CEMEX – ALVIC & ALUMINA QUARRY
REVISED RECLAMATION PLAN

SAN BERNARDINO COUNTY, CALIFORNIA

Revegetation Plan

Prepared For:

Lilburn Corporation
1905 Business Center Drive
San Bernardino, California 92408
Contact: *Frank Amendola*
909.890.1818

Prepared By:

ELMT Consulting, Inc.
2201 N. Grand Avenue #10098
Santa Ana, California 92711
Contact: *Thomas J. McGill, Ph.D.*
714.714.5050

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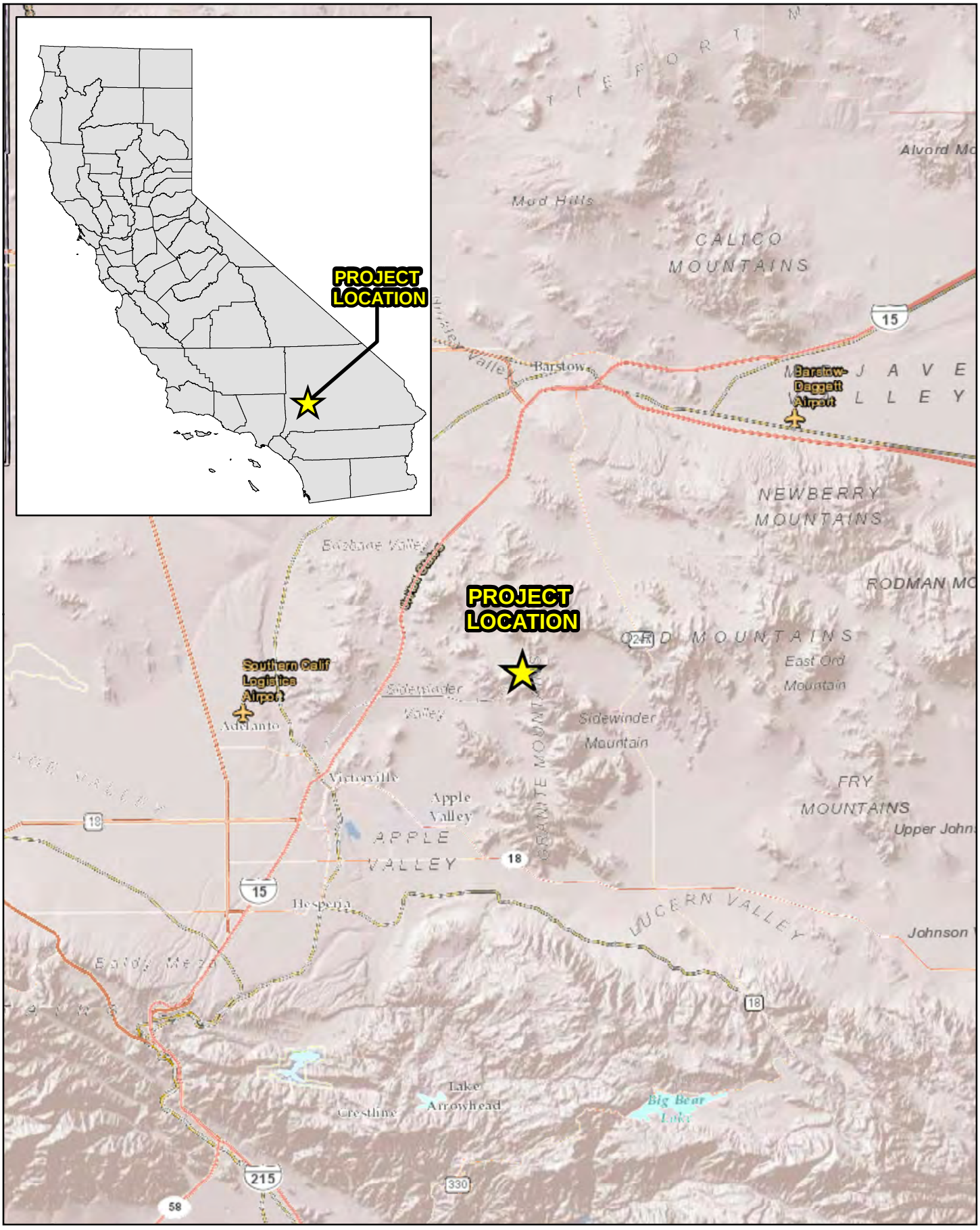
Section 1 Introduction

CEMEX Construction Materials Pacific, LLC (CEMEX) is submitting to San Bernardino County (County) a revision to its existing Alvic Quarry Reclamation Plan (84M-012; CA MINE ID #91-36-0105) (Revised Plan) for the planned expansion and reclamation of the existing Alvic Quarry northeast of the Town of Apple Valley in unincorporated San Bernardino, California. As part of the planning process to expand mining at the Alvic Quarry, CEMEX will be submitting an application under the Surface Mining and Reclamation Act (SMARA) to San Bernardino County, the local lead agency. The reclamation plan review process under SMARA for the proposed expansion requires several documents be prepared, including a revegetation plan. The revegetation plan will be implemented to restore a site concurrent with completed mine areas and when mining is complete but must first be reviewed and approved as part application process prior to commencing the expansion.

Section 2 Project Location and Description

The Project site is generally located east of Interstate 15, south of Interstate 40, north of State Route 18, and west of State Route 247 north of the Town of Apple Valley in unincorporated San Bernardino County, California (Exhibit 1, *Regional Vicinity*). The Project site is depicted on the Stoddard Well quadrangle of the United States Geological Survey's (USGS) 7.5-minute topographic map series in Sections 3 and 4 of Township 6 North, Range 2 West (Exhibit 2, *Site Vicinity*). Specifically, the Project site is located within the boundaries of the existing CEMEX Black Mountain Quarry, at the eastern terminus of Black Mountain Road at the existing Alvic Quarry (Exhibit 3, *Project Site*).

The project proposes to expand mining operations and update reclamation at the existing Alvic Quarry. The Alvic Quarry is located on patented (private) lands owned by CEMEX. The existing quarry and access road consist of approximately 22 disturbed acres. The proposed revision will include an additional approximately 141 acres for a total plan area of approximately 163 acres to be disturbed and reclaimed.



ALVIC QUARRY REVISED RECLAMATION PLAN
REVEGETATION PLAN

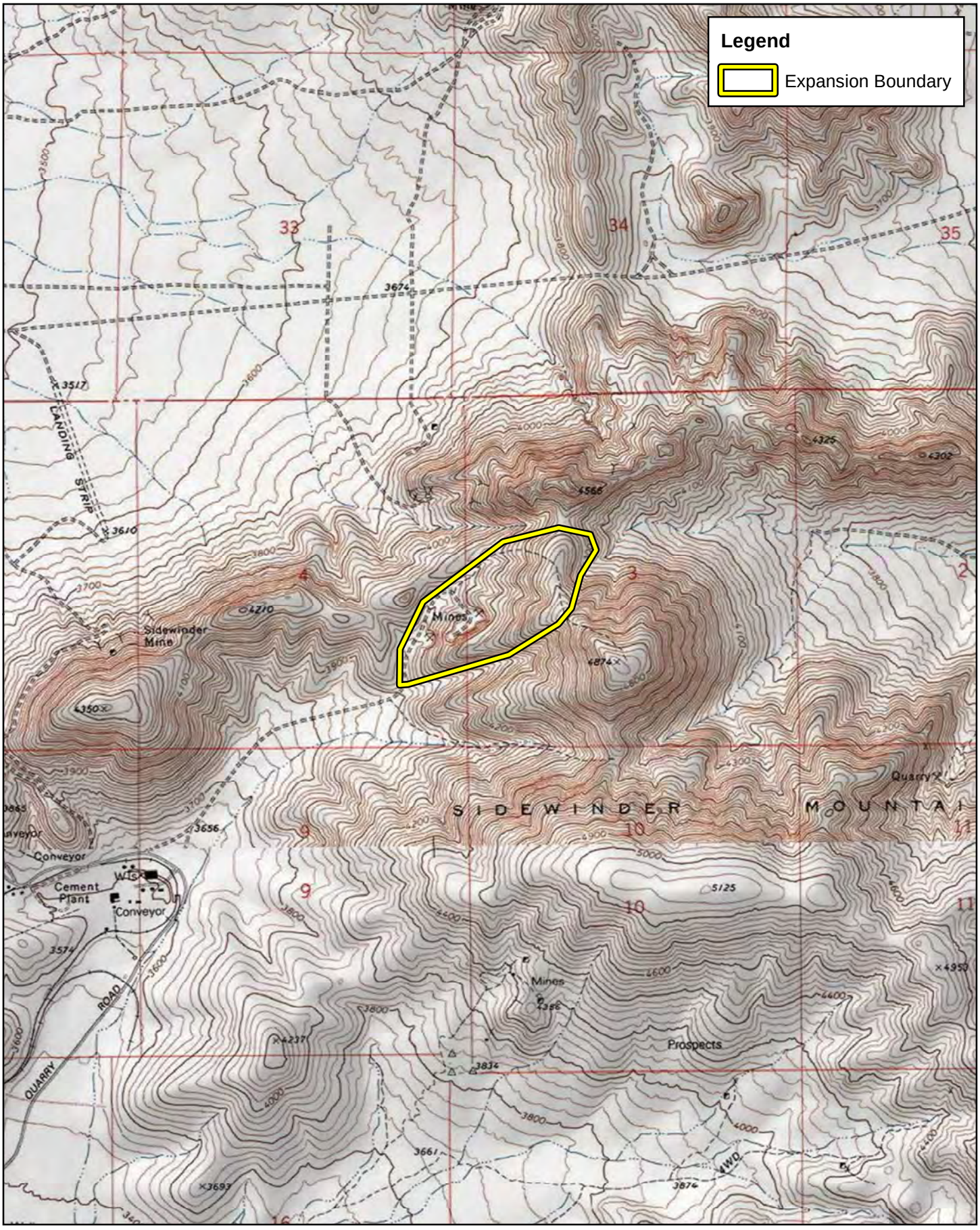
Regional Vicinity

ELMT CONSULTING

0 2.5 5 10 Miles

Source: ESRI World Shaded Relief Ma, World Transportaiton, San Bernardino County

Exhibit 1



ALVIC QUARRY REVISED RECLAMATION PLAN
REVEGETATION PLAN

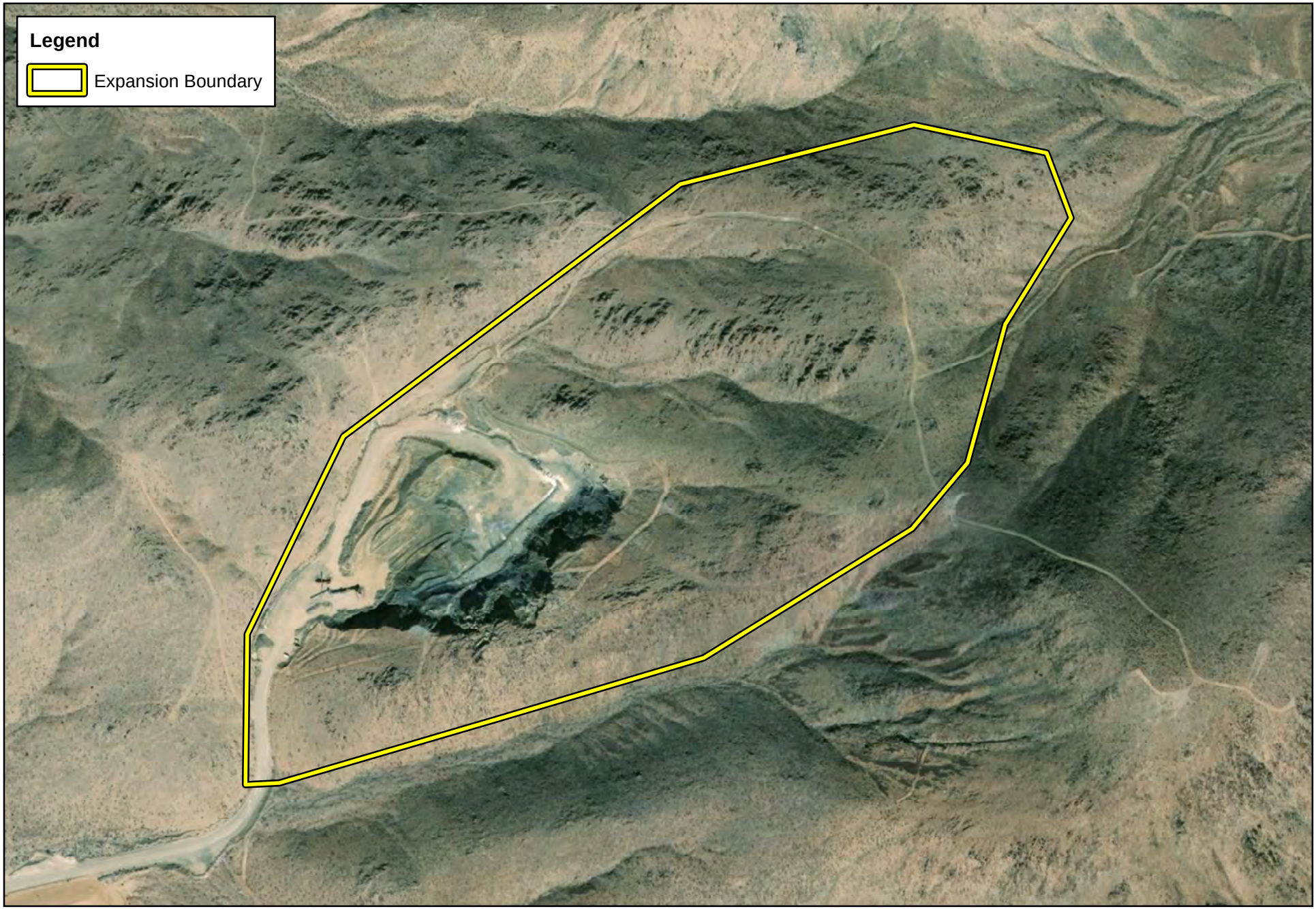
Site Vicinity

ELMT CONSULTING

0 0.25 0.5 1 Miles

Source: USA Topographic Maps, San Bernardino County

Exhibit 2



ELMT CONSULTING

0 250 500 1,000
Feet

Source: ESRI Aerial, World Transportation, San Bernardino County

ALVIC QUARRY REVISED RECLAMATION PLAN
REVEGETATION PLAN

Project Site

Exhibit 3

Section 3 Environmental Setting

3.1 LOCAL CLIMATE

The Mojave Desert is found at elevations of 2,000 to 5,000 feet above mean sea level and is characterized by cool winter temperatures and warm summer temperatures, with its rainfall occurring almost entirely in the winter. Climatological data obtained from nearby weather stations indicated the annual precipitation averages 6.18 inches per year. Almost all of the precipitation in the form of rain occurs in the months between October and April, with hardly any occurring between the months of May and September. The wettest month is February, with a monthly average total precipitation of 1.22 inches. The average minimum and maximum temperatures for the region are 45.7 and 78.9 degrees Fahrenheit (°F) respectively with December and January (monthly average 41° F) being the coldest months and July being the hottest (monthly average 100° F). Temperatures during the site visit were in the mid-70s (° F).

3.2 TOPOGRAPHY AND SOILS

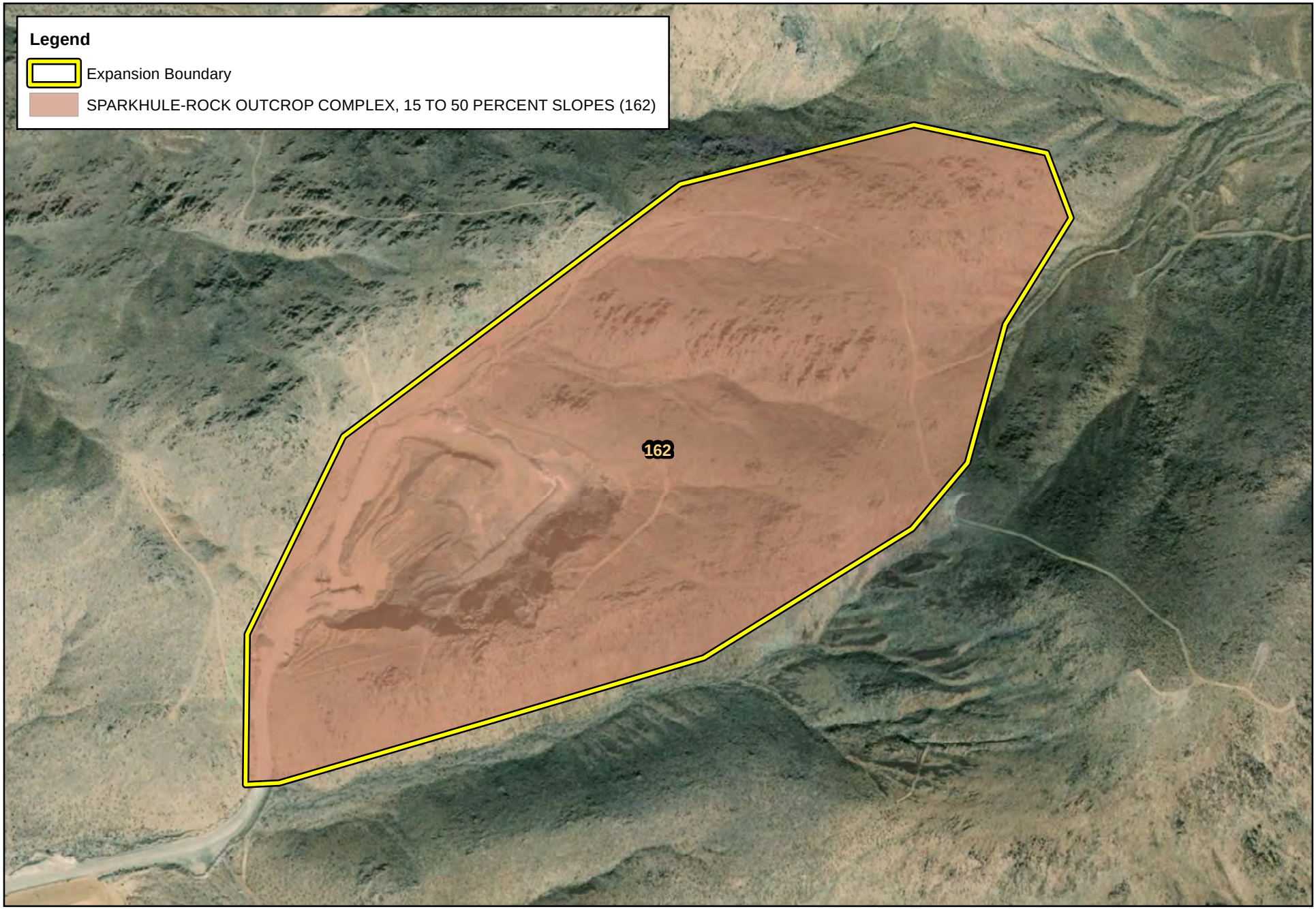
On-site surface elevation ranges from approximately 3,898 to 4,340 feet above mean sea level. Topography on-site generally consists of rolling hills and several steep sided hilltops and ridgelines located across the survey area, all descending roughly east to west or north to south. There are several portions of the project site that are actively being mined or have previously been mined resulting in steep cliff faces.

According to the United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS), Soil Survey[1] Custom Soil Resource Report, the survey area is underlain by the following soil units: Sparkhule-rock outcrop complex (15 to 50 percent slopes) (Exhibit 4, *Soils*). Soils within the existing mining area have been mechanically disturbed and compacted from mining activities, while soils adjacent to the existing mine area, within the survey area are relatively undisturbed.

3.3 SURROUNDING LAND USES

The project site is located in the northeast corner of the CEMEX Black Mountain Quarry and Plant in a remote area northeast of the Town of Victorville in unincorporated San Bernardino County. Areas surrounding the site consist of vacant, undeveloped land with existing mining infrastructure to the west. The project site is situated at the eastern end of the range in between Black Mountain and Sidewinder Mountain, with Fairview Mountains located to the southwest. The Apple Valley Airport is located approximately 6.2 miles to the southwest and Interstate 15 is located approximately 7.3 miles to the west. No structures or industrial areas other than those supporting the operations of the CEMEX Black Mountain Quarry and Plant are located within 4 miles of the site.

[1] A soil series is defined as a group of soils with similar profiles developed from similar parent materials under comparable climatic and vegetation conditions. These profiles include major horizons with similar thickness, arrangement, and other important characteristics, which may promote favorable conditions for certain biological resources.



ALVIC QUARRY REVISED RECLAMATION PLAN
REVEGETATION PLAN

Soils

ELMT CONSULTING

0 250 500 1,000 Feet

Source: ESRI Aerial, Soil Survey Geographic Database, San Bernardino County

Exhibit 4

3.4 VEGETATION

The project site is relatively undeveloped except those areas that have been subject to existing mining activities. The areas on the perimeter of the project site are undeveloped/undisturbed, while the middle portion of the project site supports mining pits, and dirt access roads.

During the field investigation one (1) plant community was observed within the boundary of the project site: Mojavean desert scrub (Exhibit 5, *Vegetation*). In addition, one (1) land cover type that would be classified as disturbed was observed on-site. This area is not a vegetation classification, but rather a land cover type. The vegetation community and land cover type are described in further detail below.

3.4.1 Mojavean Desert Scrub (76 acres)

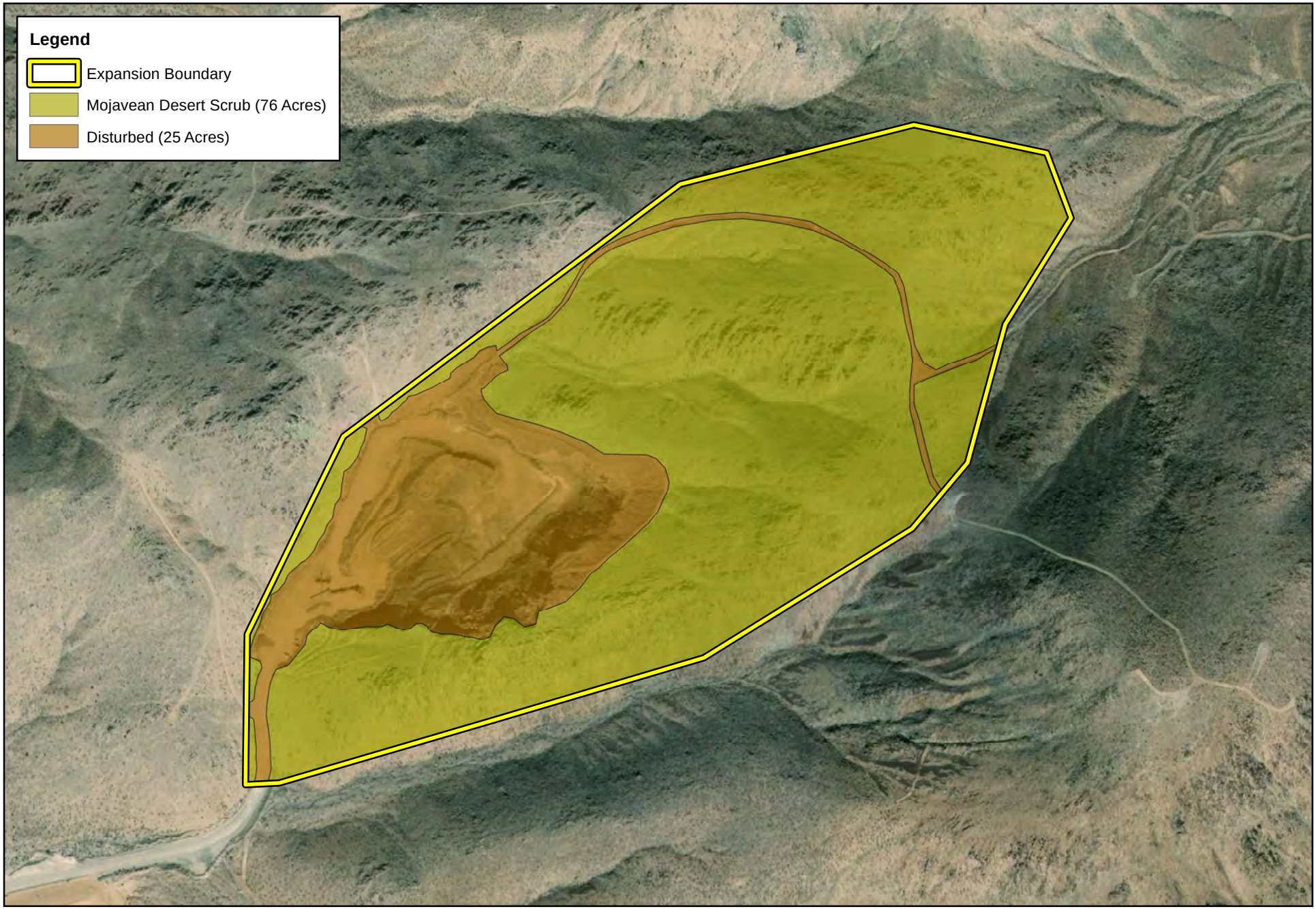
The Mojavean desert scrub plant community occurs throughout the undeveloped/undisturbed portions of the project site and is the dominant plant community within the surrounding landscape. This plant community is found on the outer perimeter of the project site boundaries, outside of the areas that have been subject to existing mining activities, on the steep slopes of rolling hills. Common plant species found within this plant community include fiddleneck (*Amsinckia tesselata*), desert dudleya (*Dudleya saxosa*), sagebrush combseed (*Pectocarya linearis*), curvenut combseed (*Pectocarya recurvata*), red-stemmed filaree (*Erodium cicutarum*), wingnut cryptantha (*Cryptantha pterocarya*), creosote (*Larrea tridentata*), Mojave yucca (*Yucca schidigera*), desert trumpet (*Eriogonum inflatum*), pencil cholla (*Cylindropuntia ramosissima*), burrobush (*Ambrosia dumosa*), hedgehog cactus (*Echinocereus* sp.), beavertail cactus (*Opuntia basilaris*), barrel cactus (*Echinocactus* sp.), common phacelia (*Phacelia distans*), desert wishbone (*Mirabilis laevis*), matchweed (*Gutierrezia californica*), cheesebush (*Ambrosia salsola*), and brittlebush (*Encelia farinosa*).

3.4.2 Disturbed (25 acres)

Disturbed areas are generally areas that have been subject to a high level of human disturbances from existing mining activities and no longer comprise a native plant community. These areas are unpaved and are primarily or entirely devoid of vegetation, or support ruderal/weedy plant species and are found throughout the project site. Disturbed areas included existing mining pits, dirt access roads, and stockpile areas. Plant species occurring within these disturbed areas include red brome (*Bromus madritensis* ssp. *rubens*), short-podded mustard (*Hirschfeldia incana*), and Mediterranean grass (*Schismus barbatus*).

3.5 PLANT COMMUNITY COMPOSITION

The goal of most restoration and revegetation projects is to recreate the plant cover, distribution and species composition of the plant community found on a site prior to disturbance. Accurate data on the plant community composition is desirable in the initial planning and evaluation process for the project. Plant cover, species density and species diversity are important aspects of a plant community which can be measured by conducting sampling of a comparable reference site or, in this case, the largely undisturbed native plant community. As noted, there is only one native plant community found within the proposed mining expansion area, a Mojavean Desert scrub plant community which is homogenous throughout the expansion area with only minor variations in composition associated with slope orientation.



ELMT CONSULTING

0 250 500 1,000 Feet

Source: ESRI Aerial, Soil Survey Geographic Database, San Bernardino County

ALVIC QUARRY REVISED RECLAMATION PLAN
REVEGETATION PLAN

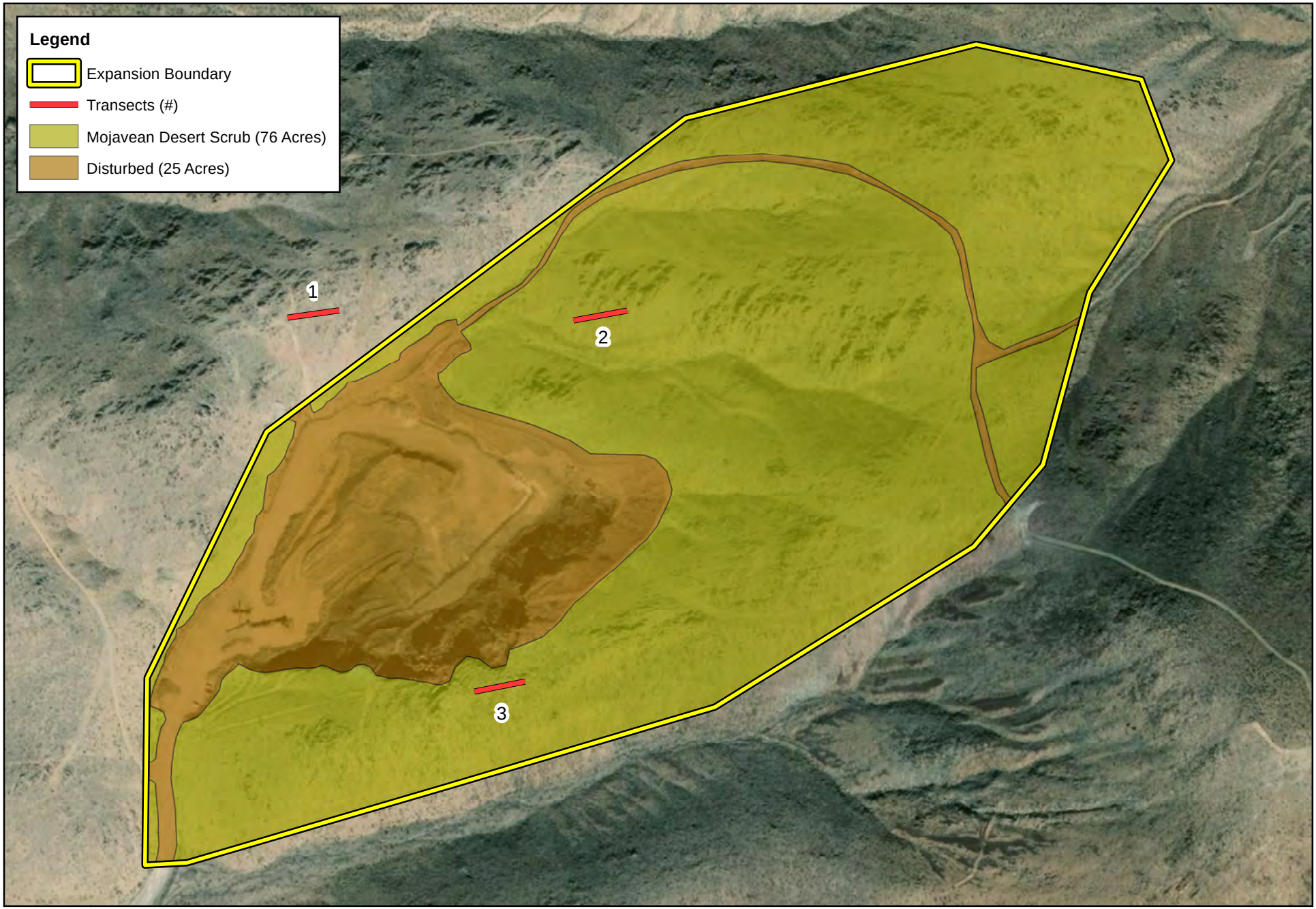
Vegetation

Exhibit 5

In order to accurately define composition of the Mojavean Desert scrub plant community and to be able to adequately measure the success of the revegetation over time, plant transects were conducted using the point intercept methodology to document baseline conditions. ELMT biologists used the Releve methodology to select representative transect locations. The Releve methodology allows a biologist to use their knowledge of an area and the habitat(s) found within that area to subjectively select transect lines or locations as representative of that habitat(s) rather using other methodologies that require a large number of randomly generated transects in order to ensure that sample size is sufficient to adequately represent habitat(s) in the area. For the proposed project, there is a single habitat, a Mojavean Desert plant community which is homogenous across the project site, with some minor vegetative variation associated with slope orientation. ELMT lead biologist has worked extensively in Mojave Desert and within Mojavean Desert scurb habitat for forty years. Based on his knowledge and years of experience in desert habitats, he selected three transect locations as representative of observed Mojavean Desert scrub habitat found onsite. The location of these transect lines were recorded with a GPS unit for future reference. The locations of the transect lines are shown in Exhibit 6, *Transect Locations*. The information collected was used to document the species present, percent vegetative cover, species density and species diversity as part of documenting baseline conditions within each landform. This characterization of baseline conditions provides a guide for future revegetation efforts. The landforms selected were Transect 1: north facing slope on north side; Transect 2 – south facing slope on north side; and Transect 3 – north facing slope on south side.

Vegetation within in each line was sampled using the point-intercept method (California Native Plant Society 2014). Each transect was 50 meters long and 1 meter wide. All native and non-native plant species within a 50-meter square transect were recorded and are presented in Table 1, *Plants Identified Within Each Transect*. Additionally, a transect line was stretched down the center of each transect and plant species, native and non-native, that were intercepted by the line were noted and recorded at half-meter (1.6-foot) intervals. Note that only those plant species intercepted the central transect line were recorded and that not all plant species within a transect necessarily intercepted the central transect line. Datasheets for the point-intercept process are presented in Appendix A, *Transect Data Sheets* and were used to determine percent plant cover (refer to Table 2, *Percent Plant Cover*) and species density and species diversity (refer to Table 3, *Species Density and Species Diversity*). Species density is calculated as the percent cover of all native species. Two transects were conducted for habitat on north facing slopes. Since the vegetative data was comparable between these two transects, these data were combined and used to generate a single average value for species density and diversity for habitat on north facing slopes. These average values are presented later in Table 7, *Plant Community Composition*.

As previously noted, Appendix A provides the raw data for all plant species observed within each transect area. Tables 1 through 3 summarizes these data and provides an analysis of the data for the proposed expansion areas. Appendix C, *Site Photographs* provides a series of site photos of the project site and the location of the transects within and adjacent to the proposed expansion area.



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0 250 500 1,000 Feet

Source: ESRI Aerial, Soil Survey Geographic Database, San Bernardino County

ALVIC QUARRY REVISED RECLAMATION PLAN
REVEGETATION PLAN

Transects

Exhibit 6

Table 1: Plants Identified Within Each Transect

Plant Species	Transects		
	1	2	3
Amsinckia tesselata	X	X	X
Bromus rubens			X
Cryptantha intermedia		X	X
Cylindropuntia ramosissima	X		
Dudleya saxosa			
Echinocereus englemannii	X	X	
Encelia farinosa			X
Ephedra nevadensis	X	X	X
Eriogonium fasciculatum	X		
Eriogonium inflatum	X	X	X
Erodium cicutarium	X	X	X
Ferocactus cylindraceus	X	X	X
Larrea tridentate	X	X	X
Lycium brevipes			X
Mentzelia sp.		X	
Oligomeris linifolia		X	
Opuntia basilaris	X	X	
Pectocarya penicellata		X	
Pectocarya recurvata	X		
Phacelia distans		X	
Plantago sp.			X
Psorothamnus schottii		X	
Schismus barbatus	X		
Sphaeralcea ambigua	X	X	X
Stipa speciosa	X	X	X

Table 2: Percent Plant Cover (per 50 m^2)

Plant Species	North Facing Slope on North Side	South Facing Slope on North Side	North Facing Slope on South Side
Plant Species	**Transects**		
	1	**2**	**3**
Cylindropnutia ramosissima	1%	1%	
Dudleya saxosa		1%	
Echinocereus mojavensis	4%	3%	
Encelia farinosa			4%
Ephedra nevadensis	4%	7%	16%
Eriogonum fasciculatum	9%		1%
Ferocactus cylindraceus	2%		1%
Larrea tridentata	4%	1%	4%
Lycium brevipes			2%
Opuntia basilaris	1%		
Stipa specoisa	3%		4%
Native Perennial Subtotal	**28%**	**13%**	**32%**
Amsinckia tellelata	12%	5%	6%
Caulanthus lasiophyllus		2%	
Cryptantha pterocarya			2%
Cryptantha intermedia		1%	12%
Eriogonum inflatum	1%	10%	1%
Malacothrix glabrata	1%		
Mentzelia desertorum		2%	
Oligomeris linifolia		2%	
Pectocarya penicellata	1%	1%	
Pectocarya recurvata	1%		
Phalcelia distans		1%	
Sphaeraclea ambigua		2%	2%
Native Annual Subtotal	**16%**	**28%**	**23%**
TOTAL NATIVE COVER	**44%**	**41%**	**55%**
Bromus rubens			4%
Erodium cicutarium	15%	36%	20%
Schismus barbatus	2%		
TOTAL NON-NATIVE COVER	**17%**	**36%**	**24%**
Bare Ground Subtotal	**39%**	**23%**	**21%**
GRAND TOTALS	**100%**	**100%**	**100%**

Table 3: Species Density and Diversity (all native plants per 50 m^2)

	Transects		
	1	**2**	**3**
Species Density	44	41	55
Species Diversity (all natives)	13	14	12
Species Diversity (perennials)	8	5	7

3.6 JURISDICTIONAL FEATURES

The USFWS National Wetland Inventory and the USGS National Hydrography Dataset were reviewed to determine if any blueline streams or riverine resources have been documented within or immediate surrounding the project site. Based on this review and field investigation, approximately three (3) to four (4) riverine resources were identified immediately adjacent to the project site (Exhibit 7, *Jurisdictional Areas*). These features are ephemeral features that follow topography within the canyon bottoms of the rolling hills. Surface flows within with these features are only provided by direct precipitation from storm events. No surface water was observed during the field investigations. Based on the proposed mining expansion boundary, none of the mapped riverine resources will be impacted from project implementation.

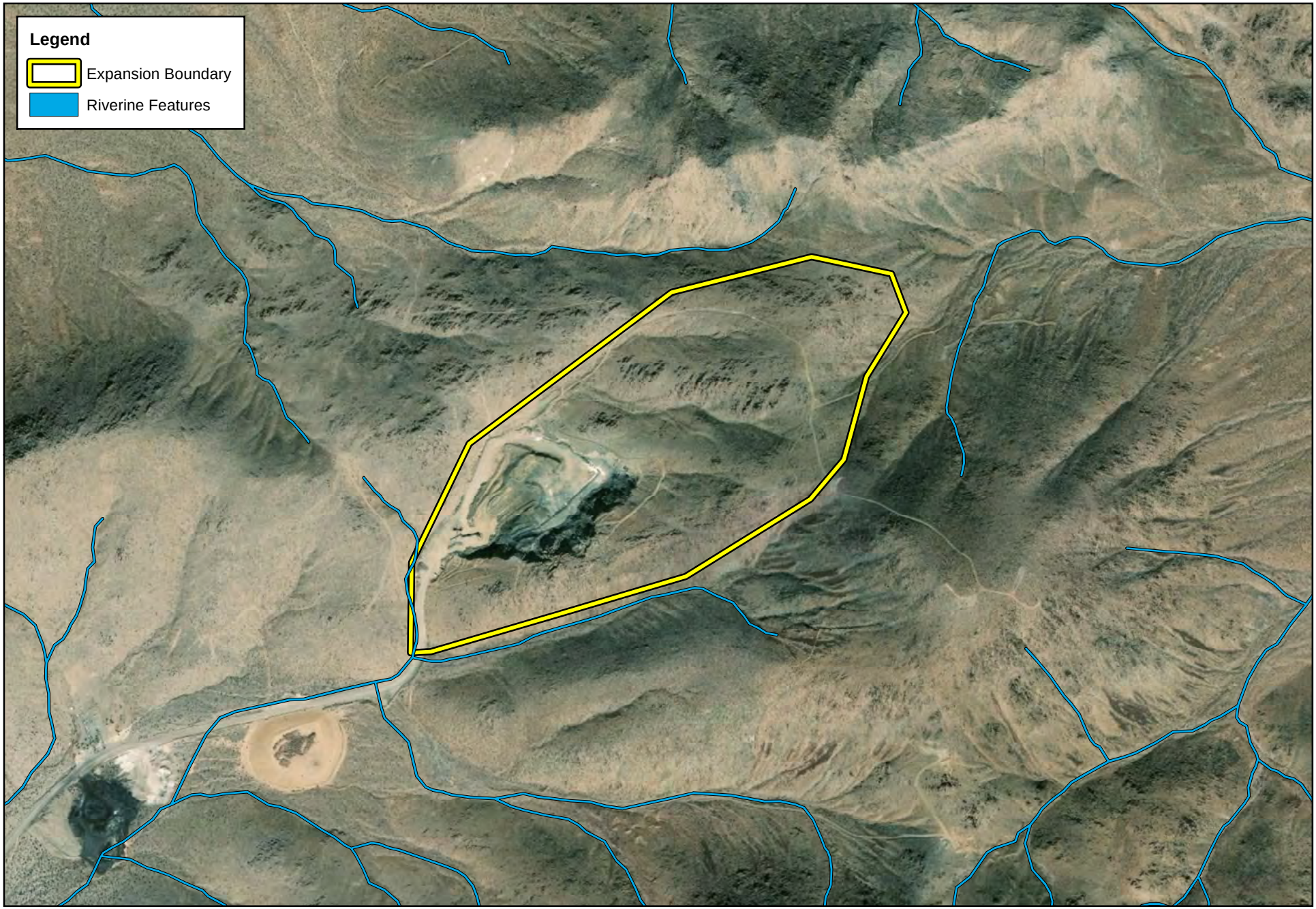
3.7 SPECIAL-STATUS PLANT SPECIES

The CNDDB Rarefind 5, CNDDB Quickview Tool in BIOS and the CNPS Electronic Inventory of Rare and Endangered Vascular Plants of California were queried for reported locations of special-status plant and wildlife species as well as special-status natural plant communities in the Turtle Valley, Stoddard Well, Apple Valley North, and Fairview Valley USGS 7.5-minute quadrangles. The habitat assessment evaluated the conditions of the habitat(s) within the boundaries of the project site to determine if the existing plant communities, at the time of the survey, have the potential to provide suitable habitat(s) for special-status plant and wildlife species.

The literature search identified five (5) special-status plant species and fifteen (15) special-status wildlife species as having the potential to occur within the Turtle Valley, Stoddard Well, Apple Valley North, and Fairview Valley quadrangles. No special-status plant communities were identified within these quadrangles. Special-status plant and wildlife species were evaluated for their potential to occur within the project boundaries based on habitat requirements, availability and quality of suitable habitat, and known distributions. Species determined to have the potential to occur within the general vicinity are presented in *Table B-1: Potentially Occurring Special-Status Biological Resources* in Appendix B. Refer to Table B-1 for a determination regarding the potential occurrence of special-status plant and wildlife species within the project site.

Special-Status Plants

According to the CNDDB and CNPS, five (5) special-status plant species have been recorded in the Turtle Valley, Stoddard Well, Apple Valley North, and Fairview Valley quadrangles (refer to Appendix B). No special-status plant species were observed on-site during the field investigation, which was conducted during the blooming period for some of the special-status plant species. Based on habitat requirements for the identified special-status species, and known distributions, it was determined that the undeveloped portions of the project site that support the Mojavean desert scrub plant community do not have the potential to support any of the special-status species documented as occurring within the vicinity of the project site are presumed absent. The project site is located at the maximum elevational rage from most of the special-status species. As a result, no impacts to special-status species are expected to occur.



ELMT CONSULTING

0 250 500 1,000
Feet

Source: ESRI Aerial, USFWS National Wetlands Inventory, San Bernardino County

ALVIC QUARRY REVISED RECLAMATION PLAN
REVEGETATION PLAN

Jurisdictional Areas

Exhibit 7

Special-Status Wildlife

According to the CNDDB, fifteen (15) special-status wildlife species have been reported in the Turtle Valley, Stoddard Well, Apple Valley North, and Fairview Valley quadrangles (refer to Appendix B). No special-status wildlife species were observed on-site during the habitat assessment. Based on habitat requirements for specific species and the availability and quality of on-site habitats, it was determined that the proposed project site has a moderate potential to provide suitable habitat for loggerhead shrike (*Lanius ludocivianus*), and low potential to provide suitable habitat for Cooper's hawk (*Accipiter cooperii*), golden eagle (*Aquila chysaetos*), burrowing owl, and prairie falcon (*Falco mexicanus*). Further it was determined that the project site does not provide suitable habitat for any of the other special-status wildlife species known to occur in the area since the project site.

3.7.1 San Bernardino County Development Code – Section 88.01.060 Desert Native Plant Protection

San Bernardino County Development Code, Section 88.01.060 Desert Native Plant Protection provides regulations for the removal of specified desert native plant species in order to preserve and protect the plants and to provide conservation and wise use of desert resources. This section applies to both publicly owned lands, as well as privately owned lands. The following desert native plants occur or have the potential to occur within the proposed expansion area:

- Smoke tree (*Dalea spinosa*)
- Mesquites (*Prosopis* sp.)
- Creosote (*Larea tridentata*) rings
- Joshua trees (*Yucca brevifolia*)
- Mojave yucca (*Yucca schidigera*)
- Desert ironwood (*Olneya tesota*)
- Palos verdes (Cercidium sp.)
- Cholla (*Cylindropuntia* sp.)
- Beavertail cactus (*Opuntia basilaris*)
- Barrel cactus (*Echinocarpa* sp.)

The baseline survey of this site, prepared under separate cover, did not identify any Joshua trees, smoke trees, mesquites, desert ironwoods, or palos verdes trees within the proposed expansion boundaries. Mojave yucca, pencil cholla, beavertail cactus and barrel cactus were identified within the proposed expansion areas. Although creosote plants occurred sporadically throughout the expansion areas, no creosote rings were observed.

Section 4 Revegetation Methodology

The goal of this revegetation plan, as part of the reclamation plan for the proposed mine expansion, is to restore the Mojavean Desert scrub plant community and increase its potential to support suitable habitat for special-status species. The achievement of a successful revegetation program involves a number of steps. The steps include controlling access, removing sources of on-site human disturbance, reducing/eliminating non-native plant species, and reseeding or planting, as necessary.

The revegetation efforts for the expansion of the CEMEX's Alvic Quarry is based on the summary analysis found in Table 4 below.

Table 4: Revegetation Goals, Objectives, and Implementation Program

GOAL	OBJECTIVE	ACTION	ASSUMPTIONS	MONITORING
Restore the native Mojavean Desert scrub plant community that provides habitat for special-status species	Protect project site from direct and indirect impacts	Limit access by construction of fencing and barriers and placement of signage.	Unlimited access is one of the major issues adversely affecting native habitat values.	Install fencing and signage. Bi-annual inspection for 2 years, then annually thereafter of site after revegetating an area to ensure fencing and gates are secure and signs are posted.
		Remove Trash	Trash needs to be removed prior to any revegetation activities and the Site needs to be kept free of trash.	Remove trash prior to revegetation. Bi-annual inspection for 2 years, then annually thereafter of the site for trash piles to ensure their timely removal,.
		Feral Animals	It is assumed that feral animals are not a problem due to the presence of coyote and bobcat in mining area. However, this assumption should be validated through monitoring.	As part of monitoring process for each revegetated area habitat, these open areas will be surveyed for dog and cat sign/tracks. If a problem is observed, a program will be developed to abate the problem.
	Protect Desert Native Plant Species as defined by San Bernardino County Development Code	Conduct pre-construction plant surveys to document the numbers and distribution of protected desert native plant species with a proposed expansion area.	The presence of protected desert native plant species requires+ that these species be salvaged and transplanted, where possible.	Salvaged/transplanted species will be available for use in the revegetation process., along with salvaged soils and the associated seed base in the topsoil.

		Mojave yucca and two cacti species were identified onsite.		
	Remove/control non-native plant species	Non-native plant species are to be maintained at less than 10% as part of the restoration effort.	The presence of non-native plants reduces the habitat values of the site. Removal/control can be accomplished through manual removal and/or the use of herbicides.	Document methods used for the removal of non-native species and their effectiveness prior to the implementation of replanting of native species. Monitor regrowth of native species and conduct maintenance activities bi-annually for 2 years, then annually thereafter to remove non-native plant species during vegetation monitoring (See Section 5.1.2 for more detail).
	Revegetate mined areas to support a native Mojavean Desert scrub plant community.	Following implementation of the revegetation plan, monitor the revegetated areas to ensure successful re-establishment of a Mojavean Desert scrub plant community.	Once re-established, the Mojavean Desert scrub plant community will suitable habitat for local wildlife species, and the special-status species that may use the area.	Establish performance criteria/standards to meet this objective and to support the special-status species. (See Section 5.1.2 for performance standards for the Site).

4.1 REDUCING HUMAN DISTURBANCES

The first step to successfully revegetate a quarry or mined area is to remove human disturbances. Human disturbance can be a significant cause of the loss of natural habitat values on a site. This initial stage of the revegetation will be conducted in two steps: first, securing the site, and second, removing areas of human disturbance (i.e., mining operations).

4.1.1 Securing the Site

Before revegetation activities proceed within a given area, the area(s) proposed for revegetation will be secured from unauthorized human intrusion to reduce the risks of off-road vehicle travel, shooting, trash dumping, and vandalism to the restored site from surrounding areas. The Alvic mine is accessed by a single dirt road from the Black Mountain Cement Plant located approximately 1 mile southwest of the Alvic Mine site. Access to these CEMEX mining areas is controlled by manned security point and intrusion into the

areas is not expected to be an issue during the life of these mining operations. Following the completion of mining, use of the dirt access could lead to human intrusion and use of the site for recreational purposes,

The single access road to the Alvic mining area will be secured against unauthorized access by the installation of a locked swing gate. The gate will be strategically placed at existing road entrance onto the site. Appropriate signage will be placed at regular intervals around the perimeter of the Alvic mine to inform the public that these areas are part of a mining reclamation area and that trespassing is prohibited. Signs will be placed on all gates and on posts strategically located along the boundary line and will be clearly marked and visible to people attempting to enter the site.

4.1.2 Removal of Human Impacts/Disturbance

Mined areas will be recontoured and all trash and equipment will be removed from within and immediately adjacent to the mine site prior to any revegetation efforts. All trash will be removed by hand and/or authorized use of vehicles and will be hauled offsite for proper disposal. Impacts to native plant species should be avoided as much as possible during removal activities. Removal should be done by hand, when feasible. However, some removal will be done by machine since some trash or debris items weigh over 50 pounds and cannot easily be carried off-site by one individual. The use of equipment will be limited, as much as feasible, to the existing dirt road system. A qualified Biologist will remain on-site during all trash removal to ensure that there are no adverse impacts to the native Mojavean Desert scrub habitat that could otherwise affect the revegetation of a site needed to restore its conservation value.

4.2 REMOVAL OF NON-NATIVE SPECIES

A review of the data from the baseline vegetation inventory (see Section 3.5), non-native vegetation, with the exception of *Erodium cicutarium, was* found to occur at a low enough level, less than l0%, in all three transects. *Erodium cicutarium* ranged between 15% and 36%. This species is common throughout the Mojave Desert, even though considered a noxious weed, it provides a seed sources for many of the small mammals.

It is important that non-native grass species (*Bromus rubens, Schismus barbatus,* and *Stipa specoisa*) be monitored and/or controlled to prevent their spread into mined areas. Non-native grasses, if their populations exceed 10%, should be removed or treated. Manual clearing would be the suggested method. A second method would be the use of approved herbicides, depending on the species and the extent of the infestation. One or both of these methods could be used to accomplish this task. The selection of method(s) to be used will be site specific and made by the qualified Biologist in coordination with CEMEX and San Bernardino County. All efforts to remove non-native species will be overseen by a qualified Biologist to ensure the level effort addresses the issue.

If manual clearing is used, the Biologist will ensure all non-native, exotic, or invasive plant material is gathered into appropriate storage containers (drawstring plastic trash bags are acceptable), removed from the Site, and deposited at an approved disposal facility (a landfill is acceptable) to prevent the introduction and establishment of those species to new areas. If herbicides are used, the appropriate herbicide will be selected by the Biologist in consultation with CEMEX and San Bernardino County. At this time, it is

anticipated the herbicide to be used will be Fusillade and Roundup (glyphosate). The Biologist would also oversee their application.

4.3 PROTECTION OF DESERT NATIVE PLANT SPECIES

San Bernardino County Development Code provides protection measures that require avoidance and/or to minimization measures to native desert plant species. These measures, as discussed below, will be followed by CEMEX as mining moves into the proposed expansion areas. Avoidance is always the best approach to reduce impacts to desert native vegetation. Pre-construction surveys will be conducted within the proposed quarry expansion area to document the presence or absence of desert native plant species as identified by San Bernardino County Development Code. All identified desert native plant species will be marked in the field and identified on a map using GPS. Where feasible, these protected species will be avoided and preserved in place. If avoidance is not possible, a salvage and onsite transplantation plan will be prepared and reviewed with San Bernardino County as part of their permitting process under San Bernardino County Development Code, Section 88.01.060.

4.3.1 Plant Relocation

Plant relocation is the primary method of preserving the species diversity of the site recommended by the County. This process requires identifying those individual desert native plant species that are capable of tolerating of being relocated, identifying a suitable staging area, a proven method of moving and maintaining the individual plants, and an effective monitoring plan. The following procedures will be implemented to locate, salvage and transplant desert native plants.

Staging Area

A suitable location will be identified at the time the plants are removed. A qualifying location will contain similar soil type, hillside/slope aspect relative to the noon sun, upslope hydrology, and local vegetation community. The temporary staging area must be fenced off to limit exposure to construction influences and animal herbivory.

Jointed (Segmented Cacti)

Jointed cacti (cholla and beavertail) will be salvaged by collecting the branches or segments of each plant for transplanting. The salvage and translocation will utilize the following methodology:

- Use a clean, sharp knife, pruners or loppers to make smooth, lean cuts at the joints to obtain whole segments or stems of new growth. (Disinfect tools with a 10-percent bleach solution to inhibit the spread of disease between plants).
- Place the cuttings on a pallet in shade with good air circulation. Let them air-dry for one to several weeks, until cuts callus, which helps prevent rot.
- Plant your new cactus in full sun with well-drained soil. Water two times per week while staging with 1 to 2 gallons of water. Excellent drainage is necessary.
- Make sure that the new planting location either drains well naturally or is made to drain well by amending soil with sand and gravel.

Mojave Yucca

The removal of Mojave yucca must be accomplished in a manner which will keep as much of the root system as possible intact while avoiding limb and stem breakage. Additionally, translocation of the yucca must be completed in as timely a manner as possible so as to minimize exposure of the roots to the air and desiccation. The following plant species flagged on-site and determined suitable for survival will be salvaged and located to areas outside the disturbance footprint within a predetermined staging area. The salvage and translocation will utilize the following methodology:

- The plants to be salvaged and translocated must be assessed and flagged by a certified arborist or desert native plant expert.
- To the greatest extent feasible, plants should be extracted between October and March. The north side of each plant must be marked. Protective gear must be worn (gloves, eyewear, etc.) when handling plants or trees.
- The selected trees and plants taller than 2 feet must be removed utilizing equipment such as a backhoe and shovels and will be transported on trucks/trailers. Yucca plants taller than 6 feet should be transplanted by a professional contractor experienced in transplanting large yucca plants.
- To the extent practical, plants/ growing in clusters must be kept together in a single unit to reduce root damage. The integrity of the clusters can be better maintained by bundling the cluster with rope or straps and moving the cluster with a front-end loader, tree spade, etc. Care must be taken to assure no damage occurs to plants, especially the larger, multi-stemmed individuals.
- All plants must be tagged using a method to assure the north side of the plant stays in this orientation during the entire relocation process until the final planting has taken place.
- The contractor will apply fungicide, horticultural charcoal, or sulfur to roots to decrease the risk of infection.
- Within the fenced staging area, plant yuccas in rows to allow for easier access and maintenance. If multiple parallel trenches are needed, then trenches will be spaced to allow heavy equipment to access each large plant (taller than 2 feet). Trenches must be watered thoroughly prior to transplanting. Organic soil amendment is not necessary. Large rocks should be removed from the hole prior to planting.
- Water two times per week while staging with 1 to 2 gallons of water. Excellent drainage is necessary. Make sure that the new planting location either drains well naturally or is made to drain well by amending soil with sand and gravel. The whole should drain completely within 2 to 3 hours. Place Tree in a hole and back fill with native soil. Use the soil line on the trunk to determine correct planting depth. Do not plant too deep. Soil must be formed into catchment basins or trenches around plants to hold water, e.g., a watering basin with a 2 to 3-foot radius from the trunk is sufficient.

Seed Bank Establishment

- The top 6 to 12” of surface material will be salvaged and either transported immediately to areas ready for revegetation or stored temporarily onsite. The soil area will be marked with signs and/or flagging to protect from other uses,
- Roughen or rip compacted surfaces to be revegetated to a minimum of 6” to hold moisture and seeds,

- Add any stockpiled surface material containing banked seeds in an "island pattern" to a depth of up to one foot,
- Seed by hand with commercially available (e.g., S&S Seeds) native desert seeds utilizing species listed in Table 6 or others as recommended by the qualified desert native plant expert/botanist or a certified arborist. Seeding will take place in winter (November – February) to take advantage of normal precipitation. Seeds will be hand raked or mechanically covered by a tractor with a chain attachment. Alternatively seeding may be conducted by an imprinter pulled by a small tractor, and
- Stake or flag reclaimed areas to eliminate additional disturbance.

4.4 REVEGETATION

Revegetation of native habitats will follow the removal of any non-native species that may have become established and has the goals of: 1) restoring native habitat through revegetation in order to re-establish high-quality Mojavean Desert scrub suitable for native wildlife and special-status species; and 2) to reestablish a structurally diversified native plant community within the mine site and associated facilities that will ensure long-term viability of the native Mojavean Desert scrub plant community and the various species associated with this habitat. By achieving these goals, the site will be restored so that healthy populations of those special-status species identified as potentially occurring in the area could reestablish the site. The following sections outline the steps necessary to achieve these goals.

4.4.1 Recontouring

Because the soils are already present, re-establishing the Mojavean Desert scrub plant community should be successful with recontouring and/or ripping the site, where needed, for erosion control and to eliminate compaction, followed by revegetation and the requisite five years of monitoring and managing the revegetation effort.

4.4.2 Revegetation

Revegetation will be accomplished at the Alvic mine site once the mine has been closed and will be initiated in consultation with San Bernardino County. It is recommended that all native seeds to be used during the revegetation effort be collected onsite or from similar areas of undisturbed Mojavean Desert scrub habitat located adjacent to the Alvic mine site.

Seed Collection

Seeds will be collected from the Alvic mine site so that they have the greatest chance of adapting to site conditions and the microclimate. To ensure the genetic variability of the plants, seeds from individual species should be collected from at least two (2) distinct locations at least 1/8 mile apart, if possible. Equal numbers of seeds should be collected from the locations, and plants should not be damaged unnecessarily in the collection of the seeds. Once collected, seeds should be cleaned and separated from all unnecessary material, then stored in a cool, dry location until needed. Professional native seed companies, such as S&S Seeds, provide services for collecting and storing native seeds from local areas as part of large revegetation efforts. It is recommended that a native seed company be contacted at least four or five years before the anticipated closure of a mined area.

Plant Palette

The seeds to be harvested and used for revegetation purposes on the revegetation include species that are either present on the site already or are present in the surrounding area as part of the Mojavean Desert scrub plant community. The proposed plant palette, Table 5, *Proposed Native Plant Species for Seed Collection*, is based on native species found in this plant community. However, the list may be revised based on the information collected from the reference site at the time of revegetation. While the shrubs will eventually dominate a habitat type, the forbs and annuals provide early successional species that stabilize the soil and help shelter slower-growing woody shrubs.

Soil Preparation

Prior to any revegetation, the soils within the mine site scheduled for seeding will be prepared to receive seeds. If needed, soils will be de-compacted, following a pre-revegetation clearance survey that verifies that no special-status wildlife species are present. If areas be scheduled for revegetation no longer support native soils, these areas will be cover with 0.5 to 1 foot of suitable soils. Removal or salvaged topsoil from the expanded mining operations at the Alvic mine site should be able to provide 0.5 feet of the required fill.

If seeds are to be hand cast onto the soil surface, the soil will first be scarified. In areas where the seeds will be imprinted, the site will first be ripped. The ripper blades will be spaced 12 inches apart and capable of ripping the soil to a depth of six to ten inches. The Biologist will be present during these activities to ensure that no impacts occur to special-status wildlife species or special-status plant species occurs.

Table 5: Proposed Native Plant Species for Seed Collection

SPECIES		POUNDS PER ACRE
SCIENTIFIC NAME	**COMMON NAME**	
Alyssum desertorum	desert alyssum	0.25
Amsinckia tesselata	fiddleneck	0.25
Chaenaetis fremontii	desert pincushion	0.25
Cryptantha intermedia	common cryptantha	0.75
Encelia farinosa	brittlebush	2.0
Ephedra nevadensis	Mormon tea	1.50
Eriogonium fasciculatum	flat-topped buckwheat	0.75
Eriogonium inflatum	desert trumpet	1.00
Larrea tridentate	creosote	2.00
Lycium brevipes	peachthorn	2.00
Malacothrix glabrata	desert dandelion	0.75
Mentzelia affinis	blazingstar	0.50
Oligomeris linifolia	leaved cambess	0.50
Pectocarya penicellata	winged combseed	0.25
Pectocarya recurvata	curvenut combseed	0.25
Phacelia distans	phacelia	0.25
Psorothamnus schottii	dalea	2.00
Sphaeralcea ambigua	desert mallow	0.75
Stipa speciosa	desert needle grass	0.25
	TOTAL pounds per acre	**15-20**

Seeding

Seeds will be distributed throughout an area scheduled for revegetation during the rainy season, generally between October 1 and January 30, or during a suitable period based on weather forecasts and rainfall. The preferred method of seed installation is by imprinting. Imprinting is a method in which heavy steel drum rollers with imprinting teeth on them are dragged (rolled) across a site to leave troughs for seeds to be placed in. Seeds are placed into a hopper in front of the imprinter, and the hopper disperses the seed onto the rollers, which subsequently press the seeds into the ground while creating troughs. When properly implemented, the troughs trap seeds, collect moisture, reduce runoff, and reduce erosion, while also providing shelter from winds and intense sunlight. Imprinting should only occur after the soil has been sufficiently ripped to provide a rough surface for catching the seeds, and only when there is sufficient moisture in the soil for it to be properly imprinted without the troughs losing their shapes.

The seed hopper must be thoroughly cleaned prior to the arrival of the imprinter at the site. Seed can be mixed with wheat bran or another approved substitute to aid in application and the prevention of seed segregation. In addition, mycorrhizal fungi can be applied to the seeds where necessary, particularly in highly disturbed areas where plants may otherwise have difficulty growing. The restoration contractor shall determine the appropriate mixing ratio of the seed to the binder and/or mycorrhizae, if used.

Where imprinting is not possible due to access issues, steepness of slopes or due to potential damage to surrounding habitat, broadcast seeding will be used. Broadcasting will be conducted by hand and should not occur when there are detectable winds that might carry seed away from its intended location. Seed should be broadcast twice: first, half of the seed should be spread while moving in one direction, and then the other half of the seed should be spread while moving perpendicular to the original direction.

Any harvested seeds not used during initial seeding efforts will be stored in a cool/dry environment until subsequent seeding efforts.

A Biologist will be present during these activities to ensure that there will be no impacts to areas with special-status plant or wildlife species.

Test Plots

The use of test plots is recommended during the initial revegetation efforts. These test plots will provide valuable data for the ensuring revegetation efforts of mined areas are successful. The proposed expansion areas are composed of moderate slopes with both north and south facing slopes that support a Mojavean Desert scrub plant community. Two different seeding processes have been recommended for use in revegetating sites: mechanically imprinting seeds, as described in detail above, and broadcasting of seeds by hand for inaccessible areas or area that would otherwise be damaged by the use of an imprinter. Imprinting is normally used on level to gently sloping areas that currently do not occur in the proposed expansion areas. The decision for which methodology would work best will need to be made at the time revegetation and would reflect the existing topography of the area following recontouring. If revegetation is phased, early revegetation efforts can be used to test the benefits of the two seeding methodologies within the proposed expansion areas. Further, test plots could also be employed to test for the effective of using mycorrhizal fungi as part of the imprinting process. Table 6, *Test Plots*, is a suggested matrix of test plots

that could be used at the initial revegetation site to test the methodologies of seeding within the proposed expansion areas and the benefits of using mycorrhizal fungi during the seeding process.

Table 6: Potential Test Plots*

Type of Seeding	North Facing Slope on North Side	South Facing Slope on North Side	North Facing Slope on South Side
Seeding by Hand			
Imprinting with Micorrhizal Fungi			
Imprinting without Micorrhizal Fungi			

*Suggest 1 acre plots for each test category

Section 5 Performance Standards, Biological Monitoring and Reporting

Following the revegetation effort, the restored areas will be monitored for five years to ensure a successful revegetation process in support of overall reclamation of the area or until success criteria are achieved. Performance standards described in this section will be used to determine when a quarry or revegetation area will be considered a success. Biological monitoring will be conducted during the first two years after seeding and bi-annually thereafter to track the success of the revegetation effort, ensuring that any corrective measures needed can be implemented in a timely manner and the established performance standards are met. Annual reporting will document all activities and their success and includes the following reports: 1) implementation reports, 2) monitoring reports, and 3) annual reports. The implementation report and monitoring reports will be prepared at the conclusion of each activity. The annual report will provide a yearly accounting of reclamation and revegetation activities, results of the biological monitoring, and the status of where the revegetation efforts are in relationship to meeting the performance standards. The annual report will also provide an accounting of all maintenance activities that occurred during the previous year.

5.1 PERFORMANCE STANDARDS

Composition of the native Mojavean Desert scrub plant community was determined using vegetation transects conducted within of the existing, undisturbed native habitat and is summarized in Table 7, *Plant Community Composition* below. From this vegetation composition data, a series of performance standards or success criteria were derived and are presented in Table 8, *Performance Standards*. Native perennial shrub cover was based on 45% of baseline values, while species density and species diversity were based on 40% of baselines values for native perennial shrubs. Separate performance standards were developed for north-facing and south-facing. The performance standards of south facing slopes also apply to the pit floor landforms encountered within the proposed expansion area. Fulfillment of the performance standards is expected to indicate that revegetated areas are progressing toward the long-term goal of becoming a functioning, self-sustaining Mojavean Desert scrub plant community.

Table 7: Plant Community Composition*

Transect/ Landform	Perennial Percent Cover	Native Species Density	Native Species Diversity
1 & 3 (avg.) North Facing Slope	30	50	13
2 South Facing Slope & Pit Floor	13	41	14

*Native perennial shrubs from the 2020 baseline surveys per 50 m^2.

Table 8: Performance Standards*

(45% of Baseline Cover, 40% of Baseline Species Density/Diversity)

Transect / Landform	Perennial Percent Cover	Native Species Density	Native Species Diversity
1 & 3 (ave.) North facing	14	20	5
2 South facing	6	16	6

*Native perennial shrubs from the 2020 baseline surveys per 50 m^2.

Performance standards are provided for controlling site access and illegal dumping of trash, as well as weed control and revegetation activities. These activities will be in place for a period of five (5) years following revegetation, or until performance standards are met. There must be a minimum of two monitoring visits each year over the five-year period, unless performance standards are met earlier. If all annual performance standards are met at the end of the five-year monitoring period or earlier, no additional revegetation activities or monitoring will be required.

Security, installation of a gate, and trash removal will occur in Year 1. The removal of non-native vegetation will also commence in Year 1. These efforts will be followed by the revegetation activities in Year 2. It is expected that each revegetated area will meet the Performance Standards at a different time, likely in Years 4 or 5. A five-year monitoring period, see Table 9, *Revegetation Schedule*, will be conducted starting at Year 1. If the performance standards are not being met, corrective measures will be implemented after coordination with the San Bernardino County Land Use Services Division of the Land Planning Department. A general revegetation schedule is shown in the table below.

Table 9: Revegetation Schedule

RESTORATION PHASE	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Phase 1	Security, site cleanup clearance surveys and removal of non-natives	Revegetation and biological monitoring		Quantitative Monitoring and meeting Preformance Standards	

5.1.1 Site Access/Illegal Dumping

Performance standards are needed to track site access as well as the maintenance activities needed to remove illegal uses of the project site for the dumping of trash and use by off-road vehicle activity that could threaten the success of the revegetation efforts. Controlling site access will be considered successful if the barriers and signs are not damaged beyond functioning and if the loss of habitat from human disturbance associated with site access and illegal uses results is less than 5%.

5.1.2 Revegetation and Weed Control

The success of revegetation efforts and attainment of performance standards will be assessed by Biological Monitoring (Qualitative and Quantitative Monitoring). Each revegetation area or landform will be evaluated separately to determine if the performance standards have been met for that area. The performance goals

for revegetation are listed in Table 8 and summarized below. The revegetation efforts will be considered successful when the following performance goals for the Mojave Desert scrub habitat are met:

- Native perennial shrub cover is between 6% and 14%.
- Native shrub composition should be structurally diverse with no single native shrub species constituting greater than 20% of native perennial shrub cover.
- Native plant species density is between 16% and 20%.
    - It is important that native shrub cover remains open in order to provide pathways for wildlife to move freely through the area.
- Native plant species diversity is between 5% and 6%.
- Non-native vegetation cover, primarily non-native grasses, is not greater than 6% of the plant cover in the area
- Significant maintenance measures (i.e., reseeding, weed control, repairing significant areas of erosion) have not been required for the previous two years.
- Non-native vegetation cover will include areas of human disturbance as part of the loss of native habitat and shall constitute no more than 10% of the Site; with human disturbance constituting less than 5% of this total.

5.2 MONITORING

Monitoring will include both site monitoring for assess control, trash dumping and other forms of human disturbances, as well as biological monitoring of revegetated areas.

Site monitoring of human use (access, trash dumping and off-road vehichle use) will consist of:

- **Installation monitoring**: to observe and document the construction of fences/barriers, gates (inlcuding chains and locks) and signs, and to document the removal of trash and elimination of human disturbrance.
- **Security monitoring**: to observe the status of barriers, gates, chains, locks, and signs.
- **Ongoing monitoring**: to observe and document the effectiveness of the access control measures and the efforts to eliminate illegal tresspsss or human intrusion.

Monitoring of revegetation efforts will consist of:

- Conducting baseline inventories of vegetative condtions and development of Performance Standards from this initial assessment
- Implementation monitoring to ensure that the initial weed control (removal of non-native species) and subsequent reseeding with native seeds have been properly performend and documented.
- Biological monitoring to qualitatively and quantitatively evaluate overall conditions of a revegetated mine site and to document achievement of Perfomance Standards.

5.2.1 Site Monitoring

Site monitoring will include both Security monitoring by CEMEX security personnel and by the observations by the biological monitor during qualitative monitoring to assess the security of each revegetated area, including breach is gates or fences, the presence of trash, and loss of habitat due to off-road vehicle activity. Security monitoring of the site is required because unimpeded access to the revegetated areas will result in impacts to an area and is a threat to the success of the revegetation efforts. Security monitoring will be conducted bi-annually by security personnel and by the Biological Monitor during each bi-annual monitoring visit for the first two years, then annually thereafter. Any observed breach will be reported immediately to CEMEX and repaired within 5 working days. Readily observable trash sites and impacts from off-road vehicle activities will also be reported immediately to CEMEX and corrective measures taken within 5 working days.

5.2.2 Vegetation Monitoring

Vegetation monitoring will be conducted for three purposes: 1) to ensure that the site preparation, seeding and weed eradication follows the Revegetation Plan (implementation monitoring), 2) to evaluate native plant establishment and vigor, and to identify and make recommendations for correcting problems (qualitative monitoring) and 3) to quantitatively measure development of the Mojavean Desert scrub habitat (quantitative monitoring). The success of the revegetation effort will be measured primarily by the analysis of the quantitatively collected data.

Implementation monitoring will occur during the initial revegetation activities by the biological monitor. The biological monitor will ensure that the revegetation and weed control plans are followed and assist in making necessary modifications to the plan, if necessary. Monitoring records will be kept for all revegetation activities including weed control, soil preparation, and seeding activities. The monitoring records will include dates for each activity, location of each activity, the type of treatments or actions taken, any problems encountered, and modifications made to the Revegetation Plan. This information will be documented and used to develop an implementation (as-built) report that will be included in the first annual monitoring report.

Qualitative monitoring is necessary to evaluate the general health of reseeded areas and/or areas still being treated for removal of non-native species and to identify and correct any identified problems. This is a subjective process that relies on the expertise of the biological monitor. Under qualitative monitoring, revegetated areas will be visited by the monitor on a defined schedule (i.e., bio-annual for Years 1 and 2, and then annually thereafter) to evaluate the effectiveness of nonnative species control and to document the growth and vigor of seeded vegetation. The monitor will record and report observations on the qualitative monitoring form. A sample form is provided in Appendix D. If required, the monitor will make specific recommendations for correcting any identified problems, including issues with seed germination and growth, erosion concerns, increased treatment for weed control, and other requirements for site protection. A general 5-year schedule for qualitative monitoring is shown in Table 9. The schedule is meant to be flexible so that qualitative monitoring is performed when needed and results in modifications to the Revegetation as needed.

Quantitative monitoring will be used to periodically quantify specific attributes of the revegetated habitat. Revegetation in the desert can take several years to accomplish depending on climatic conditions, rain vs. drought, and other unpredictable variables. The quantitative monitoring is designed to determine whether the revegetated site demonstrates a trend toward development of a self-sustaining Mojavean Desert scrub habitat. It will be conducted to measure the re-establishment of the native Mojavean Desert scrub habitat and to assess when the revegetated areas achieve the prescribed performance standards. Quantitative monitoring will commence after qualitative monitoring indicates that the vegetative cover within each of the revegetated areas is approaching the performance standards. This should occur between years 2 and 4 after the initial revegetation effort. This monitoring will occur annually during the spring, when the Mojavean Desert scrub habitat is normally the most diverse with the addition of spring annuals.

Each revegetation site will be sampled by selecting transect locations using the RELEVE methodology and intercept methodology to measure vegetation along the transect method line. The methodology shall be the same methodology used during the initial baseline documentation of natural conditions prior to mining. Data will be collected on each area at the same time each year, in the spring, to ensure consistency between years. The monitoring data from each revegetation area will be analyzed for changes or trends in densities/cover of the most common perennial and annual species. Year-to-year changes in cover characteristics will be compared to determine if the characteristics are approaching the characteristics found in the preliminary baseline vegetation transects documented in this report. The monitor will record and report observations on the quantitative monitoring form found in Appendix D.

Each revegetated area will be monitored for a maximum of 5 years or until performance standards are met. If restoration performance standards have been met prior to 5 years, then the project will be considered successful and no further monitoring will be conducted and closure procedures can be initiated with San Bernardino County. If performance standards have not been met, CEMEX will meet with the San Bernardino County to develop alternative corrective actions based on the revegetation efforts and results of the monitoring efforts. Monitoring will continue until standards are met.

5.2.3 Special-Status Species Monitoring

A qualified biologist shall be present on the project site during all reclamation and revegetation activities in the event special-status species are found in the revegetation area(s). No special-status species were found in or adjacent to the proposed expansion areas during the establishing baseline conditions prior to the proposed mine expansion. The biologist will conduct a pre-construction survey, according to accepted protocols for potentially occurring special-status species revegetation efforts.

5.3 REPORTING

The revegetation efforts will be documented in an initial implementation report, monitoring reports, and annual reports. The activities undertaken during the initial revegetation effort will be documented in an implementation report. The annual reports will be based on the monitoring reports and will document the monitoring efforts and continued revegetation activities undertaken each year until an area or site meets performance standards or for five years, whichever is longer. Appendix D provides a series of sample monitoring forms that are proposed for use to aid in the preparation of the implementation and annual reports. Information in these reports will be used to develop the work plan for the subsequent year.

5.3.1 Implementation Report

The results of the initial revegetation effort will be documented in an implementation report. This report will document the access control, trash removal, and habitat revegetation measures undertaken. The implementation report will also include the results of the qualitative and quantitative monitoring conducted at each revegetation site and the results of the reference site study. The report will be submitted to CEMEX for review within 30 days of completion of trash removal, installation of a gate/barrier and initial revegetation activities (i.e., removal of non-native vegetation and seeding). The implementation report will include the following information:

- Preliminary study results
- Locations and methods of trash removal
- Locations and types of fences/barriers installed
- Locations and methods of weed removal, including Biological monitoring effort
- Locations and methods of restoration, including Biological monitoring effort
    - Soil preparation
    - Seed mixes
    - Planting methods
- Erosion control measures
- Photo-documentation of the above implementation activities
- Issues/problems encountered

The implementation report will be submitted to San Bernardino County following CEMEX review. It will also be included in the Year 1 annual report.

5.3.2 Monitoring Forms

Following the installation of the site security (gate, barriers, chains, and locks) and implementation of the revegetation program, site and biological monitoring activities will be conducted in accordance with the general schedule for ongoing monitoring shown on Table 9. Appendix D provides a sample of the standard monitoring forms that will be completed for each monitoring occurrence: Site Maintenance, Vegetation Monitoring, and Annual Inspection.

5.3.3 Annual Report

An annual report will be prepared and submitted to CEMEX for forwarding to San Bernardino County the beginning of each year, documenting the previous year's efforts. These reports will include a general discussion of revegetation efforts to date, development of the Mojavean Desert scrub plant communities, plus specific observations on the effectiveness of access control, trash removal, weed eradication and revegetation efforts. Aerial and ground photo-documentation of conditions and activities will be included.

The annual reports will include copies of the monitoring forms prepared for each site visit during the previous year of monitoring. Annual reports will include the following information:

- Updated vegetation maps for areas proposed for reclamation and revegetation processes.
- Discussion of qualitative monitoring data.
- Analysis of quantitative monitoring data.
- Photo-documentation of monitoring results.
- Analysis of effectiveness of access control and trash removal.
- Documentation of any significant storm events, fires, or anthropomorphic actions affecting the revegetated areas.
- Summary of any other maintenance activities conducted within revegetated areas.
- Recommendations for management actions or maintenance activities for the forthcoming year.

The various implementation and monitoring reports will be submitted to San Bernardino County following CEMEX's review.

Section 6 References

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Appendix A Transect Data Sheets

CEMEX - Alvic Quarry Revised Reclamation Plan - Vegetation Transects					
Transect 1 - North Side		Transect 2 - East Side		Transect 3 - South Side	
0	Bare Ground	0	Bare Ground	0	Eriogonum fasciculatum
0.5	Erodium cicutarium	0.5	Erodium cicutarium	0.5	Bromus rubens
1	Caulanthus lasiophyllus	1	Erodium cicutarium	1	Bromus rubens
1.5	Bare Ground	1.5	Eriogonum inflatum	1.5	Bare Ground
2	Eriogonium fasciculatum	2	Erodium cicutarium	2	Amsinkia tessellata
2.5	Bare Ground	2.5	Eriogonum inflatum	2.5	Bare Ground
3	Bare Ground	3	Oligomeris linifolia	3	Bare Ground
3.5	Bare Ground	3.5	Erodium cicutarium	3.5	Sphaeralcea ambigua
4	Eriogonum fasciculatum	4	Erodium cicutarium	4	Sphaeralcea ambigua
4.5	Bare Ground	4.5	Erodium cicutarium	4.5	Ephedra
5	Eriogonum fasciculatum	5	Erodium cicutarium	5	Ephedra
5.5	Eriogonum fasciculatum	5.5	Erodium cicutarium	5.5	Bare Ground
6	Erodium cicutarium	6	Ephedra	6	Bare Ground
6.5	Erodium cicutarium	6.5	Ephedra	6.5	Bare Ground
7	Eriogonum fasciculatum	7	Ephedra	7	Bare Ground
7.5	Erodium cicutarium	7.5	Erodium cicutarium	7.5	Stipa speciosa
8	Erodium cicutarium	8	Eriogonum inflatum	8	Encelia farinosa
8.5	Larea tridentata	8.5	Eriogonum inflatum	8.5	Erodium cicutarium
9	Amsinkia tessellata	9	Bare Ground	9	Bare Ground
9.5	Amsinkia tessellata	9.5	Phacelia distans	9.5	Erodium cicutarium
10	Larrea tridentata	10	Erodium cicutarium	10	Erodium cicutarium
10.5	Larrea tridentata	10.5	Bare Ground	10.5	Erodium cicutarium
11	Erodium cicutarium	11	Erodium cicutarium	11	Erodium cicutarium
11.5	Cylindropuntia ramosissima	11.5	Erodium cicutarium	11.5	Encelia farinosa
12	Ephedra	12	Ephedra	12	Encelia farinosa
12.5	Bare Ground	12.5	Ephedra	12.5	Ephedra
13	Eriogonum fasciculatum	13	Erodium cicutarium	13	Ephedra
13.5	Bare Ground	13.5	Ephedra	13.5	Amsinkia tessellata
14	Bare Ground	14	Amsinkia tessellata	14	Erodium cicutarium
14.5	Echinocereus englemannii	14.5	Bare Ground	14.5	Cryptantha
15	Bare Ground	15	Bare Ground	15	Erodium cicutarium
15.5	Bare Ground	15.5	Erodium cicutarium	15.5	Erodium cicutarium
16	Bare Ground	16	Erodium cicutarium	16	Cryptantha
16.5	Bare Ground	16.5	Bare Ground	16.5	Cryptantha
17	Sphaeralcea ambigua	17	Echinocereus englemannii	17	Erodium cicutarium
17.5	Erodium cicutarium	17.5	Bare Ground	17.5	Erodium cicutarium
18	Echinocereus englemannii	18	Erodium cicutarium	18	Ferocactus cylindraceus
18.5	Bare Ground	18.5	Sphaeralcea ambigua	18.5	Stipa speciosa
19	Stipa speciosa	19	Sphaeralcea ambigua	19	Erodium cicutarium
19.5	Stipa speciosa	19.5	Sphaeralcea ambigua	19.5	Encelia farinosa
20	Echinocereus englemannii	20	Sphaeralcea ambigua	20	Bare Ground
20.5	Stipa speciosa	20.5	Bare Ground	20.5	Bare Ground
21	Eriogonum inflatum	21	Erodium cicutarium	21	Cryptantha
21.5	Bare Ground	21.5	Bare Ground	21.5	Cryptantha
22	Bare Ground	22	Bare Ground	22	Cryptantha
	Bare Ground		Erodium cicutarium		Bare Ground
23	Bare Ground	23	Bare Ground	23	Ephedra
	Bare Ground		Ephedra		Amsinkia tessellata
24	Schismus barbatus	24	Opuntia basilaris	24	Ephedra
	Bare Ground		Echinocereus englemannii		Cryptantha
25	Erodium cicutarium	25	Bare Ground	25	Ephedra
	Ephedra		Eriogonum inflatum		Ephedra
26	Ephedra	26	Eriogonum inflatum	26	Ephedra
	Bare Ground		Bare Ground		Cryptantha
27	Bare Ground	27	Stipa speciosa	27	Cryptantha
	Bare Ground		Bare Ground		Amsinkia tessellata
28	Bare Ground	28	Eriogonum inflatum	28	Amsinkia tessellata
	Bare Ground		Bare Ground		Ephedra
29	Bare Ground	29	Bare Ground	29	Plantago
	Ephedra		Bare Ground		Ephedra
30	Erodium cicutarium	30	Eriogonum inflatum	30	Bromus rubens
	Erodium cicutarium		Erodium cicutarium		Cryptantha
31	Erodium cicutarium	31	Erodium cicutarium	31	Ephedra

	Bare Ground		Erodium cicutarium		Erodium cicutarium
32	Erodium cicutarium	32	Erodium cicutarium	32	Bare Ground
	Erodium cicutarium		Bare Ground		Erodium cicutarium
33	Schismus barbatus	33	Eriogonum inflatum	33	Lycium brevipes
	Bare Ground		Bare Ground		Lycium brevipes
34	Bare Ground	34	Eriogonum inflatum	34	Bare Ground
	Bare Ground		Ferocactus cylindraceus		Bare Ground
35	Bare Ground	35	Oligomeris linifolia	35	Bare Ground
	Amsinkia tessellata		Echinocereus englemannii		Bare Ground
36	Larrea tridentata	36	Bare Ground	36	Erodium cicutarium
	Erodium cicutarium		Psorothamnus schottii		Ephedra
37	Amsinkia tessellata	37	Bare Ground	37	Cryptantha
	Erodium cicutarium		Bare Ground		Cryptantha
38	Amsinkia tessellata	38	Erodium cicutarium	38	Larrea tridentata
	Pectocarya recurvata		Bare Ground		Larrea tridentata
39	Eriogonum fasciculatum	39	Erodium cicutarium	39	Bare Ground
	Amsinkia tessellata		Pectorcarya penicillata		Bare Ground
40	Ferocactus cylindraceus	40	Erodium cicutarium	40	Bromus rubens
	Bare Ground		Erodium cicutarium		Cryptantha
41	Echinocereus englemannii	41	Cryptantha	41	Eriogonum inflatum
	Bare Ground		Amsinkia tessellata		Amsinkia tessellata
42	Amsinkia tessellata	42	Erodium cicutarium	42	Bare Ground
	Amsinkia tessellata		Amsinkia tessellata		Erodium cicutarium
43	Amsinkia tessellata	43	Erodium cicutarium	43	Erodium cicutarium
	Amsinkia tessellata		Amsinkia tessellata		Erodium cicutarium
44	Amsinkia tessellata	44	Erodium cicutarium	44	Erodium cicutarium
	Bare Ground		Erodium cicutarium		Erodium cicutarium
45	Eriogonum fasciculatum	45	Erodium cicutarium	45	Erodium cicutarium
	Eriogonum fasciculatum		Mentzelia		Erodium cicutarium
46	Bare Ground	46	Mentzelia	46	Larrea tridentata
	Bare Ground		Erodium cicutarium		Larrea tridentata
47	Bare Ground	47	Erodium cicutarium	47	Bare Ground
	Bare Ground		Erodium cicutarium		Bare Ground
48	Bare Ground	48	Erodium cicutarium	48	Ephedra
	Bare Ground		Erodium cicutarium		Ephedra
49	Bare Ground	49	Amsinkia tessellata	49	Cryptantha
	Erodium cicutarium		Erodium cicutarium		Stipa speciosa
50	Amsinkia tessellata	50	Larrea tridentata	50	Stipa speciosa

Appendix B Potentially Occurring Special-Status Plant Species

Table B-1: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	**Status**	**Habitat Description**	**Observed On-site**	**Potential to Occur**
SPECIAL-STATUS WILDLIFE SPECIES				
Accipiter cooperii Cooper's hawk	Fed: None CA: **WL**	Occurs along patches and groves of wooded areas within live oak, riparian deciduous, or other forest habitats near water. Forages in broken woodland habitat edges and nests in deciduous trees and second-growth conifer stands and riparian areas near streams and open water.	No	**Low:** Although there is marginal foraging habitat on-site, there is no suitable nesting habitat on or within the vicinity of the survey area.
Antrozous pallidus pallid bat	Fed: None CA: SSC	Occurs locally throughout low elevations of California in a wide variety of habitats including grasslands, shrublands, woodlands, and forests. The species is most common in open, dry habitat with rocky areas for roosting. Day roosts are in caves, crevices, mines, and occasionally in hollow trees and buildings. Prefers rocky outcrops, cliffs, and crevices with access to open habitats for foraging.	No	**Presumed Absent:** There is no suitable roosting habitat within or adjacent to the survey area.
Aquila chrysaetos golden eagle	Fed: None CA: **FP, WL**	Occurs in rolling foothill, sage-juniper flats, desert, and mountainous habitats. Requires open terrain for hunting including grasslands, deserts, savannahs, and early successional stages of forest and shrub habitats. Nests on cliffs and escarpments in rugged canyons and in large trees in open areas. Prefers rolling foothills, mountain terrain, cliffs, rock outcrops, and wide arid plateaus deeply cut by streams and canyons.	No	**Low:** Although there is marginal foraging habitat on-site, there is no suitable nesting habitat on or within the vicinity of the survey area.
Athene cunicularia burrowing owl	Fed: None CA: SSC	Prefers habitat with short, sparse vegetation with few shrubs and well-drained soils in grassland, shrub steppe, and desert habitats. Primarily a grassland species, but it persists and even thrives in some landscapes highly altered by human activity. Occurs in open, annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. The overriding characteristics of suitable habitat appear to be burrows for roosting and nesting and relatively short vegetation with only sparse shrubs and taller vegetation.	No	**Low:** The Mojavean desert scrub plant community has the potential to provide suitable line of site opportunities. No owls, suitable burrows, and/or sign were observed within or adjacent to the project site during the surveys.
Bombus crotchii Crotch bumble bee	Fed: None CA: **CE**	Colonial species that lives almost exclusively from coastal California east towards the Sierra-Cascade Crest and can be found uncommonly in western Nevada and south through Baja California. Inhabits grassland and scrub habitats in hotter and drier climates than most other bumblebee species and is only capable of tolerating a narrow range of climatic conditions. Feeds on a variety of annual and perennial plant species, classifying it as a dietary generalist. This species usually nests underground, often in abandoned rodent dens.	No	**Presumed Absent:** There is no suitable roosting habitat within or adjacent to the survey area.

Scientific Name Common Name	**Status**	**Habitat Description**	**Observed On-site**	**Potential to Occur**
Buteo swainsoni Swainson's hawk	Fed: None CA: **THR**	Breeds in stands with few trees in Joshua tree woodlands, juniper-sage flats, riparian areas, oak savannahs. Forages in adjacent grasslands or suitable grain/alfalfa fields, and livestock pastures. Primary nest trees are Joshua trees and Fremont cottonwoods. Tends to avoid areas exposed to human disturbances.	No	**Presumed Absent:** There is no suitable habitat within or immediately adjacent to the project site.
Chaetodipus fallax pallidus pallid San Diego pocket mouse	Fed: None CA: SSC	Commonly occurs in sandy herbaceous areas with a substrate consisting of rocks or course gravel. Prefers chaparral but also occurs in desert wash, desert scrub, succulent scrub, annual grassland, and pinyon juniper woodland.	No	**Presumed Absent:** There is no suitable habitat within or immediately adjacent to the project site.
Dipodomys merriami parvus San Bernardino kangaroo rat	Fed: **END** CA: **CE**; SSC	Primarily found in Riversidian alluvial fan sage scrub and sandy loam soils, alluvial fans and flood plains, and along washes with nearby sage scrub. May occur at lower densities in Riversidian upland sage scrub, chaparral and grassland in uplands and tributaries in proximity to Riversidian alluvial fan sage scrub habitats. Tend to avoid rocky substrates and prefer sandy loam substrates for digging of shallow burrows.	No	**Presumed Absent:** There is no suitable habitat within or immediately adjacent to the project site.
Falco mexicanus prairie falcon	Fed: None CA: **WL**	Distributed from annual grasslands to alpine meadows, but primarily associated with grasslands, savannahs, rangeland, agricultural fields, and desert scrub areas. Requires open terrains for foraging and nests on cliffs, escarpments, and rock outcrops.	No	**Low:** Although there is marginal foraging habitat on-site, there is no suitable nesting habitat on or within the vicinity of the survey area.
Gopherus agassizii Mojave desert tortoise	Fed: **THR** CA: **THR**	Occurs in desert scrub, desert wash, and Joshua tree habitats with friable, sandy, well-drained soils for nest and burrow construction. Highest densities occur in creosote bush scrub with extensive annual wildflower blooms and succulents with little to no non-native plant species.	No	**Presumed Absent:** No suitable burrows or habitat were observed during the survey. The terrain within the project site is largely unsuitable for burrowing.
Lanius ludovicianus loggerhead shrike	Fed: None CA: SSC	Prefers open habitats with bare ground, scattered shrubs, and areas with low or sparse herbaceous cover including open-canopied valley foothill hardwood, riparian, pinyon-juniper, desert riparian, creosote bush scrub, and Joshua tree woodland. Requires suitable perches including trees, posts, fences, utility lines, or other perches.	No	**Moderate:** There is suitable foraging and nesting habitat within and adjacent to the survey area. Joshua tree and Mojave yucca lines provide preferred perching sites.
Onychomys torridus ramona southern grasshopper mouse	Fed: None CA: SSC	Inhabits alkali desert scrub and other desert scrub habitats, and to a lesser extent succulent shrubs, desert washes, desert riparian, coastal scrub, mixed chaparral, and sagebrush habitats. Generally rare in valley foothill and montane riparian habitats. Prefers low to moderate shrub cover and requires friable soils.	No	**Presumed Absent:** There is no suitable habitat within or immediately adjacent to the project site.
Siphateles bicolor mohavensis Mohave tui chub	Fed: **END** CA: **END, FP**	Historically occurred throughout the Mojave River drainage. Only surviving natural populations occurs in Soda Spring at the Desert Studies Center near the town of Baker, Lark Seep on the China Lake Naval Weapons Center, Camp Cady, and at the Lewis Center for Educational Research in Apple Valley.	No	**Presumed Absent:** There is no suitable habitat within or immediately adjacent to the project site.

Scientific Name Common Name	**Status**	**Habitat Description**	**Observed On-site**	**Potential to Occur**
Toxostoma bendirei Bendire's thrasher	Fed: None CA: **FP; WL**	Occurs in flat desert areas with dense perennial shrubs and scattered stands of Joshua trees, yuccas, cholla in desert succulent shrub and Joshua tree habitats. Typically found on higher elevation bajadas and valleys. Typically prefer sites with firmly packed dirt rather than sandy soils, desert pavement, and rocky soils.	No	**Presumed Absent:** There is no suitable habitat within or immediately adjacent to the project site.
Toxostoma lecontei Le Conte's thrasher	Fed: None CA: SSC	Occurs primarily in desert washes and flats with scattered shrubs and large areas of open, sandy terrain in desert wash, desert scrub, alkali desert scrub, and desert succulent shrub habitats. Commonly nests in a dense, spiny shrub or densely branched cactus. Rarely found on rocky soils, hillsides, riparian, or on agricultural lands.	No	**Presumed Absent:** There is no suitable habitat within or immediately adjacent to the project site.
SPECIAL-STATUS PLANT SPECIES				
Androsace elongata ssp. acuta California androsace	Fed: None CA: None CNPS: 4.2	Occurs in a variety of habitats including chaparral, cismontane woodland, coastal sage scrub, meadows, and seeps. Elevation is 490 to 3,940 feet above msl. Blooms March to June.	No	**Presumed Absent:** There is no suitable habitat within or immediately adjacent to the project site.
Cymopterus deserticola desert cymopterus	Fed: None CA: None CNPS: 1B.2	Occurs on sandy soils in Joshua tree woodland and Mojavean desert scrub habitats. Elevation is 2,070 to 4,925 feet above msl. Blooms March to May.	No	**Presumed Absent:** There is no suitable habitat within or immediately adjacent to the project site.
Diplacus mohavensis Mojave monkeyflower	Fed: None CA: None CNPS: 1B.2	Occurs on granitic soils on gravelly banks of desert washes, in sandy openings between creosote bushes and along rocky slopes above washes, areas that are not subject to regular water flows. Found at elevations ranging from 1,969 to 3,937 feet. Blooming period is from April to June.	No	**Presumed Absent:** There is no suitable habitat within or immediately adjacent to the project site.
Eriophyllum mohavense Barstow woolly sunflower	Fed: None CA: None CNPS: 1B.2	Occurs on sandy, silty soils or margins of playas within desert chenopod scrub, Mojavean desert scrub, creosote bush scrub habitats. Elevation is 1,640 to 3,150 feet above msl. Blooms April to May.	No	**Presumed Absent:** There is no suitable habitat within or immediately adjacent to the project site.
Pediomelum castoreum Beaver Dam breadroot	Fed: None CA: None CNPS: 1B.2	Occurs on sandy soils in washes and road cuts in Joshua tree woodland and Mojavean desert scrub habitats. Elevation is 2,000 to 5,000 feet above msl. Blooms April to May.	No	**Presumed Absent:** There is no suitable habitat within or immediately adjacent to the project site.

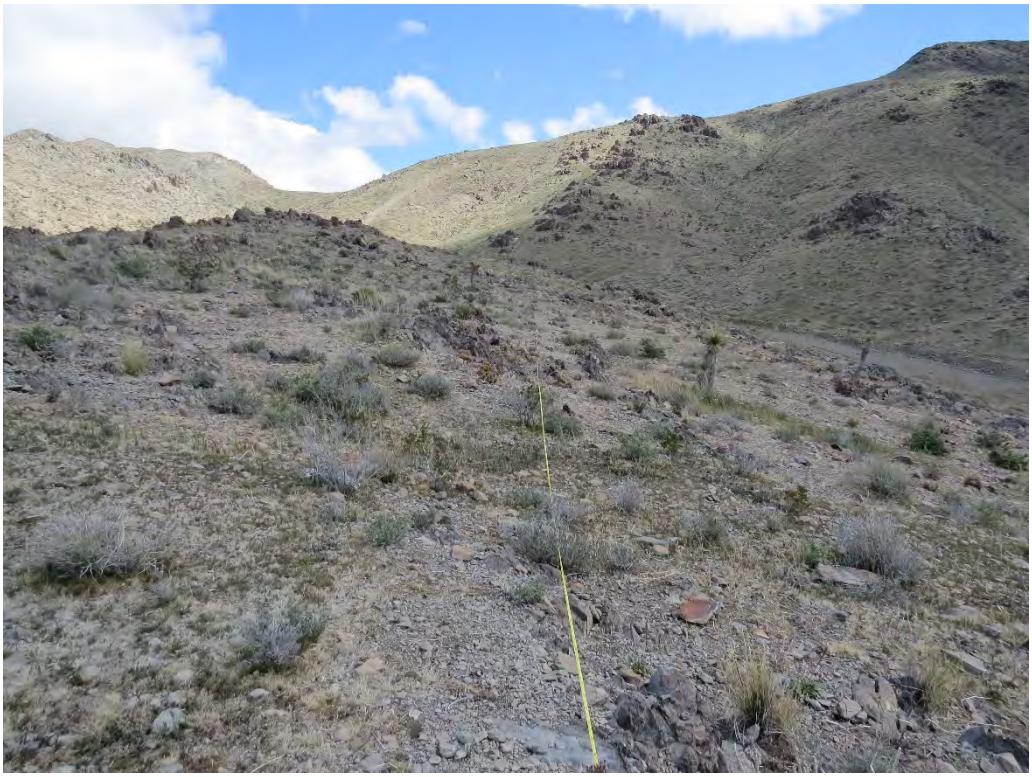
U.S. Fish and Wildlife Service (Fed) - Federal
END – Federal Endangered
THR – Federal Threatened
DL - Delisted

California Department of Fish and Wildlife (CA) - California
END – California Endangered
THR – California Threatened
CTHR – California Candidate Threatened
DL - Delisted
FP – California Fully Protected
SSC – California Species of Special Concern
WL – California Watch List
CE – Candidate Endangered

California Native Plant Society (CNPS) - *California Rare Plant Rank*
1B Plants Rare, Threatened, or Endangered in California and Elsewhere
2B Plants Rare, Threatened, or Endangered in California, but More Common Elsewhere
4 Plants of Limited Distribution – A Watch List

Threat Ranks
0.2- Moderately threatened in California
0.3- Not very threatened in California

Appendix C Site Photographs



Photograph 1: From the southwest end of Transect 1 looking east along the transect.

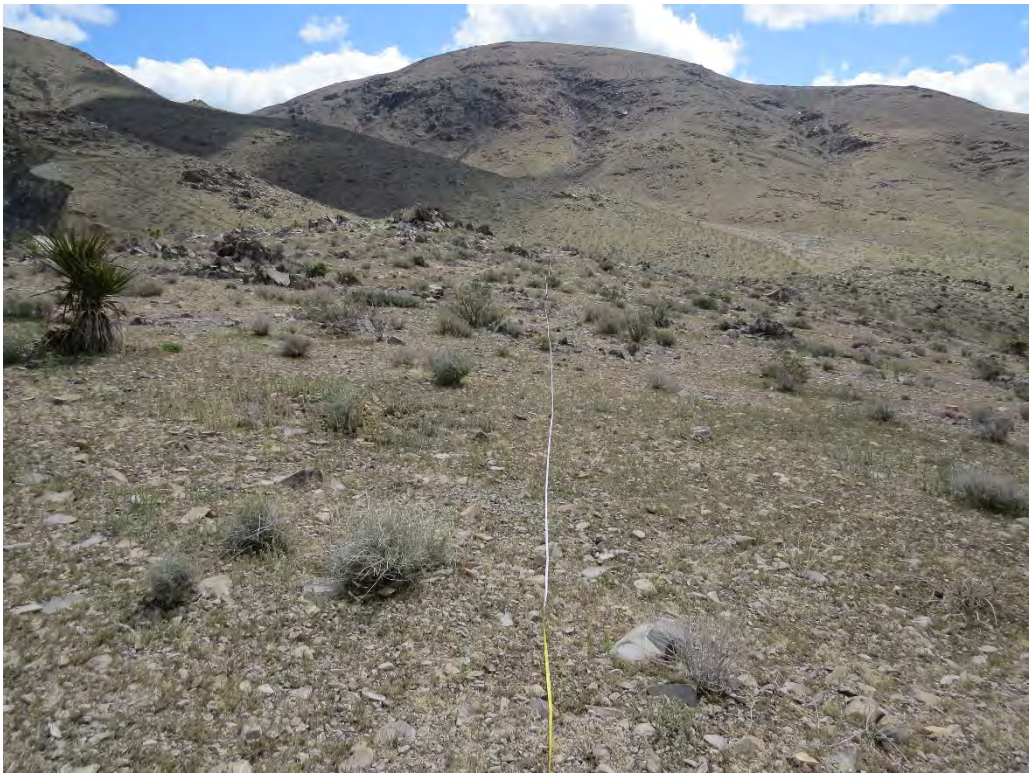
Photograph 2: From the southwest end of Transect 1 looking west.

Photograph 3: From the northeast end of Transect 1 looking west along the transect.

Photograph 4: From the northeast end of Transect 1 looking east.

Photograph 5: From the southern end of Transect 2 looking north along the transect.

Photograph 6: From the southern end of Transect 2 looking south.

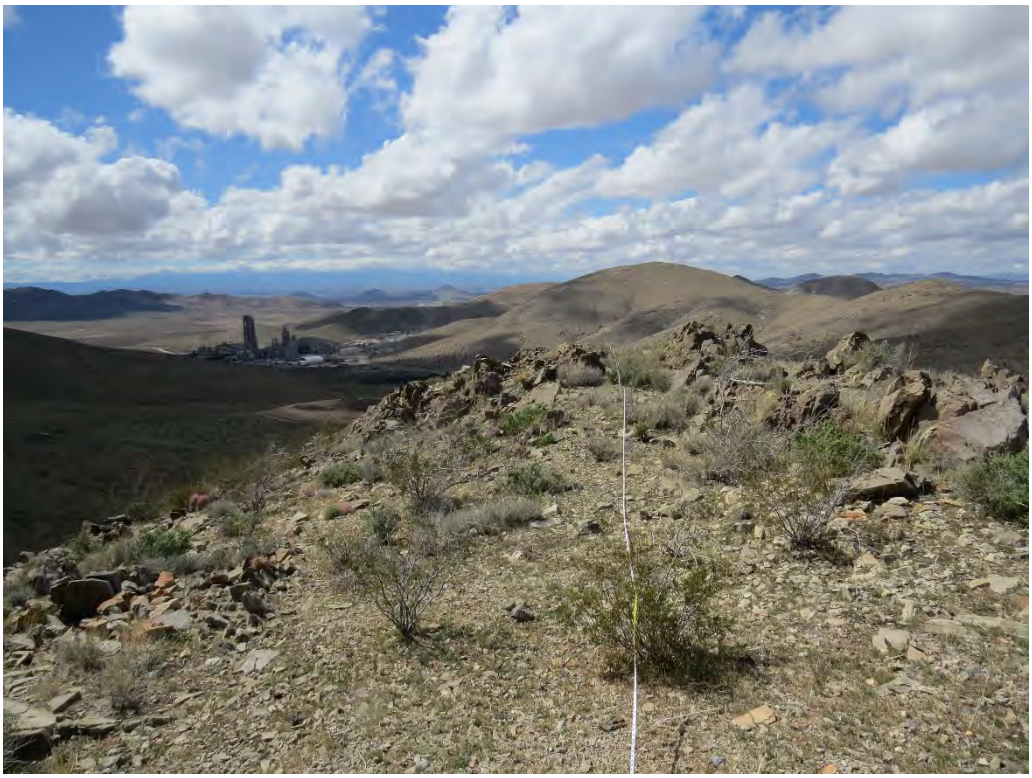


Photograph 7: From the northern end of Transect 2 looking south along the transect.

Photograph 8: From the northern end of Transect 2 looking north.

Photograph 9: From the southwestern end of Transect 3 looking east along the transect.

Photograph 10: From the southwestern end of Transect 3 looking west.



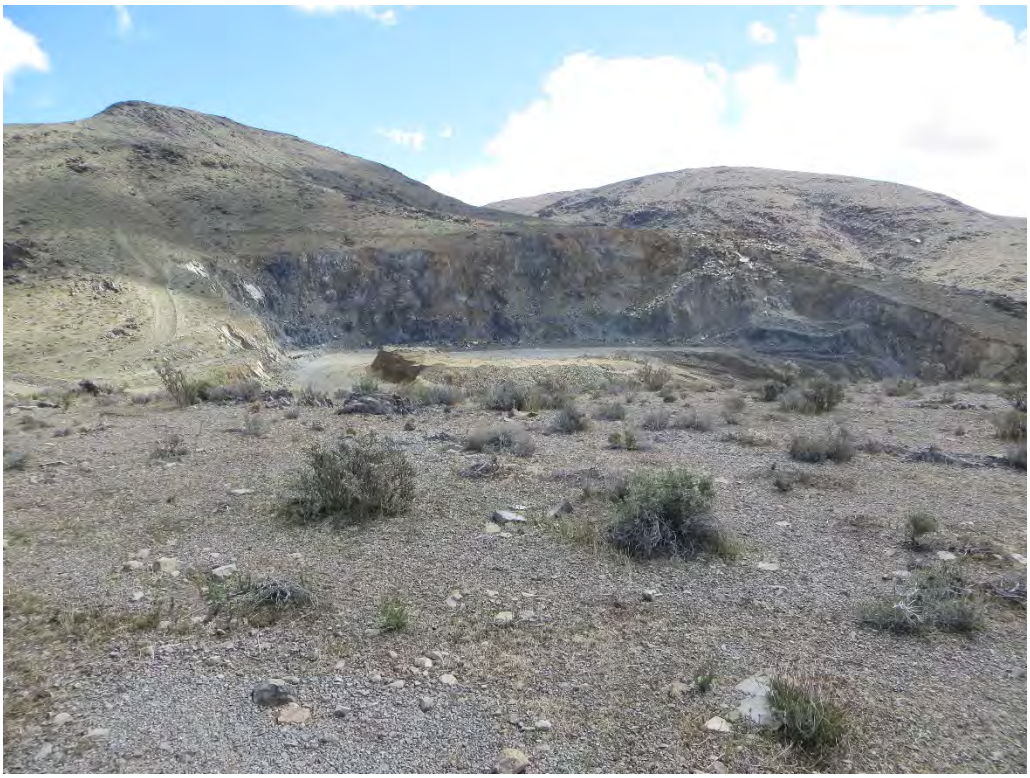
Photograph 11: From the northeastern end of Transect 3 looking west along the transect.

Photograph 12: From the northeastern end of Transect 3 looking west.

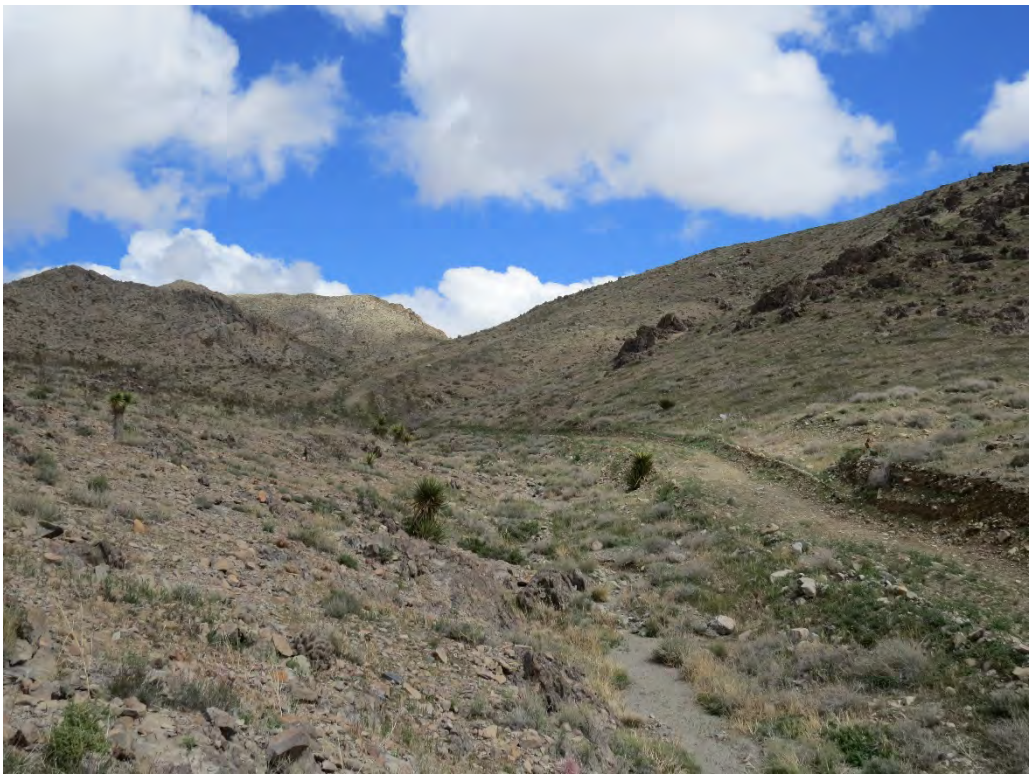
Photograph 13: Looking at the southwest corner of the site where the existing dirt access road enters the project site.

Photograph 14: From the northern boundary of the site near the southwest corner looking west.

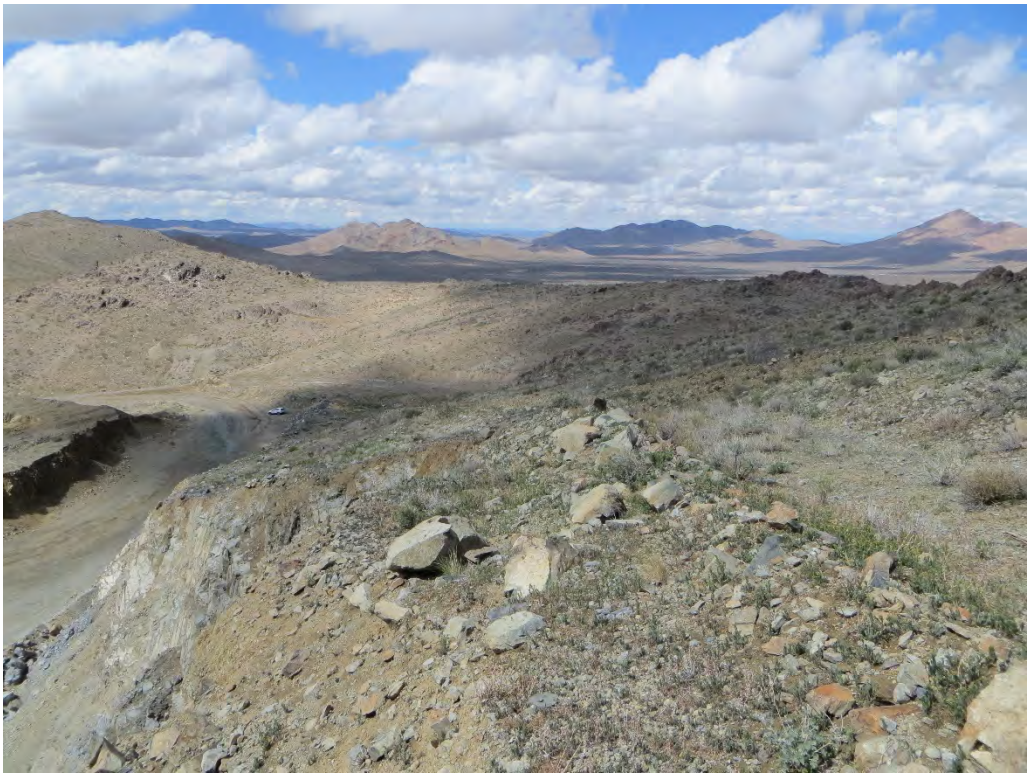
Photograph 15: From the northern boundary of the site near the southwest corner looking east along the northern boundary of the site.



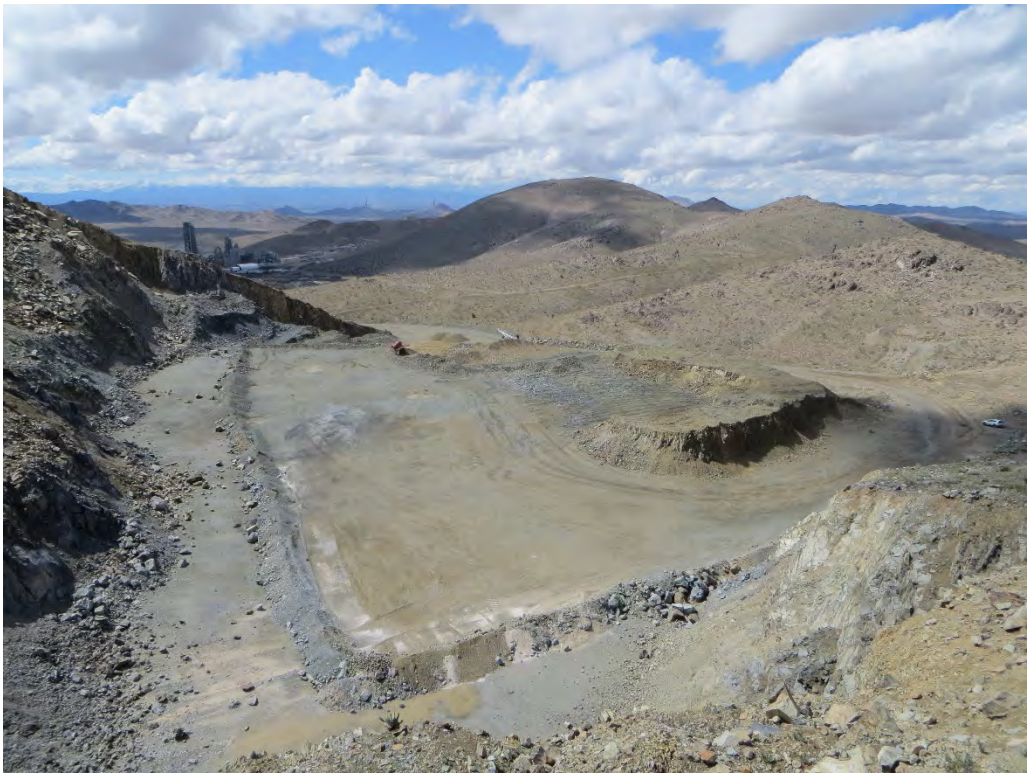
Photograph 16: From the northern boundary of the project site looking south towards existing mining area.



Photograph 17: View of the steep rolling hills on the northeastern portion of the project site.



Photograph 18: From the eastern boundary of the existing mining pit looking north.



Photograph 19: From the eastern portion of the project site looking west over the existing mine area.

Photograph 20: From the eastern portion of the project site looking south towards the southern portion of the site.

Photograph 21: From the southern portion of the site looking northeast at the undeveloped hillsides.

Photograph 22: From the southern boundary of the project site near the southwest corner looking west.

Appendix D Monitoring Forms

Site Maintenance Form

Site Maintenance Form

Name of Monitor(s):_____

Today's Date: _____ **Date of Last Visit:** _____

Is this visit a follow-up to a previous visit (i.e. to complete maintenance)? Yes No

Points of Access

Is there any damage to the fence, barriers, signs, or berm? Yes No

If yes, describe the location(s) and extent:

Item	Location	No Action Needed	Repair Needed	Replacement Needed

Trash

Are there any new trash dumps present? Yes No

If yes, describe the number of new dumps and general location(s):_____
_____

Additional comments:_____
_____
_____

Will a follow-up visit be necessary? If so, when is this expected to occur and what additional work is necessary? _____

Vegetation Monitoring Form

Vegetation Monitoring Form

Name of Monitor(s):_____

Today's Date: _____ **Date of Last Visit:** _____

Photograph Numbers: _____

Non-Native Vegetation

Is the estimated total non-native coverage less than 20%? Yes No

Are there any new, established populations of weeds? If yes, which species and where is it/they generally located?_____

Can this population(s) be easily controlled or will a more intensive treatment regime be necessary?
_____

Can all weeds be removed/killed during this visit? Yes No

If no, explain why not:_____

Native Vegetation

Is the estimated total native coverage between 20% and 50%? Yes No

Is any vegetation removal necessary to stay within desired absolute and/or relative cover goals? If yes, explain:_____

Are there any species or specific areas that show unusual rates of die-off? If yes, which species or which areas?_____

If yes, is there an obvious source of the mortality that can be remedied? Explain:_____
_____

Was any watering conducted during this visit? Yes No
Was any replanting/reseeding required during this visit? If yes, which species and where?_____
_____

Additional comments or recommendations:_____
_____
_____

Will a follow-up visit be necessary? If so, when is this expected to occur and what additional work is necessary?_____

Annual Monitoring Form (Page 1)

Name of Monitor(s):_____

Today's Date: _____

Date of Last Site Maintenance Visit:_____ **Vegetation Monitoring Visit:**_____

Conservation/Restoration Area:_____ **Photograph Numbers:** _____

Non-Native Vegetation

Are there any notable populations of weeds that will require follow-up treatment? If yes, which species and where is it/they generally located? _____

Provide any details on eradication suggestions:_____

Riparian Vegetation

Is any vegetation removal necessary to stay within desired absolute and/or relative cover goals? If yes, explain:_____

Is any additional replanting/reseeding recommended? If yes, which species and where?_____
_____
_____

Is there sufficient space between plants for Special-status Species movement or is vegetation thinning required? Explain. _____
_____
_____

Incidental Observations of Sensitive Plant Species:_____
_____

Site Maintenance

Is any maintenance needed on the gates, chains, locks, signs, or berm? If yes, where? _____
_____

Are there any trash piles or new homeless encampments? If yes, where? _____
_____

Additional comments or recommendations:_____
_____
_____
_____

Annual Monitoring Form (Page 2)

Name of Monitor(s):_____

Today's Date: _____

Transect: _____

Non-Native Vegetation

Weed Species	Percent Cover	Plant Height Range	Comments
TOTAL		N/A	

Riparian Vegetation

Trees/Shrub Species	Percent Cover	Plant Height Range	Recommend for Thinning?	Comments
TOTAL		N/A		

% bare ground _____ % leaf litter _____ % rock _____

Additional comments:_____

_____

_____