Historic Biological Reports
Scan Control Sheet

County Project Number(s): CUP-4609

Report Type (check one):
- ☐ Initial Study
- ☐ Species Inventory/Survey
- ☐ Focused Study
- ☒ EIR
- ☐ Draft EIR
- ☐ EIS
- ☐ ND
- ☐ MND
- ☐ Other

Report Date (Month/Day/Year): 11/3/1993

Check if the following apply to the report:

- ☒ Wetland and/or aquatic habitat
- ☐ Within designated Coastal Zone
- ☐ Potential movement corridor for fish and/or wildlife

CHAPTER 9

BOTANICAL RESOURCES

9.1 EXISTING CONDITIONS

Introduction

The following analysis of the impacts of the proposed project on botanical resources was prepared using baseline data provided by **Rachel Tierney**, consulting botanist (Botanical Resources Analysis and Revegetation Plan, October 1991). The proposed Mitigation Measures detailed in the revegetation plan outlined by the consulting botanist's report have been incorporated into the mitigation measures section of this EIR. The Botanical Resources Analysis prepared by Tierney included a description of the on-site botanical resources including an assessment of the potential for sensitive plant species or communities to occur within the project site. The revegetation plan presented in the Mitigation Measures section of this EIR was prepared for inclusion in the Reclamation Plan for the project.

The scope of the prior mining operations on the property and the present pasture uses of the existing grasslands have effectively reduced the habitat value of the property for wildlife to insignificant status. Adverse impacts to wildlife or effects on wildlife corridors were determined to be insignificant in the Initial Study for this project. Therefore, the biological resource impact analysis was limited to a consideration of the botanical resources on the property, which, although seriously impacted by prior mining, were determined to have some residual resource value.

Botanical Setting

A field survey of the site was conducted on February 15, 1991 by the consulting botanist. **Planning Corporation** staff field confirmed the vegetation mapping in March of 1993 and conducted an additional, independent review of potential biological impacts. A vegetation map prepared by the botanical consultant (Figure 2 in the Tierney Botanical Resources Analysis, October 1991) was derived in part from an aerial photograph taken in 1989. This initial mapping illustrated the vegetation in Phases I, II, and III as occupying an area that had been previously graded; this previously graded area has gradually been re-colonized both by invasive ruderal vegetation and by natives present in relict stands in areas surrounding the Tapo Quarry. The original vegetation map in the Tierney report suggested that the lands east of the Phase I, II, and III proposed operations were intact coastal sage scrub while in fact most of this area is either barren, *or* has reverted to grassland. There are only several small relict stands of coastal sage scrub within the CUP area and the surrounding vicinity. A revised vegetation map (**Figure 9-1**) was prepared for this document.

Although vegetation conditions at the project site have been altered somewhat due to grazing and site clean-up since the original field survey by Tierney, the extent of botanical resources on the property have not changed significantly since 1991. Within Phases IV and V, almost all of the area designated for excavation has been heavily disturbed by recent mining operations. Unlike the gradual re-establishment of a combination of native and exotic species that has characterized conditions within Phases I, II, and III, no vegetation restoration has occurred within Phases IV and V (with the exception of small areas planted by the owner to barley hay).

The original topography of the worked-portion of the site has been greatly altered by mining activity, and now forms a maze of multi-leveled, plateaus and hummocks. Even the Phase VI area has been altered significantly.

All species observed during the field reconnaissance are listed in **Table 9-1**. Since the survey was conducted at a time when many annual and perennial herbs are not evident, the observed vegetation represents a portion of the entire flora actually present. However, given the extensive previous disturbance of the property, the plants listed in **Table 9-1** represent an accurate appraisal of the existing communities and associated plants.

Plant Communities

The plant communities present within the project boundary can be classified into three categories: Coastal Sage Scrub, Oak Woodland, and a diminutive Willow Woodland associated with a small spring. The distribution of these plant communities are mapped on **Figure 9-1** and described below. Existing conditions within the property boundary within each of these communities is illustrated with commentary in **Figures 9-2** through **9-5.**

Coastal Sage Scrub: This community is mostly comprised of low, evergreen shrubs. The Coastal Sage Scrub community may have been more common within the site prior to mining activity. Presently, undisturbed areas in the eastern and southern sections of the site display a sparse-to-moderate cover of the often aromatic shrubs comprising this community. Species common within the project boundary are California Sagebrush (*Artemisia californica*), California Buckwheat (*Eriogonum fasciculatum*), Coyotebush (*Baccharis pilularis ssp. consanguinea*) and Black Sage (*Salvia mellifera*).

Oak Woodland: Individual and small clusters of Coast Live Oak (*Quercus agrifolia*) are scattered along the slopes flanking the access road into the quarry. Oak trees and the associated understory provide a particularly rich habitat for wildlife including nesting, perching and resting sites and forage and cover for a large variety of mammals, birds and reptiles.

A number of the oak trees within the property boundary do not appear to be healthy. This may be due either to the direct or indirect effects of the recent drought, the location of the trees on the margin of suitable habitat and soil distributions, or possibly the influence of diseases. Little evidence of age stratification was noted in the population, a common condition within the California oak communities; few young trees were observed to be present, possibly due to grazing and deterioration of oak understory vegetation.

Willow Woodland: A small spring is present along the access road, where several Arroyo Willows (*Salix lasiolepis*) and Mulefat (*Baccharis glutinosa*) have established in two locations. No above-ground water was noted during the field survey, however, this is the first year in several decades that the spring has not been perennial (Brooks, Juanita, 1991).

Grassland: This community within the boundary of the Tapo project is represented entirely by introduced exotic grasses. Based on comparable data from less intensively grazed areas, native grasslands (characterized primarily by bunch grasses, *Stipa spp.*), once were present within and surrounding the Oak Woodlands on the property. Given the proximity of the project to the historic Rancho Tapo grazing allotment, it is likely that all native grasslands were eliminated from the project area early in the 19th century. This replacement of natives, which was initiated as a result of plant introductions by the Spanish (particularly *Avena spp.*), was accelerated by intensive grazing.

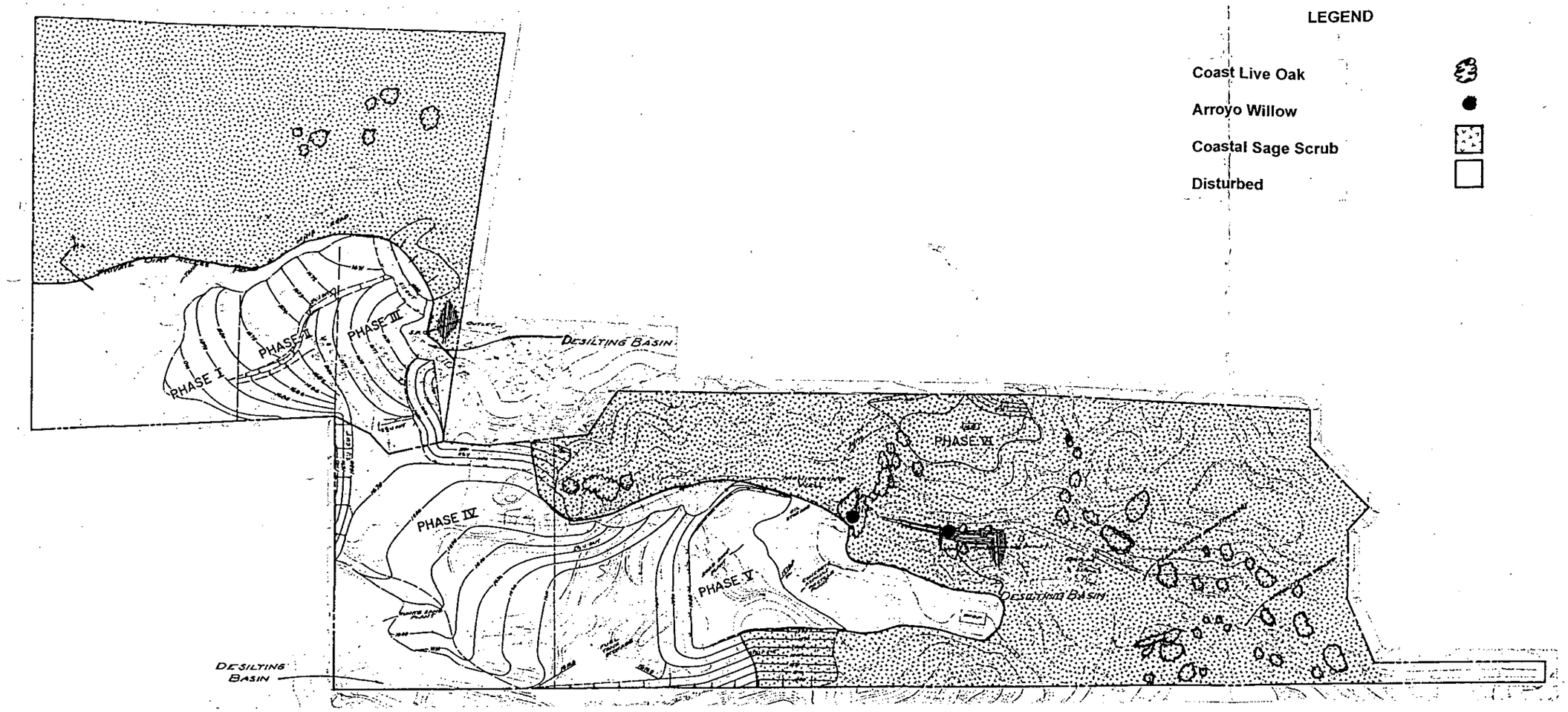

Figure 9-1

Vegetation Map

Tapo Rock and Sand Quarry EIR
County of Ventura
Resource Management Agency
Planning Division

Figure 9-2

Existing Vegetation Conditions in the Vicinity of Phase I, II, and III

Existing habitat conditions within the vicinity of Phases I, II, III are displayed in the foreground of this photograph. A mixture of re-established typical coastal sage scrub vegetation mixed with ruderal and invasive plants is included within the boundary of mining Phases I, II, and III. The areas in the immediate vicinity of the proposed mining operation have been quarried extensively. In the canyon north of the Phase I, II, III component of the project, substantial quarrying was done in the 1960s and 1970s. Visible in the eroding ridgeline north of the project are mining tailings and equipment which was used to extract fossil shell embedded in the landforms surrounding the northern perimeter of the project. This operation has been abandoned.

Figure 9-3

Vegetation Conditions in the Phase VI

This photograph illustrates existing vegetation conditions within Phase VI and the perimeter of previously excavated portions of the quarry in south of Phase V. The landform comprising Phase VI would be the last phase of work to be performed under the present excavation timing. Obtaining access to the Phase VI site will require careful planning to avoid impacts to the relict stand of Quercus agrifolia illustrated in the area which is to be used to access this Phase area. This photograph also illustrates the type of re-colonization that occurs naturally on the steep slopes left after mining has been completed.

Figure 9-4

Slope to be Reclaimed on the Western Portion of Phase IV

This photograph illustrates current conditions on the western perimeter of the existing Phase IV operation. A stabilized slope will be constructed on the exposed ridge in the foreground as part of the reclamation plan for this area. This photograph also illustrates the type of equipment that is used to separate the finer sands from the cobbles and larger rocks embedded in the formations being mined. All of the equipment is movable and not fixed in place.

Figure 9-5

Vegetation Conditions in the Vicinity of the Spring and Riparian Zone

This photograph illustrates the willow woodlands within the project boundary. The road ascending the Canyon appears to have cut through a formation that once supported a developed spring. Vegetation around the spring includes Arroyo Willows (*Salix lasiolepis*) and Mulefat (*Baccharis glutinosa*). Several oaks are present in the vicinity of the spring and form a canopy over the area. The age and size of the living and dead willows in the vicinity of the spring suggest that this spring has been active for a considerable period of time. It is likely that this spring served as one of several water sources for the historic Chumash settlement of *ta'apu*. Such springs were carefully maintained by the Chumash and the present disintegrated and silted over conditions of the spring probably is related to historic use of the area for cattle grazing in the early 19th century.

TABLE 9-1
PLANT SPECIES OBSERVED WITHIN THE TAPO ROCK AND SAND PRODUCTS CUP BOUNDARY

SCIENTIFIC NAME	COMMON NAME	STATUS	HABIT
Ambrosia psilostachya var. californica	Western Ragweed	N	PH
Artemisia californica	Coastal Sagebrush	N	S
Artemisia douglasiana	Mugwort	N	S
Atriplex lentiformis	Quailbush	I	S
Atriplex semibaccata	Australian Saltbush	I	S
Avena fatua	Wild Oats	I	AG
Avena barbata	Slender Oats	I	AG
Baccharis glutinosa	Mule Fat	N	S
Baccharis pilularis ssp. consanguinea	Coyote Bush	N	S
Brassica nigra	Black Mustard	I	AG
Brassica geniculata	Short-Podded Mustard	I	PH
Bromus diandrus	Ripgut Brome	I	AG
Bromus mollis	Soft Chess	I	AG
Bromus rubens	Red Brome	I	AG
Calystegia macrostegia ssp. cyclostegia	Morning Glory	N	V
Carduus pycnocephalus	Italian Thistle	I	A
Centaurea melitensis	Tocalote	I	A
Chenopodium californicum	Soap Plant	N	PH
Cirsium vulgare	Bull Thistle	I	B
Convolvulus arvensis	Bindweed	I	V
Conyza canadensis	Horseweed	N	A
Corethrogyne filaginifolia	Custerweed Aster	N	S
Croton californicus	Croton	N	Su
Dichelostemma pulchella	Blue Dicks	N	PH
Dudleya pulverulenta	Live Forever	N	PH
Encelia californica	Encelia	N	PH
Eriogonum fasciculatum	California Buckwheat	N	S
Eriophyllum confertiflorum	Golden Yarrow	N	Su
Erodium cicutarium	Redstem Filaree	I	A
Erodium moschatum	Filaree	I	A
Eucalyptus sp.	Eucalyptus	I	T

(continued on the following page)

SCIENTIFIC NAME	COMMON NAME	STATUS	HABIT
Foeniculum vulgare	Sweet Fennel	I	PH
Heteromeles arbutifolia	Toyon	N	T
Heterotheca grandiflora	Telegraph Weed	N	A
Hordeum glaucum	Barley	I	AG
Isocoma venetus ssp. vernonioides	Coast Goldenbush	N	S
Leptodactylon californicum	Prickly Phlox	N	S
Lotus scoparius	Deerweed	N	Su
Malva parviflora	Cheeseweed	I	A
Marah macrocarpus	Man Root	N	PH
Marrubium vulgare	Horehound	I	Su
Medicago polymorpha	Bur-Clover	I	A
Mirabilis californica	Wishbone Bush	N	SU
Nicotiana glauca	Tree Tobacco	I	T
Phacelia sp.	Phacelia	N	
Quercus agrifolia	Coast Live Oak	N	T
Raphanus sativus	Wild Radish	I	A
Rumex crispus	Curly Dock	I	PH
Salsola iberica	Russian Thistle	I	A
Salvia apiana	White Sage	N	S
Salvia mellifera	Black Sage	N	S
Salix lasiolepis	Arroyo Willow	N	T
Sambucus mexicana	Elderberry	N	S
Xanthium spinosum	Spiny Cocklebur	I	A
Yucca whipplei	Our Lord's Candle	N	S

This list represents those species encountered during a February, 1991 field reconnaissance and is not a complete tally of all species occurring on site.

Status: N=native; I=introduced; C=cultivated

Habit: T=tree; S=shrub; Su=subshrub; PH=perennial herb; B= biennial; A=annual herb; AG=annual grass; PG=perennial grass; V=vine

Other Plant Communities

In addition to the above-mentioned natural communities, Eucalyptus windrows have been planted along a portion of the site boundary. These Australian introductions exclude the growth of other species (including any development of understory) and are therefore less desirable in the environment than native trees such as oaks. However, mature Eucalyptus trees provide roosting and foraging sites for raptors and other birds and therefore contribute useful faunal habitat. Disturbed areas (mined and along roadways) are overrun with introduced ruderal species. The most common of these are Tree Tobacco, (*Nicotiana glauca*), Sweet Fennel (*Foeniculum vulgare*) and weedy Mustards (*Brassica nigra, B. geniculata*).

Sensitive Botanical Resources

A "sensitive botanical resource" includes both rare plant species and habitats. Native plants are regarded as "sensitive" when they are threatened with extinction throughout their range, or when they are in danger of local extirpation. Habitats are also considered sensitive if they exhibit a limited distribution, have high wildlife value, contain sensitive species, and/or are particularly susceptible to disturbance.

No sensitive plant species are known to occur within the project site (California Department of Fish and Game, 1989). No sensitive plant species are known to occur within the project site (California Department of Fish and Game, 1989; California Native Plant Society, 1988). Due to the heavily disturbed nature of the previously quarried areas within the CUP boundary, sensitive species are not expected to be present in the area to be mined. The following six sensitive species have been located in the project region and have a potential to occur within the project boundaries. Suitable habitat for three of the species is not present at the site. The remaining three species would have been apparent during the time of survey, but were not located. Sources for this list are: The CDFG (California Department of Fish and Game) Natural Diversity Data Base, the Santa Monica National Forest Service, and the CNPS (California Native Plant Society). Along with scientific and common names of each plant is the habitat where they are most commonly found.

Astragalus brauntonii (Braunton's Milk Vetch)
CNPS: 1B **State/Federal:** /Endangered
Habitat: Recent burns or disturbed sites in chaparral, coastal scrub and grasslands.
Potential for Occurrence: This species was not seen during the survey. Remnant material would have been visible during the reconnaissance.

Brickellia nevinii (Nevin's Brickellia)
CNPS: 3 (a review list) **State/Federal:** None
Habitat: Dry sites in chaparral, from Santa Monica and south-facing San Gabriel Mountains to Santa Barbara County.
Potential for Occurrence: This species was not seen during the survey. Coincidence with flowering period (which is in the fall) is not necessary for a positive identification.

Dudleya parva (Conejo Dudleya)
CNPS: 1B **State/Federal:** None
Habitat: Volcanic outcrops.
Potential for Occurrence: Suitable habitat is not present within the project vicinity.

Hemizonia minthornii (Santa Susana Tarplant)
CNPS: 1B **State/Federal:** Rare/Candidate
Habitat: Santa Susana rock outcrops.
Potential for Occurrence: Suitable habitat not present. These are very distinctive perennial plants and floral identification is not necessary.

Nolina cismontana (N. parryi) (Nolina)
CNPS: none **State/Federal:** none
Habitat: Dry sites within the chaparral.
Potential for Occurrence: Marginal habitat present. Species can be identified at any time of the year and was not noted during survey.

Pentachaeta lyonii (Lyon's Pentachaeta)
CNPS: 1B **State/Federal:** /Endangered
Habitat: Thin grasslands; almost always associated with annual Polemones. Located in scattered locations in Ventura and Los Angeles Counties.
Potential for Occurrence: Suitable, undisturbed habitat does not occur on-site.

Sensitive Habitats (Wetlands)

Similar to oaks in wildlife benefits, riparian habitats provide food, nesting sites and cover. With the addition of intermittent or year-round water, this is perhaps the most useful habitat for the greatest number of species.

Because of their limited extent and high-wildlife value, all wetland communities are considered sensitive and protected by Federal and State regulations. Wetlands are protected from filling without permitting from the Army Corps of Engineers under Section 404 of the Federal Clean Water Act. The California Department of Fish and Game (CDFG) also requires permitting for any project which will "change the natural flow or substantially change the bed, channel or bank of any river, stream, or lake designated by the Department [of Fish and Game], or use any material from the streambeds, without first notifying the Department of such activities" (CDFG, 1989).

The definition of a wetland for the purposes of impact evaluation is provided in the County General Plan Glossary:

> *Wetlands - Lands which are transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is periodically covered with shallow water. The frequence of occurrence of water is sufficient to support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands include marshes, bogs, sloughs, vernal pools, wet meadows, river and stream overflows, mudflats, ponds, springs and seeps.*

Policy 1.5.2.3 of the County General Plan states in part that:

> *Discretionary development that would have a significant impact on significant "wetland" habitats shall be prohibited, unless mitigation measures are adopted that would reduce the impact to a less than significant level, or for lands designated "Urban" or "Existing Community", a statement of overriding considerations is adopted by the decision-making body.*

The General Plan provides additional guidance regarding mitigation planning adjacent to wetland environments:

> ***Discretionary development shall be sited a minimum of 100 feet from significant "wetland habitats to mitigate the potential impacts on said habitats. Buffer areas may be increased or descreased upon evaluation and recommendation by a qualified biologist and approval by the decision-making body. Factors to be used in determining adjustment of the 100 foot buffer include soil type, slope stability, drainage patterns, presence or absence of endangered, threatended or rare plants or animals, and compatibility of the proposed development with the wildlife use of the wetland habitat area. The requirement of a buffer (setback) shall not preclude the use of replacement as a mitigation when there is no other feasible alternative to allowing a permitted use, and if the replacement results in no net loss of wetland habitat. Such replacement shall be "in kind" (i.e., same type and acreage), and provide wetland habitat of comparable biological value. On-site replacement shall be preferred wherever possible. The replacement plan shall be developed in consultation with California Department of Fish and Game (Policy 1.5.2.4 of Goals, Policies and Programs).***

Wetlands, delineated by the presence of 1) hydrophytic vegetation, 2) hydric soils and 3) wetland hydrology for at least two weeks out of the growing season, are protected from disturbance without first obtaining a permit from the Army Corps of Engineers (Section 404 of the Federal Clean Water Act). The California Department of Fish and Game also requires a permit for any project which will "change the natural flow or substantially change the bed, channel or bank of any river, stream, or lake designated by the Department [of Fish and Game], or use any material from the streambeds, without first notifying the Department of such activities" (California Department of Fish and Game, 1989). **The Department of Fish and Game generally requires a 2:1 replacement ratio for wetlands prior to issuing permits which enable disturances to a riparian system.** Unlike the Federal characterization of wetlands, the State requires only **one** of the three wetland parameters to be met at any site.

The existence of an active unrecorded spring and associated riparian vegetation in the immediate vicinity of the existing retention basin south of the Phase V and west of the Phase VI quarry areas will require mitigation planning because improvement of this basin to Public Works requirements will require modifications to the basin to expand the existing basin's capacity. Given this requirement, **the project has some limited potential to adversely effect this spring, which satisfies the "wetlands" definition contained in the General Plan.**

The study performed for this EIR satisfies the concerns expressed in Policy 1.5.2.3 of the General Plan and the mitigation plan outlined below satisfies the guidelines contained in Policy 1.5.2.4. It is important to emphasize that the potential impacts to the spring and associated vegetation will occur as a result of Public Works requirements to expand the existing desilting basin.

9.2 IMPACTS

The proposed mining plan within the boundary of Phases I through V nearly exclusively involves landforms that have been previously disturbed. **Quarrying activities in Phases I through V should not adversely effect botanical resources. However, without biological mitigation measures, two adverse impacts are expected to occur which are potentially significant. These potential impacts include:**

(1) Damage to the spring and willow woodland during construction of a retention basin; and

(2) *Potential* impacts to *two* oak trees from the creation of an access road and flume for the Phase *VI* mining operation.

The replacement of 1.9 acres of coastal sage scrub habitat that is being re-established in previously mines areas and the restoration of mined surfaces with vegetation at the time operations cease will be adequately accomplished under the existing Reclamation Plan.

Discussion

The total of 1.9 acres of mixed exotic (non-native grassland) and gradually recovering Coastal Sage Scrub which will be removed with the proposed extraction occurring in Phase VI. While the vegetative cover over about 9 acres of previously mined land within Phases I, II, and III will also be removed, the condition and significance of the vegetation in this area does not warrant designation as a developed Coastal Sage Scrub habitat and impacts to this area were judged to be insignificant. In addition, at least one mature oak tree, located just north of Area VI, will possibly be disturbed either during construction of access roads or as a result of mining activities. Although the area surrounding the small spring will not be directly disturbed during proposed mining operations, this resource is significant and should be protected during construction of the expanded retention basin adjacent to this spring. Finally, to restore vegetation to the slopes at finish grade once the mining operations are completed will require a carefully conceived revegetation program.

9.3 MITIGATION MEASURES

To reduce impacts associated with the mining operation to acceptable levels, the following biological Mitigation Measures should be required:

(1) The improvement plans for the retention basin adjacent to the spring should be designed to avoid either direct impacts associated with construction or indirect impacts related to increased siltation of the spring. Riparian vegetation should be incorporated into the Reclamation Plan revegetation program in the spring vicinity. Construction of the retention basin adjacent to the spring should be monitored by a qualified biologist.

(2) Since impacts to two (2) oak trees on the sideslopes of the Phase VI mining may not be avoidable, the Reclamation Plan should be amended to provide for replacement of these 2 trees pursuant to the County's Tree Protection Ordinance (No. 3993), as amended.

Discussion

A portion of the property should be restored to its native Coastal Sage Scrub habitat. This can be accomplished without a severe loss in grazing acreage if the steepest slopes are singled out for the restoration of the shrub-land community. A Coastal Sage Scrub seeding mix and restoration procedures are outlined in Section 3.0 below.

Any tree subject to the Protected Tree Ordinance (No. 3993) requires full mitigation per Ventura County Zoning Ordinance Section 8107-25. Based on the development plan for this project, as many as two oak trees may require mitigation under Section 8107-25. This section requires a one-to-one replacement/offset for each square inch of cross-sectional tree area that is lost. There is considerable flexibility afforded project operators in meeting this standard. Alternative methods of mitigating this impact are discussed in the following section.

Protection of the small spring and its associated wetland vegetation should be carefully planned. The current mining operations have not interfered with this riparian system and therefore elaborate fencing or staking of the wetland does not seem appropriate. However, the wetland does provide, in most years, a reliable source of year-round water, and therefore represents an important resource for wildlife living in or passing through the area. The limited grading required to improve the existing retention pond adjacent to the spring should be monitored during construction by a qualified biologist.

The basic features of the recommended revegetation program for this project are discussed in the following section.

Recommended Revegetation Program

Program Objectives

The goals of the revegetation plan are (1) to provide grasslands suitable for limited grazing in the future on slopes suitable for this use (an existing use on part of the property within the CUP boundary); (2) to restore native shrublands to the finish graded terraces of the steeper slopes which are more likely to erode without the re-establishment of native vegetation; *and (3) protect and enhance the on-site riparian community.* In addition to the proposed seeding program, a tree planting program is recommended to encourage the perpetuity of the existing oak woodlands on the property and to improve the tree canopy and habitat value of the existing spring.

Coastal Sage Scrub and Grassland Restoration

Topsoil and Ground Preparation

Soils to be used for reclamation will come almost exclusively from the 30,000 tons of top soil already stockpiled from previous quarry operations, supplemented by importing additional material as needed. As discussed previously, none of the proposed quarry areas contain significant amounts of top soil. Although limited amounts of material from these areas may be stockpiled for reclamation purposes, the great majority of the material to be used for reclamation will come from the existing stockpile and off-site sources.

Seeding Plans

Two seeding plans have been recommended: one would promote the restoration of the native Coastal Sage Scrub community on steeper slopes and the other would provide adequate grazing land restoration. The locations receiving each treatment are specified in **Figure 9-6**. In general, slopes at or near a 2:1 gradient should be seeded with the Coastal Scrub seed mix. More level areas should receive the Grassland seed mix. Seed should be broadcast in the fall, to reduce losses from herbivores, and to take full advantage of the winter rainfall. November is typically the preferred seeding month; however a dry fall may warrant planting later in the winter. Decisions about planting schedules for each phase should be made by the monitoring biologist.

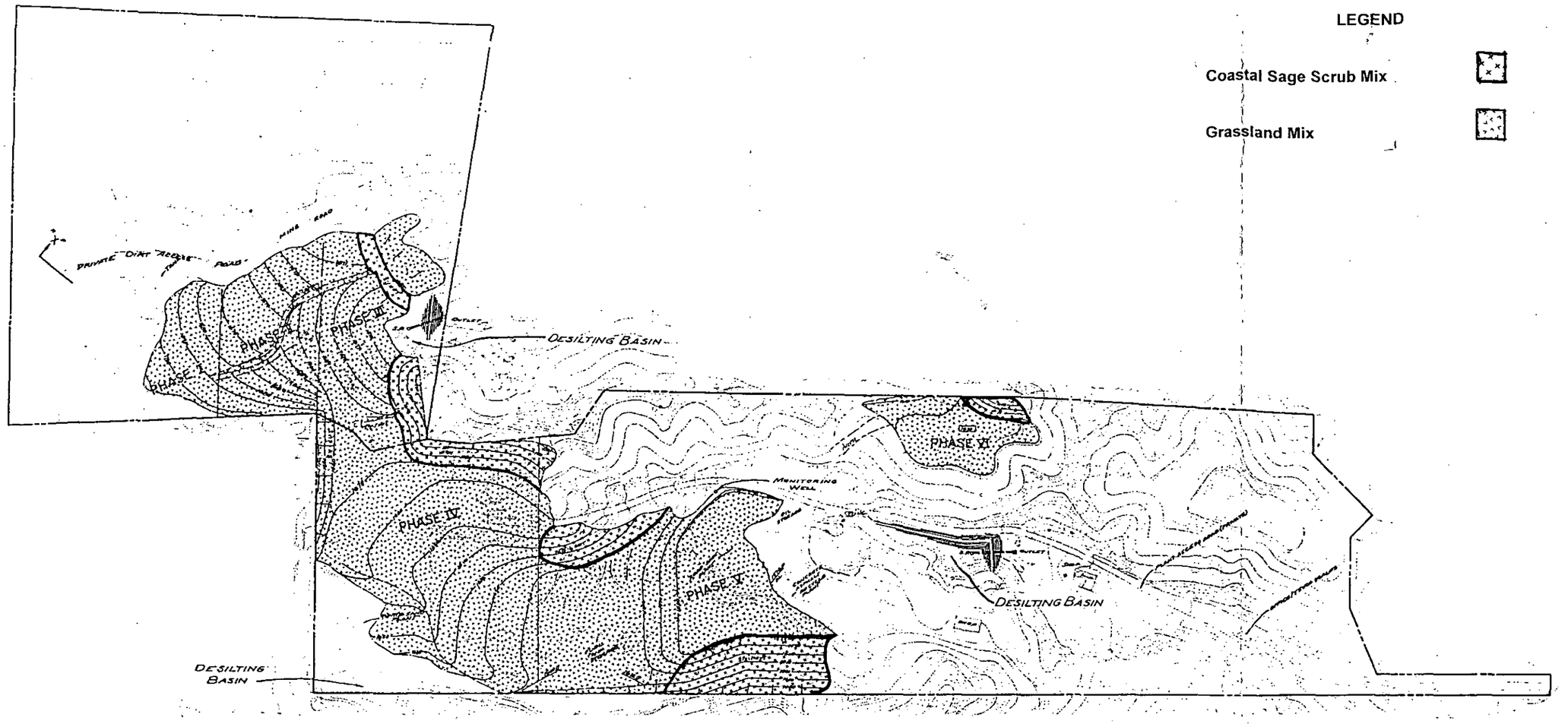

FIGURE 9-6

Vegetation Restoration Areas

Tapo Rock and Sand Quarry EIR
County of Ventura
Resource Management Agency
Planning Division

The approximate acreages allocated for each community-mix are:

	Coastal Sage Scrub Mix	Grassland Mix
Phase I	0.3 acres	2.2 acres
Phase II	0 acres	3.1 acres
Phase III	0.6 acres	3.0 acres
Phase IV	0.8 acres	10.3 acres
Phase V	3.3 acres	6.3 acres
Phase VI	0.2 acres	1.7 acres
Total	5.2 acres	26.6 acres

Grassland Procedures

Organic material, in the form of composted manure, cotton gin waste/almond hulls compost, or other suitable materials should be added to the topsoil to amend the mineral component of the soil. Cotton gin waste/almond hull compost applied at 3 tons per acre and will provide approximately 1.3% nitrogen, 1.5% phosphorus, and 2.5% potassium (Payne, Jim, 1991). Nitrogen should be added to the topsoil at a total rate of 60 lbs/acre. This may be supplied in the soil amendment or broadcast in other forms (i.e. urea, ammonium sulphate or ammonium nitrate).

All areas should be graded smooth and tamped but not compacted. Seed may be either broadcast, or drilled (1/4 - 1/2 inch below the surface). **Table 9-2** outlines the specific species and application rates for the grassland. Cattle shall be prohibited from grazing on the restored areas until performance objectives have been met which are outlined in **Table 9-4**).

TABLE 9-2
Grassland Seeding Mix

Minimum % Purity/Germination	LBS/AC	Species
95/85	9	Bromus mollis (California Brome)
85/80	4	Vulpia megalura (Zorro Fescue)
95/90	5	Trifolium hirtum (Hykon Rose Clover)
	18 total pounds per acre	

[Note: This mix may be broadcast or drilled.]

Coastal Sage Scrub Procedures

Slopes receiving the Coastal Sage Scrub Seed Mix (**Table 9-3**) require no organic soil amendment. Sites receiving this mix would **not** benefit from additional nitrogen, which promotes the growth of weeds over native plants. However, topsoil, mixed with up to 50% overburden, should be spread on all surfaces receiving this seed mixture.

The Coastal Sage Scrub seeding mix contains a combination of fast-growing grasses and forbs in addition to common, native shrub seeds. Once established, these plants will provide quick erosion control during the slower period of growth associated with the more permanent perennial plants. Seed may be broadcast or hydroseeded. The efficacy of the planting will need to be monitored by the consulting biologist or by a qualified native plant restoration firm.

Oak Tree Planting and Protection Plan

As identified in this EIR, as many as two on-site oaks may require mitigation. Per County Zoning Ordinance Section 8107-25, a Tree Permit must be issued by the County prior to removal of these trees. Mitigation for the loss of these trees could take the following forms:

a. Transplanting of the two trees on or off site. This can include transplanting to a nursery for holding purposes.

b. Reforestation in accordance with a professionally prepared plan, such that the anticipated growth can be legitimately counted towards the total replacement area required.

c. Planting of new trees with the same number of square inches of tree which exist in the trees which are being removed.

d. Dedication of land in fee or through appropriate easements which is suitable for the planting and survival of protected trees.

e. Dedication of land in fee or through appropriate easements which contains protected trees or significant habitat suitable for preservation.

f. Financial contributions to appropriate agencies/entities which further the above options as well as the following objectives: the general preservation, regeneration and maintenance of protected trees and significant habitat; the identification and official designation of "historical" trees; and educational and informational programs related to the value of protected trees and significant habitat.

Site Preparation

The planting locations should be adjacent to existing oak woodlands and should avoid apparent heavy concentrations of gophers. At each site, a 3-foot diameter circle shall be cleared of all vegetation, pulling any weedy species by the roots.

Deer are expected to be a threat to seedling survival. Protective cages, installed around the seedlings, will prevent defoliation from these herbivores. Cages must be at least 5 feet in height and be large enough to protect side branches. The suggested diameter for a cylindrical hog-wire fence is six feet. The fence must be reinforced with metal posts.

TABLE 9-3
Coastal Sage Scrub Seeding Mix

MINIMUM % PURITY/GERMINATION	LBS/AC	SPECIES
15/60	5	Artemisia californica (California Sagebrush)
5/40	10	Baccharis pilularis (Coyotebush)
95/85	3	Bromus mollis (Blando Brome)
85/85	3	Bromus rubens (Red Brome)
10/65	10	Eriogonum fasciculatum (California Buckwheat)
35/75	1	Eriophyllum confertiflorum (Golden Yarrow)
95/75	5	Plantago insularis (Plantain)
40/60	8	Lotus scoparius (Deerweed)
85/50	2	Salvia mellifera (Black Sage)
40/30	2	Stipa pulchra (Purple Needlegrass)
85/80	5	Vulpia megalura (Zorro Fescue)

36 total (shrub) lbs per acre
18 total (grass/cover crop) lbs per acre

[Note: If the seed is not broadcast, the following materials should be added to the hydroseed slurry: 2,000 lbs/acre cellulose wood fiber and 160 lbs per acre organic soil stabilizer.]

Since summer watering may be necessary, 15 gallon size gopher retainers shall be placed in each planting well. Seedings will benefit from fall planting during the year following container germination.

The oaks tree planting area within about a three foot radius of the trunk of the planted tree shall be mulched with oak leaf duff.

Maintenance

Oak sites shall be watered on a regular basis for the first few years. Since the seeds will be planted in the fall, natural precipitation should reduce the need for watering during the first few months. Planted trees *must* receive 5-10 gallons of water every 2 weeks for the first year depending on degree of exposure and mulching. Water shall be delivered slowly, with a drip system, to encourage deep rooting. Watering shall be tapered off **gradually**. Artificial irrigation should cease after about 3 years. Seedlings may be irrigated more occasionally during the driest summer months, if the plants appear stressed.

Sites shall be manually weeded each spring until plants are at least 4-feet tall. Mulch shall be maintained and replaced each year if necessary.

Oak trees will be considered established after they are at least 6-feet tall, *are in good health as determined by the monitoring agency,* **and** have not received artificial irrigation for at least 3 years.

Riparian Habitat Restoration

The following recommendations have been made by the consultants to adequately offset impacts to wetland habitat that will result from construction of an expanded desiltation basin. These recommendations need to be incorporated into the amended Reclamation Plan for the project prior to certification of the Final EIR. Upon completion of the proposed desiltation basin adjacent to the spring, restoration of this area should be performed to restore diversity to the riparian canopy. At the direction of the consulting biologist or native plant restoration firm, soil embedded household trash and discarded industrial material should be removed from the spring area manually. Dead and fallen willow trunks should be hand removed as well in a manner which will not disturb the roots of healthy specimens. Trees and shrubs typically present in the down canyon riparian corridor should by planted in proximity to the spring and downslope from the spring to improve the value of the spring area to avifauna and wildlife and to enhance the biological aesthetics of the area. Recommended species include the elderberry (Sambucus sp.), sycamore (Platanus racemosa), the california cottonwood (Populus fremontii) and, in appropriate areas directly upslope from the riparian zone, California buckeye (Aesculus californica).

Depending on planting locations, the buckeyes may require irrigation (similar to the Oak watering program) for several years. The visual interest of the area would be enhanced by mixing several white and pink flowering buckeye. Several container plants purchased from a reputable native plant nursery of each of the foregoing tree species should be planted in the late fall following completion of the desilting basin. In addition, the understory in the spring area *shall* be seeded with appropriate plants *indigenous to riparian areas.*

If recommended by the consulting biologist, it may be beneficial to fence the spring and riparian habitat to prevent access by cattle, while still allowing native animals access to the area. This would prevent cattle from trampling and silting in an important source of water for the local fauna, as well as protect the replanted riparian habitat from overgrazing.

Mitigation Monitoring Plan

Purpose and Standards

The purpose of the monitoring program is to confirm that the restoration program has been followed and has successfully attained the specified revegetation goals. The applicant shall be financially responsible for all monitoring activities. In addition to monitoring required for wetlands protection during the construction of the desilting basin, monitoring will also be required after revegetation of

each mining phase. This monitoring will consist of annual visits to the site for at least the first 5 years following revegetation implementation. A final evaluation will be conducted and submitted to the County and the State ten years after implementation. However, monitoring may continue for a longer period if performance of the program has not been satisfactory. Monitoring will continue until all disturbed areas and plantings are established and long-term viability of the vegetation is assured.

An Annual Report will be furnished (by the independent monitor or by the applicant) to the County of Ventura and the State Geologist following each yearly survey. This report will summarize the progress of the project and present an evaluation of performance based upon the Revegetation and Protection Objectives outlined in **Table 9-4**, and provide suggestions for modifications to the revegetation plan if these standards are not achieved. "Alternative Actions" shall be taken when the criteria for success are not achieved. Specific methods used to evaluate cover, density, weed infestation and erosion will be determined and described in the first annual report. These methods of measurement shall be followed throughout the duration of the monitoring program. Any changes in measurement methodology should be rationalized in subsequent reports.

Off-site evaluations will provide more accurate goals for the restored area. Therefore, final performance standards should not be set until after an off-site vegetation cover, diversity and/or density analysis is conducted. This study may proceed concurrent with the first annual spring survey. Suggestions for improvements to the program and standards will also be presented in the first annual report if appropriate.

TABLE 9-4
Preliminary Revegetation and Protection Objectives

	Criterion	Alternative Action
Oak Planting	*The Final survival ratio for the trees shall comply with the County Protected Tree Ordinance.*	Determine cause of failure. Replant and/or improve protective caging. years.
Grassland	*95%* cover (grass species) within 2 years. No interference of grass establishment by broadleaf-weedy species.	Determine cause of failure. Consider reseeding. Remove weeds manually and reseed effected area.
Riparian	*Successful establishment of the riparian trees identified in the restoration plan within 5 years.*	*Determine cause of failure, and either replant or survey again in one year. (Drought conditions may retard establishment).*
Coastal Sage Scrub	1.5 native shrubs per square meter within 3 years of seeding. *80%* cover of native species within 5 years.	Determine cause of failure, and either replant or survey again in one year. (Drought conditions may retard establishment).
Erosion Control	No significant erosion.	Determine cause. Repair rilling, reseed and straw mulch worked area.

Bond Requirementsd

The applicant shall post a bond with the County to ensure that all restoration and monitoring measures are implemented. The bond will cover the cost of long-term monitoring for at least 10 years. Release of the bond will be contingent upon the submission of annual monitoring reports, the implementation of any remedial work suggested in those reports and the success of the revegetation effort as defined in the performance criterion.

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