

APPENDIX C BIOLOGICAL RESOURCES

SWD Quarry
200 Highway 16, Plymouth, California

Biological Assessment
November 2016

Prepared for
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by

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Introduction

A vegetation and wildlife assessment survey was conducted for an approximately 95.6-acre property and an adjacent 40.0-acre property in Amador County, California, known as the SWD Quarry. A corner of the site is approximately 1 mile east and one-mile south of the corner of Highway 16 and Lone Road (Figure 1). The purpose of the survey was to document the types of vegetation and wildlife that are present or might be expected to be present on the site, particularly rare or listed species, and any changes that may have affected biological diversity on the site since a previous biological survey was conducted for the 95.6-acre property in December 2004 (then known as the Devai Property).

Methods

A check was made of relevant wildlife and plant databases (CNDDDB, US Fish & Wildlife Service, CNPS) to determine what species of concern might be expected to occur in this area. A CNDDDB (California Natural Diversity Database) assessment was performed in 2004 and again in November of 2016, centered on the Carbondale quad, in order to discover any changes to known rare plant/wildlife species occurrence in this area.

Aerial digital imagery from 2012-2016 available from the internet (Google Earth, Mytopo.com, Amador County, etc.) was consulted to determine the vegetation/habitat types available and to detect any changes from previous on-site surveys.

Findings

95.6-acre property: The site is rolling hills with chaparral, oak woodland along swales, and a few grassland openings and the vegetation was essentially unchanged from 2004 to 2016. The 2004 survey included areas adjacent to the 95.6-acre area (approximately 320-acres total) and this entire area does not appear to have changed significantly in the past 12 years. Much clearing of chaparral and piling of brush had occurred on some slopes, but none looked very recent. Some of this had also occurred by the time of the 2004 survey, but it appears additional vegetation clearing has occurred using a chain or brush rake. There was no sign of recent wildfire. Bisbee Peak rush-rose (*Helianthemum suffrutescens*; this species is a CNPS rare plant but is not listed as threatened or endangered by the State of California or by the Federal government) was found on this site in 2004 and likely persists, particularly in areas where vegetation has been cleared. No new rare species or suitable habitats were found to occur in this area.

40.0-acre property: The vegetation/habitat on this parcel is similar to the 95.6-acre property, though fairly evenly divided in half into dense chamise chaparral and annual grassland/oak/pine types, and both types appear largely undisturbed. Both of these vegetation/habitat types are common in this foothill area. Only a couple of small dirt roads occur on this property and no significant vegetation clearing has occurred. There is no rare habitat, particularly no lone chaparral, and no waterbodies/wetlands. Bisbee Peak rush-rose could be present, as with all chaparral areas throughout this area.

Conclusions

The vegetation types and wildlife habitat at both the 95.6-acre and 40-acre properties are common throughout this area. There is a low potential of habitat for some rare species to occur in this area (see Table 1). One rare plant species, Bisbee Peak rush-rose, has been found in chaparral on the 95.6-acre property and could also occur in chaparral on the 40-acre property. Highly endangered lone endemics (buckwheat and manzanita) do not occur on either property.

Table 1. Rare plant/animal species that could occur in the vicinity of the SWD Quarry and an explanation of their likelihood to occur in the area.

A reassessment of potential rare plant and animal species that might occur at or near the SWD Quarry site is presented below. The list prepared in 2004 is compared with a new data assessment from the CNDDDB (California Natural Diversity Database; 9 quad data grab centered on Carbondale quad) with the following results (colors refer to shading of the Common Name of each species in Table 1):

1. **Yellow** = the status of this plant/animal is unchanged from 2004;
2. **Pink** = the 2016 CNBBD does not contain this plant/animal for this area, but it is known to occur in the greater area of the project, though not at the SWD Quarry site;
3. **Red** = there has been a nomenclature change for the Northwestern Pond Turtle. The CNDDDB tracks the Western Pond Turtle rather than the Northwestern Pond Turtle. There is no habitat for either species at the SWD Quarry site.

A list of other species contained in the 2016 CNDDDB data grab are included at the end of Table 1. There is no habitat for these species at the SWD Quarry site and their only occurrence would be incidental, e.g., bird species flying over the area.

TABLE 1 SPECIAL-STATUS SPECIES RECORDED OR POTENTIALLY OCCURRING WITHIN THE VICINITY OF THE SWD QUARRY SITE, AMADOR COUNTY				
Genus/ Species	Common Name	Status Federal/CA/ Other	Habitats and Seasonal Distribution In California	Likelihood of Occurrence on or Near Proposed Project Sites
PLANTS				
<i>Agrostis hendersonii</i>	Henderson's bent grass	None/none/C NPS 3	An annual grass that grows in vernal pools in Calaveras, Butte, Merced, Shasta, and Tehama counties, and in Oregon.	No Potential. The species was extirpated from a known local by construction of Comanche Reservoir, but it has never been observed growing in Amador county chaparral. Site surveys did not discover this species in the limited vernal habitat on the project site.
<i>Arctostaphylos myrtifolia</i>	lone manzanita	FT/none/ CNPS 1B	A shrub that grows in Calaveras and Amador county restricted to chaparral communities on the lone formation soils.	No Potential. There is lone formation soil-type habitat in the project area, but extensive searches of the property found none of this plant.
<i>Calycadenia hooveri</i>	Hoover's calycadenia	None/none/C NPS 1B	An annual herb that blooms from July-September. Grows in valley and foothill grassland; many calycadenias tend to grow in rocky soils. It has been discovered growing in Calaveras, Madera, Merced, Mariposa, and Stanislaus counties.	No Potential. The species is known only to occur south of Amador county. Surveys at the project site did not discover this species in the foothill grassland areas.
<i>Eriogonum apricum</i> var. <i>apricum</i>	lone buckwheat	FE/SE/ CNPS 1B	A perennial that is only known to grow on lone formation soils in Amador county.	No Potential. There is lone formation soil-type habitat in the project area, but extensive searches of the property found none of this plant.

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<i>Eriogonum apricum</i> var. <i>prostratum</i>	Irish Hill buckwheat	FE/SE/ CNPS 1B	A perennial that is only known to grow on lone formation soils in Amador county; the type locality for this species is within one-mile of the proposed project site under different ownership.	No Potential. There is lone formation soil-type habitat in the project area, but extensive searches of the property found none of this plant.
<i>Gratiola heterosepala</i>	Bogg's Lake hedge-hyssop	None/SE/ CNPS 1B	This annual herb grows in vernal pools in Fresno, Lake, Lassen, Madera, Merced, Modoc, Placer, Sacramento, Shasta, Siskiyou, San Joaquin, Solano, and Tehama counties, and in Oregon.	No Potential. There is a single clay-type vernal pool on the proposed project site created by vehicle ruts and it is not the type of pool this species has been found in. This species was not discovered during surveys of the vernal pool on the project site.
<i>Helianthemum suffrutescens</i>	Bisbee Peak rush-rose	None/none/ CNPS 3	A perennial, somewhat shrubby plant blooming big yellow flowers April-June, that grows in chaparral in Amador, Calaveras, El Dorado, Sacramento, and Toulumne counties.	Known to Occur. Tens of thousands of individuals of this species were found in 2004 to be growing in areas recently burned by wildfire in a portion of the chaparral habitat in this area.
<i>Horkelia parryi</i>	Parry's horkelia	None/none/ CNPS 1B	A perennial herb that flowers from April-June, generally in chaparral on frequently disturbed soils. Known from Amador, Calaveras, El Dorado, and Mariposa counties.	Low Potential. Suitable habitat is present, particularly on the edges of roads through chaparral vegetation, but site surveys did not discover this species.
<i>Legenere limosa</i>	Legenere	None/none/ CNPS 1B	An annual vernal pool herb with very inconspicuous flowers and a prostrate, vine-like growth form. Known to occur in Lake, Napa, Placer, Sacramento, Shasta, San Mateo, Solano, Sonoma, Stanislaus, and Tehama counties.	No Potential. There is a single clay-type vernal pool on the proposed project site created by vehicle ruts and it is not the type of pool this species has been found in. This species was not discovered during surveys of the vernal pool on the project site.
<i>Navarretia myersii</i> ssp <i>myersii</i>	Pincushion navarretia	None/none/ CNPS 1B	An annual vernal pool herb that blooms in May. It has been discovered in Amador, Lake, Merced, and Sacramento counties.	No Potential. There is a single clay-type vernal pool on the proposed project site created by vehicle ruts and it is not the type of pool this species has been found in. This species was not discovered during surveys of the vernal pool on the proposed project site.
<i>Orcuttia viscida</i>	Sacramento orcutt grass	FE/SE/ CNPS 1B	An annual grass that is only known to occur in Sacramento county.	No Potential. There is a single clay-type vernal pool on the proposed project site created by vehicle ruts and it is not the type of pool this species has been found in. This species was not discovered during surveys of the vernal pool on the proposed project site.

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<i>Sphenopholis obtusata</i>	Prairie wedge grass	None/none/ CNPS 2	A perennial grass that is grows in mid-elevation seeps and meadows in Amador, Fresno, Inyo, Mono, Riverside, San Bernardino, and Tulare counties.	No Potential. No suitable habitat present.
INVERTEBRATES				
<i>Branchinecta lynchi</i>	Vernal pool fairy shrimp	FT/none/none	A small crustacean that can be found swimming in vernal pools in late-winter, but spending most of the year in the soil as microscopic eggs awaiting next season's rains. Found in California and Oregon (primarily in the Central Valley and along portions of the Central Coast).	Low Potential. There is a single clay-type vernal pool on the proposed project site created by vehicle ruts. This species was not discovered during surveys of the vernal pools on the proposed project site.
<i>Desmocerus californicus dimorphus</i>	Valley elderberry longhorn beetle	FT/none/none	A beetle found in the Sacramento and San Joaquin valleys. It lays its eggs on elderberry (<i>Sambucus mexicana</i>). The larvae then feed and burrow inside the shrub, typically in stems larger than one-inch diameter, until emerging and leaving a telltale hole.	No Potential. No elderberry was observed in the vicinity of the proposed project site during surveys. Therefore, the species has no potential to be affected by the proposed project.
<i>Lepidurus packardi</i>	Vernal pool tadpole shrimp	FE/none/none	A small crustacean that can be found swimming in vernal pools in late-winter, but spending most of the year in the soil as microscopic eggs awaiting next season's rains. Found only in California from east of Redding in Shasta County to Merced County.	Low Potential. There is a single clay-type vernal pool on the proposed project site created by vehicle ruts. This species was not discovered during surveys of the vernal pools on the proposed project site.
FISHES				
<i>Oncorhynchus mykiss</i>	Steelhead (central valley California ESU)	FT/CSC/none	Found historically in drainages of the Cosumnes River. This winter-run steelhead typically is in passage during December to April. Dry Creek is considered 'critical habitat' for the steelhead and represents the nearest suitable habitat for this species.	No Potential. No suitable habitat is associated with the proposed project sites. Therefore, the species has no potential to be affected by the proposed project.
<i>Oncorhynchus tshawytscha</i>	Chinook salmon – fall run	FC/CSC/none	Found historically in drainages of the Cosumnes River. These winter-run salmon typically are in passage during December to April. Dry Creek is considered 'essential fish habitat' for the salmon and represents the nearest suitable habitat for this species.	No Potential. No suitable habitat is associated with the proposed project sites. Therefore, the species has no potential to be affected by the proposed project.

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AMPHIBIANS				
<i>Ambystoma californiense</i>	California tiger salamander	FT/CSC/none	Found in annual grassland, oak savannah, and coastal sage scrub adjacent to vernal pools, stock ponds, and ponded backwater reaches of ephemeral streams in foothill counties of the central valley and in the coast range where it utilizes rodent holes as burrows. Breeds in pools and larvae spend many weeks in pools after hatching until migrating to upland burrows.	No Potential. No suitable breeding habitat appears to exist on the site.
<i>Rana aurora draytonii</i>	California red-legged frog	FT/CSC/none	The listed subspecies is found along the coast and in the Coast Range from Sonoma County to Los Angeles County and to Baja California. A small number of remnant populations also occur in the Sierra Nevada foothills and Riverside County. Typically occurs in dense, shrubby riparian and emergent freshwater marsh vegetation adjacent to slow-moving perennial streams or ponds. However, may also be found in and along ephemeral drainages.	No Potential. No suitable breeding habitat appears to exist on the site.
<i>Scaphiopus hammondii</i>	Western spadefoot	FSC/CSC/none	Found in dry habitats (e.g., annual grassland, oak savannah and woodland, and coastal sage scrub) adjacent to vernal pools, stock ponds, and overflow channels of low-gradient drainages within the Central Valley and coastal California from Monterey County to San Diego County. This species is often referred to as the spadefoot toad, but is not a true toad (i.e., member of the family Bufonidae). The species is associated with the family Pelobatidae.	No Potential. No suitable breeding habitat appears to exist on the site.
REPTILES				
<i>Clemmys marmorata marmorata</i>	Northwestern pond turtle	none/CSC/none	Found primarily in ponds and streams of the central valley and throughout northern California. A broad region of intergradation with the southwestern pond turtle (<i>C. m. pallida</i>) occurs from the San Francisco Bay area to the southern San Joaquin Valley. Occurs at scattered locations throughout its range in and adjacent to ponds, reservoirs, or other slow-moving perennial	No Potential. No suitable breeding habitat appears to exist on the site.

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			aquatic habitats (e.g., sloughs, streams, and rivers). Breeds in upland areas	
BIRDS				
<i>Accipiter cooperii</i>	Cooper's hawk (nesting)	none/CSC/ none	Found as resident species throughout the lower elevation portions of California in low rolling grasslands with scattered oaks and river bottomlands or marshes adjacent to deciduous woodland. Prefers deciduous forest and typically hunts other birds and some small mammals.	Low Potential. The proposed project site does not provide suitable nesting habitat for this species. The adjacent oak woodlands provide potential nesting and foraging habitat for the species. However, no Cooper's hawks or evidence of nesting (i.e., nest structures) were observed at or near the proposed project sites. Therefore, the proposed project has some potential, albeit low, to affect the species.
<i>Accipiter striatus</i>	Sharp-shinned hawk (nesting)	none/CSC/ none	Found as resident species throughout the lower elevation portions of California in low rolling grasslands with scattered oaks and river bottomlands or marshes adjacent to deciduous woodland. Requires grasslands, meadows, or marshes (for foraging) located near dense-topped trees (for nesting and roosting).	No Potential. The proposed project site does not provide suitable nesting habitat (i.e., dense stands of small conifers) for the species. In addition, no sharp-shinned hawks were observed on at or near the proposed project sites during the survey. Therefore, this species has no potential to be affected by the proposed project.
<i>Agelaius tricolor</i>	Tricolored blackbird (nesting)	FSC/CSC/ none	Found as a resident in annual grassland, oak savannah and freshwater marsh within the Central Valley, coastal California, and into Oregon. Nesting habitat typically involves emergent freshwater marsh, but may also include dense stands of willow, blackberry, thistle or grasses.	No Potential. The proposed project site does not contain any freshwater marsh or blackberry thickets to support nesting by this species. Therefore, the sites are considered to have no potential to support nesting by the species.
<i>Aquila chrysaetos</i>	Golden eagle (nesting and wintering)	FSC/CSC/ none	The largest bird of prey in the United States, the golden eagle is found in mountainous areas, canyons, shrub-land and grassland. During the winter they are found in shrub-steppe vegetation, also wetlands, river systems and estuaries.	Low Potential. Golden eagles and their nests are unmistakable, and no nesting eagles have been observed on or near the proposed project site. However, the species has a moderate potential to occur at or near the site during winter given that the site supports some grassland.
<i>Ardea alba</i>	Great egret (rookeries)	none/CSC/ none	Great egrets will roost and breed in large colonies in huge, dense trees (valley oak, eucalyptus, cottonwood) or in trees stands that are dense.	No Potential. No egret rookeries are known to occur or were recorded at or near the proposed project site. Therefore, the proposed project has no potential to affect nesting by this species.
<i>Ardea herodias</i>	Great blue heron (rookeries)	none/CSC/ none	Great blue herons will roost and breed in large colonies in huge,	No Potential. No heron rookeries are known to occur or were

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			dense trees (valley oak, eucalyptus, cottonwood) or in trees stands that are dense, often mixed with egrets.	recorded at or near the proposed project site. Therefore, the proposed project has no potential to affect nesting by this species.
<i>Athene cunicularia</i>	Burrowing owl	none/CSC/ none	Burrowing owls occupy burrows typically dug by California ground squirrels. They feed on insects and small vertebrate prey in grassland areas around their nests.	Low Potential. Evidence of California ground squirrels was recorded at and near the proposed project sites. No evidence of burrowing owls was recorded at these sites (e.g., whitewash or castings at the mouths of burrows, or individual burrowing owls). However, given the ability of these to colonize areas (including disturbed areas) supporting California ground squirrels, there is some potential, albeit low, for the species to occur at or near the proposed project sites.
<i>Buteo lineatus</i>	Red-shouldered hawk (nesting)	FSC/CSC/ none	Found as resident and wintering species throughout the lower elevation portions of California in oak savannah and riparian woodland types where there are trees with dense cover for nesting.	Low Potential. The proposed project site does not provide suitable nesting habitat for the species. The adjacent oak woodlands provide potential nesting and foraging habitat for the species. However, no red-shouldered hawks or evidence of nesting (i.e., nest structures) were observed at or near the proposed project sites. Therefore, the proposed project has some potential, albeit low, to affect the species.
<i>Buteo swainsoni</i>	Swainson's hawk (nesting)	none/ST/none	Occurs in California as a breeding resident in the Central Valley (primarily in the southern Sacramento and northern San Joaquin valleys), Klamath Basin, and Modoc Plateau. However, nesting pairs are also occasionally found in the Mojave Desert, Lanfair Valley (San Bernardino County), Antelope Valley (Los Angeles County), and eastern San Luis Obispo County. In the Central Valley the species typically nests in riparian woodland or forest stands, or oak savannah. Nest territories are located adjacent to suitable foraging habitat (e.g., grassland, suitable grain and row crop fields, alfalfa, and pastures).	Low Potential. The species not has been recorded nesting near the project site. There are some moderate-sized foothill pines on the site, but no raptor-type nests were observed in any of these trees. Most of the area near the project site is chaparral habitat, which is not a favored hunting area for Swainson's hawk.

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<i>Circus cyaneus</i>	Northern harrier (nesting)	none/CSC/ none	Found as resident and wintering species throughout the lower elevation portions of California in annual grasslands, oak savannah, and valley and coastal marshes.	No Potential. The proposed project site does not provide suitable nesting habitat (i.e., dense grassland or coastal marsh) for the species. Therefore, the proposed project has no potential to affect nesting by this species.
<i>Elanus leucurus</i>	White-tailed kite (nesting)	MNBMC/CF P/none	Found as resident species throughout the lower elevation portions of California in low rolling grasslands with scattered oaks and river bottomlands or marshes adjacent to deciduous woodland. Requires grasslands, meadows, or marshes (for foraging) located near dense-topped trees (for nesting and roosting).	Low Potential. The proposed project site does not provide sufficient suitable nesting and foraging habitat for the species. The adjacent oak woodlands provide potential nesting habitat for the species. However, no white-tailed kites or evidence of nesting (i.e., nest structures) were observed at or near the proposed project. Therefore, the proposed project has some potential, albeit low, to affect the species.
<i>Empidonax traillii</i>	Willow flycatcher	FE/SE/none	Found as a summer resident (late March to late August) in Sierra valleys and in coastal California. Also occurs at scattered locations along the western border of the deserts. Typically nests in dense willow riparian communities.	No Potential. There are no stands of riparian vegetation (willow scrub) on nor immediately adjacent to the proposed project site to support nesting by this species. Therefore, this species has no potential to be affected by the proposed project.
<i>Falco mexicanus</i>	Prairie falcon (nesting)	MNBMC/CF P/none	Prairie falcons can be found in open treeless terrain including prairies, deserts, canyons, and mountains in relatively arid areas of California. In the Sierra Nevada prairie falcons range above timberline in late summer but winter at lower elevations. During the breeding season prairie falcons are commonly found in foothills and mountains that provide cliffs and escarpments suitable for nest sites.	No Potential. The proposed project site does not provide suitable nesting habitat (e.g., isolated cliffs or bluffs) for the species. Therefore, the proposed project has no potential to affect nesting by this species.
<i>Riparia riparia</i>	Bank swallow	none/ST/none	Bank swallows breed in small holes dug into sheer river banks, and have been known to nest on the Cosumnes River and along Dry Creek about twenty miles downstream of the project site.	No Potential. There is no suitable undisturbed bank habitat for bank swallows to utilize as nest sites at the proposed project sites. Although there are exposed banks and cliff faces associated with some of the sites, the soils or substrate are not suitable for excavation by bank swallows. Therefore, the proposed project has no potential to affect this species.

FEDERAL	FE	Federally listed as Endangered
	FT	Federally listed as Threatened
	FPE	Federally proposed as Endangered
	FPT	Federally proposed as Threatened
	FC	Federal Candidate Species (former Category 1 candidates)
	FSC	U.S. Fish and Wildlife Service designated "Species of Concern" (formerly Category 2 Candidate for listing)
	MNBMC	U.S. Fish and Wildlife Service designated "Migratory Non-game Bird of Management Concern"
STATE	SE	State listed as Endangered
	ST	State listed as Threatened
	SR	State designated as Rare
	CFP	California Department of Fish and Game designated "Fully Protected"
	CSC	California Department of Fish and Game designated "Species of Special Concern."
OTHER	CNPS List 1a	Plants presumed extinct in California
	CNPS List 1b	Plants that are rare, threatened, or endangered in California and elsewhere
	CNPS List 2	Plants that are rare in California but more common elsewhere.
	CNPS List 3	Plants for which we need more information.

Other Rare Species From the Greater Amador County Area

Other potentially rare species in the CNDDDB database grab for this area are listed here. These species have no significant chance of more than an incidental occurrence at the SWD Quarry site because no proper habitat exists or the area is out of the species range; these are included here to verify all rare species known from the area were considered.

1. Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*)
2. American badger (*Taxidea taxus*)
3. Bald eagle (*Haliaeetus leucocephalus*)
4. Blennosperma vernal pool andrenid bee (*Andrena blennospermatis*)
5. Brandegee's clarkia (*Clarkia biloba* ssp. *Brandegeeeae*)
6. California linderiella (*Linderiella occidentalis*)
7. California wolverine (*Gulo gulo*)
8. Dwarf downingia (*Downingia pusilla*)
9. Ferruginous hawk (*Buteo regalis*)
10. Giant gartersnake (*Thamnophis gigas*)
11. Grasshopper sparrow (*Ammodramus savannarum*)
12. Hairy water flea (*Dumontia oregonensis*)
13. Midvalley fairy shrimp (*Branchinecta mesovallensis*)
14. Northern goshawk (*Accipiter gentilis*)
15. Pallid bat (*Antrozous pallidus*)
16. Ricksecker's water scavenger beetle (*Hydrochara rickseckeri*)
17. Sanford's arrowhead (*Sagittaria sanfordii*)
18. Slender Orcutt grass (*Orcuttia tenuis*)
19. Stebbins' lomatium (*Lomatium stebbinsii*)
20. Three-bracted onion (*Allium tribracteatum*)
21. Tuolumne button-celery (*Eryngium pinnatisectum*)

Figure 1. Pink area indicates the area included in this survey (SWD Quarry). The 40-acre Property is the pink square on the right (the NW quarter of the NW quarter of Sec 16) and the 95.6-acre Property is the remainder of the pink area.

