeown Avenue
Patagonia, AZ. 85624
(520) 394-2229
patagoniagov@qwestoffice.net

Carolyn Shafer, Mission Coordinator and Board Member
Patagonia Area Resource Alliance
PO Box 1044
Patagonia, AZ 85624
(520) 477-2308
parawatchdogs@gmail.com

Rob Peters, Ph.D.
Senior Representative, Southwest Office, Tucson, AZ
Defenders of Wildlife
210 Montezuma Ave., Suite 210
Santa Fe, NM 87501
Tel: 520 623-0447
rpeters@defenders.org | www.defenders.org

Roger Featherstone
Arizona Mining Reform Coalition
PO Box 43565
Tucson, AZ 85733-3565
(520) 777-9500
roger@AZminingreform.org

Randy Serraglio
Center for Biological Diversity
PO Box 710
Tucson, AZ 85702
(520) 623-5252 x 321
rserraglio@biologicaldiversity.org

Gayle Hartmann, President
Save the Scenic Santa Ritas
8987 E. Tanque Verde #309-157
Tucson, AZ 85749

Jonathan Lutz, Executive Director
Tucson Audubon Society
300 E. University Blvd., Suite 120
Tucson, AZ 85705
(520) 629-0510
jlutz@tucsonaudubon.org

Ben Lomeli, President
Friends of Santa Cruz River
PO Box 4275
Tubac, AZ 85646
riverfriends@foscraz.com

Kurt Vaughn, Ph.D., Executive Director
Borderlands Restoration Network
P.O. Box 121
Patagonia, AZ 85624
kvaughn@borderlandsrestoration.org

Louise Misztal, Executive Director
Sky Island Alliance
PO Box 41165
Tucson, AZ 85717
louise@skyislandalliance.org

Robert Proctor, President
Friends of Sonoita Creek
PO Box 4508
Rio Rico, AZ 85648
sonoitacreek@gmail.com

Pete Dronkers, Southwest Circuit Rider
Earthworks
1612 K St. NW #904
Washington, DC, 20006
pdronkers@earthworksaction.org

Appendix A

Threatened, Endangered, and Sensitive Species in the Patagonia, Arizona Area
(Ariz. Dep't of Fish & Game (2013), available at https://www.patagoniaalliance.org/protect-the-patagonias/endangered-species/)

Amphibians:
Ambystoma mavortium stebbinsi – Sonora Tiger Salamander **(E)
Craugastor augusti cactorum –Western Barking Frog **(SS)
Gastrophryne olivacea – Western Narrow-mouthed Toad **(SS)
Hyla wrightorum (Huachuca/Canelo Pop.) — Arizona Treefrog (Huachuca/Canelo DPS) **(C)
Lithobates chiricahuensis – Chiricahua Leopard Frog **(T)
Lithobates tarahumarae – Tarahumara Frog **(SS)
Lithobates yavapaiensis – Lowland Leopard Frog **(SS)

Birds:
Accipiter gentilis – Northern Goshawk **(SS)
Amazilia violiceps – Violet-crowned Hummingbird **(SS)
Ammodramus bairdii – Baird's Sparrow **(SS)
Ammodramus savannarum ammolegus — Arizona grasshopper sparrow **(SS)
Anthus spragueii – Sprague's Pipit **(C)
Antrostomus ridgwayi – Buff-collared Nightjar **(SS)
Athene cunicularia hypugaea – Western Burrowing Owl **(SS)
Buteo albonotatus – Zone-tailed Hawk **(SS)
Buteo plagiatus – Gray Hawk **(SS)
Buteogallus anthracinus – Common Black-Hawk **(SS)
Calothorax lucifer – Lucifer Hummingbird **(SS)
Camptostoma imberbe – Northern Beardless-Tyrannulet **(SS)
Coccyzus americanus – Yellow-billed Cuckoo (Western U.S. DPS) (T)
Empidonax fulvifrons pygmaeus – Northern Buff-breasted Flycatcher **(SS)
Empidonax traillii extimus – Southwestern Willow Flycatcher **(E)
Falco peregrinus anatum – American Peregrine Falcon **(SS)
Glaucidium brasilianum cactorum – Cactus Ferruginous Pygmy-owl **(SS)
Haliaeetus leucocephalus (wintering pop.) – Bald Eagle – Winter Population **(SS)
Pachyramphus aglaiae – Rose-throated Becard **(SS)
Strix occidentalis lucida – Mexican Spotted Owl **(T)
Tyrannus crassirostris – Thick-billed Kingbird **(SS)

Fish:
Agosia chrysogaster chrysogaster – Gila Longfin Dace **(SS)
Catostomus clarkii – Desert Sucker **(SS)
Catostomus insignis – Sonora Sucker **(SS)
Cyprinodon macularius – Desert Pupfish **(E)
Gila ditaenia – Sonora Chub **(T)
Gila intermedia – Gila Chub **(E)
Poeciliopsis occidentalis occidentalis – Gila Topminnow **(E)

Invertebrates:
Argia sabino – Sabino Canyon Dancer **(SS)
Heterelmis stephani – Stephan's Heterelmis Riffle Beetle **(SS)(C)
Pyrgulopsis thompsoni – Huachuca Springsnail **(SS)(C)

Mammals:
Baiomys taylori – Northern Pygmy Mouse **(SS)
Choeronycteris mexicana – Mexican Long-tongued Bat **(SS)
Corynorhinus townsendii pallescens – Pale Townsend's Big-eared Bat **(SS)
Lasiurus blossevillii — Western Red Bat **(SS)
Leopardus pardalis — Ocelot **(E)
Leptonycteris curasoae yerbabuenae – Lesser Long-nosed Bat **(E)
Macrotus californicus – California Leaf-nosed Bat **(SS)
Panthera onca – Jaguar **(E)
Reithrodontomys fulvescens – Fulvous Harvest Mouse **(SS)
Reithrodontomys montanus – Plains Harvest Mouse **(SS)
Sciurus arizonensis – Arizona Gray Squirrel **(SS)
Sigmodon ochrognathus – Yellow-nosed Cotton Rat **(SS)
Sorex arizonae – Arizona Shrew **(SS)
Thomomys umbrinus intermedius – Southern Pocket Gopher **(SS)

Plants:
Abutilon parishii – Pima Indian Mallow **(SS)
Agave parviflora ssp. parviflora – Santa Cruz Striped Agave **(SS)
Amoreuxia gonzalezii – Saiya **(SS)
Amsonia grandiflora – Large-flowered Blue Star **(SS)
Asclepias lemmonii – Lemmon Milkweed **(SS)
Asclepias uncialis – Greene Milkweed **(SS)
Astragalus hypoxylus – Huachuca Milkvetch **(SS)
Browallia eludens – Bush-violet **(SS)
Capsicum annuum var. glabriusculum – Chiltepin **(SS)
Carex chihuahuensis – Chihuahuan Sedge **(SS)
Carex ultra – Arizona Giant Sedge **(SS)
Choisya mollis – Santa Cruz Star Leaf **(SS)
Conioselinum mexicanum – Mexican Hemlock Parsley **(SS)
Coryphantha recurvata – Santa Cruz Beehive Cactus **(SS)
Coryphantha scheeri var. robustispina – Pima Pineapple Cactus **(E)
Coursetia glabella – Smooth Baby-bonnets **(SS)
Dalea tentaculoides – Gentry's Indigo Bush **(SS)
Desmodium metcalfei – Metcalfe's Tick-trefoil **(SS)
Erigeron arisolius – Arid Throne Fleabane **(SS)
Graptopetalum bartramii – Bartram Stonecrop **(SS)
Heterotheca rutteri – Huachuca Golden Aster **(SS)
Hexalectris arizonica – Arizona Crested coral-root **(SS)
Hexalectris colemanii – Coleman's coral-root **(SS)

Lilaeopsis schaffneriana ssp. recurva – Huachuca Water-umbel **(E)
Lilium parryi – Lemmon Lily **(SS)
Lotus alamosanus – Alamos Deer Vetch **(SS)
Lupinus huachucanus – Huachuca Mountain Lupine **(SS)
Macroptilium supinum – Supine Bean **(SS)
Manihot davisiae – Arizona Manihot **(SS)
Metastelma mexicanum – Wiggins Milkweed Vine **(SS)
Muhlenbergia palmeri – Palmer's Muhly **(SS)
Muhlenbergia xerophila – Weeping Muhly **(SS)
Paspalum virletii – Virlet Paspalum **(SS)
Passiflora arizonica – Arizona Passionflower **(SS)
Pectis imberbis – Beardless Chinch Weed **(SS)
Pennellia tricornuta – Chiricahua Rock Cress **(SS)
Penstemon discolor – Catalina Beardtongue **(SS)
Phemeranthus humilis – Pinos Altos Flame Flower **(SS)
Phemeranthus marginatus – Tepic Flame Flower **(SS)
Physalis latiphysa – Broad-leaf Ground-cherry **(SS)
Potentilla rhyolitica var. rhyolitica – Huachuca Cinquefoil **(SS)
Psilotum nudum – Whisk Fern **(SS)
Samolus vagans – Chiricahua Mountain Brookweed **(SS)
Senecio multidentatus var. huachucanus – Huachuca Groundsel **(SS)
Sisyrinchium cernuum – Nodding Blue-eyed Grass **(SS)
Spiranthes delitescens – Canelo Hills Ladies'-tresses **(SS)
Stevia lemmonii – Lemmon's Stevia **(SS)
Tragia laciniata – Sonoran Noseburn **(SS)
Viola umbraticola – Shade Violet **(SS)

Reptiles:
Aspidoscelis burti stictogrammus – Giant Spotted Whiptail **(SS)
Crotalus pricei – Twin-spotted Rattlesnake **(SS)
Crotalus willardi willardi – Arizona Ridge-nosed Rattlesnake **(SS)
Gopherus morafkai – Sonoran Desert Tortoise **(SS)
Gyalopion quadrangulare – Thornscrub Hook-nosed Snake **(SS)
Oxybelis aeneus – Brown Vinesnake **(SS)
Plestiodon callicephalus – Mountain Skink **(SS)
Sceloporus slevini – Slevin's Bunchgrass Lizard **(SS)
Senticolis triaspis intermedia – Northern Green Ratsnake **(SS)
Tantilla yaquia – Yaqui Black-headed Snake **(SS)
Thamnophis eques megalops – Northern Mexican Gartersnake (T)

(E)** Federally endangered species are listed under the Endangered Species Act (ESA) and in danger of extinction throughout all or a significant part of their range.

(T)** Federally threatened species are listed under the ESA likely to become endangered within the foreseeable future throughout or in a significant part of its range.

(C)** These species are proposed as candidates for status as federally endangered or threatened under the ESA.

(SS)** U.S. Forest Service Sensitive Species are identified by Regional Foresters with the goal of avoiding trends toward federal listing and maintaining the species' viability. Forest Service policy is to keep these species from being listed under the ESA through coordination in land managing activities.