APPENDIX D
BIOLOGICAL RESOURCES

U.S. Fish and Wildlife Service

Natural Resources of Concern

This resource list is to be used for planning purposes only — it is not an official species list.

Endangered Species Act species list information for your project is available online and listed below for the following FWS Field Offices:

CARLSBAD FISH AND WILDLIFE OFFICE
6010 HIDDEN VALLEY ROAD, SUITE 101
CARLSBAD, CA 92011
(760) 431-9440
http://www.fws.gov/carlsbad/

VENTURA FISH AND WILDLIFE OFFICE
2493 PORTOLA ROAD, SUITE B
VENTURA, CA 93003
(805) 644-1766

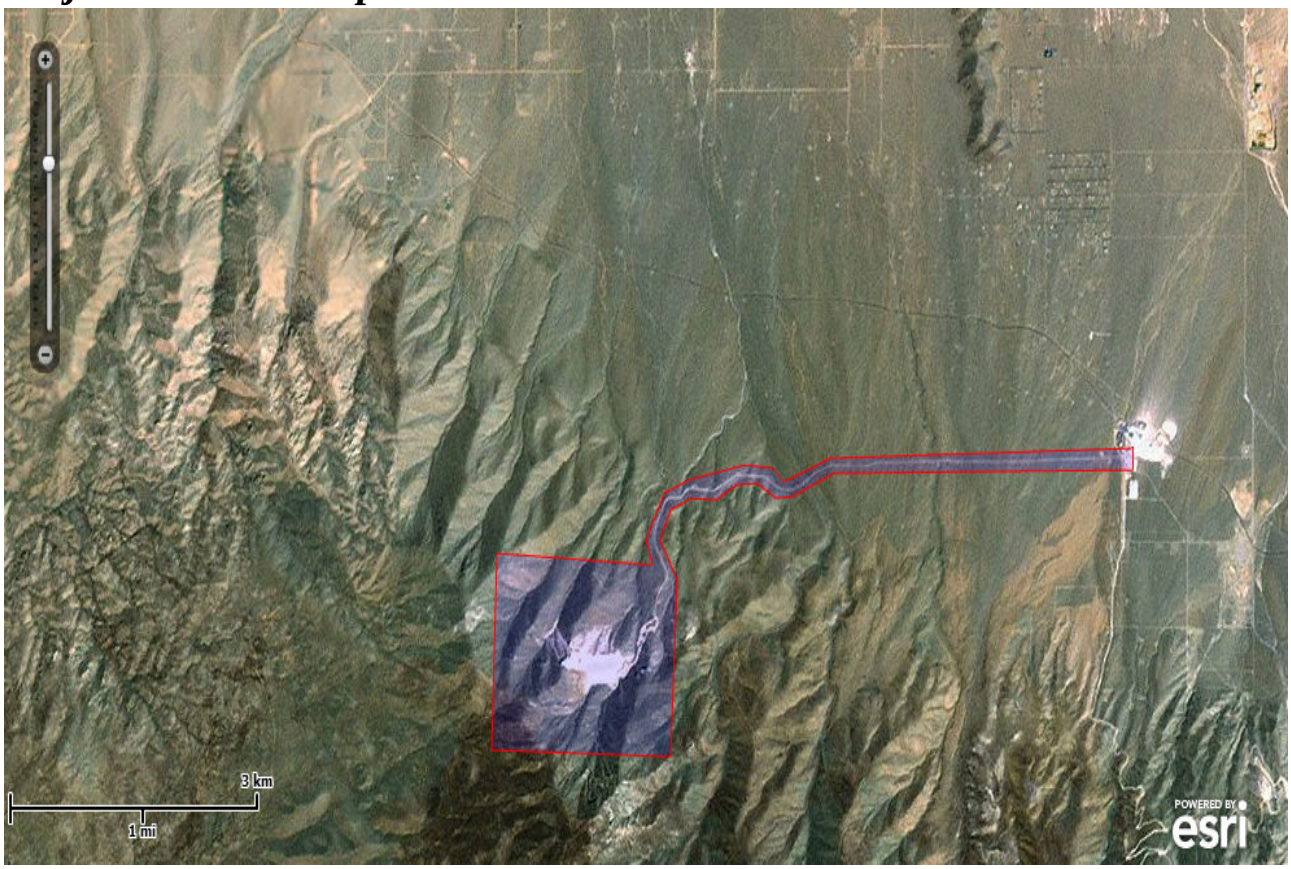
Project Name:

OMYA White Knob Mine

U.S. Fish and Wildlife Service

Natural Resources of Concern

Project Location Map:



Project Counties:

San Bernardino, CA

Geographic coordinates (Open Geospatial Consortium Well-Known Text, NAD83):

MULTIPOLYGON (((-116.943255 34.3824195, -116.943255 34.3804361, -116.9827372 34.3801528, -116.9882303 34.3781693, -116.9904619 34.3780276, -116.9928652 34.3793027, -116.9956118 34.379161, -116.9983583 34.3778859, -117.0016199 34.3780276, -117.0043751 34.3770359, -117.0057398 34.3744856, -117.0035168 34.3710851, -117.0043665 34.3560648, -117.0280643 34.3566316, -117.0273777 34.3733521, -117.0067783 34.3723603, -117.0076281 34.3744856, -117.0052334 34.3784527, -117.0019718 34.3795861, -116.9945904 34.3808611, -116.9908138 34.3805778, -116.9894405 34.3794444, -116.9875523 34.3800111, -116.9832607 34.3814278, -116.9434353 34.3822778, -116.943255 34.3824195)))

U.S. Fish and Wildlife Service

Natural Resources of Concern

Project Type:

Mining

Endangered Species Act Species List (USFWS Endangered Species Program).

There are a total of **10** threatened, endangered, or candidate species, and/or designated critical habitat on your species list. Species on this list are the species that may be affected by your project and could include species that exist in another geographic area. For example, certain fishes may appear on the species list because a project could cause downstream effects on the species. Please contact the designated FWS office if you have questions.

Species that may be affected by your project: (View all critical habitat on one map)

Amphibians	Status	Species Profile		Contact
arroyo toad (*Anaxyrus californicus*) Population: Entire	Endangered	species info		Carlsbad Fish And Wildlife Office
California red-legged frog (*Rana draytonii*) Population: Entire	Threatened	species info		Ventura Fish And Wildlife Office
Birds				
Least Bell's vireo (*Vireo bellii pusillus*) Population: Entire	Endangered	species info		Ventura Fish And Wildlife Office
Southwestern Willow flycatcher (*Empidonax traillii extimus*) Population: Entire	Endangered	species info		Ventura Fish And Wildlife Office, Carlsbad Fish And Wildlife Office
Flowering Plants				

Natural Resources of Concern

Bear Valley sandwort (*Arenaria ursina*)	Threatened	species info		Carlsbad Fish And Wildlife Office
Cushenbury buckwheat (*Eriogonum ovalifolium var. vineum*)	Endangered	species info		Ventura Fish And Wildlife Office, Carlsbad Fish And Wildlife Office
Cushenbury oxytheca (*Oxytheca parishii var. goodmaniana*)	Endangered	species info	Final designated critical habitat	Ventura Fish And Wildlife Office, Carlsbad Fish And Wildlife Office
Parish's daisy (*Erigeron parishii*)	Threatened	species info		Ventura Fish And Wildlife Office, Carlsbad Fish And Wildlife Office
Southern Mountain wild-buckwheat (*Eriogonum kennedyi var. austromontanum*)	Threatened	species info		Carlsbad Fish And Wildlife Office
Reptiles				

U.S. Fish and Wildlife Service

Natural Resources of Concern

Desert tortoise (*Gopherus agassizii*) Population: U.S.A., except in Sonoran Desert	Threatened	species info		Ventura Fish And Wildlife Office

FWS National Wildlife Refuges (USFWS National Wildlife Refuges Program).

There are no refuges found within the vicinity of your project.

FWS Migratory Birds (USFWS Migratory Bird Program).

Most species of birds, including eagles and other raptors, are protected under the Migratory Bird Treaty Act (16 U.S.C. 703). Bald eagles and golden eagles receive additional protection under the Bald and Golden Eagle Protection Act (16 U.S.C. 668). The Service's Birds of Conservation Concern (2008) report identifies species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become listed under the Endangered Species Act as amended (16 U.S.C 1531 et seq.).

NWI Wetlands (USFWS National Wetlands Inventory).

The U.S. Fish and Wildlife Service is the principal Federal agency that provides information on the extent and status of wetlands in the U.S., via the National Wetlands Inventory Program (NWI). In addition to impacts to wetlands within your immediate project area, wetlands outside of your project area may need to be considered in any evaluation of project impacts, due to the hydrologic nature of wetlands (for example, project activities may affect local hydrology within, and outside of, your immediate project area). It may be helpful to refer to the USFWS National Wetland Inventory website. The designated FWS office can also assist you. Impacts to wetlands and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes. Project Proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate U.S. Army Corps of Engineers District.

1mi					
Occurrence Count	**Scientific Name**	**Common Name**	**Federal Listing**	**State Listing**	**Rare Plant Rank**
3	Acanthoscyphus parishii var. goodmaniana	Cushenbury oxytheca	Endangered	None	1B.1
2	Astragalus lentiginosus var. sierrae	Big Bear Valley milk-vetch	None	None	1B.2
2	Boechera dispar	pinyon rockcress	None	None	2.3
3	Boechera shockleyi	Shockley's rockcress	None	None	2.2
2	Chaetodipus fallax pallidus	pallid San Diego pocket mouse	None	None	
1	Charina umbratica	southern rubber boa	None	Threatened	
1	Dudleya abramsii ssp. affinis	San Bernardino Mountains dudleya	None	None	1B.2
1	Erigeron parishii	Parish's daisy	Threatened	None	1B.1
3	Eriogonum ovalifolium var. vineum	Cushenbury buckwheat	Endangered	None	1B.1
1	Falco mexicanus	prairie falcon	None	None	
1	Heuchera parishii	Parish's alumroot	None	None	1B.3
1	Phlox dolichantha	Big Bear Valley phlox	None	None	1B.2
1	Saltugilia latimeri	Latimer's woodland-gilia	None	None	1B.2

5mi					
Occurrence Count	**Scientific Name**	**Common Name**	**Federal Listing**	**State Listing**	**Rare Plant Rank**
13	Acanthoscyphus parishii var. goodmaniana	Cushenbury oxytheca	Endangered	None	1B.1
1	Accipiter cooperii	Cooper's hawk	None	None	
2	Aquila chrysaetos	golden eagle	None	None	
7	Astragalus albens	Cushenbury milk-vetch	Endangered	None	1B.1
1	Astragalus bernardinus	San Bernardino milk-vetch	None	None	1B.2
12	Astragalus lentiginosus var. sierrae	Big Bear Valley milk-vetch	None	None	1B.2
10	Astragalus leucolobus	Big Bear Valley woollypod	None	None	1B.2
1	Astragalus tidestromii	Tidestrom's milk-vetch	None	None	2.2
4	Athene cunicularia	burrowing owl	None	None	

1	Atriplex parishii	Parish's brittlescale	None	None	1B.1
1	Berberis fremontii	Fremont barberry	None	None	3
3	Boechera dispar	pinyon rockcress	None	None	2.3
1	Boechera lincolnensis	Lincoln rockcress	None	None	2.3
9	Boechera parishii	Parish's rockcress	None	None	1B.2
19	Boechera shockleyi	Shockley's rockcress	None	None	2.2
4	Calochortus palmeri var. palmeri	Palmer's mariposa-lily	None	None	1B.2
2	Calochortus striatus	alkali mariposa-lily	None	None	1B.2
1	Canbya candida	white pygmy-poppy	None	None	4.2
1	Castilleja cinerea	ash-gray paintbrush	Threatened	None	1B.2
2	Castilleja lasiorhyncha	San Bernardino Mountains owl's-clover	None	None	1B.2
3	Chaetodipus fallax pallidus	pallid San Diego pocket mouse	None	None	
2	Charina umbratica	southern rubber boa	None	Threatened	
1	Corynorhinus townsendii	Townsend's big-eared bat	None	None	
2	Cymopterus multinervatus	purple-nerve cymopterus	None	None	2.2
1	Drymocallis cuneifolia var. cuneifolia	wedgeleaf woodbeauty	None	None	1B.1
1	Dryopteris filix-mas	male fern	None	None	2.3
12	Dudleya abramsii ssp. affinis	San Bernardino Mountains dudleya	None	None	1B.2
1	Elymus salina	Salina Pass wild-rye	None	None	2.3
1	Ensatina klauberi	large-blotched salamander	None	None	
3	Eremogone ursina	Big Bear Valley sandwort	Threatened	None	1B.2
10	Erigeron parishii	Parish's daisy	Threatened	None	1B.1
2	Eriogonum kennedyi var. austromontanum	southern mountain buckwheat	Threatened	None	1B.2
1	Eriogonum microthecum var. johnstonii	Johnston's buckwheat	None	None	1B.3

17	Eriogonum ovalifolium var. vineum	Cushenbury buckwheat	Endangered	None	1B.1
2	Falco mexicanus	prairie falcon	None	None	
7	Heuchera parishii	Parish's alumroot	None	None	1B.3
1	Hydroporus simplex	simple hydroporus diving beetle	None	None	
1	Icteria virens	yellow-breasted chat	None	None	
3	Ivesia argyrocoma var. argyrocoma	silver-haired ivesia	None	None	1B.2
1	Lampropeltis zonata (parvirubra)	California mountain kingsnake (San Bernardino population)	None	None	
1	Lasionycteris noctivagans	silver-haired bat	None	None	
2	Lilium parryi	lemon lily	None	None	1B.2
1	Mimulus exiguus	San Bernardino Mountains monkeyflower	None	None	1B.2
1	Mimulus purpureus	little purple monkeyflower	None	None	1B.2
1	Myotis evotis	long-eared myotis	None	None	
1	Myotis volans	long-legged myotis	None	None	
1	Navarretia peninsularis	Baja navarretia	None	None	1B.2
7	Packera bernardina	San Bernardino ragwort	None	None	1B.2
1	Pebble Plains	Pebble Plains	None	None	
1	Perideridia parishii ssp. parishii	Parish's yampah	None	None	2.2
6	Phlox dolichantha	Big Bear Valley phlox	None	None	1B.2
1	Piranga rubra	summer tanager	None	None	
1	Plagiobothrys parishii	Parish's popcornflower	None	None	1B.1
1	Psychomastax deserticola	desert monkey grasshopper	None	None	
1	Saltugilia latimeri	Latimer's woodland-gilia	None	None	1B.2
1	Sidalcea hickmanii ssp. parishii	Parish's checkerbloom	None	Rare	1B.2
1	Sidalcea neomexicana	Salt Spring checkerbloom	None	None	2.2
1	Streptanthus bernardinus	Laguna Mountains jewel-flower	None	None	4.3

1	Symphyotrichum defoliatum	San Bernardino aster	None	None	1B.2
1	Taraxacum californicum	California dandelion	Endangered	None	1B.1
1	Thamnophis hammondii	two-striped garter snake	None	None	
8	Toxostoma lecontei	Le Conte's thrasher	None	None	
2	Xerospermophilus mohavensis	Mohave ground squirrel	None	Threatened	

10mi					
Occurrence Count	**Scientific Name**	**Common Name**	**Federal Listing**	**State Listing**	**Rare Plant Rank**
25	Acanthoscyphus parishii var. goodmaniana	Cushenbury oxytheca	Endangered	None	1B.1
1	Accipiter cooperii	Cooper's hawk	None	None	
3	Anaxyrus californicus	arroyo toad	Endangered	None	
13	Aquila chrysaetos	golden eagle	None	None	
18	Astragalus albens	Cushenbury milk-vetch	Endangered	None	1B.1
6	Astragalus bernardinus	San Bernardino milk-vetch	None	None	1B.2
21	Astragalus lentiginosus var. sierrae	Big Bear Valley milk-vetch	None	None	1B.2
38	Astragalus leucolobus	Big Bear Valley woollypod	None	None	1B.2
2	Astragalus tidestromii	Tidestrom's milk-vetch	None	None	2.2
4	Athene cunicularia	burrowing owl	None	None	
1	Atriplex parishii	Parish's brittlescale	None	None	1B.1
1	Berberis fremontii	Fremont barberry	None	None	3
7	Boechera dispar	pinyon rockcress	None	None	2.3
1	Boechera lincolnensis	Lincoln rockcress	None	None	2.3
25	Boechera parishii	Parish's rockcress	None	None	1B.2
29	Boechera shockleyi	Shockley's rockcress	None	None	2.2
1	Botrychium crenulatum	scalloped moonwort	None	None	2.2
21	Calochortus palmeri var. palmeri	Palmer's mariposa-lily	None	None	1B.2
4	Calochortus striatus	alkali mariposa-lily	None	None	1B.2

2	Calyptridium pygmaeum	pygmy pussypaws	None	None	1B.2
1	Canbya candida	white pygmy-poppy	None	None	4.2
26	Castilleja cinerea	ash-gray paintbrush	Threatened	None	1B.2
29	Castilleja lasiorhyncha	San Bernardino Mountains owl's-clover	None	None	1B.2
4	Chaetodipus fallax pallidus	pallid San Diego pocket mouse	None	None	
1	Charina trivirgata	rosy boa	None	None	
33	Charina umbratica	southern rubber boa	None	Threatened	
1	Claytonia lanceolata var. peirsonii	Peirson's spring beauty	None	None	3.1
2	Corynorhinus townsendii	Townsend's big-eared bat	None	None	
3	Cymopterus multinervatus	purple-nerve cymopterus	None	None	2.2
3	Drymocallis cuneifolia var. cuneifolia	wedgeleaf woodbeauty	None	None	1B.1
1	Dryopteris filix-mas	male fern	None	None	2.3
32	Dudleya abramsii ssp. affinis	San Bernardino Mountains dudleya	None	None	1B.2
1	Elymus salina	Salina Pass wild-rye	None	None	2.3
1	Empidonax traillii extimus	southwestern willow flycatcher	Endangered	Endangered	
2	Ensatina klauberi	large-blotched salamander	None	None	
21	Eremogone ursina	Big Bear Valley sandwort	Threatened	None	1B.2
19	Erigeron parishii	Parish's daisy	Threatened	None	1B.1
4	Eriogonum evanidum	vanishing wild buckwheat	None	None	1B.1
20	Eriogonum kennedyi var. austromontanum	southern mountain buckwheat	Threatened	None	1B.2
2	Eriogonum microthecum var. johnstonii	Johnston's buckwheat	None	None	1B.3
1	Eriogonum microthecum var. lacus-ursi	Bear Lake buckwheat	None	None	1B.1
26	Eriogonum ovalifolium var. vineum	Cushenbury buckwheat	Endangered	None	1B.1
1	Euchloe hyantis andrewsi	Andrew's marble butterfly	None	None	

1	Eumops perotis californicus	western mastiff bat	None	None	
3	Falco mexicanus	prairie falcon	None	None	
1	Gila orcuttii	arroyo chub	None	None	
1	Gilia leptantha ssp. leptantha	San Bernardino gilia	None	None	1B.3
3	Glaucomys sabrinus californicus	San Bernardino flying squirrel	None	None	
3	Gopherus agassizii	desert tortoise	Threatened	Threatened	
2	Haliaeetus leucocephalus	bald eagle	Delisted	Endangered	
15	Heuchera parishii	Parish's alumroot	None	None	1B.3
1	Hydroporus simplex	simple hydroporus diving beetle	None	None	
1	Icteria virens	yellow-breasted chat	None	None	
22	Ivesia argyrocoma var. argyrocoma	silver-haired ivesia	None	None	1B.2
1	Lampropeltis zonata (parvirubra)	California mountain kingsnake (San Bernardino population)	None	None	
1	Lasionycteris noctivagans	silver-haired bat	None	None	
9	Lewisia brachycalyx	short-sepaled lewisia	None	None	2.2
30	Lilium parryi	lemon lily	None	None	1B.2
6	Linanthus killipii	Baldwin Lake linanthus	None	None	1B.2
15	Mimulus exiguus	San Bernardino Mountains monkeyflower	None	None	1B.2
19	Mimulus purpureus	little purple monkeyflower	None	None	1B.2
2	Myotis evotis	long-eared myotis	None	None	
1	Myotis thysanodes	fringed myotis	None	None	
1	Myotis volans	long-legged myotis	None	None	
1	Myotis yumanensis	Yuma myotis	None	None	
13	Navarretia peninsularis	Baja navarretia	None	None	1B.2
7	Neotamias speciosus speciosus	lodgepole chipmunk	None	None	
25	Packera bernardina	San Bernardino ragwort	None	None	1B.2

18	Pebble Plains	Pebble Plains	None	None	
20	Perideridia parishii ssp. parishii	Parish's yampah	None	None	2.2
1	Phacelia parishii	Parish's phacelia	None	None	1B.1
24	Phlox dolichantha	Big Bear Valley phlox	None	None	1B.2
3	Phrynosoma blainvillii	coast horned lizard	None	None	
4	Physaria kingii ssp. bernardina	San Bernardino Mountains bladderpod	Endangered	None	1B.1
1	Piranga rubra	summer tanager	None	None	
1	Plagiobothrys parishii	Parish's popcornflower	None	None	1B.1
10	Poa atropurpurea	San Bernardino blue grass	Endangered	None	1B.2
1	Poliomintha incana	frosted mint	None	None	1A
1	Polygala intermontana	intermountain milkwort	None	None	2.3
2	Psychomastax deserticola	desert monkey grasshopper	None	None	
1	Puccinellia parishii	Parish's alkali grass	None	None	1B.1
13	Pyrrocoma uniflora var. gossypina	Bear Valley pyrrocoma	None	None	1B.2
6	Rana muscosa	Sierra Madre yellow-legged frog	Endangered	Candidate Endangered	
3	Saltugilia latimeri	Latimer's woodland-gilia	None	None	1B.2
1	Sidalcea hickmanii ssp. parishii	Parish's checkerbloom	None	Rare	1B.2
3	Sidalcea malviflora ssp. dolosa	Bear Valley checkerbloom	None	None	1B.2
1	Sidalcea neomexicana	Salt Spring checkerbloom	None	None	2.2
18	Sidalcea pedata	bird-foot checkerbloom	Endangered	Endangered	1B.1
1	Siphateles bicolor mohavensis	Mohave tui chub	Endangered	Endangered	
6	Streptanthus bernardinus	Laguna Mountains jewel-flower	None	None	4.3
4	Streptanthus campestris	southern jewel-flower	None	None	1B.3
2	Symphyotrichum defoliatum	San Bernardino aster	None	None	1B.2
18	Taraxacum californicum	California dandelion	Endangered	None	1B.1
1	Thamnophis hammondii	two-striped garter snake	None	None	
7	Thelypodium stenopetalum	slender-petaled thelypodium	Endangered	Endangered	1B.1

19	Toxostoma lecontei	Le Conte's thrasher	None	None	
3	Xerospermophilus mohavensis	Mohave ground squirrel	None	Threatened	

Scientific Name	Common Name	Rare Plant Rank	CESA	FESA	Elevation High (meters)	Elevation Low (meters)
Abronia nana var. covillei	Coville's dwarf abronia	4.2	None	None	3100	1524
Acanthoscyphus parishii var. goodmaniana	Cushenbury oxytheca	1B.1	None	FE	2377	1219
Acanthoscyphus parishii var. parishii	Parish's oxytheca	4.2	None	None	2600	1220
Allium parishii	Parish's onion	4.3	None	None	1465	900
Androsace elongata ssp. acuta	California androsace	4.2	None	None	1200	150
Astragalus albens	Cushenbury milk-vetch	1B.1	None	FE	2000	1095
Astragalus bicristatus	crested milk-vetch	4.3	None	None	2745	1700
Astragalus lentiginosus var. sierrae	Big Bear Valley milk-vetch	1B.2	None	None	2600	1800
Astragalus leucolobus	Big Bear Valley woollypod	1B.2	None	None	2885	1750
Boechera dispar	pinyon rockcress	2B.3	None	None	2540	1200
Boechera parishii	Parish's rockcress	1B.2	None	None	2990	1770
Boechera shockleyi	Shockley's rockcress	2B.2	None	None	2310	875
Calochortus palmeri var. palmeri	Palmer's mariposa lily	1B.2	None	None	2390	1000
Calochortus plummerae	Plummer's mariposa lily	4.2	None	None	1700	100
Calochortus striatus	alkali mariposa lily	1B.2	None	None	1595	70
Canbya candida	white pygmy-poppy	4.2	None	None	1460	600
Castilleja cinerea	ash-gray paintbrush	1B.2	None	FT	2960	1800
Castilleja lasiorhyncha	San Bernardino Mountains owl's-clover	1B.2	None	None	2390	1300
Castilleja montigena	Heckard's paintbrush	4.3	None	None	2800	1950
Castilleja plagiotoma	Mojave paintbrush	4.3	None	None	2500	300
Claytonia lanceolata var. peirsonii	Peirson's spring beauty	3.1	None	None	2745	2135
Cymopterus multinervatus	purple-nerve cymopterus	2B.2	None	None	1800	790
Drymocallis cuneifolia var. cuneifolia	wedgeleaf woodbeauty	1B.1	None	None	2215	1800
Dryopteris filix-mas	male fern	2B.3	None	None	3100	2400
Dudleya abramsii ssp. affinis	San Bernardino Mountains dudleya	1B.2	None	None	2600	1250
Elymus salina	Salina Pass wild-rye	2B.3	None	None	2135	1350
Eremogone ursina	Big Bear Valley sandwort	1B.2	None	FT	2900	1800
Erigeron parishii	Parish's daisy	1B.1	None	FT	2000	800
Eriogonum evanidum	vanishing wild buckwheat	1B.1	None	None	2225	1100
Eriogonum kennedyi var. austromontanum	southern mountain buckwheat	1B.2	None	FT	2890	1770
Eriogonum microthecum var. johnstonii	Johnston's buckwheat	1B.3	None	None	2926	1829
Eriogonum ovalifolium var. vineum	Cushenbury buckwheat	1B.1	None	FE	2440	1400

Scientific Name	Common Name	Rare Plant Rank	CESA	FESA	Elevation High (meters)	Elevation Low (meters)
Eriogonum umbellatum var. minus	alpine sulfur-flowered buckwheat	4.3	None	None	3068	1800
Frasera neglecta	pine green-gentian	4.3	None	None	2500	1400
Frasera neglecta	pine green-gentian	4.3	None	None	2500	1400
Heuchera parishii	Parish's alumroot	1B.3	None	None	3800	1500
Hulsea vestita ssp. parryi	Parry's sunflower	4.3	None	None	2895	1370
Ivesia argyrocoma var. argyrocoma	silver-haired ivesia	1B.2	None	None	2960	1463
Lewisia brachycalyx	short-sepaled lewisia	2B.2	None	None	2300	1370
Lilium parryi	lemon lily	1B.2	None	None	2745	1220
Mimulus exiguus	San Bernardino Mountains monkeyflower	1B.2	None	None	2315	1800
Mimulus johnstonii	Johnston's monkeyflower	4.3	None	None	2920	975
Mimulus mohavensis	Mojave monkeyflower	1B.2	None	None	1200	600
Mimulus purpureus	little purple monkeyflower	1B.2	None	None	2300	1900
Myosurus minimus ssp. apus	little mousetail	3.1	None	None	640	20
Navarretia peninsularis	Baja navarretia	1B.2	None	None	2300	1500
Packera bernardina	San Bernardino ragwort	1B.2	None	None	2300	1800
Packera ionophylla	Tehachapi ragwort	4.3	None	None	2700	1500
Perideridia parishii ssp. parishii	Parish's yampah	2B.2	None	None	3000	1465
Phacelia exilis	Transverse Range phacelia	4.3	None	None	2700	1100
Phacelia mohavensis	Mojave phacelia	4.3	None	None	2500	1400
Phacelia parishii	Parish's phacelia	1B.1	None	None	1200	540
Phlox dolichantha	Big Bear Valley phlox	1B.2	None	None	2970	1830
Physaria kingii ssp. bernardina	San Bernardino Mountains bladderpod	1B.1	None	FE	2700	1850
Pickeringia montana var. tomentosa	woolly chaparral-pea	4.3	None	None	1700	0
Plagiobothrys parishii	Parish's popcorn-flower	1B.1	None	None	1400	750
Poa atropurpurea	San Bernardino blue grass	1B.2	None	FE	2455	1360
Puccinellia parishii	Parish's alkali grass	1B.1	None	None	1000	700
Pyrrocoma uniflora var. gossypina	Bear Valley pyrrocoma	1B.2	None	None	2300	1600
Rupertia rigida	Parish's rupertia	4.3	None	None	2500	700
Saltugilia latimeri	Latimer's woodland-gilia	1B.2	None	None	1900	400
Sedum niveum	Davidson's stonecrop	4.2	None	None	3000	2075
Sidalcea hickmanii ssp. parishii	Parish's checkerbloom	1B.2	CR	None	2499	1000
Sidalcea malviflora ssp. dolosa	Bear Valley checkerbloom	1B.2	None	None	2685	1495

Scientific Name	Common Name	Rare Plant Rank	CESA	FESA	Elevation High (meters)	Elevation Low (meters)
Sidalcea neomexicana	salt spring checkerbloom	2B.2	None	None	1530	15
Sidalcea pedata	bird-foot checkerbloom	1B.1	CE	FE	2500	1600
Streptanthus bernardinus	Laguna Mountains jewel-flower	4.3	None	None	2500	670
Streptanthus campestris	southern jewel-flower	1B.3	None	None	2300	900
Syntrichopappus lemmonii	Lemmon's syntrichopappus	4.3	None	None	1830	500
Taraxacum californicum	California dandelion	1B.1	None	FE	2800	1620
Thelypodium stenopetalum	slender-petaled thelypodium	1B.1	CE	FE	2500	1600

Jurisdictional Delineation of Wetlands/Waters Subject to Regulatory Authority
White Knob - White Ridge Quarry
Lucerne Valley, California

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DRAFT

October 2013

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF PHOTOGRAPHS

APPENDICES

1.0 INTRODUCTION

Tetra Tech, Inc. was contracted by Omya, CA to conduct a jurisdictional wetland/ waters of the U.S. and waters of the State delineation for unnamed drainages associated with a 302-acre survey area associated with the White Knob quarry in Lucerne Valley, San Bernardino County, California (Figure 1). The survey area includes areas currently being quarried and portions of the site that are undisturbed but are part of a proposed quarry expansion. The project site includes the existing mine features and all areas around the mine that would be affected by the proposed expansion, including for areas used for staging or access. The purpose of the delineation was to determine the limits of waters subject to regulatory authority under Section 404 and 401 of the Clean Water Act and those regulated under California Department of Fish and Wildlife Code 1600 et seq. for any potential waters subject to state regulatory authority found within areas that are part of the proposed quarry expansion.

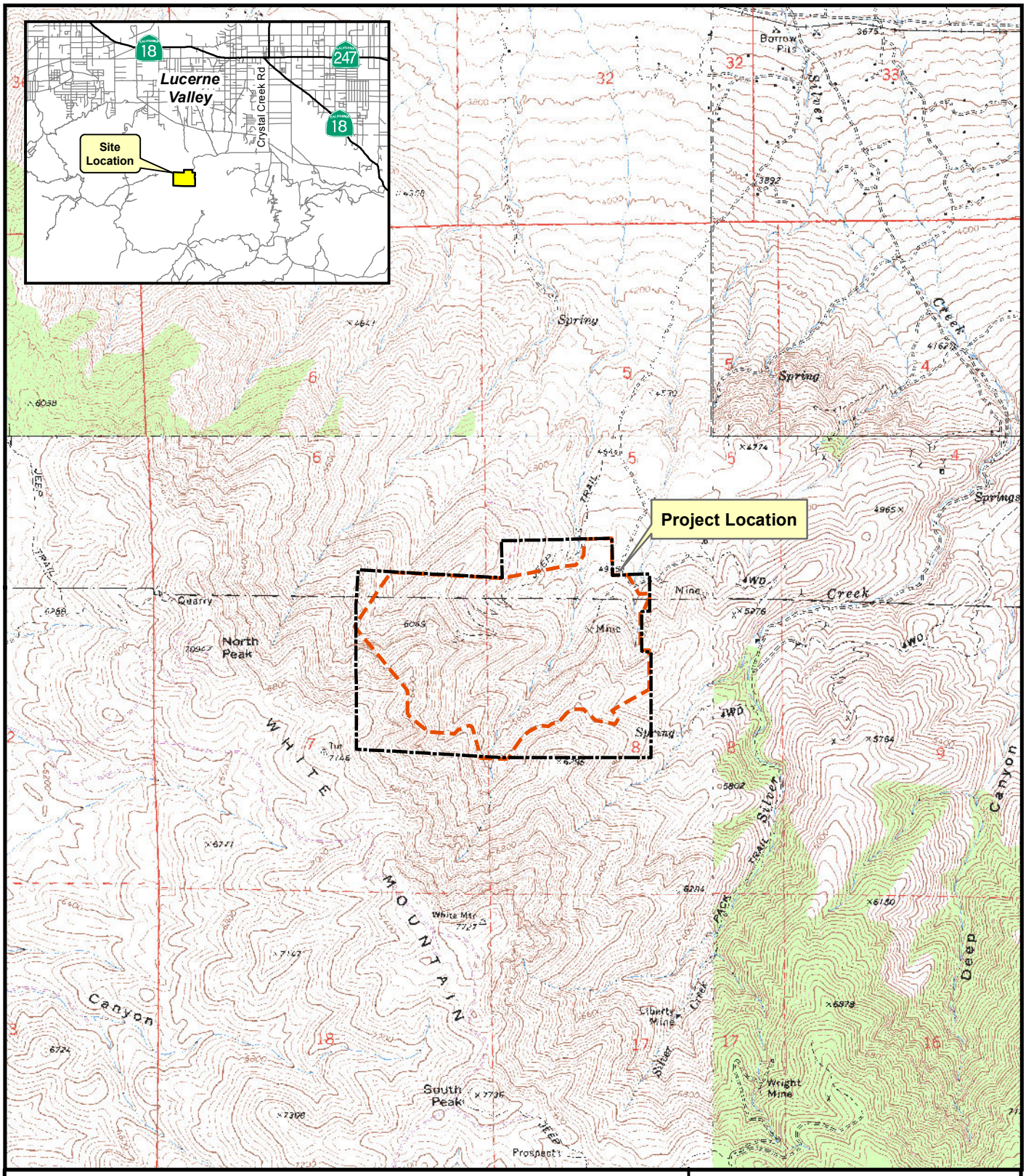
2.0 PROJECT LOCATION

The survey area, located in Lucerne Valley, California, in San Bernardino County, is an active limestone quarry. The area surveyed for jurisdictional waters is located in Sections 5, 6, 7 and 8, T3N, R1W, San Bernardino Baseline and Meridian (SBBM) of the Butler Peak 7.5-minute quadrangle (United States Geologic Survey 1988). The project site is located approximately 20 miles southeast of Victorville, California and eight air miles north of Big Bear, California. The quarry is located on the north-facing slopes of the San Bernardino Mountains and the topographic gradient at the site and regionally is from the south to the north. The area is surrounded by open undeveloped native habitat.

3.0 ENVIRONMENTAL SETTING

Plant communities within the portions of the quarry not being mined are characteristically chaparral communities of evergreen, drought-resistant sclerophyllous shrubs. The topography at the site is steep and drainages are deeply incised. Soils are undeveloped and sandy in texture with a lithic (bedrock) contact typically at a shallow depth. The survey was conducted during the fall of 2013, at a time of the year when evidence of annual herbaceous plants would unlikely be observed. Despite the timing of the survey, evidence of annual plants in the form of dried leaves and flowers were still present at within the survey area. The area in which the proposed project site is located is characterized by steep, dry ephemeral washes that generally contain water only during storm events. The climate at the site is arid, consisting of hot, dry summers and cool winters.

P:\GIS\White Knob_White Ridge\Fig 1 White Knob Topo .mxd



LEGEND

- Limits of Planned Disturbance
- Proposed White Knob - White Ridge Quarry Boundary

N

0 0.25 0.5 Miles

USGS 7.5' topographic quadrangle, Bulter Peak, CA. 1988

WHITE KNOB - WHITE RIDGE

Figure 1

Site Location Map

TETRA TECH

4.0 REGULATORY SETTING

4.1 FEDERAL REGULATORY SETTING

The U.S. Army Corps of Engineers (ACOE) regulates discharges of dredged or fill material into waters of the United States. These waters, or waters of the U.S., include wetlands and non-wetland bodies of water that meet specific criteria. U.S. Army Corps of Engineers regulatory jurisdiction pursuant to Section 404 of the Clean Water Act is founded on a connection or nexus between the water body in question and interstate commerce. This connection may be direct; through a tributary system linking a stream channel with traditional navigable waters used in interstate or foreign commerce, or may be indirect, through a nexus identified in the Corps regulations. The following definition of waters of the U.S. is taken from the discussion provided in 33 CFR 328.3.

"The terms waters of the U.S. means:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- All interstate waters including interstate wetlands;
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes or natural ponds, the use; degradation or destruction of which could affect interstate or foreign commerce including any such waters 1) which are or could be used by interstate or foreign travelers for recreational or other purposes; 2) from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or 3) which are used or could be used for industrial purpose by industries in interstate commerce;
- All impoundments of waters otherwise defined as waters of the United States under the definition; and
- Tributaries of waters defined in earlier under the definition of waters found in this section."

Wetlands are a subset of special aquatic sites that support water-dependent vegetation, have wet soils, and possess wetland hydrology (frequent or prolonged flooding). Wetlands support a diverse assemblage of plant and wildlife species, and are important for migrating birds.

The ACOE define wetlands as follows: "Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions."

In order to be considered a jurisdictional wetland under Section 404, an area must possess three wetland characteristics: hydrophytic vegetation, hydric soils, and wetland hydrology. Each characteristic has a specific set of mandatory wetland criteria that must be satisfied in order for that particular wetland

characteristic to be met (Environmental Laboratory 1987; United States Army Corps of Engineers 2008). Several parameters may be analyzed to determine whether the criteria are satisfied.

The determination of waters of the U.S. associated with intermittent streams and washes in the arid southwest is made difficult by long periods of low to no water flow through these bodies. In recognition of these environments where field determination of jurisdictional waters is difficult, technical guidance on how to determine waters of the U.S. based on physical characteristics associated with dryland fluvial systems has been provided by the ACOE (United States Army Corps of Engineers 2008). With non-tidal waters, in the absence of adjacent wetlands, the extent of ACOE jurisdiction is defined by the "ordinary high water mark" (OHWM). This is defined in 33 CFR Part 329.1, as the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line on the bank; shelving; changes in the character of the soil; destruction of terrestrial vegetation; and presence of litter and debris (U.S Army Corps of Engineers 2008). In dryland fluvial systems typical of the semi-arid southwest, some of the more common physical characteristics that indicate the OHWM of an intermittent channel include a clear natural scour line impressed on the bank, recent bank erosion, destruction of native terrestrial vegetation and the presence of litter and debris.

In 2006, the Supreme Court addressed the jurisdictional scope of Section 404 of the Clean Water Act, specifically the term "the waters of the U.S.," in *Rapanos v. U.S.* and in *Carabell v. U.S*. Referred to as the Rapanos decision. The Supreme Court provided two new analytical standards for determining whether water bodies that are not Traditional Navigable Waters (TNWs), including wetland adjacent to those non-traditional navigable waters, are subject to the Clean Water Act. Water bodies are subject to Clean Water Act jurisdiction if 1) the water body is relatively permanent, or if the water body is a wetland that directly abuts (e.g., the wetland is not separated from the tributary by uplands, a berm, dike, or similar feature) a relatively permanent water body; or 2) if a water body, in combination with all wetlands adjacent to that water body, has a significant nexus with TNWs. Traditionally Navigable Waters include but are not limited to the "navigable waters of the United States". These waters are subject to the ebb and flow of the tide and/or the water body is presently used, or has been used in the past, or may be susceptible for use (with or without reasonable improvements) to transport interstate or foreign commerce. Relatively Permanent Waters that are tributaries to Traditional Navigable Waters are also subject to regulatory authority by the ACOE.

4.2 STATE OF CALIFORNIA REGULATORY SETTING

Under California State law, "waters of the state" means "any surface or groundwater including saline waters, within boundaries of the state". After the US Supreme Court decision in *Solid Waste Agency of*

Northern Cook County v. Army Corps of Engineers (SWANNC v. USCOE), the State Water Resources Control Board (SWRCB) confirmed the State's jurisdiction over isolated wetlands. The SWRCB has confirmed that under Section 401 of the Clean Water Act and the California Porter-Cologne Water Quality Control Act, discharges to wetlands and other "waters of the state" (including isolated wetlands) are subject to State regulations. The Regional Water Quality Control Board (RWQCB)-Colorado River Basin Region regulates discharge to wetlands and "waters of the state" found in the project area.

The Porter-Cologne Water Quality Control Act (Act), Water Code §13000 et seq. provides for overall regulation under state law of water quality involving waters of the State of California. This relates to both groundwater and surface water. The Act provides for specific regulations under federal law of discharge of pollutants to surface waters of the state. Dredging, filling or excavation of isolated waters constitutes a discharge of waste to waters of the state. The RWQCB claims jurisdiction over isolated wetlands that meet the Federal definition three-parameter definition of a wetland. For projects that would dredge, fill or excavate isolate waters, the project proponent would need to seek a waste discharge requirement (WDR) permit from the RWQCB

Pursuant to Division 2, Chapter 6, Sections 1600-1603 of the California Fish and Wildlife (CDFW) Code, the CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream or lake, which support fish or wildlife (i.e., bed to bank). The CDFW defines a "stream" (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." In their definition of "lake", the CDFW also includes "natural lakes or man-made reservoirs." The CDFW has interpreted the term "streambed" to encompass all portions of the bed, banks, and channel of any stream, including intermittent and ephemeral streams, extending laterally to the upland edge of riparian vegetation. Fish and Wildlife code does not specifically contain provisions regulating activities that would impact wetlands, isolate areas containing riparian vegetation or wetland hydrology.

5.0 WETLAND AND WATERS OF THE U.S./WATERS OF THE STATE DELINEATION AND DETERMINATION

5.1 METHODS

Prior to mobilizing into the field, Tetra Tech conducted a review of any potential drainage features within the region and the proposed project site using recent aerial topography, USGS 7.5-minute quadrangle maps and recent satellite aerial photographs. Field investigations were conducted by Tetra Tech biologists on September 23, 24, and 25, 2013, to identify the presence of waters subject to regulatory

authority. The focus of the field survey was to identify a definable channel bed and bank, determine the OHWM, and to determine if riparian vegetation extended above the OHWM in any locations. Indicators of OHWM included undercut banks on corners, scour pits on the downstream sides of rocks or other in-stream obstacles, sandy berms indicating meandering, sorted sediment deposits, drift lines, and matted vegetation on the upstream side of plants. Indicators of wildlife use and the presence of habitat for sensitive plant and animal species were also noted. The researchers walked each drainage or tributary and measured the width and length of those where OHWM indicators were identified, or where riparian habitat extended above the OHWM. The drainages were mapped using a Trimble GPS device with sub-meter accuracy. Drainage widths were measured on a regular basis. Aerial photographs were used to track the jurisdictional channels identified, and photographs were taken at each of the washes where indicators of OHWM or riparian habitat were identified.

Data sources reviewed in conjunction with the field survey included aerial photographs, US Geological Survey topographic maps, and the available soils information. The National Wetland Inventory (NWI) has not mapped wetlands within the quarry property boundaries (U.S. Fish and Wildlife Service 2013). Topographic maps and aerial photos were used to identify drainage patterns and washes through the project site. The *Review of Ordinary High Water Mark Indicators for Delineating Arid Streams in the Southwestern United States* (U.S. Army Corps of Engineers 2008) was used as guidance for identifying and determining limits of ACOE and CDFW jurisdiction. This report discusses the use of fluvial geomorphology, physical features that develop within arid stream channels as a result of precipitation events, and vegetation to determine the OHWM and limits of waters of the state within channels located in arid climates.

The use of vegetation patterns assists in identifying the OHWM in the arid southwest due to the close association between riparian vegetation and stream hydrology (U.S. Army Corps of Engineers 2008). Therefore, the presence of riparian species can be used to indicate that a wash would receive more frequent flows associated with smaller storm events and to more accurately determine the extent of waters subject to regulatory authority. Arid region riparian vegetation community species compositions can provide information about historic and present hydrological flow regimes. Certain vegetation communities and species are reliable vegetative indicators of surface flows and flow regimes in desert streams and washes.

The riparian vegetation classes in an arid environment can be defined into the following three wetness classes:

- Hydroriparian areas that are perennially saturated;
- Mesoriparian areas that are seasonally moist; and
- Xeroriparian areas that are predominantly dry, with infrequent flood events (U.S. Army Corps of Engineers 2008).

The dominant wetness class located at or above the OHWM was identified for the drainage in the study area. In addition to signs of OHWM, soil core samples to a depth of 12-inches below grade were taken at specified locations to document soil texture, color, and moisture. No soil pits were dug. Any hydric conditions such reduced color or mottles were noted. Field conditions for the sampling points within the drainages were documented on Wetland Delineation forms (Appendix A). Finally, the origin and terminus of the on-site drainage features were documented. A complete compendium of plants observed during the survey can be found in Appendix B.

5.2 RESULTS

Based on a review of aerial images and field verification, drainages located within the limits of planned disturbance were found to have field characteristics supporting a determination of jurisdictional waters of the state. As discussed later, field findings support that jurisdictional waters found within the planned disturbance area are likely isolated and may not be subject to oversight by the ACOE as waters of the U.S. Photographs 1 through 11 depict conditions for the surveyed jurisdictional drainages. One drainage located in the southeastern portion of the quarry property was determined to not have characteristics to support a determination of a jurisdictional water (Photograph 12). The location and orientation of these photos are indicated on Figure 2. Those drainages within the limits of planned disturbance for the quarry that were observed to have stream flow characteristics with definable bed-and-bank features are noted on Figure 2.

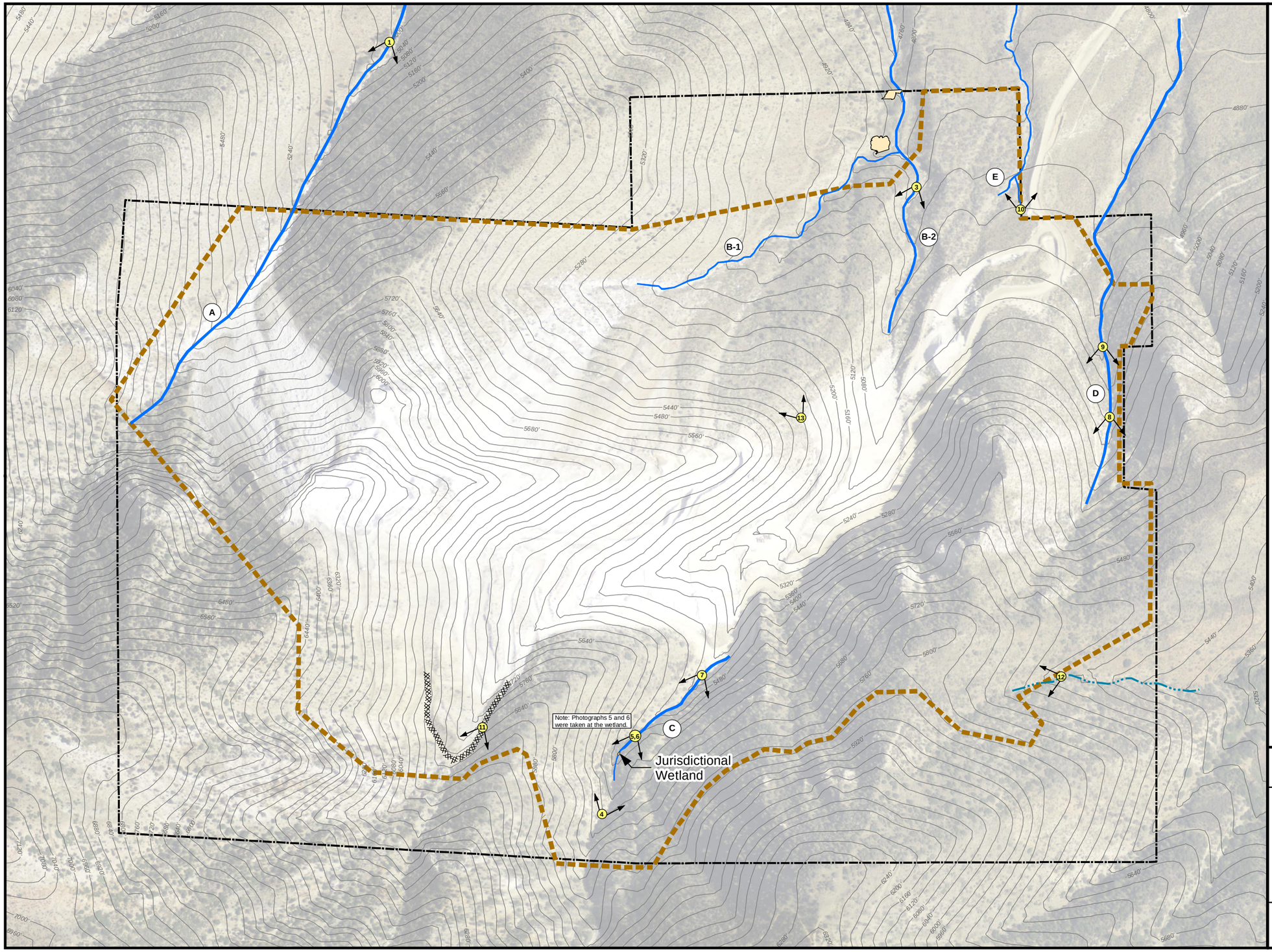
5.2.1 Vegetation

At lower altitudes within the mining property, California juniper plant series dominates the landscape. Joshua trees (*Yucca brevifolia*), singleleaf pinyon (*Pinus monophylla*) and California juniper (*Juniperus californicus*) are the dominate plants found within this series that were noted at the site (Sawyer and Keeler-Wolf 1995). Within the middle portions of the site, undisturbed areas are characterized by the Brittlebush series. Acton's encelia (*Encelia actoni*), big sagebrush (*Artemisia tridentata*) and California buckwheat (*Eriogonum fasciculatum*) as well as other buckwheats are the dominate plants within this series that were found at the site. Finally, the upper portions of the site are characterized by the Bitterbrush series plant community where antelope bitterbrush (*Purshia tridentata*), rubber rabbit bush (*Ericameria nauseous*) and Mormon tea (*Ephedra nevadensis*) are the dominate plants within this series found at the site.

Hydrophytic plants are adapted for life in permanently or periodically saturated soils. No hydrophytic plants or evidence of hydrophytic plants were observed in any of the drainages where sign of OHWM were observed with the exception for a small area associated with Drainage C. No desert riparian plants such as smoke tree (*Psorothamnus spinosa*) or ironwood (*Olneya tesota*) or trees and shrubs found in more mesic environments such as willows (*Salix* sp.) or cottonwood (*Populus fremontii*) were observed.

A small area within Drainage C was found to contain facultative emergent plants commonly associated with hydroriparian environments (Figure 2). Plants observed at the sampling point associated with the Drainage C wetland are noted in Table 1.

P:\GIS\White Knob_White Ridge\White Knob Juris Drainage.mxd

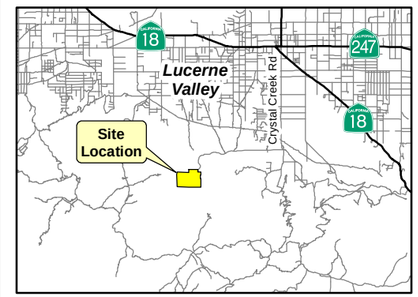


0 250 500 Feet

- Photograph Directional Arrow
- Jurisdictional Drainage
- Non-jurisdictional Drainage
- Limits of Planned Disturbance Line
- Road Cut (non-jurisdictional)
- Topographic Elevation Contour (USGS Butler Peak 7.5' quadrangle)
- Wetland
- White Knob-White Ridge Quarry Boundary

Jurisdictional Areas Within Planned Disturbance Limits

Location	Acres	Linear Feet
A	0.380	1,379
B-1	0.176	1,309
B-2	0.216	942
C	0.216	1,354
D	0.324	1,175
E	0.043	310
WETLAND	0.003	--
TOTAL	**1.358**	**6,469**



WHITE KNOB-WHITE RIDGE QUARRY

Figure 2

Survey Area and Jurisdictional Drainages

TETRA TECH

X:\GIS\White Knob_White Ridge\photo 1-2.CDR

Photograph 1 - Drainage A, facing south, with sediment deposits and defined bed to bank.

Photograph 2 - Drainage B1, facing west. Sorted sediments and defined bed to bank are present.

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Photograph 3 - Drainage B2, facing south. Typical bed configuration in a relatively flat parts of the drainage.

Photograph 4 - Drainage C, facing south, top of drainage. Indicators of waters of the state were not found above this point.

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Photograph 5 - Drainage C, facing north. View of jurisdictional wetland.

Photograph 6 - Drainage C, facing north. View of jurisdictional wetland and bed features.

X:\GIS\White Knob_White Ridge\photo 7-8.CDR

Photograph 7 - Drainage C, facing north. View of typical bed configuration found in the middle reach of the drainage.

Photograph 8 - Drainage D, facing south. Indicators include cut banks and sediment deposits in rocky center of the bed.

Photograph 9 - Drainage D, facing south, typical section.

Photograph 10 - Drainage E, sorted sediments along the right bank indicate water movement and sediment transport.

X:\GIS\White Knob_White Ridge\photo 11-12.CDR

Photograph 11 - View of non-jurisdictional road cut. View to the southwest.

Photograph 12 - View of non-jurisdictional drainage on the southwestern side of the quarry boundary. View to the west.

Table 1 Plant Species Observed in the Drainage C Wetland

Scientific Name	Common Name	Wetland Plant Indicator Status
Juncus effusus	Common rush	FACW+
Salix laevigata	Arroyo willow	FACW+
Salix lasiolepis	Red willow	FACW
Baccharis salicifolia	Mule fat	FACW
Quercus wislizenii	Interior live oak	No Indicator
Taushia parishii	Parish's umbrellawort	No Indicator
Pinus monophylla	Pinyon pine	No Indicator
Penstemon sp.	Penstemon	No Indicator

Table 1 defines the wetland plant indicator status of the plants observed in the Drainage C wetland. Table 2 provides a definition of wetland plant indictor status. Additionally, a positive (+) sign or negative (-) sign may be used with the Facultative plant categories to more specifically define the regional frequency or occurrence in wetlands. The positive sign indicates the plant is more frequently found in wetlands. A negative sign indicates that a plant is less frequently found in wetlands.

Table 2 Wetland Plant Indicator Status

Category	Acronym	Probability
Obligate Wetland	OBL	Occur almost (estimated probability >99%) under natural conditions in wetlands.
Facultative Wetland	FACW	Usually occur in wetlands (estimated probability 67%-99%), but occasionally found in non-wetlands
Facultative	FAC	Equally likely to occur in wetlands or non-wetlands (estimated probability 34%-66%)

Category	Acronym	Probability
Facultative Upland	FACU	Usually occur in non-wetlands (estimated probability 67%-99%), but occasionally found on wetlands (estimated probability (1%-33%).
Obligate Upland	UPL	Occurs in wetlands in another region, but occur almost always (estimated probability > 99%) under natural conditions in non-wetlands in the region specified

The hydrophytic vegetation criterion for regulatory jurisdiction is met if more than 50 percent of the dominant plant species from all strata (tree, shrub and herb layer) are considered hydrophytic (Environmental Laboratory 1987; United States Army Corps of Engineers 2008). Hydrophytic species are those included on the National List of Plant Species that Occur in Wetlands: California (Region 0) (Reed 1988). The species found at the Drainage C wetland are listed as plants that occur in wetlands in California. The wetland in Drainage C is dominated by four plants that are categorized in California as hydrophytic vegetation.

5.2.2 Soils

Hydric soils, or soils associated with wetlands, are saturated or inundated long enough during the growing season to develop anaerobic conditions that favor growth and regeneration of hydrophytic vegetation. Soils are considered hydric when the following criteria for mineral soils are met.

I. All Histosols except Folists; or
II. Soils in Aquic suborders, Aquic subgroups, Albolls suborder, Salorthids great group, Pell great groups of Vertisols, Pachic suborders or Cumulic subgroups that are:
    A. Somewhat poorly drained and have a frequently occurring water table at less than 0.5 feet from the surface for a significant period (usually more than two weeks) during the growing season; or
    B. Poorly drained or very poorly drained and have either:
        (1) A frequently occurring water table at less than 0.5 feet from the surface for a significant period (usually more than two weeks) during the growing season if textures are coarse sands, or fine sands in all layers within 20 inches; or
        (2) A frequently occurring water table at less than 1.0 foot from the surface for a significant period (usually more than two weeks) during the growing season if permeability is greater than 6.0 inches/hour in all layers within 30 inches; or

(3) A frequently occurring water table at less than 1.5 feet from the surface for a significant period (usually more than two weeks) during the growing season if permeability is less than 6.0 inches/hour in all layers within 20 inches; or

III. Soils that are frequently ponded for a long duration or very long duration during the growing season; or

IV. Soils that are frequently flooded for a long duration or a very long duration during the growing season.

There are a number of indicators that may indicate the presence of hydric soils, including hydrogen sulfide generation, the presence of iron and/or manganese concretions, low chroma associated with the soil color, gleyed color, and mottling due to oxidation and reduction of accumulated metals such as iron.

A formal soil survey of the project site by the Natural Resources Conservation Service (NRCS) has been completed for only the southern-most portion of the quarry (United States Department of Agriculture 1986). The soils in this area have been classified as Arrastre-Rock complex series where 60 percent of the soils are Arrastre sandy loam soils with 20 percent rock outcrop with the remaining a mixtures of other sandy loam and loamy sand soils. Located on hillsides, ridges and side slopes of rugged upland foothills as seen within the quarry boundaries, these soils are thinly developed over limestone bedrock. With the exception of the soils associated with the wetland located in Drainage C, soils found within the surveyed drainages were noted as sandy loam in texture with no hydric characteristics. These soils appear to share characteristics of the Arrastre sandy loam series and were not determined to be hydric. Soils within the Drainage C wetland were found to be water-logged, sulfur smelling and a gleyed color (Munsell color 5G2.5). The soils associated with the Drainage C wetland were determined to be hydric.

5.2.3 Hydrology

As stated earlier, the area in which the proposed project site is located is characterized by steep, dry ephemeral washes that generally contain water only during storm events. The largest washes in the area are found low in the system, where the topography is most gentle. In this area, washes are low gradient with gravelly and/or sandy beds. Headwaters and small tributaries entering the washes from hillsides tend to be more heavily incised and have narrower beds. The drainage pattern is generally from south to north. Drainage runoff from mine area exits the project site and ultimately drains to Rabbit Dry Lake, located on the floor of Lucerne Valley to the north of the quarry (Photograph 13). Evidence of past water flow in the form of scour marks and deposition of sand and plant debris was observed in the jurisdictional drainages within the quarry boundaries.

5.2.4 Traditional Navigable Waters-Waters of the United States

The ACOE continues to assert jurisdiction over all waters that are in use, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which may be subject to the ebb and flow of the tide and are defined as Traditional Navigable Waters (U.S. Army Corps of Engineers and Environmental Protection Agency 2007). Field observations and review of relevant aerial photographs

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Photograph 13 - View of Rabbit Dry Lake playa, north of the quarry.
View to the north.

and topographic maps confirm that the un-named drainages within the quarry terminate in Rabbit Dry Lake playa found to the north of the quarry. No connection to the Mojave River for the drainages associated with the quarry was observed. A recent Approved Jurisdictional Determination (AJD) dated April 30, 2013 has been issued by the ACOE for the Marathon Solar Project located southeast of the quarry on the west side of Camp Rock Road, north of highway 247 (U.S. Army Corps of Engineers 2013). The drainages associated with this project terminate in Lucerne Dry Lake found east of Rabbit Dry Lake playa. The AJD for the Marathon Solar Project concluded that the on-site drainages are isolated and are not subject to ACOE regulation under Section 404. The Marathon Solar Project AJD indicates that Rabbit Dry Lake and Lucerne Dry Lake are part of the same depositional environment and are both located in the Lucerne Valley groundwater basin Este Subarea. Based on the AJD issued for the solar project that shares the same watershed as the quarry drainages, it is likely that jurisdictional drainages within the quarry are isolated and not subject to ACOE jurisdiction.

5.2.5 Waters of the State

Under Section 401 of the Clean Water Act and the Porter-Cologne Water Quality Act, the RWQCB-Lahontan Region asserts jurisdiction over jurisdictional wetlands and those non-isolated waters associated with Traditional Navigable Waters. As the on-site drainages do not connect to the Mojave River, they are not subject to regulatory authority by the RWQCB-Colorado River Basin under Section 401. The wetland associated with Drainage C meets the three-point Federal criteria as a wetland and may be subject to regulatory authority by the RWQCB-Colorado River Basin under the Porter-Cologne Act.

5.2.5.1 Definable Bed to Bank Streambed Features

Under Section 1600 et. seq. of the California Department of Fish and Wildlife Code, the CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream or lake, which support fish or wildlife. The drainages with the quarry with definable bed-and-bank features or other indicators of OHWM would be subject to regulatory authority by the CDFW.

5.3 DETERMINATION RESULTS AND RECOMMENDATIONS

5.3.1 Determination Results

Using the previously described criteria for hydrology, vegetation indicators, and fluvial geomorphology, five washes and tributaries were identified in the vicinity of the project area with an OHWM and determined to be jurisdictional waters of the state (Figure 2 and Appendix A). The other drainages in the vicinity of the project area did not contain a discernible bed and bank or other indicators of OHWM; therefore, these drainages were determined to not be waters of the state. A total of 1.358 acres (6,469

linear feet) were identified as jurisdictional waters of the state in the proposed project area (Table 4). A total of 0.003 acres of jurisdictional wetland was measured in Drainage C. The Drainage C wetland met all three criteria for a jurisdictional wetland and is also subject to regulatory authority as a jurisdictional water of the state by the RWQCB-Colorado River Basin Region under the Porter-Cologne Act.

Table 3 Total Jurisdictional Waters, White Knob-White Ridge Quarry

Drainage	Linear feet	Acres
Drainage A	1,379	0.380
Drainage B-1	1,309	0.176
Drainage B-2	942	0.216
Drainage C	1,354	0.216
Drainage D	1,175	0.324
Drainage E	310	0.043
Wetland, Drainage C	--	0.003
Total	**6,469**	**1.358**

For impacts to jurisdictional waters associated with the un-named drainages within the quarry expansion area, a Streambed Alteration Agreement issued by the CDFW will be required. The wetland found in Drainage C is potentially subject to regulatory authority from both the CDFW and the RWQCB-Lahontan Region. Streambed Alteration Agreement 1600-2003-5078-R6 has been issued for Drainage A (California Department of Fish and Game 2003). At the time of this report preparation, the terms and conditions of the Streambed Alteration Agreement for allowable activities in Drainage A are unknown. If proposed activities for quarry expansion into Drainage A are permitted by Streambed Alteration Agreement 1600-2003-5078-R6, total acreage of impacts to jurisdictional waters would be reduced to 0.978 acres.

5.3.2 Recommendations

The following recommendations are made related to jurisdictional drainages found within the proposed quarry expansion area.

- Contact the CDFW and discuss mitigation strategies to include in-lieu mitigation opportunities.
- Contact ACOE and determine if an AJD has been issued for any project with drainages that terminate in Rabbit Dry Lake. Confirm that Rabbit Dry Lake and Lucerne Dry Lake would be considered within the same watershed/hydrologic unit.
- Seek an AJD from the ACOE based on the findings of this report.
- Contact the RWQCB-Colorado River Basin and discuss requirements for a WDR permit related to the Drainage C wetland.

6.0 CERTIFICATION

"*Certification: I hereby certify that the statements furnished above and in the attached exhibits present data and information required for this jurisdictional water/wetlands delineation and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief*."

DATE: 15 October 2013 SIGNED: 

Report Author

Field Work Performed by: David Munro, Tetra Tech
Stephanie Pacheco, Tetra Tech

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APPENDIX A WETLAND DELINEATION FORMS

Date 25 September 2013 Client Omya, CA

Name of Project White Knob/White Ridge Quarry Site ID W. of Annex Quarry-Drainage A

Field Team D. Munro/S. Pacheco Photo #

Aspect Northeast Avg. Width of Channel at OHWM 12-feet

Weather (temp, precipitation, cloud cover) Clear/Cool

Plant Community Description California Juniper Series/Alluvial Wash

Plant Species (in order of dominance)

Yerba Santa	
Rubber rabbit bush	
Antelope brush	

Indicators Sediment deposition, scour

Riparian Vegetation Class (hydroriparian, mesoriparian, xeroriparian) Xeroriparian

Morphology Deeply incised riparian canyon, 10-12% slope

Soil Characteristics Sandy soils, no hydric soils present

Hydrology Ephemeral, intermittant streambed

Determination/Notes Waters of the State/US; upper reach disturbed due to past quarry activities.

Date 24 September 2013 Client Omya, CA

Name of Project White Knob/White Ridge Quarry Site ID Reach 2-Drainage B-2

Field Team D. Munro/S. Pacheco Photo #

Aspect East facing Avg. Width of Channel at OHWM 2-3 feet

Weather (temp, precipitation, cloud cover) 80 degrees, no cloud cover, no precipitation

Plant Community Description Alluvial wash/California Juniper Series

Plant Species (in order of dominance)

Yerba Santa	
Rubber rabbit bush	
Interior live oak	

Indicators Sediment deposits, matted vegetation, scour pools

Riparian Vegetation Class (hydroriparian, mesoriparian, xeroriparian) Xeroriparian

Morphology Cascading, rocky, incised, 10-12% slope

Soil Characteristics Sandy and rocky.

Hydrology Ephemeral

Determination/Notes Other waters of the US/Waters of the State

Date 24 September 2013 Client Omya, CA

Name of Project White Knob/White Ridge Quarry Site ID OB-2-Upper Reach 1/Drainage C

Field Team D. Munro/S. Pacheco Photo #

Aspect East facing Avg. Width of Channel at OHWM 1-2 feet

Weather (temp, precipitation, cloud cover) 80 degrees, no cloud cover, no precipitation

Plant Community Description Alluvial fan scrub/Brittlebush Series-Bitterbush Series

Plant Species (in order of dominance)

Yerba Santa	
Rubber rabbit bush	
Interior live oak	

Indicators Scour pools downstream of rocks, matted vegetation, sediment deposits

Riparian Vegetation Class (hydroriparian, mesoriparian, xeroriparian) Xeroriparian

Morphology Cascading, rocky, incised

Soil Characteristics Sandy and large boulders

Hydrology Ephemeral

Determination/Notes Other waters of the US/Waters of the State

Date 24 September 2013 Client Omya, CA

Name of Project White Knob/White Ridge Quarry Site ID OB-2 Wetland/Reach 2/Drainage C

Field Team D. Munro/S. Pacheco Photo #

Aspect East facing Avg. Width of Channel at OHWM 20 linear feet by 7 feet

Weather (temp, precipitation, cloud cover) Cool and clear

Plant Community Description Wetland macrophytic herbaceous and woody perennials; evidence of herbaceous annuals from the spring.

Plant Species (in order of dominance)

Arroyo willow	
Red willow	
Interior live oak	
pinyon pine	
Unknow scroph; possible penstemon	
Parish's umbrellawort	
Juncus sp.	
Mule fat	

Indicators Hydric soils, presence of standing water and obligate/facul

Riparian Vegetation Class (hydroriparian, mesoriparian, xeroriparian) Hydroriparian

Morphology Wetland present in incised canyon/riparian corridor

Soil Characteristics Hydric characteristics, sulfer smelling, reduced color (5G2.5), saturated soils

Hydrology Standing water observed

Determination/Notes Jurisdictional Wetland/Waters of the State

Date 24 September 2013 Client Omya, CA

Name of Project White Knob/White Ridge Quarry Site ID OB-2 Reach 3/Drainage C

Field Team D. Munro/S. Pacheco Photo #

Aspect East facing, 10% slope Avg. Width of Channel at OHWM 7 feet

Weather (temp, precipitation, cloud cover) Cool and clear

Plant Community Description Facultative plants/upland plants, Bitterbrush Series

Plant Species (in order of dominance)

Parish's umbrellawort	
Red willow	
Ceanothus	
Pinyon pine	
Rubber rabbit bush	

Indicators Plants and hydrology support presence of jurisdictional waters; no hydric soils present.

Riparian Vegetation Class (hydroriparian, mesoriparian, xeroriparian) Xeroriparian

Morphology Sign of OHWM, deeply incised canyon riparian corridor

Soil Characteristics Non-gleyed, damp soils in upper 3" of 6" core; 10YR3/2

Hydrology Evidence of past water flow; scour marks at edges of streambed

Determination/Notes Jurisdictional Waters of the State

Date 24 September 2013 Client Omya, CA

Name of Project White Knob/White Ridge Quarry Site ID OB-2 Reach 4/Drainage C

Field Team D. Munro/S. Pacheco Photo #

Aspect East facing, 10% slope Avg. Width of Channel at OHWM 12 feet

Weather (temp, precipitation, cloud cover) Cool and clear

Plant Community Description Alluvial fan scrub, Bitterbrush Series-Brittle Bush Series

Plant Species (in order of dominance)

Yerba Santa	
Rubber rabbit bush	
Manzanita	
Acton encelia	
Rubber rabbit bush	
Chaparral yucca	

Indicators Past hydrology

Riparian Vegetation Class (hydroriparian, mesoriparian, xeroriparian) Xeroriparian

Morphology Sign of OHWM, deeply incised canyon riparian corridor

Soil Characteristics No hydric characteristics

Hydrology Evidence of drift lines and sediment deposits

Determination/Notes Jurisdictional Waters of the State

Date 25 September 2013 Client Omya, CA

Name of Project White Knob/White Ridge Quarry Site ID OB-3, Drainage D

Field Team D. Munro/S. Pacheco Photo #

Aspect East facing, 10-12% slope Avg. Width of Channel at OHWM 12 feet

Weather (temp, precipitation, cloud cover) Cool and clear

Plant Community Description California Juniper Series

Plant Species (in order of dominance)

Yerba Santa	Calif. wishbone
Rubber rabbit bush	Calif. buckwheat
Manzanita	Joshua tree
Acton's encelia	Golden bush-E. linearifolia
Rubber rabbit bush	Bromus madritensis
Chaparral yucca	Mormon tea/E. nevadensis
White thorn	
Flannel bush	

Indicators Past hydrology only; no riparian plants or hydric soils.

Riparian Vegetation Class (hydroriparian, mesoriparian, xeroriparian) Xeroriparian

Morphology Sign of OHWM, deeply incised canyon riparian corridor

Soil Characteristics No hydric characteristics, 10YR5/4

Hydrology Evidence of drift lines and sediment/plant debris deposits

Determination/Notes Jurisdictional Waters of the State

Date 26 September 2013 Client Omya, CA

Name of Project White Knob/White Ridge Quarry Site ID Back Drainage/SE Corner of Site

Field Team D. Munro/S. Pacheco Photo #

Aspect East facing, 8% slope Avg. Width of Channel at OHWM None

Weather (temp, precipitation, cloud cover) Cool and clear

Plant Community Description Bitterbrush Series

Plant Species (in order of dominance)

Flannel bush	Yerba santa
Antelope brush/P. tridentata	Beaver tail cactus
Desert needle grass	Pinyon pine
Calif. buckwheat	Joshua tree
Calif. juniper	
Spanish bayonet/Y. whipplei	
Manzanita	
Big sagebrush	

Indicators No scour signs; signs of past water movement.

Riparian Vegetation Class (hydroriparian, mesoriparian, xeroriparian) None

Morphology Deeply incised canyon

Soil Characteristics No hydric characteristics, 10YR4/4

Hydrology No sign of past water movement; scour and deposition.

Determination/Notes Not a jurisdictional drainage

Date 26 September 2013 Client Omya, CA

Name of Project White Knob/White Ridge Quarry Site ID Drainage w/of OB3/Drainage E

Field Team D. Munro/S. Pacheco Photo #

Aspect north facing Avg. Width of Channel at OHWM 6 feet

Weather (temp, precipitation, cloud cover) Cool and clear

Plant Community Description Bitterbrush Series

Plant Species (in order of dominance)

Rubber rabbit bush	
Yerba santa	
Calif. juniper	

Indicators Scour signs; signs of past water movement.

Riparian Vegetation Class (hydroriparian, mesoriparian, xeroriparian) Xeroriparian

Morphology Moderately incised canyon riparian corridor

Soil Characteristics No hydric characteristics, 10YR4/4

Hydrology Sign of past water movement; scour and deposition.

Determination/Notes Jurisdictional Waters of the State; no special aquatic sites or wetlands observed.

APPENDIX B FLORAL COMPENDIUM

APPENDIX B
FLORA COMPENDIUM
WHITE KNOB/WHITE RIDGE QUARRY
LUCERNE VALLEY, CALIFORNIA 92356

Flora	Flowering Plants
Gymnospermae	**Pollen Producing Woody Gymnosperms**
Cupressaceae	**Cypress Family**
Calocedrus decurrens	Incense cedar
Juniperus californica	California juniper
Ephedraceae	**Ephedra Family**
Ephedra nevadensis	Mormon tea
Pinaceae	**Pine Family**
Pinus monophylla	Single-leaf pine
Angiospermae: Monocotyledonae	**Monocot Flowering Plants**
Junaceae	**Rush Family**
Juncus effusus.	Common rush
Liliaceae	**Lily Family**
Yucca brevifolia	Joshua tree
Yucca schidigera	Mohave yucca
Yucca whipplei	Spanish daggers
Poaceae	**Grass Family**
Achnatherum speciosum	Desert needlegrass
Bromus diandrus	Ripgut brome*
Bromus madritensis ssp. *rubens*	Red brome*
Angiospermae: Dicotyledonae	**Dicot Flowering Plants**
Anacardiaceae	**Sumac Family**
Rhus trilobata	Skunk bush
Apiaceae	**Carrot Family**
Tauschia parishii	Parish's umbrellawort
Asteraceae	**Aster Family**
Ambrosia dumosa	Burro bush
Artemisia tridentata	Big sagebrush
Baccharis pularis	Coyote broom
Baccharis salicifolia	Mulefat
Encelia actoni	Acton's brittle bush
Ericameria cuneata	Wedge-leaved golden bush
Ericameria linearifolia	Thread-leaved golden bush
Ericameria nauseousa	Rubber rabbit brush
Solidago velutina spp. *californica*	Velvety goldenrod
Brassicaceae	**Mustard Family**
Sisymbrium irio	London rocket*
Cactaceae	**Cactus Family**
Echinocereus engelmannii	Englemann's hedgehog cactus
Opuntia basilaris	Beavertail cactus
Chenopodiaceae	**Saltbush Family**
Grayia spinosa	Hopsage
Ericaceae	**Heath Family**
Actostaphylos glauca	Big berry manzanita
Fagaceae	**Oak Family**
Quercus wislizenii	Interior live oak

APPENDIX B
FLORA COMPENDIUM
WHITE KNOB/WHITE RIDGE QUARRY
LUCERNE VALLEY, CALIFORNIA 92356

Hydrophyllaceae	**Waterleaf Family**
Eriodictyon trichocalyx	Hairy yerba santa
Salvia dorrii	Desert sage
Malvaceae	**Mallow Family**
Sphaeralcea ambigua	Desert mallow
Nyctaginaceae	**Four O'clock Family**
Mirabilis bigelovii	Desert four o'clock
Oleracea	**Olive Family**
Forestiera pubescens	Desert olive
Polygonaceae	**Buckwheat Family**
Eriogonum fasiculatum	California buckwheat
Eriogonum inflatum	Desert trumpet
Rhamnaceae	**Buckthorn Family**
Ceanothus greggii	Cup leaf ceanothus
Ceanothus leucodermis	White thorn
Rosaceae	**Rose Family**
Coleogyne ramosissima	Black brush
Purshia tridentata	Antelope brush
Salicaceae	**Willow Family**
Populus fremontii	Cottonwood
Salix laevigata	Red willow
Salix lasiolepis	Arroyo willow
Sterculiaceae	**Cacao Family**
Fremontodendron californicum	California flannel bush

* Denotes non-native plant

Taxonomy and nomenclature follow Baldwin, B. G. et. al., 2012, *The Jepson Manual: Vascular plants of California, second edition*, University of California Press.

NORTH SLOPE

RAPTOR CONSERVATION STRATEGY

DRAFT Prepared by:
Robin Eliason, Mountaintop District, San Bernardino National Forest
September 2013

NORTH SLOPE RAPTOR CONSERVATION STRATEGY

INTRODUCTION

Strategy: The SBNF has developed this Raptor Conservation Strategy (RCS) for the San Bernardino Mountain's North Slope in coordination with the mining companies, USFWS, and CDFW.

The San Bernardino National Forest (SBNF) and the three North Slope mining companies (Mitsubishi, Omya, and Specialty Minerals) are cooperatively participating in the monitoring of nesting raptors on the SBNF's North Slope of the San Bernardino Mountains. This includes known North Slope nesting golden eagles (California fully-protected species and protected under the federal Bald and Golden Eagle Protection Act), and other raptors of concern that have the potential to nest (peregrine falcon, prairie falcon, and California condors).

The objective of the RCS is to provide consistent objectives, management actions, processes, and management tools across the affected mining companies on the North Slope. The mining companies have provided input to the development and finalization of the RCS and have agreed to follow the guidelines put forth in the effort. The RCS has been tailored for activities associated with mining activities and effects.

The RCS is expected to be a dynamic document, to be updated as new information and scientific understanding of the subject species become available. The RCS may be updated over time to include other raptors in the future if concerns develop over their local population status. The strategy includes monitoring objectives, schedules, and protocols, as well as measures to avoid, minimize, rectify, and reduce (or eliminate over time) effects to raptors nesting in the North Slope from mining and National Forest land and resource management activities. The intent is to use systematic monitoring of raptor nesting and observed behavior to develop and refine site- and activity- specific measures to ensure successful nesting and provide for adaptive management opportunities.

Due to the long life of the mining projects and potential for new technologies (both in raptor monitoring and mining), and the uncertainty of long term raptor population trends, the RCS will be reviewed and updated periodically with a goal of at least every five years.

The intent of the RCS is to:

- Ensure compliance with state and federal laws (Bald and Golden Eagle Protection Act, Migratory Bird Treaty Act, California Endangered Species Act, federal Endangered Species Act, etc.)
- Provide guidelines for reducing the likelihood of "take" of a State or Federally-protected species; and provide direction for acquiring an "incidental take permit" if necessary.
- Describe an adaptive management approach that provides protection of nests while continuing the mining operations and other activities. The purpose of adaptive management is to improve long-term management outcomes by recognizing where key uncertainties impeded decision-making, seeking to reduce those uncertainties over time, and applying that learning to subsequent decisions (**Walters 1986**).
- Provide continuity and a unified approach for managing nesting raptors and their habitat

on the North Slope for the mine operators in the area. By taking this approach, the parties may combine efforts, reducing costs and redundancy.

BACKGROUND

The North Slope's rugged terrain rises from the Mojave Desert floor. The steep slopes have an abundance of rocky pinnacles, outcrops, rock crevice formations, rock ledges, cliff potholes, and cliffs. These areas provide excellent nest sites for birds, including several cliff-nesting raptor species such as owls, golden eagles, California condors, peregrine and prairie falcons, red-tailed hawks, and other raptors.

The vegetation on the North Slope includes 1) pinyon/juniper woodland and montane conifer forests at the rim; 2) a pinyon/juniper-desert transition zone that includes Joshua trees, pinyon pines, junipers, yuccas, and desert shrubs; and, 3) high desert vegetation at the base of the mountain slopes. All of these vegetation communities provide foraging and nesting habitat for these raptors. The rugged terrain, and deep canyons/drainages also have suitable foraging and nesting sites. Golden eagles are known to nest on the North Slope and prairie falcons are suspected nesters.

a) Golden Eagle (*Aquila chrysaetos*) **RE-will update with more recent version

The golden eagle is a SBNF Watchlist species, a species identified by the Forest Service as a local viability concern, a CDFW Watchlist species, a California state fully-protected species. It is protected under the Bald and Golden Eagle Protection Act (Eagle Act) and the Migratory Bird Treaty Act (MBTA).

Life History and Baseline Information – Golden Eagle: In California, golden eagles are an uncommon permanent resident and migrant throughout most of the state, except the floor of the Central Valley. This species ranges from sea level to 11,500 feet. It is considered more common in southern California than in the northern part of the state. In southern California, it is an uncommon resident throughout most of the region except in the Colorado Desert and along the Colorado River, where it is a casual winter visitor. Historically, golden eagles were considered more abundant in remote parts of southern California than anywhere else in the United States.

Golden eagles nest primarily on cliffs and hunt for rabbits and other small mammals in nearby open habitats, such as grasslands, oak savannas, and open shrublands. They build their nests on rock outcrops, cliff ledges, or in trees, typically 10-100 feet above the ground. They often occupy remote mountain ranges and upland areas, often at or above treeline where vegetation is short or sometimes absent. In southern California, golden eagles generally avoid heavily forested mountains, the coast, and urban areas.

Wintering habitats in the western United States tend to include available perches and native shrub-steppe vegetation types (*e.g.*, comprising *Artemisia* and similar shrubs). Habitats with these characteristics typically support substantial prey populations of black-tailed jackrabbits (*Lepus californicus*).

The golden eagle breeding season begins in early February and peaks in March through July. The nest is constructed of branches, twigs, and stems of any kind and is added to continuously during the nesting period. The nest is large, but thin, and becomes more massive with successive use. Alternative nest sites within the breeding territory are occasionally used. Females typically lay two eggs and incubate them for 43–45 days. The semi-altricial eaglets are brooded by the female for an additional 30 days. The male delivers food to the female, and the female feeds the young. The young fly at about 50 days, remaining near the nest site for a few weeks. Breeding site fidelity in adult golden eagles is high. Juvenile golden eagles disperse from their natal area, traveling long distances before returning two or three years later. After they return, they often live nomadically near their natal area, presumably until they establish a territory.

In California, golden eagles are mostly resident. However, they may move altitudinally in response to changing weather conditions; they may also move upslope after the breeding season.

Golden eagles soar 98-297 feet above ground in search of prey or make low quartering flights 23-26 feet above ground. Golden eagles will occasionally hunt from an exposed perch, flying directly toward prey. Golden eagles eat primarily lagomorphs and rodents, but they will also take other mammals, reptiles, carrion, and birds. Studies of golden eagle diet indicate that mammals comprise 82 percent of the diet, supplemented by birds at 12.6 percent, with the remainder consisting of reptiles and fish.

Golden eagles are highly territorial, and life-long monogamous pairs will occupy a territory over their life span. Territorial boundaries are well defined and vigorously defended. Golden eagles tend to nest on the periphery of their territories, often near an adjacent nesting pair. (Source: **USFS 2006** Forest Plan Species Accounts)

***Population Status and Threats – Golden Eagle*:** Golden eagles remain threatened by human disturbance at nest sites, poison baits, shooting, and collisions with powerlines. However, these threats do not appear to substantially affect the population as a whole. However, they may be significant to the southern California population where serious declines have already been documented.

Near National Forest System lands in southern California, golden eagles are affected by private land development and rapid urbanization that encroaches on key foraging areas. There appears to be abundant nesting habitat on public land, but in many places the highest quality foraging areas are on private land.

Increased recreational activity, particularly rock climbing, in the vicinity of cliff nests is also a problem in some areas and can cause golden eagles to abandon nest sites. Mining activities on the desert slope of the San Bernardino Mountains may also be a threat to golden eagles if mining results in disturbance to nesting cliffs. Management consideration should be given to identifying and protecting active nest sites during the breeding season. Lead in the gut piles and carcasses of game animals left in the field may result in poisoning if fed on by golden eagles. (**Source: USFS Forest Plan 2006**)

Golden eagle populations are thought to be declining through much or all of its range in the U.S. Threats to golden eagles include powerlines (electrocutions and collisions), contaminants (*e.g.*, lead, secondary poisoning from rodenticides), shooting and poaching, incidental trapping in furbearer traps, drowning in stock-tanks, vehicle collisions, habitat loss, disturbance, and large-scale non-renewable and renewable energy developments (**Pagel, pers. comm. 2013**).

Mortality of golden eagles as a result of wind turbine collisions has been high (as many as an average of 64/year at Altmont Pass over the past six years). Large-scale solar panel projects result in losses of large acreages of foraging habitat for golden eagles. Within the foreseeable future, a number of new renewable energy projects are expected to come online in California's deserts, as suggested by the number of applications for renewable energy projects (http://www.energy.ca.gov/siting/solar/; http://www.blm.gov/ca/st/en /prog/energy/wind.html). Those combined with existing developments and other threats to golden eagles contribute to the concern for the golden eagle population in the western U.S.

Over the long life of the mining operations on the North Slope, it is likely that more high quality golden eagle nesting and foraging habitat will be affected by limestone mines and that displacement will occur with some part of the North Slope lacking this species. Given the current situation for golden eagles, there are concerns about cumulative effects for this species due to multiple threats (**Pagel, pers. comm. 2013**).

Occurrence on the North Slope – Golden Eagle: Golden eagles are known to nest on and near the North Slope, including in nearby Marble and Arctic Canyons in the 1990s and Blackhawk Mountain more recently. There are at least twenty known active and inactive nest sites for golden eagles within a 10-mile radius of the North Slope. In 2010, two active nests were located on the North Slope, both with fledglings. There are also a number of inactive nest sites on the North Slope. Golden eagles are known to have re-occupied nests that have been vacant for 30-40 years (**Pagel, pers. comm. 2013**).

The entire North Slope area supports suitable foraging habitat and there are a number of records for them in the area (**Kielhold 1993, MacKay and Thomas 2008, SBNF records**), including using wildlife drinkers at the mines.

Take – Golden Eagle: The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c), enacted in 1940, and amended several times since then, prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald and golden eagles, including their parts, nests, or eggs. Under the Eagle Act, "take" is defined as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest or disturb." "Disturb" is defined in regulations as "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available: (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that

interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment (Federal Register 74 (175): 46835-46879 9/11/09).

The regulation set forth in 50 CFR § 22.26 provides for issuance of permits to take golden eagles where the taking is associated with but not the purpose of the activity and cannot practicably be avoided. Most take authorized under this section will be in the form of disturbance; however, permits may authorize non-purposeful take that may result in mortality.

The regulation at 50 CFR § 22.27 establishes permits for removing eagle nests where: (1) necessary to alleviate a safety emergency to people or eagles; (2) necessary to ensure public health and safety; (3) the nest prevents the use of a human-engineered structure; or (4) the activity or mitigation for the activity will provide a net benefit to eagles. Only inactive nests may be taken, except in the case of safety emergencies. Inactive nests are defined by the continuous absence of any adult, egg, or dependent young at the nest for at least 10 consecutive days leading up to the time of take. (Source: http://www.fws.gov/migratorybirds/BaldAndGoldenEagleManagement.htm)

b) California Condor *(Gymnogyps californianus)* **RE-will update with more recent version
The California condor is both a federally and state listed as Endangered. Critical Habitat has been designated (1976) but none is present on the North Slope. A Recovery Plan exists for this species.

Life History and Baseline Information - California Condor: From 100,000 to 10,000 years ago, California condor ranged widely; with the extinction of the large Pleistocene mammals, the species declined in range and numbers. Condor remains reveal that the species once ranged over much of western North America, and as far east as Florida. Until about 2,000 years ago, the species nested in west Texas, New Mexico, and Arizona. When European settlers arrived on the Pacific coast of North America in the early 1800s, California condors occurred from British Columbia to Baja California, and also occasionally ranged into the American southwest.

Historically, California condor occurred in the Coast Ranges of California from Santa Clara and San Mateo Counties south to Ventura County, and east to the western slope of the Sierra Nevada and Tehachapi Mountains. It occurred primarily from sea level to 9,000 feet and nested at 2,000-6,500 feet. Almost all of the historic nest sites used by California condors are located on the Los Padres, Angeles, and Sequoia National Forests.

California condor nesting sites are typically located in chaparral, conifer forest, or oak woodland communities. Historically, condors nested on bare ground in caves and crevices, behind rock slabs, or on large ledges or potholes on high sandstone cliffs in isolated, extremely steep, rugged areas. Cavities in giant sequoia (*Sequoiadendron giganteum*) have also been used. The nest site is often surrounded by dense brush.

The appearance of many nest sites suggests that they have been long used, perhaps for centuries, whereas other apparently suitable sites in undisturbed areas show no signs of condor use. Characteristics of condor nests include:

- entrances were large enough for the adults to fit through;

- they had a ceiling height of at least 14.8 inches at the egg position;
- floors were fairly level with some loose surface substrate;
- the nest space was un-constricted for incubating adults; and
- there was a nearby landing point.

Condors often return to traditional sites for perching and resting. Traditional roost sites include cliffs and large trees and snags (roost trees are often conifer snags 40-70 feet tall, often near feeding and nesting areas. Condors may remain at the roost site until midmorning, and generally return in mid- to late afternoon.

Most foraging occurs in open terrain of foothills, grasslands, potreros with chaparral areas, or oak savannah habitats. Historically, foraging also occurred on beaches and large rivers along the Pacific coast. Water is required for drinking and bathing.

California condors typically breed every other year, but can breed annually if they are not caring for dependent young. California condors usually lay a single egg between late January and early April. The egg is incubated by both parents and hatches after approximately 56 days. Both parents share responsibilities for feeding the nestling. Feeding usually occurs daily for the first 2 months, then gradually diminishes in frequency. Juvenile condors leave the nest at 2-3 months of age, but remain in the vicinity of the nest and under their parents' care for up to a year. The California condor is nonmigratory. California condors are capable of extended flights (more than 100 miles in a day).

California condors are opportunistic scavengers, feeding exclusively on the carcasses of dead animals. Typical foraging behavior includes long-distance reconnaissance flights, lengthy circling flights over a carcass, and hours of waiting at a roost or on the ground near a carcass. California condors locate food by visual rather than olfactory cues, and require fairly open areas for feeding, allowing ease in approaching and leaving a carcass. California condors typically feed only 1-3 days per week.

Seasonal foraging behavior shifts may be the result of climatic cycles or changes in food availability. California condors maintain wide-ranging foraging patterns (*i.e.*, at least 2.8 to 11.6 square miles) throughout the year, an important strategy for a species that may be subjected to unpredictable food supplies.

Historically, condors probably fed on mule deer (*Odocoileus hemionus*), elk (*Cervus elaphus*), pronghorn antelope (*Antilocarpa americana*), and various marine mammals. More recently, domestic livestock made up the majority of their diet. (Source: **USFS 2006** Forest Plan Species Account)

Population Status and Threats – California Condor: The California condor has been one of the most highly endangered bird species in the world throughout its modern history. As the result of an aggressive management program, including capture of the last six individuals remaining in the wild in 1986-87, captive breeding, and reintroduction of captive progeny, the total population continues to increase from the low point in 1982-82, when only 21-22 individuals were thought

to survive. The 9/30/12 California condor status report by the U.S. Fish and Wildlife Service showed a total population of 410 individuals, including 180 in captivity and 230 in the wild.

A high number of birds are still being lost to poisoning from lead ingested from carcasses, and this factor may preclude rapid recovery of the species in some areas. The ingestion of trash items, including glass fragments, china, plastic, and metal bottle tops, and non-digestible natural items such as small rocks, sticks, grass, wool, and fur, is a serious problem for condor chicks in California nests. (http://globalraptors.org/grin/SpeciesResults.asp?specID=8258)

Factors that led to California condor's century-long decline included illegal collection of adults and their eggs; poisoning by substances used to eradicate livestock predators; poisoning from ingestion of lead fragments of bullets embedded in animal carcasses; other forms of poisoning (DDT, cyanide, strychnine, compound 1080, antifreeze from car radiators); shooting; and collisions with structures such as transmission lines. In addition, the roads, cities, housing tracts, and weekend mountain retreats of modern civilization have replaced much of the open country condors need to find food. Their slow rate of reproduction and maturation undoubtedly make the California condor population as a whole more vulnerable to these threats.

Viability is a definite concern due to the extremely small population and vulnerability to many factors. Greatest among these are shooting, lead contamination, collision with overhead transmission lines and towers, trash, and general human disturbance (**USFS 2006** Forest Plan Species Account).

Rideout *et al.* (2012) documented the causes of death of free-ranging California condors between 1992 (the beginning of the reintroduction program) through 2009. Out of 76 dead condors for which the cause of death could be determined, 70% were from anthropogenic causes. Ingestion of trash was the most important cause of death for nestlings, and lead toxicosis was the most important factor for juveniles and adults. Other causes of death identified included: copper toxicosis (possibly from cattle troughs treated with copper sulfate to control algae), west Nile virus, powerline electrocution, powerline collision, ethylene glycol (antifreeze) ingestion, rattlesnake bite, predation, and gunshot.

There are many existing and ongoing threats to California condors, as described above. The risk to condors from man-made factors (trash, toxins, shooting, electrocution, and collisions) will continue and may increase in the foreseeable future as human populations in southern California grow.

Perhaps the greatest threat to condors in the foreseeable future is the expansion of renewable energy developments (solar and wind) throughout current condor's distribution as well as in areas where condors are expected to expand as the population continues to grow. The Bureau of Land Management has seen a surge in wind energy applications. Their website has data tables and maps displaying areas with existing applications for renewable energy projects (http://www.blm.gov/ca/st/en/prog/energy/wind.html).

Occurrence on the North Slope – California Condor: California condors have been observed at several locations in the San Bernardino Mountains since 2002, including the White Mountain

area of the North Slope. USFWS records of radio-tagged condors suggest that as S. California's condor population continues to grow, the areas they cover is expanding. Condors appear to be traveling long distances from the main population sites on the coast on a more frequent basis. While nesting is not currently known from the North Slope, it could occur over the 40-120 year life of the project.

Take for California Condor: The Endangered Species Act of 1973, as amended, makes it unlawful for a person to "take" a listed animal without a permit. Take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct." Through regulations, the term "harm" is defined as "an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering."

There are currently no nests known on the North Slope: take and disturbance to nesting California condors are considered very unlikely but the likelihood could change should nesting occur in the future. The Raptor Conservation Strategy contains provisions for annual monitoring and nest monitoring and for actions if an active condor nest were found in close proximity.

c) American Peregrine Falcon *(Falco peregrines anatus)* **RE-will update with more recent version

The peregrine falcon is a Forest Service Sensitive species and a CDFW "fully protected" species. It is a USFWS Bird of Conservation Concern. It has been removed from the Federal and State of California's Endangered Species list.

Life History and Baseline Information – Peregrine Falcon: Peregrine falcons nest almost exclusively on protected ledges of high cliffs, primarily in woodland, forest, and coastal habitats. A very small number of nests have been found on small outcrops and in trees, and a number of reintroduced pairs nest on tall buildings. Cliffs that provide ledges, potholes, or small caves (usually with an overhang), and that are relatively inaccessible to mammalian predators, are required components of nesting habitat. Nest sites usually provide a panoramic view of open country, are near water, and are associated with a local abundance of passerine, waterfowl, or shorebird prey. Peregrine falcons have been known to nest at elevations as high as 10,000 feet, but most occupied nest sites are below 4,000 feet.

The breeding season of peregrine falcon generally begins in February and lasts to June. Courtship (in February) typically involves the male provisioning the female with food. Females normally lay four eggs; egg-laying in California typically occurs in March. Both male and female incubate the eggs for 29–33 days. In California, fledging occurs in late May or early June when the young are 35–42 days old. Juvenile peregrine falcons begin hunting on their own and become independent 6–15 weeks after fledging.

Peregrine falcons feed almost exclusively on birds; most of their avian prey is medium-sized to moderately large. They typically feed on highly mobile, flocking, and colonial nesting birds, such as shorebirds, waterfowl, doves, and pigeons. Peregrine falcons chase and grab their prey, or dive down on them at speeds up to 100–200 miles per hour (*i.e.*, stooping). During the stoop,

a peregrine falcon grasps its prey or strikes it with its talons and subsequently retrieves it on the ground. Peregrine falcons hunt during the day or at dusk. During the breeding season, adult peregrine falcons attack and chase other raptors away from the nest, especially golden eagles and other peregrine falcons that move through their territory. Adults hunt over a large area around the nest site; foraging may occur up to 12 miles from the nest.

Population Status and Threats – Peregrine Falcon*:* Bans on the use of DDT in the 1970s and a major reintroduction program led by the Peregrine Fund have resulted in an impressive increase in the distribution and abundance of this species over the last 20 years. The population increase has been substantial enough to warrant the taxon's delisting, in August 1999, from the federal endangered status, although this decision is controversial. (Source: **USFS 2006** Forest Plan Species Accounts)

The widespread use of organochloride pesticides, especially DDT, was a primary cause of the decline in peregrine falcon populations. High levels of these pesticides and their metabolites (*i.e*., byproducts of organic decompositions) have been found in the tissues of peregrine falcons, leading to thin eggshells and reproductive failure. Environmental toxins continue to be a threat. Other threats include illegal shooting, illegal falconry activities, and habitat destruction. NFS lands in southern California do not support a large amount of high-quality habitat for American peregrine falcon. Protecting cliff-nesting sites from human disturbance has been identified as an important conservation measure for peregrine falcons on NFS lands.
(Source: **USFS 2006** Forest Plan Species Accounts)

Nesting sites for peregrine falcon on the North Slope are expected to continue to be affected by mining operations through disturbance and habitat alterations.

Occurrence on the North Slope – Peregrine Falcon: While not currently known to nest on the North Slope, peregrine falcon nesting territories in and near the San Bernardino Mountains have increased over the past decade. There are now successful nesting peregrines in downtown Riverside. Peregrine falcons are known to nest at one site in the San Bernardino Mountains. The nest site is approximately 75 feet high located on a cliff face. Successful fledging of chicks was documented in July 2009 and again in 2012. Another nesting territory was found in the Cajon Pass in 2012. Historically, both sites supported prairie falcon nesting. Peregrine falcons occur in the Big Bear and Baldwin Lake areas during spring and fall migration.

The North Slope has an abundance of rocky outcrops and cliffs that are suitable peregrine falcon nest sites. With successful nesting efforts in the mountain range and increasing populations of peregrine falcons in the western U.S., it is possible that over the life of the project, this species could nest on the North Slope of the San Bernardino Mountains.

Prairie Falcon (Falco mexicanus) **RE-will update with more recent version
Prairie falcons are a SBNF Watchlist species and a CDFW Watchlist species.

Life History and Baseline Information – Prairie Falcon: Prairie falcons inhabit shrub-steppe desert, open desert scrub, grassland, mixed shrub-grasslands, and alpine tundra. Prairie falcon habitat typically consists of dry open terrain, either hilly or level. Nests are located on cliffs,

generally in arid open areas. Desert scrub and grasslands are preferred foraging habitats in southern California. This species has declined in the coastal foothills of southern California, probably due to the loss of foraging habitat.

Prairie falcons breed in mid-April on cliff ledges or rock outcrops in open regions. Nests are typically scrapes located 30-40 feet high on a cliff or rock outcrop; they are occasionally found as high as 400 feet. Abandoned nests built by other birds are rarely used by prairie falcons. The female incubates a single clutch; clutches usually contain four-five eggs. Incubation lasts for approximately 29-31 days. The male feeds the female, rarely taking part in incubation duties.

Prairie falcons are described as more of a wanderer than a true migrant. They move seasonally, probably in response to food availability. Most of the species' southward movements occur between late August and late October, with the main return flight taking place in early March to late April.

Primary foods taken by prairie falcons include horned larks (*Eremophila alpestris*) and other small passerines, lizards, ground squirrels (*Spermophilus* spp.), and small rodents. Prairie falcons employ two main hunting strategies: one is to flush a prey item and fly along a route meant to conceal the prairie falcon until the last moment; the other is to patrol long distances close to the ground until it may surprise its quarry. Prairie falcons defend a small area around the nest site from conspecific and other intruders. However, prairie falcons forage over large, undefended areas, and do not defend territories at all during winter. (Source: **USFS 2006** Forest Plan Species Account)

Population Status and Threats – Prairie Falcon*:* The species is legally harvested in 19 states. Falconers legally take an estimated 0.2 percent of the prairie falcon population each year, making it the second most commonly harvested raptor in the United States. Because of prairie falcons' strong association with cliffs as nesting sites, they are especially susceptible to habitat loss adjacent to suitable nest structures. Prairie falcons can be adversely affected by large-scale agricultural development, especially in foraging areas with high densities of ground squirrels. Much of the prime foraging area for prairie falcons has been lost to development on the coastal side of the San Gabriel Mountains south to the Mexican border. The San Gabriel, San Bernardino, and Santa Ana Mountains are expected to be surrounded by urban development in the next 20-50 years. (Source: **USFS 2006** Forest Plan Species Account)

Occurrence on North Slope – Prairie Falcon*:* Prairie falcons are known to occur on the North Slope and adjacent SBNF lands. There is a migrant prairie falcon record at Cushenbury Spring (**Kielhold 1993**). There are several records on the North Slope, including in Crystal Creek, Dry Canyon, and Deep Canyon (SBNF records). They were detected in near the Mitsubishi mining area in May 2008 (**MacKay and Thomas 2008**). Suitable habitat exists for foraging and nesting exists in and near the project area. Nesting is suspected but has not been confirmed.

RAPTOR MANAGEMENT

The intent of the management actions described here is to have all mine operators with activities on National Forest system lands on the North Slope follow these measures in order to lower the

risk to raptors as a result of mining operations. These measures have been developed in conjunction with U.S. Fish and Wildlife, California Department of Fish and Wildlife, and the U.S. Forest Service. They are intended to provide for equity and consistency between the mine operators in terms of conducting activities on the North Slope that result in loss/degradation of nesting raptor (specifically golden eagle, California condor, peregrine falcon, and prairie falcon) habitat or disturbance that could harm, harass, or result in mortality of these species.

RAPTOR MANAGEMENT MEASURES

Mining companies commit to funding and participating in the following efforts. SBNF will also participate, and will contribute subject to availability of appropriated funds.

1. *Initial Evaluation/Identification of North Slope Nesting Habitat*: The objectives are to provide baseline population data and identify known active and inactive nests as well as likely nest sites. By doing an initial 1-time survey that covers the North Slope, we will gain an understanding of the minimum number of nesting territories that are currently active and the species currently nesting in the area. This will also provide a map of the known and likely nest sites.

   This initial evaluation would be a 1-time effort and cost. Most of the cliff-nesting raptor nest sites have been identified in previous surveys (Pete Bloom, pers. communication). This effort should be a matter of consolidating existing data and re-checking those areas and ground surveying trees/towers, and preparing a report and maps. This initial evaluation will help make annual monitoring (described in Item #2) more focused and efficient.

   For golden eagles, the USFWS's guidelines include a standard survey area of ten miles from the activity for solar, wind, and mining projects. This is based on the maximum practicable distance that a golden eagle typically travels from the nest centroid for foraging. Based on knowledge of the proposed North Slope mining projects, the topography, and an understanding of golden eagle biology, the USFWS has modified the survey area for this area to include the entire north slope area from near Terrace Springs west to the White Mountain, , from the toe of the slope to slightly south of the ridgeline (see attached map).

   Using smaller reconnaissance areas focused on areas of potential impacts would not allow for confident detection of nesting raptors that would likely be present in project areas and most at risk of impacts or injury.

   Annual Monitoring of Nest Sites: Annual monitoring of raptor nest sites on the North Slope is necessary to determine which raptor nesting territories are active in any given year and where they are relative to the active mining operation areas. It will also provide occupancy trend data over time. Because Step 1 will have identified the active and inactive raptor nests as well as areas of potential nest sites, this annual survey effort should be very focused and efficient (checking known nest sites and the previously-identified high quality habitat).

   Monitoring Objectives: The monitoring efforts will determine occupancy for known nest sites, species occupying the nest, chronology of nest building, egg laying, brooding, hatching,

fledging, etc., and nesting success. Over time, the monitoring efforts will provide trend data for raptors that are likely to be foraging around the active mining operations. After 5 years of monitoring and data gathering to establish baseline conditions, a reduction of the survey effort will be evaluated.

Monitoring Frequency and Duration: Monitoring of known nest sites will be conducted annually. If any 5-year annual monitoring period passes without an occupied raptor nest being located within the survey area, a reduction in survey frequency may be considered. If an active nest is located within the survey area, the survey frequency would resume or continue annually for the next 5 years. These survey requirements would continue for the duration of active mining operations.

Monitoring Area: The monitoring area has been delineated by the Forest Service in cooperation with the USFWS (see attached map). The area encompasses the North Slope area between White Mountain on the west and Terrace Springs on the east.

Monitoring Protocol/Methodology: Methodology will follow established protocols. Golden eagle reconnaissance and monitoring shall follow USFWS Interim Guidelines[1] and any future revisions to these guidelines. Surveys for other raptors will follow currently-applicable USFWS protocols or accepted survey standards. Where protocols do not exist, the survey techniques will be approved by the USFS prior to any field work. In the future, survey methodologies should consider new survey technologies with lower likelihood of disturbing both bighorn sheep and nesting raptors.

Monitoring efforts will be ground-based. Because of the disturbance potential for bighorn sheep, helicopter reconnaissance and monitoring will not be used.

Monitoring for golden eagles will start at the beginning of the courtship period (predicted for the survey area to be early to mid-January), to ensure detection of nesting attempts and abandonment. As nest occupancy and phenology of nesting raptors on the North Slope becomes better understood, the timing of survey efforts may be adjusted.

Notifications: Nest structures and/or evidence of an occupied nest territory detected during monitoring will be reported to the Forest Service biologist via email within 48 hours of detection. Monitoring results of individual flying or perched raptors, and unoccupied nests will also be reported. The Forest Service will coordinate appropriate notification, as necessary, with USFWS or CDFW.

Surveyor Qualifications: Monitoring will be conducted by qualified biologists who have verifiable prior experience, are directly knowledgeable of the species and the survey protocols, and who are approved by the Forest Service. Resumes should be submitted to the Forest Service for approval prior to hiring/contracting.

Monitoring for Behavioral Responses to Mining Activities: If, during annual monitoring, an active raptor nest is located within 1.5-miles of an active blasting site, site-specific nest monitoring

during the breeding season would be conducted to assess nesting success and disturbance responses. This monitoring will be to determine:

- Chronology of nest building, egg laying, brooding, hatching, fledging, etc.
- Reproductive success
- Behavioral responses to mining activities (including blasting)

Golden eagles are very sensitive to noise and visual stimuli; their senses of hearing and sight are much more acute than a human's. As such, there is greater potential for disturbance at farther distances. The data from those monitoring efforts and disturbance responses will be used to evaluate and develop appropriate management tools (*e.g.*, blasting techniques, noise and seismic attenuators, timing of blasting, etc.).

Additionally, the data would be used to refine the need and guidelines for future monitoring. If nesting eagles within certain distances of active mines (including blast sites) do not exhibit any changes in behavior, the monitoring requirement may be altered (*e.g.*, reduce the distance that triggers monitoring) or ceased.

2. *Coordination:* If an occupied nest for a federally-protected species (as of 2013, includes golden eagle and California condor) is found within 1.5 miles of an active quarry operation, the SBNF would conduct an evaluation to determine if an "incidental take" permit should be requested from U.S. Fish and Wildlife Service, under the applicable law (Endangered Species Act or federal Bald and Golden Eagle Protection Act).

STANDARD DESIGN FEATURES FOR MINING AND OTHER PROJECTS ON THE NORTH SLOPE

General

DF-1. Participate in the North Slope Raptor Conservation Strategy.

DF-2. Disturbance footprints for mine operations and development of new quarries and roads shall be limited to the greatest extent possible to the goal of minimizing impacts to adjacent habitat and sensitive biological resources.

DF-3. Any soil bonding or weighting agents to be used on unpaved surfaces shall be non-toxic to wildlife and plants and non-attractants for wildlife.

DF-4. All vehicles and equipment shall be maintained in proper working condition to minimize the potential for spill of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials; except as necessary to repair or remove disabled vehicles or equipment, vehicle servicing shall take place only at a designated area.

DF-5. Maintain facilities and grounds in a manner that minimizes any potential impacts to raptors, predators, and scavengers (*e.g.*, minimize storage of equipment near active quarries that may attract prey, remove trash/garbage daily, etc.). All trash and food-related waste shall be secured in self-closing animal-proof containers and removed daily

from the site.

DF-6. No recreational target shooting will occur on NFS lands.

DF-7. The mine operators shall conduct wildlife/plant awareness programs for employees (including new employee orientation and annual refresher trainings). The program will address raptor nest awareness. This will include the importance of avoiding harassment/disturbance, adherence to speed limits, adherence to defined project boundaries, reporting guidelines, etc. The Forest Service will provide assistance in developing the training program.

DF-8. Avoid practices that attract/enhance prey populations and opportunities for raptor hunting or scavenging near active quarries, haul roads, and processing areas. This would also help discourage the spread of non-native birds; to discourage the spread of disease and pathogens, etc.

DF-9. Reduce vehicle collision risk to raptors and other scavengers by removing animal carcasses from haul and access roads immediately.

DF-10. New powerlines should be buried to reduce avian collisions and electrocution. Where it is not possible to bury lines, the Avian Power Line Interaction Committee (APLIC) guidance on power line construction and design (APLIC 2006).

Reclamation

The timing and planning of reclamation measures should consider improving or creating suitable foraging and nesting habitat for raptors. These measures may include:

RE-1. Phase reclamation where possible to re-establish suitable habitat for prey species in areas where mining activities have ceased.

RE-2. Where perch structures are lacking, consider construction/installation of artificial perches (*e.g.*, poles, rock piles, etc.) for foraging.

RE-3. Restrict vehicle use and human activity to the extent possible in reclamation areas. Remove and reclaim roads where possible.

RE-4. Revegetate with local native plant species that are favorable for raptor prey species.

RE-5. During reclamation, create suitable cover for prey species by considering spatial features on the landscape. Planting in groupings and mosaics and construction of brush and rock piles should be considered.

RE-6. If natural water sources are lacking in reclamation areas, evaluate the feasibility of artificial water sources (wildlife drinkers, guzzlers, catchment structures, etc.) during the reclamation period.

POSSIBLE PROTECTION MEASURES BASED ON NEED AS DETERMINED BY MONITORING RESULTS

Because this is viewed as a long-term management effort with the expectation that the mining operations may exist a century or more after approval, these measures are viewed as a tentative toolbox of possible approaches. Depending on site-specific conditions, one or more of these measures may be appropriate. Alternatively, development of new measures may be more appropriate, especially in response to changes in mining technology, changes in wildlife monitoring/management techniques, and based on a better understanding of the ecology of North Slope raptors.

PM-1. Where nest monitoring detects changes in behavior of nesting raptors associated with blasting activities, use of noise attenuation devices or techniques (*e.g.,* blast mats, different blasting compounds, etc.) would be used during the breeding season. In some cases, if a nest were extremely close (with ½-mile), noise attenuation devices or techniques should be considered without waiting for monitoring results.

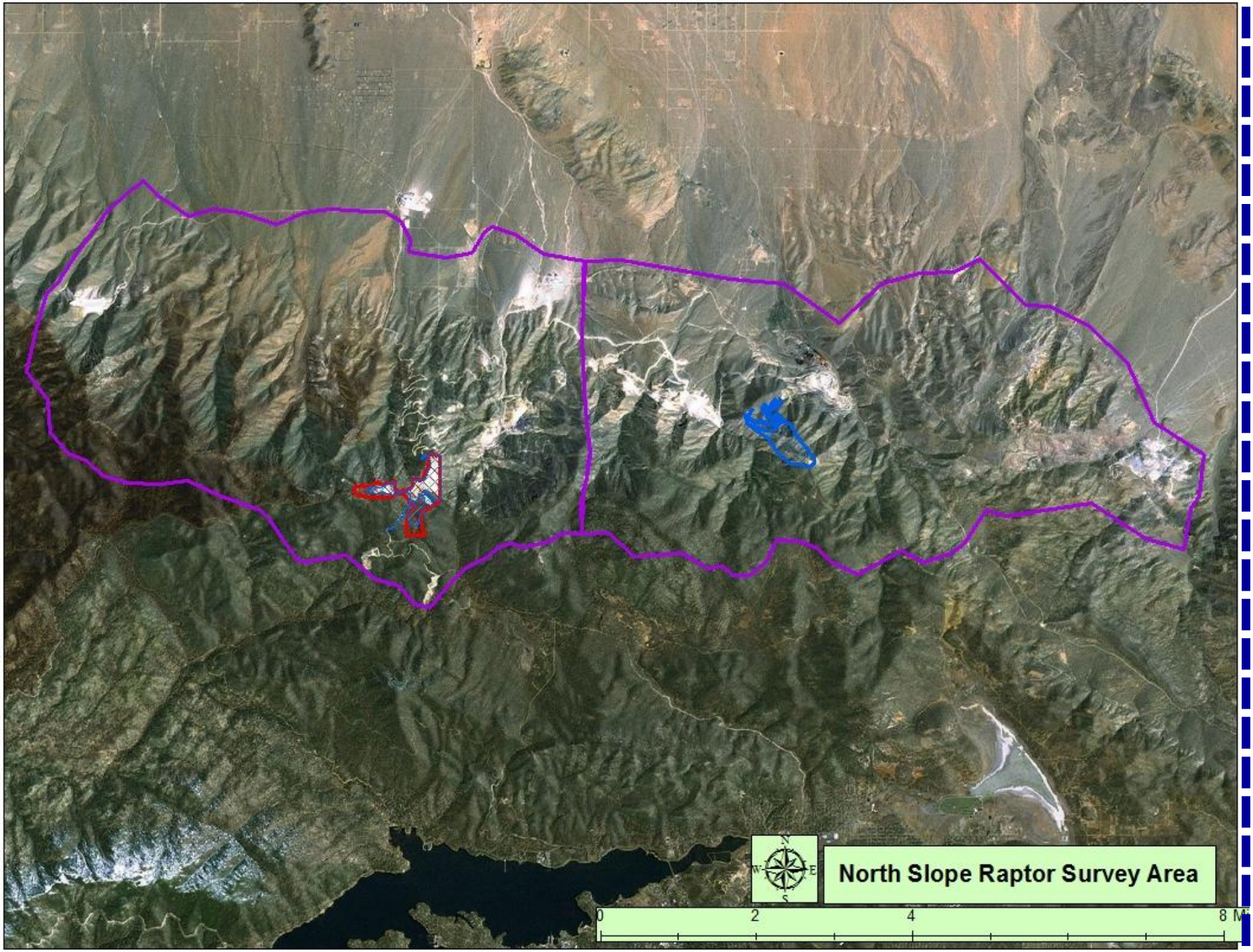
PM-2. Where disturbance or mortality risk is determined to be very high due to close proximity (within ½-mile), a Limited Operating Period (LOP) should be considered with a restriction on blasting (or other activities likely to cause nest abandonment or failure) during the breeding season.

PM-3. If suitable nesting habitat is degraded to the point that suitable nest sites are a limiting factor, consider construction of artificial nest platforms at suitable sites away from disturbance sources.

[1] Golden eagle reconnaissance and monitoring shall follow USFWS Interim Guidelines (Pagel *et al.* 2010 – Interim Golden Eagle Technical Guidance: Inventory and Monitoring Protocols; and Other Recommendations in Support of Golden Eagle Management and Permit Issuance, USFWS Division of Migratory Birds, Washington, DC) and any future revisions to these guidelines. Monitoring for other raptors will follow currently-applicable USFWS protocols or accepted survey standards.

The ground observation survey guidelines for golden eagles are summarized here (see the Pagel *et al.* 2010 for complete guidelines):

- Observation posts for monitoring known territories will be no closer than 300 meters for extended observations, and generally no further than 700 meters, where terrain allows. Maximum observation post distance would be 1600 meters.
- To inventory and determine occupancy of cliff systems, there will be at least 2 observation periods per season. To determine fledging success, additional observations may (or may not) be necessary. territory occupancy can be confirmed.
    - Observation periods will last at least 4 hours for known nest sites, or until
    - Observation periods will last for at least 4 hours per 1.6 km of cliff system, based from the center point of that cliff complex.
    - Observation periods will be at least 30 days apart for monitoring efforts.
- To collect monitoring data at a known nest territory, there will be at least 2 observation periods per season.
    - Observation periods from ground observation points will last at least 4 hours for known nest sites or until nesting chronology can be confirmed per visit. Observation periods will be at least 30 days apart.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Pagel, J.E., D.M. Whittington, and G.T. Allen. 2010. Interim Golden Eagle technical guidance: inventory and monitoring protocols; and other recommendations in support of eagle management and permit issuance. Division of Migratory Bird Management, U.S. Fish and Wildlife Service. (http://www.dfg.ca.gov/wildlife/nongame/GEWG/docs/InterimGoldenEagleMonitoringProtocol.pdf

U.S. Fish and Wildlife Service. 2013. Eagle Conservation Plan Guidance: Module 1 – Land-Based Wind Energy (Version 2). U.S. Fish and Wildlife Service, Division of Migratory Bird Management. April 2013. 103 pp.

Walters, C. J. 1986. Adaptive management of renewable resources. Macmillan, New York, New York, USA.

Websites with Draft Conservation Plan Guidance:

http://www.fws.gov/windenergy/docs/ECP_draft_guidance_2_10_final_clean_omb.pdf

There are a number of example "Bird and Bat Conservation Strategies" on-line that have been developed for renewable energy projects. Some examples:

Energy.gov

Centinelasolar.com

Minnesota State Conservation Strategies

Separate Attachments

Interim Golden Eagle Technical Guidance: Inventory and Monitoring Protocols; and Other Recommendations in Support of Golden Eagle Management and Permit Issuance. Pagel *et al.* 2010.

Eagle Conservation Plan Guidance: Module 1 - Land-Based Wind Energy (Version 2). U.S. Fish and Wildlife Service. April 2013.

MEMORANDUM OF UNDERSTANDING

among

USDI BUREAU OF LAND MANAGEMENT
CALIFORNIA DESERT DISTRICT;

the

USDA FOREST SERVICE,
SAN BERNARDINO NATIONAL FOREST;

the

COUNTY OF SAN BERNARDINO;

the

CALIFORNIA NATIVE PLANT SOCIETY;

and

VARIOUS PRIVATE PARTIES

This **MEMORANDUM OF UNDERSTANDING** (this "MOU") is hereby entered into as of this 29th day of April, 2003 by and among the United State Department of Interior Bureau of Land Management, California Desert District ("BLM"); the United States Department of Agriculture Forest Service, San Bernardino National Forest ("Forest Service"); the County of San Bernardino ("County"); the California Native Plant Society ("CNPS"); various private parties who have executed this MOU as the "Initial Transaction Parties"; various private parties who execute this MOU in the future with respect to a specified mining project by amendment to this MOU as "Compliance Parties"; and various private parties who execute this MOU in the future by amendment to this MOU as "Credit Holders."

A. Background and Purpose. The purpose of this MOU is to provide a framework for cooperation to implement the Carbonate Habitat Management Strategy dated April 29, 2003, which is hereby incorporated herein by reference (the "CHMS"). In the event of any conflict between the CHMS and the terms of this MOU, this MOU shall control.

1. On August 24, 1994, the following five plant species that are associated with the carbonate geology of the northeastern San Bernardino Mountains and adjacent Lucerne Valley were listed as threatened or endangered under the federal Endangered Species Act of 1973, as amended (the "ESA"): Cushenbury buckwheat (*Eriogonum ovalifolium* var. *vineum*), Cushenbury milk-vetch (*Astragalus albens*), Cushenbury oxytheca (*Oxytheca parishii* var. *goodmaniana*), Parish's daisy (*Erigeron parishii*), and San Bernardino Mountains bladderpod (*Lesquerella kingii* var. *bernardina*). Four of these plants (all but the San Bernardino Mountains blad-

derpod) shall be referred to collectively as the "Carbonate Plants".The Carbonate Plants occur on commercially valuable limestone deposits.

2. The coincidence of limestone deposits and habitat for the Carbonate Plants creates a potential for conflict between the public interest in, and ESA requirement of, preserving the Carbonate Plants, on the one hand, and the public interest and private property interest in mining the limestone deposits, on the other hand. The CHMS was developed over a period of about four years with the involvement of all of the initial parties to this MOU, the U. S. Fish and Wildlife Service ("USFWS"), and others to provide a strategy to resolve this potential conflict within an area identified in the CHMS as the Carbonate Habitat Management Area (the "CHMA").

3. The CHMS is designed to allow certain mining activities to occur while conserving habitat for the Carbonate Plants by establishing an initial habitat reserve for the Carbonate Plants (the "Habitat Reserve") that will be increased in size over time.

4. Under the CHMS, private parties (the Credit Holders hereunder) may receive tradable credits ("Conservation Credits") in exchange for making voluntary contributions to the Habitat Reserve ("Reserve Contributions").

5. Under the CHMS, individual mining projects within the CHMA can be brought into compliance with the ESA with respect to the Carbonate Plants ("ESA Compliance") upon satisfying the conditions of the CHMS for such compliance, which includes, without limitation, making sufficient Reserve Contributions or providing sufficient Conservation Credits as compensation for a proposed destruction of Carbonate Plant habitat. A private party (a Compliance Party hereunder) who satisfies the conditions for a parcel to achieve ESA Compliance is said to "obtain ESA Compliance" for that parcel.

6. Upon execution of this MOU, BLM and Forest Service shall cooperate to prepare and submit to USFWS a biological assessment of the effects of implementing the CHMS (the "CHMS Biological Assessment") in order to initiate a consultation with the USFWS under Section 7 of the ESA (the "CHMS Section 7 Consultation") in order to obtain from the USFWS a biological opinion under Section 7 of the ESA regarding implementation of the CHMS (the "CHMS Biological Opinion").

7. It is the intent of the parties hereto that if the CHMS Biological Opinion states that the implementation of the CHMS in accordance with its stated terms would not result in jeopardy to the continued existence of the Carbonate Plants or the destruction or adverse modification of critical habitat for the Carbonate Plants, the CHMS will be implemented consistent with the CHMS Biological Opinion.

8. The Initial Transaction Parties have mining interests within the CHMA and desire to enter into certain transactions with the federal government, including Forest Service or BLM, as applicable, with respect to their mining land and/or claims (the "Initial Transactions"). Such transactions may involve contributing land or claims

to the Habitat Reserve in exchange for Conservation Credits, obtaining ESA Compliance for particular mining parcels, selling land or claims to the federal government, and/or exchanging land or claims for land owned by the federal government.

9. By cooperating under this MOU to implement the CHMS as described in subsection 4 above, the parties hereto increase the likelihood of enjoying the benefits of the CHMS, as described in Section B below, without interruption.

10. As it is in the interest of the public to receive both the economic benefits of ongoing carbonate mining within the CHMA and environmental benefits of preserving the Carbonate Plants, the cooperation of the parties under this MOU serves the mutual interest of the parties and the public.

B. Statement of Mutual Benefit and Interests.

1. BLM shall benefit from the successful implementation of the CHMS in accordance with this MOU by:

(a) Establishing a process for ensuring compliance of mining projects located on lands it manages within the CHMA with the ESA as to Carbonate Plants that saves time and resources for BLM and its applicants.

(b) Establishing a biological framework for addressing the Carbonate Plants in future Federal Land Plans and other land management or ESA compliance plans that include portions of the CHMA, as well as in the NEPA compliance documentation that accompanies such plans.

(c) Attaining compliance with certain stipulations it has entered into with respect to certain pending litigation.

2. Forest Service shall benefit from the successful implementation of the CHMS in accordance with this MOU by:

(a) Establishing a process for ensuring compliance of mining projects located on lands it manages within the CHMA with the ESA as to Carbonate Plants that saves time and resources for Forest Service and its applicants.

(b) Establishing a biological framework for addressing the Carbonate Plants in future Federal Land Plans that include portions of the CHMA, as well as in the NEPA compliance documentation that accompanies such plans.

(c) Attaining compliance with certain stipulations it has entered into with respect to certain pending litigation.

3. County shall benefit from the successful implementation of the CHMS in accordance with this MOU by:

(a) Establishing a process that can be used to streamline the County's review under the California Environmental Quality Act of the biological impacts of mining projects on private land within the CHMA.

(b) Establishing a process that can be used to streamline the County's implementation of the California Surface Mining and Reclamation Act of 1975, as amended.

4. CNPS shall benefit from the successful implementation of the CHMS in accordance with this MOU because the CHMS coincides with CNPS' interest in conserving rare and endangered plants by providing a means for maintaining and managing the geomorphic and ecological processes of the landscape in large, well-placed blocks of habitat where the Carbonate Plants are found within the CHMA such that the Carbonate Plants are likely to persist indefinitely.

5. The Initial Transaction Parties shall benefit from the successful implementation of the CHMS in accordance with this MOU by:

(a) Receiving the benefits of being Compliance Parties and Credit Holders (see subsections 6 and 7 below), depending whether the transactions into which they enter place them in one or both of those statuses.

(b) Obtaining increased certainty regarding how the existence of habitat for Carbonate Plants on their particular holdings will be addressed.

6. The Compliance Parties shall benefit from the successful implementation of the CHMS in accordance with this MOU by:

(a) Establishing increased regulatory certainty under the ESA that the most valuable mineral deposits within the CHMA may be mined in the future.

(b) Establishing a definitive, streamlined process for future mining activities within the CHMA to comply with the ESA and County regulation of the Carbonate Plants.

(c) Establishing a framework for addressing impacts to the Carbonate Plants under the National Environmental Policy Act to the extent that provisions of the CHMS are incorporated into future Federal Land Plans.

7. The Credit Holders shall benefit from the successful implementation of the CHMS in accordance with this MOU by:

(a) Obtaining a means to receive Conservation Credits in exchange for making Reserve Contributions, which credits may be used, sold, or held, to obtain ESA Compliance.

(b) Obtaining a means to offer precise compensation given for impacts to Carbonate Plants, avoiding overcompensating to meet ESA requirements.

8. The parties shall mutually benefit from the successful implementation of the CHMS in accordance with this MOU by obtaining a means to facilitate economic limestone mining activity while conserving the Carbonate Plants, all under a sensible and efficient regulatory regime.

In consideration of the above premises, the parties agree as follows:

C. BLM and Forest Service shall each:

1. Cooperate together to expeditiously prepare the CHMS Biological Assessment.

2. Coordinate the mining and land use regulations administered by the Resource Management Agencies with the provisions of the CHMS to facilitate the use of the CHMS by prospective Compliance Parties to obtain ESA Compliance, such as by coordinating the administration of their respective land management plans (the "Federal Land Plans") with the CHMS.

2. In processing applications for mining activities, accept compliance with the CHMS as compliance with the Federal Land Plans, the ESA, and other federal laws and regulations with respect to impacts on the Carbonate Plants (subject, however, to review under the National Environmental Policy Act ("NEPA")).

3. Manage those portions of the Habitat Reserve that fall under their respective jurisdictions in a manner that is consistent with the CHMS.

4. Facilitate federal land designations as contemplated by the CHMS to help form the Habitat Reserve.

5. Facilitate federal land purchases and exchanges as contemplated by the CHMS to help form the Habitat Reserve.

6. Facilitate acceptance by the federal government of title to privately owned land contributed to the Habitat Reserve under the CHMS.

7. Notify the parties hereto if at any time Congress or the Secretary of the Interior determines that all or any part of the Habitat Reserve is no longer necessary to provide for the conservation of the Carbonate Plants and, as a consequence, an existing mineral withdrawal or other use restriction has been removed as to such land.

8. Work with the USFWS to develop and implement a plan for monitoring the effectiveness of, compliance with, and biological conditions under the CHMS.

9. Monitor the implementation of the CHMS for consistency with the CHMS Biological Opinion and immediately report to the parties hereto any potential or realized inconsistencies.

10. Monitor the CHMA for conditions that could require re-initiation of the CHMS Section 7 Consultation and immediately report any such conditions to the parties hereto.

11. In the event of a re-initiation of the CHMS Section 7 Consultation, suspend or partially suspend operation of the CHMS, if required by Section 7(d) of the ESA, and report the suspension to the parties hereto.

D. In addition to Section C above, Forest Service shall:

1. Maintain and update a geographical database of Carbonate Plant habitat within the CHMA (the "Habitat Inventory"), as described in the CHMS.

2. Administer the creation, use, and transfer of Conservation Credits as described in the CHMS.

3. Carry out the regular reporting functions described in the CHMS.

4. Receive, maintain, and make publicly available records and reports it receives pursuant to the CHMS, such as revegetation reports and various monitoring reports.

5. Maintain a complete original of this MOU, along with any and all amendments hereto, and make a duplicate thereof available to any of the parties hereto at any time upon request.

E. County shall:

1. Adopt standardized conditions of approval for addressing impacts to Carbonate Plants by proposed mining and reclamation projects in a manner that is consistent with the CHMS. Such conditions of approval shall apply under SMARA, the County land use ordinances, and CEQA, subject to the approval of the Board of Supervisors on a project-by-project basis.

2. Such conditions of approval shall provide for (a) habitat compensation requirements consistent with the those set forth in the CHMS and (b) revegetation standards and incentives consistent with those set forth in the CHMS.

F. CNPS shall: Acknowledge, as an active participant in the Working Group, representing the conservation interests of the Carbonate Plants and assuring that from their perspective, that the CHMS provides a good and practical solution to the conflicts between the public economic interest in ongoing carbonate mining and the public interest in conserving the Carbonate Plants within the CHMA.

G. The Initial Transaction Parties shall: Negotiate in good faith with BLM and/or Forest Service to enter into one or more transactions that directly or indirectly result in land within the CHMS containing habitat for the Carbonate Plants to be added to the Habitat Reserve. Such transactions may consist of a wide variety of components that are described in the CHMS, including, without limitation, selling land or mining claims to the federal government, exchanging land or mining claims to the federal government for government-owned land, and making Reserve Contributions in exchange for Conservation Credits. At the discretion of the respective Initial Transaction Parties, such transactions may be contingent upon both the issuance of a favorable CHMS Biological Opinion and upon the simultaneous closing of transactions involving some or all of the other Ini-

tial Transaction Parties. Although the Initial Transaction Parties intend to enter into such transactions, they are not contractually bound by this MOU to do so on any particular terms or to do so at all. Moreover, the Initial Transaction Parties may require certain other agency and industry acts to occur within a short time after the execution of this MOU before the Initial Transactions may be consummated. Each Initial Transaction Party may enter into transactions under the CHMS other than Initial Transactions both before and after such party or other Initial Transaction Parties enter into Initial Transactions. Each Initial Transaction Party may also, at any time, seek compliance with the ESA for projects within the CHMA outside and apart from the CHMS.

H. The Compliance Parties shall:

1. Remain in compliance with the ESA with respect to the covered mining project, taking into account that Covered Activities on the subject land are deemed to be in compliance with the ESA.

2. Remain in substantial compliance with all reclamation requirements that apply to the covered mining project.

3. Comply with the terms of any Use Restriction Agreements entered into by applicant under the CHMS in connection with making Relocatable Contributions.

4. Comply with the terms of any Surface Entry Restrictions entered into by applicant under the CHMS in connection with making split estate Reserve Contributions.

5. Conduct any future mining operations occurring within the area covered by the CHMS prior to the consummation of the Initial Transactions in a manner which is consistent with the terms of the CHMS.

Substantial compliance with the terms of this Section H is a condition for Compliance Parties to retain ESA Compliance under the CHMS.

I. The Credit Holders shall: Follow the processes set forth in the CHMS with respect to the use or transfer of the Conservation Credits they hold.

J. It is mutually agreed and understood by all parties that:

1. *Freedom of Information Act.* Any information furnished to Forest Service or BLM under this MOU is subject to the Freedom of Information Act (5 U.S.C. 552).

2. *Modification.* This MOU may be modified only by a written amendment signed and dated by all parties who could be adversely affected by such modification. Notwithstanding the foregoing, this MOU may be amended at any time to add additional Compliance Parties or additional Credit Holders without the consent of any other party.

3. *Critical Habitat Modification.* The parties to this MOU are planning on filing a petition requesting revision of the critical habitat designation boundaries for the carbonate plants to conform with the boundaries expressed in the CHMS.

4. *Participation in Similar Activities.* This MOU in no way restricts any of its parties from participating in similar activities with other public or private agencies, organizations, and individuals.

5. *Commencement/Expiration Date.* This MOU is executed as of April 29, 2003 and is effective until that date which is five years after the effective date. This MOU is subject to automatic extension for subsequent five-year periods unless one or more of the parties hereto objects to such extension by written notice to Forest Service at least 30 days, but no more than 120 days, prior to any expiration date, in which event this MOU shall expire upon the expiration date then in effect.

6. *Contingencies.* This MOU shall take effect upon the satisfaction of all of the following contingencies:

(a) Revision of the designation of critical habitat by USFWS to avoid conflict with the CHMS.

(b) Issuance of the CHMS Biological Opinion stating that the implementation of the CHMS in accordance with its stated terms would not result in jeopardy to the continued existence of the Carbonate Plants or the destruction or adverse modification of critical habitat for the Carbonate Plants.

(c) Creation of escrows providing for the simultaneous closing of those Initial Transactions whose Initial Transaction Parties desire such simultaneous closings.

(d) Inclusion of the CHMS in the Federal Land Plans of BLM and Forest Service that govern the areas encompassing the CHMA.

(e) Adoption by the County of standard conditions of approval consistent with the CHMS.

(f) Commitment of the federal funding, if any, needed to implement all Initial Transactions involving federal purchases of land and/or claims.

7. *Dependency of CHMS Biological Opinion.* The parties acknowledge that (a) the CHMS is wholly dependent on the issuance and continued validity of the CHMS Biological Opinion and the successful and continued implementation of its terms and conditions; and (b) the CHMS may be suspended, in whole or in part, pending any re-initiation of the CHMS Section 7 Consultation.

8. *Termination.*

(a) This MOU shall terminate automatically with respect to any Compliance Party whose mining projects that have obtained ESA Compliance under the CHMS have all ceased operations and had their respective underlying land fully reclaimed in accordance with all applicable laws and regulations.

(b) This MOU shall terminate automatically with respect to any Credit Holder who no longer holds any Conservation Credits.

(c) This MOU shall terminate automatically as to any Initial Transaction Party who no longer has any transaction pending under this MOU, except that this MOU shall continue in effect as to any status such party may have as a Compliance Party or as a Credit Holder if, until termination under subsections (a) and/or (b) above, as applicable.

(d) This MOU shall terminate automatically as to all parties in the event that the CHMS Biological Opinion states that the CHMS would result in either jeopardy to any of the Carbonate Plants or adverse modification of the critical habitat for any of the Carbonate Plants.

(e) No termination of, withdrawal from, or failure to comply with this MOU as to one or more of the parties shall change the effect of this MOU as to the other parties.

9. *Principal Contacts*. The principal contact and contact information for each party hereto are as shown on the signature page hereto for such party.

10. *Notices*. Forest Service shall notify the principal contact of each of the other parties at the addresses set forth on the respective signature pages below of the occurrence of any of the following as soon as reasonably practicable after such occurrence: (a) any modification of this MOU, (b) any objection by any party hereto to an automatic extension of this MOU under Section 4 above, and (c) any attempt of any party hereto (whether or not authorized hereby) to withdraw from this MOU.

11. *Non-Fund-Obligating Document.* This MOU is neither a fiscal nor a funds obligation document as to Forest Service and BLM. Any endeavor or transfer of anything of value involving reimbursement or contribution of funds between the parties to this MOU will be handled in accordance with applicable laws, regulations, and procedures including those for Government procurement and printing. Such endeavors will be outlined in separate agreements that shall be made in writing by representatives of the parties and shall be independently authorized by appropriate statutory authority. This MOU does not provide such authority. Specifically, this MOU does not establish authority for noncompetitive award to the cooperator of any contract or other agreement. Any contract or agreement for training or other services must fully comply with all applicable requirements for competition. Nothing in this MOU obligates the expenditure of funds in violation of the federal Antideficiency clause.

12. *Consistency with Federal Law.* Nothing in this MOU shall be interpreted contrary to the statutes, rules, or regulations of the federal agencies. In the event of a perceived inconsistency, the statue, rule, or regulation will control the interpretation of this MOU. In the event that one or more of the provisions in this MOU are de-

termined to be inconsistent with any statue, rule, or regulation of the federal agencies, such determination will not render any other provision inconsistent.

THE PARTIES HERETO have executed this MOU in counterparts on the following pages. This MOU shall be deemed effective as of the date first above written upon its execution by BLM, Forest Service, and County; it shall become effective as to each additional party as of the date that such party executes this MOU.

BLM:

USDI Bureau of Land Management, California Desert District

By: Linda Hansen Date: 4-29-03
Linda Hansen, District Manager

Principal contact information:

District Manager
California Desert District
Bureau of Land Management
22835 Calle San Juan de los Lagos
Moreno Valley, CA 92553
(909) 697-5206 (phone)
(909) 697-5299 (fax)

FOREST SERVICE:

USDA Forest Service, San Bernardino National Forest

By: _____ Date: 4.29.03
Gene Zimmerman, Forest Supervisor

Principal contact information:

Mountaintop District Botanist
Big Bear Ranger Station
42300 North Shore Drive
P.O. Box 290
Fawnskin, California 92333
(909) 866-3437 (phone)
(909) 866-2867 (fax)

INITIAL TRANSACTION PARTY:

Butterfield Claims Holders

By: Ella Mae Shofner Butterfield Date: 4/29/03
Ella Mae Shofner Butterfield, representative

Principal contact information:

Ella Mae Shofner Butterfield
P.O. Box 1408
Paso Robles, CA 93447
(805) 238-1383 (phone)
(805) 237-0874 (fax)

INITIAL TRANSACTION PARTY:

Cushenbury Mine Trust

By: Frank Bitonti Date: 4-29-03
Frank Bitonti, Trustee

Principal contact information:

Frank Bitonti, Trustee
P.O. Box 401081
Hesperia, CA 92340
(760) 948-0678
(760) 948-1987 (Fax)

INITIAL TRANSACTION PARTY:

Mitsubishi Cement Corporation

By: _____ Date: 4/29/03
Michael W. Jasberg, Executive Vice President

Principal contact information:

Michael W. Jasberg, Executive Vice President
3633 Inland Empire Boulevard
Empire Tower, Suite 900
Ontario, CA 91764-4910
(909) 466-5900
(909) 466-5910 (fax)

INITIAL TRANSACTION PARTY:

OMYA (California) Inc.

By: _____ Date: 4-29-03

Jim Reddy, President

Principal contact information:

Jim Reddy, President
P.O. Box 825
Lucerne Valley CA 92356
760 248-7306
760 248-9115

INITIAL TRANSACTION PARTY:

Specialty Minerals Inc.

By: Douglas Mayger Date: 4/29/03

Doug Mayger, Plant Manager

Principal contact information:

Doug Mayger, Plant Manager
P.O. Box 558
Lucerne Valley Calif . 92356
(760) 248-5300 (phone)
(760) 248-6707 (fax)