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PHILLIPS 66

Wildlife and Habitat Assessment

Santa Maria Refinery Rail Project
San Luis Obispo County, California

APNs: #092-401-011, #092-401-013, #092-411-005, #092-401-005

ARCADIS

Wildlife & Habitat Assessment

Santa Maria Refinery Project Site,
San Luis Obispo County,
California

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Phillips 66

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"As a County –approved biologist, I hereby certify that this Biological Resources Assessment was prepared according to the Guidelines established by the County of San Luis Obispo Department of Planning and Building and that the statements furnished in the report and associated maps are true and correct to the best of my knowledge and belief; and I further certify that I was present throughout the site visit(s) associated with this report."

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Acronyms and Abbreviations

AOU	American Ornithologists' Union
CDFW	California Department of Fish and Wildlife
cm	centimeter
CNDDB	California Natural Diversity Database
CSC	California Special Concern Species
CT	California-listed Threatened Species
ºF	degrees Fahrenheit
FE	Federally-listed Endangered Species
FSC	Federal Special Concern Species
FT	Federally-listed Threatened Species
ha	hectare
km	kilometer
MBTA	Migratory Bird Treaty Act
m	meter
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

1. Executive Summary

This Biological Assessment presents the findings of a biological survey of a portion of the Phillips 66 Santa Maria Refinery (SMR) property proposed for modification of an existing rail spur and construction of an unloading facility designed to facilitate rail delivery of crude oil to the refinery. The survey included the approximately 40-acre construction area (the Site) and the surrounding area. The SMR property is located near Highway 1 on the Nipomo Mesa in Arroyo Grande, San Luis Obispo County, California. The purpose of the October 2012 ARCADIS biological survey was to identify existing or potentially occurring sensitive animal species, sensitive habitat, or other wildlife related issues of concern occurring on the Site or the surrounding area.

The Site supports degraded central coastal dune scrub habitat that has experienced moderate to heavy disturbance from various land uses. Four sensitive wildlife species (western burrowing owl, loggerhead shrike, northern harrier, and Cooper's hawk) were observed in the general project area during biological surveys. Two sensitive wildlife species (coast horned lizard and silvery legless lizard) are assumed to occupy the Site, although they were not observed during the surveys. Two additional sensitive species (white-tailed kite and American badger) are assumed to periodically be in the project area, though they were not observed during the surveys.

This report addresses the potential wildlife impacts associated with the proposed rail project. This report conservatively considered that the proposed rail spur pathway would be permanently disturbed. Differentiation between the total permanent impacts and temporary impacts was not feasible at this time. ARCADIS conservatively combined both temporary and permanent impacts for the purpose of impact assessment. Measures to avoid and minimize potential impacts to wildlife are proposed in Section 7 of this report.

2. Introduction

This report provides a Biological Assessment of the Phillips 66 Santa Maria Refinery (SMR) Rail Project Site (the Site). The SMR property consists of four assessor's parcels within the South County Planning Area of San Luis Obispo County (APN #092-401-011, #092-401-013, #092-411-005, and #092-401-005). The approximately 1,650-acre (668 ha) SMR property is located on Highway 1 approximately 5 miles (8.05 km) south of the intersection of Highway 1 and Halcyon Road on the Nipomo Mesa in Arroyo Grande, San Luis Obispo County, California (Figure 1). The project Site is a small portion of the SMR property and is currently used for industrial operations and cattle grazing. The current land use designation is "Industrial"; this designation is not expected to change as a result of the proposed project.

The SMR property is bordered to the north by agriculture fields, industrial facilities, and residential housing. It is bordered to the south by agriculture, by residential development to the east, and by undeveloped coastal dunes to the west. The proposed rail spur extends the existing spur through

the coke processing area and to the east through the grazing area. Additionally, a covered offloading rack will be constructed and an above ground pipeline will convey material from the offloading rack to the existing storage tanks at the SMR. The proposed development consists of extending the existing rail spur by approximately 2305 yards (2110 m). The width of the rail spur disturbance envelope is expected to be approximately 270-feet (82m). The length of the pipeline is approximately 775-yards (710 m). The width of the pipeline disturbance envelope varies but is approximately 25 feet (7.5 m). However, the above ground pipeline installation follows an existing road is not likely to actually require disturbance of that entire area. The total area of anticipated temporary and permanent disturbance is expected to be approximately 48.9 acres (19.8 ha). Note that this includes areas within the existing industrial refinery as is delineated below and shown on Figure 2. As previously noted, it is anticipated that a significant portion of the disturbance envelope outside the developed refinery in the natural area will be subject only to temporary disturbance during site grading and prep and that the area will be restored to pre-disturbance conditions following completion of construction.

The approximate construction areas are summarized below and shown on Figure 2:

- 2305 yards (2110 m) – Length of spur extension (including approximately 815 yards within the existing industrial coke plant area)
- 270-feet (82m) – Approximate width of construction area for rail extension (note that much of the area would only be affected temporarily).
- 775-yards (710 m) – Length of new pipeline from the unloading facility to the internal refinery (note that an additional 400 yards will be constructed within the existing refinery connecting to the existing storage tanks).
- 25-feet (7.5 m) – Approximate width of temporary construction area for pipeline installation

Acreage Breakdown (includes temporary and permanent):

- 38.6 acres – Rail Spur and Unloading Facility
- 4.1 acres – New Pipeline (mostly temporary impacts)
- 1.7 acres – Secondary Emergency Vehicle Access
- 4.5 acres – Internal Refinery Piping and Existing Track Upgrade

Collectively, the entire project, including temporary and permanent impacts, would affect approximately 48.9 acres (19.8 ha). Of this area, a significant portion occurs within the existing refinery:

- 21.9 acres (45% of total) occurs within the existing industrial refinery area
- 27 acres occur in undeveloped areas and include portions of the rail extension, the new pipeline, and the secondary emergency vehicle access road (Figure 2).

As noted above, a significant portion of the impacts would be temporary during construction and affected plant communities would be returned to pre-project conditions following completion of construction.

The purpose of this analysis is to identify sensitive animal species and sensitive habitat that occur or have the potential to occur on the property, or other potential environmental issues of concern for the Site.

3. Methods

ARCADIS conducted a sensitive species survey of the project area on October 9 and November 13, 2012. Surveys were conducted under clear, calm weather conditions and lasted approximately 5 and 3 hours, respectively. The personnel conducting the October 9 survey consisted of ARCADIS Senior Ecologist Mary Carroll and ARCADIS Wildlife Biologist Mitch Siemens. The November 13 survey was conducted by Mr. Siemens. The Site was accessed on foot throughout the area shown on Figure 4 as well as in a buffer area around the footprint, which included adjacent areas that might be potentially affected by project construction activity.

Desktop Data Search: Prior to performing the field work, ARCADIS reviewed documents concerning the Site and the surrounding areas, including a search of the California Natural Diversity Database (CNDDB; California Department of Fish and Wildlife [CDFW] 2012) for the United States Geological Survey (USGS) 7.5-minute series Oceano topographic quadrangle and the adjacent quadrangles (Arroyo Grande NE, Guadalupe, Nipomo, Santa Maria, Tar Spring Ridge, Orcutt, Casmalia, and Pismo Beach). Aerial photographs from approximately the last 20 years were also reviewed to better understand the history of the Site. Other resources employed for this assessment included various state and federal regulations, consultation with other local biologists about issues in the area, and ARCADIS's direct experience on the Site and in the surrounding area including a previous biological site assessment conducted for a ConocoPhillips project (LFR 2005). ARCADIS biologists also interviewed a local rancher who has a long history tending cattle on the Site.

Wildlife Diversity: All wildlife species observed or assumed present from sign (e.g., tracks, burrows, scat, nests) during the surveys are listed in Table 1. Nomenclature for bird species follows the most recent taxonomy as reflected in the 1983 American Ornithologists' Union (AOU) Check-List of North American Birds and published supplements through 1998. The list of wildlife species also may not be comprehensive. In order to create a more comprehensive wildlife list, multiple surveys would be required in order to enable observation of species both during the day and at night, during different seasons, and during weather conditions when some species are more likely to be detected. Sensitive wildlife species observed at the Site are discussed in Section 5.

4. Habitat Description

The Nipomo Mesa and the Central Coast region in general occur in an important biological transition zone between the moister communities of central and northern California and the more arid communities of southern California.

4.1 Site Description and Surrounding Natural Resource Areas

The topography of the Site and surrounding area consists of relatively flat to gradually undulating terrain. Oceano sands underlay the Site, which are well drained and predominate in old stabilized sand dunes in several locations along the Central Coast. Elevations at the Site average about 60 feet.

Yearly precipitation is estimated at 17.14 inches (Western Regional Climate Center 2012), falling primarily between October and April. The local weather pattern of mild, wet winters and warm, dry summers is characteristic of Mediterranean climate regions, and the effect of the dry summers on plant life is ameliorated somewhat by the presence of summer fog.

Temperatures at the Site are generally mild, with a mean annual temperature of 58.0 degrees Fahrenheit (°F), with an average maximum August temperature of 71.0°F and an average January minimum temperature of 42.4 °F (Western Regional Climate Center 2005).

The Oceano Dunes State Park is located along the beach immediately west of the SMR property. The 3,600-acre (1456 ha) park has 5.5 miles (8.8 km) of beach access with 1,500 acres (607 ha) of sand dunes open for vehicle and recreational vehicle use. The park is the only California State Park facility that allows vehicles to be driven on the beach. The Oso Flaco Lake Natural Area is also part of the Oceano Dunes State Park. The Lake area is off-limits to vehicles and is primarily used by the public for viewing plants, wildlife, and scenic landscapes. The Oso Flaco Lake Natural Area offers a 1.5-mile (2.4 km) boardwalk path, including a span that crosses over the lake itself, that connects the parking lot at the west end of Oso Flaco Lake Road to the beach.

The County of Santa Barbara Parks Department manages the Rancho Guadalupe Dunes Preserve located approximately 5 miles south of the Site. The Rancho Guadalupe Dunes Preserve supports pristine sand dunes and offers fishing, hiking, wildlife viewing, picnicking, and other activities for the public. The preserve is used as a breeding location by two federal and state listed wildlife species; the snowy plover (*Charadrius alexandrines*) and California least tern (*Sterna antillarum*). Certain human activities within the park are seasonally restricted during the breeding season (March 1 through October 1) of these two listed wildlife species.

Black Lake Canyon is located approximately 1 mile north of the SMR property. Black Lake Canyon represents a significant natural resource, containing habitat for a number of rare plant and wildlife

species including federally listed threatened California red-legged frog (*Rana draytonii*; the Site does not support suitable habitat for this species).

4.2 Vegetation Types

The Site and surrounding area supports three main vegetation communities within the boundaries of the project study area as described below and depicted in Figures 4 and 5: two upland communities – Central Dune Scrub and Non-native Veldt Grassland, and one wetland community – Arroyo Willow Scrub. Note that the wetland community occurs outside the Site approximately 1500-feet to the southwest and no impacts are anticipated. A jurisdictional wetland delineation was not conducted by ARCADIS during the field survey nor was one considered necessary given avoidance of the area. The distribution of vegetation types on the Site is determined by topography, soils and geology, hydrology, slope exposure, climate, and land use history. Impact acreages by plant community are provided in Table 3.

5. Results

No federal or state listed wildlife species were observed during the surveys, and none are likely to occur within the project footprint. Four sensitive wildlife species were observed on or near the Site and are described further below. Several other sensitive wildlife species are expected to occur or periodically occur in the project area though they were not observed during the ARCADIS surveys. These species are all discussed below. The Site is dominated by a mosaic of central dune scrub vegetation, as well as non-native veldt grass grassland. One area supports arroyo willow thickets.

5.1 Sensitive Wildlife

The project area supports a mosaic of primarily central dune scrub and non-native veldt grass grassland vegetation that provides habitat of good functional value for many wildlife species including several species of special concern. Oso Flaco Creek, a narrow willow-dominated riparian corridor, occurs to the south of the Site at the bottom of the mesa but is not in the immediate vicinity of the proposed project footprint. This habitat has the potential to support two sensitive wildlife species: the California red-legged frog (federal listed threatened species), and Pacific pond turtle (*Actinemys marmorata*, state species of concern). Both of these species are highly dependent upon, and associated with, aquatic environments and neither is likely to occur in the much more xeric central dune scrub habitat occurring within the proposed project area.

Some of the sensitive species listed in the CNDDB for the Oceano and surrounding quadrangles are not discussed below due to the lack of species-specific habitat needs on the Site (although they are addressed in Table 2). Species such as the Western snowy plover (*Charadrius alexandrinus nivosus*), California least tern (*Sterna antillarum browni*), and steelhead (*Oncorhynchus mykiss irideus*) are examples of species whose habitat requirements are not met by the existing conditions

on the Site. Other species, such as the California horned lizard (*Phrynosoma coronatum*) and American badger (*Taxidea taxus*), are more likely to be encountered on the Site and therefore are discussed in more detail below.

The Site and surrounding area provides foraging opportunities for several raptor species including but not limited to the northern harrier (*Circus cyaneus*), red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), Cooper's hawk (*Accipiter cooperii*), great horned owl (*Bubo virginianus*), barn owl (*Tyto alba*), western screech owl (*Otus trichopsis*), white-tailed kite (*Elanus leucurus*), and loggerhead shrike (*Lanius ludovicianus*) to the extent that prey species are present. ARCADIS noted the presence of tracks, scat, burrows, and other sign indicating that common raptor prey species (small mammals, birds, lizards, and invertebrates) occur on the Site in good numbers. The open space on the SMR property is considered an important foraging location for both sedentary and migratory raptor species in the area.

All birds included on the federal list of migratory non-game birds, and their active nests, are protected by law under the federal Migratory Bird Treaty Act (MBTA). This includes all of the birds observed on the Site listed in Table 1 with the exception of the European starling (*Sturnus vulgaris*). All raptors and their active nests are protected under CDFW code (Section 3503.5) and the MBTA. Impacts as defined in the MBTA are more strictly defined than the broadly defined term of "take" used in the Endangered Species Act and are generally limited to direct harm to individuals or active nests.

A review of aerial photographs and maps of the area indicate that the open areas on the SMR property likely serve as a dispersal corridor for wildlife, providing passage between the inland Nipomo Mesa areas and the coastal dunes and beaches to the west. Infrastructure associated with the proposed rail spur is not anticipated to be a significant barrier to wildlife traveling through the Site or to hinder the normal activities of wildlife in the area as the east/west alignment of the tracks does not block the corridor between the coast and inland areas and does not isolate one portion of the property from another.

ARCADIS' search of the CNDDB revealed that several sensitive wildlife species have been reported from the Oceano and/or neighboring quadrangles. The following is a summary of sensitive wildlife species whose habitat requirements fit conditions existing on or near the Site and are, therefore, species that may occur on the Site. Five sensitive wildlife species were observed on the Site during the ARCADIS biological survey; these include the western burrowing owl (*Athene cunicularia*), loggerhead shrike, northern harrier, ferruginous hawk (*Buteo regalis*), and Cooper's hawk (*Accipiter cooperii*). The California horned lizard and legless lizard (*Anniella pulchra*) are assumed to be present on the Site, although none were observed during the ARCADIS survey. No federal or state listed wildlife species were observed on the Site or are considered to have a moderate to high probability of occurring within the project area.

Abbreviations used:

United States Fish and Wildlife Service
FE – Federally Endangered
FT – Federally Threatened
FSC – Federal Special Concern Species

California Department of Fish and Wildlife
CE – California Endangered
CT – California Threatened
CSC – California Species of Concern
WL – Watch List

California Red-legged Frog (*Rana draytonii*)

The California red-legged frog (FT/CSC) is a comparatively large frog, though not as big as the bullfrog, and measures up to 13.1 cm in length. The lower abdomen and underside of the hind legs are red, and this frog usually has a dark mask bordered by a white jaw stripe. The legs have dark bands, and the back has many small dark flecks and larger, irregular dark blotches (some individuals lack blotches and are more uniform in color). Dorsal lateral folds on this frog are prominent. The eyes are turned outward and are well covered by the lids when viewed from above. Juveniles sometimes show yellow on the undersides of the hind legs (Stebbins 1985).
The red-legged frog's historical range extended from the vicinity of Point Reyes National Seashore, Marin County, California, coastally, and from the vicinity of Redding, Shasta County, California, inland, south to northwestern Baja California, Mexico (USFWS 2000).

Breeding for the California red-legged frog takes place from late November to late April. Males usually show up at breeding pools 2 to 4 weeks ahead of females and commence vocalizations. Egg masses containing from 2,000 to 5,000 dark, reddish-brown eggs are laid in pools among emergent vegetation. Eggs hatch in 6 to 14 days, and tadpoles metamorphose in 3.5 to 7 months. Juvenile frogs reach maturity in 3 to 4 years. California red-legged frogs may live up to 10 years (Storer 1925; Jennings and Hayes 1990).

Red-legged frogs reside in and around deep, cold, still, or slow-moving water of ponds, reservoirs, marshes, streams, and other typically permanent bodies of water, especially where cattails or other plants provide good cover (Stebbins 1985). The absence of bullfrogs and non-native predatory fish is essential in order for these microhabitats to sustain viable populations of red-legged frogs (Hayes and Jennings 1988).

California red-legged frogs are known to exist in the Black Lake Canyon drainage located approximately 1 mile north of the Site (personal observation) and have been recorded from other aquatic features near the Site (CNDDB 2012). Oso Flaco Creek, a narrow willow-dominated riparian drainage that flows from the east through the Site east of the proposed project area may also support California red-legged frogs, although ARCADIS found no CNDDB records from this location. However, the more xeric coastal dune scrub habitat occurring at the project Site is not considered optimal for California red-legged frogs, and the species is highly unlikely to occur there.

Presence on the Site: California red-legged frogs have not been observed on the Site or surrounding area. The SMR property in the vicinity of the proposed project does not have aquatic or optimal upland habitat for the California red-legged frogs, and the species is not expected to occur in the project area.

Western spadefoot toad (*Spea hammondii*)

The western spadefoot toad (FSC/CSC) prefers habitat where the soil is sandy or gravelly, and vegetation is short and open. Typically, habitat types include grasslands, pine-oak woodlands, open chaparral, and scrubland. Dry periods are spent in self-made burrows, or those of small rodents such as gophers, kangaroo rats, and ground squirrels. Spadefoot toads are active mainly at night during spring and summer rains. Breeding and egg laying occur almost exclusively in shallow, temporary pools, formed by late winter and spring rains during January through May (Stebbins 1985).

ARCADIS found no aquatic habitat on the Site to support breeding by the Western spadefoot toad. Upland habitat on the Site is not likely to be occupied by this species due to the lack of vernal pools or other temporary or seasonal aquatic features at the Site.

Presence on the Site: Not observed during ARCADIS surveys. The Site does not have aquatic habitat to support the Western spadefoot toad, although potentially suitable upland habitat is present for this species. No suitable aquatic habitat that could provide breeding conditions for the Western spadefoot toad was found during the ARCADIS field survey.

Bell's Sage Sparrow (*Amphispiza belli*)

The sage sparrow (-/CSC) is a distinctive species found in barren sage brush deserts and dry open habitat types including the grassland/chaparral interface. The pacific population or Bell's sage sparrow typically occurs in dense coastal chaparral and sagebrush scrub. The Bell's sage sparrow can often be seen running between bushes with its tail raised high. It is a medium sized sparrow with a relatively long tail. It has a dark central spot on a mostly white breast and has a complete

white eye-ring and a gray head. The Bell's sage sparrow builds a cuplike nest of twigs, grasses, bark, lined with finer materials, placed on the ground or up to 3-feet high in a shrub. Typically 3 to 4 bluish eggs are laid in the spring; incubation lasts approximately 13 days and young fledge in 9 to 11 days (Ehrlich et al. 1988, Stokes 1996).

Presence on the Site: A singing male Bell's sage sparrow was observed on the Site during ARCADIS spring surveys. The Site has suitable foraging and nesting habitat to support Bell's sage sparrow.

Pacific Pond Turtle (*Actinemys marmorata*)

The Pacific pond turtle (-/CSC) inhabits permanent or nearly permanent bodies of water in a variety of habitat types. Lakes, rivers, streams, and ponds are typical habitats where the Pacific pond turtle can be found. It requires basking sites such as rock islands, partially submerged logs, vegetation mats, or open mud banks. The Pacific pond turtle feeds primarily on insects, worms, fish, and carrion. A clutch of 3 to 11 eggs is laid April through August in soft, sandy soils near waterways (Stebbins 1985).

Site location information contained in the CNDDB for the Pacific pond turtle shows no records from Oso Flaco Creek. However, the species has been observed there (personal observation, 2005) and is also commonly observed at Oso Flaco Lake.

Presence on the Site: The Pacific pond turtle was not observed during ARCADIS surveys. The species has been observed in Oso Flaco Creek located south of the proposed project location. However, the project area can be described as xeric and supports central dune scrub habitat that is not considered conducive for the Pacific pond turtle. The Pacific pond turtle is highly unlikely to occur in the project area.

Coast Horned Lizard (*Phrynosoma coronatum*)

The coast horned lizard (FSC/CSC) is found in a variety of habitats including grassland, oak woodland, and maritime chaparral. The coast horned lizard requires loose, sandy soils, preferably in the presence of low shrubs that can provide cover from predators. Additional requirements are open areas used for sunning, and the presence of ants and other insect prey. Eggs are laid in sandy soils from April through June (Stebbins 1985).

Coast horned lizards are known to occur in dune scrub habitat south of Oso Flaco Lake (personal observation). The species was not observed on the Site by ARCADIS; however, sandy soil conditions and an adequate prey base indicate that the Site is well suited for the coast horned lizard.

Presence on the Site: Not observed during ARCADIS surveys. The Site has fair to good habitat conditions for the coast horned lizard, and it is reasonable to assume the species can be found on the Site. ARCADIS biologists spoke with a cattle rancher on the Site during the field survey who commented that he has observed coast horned lizards on the SMR property on numerous occasions.

Silvery Legless Lizard (*Anniella pulchra* subsp. *pulchra)*

The silvery legless lizard (-/CSC) prefers loose sand or loamy soils with some vegetation cover, and can be found in chaparral, beach foredunes, pine-oak woodland, and streamside growth of sycamores, cottonwoods, and oaks. The right amount of soil moisture is believed to be a critical microhabitat feature for this species. The silvery legless lizard favors the loose litter under sycamore, oak, and cottonwood trees (Stebbins 1985). The understory of oak thickets is a prime habitat for this species.

The silvery legless lizard may occur on the Site. Sandy soil conditions on the Site are suitable, and the presence of an adequate prey base is assumed. In addition, silver dune lupine (*Lupinus chamissonis*) and mock heather (*Ericameria ericoides*) are two native plant species present on the Site that are closely associated with the presence of silvery legless lizards. Silvery legless lizards are often found where these two plants occur in undisturbed, Coastal Dune Scrub habitats.

Presence on the Site: Not observed during ARCADIS surveys. The soil composition at the Site and the remnant central dune scrub habitat on the Site provide good to excellent conditions for this species. It is reasonable to assume that the silvery legless lizard occurs on the Site.

Western Burrowing Owl (*Athene cunicularia*)

The western burrowing owl (-/CSC) can be found in dry, open grasslands and fields. Burrowing owls are capable of creating their own burrows, but typically occupy burrows abandoned by California ground squirrels (*Otospermophilus beecheyi*) and badger. Abandoned pipes and debris piles are also commonly used by burrowing owls for shelter. Burrowing owls feed on a wide range of animals including insects, small mammals, birds, and reptiles. The breeding season can start as early as late February and is typically over by late August. Up to nine eggs are laid, and incubation is complete in 28 to 30 days. Young owls fledge in 44 days.

Western burrowing owls commonly winter and historically have nested in San Luis Obispo and Santa Barbara Counties. They utilize open fields with low vegetation cover. The availability of small mammal burrows, particularly California ground squirrel burrows, is a critical component of burrowing owl habitat.

Presence on the Site: The western burrowing owl was observed during both ARCADIS field surveys. Although California ground squirrels were not observed on the Site, both small mammal and medium-sized mammal burrows are occasionally encountered that can provide shelter for the western burrowing owl. Conditions on the Site are considered to be moderately to well suited for the western burrowing owl, and the Site provides refuge for this species as indicated by the sighting of two individual burrowing owls during the ARCADIS surveys.

Loggerhead Shrike (*Lanius ludovicianus*)

The loggerhead shrike (-/CSC) is found in dry, open habitat types including the grassland/chaparral interface. This bird is known for its habit of impaling prey items such as lizards, small mice, and large insects on the spines of thorn bushes or on barbed wire fencing. It generally hunts from low perches such as fence posts, wires, and the tops of low bushes. Shrikes lay five to six eggs in an open cup-shaped nest well hidden in the crotch of a tree branch. Egg laying commonly begins in April, and young fledge in about 34 days (Ehrlich et al. 1988).

Presence on the Site: One individual loggerhead shrike was observed on the SMR property during ARCADIS surveys. The Site and surrounding area has suitable foraging and nesting habitat to support the loggerhead shrike.

Northern Harrier (*Circus cyaneus*)

The northern harrier (-/CSC) is a slender raptor with long wings and tail. It spends much of its time coursing back and forth low over open fields, marshlands, savannahs, and grassland prairies in search of food, which typically includes small birds, mammals, reptiles, and insects. The northern harrier typically builds a stick nest on the ground or in low shrubs (Ehrlich et al. 1988).

Presence on the Site: The northern harrier was observed during both ARCADIS surveys, and the species is expected to forage regularly on the SMR property in the fall and winter months. The northern harrier is unlikely to nest on the Site.

White-tailed Kite (*Elanus leucurus*)

The white-tailed kite (-/CSC; “Fully protected”) requires large, open fields and relatively undisturbed oak woodland, grassland, and/or coastal sage scrub for successful breeding. Small mammals are the normal prey item of this species. Eggs are laid as early as mid-March and as late as the end of May. White-tailed kite habitat usually requires a stretch of riparian corridor in which to nest (particularly cottonwoods, but including eucalyptus, willows, and live oaks), and adjacent fields in which to hunt. Nests are usually well hidden in the tree canopy (Dixon et al. 1957).

The white-tailed kite occurs in the area, and it is reasonable to assume this species utilizes the Site for foraging purposes at least periodically.

Presence on the Site: Not observed on the Site during ARCADIS surveys. The Site and SMR property offers good to excellent foraging habitat for the white-tailed kite, and the species is assumed to occur in the area periodically.

Cooper's hawk (*Accipiter cooperii*)

The Cooper's hawk (-/WL) feeds predominantly on small to medium-sized birds, but will also take reptiles and mammals such as wood rats and small rabbits. The breeding season for this species begins in mid-March to early April. Nests are built in the upper canopy of a dense stand of trees such as live oak or cottonwood. Nests are occasionally built atop a wood rat or squirrel nest (Meng and Rosenfield 1988). After completion of the nest, three to five eggs are laid, and incubation lasts about 1 month. Young Cooper's hawks fledge at about 4 weeks of age (Reynolds & Wight 1978). The Cooper's hawk is a secretive species, but is known to breed within urban settings.

The Cooper's hawk was not observed on the Site during the ARCADIS survey. However, like the white-tailed kite, the Cooper's hawk is almost certain to forage on the Site periodically.

Presence on the Site: The Cooper's hawk was observed on the Site during ARCADIS surveys. The Site and surrounding area has adequate foraging habitat for the Cooper's hawk, which is likely to use the SMR property for foraging throughout the year.

American badger (*Taxidea taxus*)

The American badger (- / CSC) is found in open grassland, coastal scrub, chaparral, and oak woodland. California ground squirrels and other small rodents, such as the kangaroo rat (*Dipodomys* spp), are common prey items of the badger. The American badger is generally nocturnal, but is sometimes observed active in the daytime. Burrow openings of this species are elliptical and approximately 8 to 12 inches wide. Young are born in March and April (Whitaker 1996).

Subdivision and development of properties on the Nipomo Mesa is occurring at an accelerated rate, making it increasingly difficult for larger carnivore species such as the American badger to survive. Mortality due to car strikes is a common end for badgers caught in development areas. Other pressures include loss of prey species (e.g., California ground squirrels, kangaroo rats, pocket gophers) due to land clearing and or poisoning, and clearing of suitable denning locations. American badgers are known from the area and have been observed dead from vehicle strikes on Hwy 1 less than 1 mile from the Site (personal observation).

Presence on the Site: The Site and surrounding SMR property provides good habitat for the American badger, although no badger or badger diggings or burrows were observed during the ARCADIS survey. California ground squirrels, an important prey species of the American badger, were also not observed by ARCADIS; however, other small mammal badger prey species are present. ARCADIS biologists spoke with a cattle rancher on the Site during the October 9 field survey who commented that he has observed badger on the Site on one or two occasions.

Monarch Butterfly (*Danaus plexippus*)

The Monarch butterfly does not have federal or state listing status, but is included as a sensitive species in the CNDDB. Winter roost sites extend from Northern Mendocino to Baja California, Mexico. The listing by CDFW is based on limited wintering roost sites within the Central California coast portion of the butterfly's West Coast wintering range. The Monarch butterfly can be found in a variety of habitats, especially those supporting milkweed plants (*Asclepias* sp.), the primary food source of the caterpillars. These butterflies frequent grasslands, prairies, meadows, and wetlands, but avoid dense forests. In the winter, Monarchs cluster together in large numbers forming winter roost locations in eucalyptus, cypress, and Monterey pine trees, often on the edges of open areas.

The closest CNDDB reports of wintering Monarch butterflies come from the vicinity of Hwy 1 and Willow Street less than 1 mile north of the Site. Adult Monarch butterflies were observed on the Site during the survey by ARCADIS, but no winter roost sites are expected to occur on the Site.

Presence on the Site: Adult Monarch butterflies were observed on the Site by ARCADIS; however, The Site is not likely to support a winter roost location for this species, as there are few potential roost trees present on the SMR property, and those that are present are typically single trees or a small number of associated trees exposed to prevailing on-shore winds and the elements.

6. Impacts

The following discussion addresses anticipated project-related biological impacts. All biological impacts on the Site associated with the development occur on the undeveloped expanse of native central dune scrub habitat located east of the fenced refinery boundary. Wildlife impacts within the industrial areas are not anticipated. This report conservatively combines both temporary and permanent impacts for the purpose of the impact assessment. It is recognized that the majority of the disturbance envelope will be subject to temporary impacts associated with construction, however, accurate delineation between temporary and permanent impacts areas was not feasible at the time of this writing. At this time, the project is anticipated to result in minor ecological impacts to wildlife that can be mitigated to a less than significant effect, and as such, resource protection measures are proposed in Section 7.

6.1 Direct Loss of Wildlife Habitat and Species

The majority of the Site supports central dune scrub habitat impacted by cattle grazing and other land use operations. The expected direct impacts associated with the project are primarily the loss of open foraging/dispersal ground for wildlife and loss of fossorial wildlife species that may be present during clearing and grading of the Site. No direct impacts to federal or state listed species are anticipated as a result of this project.

6.2 Indirect Loss of Vegetation and Wildlife Habitat

The final project footprint will consist of up to five parallel linear rail tracks that extend east from the refinery. The rail tracks will continue out through the current grazing area, allowing rail cars to be staged for off-loading before returning to the main Southern Pacific track. The modified rail spur infrastructure will occupy/impact relatively few acres compared to the total amount of surrounding native habitat present on the SMR property. The proposed project is not anticipated to result in erosion, sedimentation, or alteration of any jurisdictional (or non-jurisdictional) wetlands.

Cumulatively, an overall increase in noise, light, and human activity are anticipated to result from this project. Development of the Site will marginally add to impacts already occurring in association with other nearby development and is likely to have a cumulative impact on biological resources in the area by increasing human activities in open dispersal corridors and foraging areas.

7. Recommended Resource Protection Measures

The following measures are recommended to help prevent or reduce impacts to sensitive biological resources occurring on the Site.

- Project scheduling – Project managers should consider scheduling construction work, especially clearing of natural habitat, to occur outside of important breeding and dispersal periods for wildlife. Clearing of vegetation should take place outside of the recognized bird breeding season (March 15 to August 31) if feasible to avoid impacts to nesting birds.

- Pre-construction wildlife surveys – Preconstruction wildlife surveys should be conducted no more than 14 days prior to the start of anticipated clearing activities. The purpose of the surveys is to identify any wildlife, especially sensitive wildlife species such as badger or burrowing owls, that might occur in the proposed clearing area and that can be passively or actively relocated away from the area to avoid project-related impacts.

- Work area delineation – The work area, including the proposed rail line route, access roads, and equipment staging areas, shall be delineated with orange construction fencing (or equivalent) in order to consolidate anticipated disturbance areas resulting from vehicle and foot traffic by construction personnel entering and leaving the project area, as well as to prevent unnecessary impacts to vegetation and wildlife areas outside of the project footprint.

- Biological monitoring – A biological monitor should be present during initial clearing to assist with keeping project work within the delineated work area footprint, to help reduce impacts to sensitive vegetation/habitat where feasible, to identify wildlife in or near the work area and to help determine impact avoidance measures for such species, and to relocate wildlife species away from the work area if necessary.

- Traffic control / car pool – To the greatest extent feasible, construction personnel should carpool from the Phillips 66 SMR paved parking lot located on the west side of the refinery to the work area. Temporary access roads should be limited to the fewest number possible to reduce impacts to biological resources. Temporary access roads and staging areas located in central dune scrub habitat should be restored to pre-project conditions following completion of construction.

- Construction personnel requirements – Construction personnel should be required to break and eat lunch in designated, fenced areas. Trash should be removed from the work area daily. Smoking should be limited to designated smoking areas. Personnel should be required to remain inside the designated work area (orange fenced areas) at all times as a means of preventing disturbance to sensitive biological resources in the area.

8. Conclusion

The Site offers potentially suitable habitat for several sensitive wildlife species known to occur in the area. It is either known or reasonable to assume from observations of habitat conditions that the Site supports (continually or periodically) the following species of concern: silvery legless lizard, California horned lizard, American badger, white-tailed kite, western burrowing owl, loggerhead shrike, Bell's sage sparrow, northern harrier, ferruginous hawk, and Cooper's hawk. The Site is not anticipated to support any federal or state listed wildlife species. It is foreseeable that build-out of the rail spur will result in direct impacts to fossorial species such as the silvery legless lizard and California horned lizard that cannot feasibly move away from project disturbance. Notwithstanding the highly lit, heavy industry already on the property, the SMR property provides a relatively large, undisturbed natural corridor for wildlife to move between the Nipomo Mesa and areas further inland, and the undeveloped coastline west of the Site. However, the proposed project is not considered a complete deterrent to such wildlife utilization, as the linear rail spur infrastructure does not block the corridor.

ARCADIS reviewed and surveyed the proposed rail spur route being considered and concludes that anticipated impacts can be mitigated to a less than significant level. No federal or state-listed wildlife species, wetlands, or sensitive native wildlife habitats are anticipated to be impacted by the proposed project.

9. References

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Tables

TABLE 1
OBSERVED WILDLIFE SPECIES AT THE
PHILLIPS 66 SANTA MARIA REFINERY PROPERTY

Compiled from ARCADIS October 9, 2012 and May 1st 2013 field surveys

Scientific Name	Common Name
MAMMALS	
Canis latrans	**Coyote**
***Dipodomys* sp.**	**Kangaroo rat**
Lepus californicus	**Black-tailed jackrabbit**
Mephitis mephitis	**Striped skunk**
Mustela frenata	Long-tailed weasel
Peromyscus sp.	Deer mouse
Procyon lotor	Raccoon
Sylvilagus audubonii	Cottontail rabbit
Thomomys bottae	**Botta's pocket gopher**
REPTILES AND AMPHIBIANS	
Anniella pulchra	Silvery legless lizard
Crotalus viridis	Pacific rattlesnake
Lampropeltis getula	California king snake
Masticophis lateralis	Striped racer snake
Phrynosoma coronatum	Coast horned lizard
Pituophis catenifer	Gopher snake
Sceloporus occidentalis	**Western fence lizard**
Uta stansburiana	**Side-blotched lizard**
INVERTEBRATES	
Danaus plexippus	**Monarch butterfly**
BIRDS	
Accipiter cooperii	**Cooper's hawk**
Amphispiza belli	**Bell's sage sparrow**
Athene cunicularia	**Western burrowing owl**
Bubo virginianus	**Great horned owl**
Buteo Jamaicensis	**Red-tailed hawk**
Buteo regalis	**Ferruginous hawk**
Callipepla californica	**California quail**
Calypte anna	**Anna's hummingbird**
Carduelis lawrencei	**Lesser goldfinch**
Carpodacus mexicanus	**House finch**
Cathartes aura	**Turkey vulture**
Circus cyaneus	**Northern harrier**
Dendroica coronata	**Yellow-rumped warbler**
Falco sparverius	**American kestrel**
Lanius ledovicianus	**Loggerhead shrike**
Passerculus sandwichensis	**savannah sparrow**
Picoides nuttallii	**Nuttall's woodpecker**
Pipilo crissalis	**California towhee**
Sayornis nigricans	**Black phoebe**
Sayornis saya	**Say's phoebe**
Zonotrichia leucophrys	**White-crowned sparrow**

Note: List includes wildife species not observed during the survey but anticipated to be found commonly on the Site. Species observed or identified by sign during the October 9th survey are listed in bold print.

TABLE 2
PRESENT OR CNDDB RECORDED SENSITIVE ELEMENTS OF BIOLOGICAL DIVERSITY
FOR THE PHILLIPS 66 PROPERTY AND SURROUNDING AREA

Scientific Name	Common Name	Status	Habitat	Occurrence of Element on Project Site
Amphibians		**USFWS / CDFG**		
Ambystoma californiense	California tiger salamander	FE / CSC	Grasslands, woodland; slow moving or ponded aquatic features for breeding	Not observed. Marginal to poor habitat present / No known breeding ponds in project vicinity
Rana aurora draytonii	California red-legged frog	FT / CSC	Lakes, ponds, marshes, slow-moving streams, riparian environments	Not observed. Species known to occur in aquatic features within one mile of the site. Potentially present in Oso Flaco Creek.
Spea hammondii	Western spadefoot toad	- / CSC	Foothills, woodlands, grasslands; temporary ponds and vernal pools for breeding	Not observed; marginally suitable upland habitat present. Aquatic habitat for breeding unlikely to occur on the site.
Taricha torosa torosa	Coast Range newt	FSC / CSC	Foothills, woodlands, riparian environments; moving clear water streams for breeding	Not observed; suitable habitat absent on site.
Birds		**USFWS / CDFG**		
Accipiter cooperii	**Cooper's hawk**	**- / CSC**	**Variety of habitats suitable; oak woodlands, forests, riparian areas for nesting.**	**Observed on site; Likely to forage on the site and occur intermittently on the site throughout the year.**
Aquila chrysaetos	Golden eagle	- / CSC (Fully Protected)	Open savannahs, grasslands, foothills and woodlands; nests in large trees or on cliff faces	Not observed; Species may occur intermittently on the site. Not likely to nest on the site.
Agelaius tricolor (nesting colony)	Tricolored blackbird	(FSC) MNBMC / CSC	Ponds, marshes, lakes	Not observed; species not likely to occur on the site; no suitable aquatic habitat on the site.
Amphispiza belli	**Bell's sage sparrow**	**- / CSC**	**coastal sage scrub,chamise chaparral**	**Observed on site; one male observed singing. The species could potentially nest on the site.**
Athene cunicularia	**Western burrowing owl**	**(FSC) MNBMC / CSC**	**Open savannahs, grasslands, foothills and barren areas; nests in small mammal burrows**	**Observed on site; suitable scrub habitat available on site; over-winters on the site.**
Buteo regalis	**Ferruginous hawk**	**(FSC) MNBMC / CSC**	**Open savannahs, grasslands, foothills and fields; may potentially over-winter on the site**	**Observed on site; suitable foraging habitat present.**
Charadrius alexandrinus nivosus (nesting)	Western snowy plover	FT / CSC	Sandy beaches, open mud-flats and dunes	Not observed; suitable habitat absent for this species.
Circus cyaneus	**Northern harrier**	**- / CSC**	**Open fields, grasslands, savannahs, and scrub habitat**	**Observed on site; suitable foraging habitat on the site for this species**
Elanus leucurus	White-tailed kite	MNBMC / CSC (Fully Protected)	FIelds, grasslands, oak woodlands, coastal scrub	Not observed; suitable habitat available for this species; species likely to occur on the site intermittently throughout the year.
Eremophila alpestris	California horned lark	- / CSC	Open fields, agricultural fields, barren areas, coastal dune scrub	Not observed; suitable open scrub and dune habitat present
Falco mexicanus	Prairie falcon	FSC / CSC	Deserts, foothills, grasslands and open savannahs; nests on cliff faces	Not observed; species may occur infrequently on the site while foraging
Gymnogyps californianus	California condor	FE/SE	Mountains, foothills, woodlands, grasslands	Not observed; potential foraging habitat on the site for this species
Laterallus jamaicensis coturniculus	California black rail	ST/ CDFG-FP	Marsh, estuary habitats	Not observed; no suitable habitat present for this species.
Lanius ludovicianus	**Loggerhead shrike**	**- / CSC**	**Deserts, foothills, grasslands and open savannahs; nests on cliff faces**	**Observed on the site; suitable habitat available for this species; species likely to occur on the site intermittently throughout the year.**
Sternula antillarum browni	California least tern	FE/SE	Coastal dunes, estuaries, beaches	Not observed; very limited dune habitat available on Site. No foraging habitat on Site
Fish		**USFWS / CDFG**		
Eucyclogobius newberryi	Tidewater goby	FE / CSC	Coastal lagoons and streams	Not expected; no suitable aquatic habitat present
Gasterosteus aculeatus williamsoni	Unarmored threespine stickleback	FE/SE	Clear water streams	Not expected; no suitable aquatic habitat present
Oncorhynchus mykiss irideus	Steelhead trout	FT / CSC	Coastal streams and rivers	Not expected; no suitable aquatic habitat present
Invertebrates		**USFWS / CDFG**		
Ablautus schlingeri	Oso Flaco robber fly	- / -	Sand dunes	Not observed; species last reported in 1962
Areniscythris brachypteris	Oso Flaco flightless moth	- / -	Coastal dunes	Not observed; species last reported in 1972
Chlosyne leanira elegans	Oso Flaco patch butterfly	- / -	**Coastal dunes**	Not observed; species last reported in 1983
Cincindela hirticollis gravida	sandy beach tiger beetle	- / -	Coast sand beaches	Not observed; no suitable habitat present

TABLE 2
PRESENT OR CNDDB RECORDED SENSITIVE ELEMENTS OF BIOLOGICAL DIVERSITY
FOR THE PHILLIPS 66 PROPERTY AND SURROUNDING AREA

Scientific Name	Common Name	Status	Habitat	Occurrence of Element on Project Site
Danaus plexippus	**Monarch butterfly**	**- / -**	**Winter roosts occur in canopy of Monterey pine, eucalyptus and other large tree groves**	**Observed; Species likely to occur intermittently on the site; no winter roost locations known to occur on the site**
Lichnanthe albipilosa	White sand bear scarab beetle	- / -	Coastal dunes	Not observed; species last reported in 1972
Plebejus icarioides moroensis	Morro Bay blue butterfly	- / -	Coastal dunes	Not observed; found at Oso Flaco Lake in 2004; *Lupinus chamissonis* (present at the project site) is host plant for this butterfly
Mammals		**USFWS / CDFG**		
Antroxous pallidus	Pallid bat	- / CSC	Variety of habitats including woodlands, fields, coastal scrub and grasslands for foraging	Not observed; suitable foraging habitat present
Corynorhinus townsendii	Townsend's big-eared bat	- / CSC	Occurs in a variety of different habitat types; roosts in the open hanging from walls, ceilings	Not observed; suitable foraging habitat present
Lasionycteris noctivagans	Silver-haired bat	- / -	Lower montane coniferous forests; riparian corridors	Not observed; marginal to poor habitat suitability for this species
Lasiurus blossevillii	Western red bat	- / CSC	Cismontane woodland, lower montane coniferous forests, riparian forests - woodlands	Not observed; marginal to poor habitat suitability for this species
Lasiurus cinereus	Hoary bat	- / -	Broadleaved upland forest, cismontane woodland, lower montane coniferous forests, woodlands	Not observed; potentially suitable foraging habitat present
Myotis yumanensis	Yuma myotis	- / -	Cismontane woodland, lower montane coniferous forests, riparian forests - woodlands	Not observed; potentially suitable foraging habitat present
Taxidea taxus	American badger	- / CSC	Grasslands, woodlands, chaparral, coastal scrub, foothills	Not observed; suitable habitat present; species likely to occur on the site periodically.
Reptiles		**USFWS / CDFG**		
Anniella pulchra	Silvery legless lizard	FSC / CSC	Coastal dune scrub, woodlands with friable soil	Not observed; suitable habitat present on the site. Species is likely to occur within the project area.
Actinemys marmorata	Pacific pond turtle	FSC / CSC	Aquatic environments of lakes, streams, marshes, ponds and riparian systems	Not observed; known to occur in Oso Flaco Creek and other aquatic environments nearby.
Phrynosoma coronatum	Coast horned lizard	FSC / CSC	Coastal scrub, coastal dune scrub, woodlands, chaparral and grasslands	Not observed; suitable habitat present on the site. Species is likely to occur within the project area.
Thamnophis hammondii	Two-striped gartern snake	- / CSC	Marshes, ponds, lakes, streams, riparian systems	Not observed; not suitable aquatic habitat on site
Plants		**USFWS / CDFG / CNPS**		
Agrostis hooveri	Hoover's bent grass	- / - / 1B.2	Central maritime chaparral, woodlands, grasslands	Not observed, suitable habitat absent. Endemic to Central Coast (Santa Barbara and San Luis Obispo Counties).
Aphanisma blitoides	Aphanisma	SOC / - / 1B.2	Coastal dunes, coastal bluff scrub, coastal scrub	Not observed; suitable habitat present.
Arctostaphylos cruzensis	Arroyo de la Cruz manzanita	- / - / 1B.1	Chaparral, coastal scrub, grassland, closed cone conifer forests, woodlands and forests	Not observed, suitable habitat absent. Endemic to the Central Coast (San Luis Obispo and Monterey Counties).
Arctostaphylos luciana	Santa Lucia manzanita	- / - / 1B.2	Chaparral, woodlands	Not observed, suitable habitat absent. Endemic to San Luis Obispo County.
Arctostaphylos morroensis	Morro manzanita	FT/-/1B.1	Central maritime chaparral, scrub, woodlands with sandy soils	Not observed, suitable habitat absent. Endemic to San Luis Obispo County.
Arctostaphylos obispoensis	San Luis Obispo manzanita, Bishop manzanita	- / - / 4.3	Chaparral, closed cone conifer forests, woodlands and forests	Not observed, suitable habitat absent. Endemic to the Central Coast (San Luis Obispo and Monterey Counties).

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Arctostaphylos pechoensis	Pecho manzanita	- / - / 1B.2	Chaparral, coastal scrub, closed cone conifer forests	Not observed, suitable habitat absent. Endemic to San Luis Obispo County.
Arctostaphylos pilosula	Santa Margarita manzanita	- / - / 1B.2	Chaparral, closed cone conifer forests, woodlands and forests	Not observed, suitable habitat absent, known from La Panza Range. Endemic to the Central Coast (San Luis Obispo and Monterey Counties).
Arctostaphylos purissima	La Purisima manzanita	- / - / 1B.1	Chaparral, closed cone conifer forests, woodlands and forests	Not observed, suitable habitat absent. Endemic to Central Coast (Santa Barbara and San Luis Obispo Counties).
Arctostaphylos rudis	Sand mesa manzanita	- / - / 1B.2	Chaparral, closed cone conifer forests, woodlands and forests	Not observed, suitable habitat absent. Endemic to Central Coast (Santa Barbara and San Luis Obispo Counties).
Arctostaphylos tomentosa subsp. *daciticola*	dacite manzanita	- / - / 1B.1	Chaparral, woodland	Not observed; suitable habitat absent, known only from Hollister Peak. Endemic to San Luis Obispo County.
Arenaria paludicola	marsh sandwort	FE/SE/1B.1	Freshwater marshes and adjacent areas.	Not observed, suitable habitat absent. Known from only two occurrences in Black Lake Canyon and Oso Flaco Lake.
Astragalus didymocarpus var. *milesianus*	Mile's milk-vetch	- / - / 1B.2	Coastal scrub, often on serpentine clay soils	Not observed; suitable coastal scrub habitat with clay soils absent. Endemic to Ventura, Santa Barbara, and San Luis Obispo Counties.
Atriplex serenana var. *davidsonii*	Davidson's saltscale	- / - / 1B.2	Coastal bluff scrub, coastal scrub	Not observed; suitable habitat present.
Calochortus obispoensis	San Luis mariposa lily	- / - / 1B.2	Chaparral, coastal scrub, grasslands, often on serpentine soils	Not observed, suitable habitat absent. Endemic to San Luis Obispo County.
Calochortus simulans	San Luis Obispo mariposa lily	- / - / 1B.3	Chaparral, coastal scrub, woodlands, lower montane coniferous forests, often on granitic soils, sometimes serpentine soils	Not observed, suitable habitat absent. Endemic to Central Coast (Santa Barbara and San Luis Obispo Counties).
Calystegia subacaulis subsp. *episcopalis*	Cambria morning-glory	- / - / 1B.2	Chaparral, woodlands.	Not observed, suitable habitat absent. Endemic to San Luis Obispo County.
Carex obispoensis	San Luis Obispo sedge	- / - / 1B.2	Chaparral, coastal scrub, closed cone conifer forests, coastal prairie and grasslands	Not observed, suitable habitat potentially present.
Castilleja densiflora subsp. *obispoensis*	San Luis Obispo owl's-clover	- / - / 1B.2	Grassland, meadows, and seeps	Not observed, suitable habitat absent. Endemic to San Luis Obispo County.
Ceanothus cuneatus var. *fascicularis*	Lompoc ceanothus	- / - / 4.2	Central maritime chaparral, central coastal scrub	Not observed, suitable habitat absent. Endemic to Central Coast (Santa Barbara and San Luis Obispo Counties).
Ceanothus impressus subsp. *nipomensis*	Nipomo ceanothus	Local Concern	Central maritime chaparral, central coastal scrub	Not observed, suitable habitat absent. Endemic to Central Coast (Santa Barbara and San Luis Obispo Counties).
Centromadia parryi subsp. *congdonii*	Congdon's tarplant	- / - / 1B.2	Grasslands and wetland fringes, often in alkaline soils	Not observed; suitable habitat absent.
Chenopodium littoreum	coastal goosefoot	- / - / 1B.2	Coastal dunes	Not observed; suitable habitat present.
Chlorogalum pomeridianum var. *minus*	dwarf soaproot	- / - / 1B.2	Chaparral in serpentine soils	Not observed, suitable habitat absent.
Chorizanthe breweri	Brewer's spineflower	- / - / 1B.3	Chaparral, coastal scrub, grassland, closed cone conifer forests, woodlands in serpentine soils	Not observed; suitable habitat absent.
Chorizanthe rectispina	Straight-awned spineflower	-/-/1B.3	Chaparral, coastal scrub, woodlands	Not observed; suitable habitat potentially present.
Cicuta maculata var. *bolanderi*	Bolander's water-hemlock	- / - /2.1	Coastal marshes	Not observed; suitable marsh habitat absent.
Cirsium fontinale var. *obispoense*	Chorro Creek bog thistle	FE/SE/1B.2	Chaparral, coastal scrub, woodlands, grasslands in serpentine seeps and drainages	Not observed; suitable serpentine substrate absent. Endemic to San Luis Obispo County.
Cirsium rhothophilum	Surf thistle	-/CT/1B.2	Coastal dunes, coastal bluff scrub	Not observed; unlikely on project site; known from dunes at Pismo Beach, Nipomo, and Santa Barbara County. Endemic to Central Coast (Santa Barbara and San Luis Obispo Counties).
Cirsium scariosum var. *loncholepis*	La Graciosa thistle	FE/CT/1B.1	Coastal dunes, coastal bluff scrub, moist habitats such as marshes	Not observed; suitable marsh habitat absent.
Cladium californicum	California saw-grass	- / - / 2.2	Marshes	Not observed; suitable marsh habitat absent.
Clarkia speciosa subsp. *immaculata*	Pismo clarkia	FE/CR/1B.1	Chaparral, coastal scrub, woodlands, grasslands	Not observed. Endemic to San Luis Obispo County.
Cordylanthus rigidus subsp. *littoralis*	Seaside bird's-beak	- / SE / 1B.1	Chaparral, coastal scrub, woodlands, grasslands	Not observed. Endemic to Central Coast.

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FOR THE PHILLIPS 66 PROPERTY AND SURROUNDING AREA

Scientific Name	Common Name	Status	Habitat	Occurrence of Element on Project Site
Dudleya abramsii subsp. *murina*	San Luis Obispo dudleya	- / - / 1B.3	Chaparral, woodlands, rocky places	Not observed; suitable habitat absent. Endemic to San Luis Obispo County.
Dudleya blochmaniae subsp. *blochmaniae*	Blochman's dudleya	- / - / 1B.1	Chaparral, coastal scrub, grasslands, often on clay or serpentine soils in bare rocky places	Not observed; suitable habitat absent.
Deinandra increscens subsp. *villosa*	Gaviota tarplant	FE/CE/1B.1	coastal bluff scrub, coastal scrub, valley and foothill grassland	Not observed; suitable scrub habitat present. Endemic to Central Coast (Santa Barbara and San Luis Obispo Counties).
Deinandra increscens subsp. *foliosa*	leafy tarplant	- / - / 1B.2	Grassland, often sandy	Not observed; suitable habitat absent. Endemic to Central Coast (Santa Barbara and San Luis Obispo Counties).
Delphinium parryi subsp. *eastwoodiae*	Eastwood's larkspur	- / - / 1B.2	Chaparral, valley and foothill grassland	Not observed, suitable habitat absent.
Delphinium parryi subsp. *blochmaniae*	dune larkspur	- / - / 1B.2	Coastal dunes, coastal scrub, central maritime chaparral	Not observed, suitable habitat present. Endemic to Ventura, Santa Barbara, and San Luis Obispo Counties.
Delphinium umbraculorum	Umbrella larkspur	- / - / 1B.3	Cismontane woodland	Not observed, suitable habitat absent.
Dithyrea maritima	Beach spectacle pod	-/CT/1B.1	Coastal dunes	Not observed; known from low sand dunes from Morro Bay sand spit southward
Dudleya abramsii subsp. *murina*	mouse-gray dudlea	- / - / 1B.3	Chaparral, coastal scrub, grasslands, often on serpentine soils in bare rocky places	Not observed; suitable habitat present although serpentine soils absent. Endemic to San Luis Obispo County.
Erigeron blochmaniae	**Blochman's leafy daisy**	**- / - / 1B.2**	**Coastal dunes, coastal scrub**	**Present. Endemic to Central Coast (Santa Barbara and San Luis Obispo Counties).**
Erigeron sanctarum	Saint's daisy	- / - / 4.2	Central maritime chaparral, central coastal scrub, woodlands	Not observed, suitable habitat present. Endemic to Central Coast (Santa Barbara and San Luis Obispo Counties).
Eriodictyon altissimum	Indian Knob mountain balm	FE/CE/1B.1	Central maritime chaparral, central coastal scrub, woodlands	Not observed; suitable habitat absent. Known from Indian Knob and Irish Hills. Endemic to San Luis Obispo County.
Eryngium aristulatum var. *hooveri*	Hoover's button celery	- / - / 1B.1	Vernal pools	Not observed; suitable habitat absent. Known from Laguna Lake near San Luis Obispo.
Erysimum capitatum var. *lompocense*	San Luis Obispo wallflower	- / - / 4.2	Central maritime chaparral, central coastal scrub in sandy soils	Not observed; suitable habitat absent.
Erysimum suffrutescens	Suffrutescent wallflower	- / - / 4.2	Coastal dunes, coastal dune scrub, coastal scrub	Not observed; suitable sandy soils present.
Fritillaria viridea	San Benito fritillary	- / - / 1B.2	Chaparral, serpentine soils.	Not observed; chaparral habitat with serpentine substrate absent. Endemic to Central Coast (San Luis Obispo, Monterey, Fresno, San Benito Counties).
Horkelia cuneata subsp. *puberula*	mesa horkelia	- / - / 1B.1	Chaparral, coastal scrub, and woodlands, especially in sandy or gravelly soils	Not observed; suitable coastal scrub, maritime chaparral, and woodland habitat present.
Horkelia cuneata subsp. *sericea*	Kellogg's horkelia	- / - / 1B.1	Closed-cone coniferous forest, chaparral, coastal dunes, coastal scrub	Not observed; suitable habitat present.
Layia heterotricha	pale-yellow layia	- / - / 1B.1	Grassland, coastal scrub, woodlands	Not observed; suitable habitat present.
Layia jonesii	Jones' layia	- / - / 1B.2	Chaparral, grasslands in clay or serpentine soils	Not observed; suitable clay soils absent.
Lupinus ludovicianus	San Luis Obispo County lupine	- / - / 1B.2	Chaparral, woodlands, grasslands in sandy or sandstone-derived soils	Not observed, suitable habitat absent. Endemic to San Luis Obispo County.
Lupinus nipomoensis	Nipomo Mesa lupine	FE / SE / 1B.1	Coastal dunes	Not observed; suitable habitat present. Endemic to San Luis Obispo County.
Monardella frutescens	San Luis Obispo manardella	- / - / 1B.2	Coastal dunes, coastal scrub	Not observed; suitable habitat present.
Monardella palmeri	Palmer's monardella	- / - / 1B.2	Chaparral, woodlands in serpentine soils	Not observed; suitable habitat absent. Endemic to Central Coast (San Luis Obispo and Monterey Counties.)
Monardella undulata subsp. *crispa*	Crisp monardella	- / - / 1B.2	Coastal dunes, coastal scrub, coastal prairie, central maritime chaparral, Bishop pine forest, ponderosa pine forest (sandy soils at low elevations)	Not observed; suitable habitat present.

TABLE 2
PRESENT OR CNDDB RECORDED SENSITIVE ELEMENTS OF BIOLOGICAL DIVERSITY
FOR THE PHILLIPS 66 PROPERTY AND SURROUNDING AREA

Scientific Name	Common Name	Status	Habitat	Occurrence of Element on Project Site
Mucronea californica	**California spineflower**	**- / - / 4.2**	**Coastal dunes, coastal scrub, central maritime chaparral, woodlands, grasslands (sandy)**	**Present.**
Nasturtium gambelii	Gambel's water cress	FE / SE / 1B.1	Coastal marshes	Not observed; suitable marsh habitat absent.
Nemacaulis denudata var. *denudata*	coast wooly-heads	- / - / 1B.2	Coastal dunes	Not observed; suitable habitat present.
Nemacladus secundiflorus var. *robbinsii*	Robbins' nemacladus	- / - / 1B.2	Chaparral, valley and foothill grassland	Not observed; suitable habitat absent.
Orobanche parishii subsp. *brachyloba*	Short-lobed broomrape	**- / - / 4.2**	Coastal bluff scrub, coastal dunes, coastal scrub	Not observed; suitable habitat present.
Prunus fasciculata* var. *punctata	**Sand almond**	**- / - / 4.3**	**Coastal dunes, coastal scrub, central maritime chaparral, woodlands**	**Present.**
Sanicula maritima	Adobe sanicle	- / Rare / 1B.1	Chaparral, coastal prairie, grasslands, seeps in clay and serpentine soils	Not observed; suitable habitat absent.
Scrophularia atrata	black-flowered figwort	SOC / - / 1B.2	Coastal dunes, coastal scrub, chaparral, woodlands, Bishop pine forest	Not observed, suitable habitat potentially present. Endemic to Central Coast (Santa Barbara and San Luis Obispo Counties).
Senecio aphanactis	Rayless ragwort	- / - / 2.2	Coastal scrub, chaparral, woodlands	Not observed; potential suitable habitat present.
Senecio blochmaniae	**Blochman's groundsel**	**- / - / 4.2**	**Coastal dunes, coastal scrub**	**Present.**
Sidalcea hickmanii subsp. *anomala*	Cuesta Pass checkerbloom	- / Rare / 1B.2	Chaparral, closed cone conifer forests in serpentine soils	Not observed; suitable habitat of closed-cone coniferous forest on serpentine substrate absent. Endemic to San Luis Obispo County.
Streptanthus albidus subsp. *peramoenus*	Most beautiful jewel-flower	- / - / 1B.2	Chaparral, woodlands, grasslands in serpentine soils	Not observed; suitable serpentine substrate absent
Symphyotrichum defoliatum	San Bernardino aster	- / - / 1B.2	Cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, valley and foothill grassland	Not observed; potential suitable habitat present.
Trifolium depauperatum var. *hydrophilum*	Saline clover	- / - / 1B.2	Marshes, vernal pools, moist grasslands, often in alkaline soil	Not observed; suitable habitat absent.
Tropidocarpum capparideum	Caper-fruited tropidocarpum	- / - / 1B.1	Grasslands, often in alkaline soils	Not observed; suitable habitat absent.

Based on CNPS Inventory of Rare and Endangered Plants (online edition 2013) and CNDDB (2013) search results for the Nipomo, Guadalupe, Santa Maria, Orcutt, Arroyo Grande NE, Oceano, Pismo Beach, Casmalia and Tar Spring Ridge quadrangles.

Status Codes

United States Fish and Wildlife Service (USFWS)
FE Federal Endangered
FT Federal Threatened
SOC Species of Concern as listed by Sacramento Office (USFWS, 2004)
MNBMC Migratory nongame bird of management concern
FSC Federal special concern species
BCC Birds of Conservation Concern

California Department of Fish and Game (CDFG)
CE California Endangered
CT California Threatened
CR California Rare
CSC California Species of Concern

California Native Plant Society (CNPS)
Lists
List 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere
List 2: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
List 3: Plants About Which We Need More Information - A Review List
List 4: Plants with limited distribution (Watch List)
Extensions to List Categories
.1 - Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 – Fairly endangered in California (20-80% occurrences threatened)
.3 – Not very endangered in California (<20% of occurrences threatened or no current threats known)

TABLE 3

POTENTIAL PROJECT IMPACTS TO VEGETATION TYPES AT THE SITE

Plant Community Type	Impacts for New Pipeline (Acres)	Impacts for Rail Spur and Unloading Facility (Acres)	Impacts for Secondary Emergency Vehicle Access Route (Acres)	Impacts for Internal Refinery Piping and Existing Track Repair (Acres)
Sensitive Habitats				
Arroyo Willow Wetland	0.00	0.00	0.00	0.00
Central Dune Scrub - Silver Dune Lupine and Dune-Heather (& Dune-Heather and Silver Dune Lupine) Association	0.00	0.00	0.00	0.00
Dune Sheet	0.00	0.00	0.00	0.00
Freshwater Marsh	0.00	0.00	0.00	0.00
Non- Sensitive Habitats				
Central Dune Scrub - Black Sage, Dune-Heather Association	0.00	10.11	0.03	0.00
Central Dune Scrub - Coastal Dune Lupine, Dune-Heather, Silver Bush Lupine Association	0.00	0.00	0.00	0.00
Central Dune Scrub - Dune-Heather Alliance	0.00	4.57	0.01	0.00
Central Dune Scrub - Dune-Heather, California Coffeeberry, Blue Elderberry Association	0.00	0.00	0.00	0.00
Central Dune Scrub - Dune-Heather, Seacliff Buckwheat, Black Sage Association	0.00	7.26	0.00	0.00
Degraded Central Dune Scrub	2.22	2.32	0.00	0.00
Industrial/Existing Refinery	1.88	13.92	1.62	4.48
Nonnative Veldt Grassland	0.00	0.30	0.01	0.00
Planted Trees	0.00	0.14	0.00	0.00
Total Sensitive Habitat Impacts	**0.00**	**0.00**	**0.00**	**0.00**
Total Non-Sensitive Habitat Impacts	**4.10**	**38.62**	**1.67**	**4.48**
TOTALS	**4.10**	**38.62**	**1.67**	**4.48**

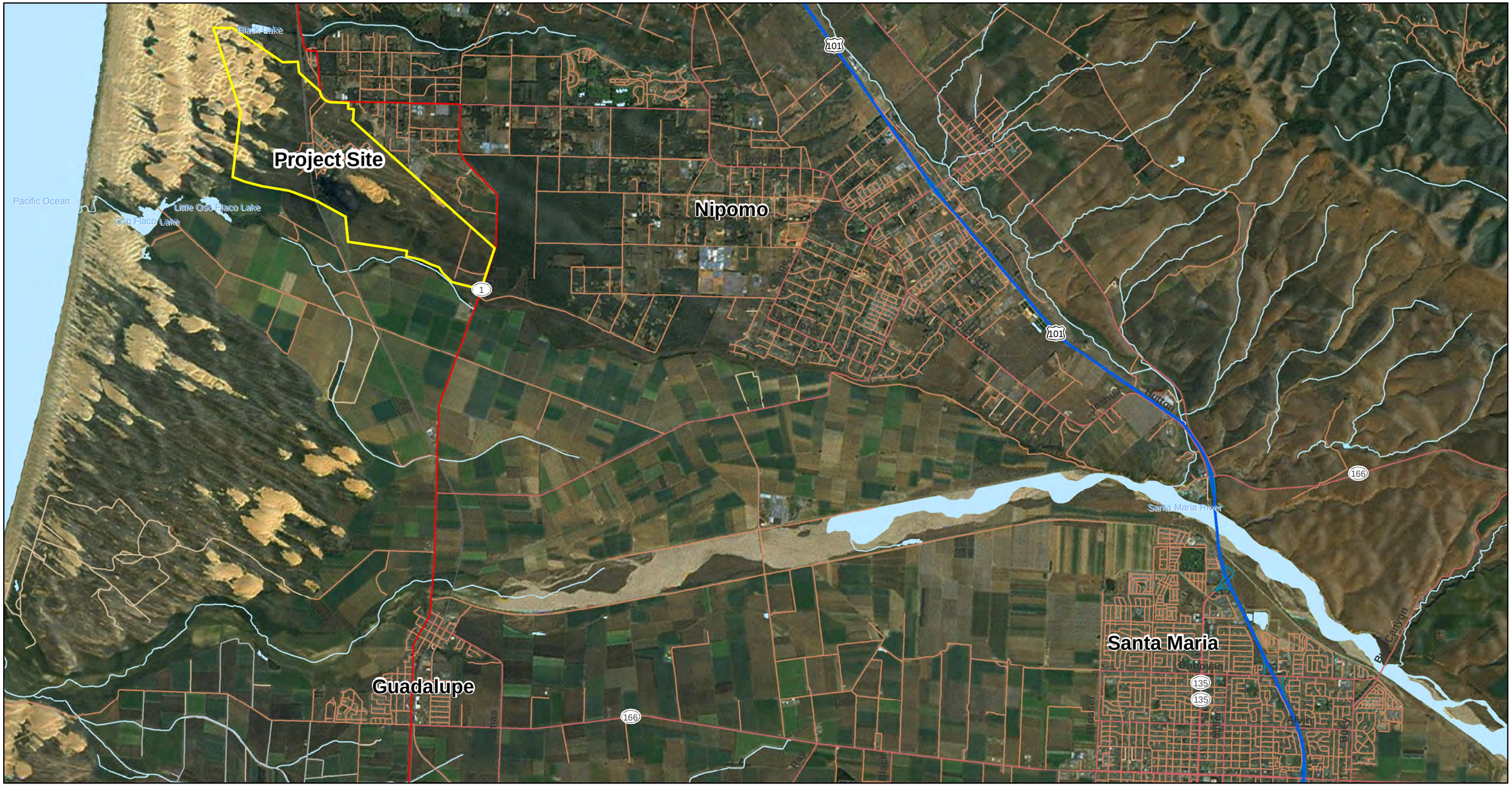
Note: To provide comprehensive acreages, this table includes a category for Industrial/Existing Refinery; however, no impacts to ecological resources are anticipated within this area.

TABLE 3

POTENTIAL PROJECT IMPACTS TO VEGETATION TYPES AT THE SITE

Plant Community Type	Total Rail Spur Project (excluding coastal access)
Sensitive Habitats	
Arroyo Willow Wetland	0.00
Central Dune Scrub - Silver Dune Lupine and Dune-Heather (& Dune-Heather and Silver Dune Lupine) Association	0.00
Dune Sheet	0.00
Freshwater Marsh	0.00
Non- Sensitive Habitats	
Central Dune Scrub - Black Sage, Dune-Heather Association	10.14
Central Dune Scrub - Coastal Dune Lupine, Dune-Heather, Silver Bush Lupine Association	0.00
Central Dune Scrub - Dune-Heather Alliance	4.58
Central Dune Scrub - Dune-Heather, California Coffeeberry, Blue Elderberry Association	0.00
Central Dune Scrub - Dune-Heather, Seacliff Buckwheat, Black Sage Association	7.26
Degraded Central Dune Scrub	4.54
Industrial/Existing Refinery	21.90
Nonnative Veldt Grassland	0.31
Planted Trees	0.14
Total Sensitive Habitat Impacts	**0.00**
Total Impact Area (including existing industrial refinery areas and roads)	**48.87**
TOTAL	**48.87**

Figures



Legend

Property Boundary

NOTES:
1. Imagery accessed through ESRI World Imagery via ArcGIS Online Layer Packages by ESRI (12/1/2010) (c) 2010 Microsoft Corporation and its data suppliers accessed on 03/08/2013 through ArcGIS 10.

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SCALE IN FEET

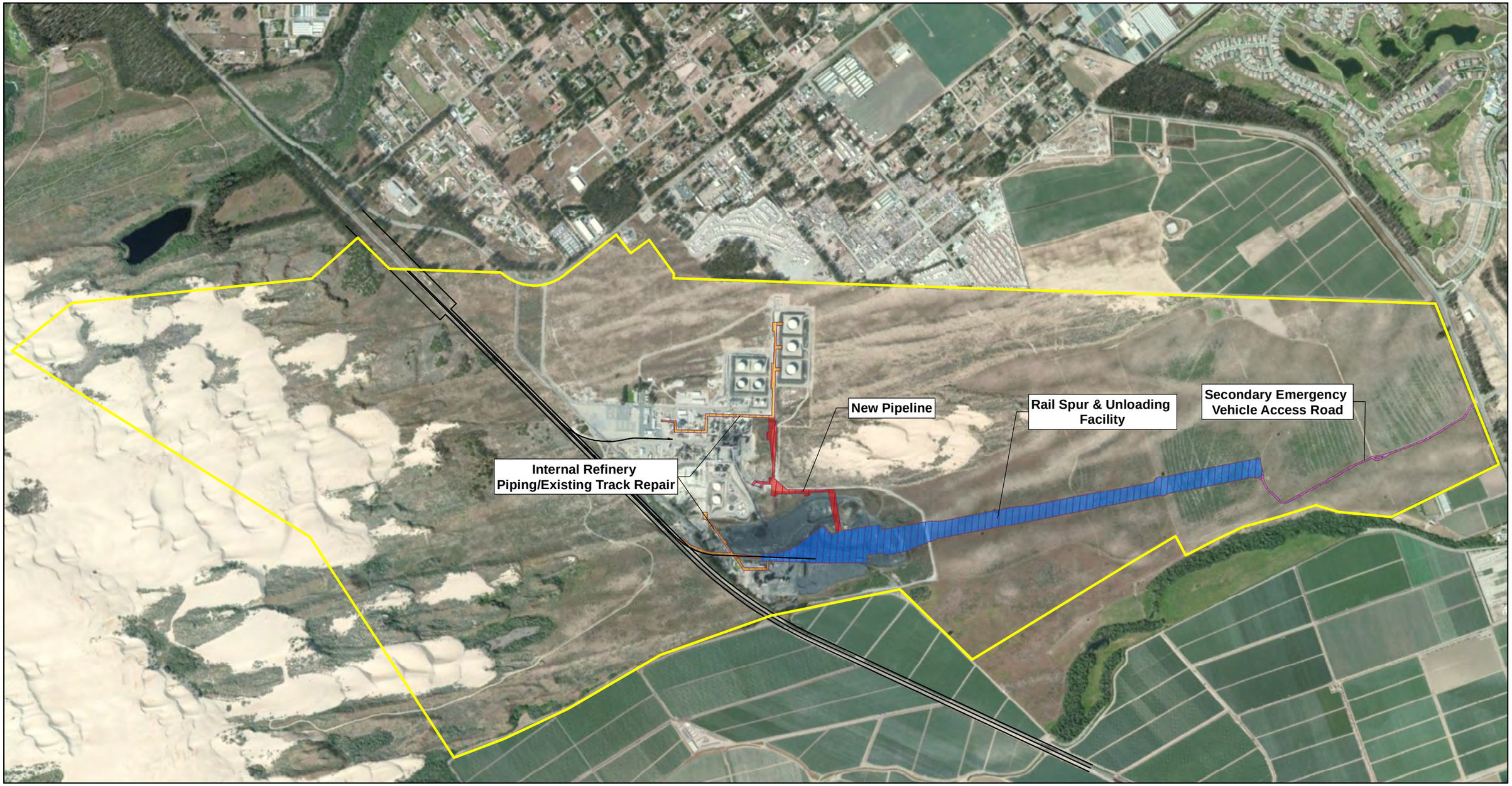
Phillips 66
Santa Maria Refinery Rail Project

PROJECT AREA

ARCADIS

FIGURE
1

I:\BCG_Misc\Phillips\GIS\Projects\060613\Fig 1 ProjectArea.mxd 6/14/2013 BGriffith
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet



Legend

- Property Boundary
- Existing Rail Line
- Limits of Disturbance

NOTES:
1. Imagery accessed through ESRI World Imagery via ArcGIS Online Layer Packages by ESRI (12/1/2010) (c) 2010 Microsoft Corporation and its data suppliers accessed on 03/08/2013 through ArcGIS 10.

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SCALE IN FEET

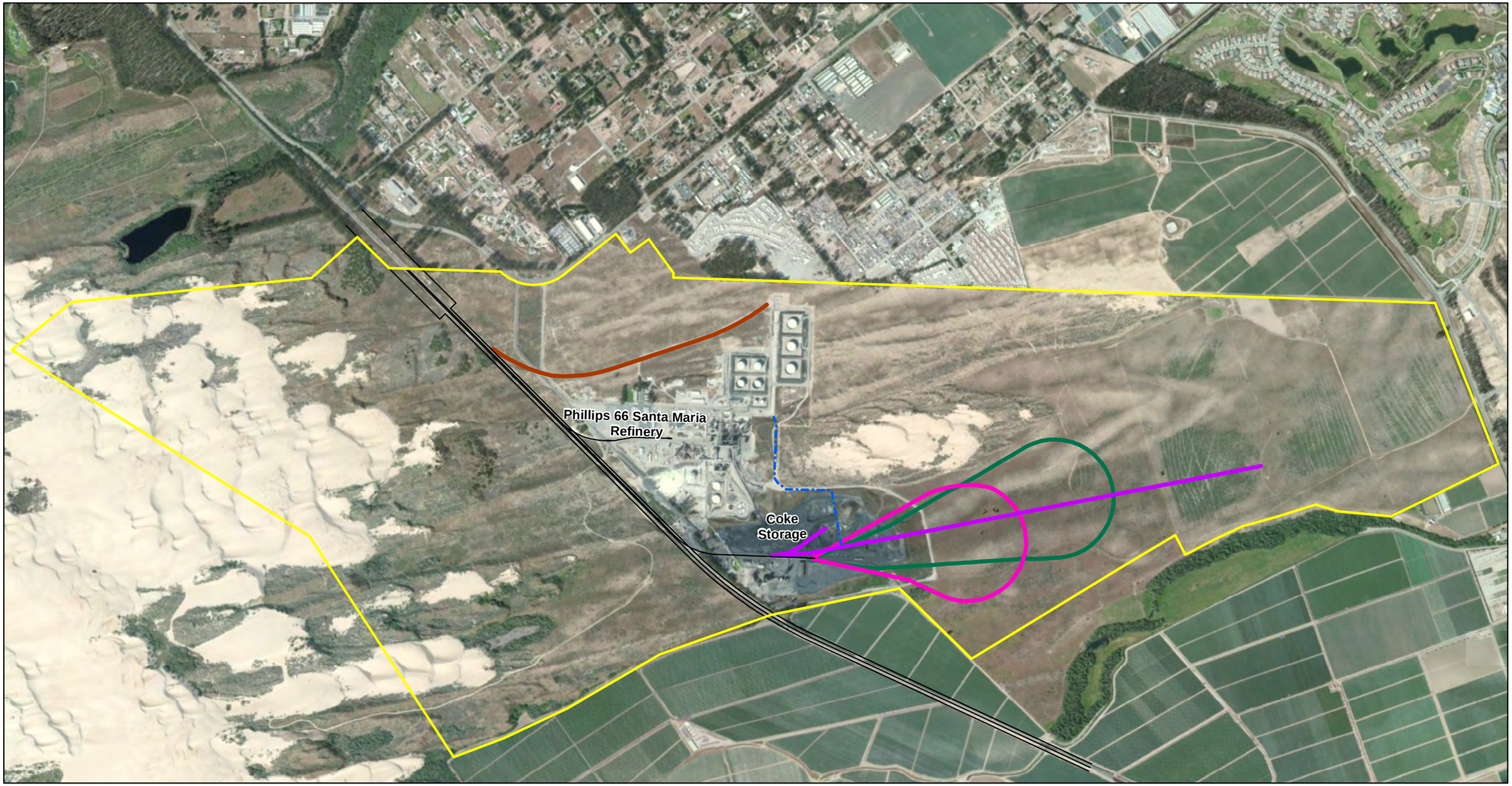
Phillips 66
Santa Maria Refinery Rail Project

PROPOSED PROJECT SITE ON PHILLIPS 66 PROPERTY

ARCADIS

FIGURE
2

I:\BCG_Misc\Phillips\GIS\Projects\060613\Fig 2 ProposedProjectSite_rev1.mxd 6/17/2013 BGriffith
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet



Legend

- Property Boundary
- Existing Rail Line
- Pipe Routing
- Northern Access Track
- Small Loop Track
- Large Loop Track
- Straight Track (Proposed Project)

NOTES:
1. Imagery accessed through ESRI World Imagery via ArcGIS Online Layer Packages by ESRI (12/1/2010) (c) 2010 Microsoft Corporation and its data suppliers accessed on 03/08/2013 through ArcGIS 10.

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SCALE IN FEET

Phillips 66
Santa Maria Refinery Rail Project

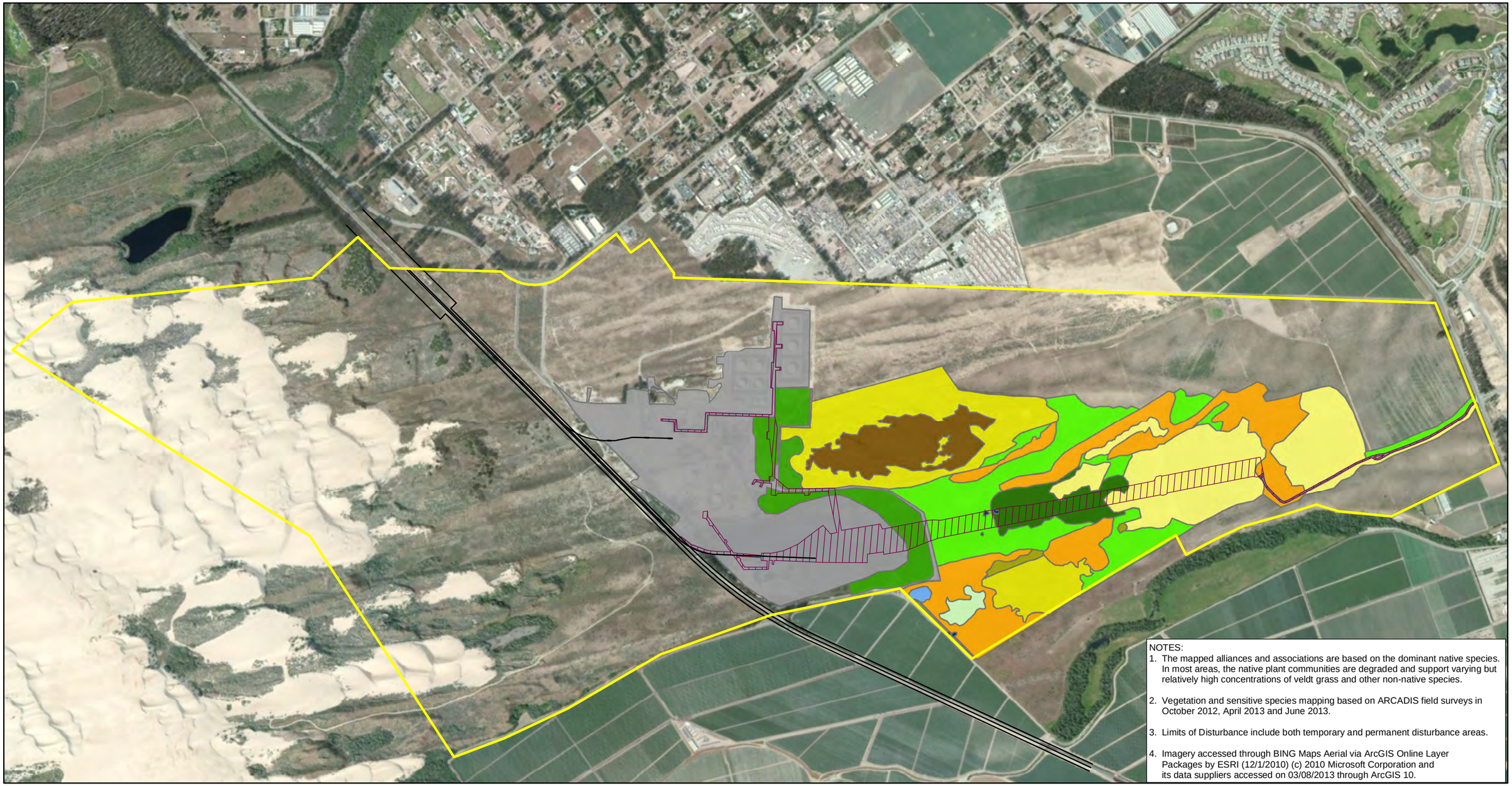
TRACK LAYOUT ALTERNATIVES

ARCADIS

FIGURE
3

Phillips SMR Rail Project EIR

I:\BCG_Misc\Phillips\GIS\Projects\060613\Fig 3 TrackLayoutAlternatives.mxd 6/14/2013 BGriffith
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet



NOTES:
1. The mapped alliances and associations are based on the dominant native species. In most areas, the native plant communities are degraded and support varying but relatively high concentrations of veldt grass and other non-native species.
2. Vegetation and sensitive species mapping based on ARCADIS field surveys in October 2012, April 2013 and June 2013.
3. Limits of Disturbance include both temporary and permanent disturbance areas.
4. Imagery accessed through BING Maps Aerial via ArcGIS Online Layer Packages by ESRI (12/1/2010) (c) 2010 Microsoft Corporation and its data suppliers accessed on 03/08/2013 through ArcGIS 10.

Legend

- Property Boundary
- Existing Rail Line
- Limits of Disturbance
- Arroyo Willow Scrub (Wetland)
- Central Dune Scrub - Coastal Dune Lupine, Dune-Heather, Silver Bush Lupine Association
- Central Dune Scrub - Dune-Heather Alliance
- Central Dune Scrub - Dune-Heather, Seacliff Buckwheat, Black Sage Association
- Degraded Central Dune Scrub
- Central Dune Scrub - Black Sage, Dune-Heather Association
- Central Dune Scrub - Silver Dune Lupine and Dune-Heather Association
- Central Dune Scrub - Dune-Heather, California Coffeeberry, Blue Elderberry Association
- Dune
- Industrial/Road
- Nonnative Veldt Grassland
- Planted Trees

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SCALE IN FEET

Phillips 66
Santa Maria Refinery Rail Project

EXISTING HABITATS

ARCADIS

FIGURE
4

I:\BCG_Misc\Phillips\GIS\Projects\060613\Fig 4 ExistingHabitats.mxd 6/14/2013 BGriffith
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet

NOTES:
1. The mapped alliances and associations are based on the dominant native species. In most areas, the native plant communities are degraded and support varying but relatively high concentrations of veldt grass and other non-native species.
2. Vegetation and sensitive species mapping based on ARCADIS field surveys in October 2012, April 2013, and June 2013.
3. Limits of Disturbance include both temporary and permanent disturbance areas.
4. Imagery accessed through BING Maps Aerial via ArcGIS Online Layer Packages by ESRI (12/1/2010) (c) 2010 Microsoft Corporation and its data suppliers accessed on 03/08/2013 through ArcGIS 10.

Legend

- Property Boundary
- Existing Rail Line
- Limits of Disturbance
- California Spineflower *(Mucronea californica)*
- California Spineflower *(Mucronea californica)*
- Sand almond *(Prunus fasciculata* var. *punctata)*
- Blochman's Groundsel *(Senecio blochmaniae)*
- Blochman's Leafy Daisy *(Erigeron blochmaniae)*
- Burrowing Owl *(Athene cunicularia)*
- Bell's Sage Sparrow *(Amphispiza belli* ssp. *belli)*

Sensitive Habitat

- Arroyo Willow Scrub (Wetland)
- Central Dune Scrub - Coastal Dune Lupine, Dune-Heather, Silver Bush Lupine Association
- Central Dune Scrub - Silver Dune Lupine and Dune-Heather Association
- 100-ft Riparian Buffer

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SCALE IN FEET

Phillips 66
Santa Maria Refinery Rail Project

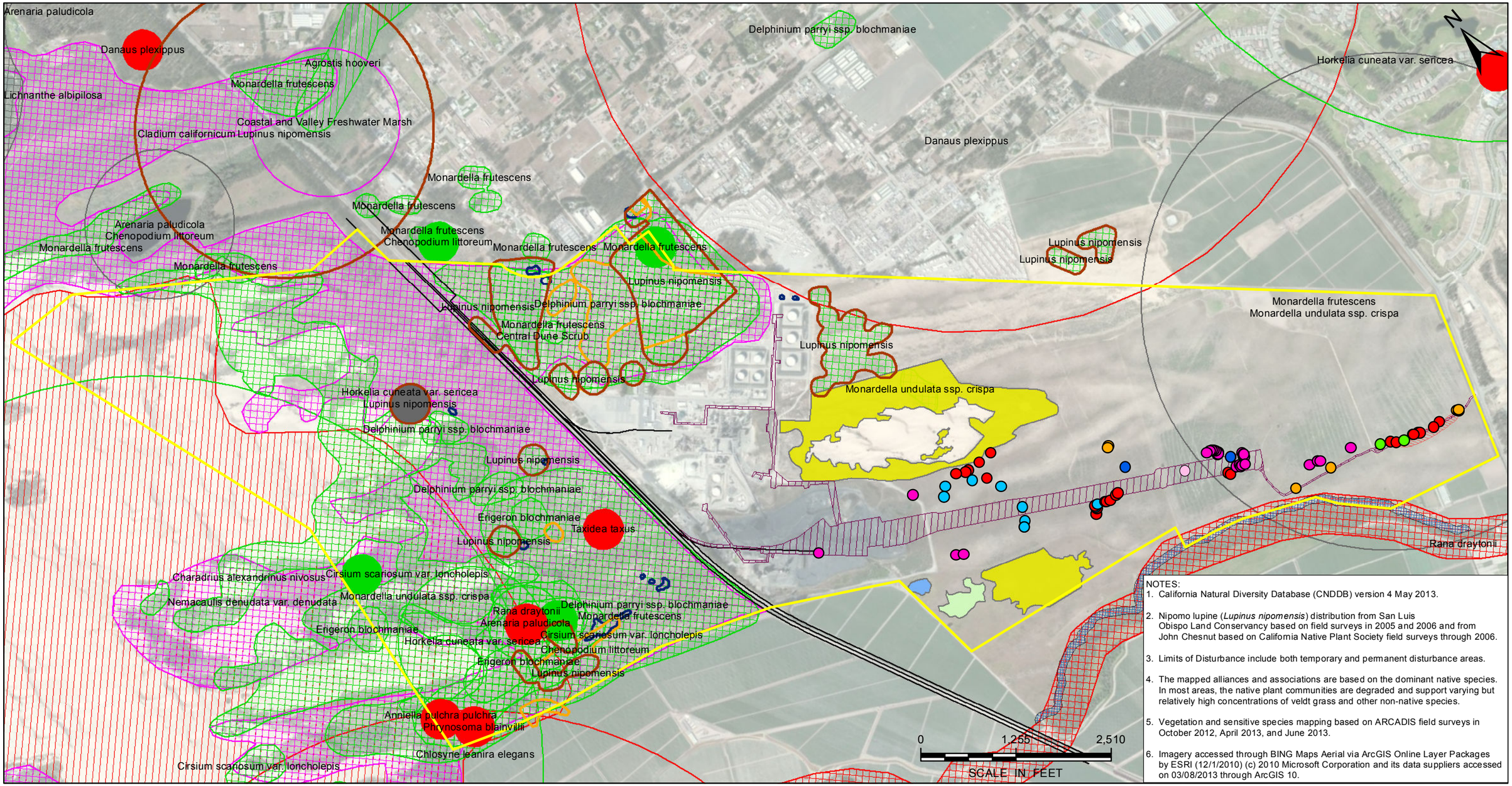
SURVEYED SENSITIVE SPECIES AND HABITATS

ARCADIS

FIGURE
5

Phillips SMR Rail Project FIR

H:\GISPROJECTS_ENV\Phillips66\GIS\Projects\060613\Fig 5 SensitiveSpecies_Habitat.mxd 6/18/2013 BGriffith
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet



NOTES:

1. California Natural Diversity Database (CNDDB) version 4 May 2013.
2. Nipomo lupine (*Lupinus nipomensis*) distribution from San Luis Obispo Land Conservancy based on field surveys in 2005 and 2006 and from John Chesnut based on California Native Plant Society field surveys through 2006.
3. Limits of Disturbance include both temporary and permanent disturbance areas.
4. The mapped alliances and associations are based on the dominant native species. In most areas, the native plant communities are degraded and support varying but relatively high concentrations of veldt grass and other non-native species.
5. Vegetation and sensitive species mapping based on ARCADIS field surveys in October 2012, April 2013, and June 2013.
6. Imagery accessed through BING Maps Aerial via ArcGIS Online Layer Packages by ESRI (12/1/2010) (c) 2010 Microsoft Corporation and its data suppliers accessed on 03/08/2013 through ArcGIS 10.

Property Boundary
Existing Rail Line
Limits of Disturbance
Mapped Nipomo Lupine from CNDDB
Mapped Nipomo Lupine from SLO Land Conservancy
Mapped Nipomo Lupine from John Chesnut

CNDDB Distributions
Plant (80m)
Plant (specific)
Plant (non-specific)
Plant (circular)
Animal (80m)
Animal (specific)
Animal (non-specific)
Animal (circular)
Terrestrial Comm. (80m)
Terrestrial Comm. (specific)
Terrestrial Comm. (non-specific)
Terrestrial Comm. (circular)
Aquatic Comm. (80m)
Aquatic Comm. (specific)
Aquatic Comm. (non-specific)
Aquatic Comm. (circular)
Multiple (80m)
Multiple (specific)
Multiple (non-specific)
Multiple (circular)

Sensitive Species
California Spineflower *(Mucronea californica)*
California Spineflower *(Mucronea californica)*
Sand almond *(Prunus fasciculata* var. *punctata)*
Blochman's Groundsel *(Senecio blochmaniae)*
Blochman's leafy daisy *(Erigeron blochmaniae)*
Burrowing Owl *(Athene cunicularia)*
Bell's Sage Sparrow *(Amphispiza belli* ssp. *belli)*

Sensitive Habitats
Arroyo Willow Scrub (Wetland)
Central Dune Scrub - Coastal Dune Lupine, Dune-Heather, Silver Bush Lupine Association
Central Dune Scrub - Silver Dune Lupine and Dune-Heather Association
100-ft Riparian Buffer

Phillips 66
Santa Maria Refinery Rail Project.

ALL MAPPED SENSITIVE RESOURCE LOCATIONS

ARCADIS

FIGURE
6

Phillips SMR Rail Project FIR

H:\GISPROJECTS_ENV\Phillips66\GIS\Projects\060613\Fig 6 CNDDB.mxd 6/18/2013 DFischer
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet

Appendix A

Photographs

Photograph 0653

10/9/12

The site provides a foraging and denning location for wildlife in the area as indicated by the many small to moderately sized burrows encountered during the ARCADIS survey.

Photograph 0654

10/9/12

Many of the small mammal burrow spoil piles showed sign of recent activity. The foot prints and tail-drag marks left by a kangaroo rat (*Dipodomys* sp.) are shown here to the left of the field note book.

A healthy small mammal population often indicates the presence of associated predators such as coyote, fox, weasel, raptors, and snakes all of which are present or likely to be present in the area.

Photograph 0655

Looking east: A western burrowing owl was inadvertently flushed from the burrow in the foreground during the ARCADIS field survey.