

May 26, 2025

Sean P. Tucker Gold Discovery Group LLC 2549 Eastbluff Drive, Suite B-499 Newport Beach, California 92660 Phone: 310-990-6179 Email: sean@golddiscoverygroup.com

RE: Rare, Threatened, and Endangered ("Special-Status") Plant Survey on 128-Acres Proposed Mining Project South of Red Mountain in San Bernardino County, California

Dear Sean:

This letter includes the results of a special-status plant survey on an 128-acres proposed mining site (project site) south of the town of Atolia in San Bernardino County, California (attached Figure 1 and Figure 2). The proposed project includes surface mining for minerals throughout the project site that consists of using machines to dig into the ground, sand, soil, and rock to identify concentrations of minerals and then extract them. The main goal of the survey was to identify rare, threatened, and endangered ("special-status") species on the 128-acres proposed mining site. The survey was conducted by South Environmental biologists Matthew South, Lucas South, and Meagan Stebbings on the western survey area on April 28, 2025 and on the eastern survey area on April 29 and 30, 2025.

The survey was conducted based on federal and national criteria of government agencies including those of the U.S. Fish and Wildlife and California Department of Fish and Wildlife that evaluate the conservation status of plants in the region and their geographical natural occurrence. When applicable, standard survey methods supported by state and federal agencies were followed. The survey involved plant observation along a series of transects during which plants were identified and recorded. Plants that could not be identified in the field were collected and identified in the laboratory. A complete list of all species recorded on the site and a brief description of the plant community including dominant species and important is included in the report.



Source: ESRI USA Topo Maps and World Topo Map accessed June 2022

Figure 1. Regional Location

Survey Area - 128-acres

The Survey Area is in an unincorporated area of San Bernardino County, California on the USGS Red Mountain quadrangle map in Section 20 of Township 30 South (T30S) North and Range 41 East (R41E)

Center Coordinate (Decimal Degrees): Latitude: 35.3063454N Longitude: -117.6013587W

Gold Discovery Group Project





Figure 2. Project Vicinity

Desert Tortoise Critical Habitat
Survey Area - 128-acres

0 500 1,000 Feet





Project Site Description

The survey area includes the entire 128-acres project site consisting of an eastern survey area and a western survey area that are separated by 600-feet and located immediately east of US Highway 395 and south of the abandoned mining town of Atolia in an unincorporated area of San Bernardino County. The survey area is less than a mile east of the border with Kern County within the United States Geological Service (USGS) Red Mountain 7.5 minute quad and within Section 20 of Township 30 South and Range 41 East at a center coordinate (decimal degrees) of 35.304600 North, -117.605804 West. The survey area is set within an undeveloped area immediately south of an existing mining operation that has entirely developed the areas to the north. Abandoned mineshafts and old mining pits occur frequently on the survey area but it is relatively undisturbed. Photographs of the survey area are in the attached Photograph Exhibit.

Topography and Rainfall

The survey area has undulating hills with a gentle slope toward the east and at an elevation of 3,225 feet on the western edge of the western area and 3,090 feet on the eastern edge of the eastern area. The average annual rainfall in Atolia, California is 5.67-inches per year with the wettest months in January through May. This area of California has had below average rainfall in 2021 and in 2022 according to the National Centers for Environmental Information.

Soils

No soils information if available for this location of San Bernardino County (USDA/NRCS 2025). However, the soils observed during the survey were sandy, friable, and suitable for burrowing species.

Plant Communities

A creosote bush — white bursage scrub (*Larrea tridentata* — *Ambrosia dumosa* Scrub) as described by the Manual of California Vegetation Online (CNPS 2025a) occurs across the survey area. This is an upland desert scrub community where shrubs and annual herbs dominate with a lesser presence of perennial herbs. According to the CNPS, the community is found on "washes and rills, alluvial fans, bajadas, valleys, basins, upland slopes, mesas, and erosional highland" in areas with soils that are primarily "well-drained, alluvial, colluvial, or sandy." It is found at an elevation of 800-5250-ft amsl (CNPS 2025a). The community is classified by the CDFW with a ranking at the state level of "5" (S5) and at the global level of "5" (G5) and therefore is not considered a sensitive natural community. Only communities with a classification of 3 or less at

either the state or global level are a sensitive natural community. The community covers approximately 67% of the Mojave desert (Thomas 2004).

In this community on the survey area, creosote bush is co-dominant with white bursage. Other important shrub species include rayless goldenhead, cheesebush, silver cholla, Anderson thornbush, and catclaw acacia. The shrub canopy was between 2-5-feet in height and had an absolute cover of 10-30%. At the ground level there was a predominance of forbs including bristly fiddleneck, Arabian grass, common goldfields, redstem stork's bill, and desert woollystar. Important grasses observed were the non-native Arabian grass and brome. Forbs were 1-1.5 feet in height and had a ground cover of 20-40%.

Methodology

Literature Review

The California Native Plant Society (CNPS) and the California Department of Fish and Wildlife (CDFW) are the primary authorities in the State of California for recording and tracking endangered, threatened, and rare plants (i.e., special-status) in the state. The CNPS "Inventory of Rare Plants" online (CNPS 2025) and the CDFW California Natural Diversity Database (CNDDB) online (CDFW 2025a) are query tools that identify rare, endangered, and threatened plants and their occurrence based on the U.S. Geological Survey (USGS) 7.5-minute topographic quadrangles for the state. Basic information is provided for each special-status plant species including conservation status, local areas of occurrence, macro and micro habitat, elevation range, and blooming period. Plants considered by the CNPS and CDFW to be rare, threatened, and endangered species are based on specific criteria of state and federal legislation and are summarized in **Appendix B**. The geographic location of occurrences of special-status plants can also be queried directly through the Biogeographic Information and Observation System (BIOS) online (CDFW 2025b).

For the survey, both databases were queried for special-status plants that have previously been recorded in the Red Mountain 7.5" quad that the project site is located within, and the eight surrounding USGS 7.5" quads: Klinker Mountain, El Paso Peaks, Johannesburg, Boron NE, Boron NW, West of Black Hills, Cuddeback Lake, and Freemont Peak. Following the online queries, the rare, threatened, and endangered species identified in each query were combined into a comprehensive list for the region. These species were considered as potential special-status species to occur on the survey site. Next, an additional assessment was conducted to determine their potential to occur on the survey area based on specific habitat and micro-habitat requirements for the species and their occurrences in the area in relation to the survey area. Based on this assessment, the special-status species were designated a "none", "low", "medium", or "high" potential to occur on the project site (**Appendix B**).

Field Survey

The survey of the western survey area was conducted on April 28, 2025 by biologists Matthew South, Lucas South, and Meagan Stebbings. The survey of the eastern survey area was conducted on April 29 and 30, 2025 by biologists Lucas South and Meagan Stebbings. The surveys were conducted under the following weather conditions:

- April 28, 2025. 62-77F, calm winds (5 mph), mostly sunny
- April 29, 2025. 77-82F, high winds (10-20 mph), mostly sunny
- April 30, 2025. 70-80F, calm winds (5 mph), partly sunny

Complete 100% coverage of the entire survey area was surveyed using 10-meter belt transect oriented north-south.

Surveys were conducted according to the CDFW March 20, 2018 *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities,* the CNPS *Botanical Survey Guidelines,* and the USFWS July 2002 *General Rare Plant Survey Guidelines.* The field portion of the survey consisted of three days of botanical exploration in mid-Spring (April 28-30, 2025) at the site. During the survey botanists traversing the survey area on foot in north-south belt transects with each surveyor separated by approximately 10-meters. During this time all plant species encountered were either identified at the time or a sample was collected in the form of photographs and plant material and the species were identified in the lab.

The survey followed the standard botanical protocol for special-status species survey of identifying all plant species encountered. Although the goal was to identify all plant species, field surveyors placed a special emphasis on discovery of the special-status species identified in the literature search with the potential to occur on the site. Species identification in the lab and to a lesser degree the field involved using digital photos and comparing them with taxonomically-related species from the area and using the botanical keys, diagrams, and descriptions in *The Jepson Desert Manual* (Baldwin et al. 2002) and *The Jepson Manual of Vascular Plants of California* (Baldwin et al. 2012).

Results

Literature Review

The querying of the CNPS and CDFW online databases for rare, threatened, and endangered plant species in the region resulted in the identification of 12 species with the potential to occur in the

region. Using the online BIOS, no special-status plant species have been recorded for the survey area in the past (CDFW 2022b). Further analysis of the potential for these species to occur at the site based on habitat and recorded occurrences within the immediate area identified 2 of the 12 species with a medium potential to occur: **Barstow woolly sunflower** and **red rock poppy**.

Data to assess the potential to occur on the site was lacking for three species: Mojave spineflower (*Chorizanthe spinosa*), solitary blazing star (*Mentzelia eremophila*), and Mojave fish-hook cactus (*Sclerocactus polyancistrus*). For these three species neither databases indicated microhabitat nor geographic occurrences for the species. Therefore, their assessment was characterized as "insufficient data." A brief discussion of the conservation status and potential to exist on the survey site of the Barstow woolly sunflower and red rock poppy follows:

- **Barstow wooly sunflower** (*Eriophyllum mohavense*): The species does not have an endangered or threatened classification at either the federal or state level. It has a California Rare Plant Ranking of 1B.2 indicating the species is rare throughout its entire range and is moderately threatened in California. The species inhabits chenopod scrub, Mojavean desert scrub and playas. It blooms from March to May and is found between 1640 and 3150-ft above mean sea level (amsl). The project site has Mojavean desert scrub and there here have been several occurrences in the immediate area. **Medium potential to occur**
- **Rock poppy** (*Eschscholzia minutiflora* ssp. *twisselmanni*): The species does not have an endangered or threatened classification at either the federal or state level. It has a California Rare Plant Ranking of 1B.2 indicating the species is rare throughout its entire range and is moderately threatened in California. The species inhabits Mojavean desert scrub and playas. It blooms from March to May and is found between 2230 and 4035-ft amsl. The project site has Mojavean desert scrub and there here have been several occurrences in the immediate area. **Medium potential to occur**

Survey Results

Species identified in the field or in the laboratory for the site over three days of surveying are listed in Table 1. No special-status plants were observed on the site. A total of 40 vascular plant species most of which are species native to California were identified. Most of the species were annual herbs and shrubs with only a few perennial herbs and no trees or vines identified. No special-status species identified through the literature search and listed in Attachment B were recorded and identified either in the field or laboratory. Important genera for which more than one species are included were *Ambrosia, Chorizanthe, Ericameria, Eriogonum, Lycium, Malacothrix, Mentzelia, and Tetradymia.* Photos of the survey area and of specific common plants are in **Attachment A**.

Common name	Scientific name	Habit	Native/Non-Native		
white bursage	Ambrosia dumosa	Shrub	Native		
cheesebush	Ambrosia salsola	Shrub	Native		
bristly fiddleneck	Amsinckia tessellata	Annual herb	Native		
Layne milkvetch	Astragalus layneae	Perennial herb	Native		
Brome	Bromus sp.	Annual grass	Non-native		
Kern suncup	Camissonia kernensis	Annual herb	Native		
Fremont's pincushion	Chaenactis fremontii	Annual herb	Native		
silver cholla	Cylindropuntia echinocarpa	Shrub	Native		
desert suncup	Eremothera boothii ssp. desertorum	Annual herb	Native		
Cooper's goldenbush	Ericameria cooperii	Shrub	Native		
rubber rabbitbrush	Ericameria nauseosa	Shrub	Native		
Desert trumpet	Eriogonum inflatum	Annual herb	Native		
spotted wild buckwheat	Eriogonum maculatum	Annual herb	Native		
Thomas's wild buckwheat	Eriogonum thomasii	Annual herb	Native		
Little desert trumpet	Eriogonum trichopes	Annual herb	Native		
Pringle's woolly sunflower	Eriophyllum pringlei	Annual herb	Native		
redstem stork's-bill	Erodium cicutarium	Annual herb	Non-native		
little gold poppy	Eschscholzia minutiflora	Annual herb	Native		
whitemargin sandmat	Euphorbia albomarginata	Perennial herb	Native		
creosote bush	Larrea tridentata	Shrub	Native		
small-ray goldfields	Lasthenia microglossa	Annual herb	Native		
Anderson thornbush	Lycium andersonii	Shrub	Native		
peach-thorn	Lycium cooperi	Shrub	Native		
desert dandelion	Malacothrix glabrata	Annual herb	Native		
whitestem blazingstar	Mentzelia albicaulis	Annual herb	Native		
wishbone bush	Mirabilis laevis	Perennial herb	Native		
desert needlegrass	Pappostipa speciosa	Perennial grass	Native		
lacy phacelia	Phacelia tanacetifolia	Annual herb	Native		
Mojave indigo bush	Psorothamnus arborescens	Shrub	Native		
Arabian grass	Schismus arabicus	Annual herb	Non-native		
catclaw acacia	Senegalia greggii	Shrub	Native		
littleleaf horsebrush	Tetradymia glabrata	Shrub	Native		
Mojave cottonthorn	Tetradymia stenolepis	Shrub	Native		
Mojave aster	Xylorhiza tortifolia	Perennial herb	Native		

Table 1. List of plant species at the Gold Discovery Group site in Atolia, California.

Conclusion

No special-status plants were observed during the survey. A literature review initially identified 12 special-status plant species with the potential to occur in the region. Of these 12 species, 2 — Barstow wooly sunflower and rock poppy — were assessed with a medium potential to occur on the site based on its macro and micro habitat characteristics and occurrences in the immediate area. For three other species, there was insufficient information to make a reasonable assessment of their potential to occur on the site. A field survey conducted over three days in late-April and early-May resulted in the identification of 34 plant taxon made up primarily of shrubs and annual herbs. Based on the dominance of plants observed, the community on the area was assessed as *Creosote Bush and White Bursage Scrub*, which is not considered a sensitive natural community by the CDFW. Of the 34 plants identified to genus or species none of them were assessed to be

special-status species. In sum, the botanical survey indicated the presence of a common natural community and no special-status species.

If you have any questions regarding the information in this report, please contact Matthew South by email: <u>msouth@southenvironmental.com</u> or by mobile phone: 303-818-3632.

Sincerely,

Matthew R. South

Matthew R. South

List of Attachments

1. Attachment A. Special-Status Species Analysis

Bibliography

- Baldwin, B.G., Boyd, S., Ertter, B.J., Patterson, R.W., Rosatti, T.J., and Wilken, D.H. 2002. The Jepson Desert Manual. University of California Press, Berkeley and Los Angeles, California.
- Baldwin, B.G., Goldman, D.H., Keil, D.J., Patterson, R., Rosatti, T.J., Wilken, D.H. 2012. The Jepson Manual Vascular Plants of California (2nd edition), University of California Press, Berkeley and Los Angeles, California.
- California Department of Fish and Wildlife (CDFW). 2025a. California Natural Diversity Database (CNDDB) (available by subscription) and Rarefind. Sacramento, California. Accessed online: https://wildlife.ca.gov/Data/CNDDB
- CDFW. 2022b. Biogeographic Information Observation System (BIOS) online. Sacramento, California. Accessed online: https://wildlife.ca.gov/Data/BIOS
- California Native Plant Society (CNPS). 2025a. A Manual of California Vegetation Online. Accessed online: http://vegetation.cnps.org/
- CNPS. 2025b. Inventory of Rare and Endangered Plants of California. California Native Plant Society. Accessed online: http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi
- National Oceanic and Atmospheric Administration (NOAA). 2025. National Centers for Environmental Information (NCEI) online. Accessed online: https://www.ncei.noaa.gov/

- Thomas, K., Keeler-Wolf, T., Franklin, J., Stine, P. 2004. Mojave Desert Ecosystem Program: Central Mojave Vegetation Database. *Environmental Science*.
- United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS). 2025. Online Web Soil Survey Mapper. Available online: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm
- United States Geological Survey (USGS). 2025. Topographical Maps Online. Available online: https://apps.nationalmap.gov/downloader/#/

Appendix A: Special-Status Species Analysis

Special-Status Species Analysis

Special-status plant species are those plants that, because of their recognized rarity or vulnerability to various causes of habitat loss or population decline, are recognized by federal, state, or other agencies as under threat from human-associated developments. Some of these species receive specific protection that is defined by federal or state endangered species legislation. Others have been designated as special-status based on adopted policies and expertise of state resource agencies or organizations with acknowledged expertise, or policies adopted by local governmental agencies such as counties, cities, and special districts to meet local conservation objectives. Special-status species include:

- Plants or wildlife listed or proposed for listing as threatened or endangered, or are candidates for possible future listing as threatened or endangered, under the federal Endangered Species Act or the California Endangered Species Act;
- Plants or wildlife that meet the definitions of rare or endangered under CEQA Guidelines Section 15380.
- Plants or wildlife covered under an adopted NCCP/HCP;
- Plants considered by the California Native Plant Society (CNPS) to be rare, threatened, or endangered (List 1A, 1B and 2 plants) in California;
- Plants listed by the CNPS as plants in which there is limited information about distribution (List 3);
- Plants listed as rare under the California Native Plant Protection Act (Fish and Game Code 1900 et seq.);

Federally-Protected Status

All references to Federally-protected species in this BRA include the most current published status or candidate category to which each species has been assigned by USFWS. For purposes of this assessment the following acronyms are used for Federal status species, as applicable:

- **FE** Federally-listed as Endangered
- **FT** Federally-listed as Threatened
- **FPE** Federally proposed for listing as Endangered
- **FPT** Federally proposed for listing as Threatened
- **FPD** Federally proposed for delisting
- **FC** Federal candidate species (former C1 species)

State-Protected Status

For the purposes of this BRA, the following acronyms are used for State status species, as applicable:

- SE State-listed as Endangered
- **ST** State-listed as Threatened
- **SR** State-listed as Rare
- **SCE** State candidate for listing as Endangered
- **SCT** State candidate for listing as Threatened
- **SFP** State Fully Protected
- SSC California Species of Special Concern

California Rare Plant Rank

The CNPS is a private plant conservation organization dedicated to the monitoring and protection of special-status species in California. CNPS has compiled an inventory comprised of the information focusing on geographic distribution and qualitative characterization of Rare, Threatened, or Endangered vascular plant species of California (CNPS 2018). The list serves as the candidate list for listing as Threatened and Endangered by CDFW. CNPS has developed six categories of rarity known as the California Rare Plant Rank (CRPR), of which Ranks 1A, 1B, 2A, and 2B are particularly considered sensitive:

Rank 1A	Presumed extinct in California.
Rank 1B	Plants Rare, Threatened, or Endangered in California and elsewhere.
Rank 2A	Presumed extinct in California, but more common elsewhere.
Rank 2B	Plants Rare, Threatened, or Endangered in California, but more common
elsewhere.	
Rank 3	Plants about which we need more information – a review list.
Rank 4	Plants of limited distribution – a watch list.

The CNPS recently added "threat ranks" which parallel the ranks used by the CNDDB. These ranks are added as a decimal code after the CNPS List (e.g., Rank 1B.1). The threat codes are as follows:

.1 Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat);

.2 Moderately threatened in California (20-80% occurrences threatened);

.3 Not very threatened in California (<20% of occurrences threatened or no current threats known).

Potential to Occur Assessment

Special-status species that are **present** or are **high** or **medium** potential to occur within the parcel are a based on one or more of the following:

- the direct observation of the species within the parcel during any field survey;
- a record reported in the CNDDB; and
- the parcel is within known distribution of a species and contains appropriate habitat.
- present means the species is known to occur, high potential indicates the habitat is ideal and near known occurrences of the species, and medium indicates that the habitat may be less than ideal due to some lacking element but still usable by the species and within the known range.

Special-status species that are **low** potential) to occur are based on one of the following:

- the parcel has the general habitat types but lacks necessary habitat elements such as suitable microhabitat or soils; or
- the parcel is outside the known elevation range or distribution of the species, and has otherwise suitable habitats;

Special-status species that have no potential to occur on the parcel are labeled as **none** due to the absence of suitable habitat.

Special-status species with a potential to occur on the survey area are listed below.

Scientific Name	Common Name	Life Form	CRPR	CESA	FESA	Blooming Period	Elevation Range (ft)	Habitat	Micro Habitat	Potential to Occur on Site
Camissonia kernensis ssp. kernensis	Kern County evening- primrose	annual herb	4.3	None	None	Mar-May	2590 - 6990	Chaparral, Joshua tree "woodland", Pinyon and juniper woodland	Granitic, Gravelly (sometimes), Sandy (sometimes)	None . The survey site lacks the habitat the species requires.
Canbya candida	white pygmy- poppy	annual herb	4.2	None	None	Mar-Jun	1970 - 4790	Joshua tree "woodland", Mojavean desert scrub, Pinyon and juniper woodland	Granitic, Gravelly, Sandy	Low. The survey site has Mojavean desert scrub and is sandy and gravelly; however, there is only one occurrence of the species according to the CNDDB and it is not in the immediate area.
Chorizanthe spinosa	Mojave spineflower	annual herb	4.2	None	None	Mar-Jul	20 -4265	Chenopod scrub, Joshua tree "woodland", Mojavean desert scrub, Playas	Alkaline (sometimes)	Insufficient Data. The survey site has Mojavean desert scrub. No information was available through the CNDDB or CNPS regarding microhabitat or occurrences.
Cryptantha clokeyi	Clokey's cryptantha	annual herb	1B.2	None	None	Apr	2380 - 4480	Mojavean desert scrub		Low: The survey site has Mojavean desert scrub; there is only one occurrence of the species according to the CNDDB in the immediate area.
Cymopterus deserticola	desert cymopterus	perennial herb	18.2	None	None	Mar-May	2065 - 4920	Joshua tree "woodland", Mojavean desert scrub	Sandy	Low: The survey site has Mojavean desert scrub and is sandy; there is only one occurrence of the species according to the CNDDB in the immediate area.

Scientific Name	Common Name	Life Form	CRPR	CESA	FESA	Blooming Period	Elevation Range (ft)	Habitat	Micro Habitat	Potential to Occur on Site
Eremothera boothii ssp. boothii	Booth's evening- primrose	annual herb	2B.3	None	None	Apr-Sep	2675 - 7875	Joshua tree "woodland", Pinyon and juniper woodland		None . The survey site lacks the habitat the species requires.
Eriophyllum mohavense	Barstow woolly sunflower	annual herb	18.2	None	None	Mar-May	1640 - 3150	Chenopod scrub, Mojavean desert scrub, Playas		Medium. The survey site has Mojavean desert scrub; according to the CNDDB the species has occurred in several places in the immediate area.
Erythranthe rhodopetra	Red Rock Canyon monkeyflower	annual herb	1B.1	None	None	Mar-Apr	2000 - 3000	Mojavean desert scrub	Sandy, Washes	Low. The survey site has Mojavean desert scrub; however, there is only one occurrence of the species according to the CNDDB in the immediate area.
Eschscholzia minutiflora ssp. twisselmannii	Red Rock poppy	annual herb	1B.2	None	None	Mar-May	2230 - 4035	Mojavean desert scrub		Medium. The survey site has Mojavean desert scrub; according to the CNDDB the species has occurred in several places in the immediate area.
Hecastocleis shockleyi	prickle-leaf	perennial evergreen shrub	3	None	None	May-Jul	3935 - 7220	Chenopod scrub, Mojavean desert scrub	Carbonate (often), Rocky, Slopes, Washes	None. The survey site has Mojavean desert scrub; however, it is below the elevation range of the species.
Mentzelia eremophila	solitary blazing star	annual herb	4.2	None	None	Mar-May	2295 - 4005	Mojavean desert scrub		Insufficient Data. The survey site has Mojavean desert scrub. No information was available through the CNDDB or CNPS regarding microhabitat or occurrences.

Scientific Name	Common Name	Life Form	CRPR	CESA	FESA	Blooming Period	Elevation Range (ft)	Habitat	Micro Habitat	Potential to Occur on Site
Sclerocactus polyancistrus	Mojave fish- hook cactus	perennial stem	4.2	None	None	Apr-Jul	2100 - 7610	Great Basin scrub,		Insufficient Data. The survey site has Mojavean
								Joshua tree "woodland", Mojavean		desert scrub. No information was available through the CNDDB or
								desert scrub		CNPS regarding microhabitat or occurrences.