

# **CEMEX – BLACK AND WHITE MOUNTAIN QUARRIES AMENDED RECLAMATION PLAN**

SAN BERNARDINO COUNTY, CALIFORNIA

## **Revegetation Plan**

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Prepared For:

**Lilburn Corporation**  
1905 Business Center Drive  
San Bernardino, California 92408  
Contact: *Martin Derus*  
909.890.1818

Prepared By:

**ELMT Consulting, Inc.**  
2201 N. Grand Avenue #10098  
Santa Ana, California 92711  
Contact: *Thomas J. McGill, Ph.D.*  
714.716.5050

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# Section 1 Introduction

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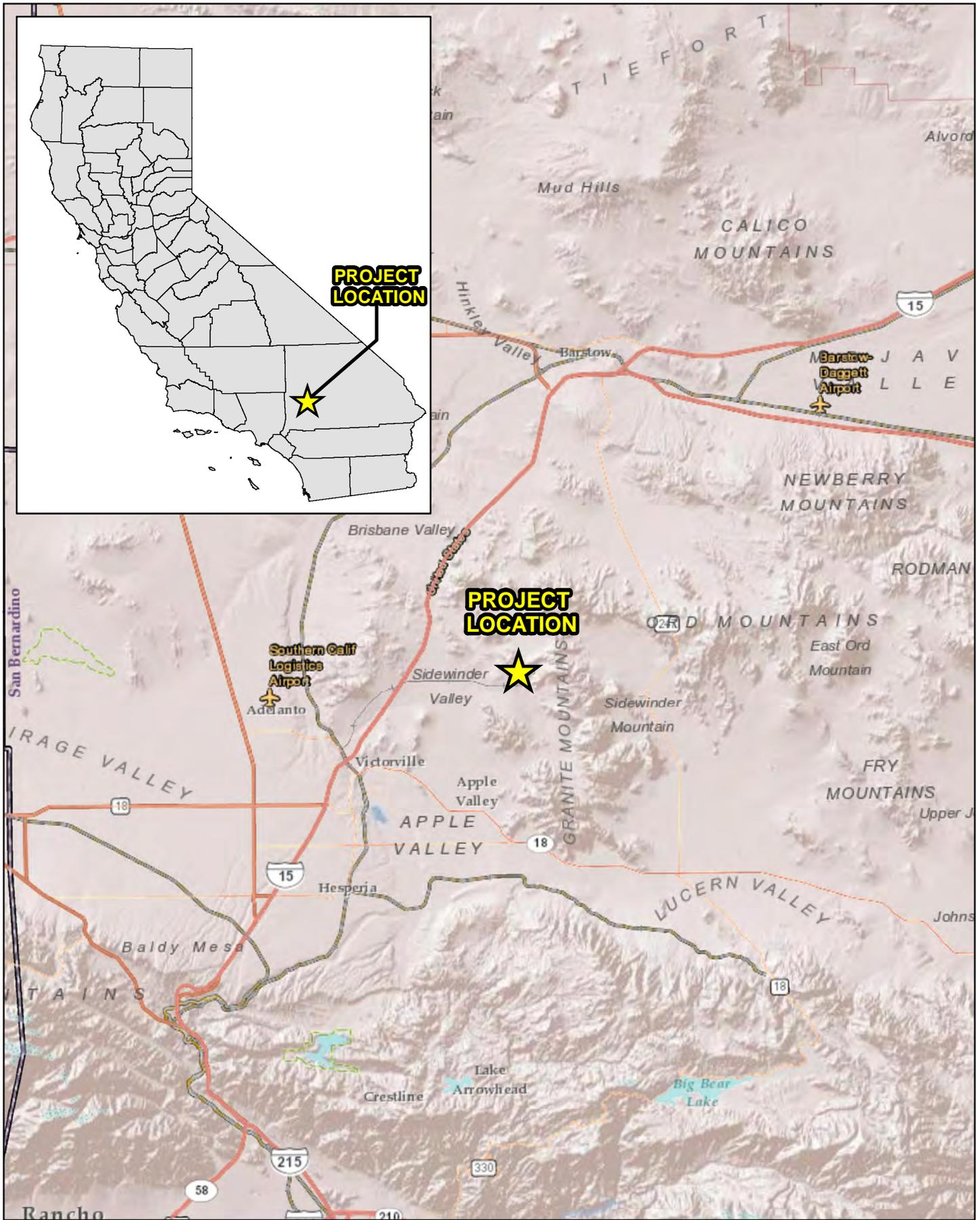
CEMEX Construction Materials Pacific, LLC (CEMEX) is submitting to San Bernardino County (County) an Amended Reclamation Plan (Amended Plan) for the planned expansion of the existing Black and White Mountain Quarries in a remote area northeast of the City of Victorville and the Town of Apple Valley in unincorporated San Bernardino, California. As part of the planning process to expand mining at the Black and White Mountain Quarries, 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 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

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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 Turtle Valley, Stoddard Well, Apple Valley North, and Fairview Valley quadrangles of the United States Geological Survey's (USGS) 7.5-minute topographic map series in Sections 5, 6, 7, 8, 17, and 18 of Township 6 North, Range 2 West (Exhibit 2, *Site Vicinity*). Specifically, the Project site is located within the middle of the existing CEMEX Black Mountain Quarry and Plant, immediately surrounding the existing Black and White Mountain Quarries (Exhibit 3, *Project Site*).

The project proposes to expand mining operations and update reclamation at the existing Black and White Mountain Quarries. The Black and White Mountain Quarries are located on patented (private) lands owned by CEMEX.

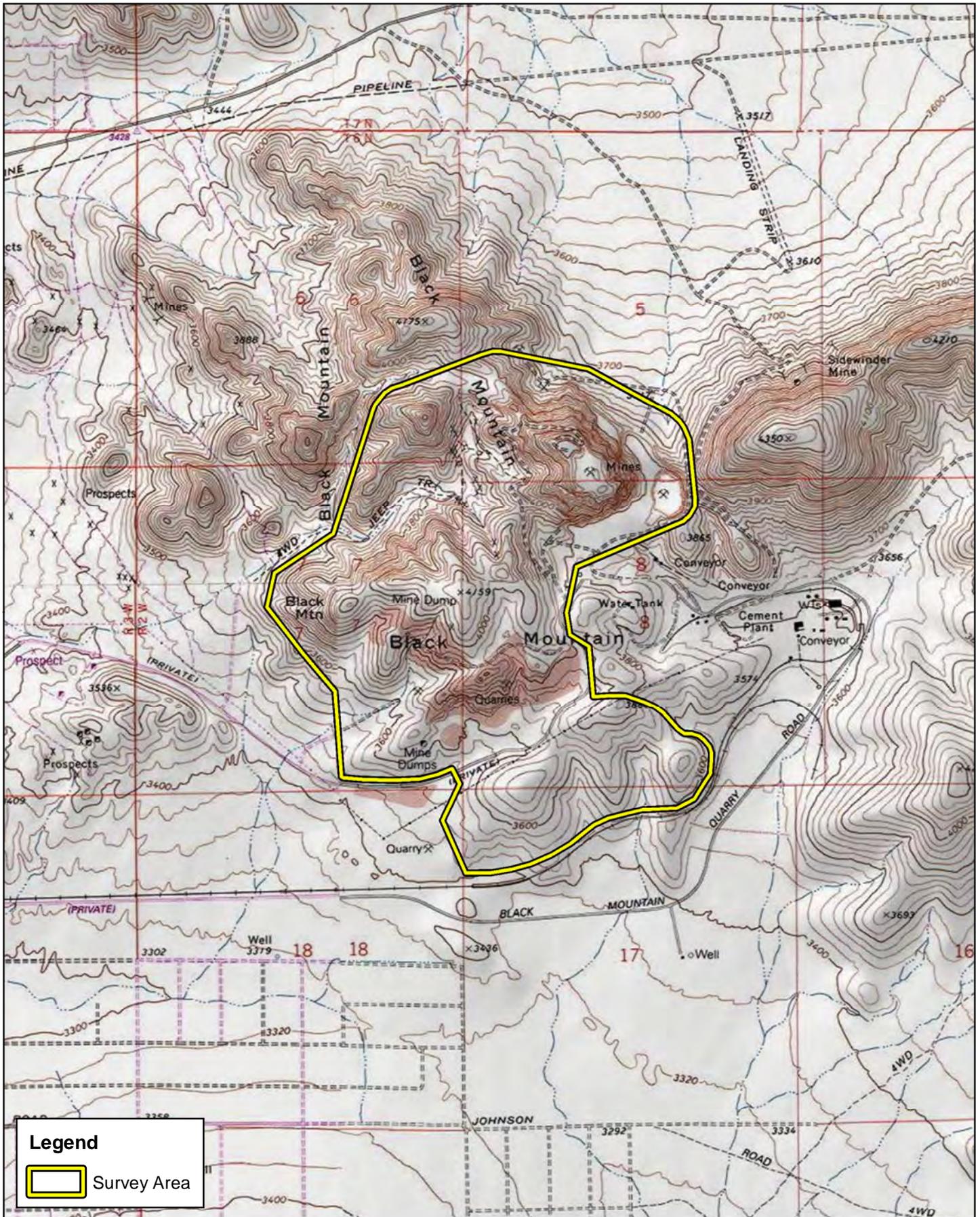


CEMEX - BLACK AND WHITE MOUNTAIN QUARRIES AMENDED RECLAMATION PLAN  
REVEGETATION PLAN



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

# Regional Vicinity

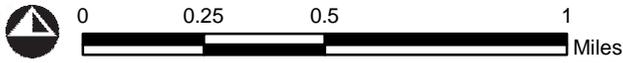


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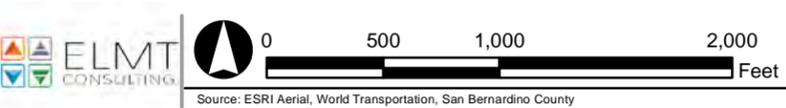
 Survey Area

CEMEX - BLACK AND WHITE MOUNTAIN QUARRIES AMENDED RECLAMATION PLAN  
 REVEGETATION PLAN

Site Vicinity



Source: USA Topographic Maps, San Bernardino County



## **Section 3      Environmental Setting**

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### **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 high-70 to mid-80s (° F).

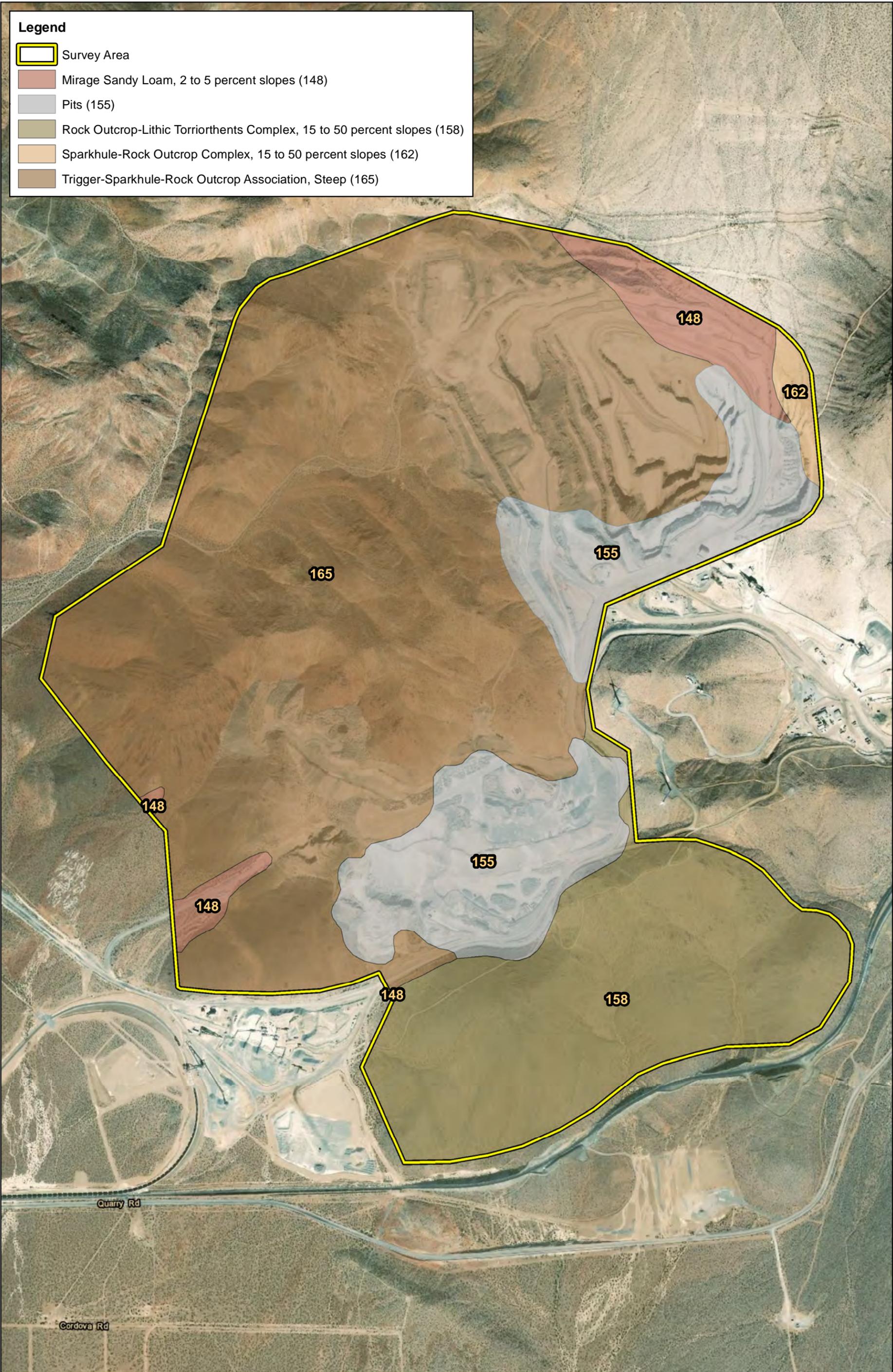
### **3.2      TOPOGRAPHY AND SOILS**

On-site surface elevation ranges from approximately 3,415 to 4,310 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. There are two height extremes within the boundaries of the site; the highest point occurs at the peak of Black Mountain proper, and the second highest occurs in the middle of the site. In addition, several portions of the project site are being actively mined or have previously been mined, or used for spoil piles resulting in steep cliff faces.

According to the Custom Soil Resource Report, the project site is underlain by the following soil units: Mirage sandy loam (2 to 5 percent slopes), Rock Outcrop-Lithic Torriorthents Complex (15 to 50 percent slopes), Sparkhule-Rock Outcrop Complex (15 to 50 percent slopes), Trigger-Sparkhule-Rock Outcrop Association (steep), and Pits (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 undeveloped portions of the survey area are undisturbed.

### **3.3      SURROUNDING LAND USES**

The project site is located in the middle of the CEMEX Black Mountain Quarry and Plant in a remote area northeast of the City of Victorville and Town of Apple Valley in unincorporated San Bernardino County. Areas surrounding the site consist of vacant, undeveloped land with existing mining infrastructure to the east and southwest. The project site is situated within the central and southern portions of the Black Mountain range, with the Sidewinder Mountain range to the east. The Apple Valley Airport is located approximately 3.8 miles to the southwest and Interstate 15 is located approximately 5.2 miles to the west. No other structures or industrial areas other than those supporting the operations of the CEMEX Black Mountain Quarry and Plant are located within 2 miles of the site.



**Legend**

- Survey Area
- Mirage Sandy Loam, 2 to 5 percent slopes (148)
- Pits (155)
- Rock Outcrop-Lithic Torriorthents Complex, 15 to 50 percent slopes (158)
- Sparkhule-Rock Outcrop Complex, 15 to 50 percent slopes (162)
- Trigger-Sparkhule-Rock Outcrop Association, Steep (165)

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REVEGETATION PLAN

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

**Soils**

## 3.4 VEGETATION

The survey area supports a mix of undeveloped and heavily disturbed land. The areas on the perimeter of the project site are relatively undeveloped/undisturbed, while the middle portion of the project site supports mining pits, ongoing mining operations, and dirt access roads. Disturbed areas include those areas that have been subject to existing mining activities. The western, northern-central, and southern portions of the site are relatively undeveloped/undisturbed, while the southern-central and northeast portions of the site support mining pits, spoil piles, infrastructure, and dirt access roads.

During the field investigation one (1) plant community was observed within the boundary of the project site: creosote bush scrub (Exhibit 5, *Vegetation*). In addition, one (1) land cover type that would be classified as disturbed was observed onsite. 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 Creosote Bush Scrub (510 acres)

The creosote bush scrub plant community occurs throughout the undeveloped/undisturbed portions on, generally on the perimeter of the survey area and is the dominant plant community within the surrounding landscape. This plant community is found in the middle, northwestern, and southern portions of the project site boundaries, outside of the areas that have been subject to existing mining activities, and is dominated by creosote (*Larrea tridentata*). Common plant species found within this plant community include fiddleneck (*Amsinckia tessellata*), desert dudleya (*Dudleya saxosa*), Mormon tea (*Ephedra nevadensis*), red-stemmed filaree (*Erodium cicutarium*), red brome (*Bromus madritensis* ssp. *rubens*), Mojave yucca (*Yucca schidigera*), California buckwheat (*Eriogonum fasciculatum*), Veatch's blazing star (*Mentzelia veatchiana*), winged combseed (*Pectocarya penicillata*), desert trumpet (*Eriogonum inflatum*), peach thorn (*Lycium cooperi*), pencil cholla (*Cylindropuntia ramosissima*), burrobrush (*Ambrosia dumosa*), needle goldfields (*Lasthenia gracilis*), hedgehog cactus (*Echinocereus* sp.), beavertail cactus (*Opuntia basilaris*), barrel cactus (*Echinocactus* sp.), common phacelia (*Phacelia distans*), desert wishbone (*Mirabilis laevis*), winterfat (*Krascheninnikovia lanata*), and Mediterranean grass (*Schismus barbatus*).

Within this plant community, Joshua trees were found on the site mainly in the upper elevations to the northwest. No Joshua trees were located in the Ballast Quarry area and only isolated trees were found in the southern areas or the current White Mountain Quarry area. Joshua trees were found in the upper elevations to the west and southwest of the current Black Mountain Quarry.

### 3.4.2 Disturbed (340 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 primarily in the northeast corner and the south portion of the middle of the project site. Disturbed areas include existing mining pits, dirt access roads, and spoil piles. Plant species occurring within these disturbed areas include red brome, short-podded mustard (*Hirschfeldia incana*), and Mediterranean grass.

**Legend**

- Survey Area
- Creosote (510 Acres)
- Disturbed (340)



CEMEX - BLACK AND WHITE MOUNTAIN QUARRIES AMENDED RECLAMATION PLAN  
REVEGETATION PLAN





Source: ESRI Aerial, World Transportation, San Bernardino County

**Vegetation**

### 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 creosote bush scrub plant community which is homogenous throughout the expansion area with only minor variations in composition associated with slope orientation.

In order to accurately define composition of the creosote bush 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 creosote bush scrub 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 creosote bush scrub habitat for forty years. Based on his knowledge and years of experience in desert habitats, he selected five transect locations as representative of observed creosote bush 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.

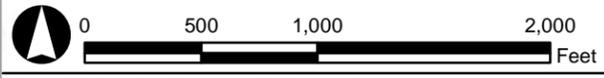
Vegetation within in each line was sampled using the point-intercept method (California Native Plant Society 2014). Each transect was 50 meters long and 1 meter wide. All native and non-native plant species within a 50-meter square transect were recorded and are presented in Table 1, *Plants Identified 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*).

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 B, *Site Photographs* provides a series of site photographs of the project site and the location of the transects within and adjacent to the proposed expansion area.



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REVEGETATION PLAN

### Transects



Source: ESRI Aerial, World Transportation, San Bernardino County

**Table 1: Plants Identified Within Each Transect**

Plant Species	Transects				
	1	2	3	4	5
<i>Acemison strigosus</i>					X
<i>Ambrosia dumosa</i>	X	X	X		
<i>Amsinkia tessellate</i>		X	X	X	X
<i>Astragalus didymocarpus</i>		X	X		
<i>Bromus madritensis</i>	X	X	X	X	X
<i>Caulanthus lasiophyllus</i>	X	X	X		
<i>Chaenactis fremontii</i>	X			X	
<i>Chorizanthe brevicornu</i>					X
<i>Cryptantha circumscissa</i>	X	X	X	X	X
<i>Cylindropuntia echinocarpa</i>		X			
<i>Dudleya saxosa</i>	X			X	
<i>Echinocereus engelmannii</i>	X	X			
<i>Emmenanthe penduliflora</i>					X
<i>Ephedra nevadensis</i>	X	X		X	
<i>Eriastrum eremicum</i>			X		
<i>Eriogonum fasciculatum</i>	X	X		X	X
<i>Eriogonum inflatum</i>		X	X		
<i>Eriogonum thurberi</i>	X				
<i>Erodium cicutarium</i>	X	X	X	X	X
<i>Euphorbia albomarginata</i>		X			
<i>Ferocactus cylindraceus</i>	X			X	X
<i>Gilia brecciarum</i>				X	X
<i>Gilia latiflora</i>					X
<i>Krascheninnikovia lanata</i>				X	X
<i>Larrea tridentana</i>	X	X	X	X	X
<i>Lasthenia gracilis</i>			X	X	
<i>Leptosyne bigelovii</i>			X		
<i>Lupinus microcarpus</i>		X	X		
<i>Lycium cooperi</i>	X			X	X
<i>Malacothrix coulteri</i>		X	X	X	
<i>Mentzelia veatchiana</i>	X	X	X		X
<i>Mirabilis laevis</i>	X	X			
<i>Oligomeris linifolia</i>	X				X
<i>Pectocarya penicillata</i>	X	X	X	X	X
<i>Phacelia distans</i>		X	X	X	X
<i>Phacelia fremontii</i>				X	
<i>Salvia columbariae</i>					X
<i>Schismus barbatus</i>	X		X		X
<i>Stipa speciosa</i>	X			X	
<i>Xylorhiza tortifolia</i>				X	
<i>Yucca mojavensis</i>	X				X

Table 2: Percent Plant Cover (per 50 m<sup>2</sup>)

Plant Species	Transects				
	1	2	3	4	5
<i>Ambrosia dumosa</i>	4%	5%	1%		1%
<i>Dudleya saxosa</i>				1%	
<i>Echinocereus engelmannii</i>	2%				
<i>Ephedra nevadensis</i>	6%	12%		6%	
<i>Eriogonum fasciculatum</i>	10%	3%		2%	1%
<i>Ferocactus cylindraceus</i>	1%				1%
<i>Krascheninnikovia lanata</i>				9%	6%
<i>Larrea tridentata</i>	8%	4%	13%	11%	9%
<i>Lycium cooperi</i>	2%			4%	3%
<i>Mirabilis lavis</i>	3%				
<i>Stipa speciosa</i>	1%				
<i>Xylorhiza tortifolia</i>				3%	
<i>Yucca mojavensis</i>					1%
<b>Native Perennial Subtotal</b>	<b>36%</b>	<b>24%</b>	<b>14%</b>	<b>36%</b>	<b>22%</b>
<i>Amsinckia tallelata</i>		2%	5%	11%	5%
<i>Chaenactis fremontii</i>				2%	
<i>Chorizanthe brevicornu</i>					2%
<i>Cryptantha circumscissa</i>	1%	2%	1%	2%	2%
<i>Eriastrum eremicum</i>			2%		
<i>Eriogonum inflatum</i>					2%
<i>Eriogonum thurberi</i>					2%
<i>Gilia brecciarum</i>					1%
<i>Gilia latiflora</i>					1%
<i>Lasthenia gracilis</i>				10%	
<i>Lupinus microcarpus</i>		1%	3%		
<i>Malacothrix glabrata</i>		2%		1%	
<i>Mentzelia veatchiana</i>		7%	6%		3%
<i>Oligomeris linifolia</i>	1%				
<i>Pectocarya penicellata</i>	7%	3%	2%	1%	6%
<i>Phalcelia distans</i>		8%	5%	6%	1%
<b>Native Annual Subtotal</b>	<b>9%</b>	<b>25%</b>	<b>24%</b>	<b>33%</b>	<b>25%</b>
<b>TOTAL NATIVE COVER</b>	<b>46%</b>	<b>49%</b>	<b>38%</b>	<b>69%</b>	<b>47%</b>
<i>Bromus madritensis</i>	6%	21%	11%	8%	1%
<i>Erodium cicutarium</i>	16%	11%	32%	4%	28%
<i>Schismus barbatus</i>	2%		2%		1%
<b>TOTAL NON-NATIVE COVER</b>	<b>24%</b>	<b>32%</b>	<b>45%</b>	<b>12%</b>	<b>30%</b>
<b>Bare Ground Subtotal</b>	<b>30%</b>	<b>19%</b>	<b>17%</b>	<b>19%</b>	<b>23%</b>
<b>GRAND TOTALS</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

**Table 3: Species Density and Diversity (all native plants per 50 m<sup>2</sup>)**

	Transects				
	1	2	3	4	5
<b>Species Density*</b>	21	20	18	20	21
<b>Species Diversity** (all natives)</b>	12	11	9	14	17
<b>Species Diversity (perennials)</b>	9	4	2	7	7

\*Species density reflects the number of native plants recorded in the transects.

\*\*Species Diversity was calculated for all native species and for native perennial species occurring in the transects.

### 3.6 SPECIAL-STATUS PLANT SPECIES

The CNDDDB Rarefind 5, CNDDDB 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.

Joshua tree (*Yucca brevifolia*) was the only special-status plant species observed onsite during the field investigation. Joshua trees are located on the site mainly in the upper elevations to the northwest. No Joshua trees were located in the Ballast Quarry area and only isolated trees were found in the southern areas or the current White Mountain Quarry area. Joshua trees were found in the upper elevations to the west and southwest of the current Black Mountain Quarry. Further, 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 creosote bush scrub plant community do not have the potential to support any of the other 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 range from most of the special-status species.

On October 15, 2019, a petition was submitted to the California Fish and Game Commission (FGC) to list the western Joshua tree as a Threatened Species under the California Endangered Species Act (CESA) (Center for Biological Diversity 2019). The FGC referred the petition to the California Department of Fish and Wildlife (CDFW) for evaluation. In February of 2020, CDFW determined that the petition provided sufficient scientific information to indicate that the petitioned actions may be warranted and recommended that the FGC accept the petition for further consideration under CESA. Then, on September 22, 2020, the FGC voted to advance the western Joshua tree to candidate threatened species under CESA. Candidate species for listing receive full protection under CESA. On October 29, 2020, the State of California Office of Administrative Law approved the adoption of Section 749.10 Title 14, California Code of Regulations (CCR), entitled Special Order Relating to the Take of western Joshua tree (*Yucca brevifolia* var. *brevifolia*) during the Candidacy Period.

With the exception of Joshua tree, no impacts to special-status species are expected to occur. Impacts to Joshua trees will be avoided to the maximum extent possible. However, if any Joshua trees will be impacted, compliance with CESA will be required and an Individual Take Permit with CDFW will need to be prepared and processed.

### **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*) (also protected under CESA as a candidate species)
- 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 smoke trees, mesquites, desert ironwoods, or palos verdes trees within the proposed expansion boundaries. Joshua trees, Mojave yucca, pencil cholla, beavertail cactus and barrel cactus were identified within the proposed expansion areas. Although creosote plants occurred 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 creosote bush 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 Black and White Mountains Mine Expansion areas are 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 creosote bush 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. Weekly inspections of site after revegetating an area to ensure fencing and gates are secure and signs are posted. Quarterly inspections when problem abated.
		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. Monthly inspections of the site for trash piles to ensure their timely removal, then quarterly inspections when problem is abated.
		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 quarterly to remove non-native plant species during vegetation monitoring (See Section 5.1.2 for more detail).
	Revegetate mined areas to support a native creosote bush scrub plant community.	Following implementation of the revegetation plan, monitor the revegetated areas to ensure successful re-establishment of a creosote bush scrub plant community.	Once re-established, the creosote bush 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. The 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 Black and White Mountains Mine Expansion areas are accessed by a single dirt road from the main entrance to CEMEX's mining area. Access 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 Black and White Mountains Mine Expansion 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 Black and White Mountains Mine Expansion areas 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 creosote bush 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 10%, in all five transects. *Erodium cicutarium* ranged between 4% and 32%. 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 madritersis* and *Schismus barbatus*) 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.

### *Joshua Tree and Mojave Yucca*

The removal of Joshua tree (as allowed under CESA) and 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 creosote bush 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 creosote bush 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 creosote bush 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 Black and White Mountains Mine Expansion areas 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 creosote bush scrub habitat located adjacent to the Black and White Mountains Mine Expansion areas.

#### *Seed Collection*

Seeds will be collected from the Black and White Mountains Mine Expansion areas 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 creosote bush 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 Black and White Mountains Mine Expansion areas 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	
<i>Amsinckia tessellata</i>	fiddleneck	0.25
<i>Chaenaetis fremontii</i>	desert pincushion	0.25
<i>Cryptantha intermedia</i>	common cryptantha	0.75
<i>Encelia farinosa</i>	brittlebush	2.00
<i>Ephedra nevadensis</i>	Mormon tea	1.50
<i>Eriogonium fasciculatum</i>	flat-topped buckwheat	0.75
<i>Eriogonium inflatum</i>	desert trumpet	1.00
<i>Krascheninnikovia lanata</i>	winterfat	1.00
<i>Larrea tridentate</i>	creosote	2.00
<i>Lupinus microcarpus</i>	chick lupine	0.50
<i>Lycium cooperi</i>	peachthorn	2.00
<i>Malacothrix glabrata</i>	desert dandelion	0.75
<i>Mentzelia affinis</i>	blazingstar	0.50
<i>Mirabilis laevis</i>	Wishbone	0.50
<i>Oligomeris linifolia</i>	leaved cambess	0.50
<i>Pectocarya penicellata</i>	winged combseed	0.25
<i>Phacelia distans</i>	phacelia	0.25

SPECIES		POUNDS PER ACRE
SCIENTIFIC NAME	COMMON NAME	
<i>Sphaeralcea ambigua</i>	desert mallow	0.75
<i>Stipa speciosa</i>	desert needle grass	0.25
<i>Xylorhiza tortifolia</i>	Mojave woodyaster	0.50
<b>TOTAL pounds per acre</b>		<b>15-20</b>

### 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 creosote bush 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\***

<b>Type of Seeding</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
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

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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. 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 quarterly 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. 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 creosote bush 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 plant species. Performance standards were developed for each landform 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 creosote bush scrub plant community.

**Table 7: Plant Community Composition**

<b>Transect</b>	<b>Perennial Percent Cover</b>	<b>Native Species Density</b>	<b>Native Species Diversity</b>
1	36	45	11
2	24	49	11
3	14	38	9
4	36	69	14
5	22	47	17
<b>Averages</b>	<b>26.4</b>	<b>49.5</b>	<b>12.4</b>

**Table 8: Performance Standards**  
**(45% of Baseline Cover, 40% of Baseline Species Density/Diversity)**

Transect	Perennial Percent Cover	Native Species Density	Native Species Diversity
Averages	26.4	49.5	12.4
% Standard	45%	40%	40%
Performance Standard or Success Criteria	12	20	5

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 Performance 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, if phased, will be evaluated

separately to determine if the performance standards have been met for that area. The species diversity goal and plant cover goal for revegetation are as follows:

- Vegetation composition should be structurally diversified and comparable to that found in the initial vegetation transects. No single native shrub species will constitute more than 20% of the area or site. Species comprising greater than 20% composition of any area, will be selectively thinned by hand. Shrubby vegetation should remain patchy within each revegetated area such that there are open pathways between shrubs for wildlife to move through an area.
- Coverage of perennial shrub plant species, e.g. creosote bush scrub, should be between 10% and 40% as documented by the qualitative monitoring of the site. This cover should form a patchwork of areas varying from openings to areas with a high density of vegetation. If shrub cover in any area 0.5 acre or greater exceeds 65%, the shrubs should be selectively removed by hand, as determined by the Project Biologist, and/or a native plant botanist. Likewise, if shrub cover is under 10% in any area 0.25 acre or greater, the area will be revegetated via hand-casting of seed or by imprinting (see below) under the direction and supervision of the Project Biologist, or a native plant botanist.

The revegetation efforts will be considered successful when the following standards are met:

- 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.
- The following standards will be applied to the Mojave Desert scrub habitat:
  - Native perennial shrub cover is between 10% and 15%.
  - No single native perennial species constitutes more than 20% of the measured cover, including California buckwheat,.
  - At least 40% species diversity compared to the initial transect sites (i.e., the frequency of dominant species are at least 50% of the frequency of these species within the initial vegetation transects).
  - The native shrub cover should remain open in order to provide pathways for wildlife to move freely through the area.
  - Significant maintenance measures (i.e., reseeding, weed control, repairing significant areas of erosion) have not been required for the previous two years.

If the native perennial plant cover is less than 10% in any area 0.5-acre or greater, the biological monitor will evaluate the reasons for the low cover and make recommendations for remedial measures, if any. Similarly, if species diversity is less than 45% of baseline conditions, the need for other remedial measures will be evaluated.

## **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 vehicle use) will consist of:

- **Installation monitoring:** to observe and document the construction of fences/barriers, gates (including chains and locks) and signs, and to document the removal of trash and elimination of human disturbance.
- **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 trespass or human intrusion.

Monitoring of revegetation efforts will consist of:

- Conducting baseline inventories of vegetative conditions 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 performed and documented.
- Biological monitoring to qualitatively and quantitatively evaluate overall conditions of a revegetated mine site and to document achievement of Performance 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 in 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 on at least a weekly/monthly basis by security personnel and by the Biological Monitor during each quarterly monitoring visit. 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 creosote bush 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., at least quarterly in Years 1 through 5) 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 C. 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 creosote bush scrub habitat. It will be conducted to measure the re-establishment of the native creosote bush 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 creosote bush 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 was 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 C.

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 quarterly 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 C 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 C 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 creosote bush 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**

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CEMEX's Black and White Mountain Quarries Amended Reclamation Plan- Vegetation Transects

Transect 1	Transect 2	Transect 3	Transect 4	Transect 5
0 Bromus madritensis	0 Pectocarya penicillata	0 Erodium cicutarium	0 Bromus madritensis	0 Erodium cicutarium
0.5 Pectocarya penicillata	0.5 Ambrosia dumosa	0.5 Pectocarya penicillata	0.5 Dudleya saxosa	0.5 Pectocarya penicillata
1 Larrea tridentata	1 Ambrosia dumosa	1 Bromus madritensis	1 Bromus madritensis	1 Erodium cicutarium
1.5 Larrea tridentata	1.5 Bare Ground	1.5 Bare Ground	1.5 Bare Ground	1.5 Eriogonum fasciculatum
2 Pectocarya penicillata	2 Bare Ground	2 Pectocarya penicillata	2 Bromus madritensis	2 Bare Ground
2.5 Oligomeris linifolia	2.5 Bromus madritensis	2.5 Bare Ground	2.5 Bare Ground	2.5 Bare Ground
3 Eriogonum fasciculatum	3 Bromus madritensis	3 Bare Ground	3 Ephedra nevadensis	3 Erodium cicutarium
3.5 Erodium cicutarium	3.5 Erodium cicutarium	3.5 Bare Ground	3.5 Erodium cicutarium	3.5 Erodium cicutarium
4 Bare Ground	4 Bromus madritensis	4 Bare Ground	4 Pectocarya penicillata	4 Erodium cicutarium
4.5 Erodium cicutarium	4.5 Mentzelia veatchiana	4.5 Bare Ground	4.5 Larrea tridentata	4.5 Bare Ground
5 Bromus madritensis	5 Ephedra nevadensis	5 Erodium cicutarium	5 Bare Ground	5 Eriogonum thurberi
5.5 Bare Ground	5.5 Ephedra nevadensis	5.5 Ambrosia dumosa	5.5 Bare Ground	5.5 Krascheninnikovia lanata
6 Eriogonum fasciculatum	6 Ephedra nevadensis	6 Bromus madritensis	6 Ephedra nevadensis	6 Bare Ground
6.5 Eriogonum fasciculatum	6.5 Bromus madritensis	6.5 Erodium cicutarium	6.5 Lycium cooperi	6.5 Erodium cicutarium
7 Eriogonum fasciculatum	7 Bromus madritensis	7 Erodium cicutarium	7 Amsinkia tessellata	7 Erodium cicutarium
7.5 Pectocarya penicillata	7.5 Bromus madritensis	7.5 Erodium cicutarium	7.5 Amsinkia tessellata	7.5 Lycium cooperi
8 Stipa speciosa	8 Mentzelia veatchiana	8 Bromus madritensis	8 Larrea tridentata	8 Lycium cooperi
8.5 Bare Ground	8.5 Malacothrix coulteri	8.5 Erodium cicutarium	8.5 Larrea tridentata	8.5 Bare Ground
9 Bare Ground	9 Erodium cicutarium	9 Cryptantha circumscissa	9 Malacothrix coulteri	9 Bare Ground
9.5 Bromus madritensis	9.5 Erodium cicutarium	9.5 Erodium cicutarium	9.5 Bare Ground	9.5 Erodium cicutarium
10 Bare Ground	10 Erodium cicutarium	10 Erodium cicutarium	10 Bare Ground	10 Erodium cicutarium
10.5 Larrea tridentata	10.5 Erodium cicutarium	10.5 Erodium cicutarium	10.5 Krascheninnikovia lanata	10.5 Erodium cicutarium
11 Bromus madritensis	11 Phacelia distans	11 Erodium cicutarium	11 Erodium cicutarium	11 Mentzelia veatchiana
11.5 Bromus madritensis	11.5 Phacelia distans	11.5 Phacelia distans	11.5 Bromus madritensis	11.5 Eriogonum thurberi
12 Bare Ground	12 Amsinkia tessellata	12 Erodium cicutarium	12 Eriogonum fasciculatum	12 Larrea tridentata
12.5 Echinocereus engelmannii	12.5 Amsinkia tessellata	12.5 Bare Ground	12.5 Ephedra nevadensis	12.5 Larrea tridentata
13 Mirabilis laevis	13 Erodium cicutarium	13 Lupinus microcarpus	13 Lycium cooperi	13 Krascheninnikovia lanata
13.5 Schismus barbatus	13.5 Bare Ground	13.5 Bare Ground	13.5 Lycium cooperi	13.5 Pectocarya penicillata
14 Bare Ground	14 Phacelia distans	14 Bare Ground	14 Bare Ground	14 Erodium cicutarium
14.5 Pectocarya penicillata	14.5 Mentzelia veatchiana	14.5 Bare Ground	14.5 Bare Ground	14.5 Lycium cooperi
15 Ephedra nevadensis	15 Bromus madritensis	15 Bare Ground	15 Krascheninnikovia lanata	15 Ferocactus cylindraceus
15.5 Ephedra nevadensis	15.5 Mentzelia veatchiana	15.5 Bromus madritensis	15.5 Eriogonum fasciculatum	15.5 Bare Ground
16 Ephedra nevadensis	16 Bare Ground	16 Erodium cicutarium	16 Amsinkia tessellata	16 Bare Ground
16.5 Ephedra nevadensis	16.5 Erodium cicutarium	16.5 Bromus madritensis	16.5 Erodium cicutarium	16.5 Bare Ground
17 Erodium cicutarium	17 Phacelia distans	17 Bromus madritensis	17 Erodium cicutarium	17 Larrea tridentata
17.5 Eriogonum fasciculatum	17.5 Phacelia distans	17.5 Erodium cicutarium	17.5 Amsinkia tessellata	17.5 Larrea tridentata
18 Bromus madritensis	18 Bromus madritensis	18 Bromus madritensis	18 Erodium cicutarium	18 Pectocarya penicillata
18.5 Schismus barbatus	18.5 Bromus madritensis	18.5 Phacelia distans	18.5 Amsinkia tessellata	18.5 Bare Ground
19 Eriogonum fasciculatum	19 Bromus madritensis	19 Erodium cicutarium	19 Amsinkia tessellata	19 Erodium cicutarium
19.5 Eriogonum fasciculatum	19.5 Bromus madritensis	19.5 Mentzelia veatchiana	19.5 Krascheninnikovia lanata	19.5 Erodium cicutarium
20 Eriogonum fasciculatum	20 Phacelia distans	20 Phacelia distans	20 Chaenactis fremontii	20 Erodium cicutarium
20.5 Mirabilis laevis	20.5 Phacelia distans	20.5 Erodium cicutarium	20.5 Chaenactis fremontii	20.5 Bare Ground
21 Bare Ground	21 Bromus madritensis	21 Erodium cicutarium	21 Bromus madritensis	21 Erodium cicutarium
21.5 Bare Ground	21.5 Bare Ground	21.5 Erodium cicutarium	21.5 Bromus madritensis	21.5 Bare Ground
22 Bare Ground	22 Bare Ground	22 Mentzelia veatchiana	22 Malacothrix coulteri	22 Larrea tridentata
22.5 Lycium cooperi	22.5 Bare Ground	22.5 Larrea tridentata	22.5 Lasthenia gracilis	22.5 Phacelia distans
23 Lycium cooperi	23 Bare Ground	23 Larrea tridentata	23 Bare Ground	23 Mentzelia veatchiana
23.5 Erodium cicutarium	23.5 Bromus madritensis	23.5 Erodium cicutarium	23.5 Bare Ground	23.5 Erodium cicutarium

24 Bare Ground	24 Bromus madritensis	24 Bromus madritensis	24 Larrea tridentana	24 Schismus barbatus
24.5 Pectocarya penicillata	24.5 Bromus madritensis	24.5 Mentzelia veatchiana	24.5 Larrea tridentana	24.5 Krascheninnikovia lanata
25 Pectocarya penicillata	25 Amsinkia tessellata	25 Amsinkia tessellata	25 Larrea tridentana	25 Erodium cicutarium
25.5 Ambrosia dumosa	25.5 Bromus madritensis	25.5 Mentzelia veatchiana	25.5 Bare Ground	25.5 Bare Ground
26 Bare Ground	26 Cryptantha circumscissa	26 Erodium cicutarium	26 Amsinkia tessellata	26 Bare Ground
26.5 Bare Ground	26.5 Erodium cicutarium	26.5 Erodium cicutarium	26.5 Amsinkia tessellata	26.5 Bare Ground
27 Bare Ground	27 Eriogonum fasciculatum	27 Lupinus microcarpus	27 Phacelia distans	27 Krascheninnikovia lanata
27.5 Pectocarya penicillata	27.5 Lupinus microcarpus	27.5 Bromus madritensis	27.5 Amsinkia tessellata	27.5 Krascheninnikovia lanata
28 Bare Ground	28 Ephedra nevadensis	28 Larrea tridentana	28 Amsinkia tessellata	28 Amsinkia tessellata
28.5 Ambrosia dumosa	28.5 Ephedra nevadensis	28.5 Larrea tridentana	28.5 Bromus madritensis	28.5 Amsinkia tessellata
29 Erodium cicutarium	29 Ephedra nevadensis	29 Larrea tridentana	29 Lasthenia gracilis	29 Gilia brecciarum
29.5 Erodium cicutarium	29.5 Ephedra nevadensis	29.5 Erodium cicutarium	29.5 Lasthenia gracilis	29.5 Erodium cicutarium
30 Ambrosia dumosa	30 Ephedra nevadensis	30 Bare Ground	30 Bare Ground	30 Erodium cicutarium
30.5 Bare Ground	30.5 Bare Ground	30.5 Erodium cicutarium	30.5 Phacelia distans	30.5 Erodium cicutarium
31 Erodium cicutarium	31 Mentzelia veatchiana	31 Eriastrum eremicum	31 Xylorhiza tortifolia	31 Ambrosia dumosa
31.5 Erodium cicutarium	31.5 Erodium cicutarium	31.5 Erodium cicutarium	31.5 Bare Ground	31.5 Chorizanthe brevicornu
32 Erodium cicutarium	32 Erodium cicutarium	32 Eriastrum eremicum	32 Lasthenia gracilis	32 Erodium cicutarium
32.5 Ambrosia dumosa	32.5 Bare Ground	32.5 Erodium cicutarium	32.5 Lasthenia gracilis	32.5 Erodium cicutarium
33 Bare Ground	33 Erodium cicutarium	33 Erodium cicutarium	33 Bare Ground	33 Larrea tridentana
33.5 Bare Ground	33.5 Erodium cicutarium	33.5 Larrea tridentana	33.5 Lasthenia gracilis	33.5 Larrea tridentana
34 Ephedra nevadensis	34 Phacelia distans	34 Larrea tridentana	34 Lasthenia gracilis	34 Erodium cicutarium
34.5 Bare Ground	34.5 Malacothrix coulteri	34.5 Larrea tridentana	34.5 Larrea tridentana	34.5 Schismus barbatus
35 Bare Ground	35 Larrea tridentana	35 Larrea tridentana	35 Larrea tridentana	35 Bromus madritensis
35.5 Erodium cicutarium	35.5 Larrea tridentana	35.5 Larrea tridentana	35.5 Larrea tridentana	35.5 Erodium cicutarium
36 Ephedra nevadensis	36 Larrea tridentana	36 Larrea tridentana	36 Krascheninnikovia lanata	36 Bare Ground
36.5 Eriogonum fasciculatum	36.5 Larrea tridentana	36.5 Schismus barbatus	36.5 Phacelia distans	36.5 Bare Ground
37 Mirabilis laevis	37 Bare Ground	37 Schismus barbatus	37 Bromus madritensis	37 Krascheninnikovia lanata
37.5 Bare Ground	37.5 Pectocarya penicillata	37.5 Phacelia distans	37.5 Bare Ground	37.5 Eriogonum inflatum
38 Echinocereus engelmannii	38 Bare Ground	38 Amsinkia tessellata	38 Bare Ground	38 Cryptantha circumscissa
38.5 Erodium cicutarium	38.5 Bare Ground	38.5 Amsinkia tessellata	38.5 Phacelia distans	38.5 Bare Ground
39 Erodium cicutarium	39 Bare Ground	39 Larrea tridentana	39 Lasthenia gracilis	39 Bare Ground
39.5 Eriogonum fasciculatum	39.5 Bare Ground	39.5 Larrea tridentana	39.5 Bare Ground	39.5 Bare Ground
40 Bare Ground	40 Eriogonum fasciculatum	40 Phacelia distans	40 Krascheninnikovia lanata	40 Eriogonum inflatum
40.5 Bare Ground	40.5 Eriogonum fasciculatum	40.5 Amsinkia tessellata	40.5 Xylorhiza tortifolia	40.5 Erodium cicutarium
41 Bare Ground	41 Bromus madritensis	41 Phacelia distans	41 Bare Ground	41 Chorizanthe brevicornu
41.5 Bare Ground	41.5 Ephedra nevadensis	41.5 Amsinkia tessellata	41.5 Cryptantha circumscissa	41.5 Bare Ground
42 Cryptantha circumscissa	42 Ephedra nevadensis	42 Erodium cicutarium	42 Xylorhiza tortifolia	42 Amsinkia tessellata
42.5 Bare Ground	42.5 Ephedra nevadensis	42.5 Erodium cicutarium	42.5 Ephedra nevadensis	42.5 Pectocarya penicillata
43 Bare Ground	43 Ephedra nevadensis	43 Bromus madritensis	43 Ephedra nevadensis	43 Bare Ground
43.5 Bare Ground	43.5 Pectocarya penicillata	43.5 Amsinkia tessellata	43.5 Ephedra nevadensis	43.5 Amsinkia tessellata
44 Schismus barbatus	44 Bromus madritensis	44 Mentzelia veatchiana	44 Lasthenia gracilis	44 Erodium cicutarium
44.5 Bare Ground	44.5 Bromus madritensis	44.5 Bromus madritensis	44.5 Krascheninnikovia lanata	44.5 Erodium cicutarium
45 Erodium cicutarium	45 Bare Ground	45 Bare Ground	45 Phacelia distans	45 Larrea tridentana
45.5 Amsinkia tessellata	45.5 Bromus madritensis	45.5 Bare Ground	45.5 Krascheninnikovia lanata	45.5 Larrea tridentana
46 Larrea tridentana	46 Bromus madritensis	46 Bare Ground	46 Krascheninnikovia lanata	46 Pectocarya penicillata
46.5 Larrea tridentana	46.5 Bare Ground	46.5 Erodium cicutarium	46.5 Lycium cooperi	46.5 Bare Ground
47 Larrea tridentana	47 Bare Ground	47 Bare Ground	47 Phacelia distans	47 Gilia latiflora
47.5 Bare Ground	47.5 Mentzelia veatchiana	47.5 Erodium cicutarium	47.5 Larrea tridentana	47.5 Erodium cicutarium
48 Erodium cicutarium	48 Ambrosia dumosa	48 Bare Ground	48 Larrea tridentana	48 Pectocarya penicillata
48.5 Schismus barbatus	48.5 Bare Ground	48.5 Erodium cicutarium	48.5 Larrea tridentana	48.5 Eriogonum inflatum
49 Erodium cicutarium	49 Bromus madritensis	49 Lupinus microcarpus	48.5 Lasthenia gracilis	49 Mentzelia veatchiana
49.5 Ferocactus cylindraceus	49.5 Erodium cicutarium	49.5 Lupinus microcarpus	49.5 Bare Ground	49.5 Yucca mojavnensis
50 Erodium cicutarium	50 Mentzelia veatchiana	50 Bromus madritensis	50 Cryptantha circumscissa	50 Cryptantha circumscissa

## **Appendix B      Site Photographs**

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



**Photograph 2:** From the northeast end of Transect 1 looking northeast.



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



**Photograph 4:** From the southwest end of Transect 1 looking southwest.



**Photograph 5:** From the northern end of Transect 2 looking south along the transect.



**Photograph 6:** From the northern end of Transect 2 looking north.



**Photograph 7:** From the southern end of Transect 2 looking north along the transect.



**Photograph 8:** From the southern end of Transect 2 looking south.



**Photograph 9:** From the southern end of Transect 3 looking north along the transect.



**Photograph 10:** From the southern end of Transect 3 looking south.



**Photograph 11:** From the northern end of Transect 3 looking south along the transect.



**Photograph 12:** From the northern end of Transect 3 looking north.



**Photograph 13:** From the northwestern end of Transect 4 looking southeast along the transect.



**Photograph 14:** From the northwestern end of Transect 4 looking northwest.



**Photograph 15:** From the southeastern end of Transect 4 looking northwest along the transect.



**Photograph 16:** From the southeastern end of Transect 4 looking southeast.



**Photograph 17:** From the southern end of Transect 5 looking north along the transect.



**Photograph 18:** From the southern end of Transect 5 looking south.



**Photograph 19:** From the northern end of Transect 5 looking south along the transect.



**Photograph 20:** From the northern end of Transect 5 looking north.



**Photograph 21:** From within the southeast corner of the project site looking south towards the southern boundary.



**Photograph 22:** From within the southwest corner of the project site looking southeast across the southern portion.



**Photograph 23:** From within the southwest corner of the project site looking northwest. The central disturbed area supporting existing mining activities is visible on the right; creosote bush scrub is visible on the left.



**Photograph 24:** From the middle portion of the project site looking west.



**Photograph 25:** From the middle portion of the project site looking southeast.



**Photograph 26:** From the middle portion of the project site looking northeast.



**Photograph 27:** From the middle portion of the project site looking north.



**Photograph 28:** From the middle portion of the project site looking west.



**Photograph 29:** From the northern portion of the project site looking south.



**Photograph 30:** From the northeast portion of the project site looking west. The peak of Black Mountain proper is visible in the center of the photo.



**Photograph 31:** From the northern eastern portion of the site looking southeast



**Photograph 32:** Looking east towards the active mining activities in the northeast corner of the project site.

## **Appendix C    Monitoring Forms**

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**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:

<b>Item</b>	<b>Location</b>	<b>No Action Needed</b>	<b>Repair Needed</b>	<b>Replacement Needed</b>

**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? \_\_\_\_\_



**Annual Monitoring Form**

**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
<b>TOTAL</b>		N/A	

**Riparian Vegetation**

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

% bare ground \_\_\_\_\_ % leaf litter \_\_\_\_\_ % rock \_\_\_\_\_

Additional comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_