APPENDIX J

Biological Technical Report

BIOLOGICAL RESOURCES EXISTING CONDITIONS TECHNICAL REPORT
for the
OTAY RIVER ESTUARY RESTORATION PROJECT
SOUTH BAY UNIT OF THE SAN DIEGO BAY NATIONAL WILDLIFE REFUGE
CITY OF SAN DIEGO, CALIFORNIA

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ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
AA	Assessment Area
CDFW	California Department of Fish and Wildlife
CNPS	California Native Plant Society
Commission	California Coastal Commission
Corps	U.S. Army Corps of Engineers
CRAM	California Rapid Assessment Method
CRPR	California Rare Plant Rank
MHPA	Multi-Habitat Planning Area
MSCP	Multiple Species Conservation Program
NWR	National Wildlife Refuge
ppt	parts per thousand
Regional Board	Regional Water Quality Control Board
Service	U.S. Fish and Wildlife Service

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SUMMARY OF FINDINGS

The proposed Otay River Estuary Restoration Project (project) site occupies approximately 165.3 acres of the South Bay Unit of the San Diego Bay National Wildlife Refuge (NWR) in the City of San Diego. The site is located north of Palm Avenue, is part of the South Bay Salt Works and also south of the South Bay Salt Works, is west of Interstate 5, and is east of the developed area of Imperial Beach.

Biological surveys of the project site were conducted by Dudek biologists in 2011, 2013, and 2014, with focused surveys conducted in spring and summer 2011. The surveys consisted of vegetation mapping, jurisdictional delineation, and focused surveys for California gnatcatcher (*Polioptila californica californica*), burrowing owl (*Athene cunicularia*), least Bell's vireo (*Vireo bellii pusillus*), Belding's Savannah sparrow (*Passerculus sandwichensis beldingi*), northern harrier (*Circus cyaneus*), light-footed Ridgway's rail (*Rallus obsoletus levipes*), and rare plants. The purpose of this biological resources technical report is to identify existing vegetation and jurisdictional resources, and survey for plant and animal species recognized as sensitive by local, State, and/or Federal wildlife agencies and/or environmental organizations.

Based on species composition and general physiognomy, 15 vegetation communities (or habitat types) and land covers were identified within the project site, inclusive of the Otay River Floodplain Site, the Pond 15 Site, and the project features required for the restoration: bay, beach, disturbed habitat, open water, salt pond levee, southern coastal salt marsh, southern coastal salt marsh–disturbed, brackishwater, former salt pond bottom and borrow area, *Isocoma* scrub, developed land, salt flat, Otay River floodplain restoration, freshwater marsh, and mule fat scrub.

Three special-status plants were observed during the 2011 surveys: California desert-thorn (*Lycium californicum*) (California Rare Plant Rank (CRPR) 4.2), estuary seablite (*Suaeda esteroa*) (CRPR 1B.2), and woolly seablite (*Suaeda taxifolia*) (CRPR 4.2).

Nine special-status wildlife species were detected on site during the 2011 surveys: northern harrier, white-tailed kite (*Elanus leucurus*), elegant tern (*Thalasseus elegans*), western gull-billed tern (*Gelochelidon nilotica vanrossemi*), light-footed Ridgway's rail, burrowing owl, short-eared owl (*Asio flammeus*), Belding's Savannah sparrow, and San Diego black-tailed jackrabbit (*Lepus californicus bennettii*). Nesting of a number of special-status wildlife species was recorded by the San Diego Bay NWR, including Belding's Savannah sparrow, western snowy plover (*Charadrius alexandrinus nivosus*), black skimmer (*Rynchops niger*), Forster's tern (*Sterna forsteri*), California least tern (*Sternula [=Sterna] antillarum browni*), double-crested cormorant (*Phalacrocorax auritus*), Caspian tern (*Hydroprogne caspia*), elegant tern, and western gull-billed tern. Six special-status wildlife species were detected off site to the west or in the Otay

River drainage immediately off site during the 2011 surveys: merlin (*Falco columbarius*), northern harrier, white-tailed kite, Clark's marsh wren (*Cistothorus palustris clarkae*), yellow warbler (*Dendroica petechia brewsteri*), and yellow-breasted chat (*Icteria virens*).

The results of the delineation concluded that there are areas on site that are under the jurisdiction of the U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Coastal Commission. Although the non-tidal portion of the Otay River channel would have qualified for California Department of Fish and Wildlife jurisdiction, the portion is on Federal land and thus is not subject to Section 1600 et seq. of the California Fish and Game Code. Within the two sites, 97.73 acres of wetlands and waters are under the joint jurisdiction of the U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Coastal Commission.

1 INTRODUCTION

The Otay River Estuary Restoration Project (project) is a partnership between the U.S. Fish and Wildlife Service (USFWS or Service) and Poseidon Resources (Poseidon) to create, restore, and enhance coastal wetlands to benefit native fish, wildlife, and plant species, and to provide habitat for migratory seabirds and shorebirds and salt marsh–dependent species within the South San Diego Bay Unit of the San Diego Bay National Wildlife Refuge (NWR). The project area (inclusive of the 40.8 acres of project features) is on approximately 165.3 acres located on two non-contiguous sites within the South San Diego Bay Unit of the San Diego Bay NWR (Figures 1 and 2). The first site is an approximately 33.5-acre area of predominantly disturbed uplands within the Otay River floodplain (hereafter referred to as the Otay River Floodplain Site). The second site is an approximately 90.9-acre active solar salt pond (hereafter referred to as the Pond 15 Site). The project also includes all project components required to implement the project.

The project site is located at the south end of San Diego Bay in San Diego County, California. The Otay River Floodplain Site west of Nestor Creek and the Pond 15 Site are located on sovereign land held by the California State Lands Commission for the benefit of the people of the State and leased to the Service for management as a part of the San Diego Bay NWR. The Otay River Floodplain Site east of Nestor Creek is owned by the Service. The Otay River Floodplain Site is situated within the corporate limits of the City of San Diego, and the Pond 15 Site is within the corporate limits of the City of National City. Directly to the south of the Otay River Floodplain Site and to the south and east of the Pond 15 Site are lands included within the City of San Diego. The City of Imperial Beach is located directly southwest of the Otay River Floodplain Site. Specifically, the approximately 33.5-acre Otay River Floodplain Site is located west of Interstate 5 between Main Street to the north and Palm Avenue to the south (Figures 1 and 2). The 90.9-acre Pond 15 Site is located in the northeast portion of the South San Diego Bay Unit of the San Diego Bay NWR, northwest of the intersection of Bay Boulevard and Palomar Street in Chula Vista. The project also includes all project components that are required for implementation of the project. The Otay River Floodplain Site is located within Sections 20 and 21, Township 18 South, Range 2 West on the U.S. Geological Survey 7.5-minute Imperial Beach quadrangle map (1966); longitude 117°5'46.02" W and latitude 32°35'29.95" N (Figure 2). The Pond 15 Site is located within Sections 16, 17, 20, and 21, Township 18 South, Range 2 West on the U.S. Geological Survey 7.5-minute Imperial Beach quadrangle map (1966); longitude 117°6'24"W and latitude 32°36'05"N (Figure 2).

Biological surveys of the project site were conducted by Dudek biologists from February through July 2011 for the Otay River Floodplain Site and in March 2013 for the Pond 15 Site, with focused surveys conducted for the Otay River Floodplain Site in spring and summer 2011. An additional visit was conducted in May 2014 to review existing conditions within the project features.

Biological Resources Existing Conditions Technical Report for the Otay River Estuary Restoration Project

This report describes the existing biological character of the project site in terms of vegetation, flora, wildlife, wetlands, and wildlife habitats, and analyzes the biological significance of the site with respect to regional biological resources planning and Federal, State, and local laws.

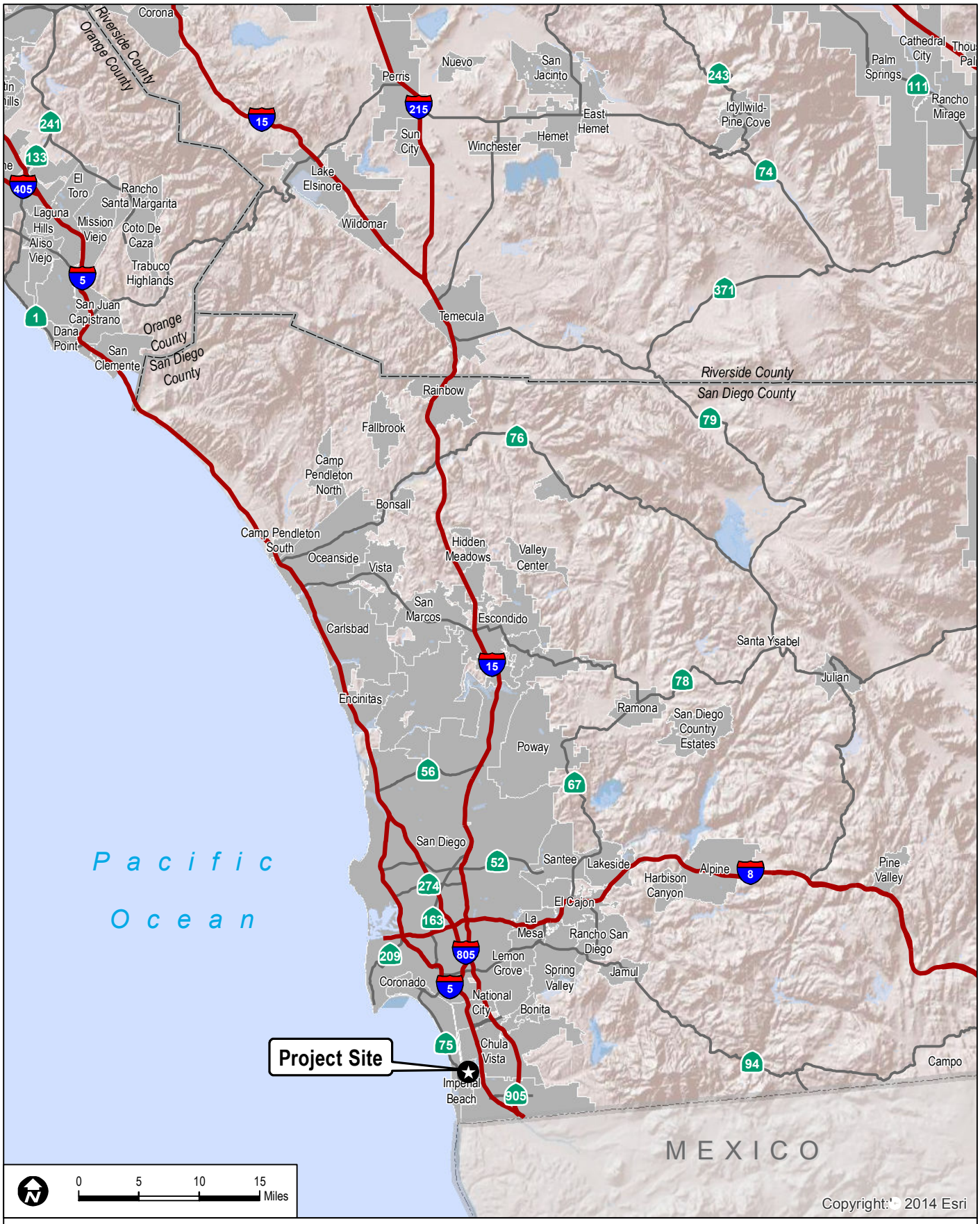

FIGURE 1

Regional Map

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Biological Resources Existing Conditions Technical Report for the Otay River Estuary Restoration Project

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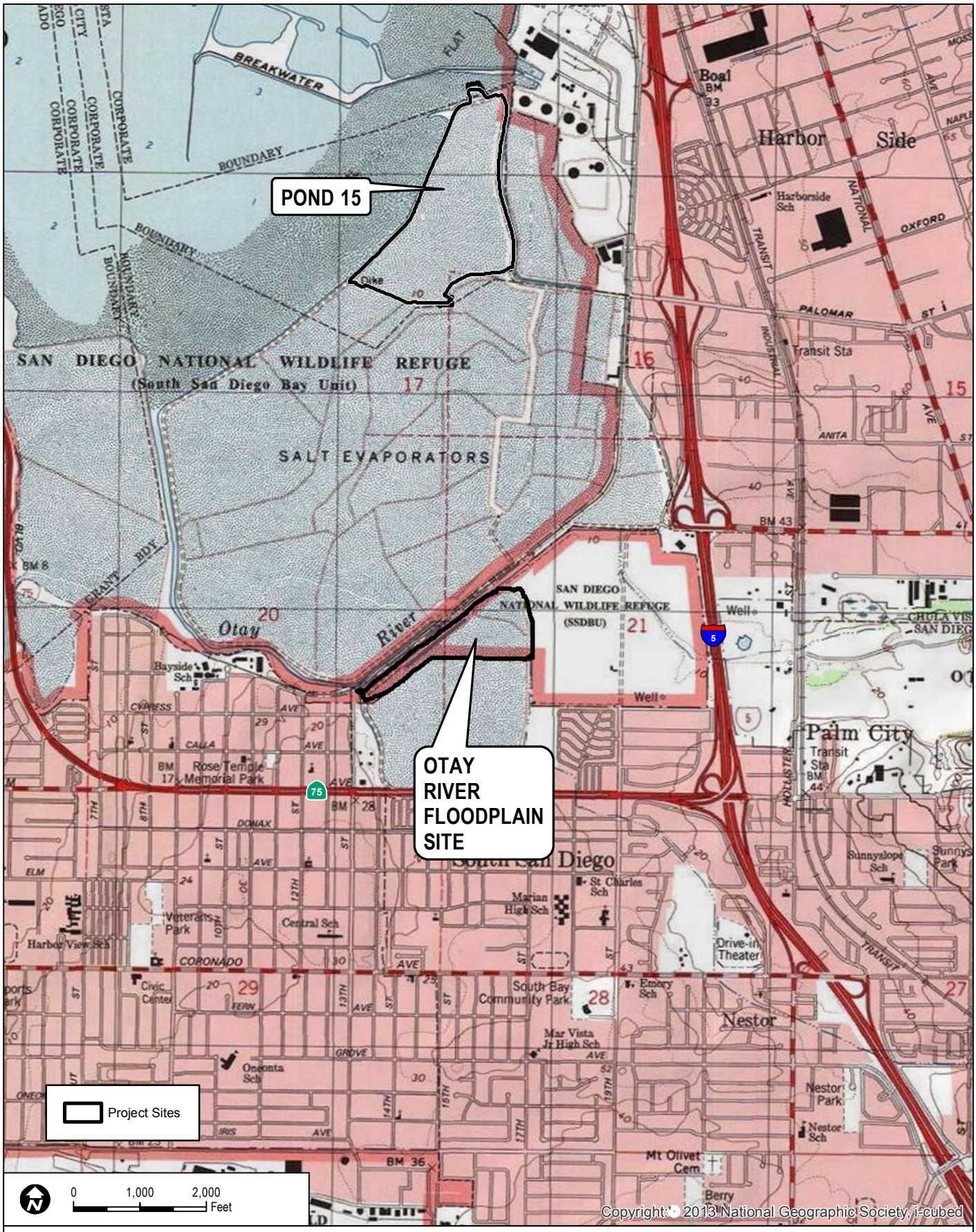

SOURCE: USGS 7.5-Minute Series Quadrangle, USA Topographic Maps Service, Imperial Beach Quadrangle.

FIGURE 2
Vicinity Map

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Biological Resources Existing Conditions Technical Report for the Otay River Estuary Restoration Project

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2 METHODS AND SURVEY LIMITATIONS

Data regarding biological resources present on the project site were obtained through a review of pertinent literature and through field reconnaissance; both are described in detail below.

2.1 Literature Review

Sensitive biological resources present or potentially present on site were identified through a literature search using the following sources: USFWS (2010), California Department of Fish and Game (CDFG) (2009 and 2011a–c), and the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular Plants (2015). General information regarding wildlife species present in the region was obtained from Unitt (1984, 2004) for birds, Hall (1981) and Ingles (1965) for mammals, Stebbins (2003) for reptiles and amphibians, and Emmel and Emmel (1973) for butterflies.

2.2 Field Reconnaissance

Dudek biologists conducted a number of surveys in 2011, 2013, and 2014. These included vegetation mapping, jurisdictional delineation, and focused surveys for California gnatcatcher (*Polioptila californica californica*), burrowing owl (*Athene cunicularia*), least Bell's vireo (*Vireo bellii pusillus*), Belding's Savannah sparrow (*Passerculus sandwichensis beldingi*), northern harrier (*Circus cyaneus*), light-footed Ridgway's rail (*Rallus obsoletus levipes*), and rare plants. Table 1 lists the dates, conditions, and survey focus for each of the survey visits.

Table 1
Schedule for Special-Status Species Surveys

Date	Hours	Personnel	Focus	Conditions
2/22/2011	0800–1730	A. Thomson, K. Dayton	Wetland delineation and vegetation mapping	Not recorded
2/25/2011	0615–0955	A. Hayworth	Belding's Savannah sparrow	58–63°F; overcast; 3–8 mph wind
3/10/2011	0710–1135	A. Hayworth	Belding's Savannah sparrow	61–69°F; clear; 1–5 mph wind
3/16/2011	0800–1000	A. Hayworth	California gnatcatcher	58°F, clear, 0–1 mph wind
3/24/2011	1015–1520	S. Fraser, K. Shaw	Burrowing owl habitat assessment	62°F, 0–40% cloud cover, 3–4 mph wind
4/4/2011	00730–1230	A. Hayworth	California gnatcatcher; Belding's Savannah sparrow	58–63°F, overcast, 0–1 mph wind

Table 1
Schedule for Special-Status Species Surveys

Date	Hours	Personnel	Focus	Conditions
4/11/2011	0600–1205	A. Hayworth	Least Bell's vireo; Belding's Savannah sparrow; northern harrier	56–60°F; overcast; 0–1 mph wind
4/14/2011	0530–1000	S. Fraser	Burrowing owl	56–62°F; clear; 2–4 mph wind
4/25/2011	0600–1230	A. Hayworth	California gnatcatcher; Belding's Savannah sparrow; least Bell's vireo	58–66°F; overcast to clear; 0–8 mph wind
4/27/2011	0500–1000	S. Fraser	Burrowing owl	58–64°F; clear; 0–1 mph wind
3/27/2011	1650–1815	J. Konecny	light-footed Ridgway's rail	65–61°F; overcast; 7–10 mph wind
4/3/2011	1645–1815	J. Konecny	Light-footed Ridgway's rail	62–59°F; overcast; 5–12 mph wind
4/10/2011	0645–0815	J. Konecny	Light-footed Ridgway's rail	60–63°F; overcast; 5–7 mph wind
4/17/2011	0625–0800	J. Konecny	Light-footed Ridgway's rail	61–63°F; overcast; 5–7 mph wind
4/24/2011	0630–0800	J. Konecny	Light-footed Ridgway's rail	64–65°F; overcast; 7–10 mph wind
5/1/2011	1840–1910	J. Konecny	Light-footed Ridgway's rail	63–60°F; overcast; 9–14 mph wind
5/6/2011	0620–1045	A. Hayworth	Least Bell's vireo; northern harrier	58–59°F; overcast; 1–3 mph wind
5/11/2011	0515–1000	S. Fraser, T. Liddicoat	Burrowing owl	58–68°F; clear; 3–5 mph wind
5/19/2011	0630–0835	A. Hayworth	Least Bell's vireo	61–63°F; overcast; 3–5 mph wind
5/19/2011	0900–1630	A. Thomson, K. Dayton	Rare plant survey	65–70°F; 50% cloud cover; 2–4 mph wind
6/3/2011	0600–1030	A. Hayworth	Least Bell's vireo; northern harrier	68–69°F; clear; 0–5 mph wind
6/22/2011	0900–1045	A. Hayworth	Least Bell's vireo	61–65°F; overcast; 3–5 mph wind
7/18/2011	0700–0910	A. Hayworth, K. Shaw	Least Bell's vireo	58–60°F; overcast; 1–6 mph wind
7/20/2011	0800–1200	S. Fraser	Wetland delineation	Not recorded
7/29/2011	0640–0835	A. Hayworth, K. Shaw	Least Bell's vireo	65–68°F; overcast; 0–1 mph wind
3/13/2013	0800–1700	A. Thomson, K. Dayton	Wetland delineation and vegetation mapping	Not recorded
3/13/2013	830–1200	A.Hayworth	Wildlife survey	60–65°F; clear; 1–5 mph wind
5/29/2014	0800–1500	A. Thomson	Wetland delineation	Not recorded

mph = miles per hour.

2.2.1 Resource Mapping

Vegetation communities were mapped in February 2011 and March 2013 by Andy Thomson and Kathleen Dayton (Table 1). Vegetation communities were mapped in the field directly onto a 100-scale (1 inch = 200 feet) digital orthographic map of the site. These boundaries and locations were digitized by Dudek Geographic Information Systems (GIS) technician Mark McGinnis using ArcGIS software. GIS coverage was created using ArcCAD to calculate acreages of each vegetation type and impacts of the proposed action.

Vegetation communities and land covers used in this report follow the Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986), with modifications to accommodate the lack of conformity of the observed communities to those of Holland (1986). Community classifications were selected based on site factors, descriptions, distribution, and characteristic species present within an area. Information such as dominant species and their associated cover classes, aspect, canopy height, and visible disturbance factors were recorded. For locations of rare or sensitive plant species mapped during the focused surveys, the numbers present were counted or visually estimated.

2.2.2 Flora

All plant species encountered during the field surveys were identified and recorded. Those species that could not be identified immediately were brought into the laboratory for further investigation. A list of plant species observed on site is presented in Appendix A.

Latin and common names for plant species with a California Rare Plant Rank (CRPR) (formerly CNPS List) follow the *California Native Plant Society On-Line Inventory of Rare, Threatened, and Endangered Plants of California* (CNPS 2015). For plant species without a California Rare Plant Rank, Latin names follow the *Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California* (Jepson Flora Project 2015) and common names follow the United States Department of Agriculture (USDA) Natural Resources Conservation Service Plants Database (USDA 2015). Other references used include Rebman and Simpson 2006 and Roberts 1998.

2.2.3 Fauna

Wildlife species detected during the field surveys by sight, calls, tracks, scat, or other signs were recorded. Binoculars (10 x 50 power) were used to aid in the identification of observed wildlife. In addition to species actually detected, expected wildlife use of the site was determined by known habitat preferences of local species and knowledge of their relative distributions in the area. A list of wildlife species observed on the property is presented in Appendix A.

Latin and common names of animals follow Crother (2008) for reptiles and amphibians, American Ornithologists' Union (AOU 2015) for birds, Wilson and Reeder (2005) for mammals, and the North American Butterfly Association (NABA 2001) for butterflies.

2.2.4 Special-Status/Regulated Biological Resources

Special-status biological resources are those defined as follows: (1) species that have been given special recognition by Federal, State, or local conservation agencies and organizations due to limited, declining, or threatened population sizes; (2) species and habitat types recognized by local and regional resource agencies as sensitive; (3) habitat areas or vegetation communities that are unique, are of relatively limited distribution, or are of particular value to wildlife; and (4) wildlife corridors and habitat linkages. Regulated biological resources may or may not be considered special status, but are regulated under Federal, State, and/or local laws.

Surveys for special-status biological resources included rare plant surveys, special-status wildlife species surveys, and wetland delineations, as described below.

Focused Plant Surveys

Dudek performed literature research to determine which special-status plant species have the potential to occur on site. This included a review of CNPS 2015, the California Natural Diversity Database (CDFG 2011c), and USFWS 2010.

Dudek conducted a survey for rare plants that have a moderate to high potential to occur within the project site based on suitable habitat present; all rare plants were recorded if they were observed, regardless of whether they were expected or not. Survey emphasis was placed on determining the presence, or potential for occurrence, of State- and Federally listed and CNPS List 1B and 2 species. CNPS List 3 and 4 species were recorded if observed. Based on the distribution and results from preliminary research, as well as the blooming period and detectability of the plant species potentially present, it was assumed that one full survey pass would provide the results to support presence or absence of the potential for plant species to occur within the site. Field survey methods conformed to *California Native Plant Society (CNPS) Botanical Survey Guidelines* (CNPS 2001); *Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities* (CDFG 2000); and *Guidelines for Conducting and Reporting Botanical Inventories For Federally Listed, Proposed, and Candidate Plants* (USFWS 1996). If special-status species were encountered during the field study, the biologist recorded the center of the polygon in which the special-status plant was observed as a point using a GPS unit, and estimated the number of

individuals present within the polygon. Depending on the species encountered or the number of individuals observed, percent cover was estimated in lieu of the number of individuals.

Focused Wildlife Surveys

Focused wildlife surveys were conducted to address the following special-status species: California gnatcatcher, Belding's Savannah sparrow, least Bell's vireo, light-footed Ridway's rail, northern harrier, and western burrowing owl.

California Gnatcatcher. Surveys were conducted under the authorization of permit TE-781084 (Anita M. Hayworth) according to the schedule provided in Table 1. The survey followed the most current protocol established by the Service, *Coastal California Gnatcatcher* (*Polioptila californica californica*) *Presence/Absence Survey Protocol, July 28, 1997* (USFWS 1997).

Suitable habitat within the project site was surveyed three times for California gnatcatcher, and included the *Isocoma* scrub and mulefat scrub habitats. Although these habitat types are not typically occupied by California gnatcatcher, the structure of the habitat is potentially suitable and the species is known to periodically forage in mulefat scrub (and *Isocoma* scrub is a subtype of coastal sage scrub). The route selected ensured complete coverage of all suitable habitat within the study area. A topographic map of the site (scale 1 inch = 100 feet) overlain with vegetation polygons was used for the survey. Weather conditions during surveys are provided in Table 1. Binoculars (10×50) were used to aid in detecting and identifying bird species. Taped gnatcatcher vocalizations were played frequently to elicit a response from the species. The tape was played approximately every 50 to 100 feet within suitable habitat. If a California gnatcatcher was detected, playing of the tape ceased to avoid harassment, and the California gnatcatcher location was recorded on the site map.

Burrowing Owl. Dudek biologists conducted a habitat assessment and focused survey for burrowing owl within the project site during the breeding season for burrowing owl. Surveys for burrowing owl followed the California Department of Fish and Wildlife (CDFW) protocol provided in the *Staff Report on Burrowing Owl Mitigation* (CDFG 1995). The surveys were conducted between April 15 and July 15. Survey visits were conducted from 2 hours before sunset to 1 hour after, or from 1 hour before to 4 hours after sunrise. The surveys extended approximately 2 hours beyond the recommended time period because a clear view of the soil surface was available to determine if burrows were present and because temperatures remained low. Four surveys were conducted at no closer than weekly intervals by walking suitable habitat within the survey area. Locations of potential burrows were recorded on a map and notes were recorded of any appropriate evidence indicating that a burrow was occupied (e.g., feathers,

pellets, tracks, and prey remains). Any burrowing owls observed also were recorded and mapped and digitized using ArcGIS.

Light-Footed Ridgway's Rail. Dudek subconsultant John Konecny conducted a focused survey for light-footed Ridgway's rail within the survey area. Light-footed Ridgway's rails have been documented in the vicinity. Six focused survey visits for light-footed Ridgway's rail were conducted 1 week apart following the survey protocol approved by the Service (USFWS 2006a) and the Light-Footed Ridgway's Rail Study Team (CRST 2009). Each survey had a dawn and dusk component. The surveys were conducted between March 27 and May 1. Survey stations were established at approximately 300-foot intervals along the survey area, including all side channels. The surveys were conducted by stopping at all stations and passively listening for light-footed Ridgway's rails during the first 5 minutes. If Ridgway's rails were not detected, a digital vocalization consisting of 30 seconds of light-footed Ridgway's rail calls followed by 30 seconds of silence was played from an iPod with amplified speakers. A response was listened for during a 1-minute period following the recorded vocalizations before proceeding to the next station. Any light-footed Ridgway's rails or other special-status species observed were recorded and mapped. If observed, the data on the light-footed Ridgway's rail's location was digitized using ArcGIS.

Least Bell's Vireo. Dudek conducted a habitat assessment and focused survey for least Bell's vireo within the study area. A recovery permit pursuant to Section 10(a)(1)(A) of the Endangered Species Act of 1973 was not required to conduct presence/absence surveys, provided that the January 19, 2001, survey protocol was followed and vocalization tapes were not used. Eight site visits to areas of suitable habitat were conducted, with 10-day intervals between each visit. Surveys were conducted between April 10 and July 31. Additional visits were conducted up to August 31 and provided information on juvenile use of the habitat and habitat use outside of the typical suitable habitat. Such additional visits were not required. Surveys were conducted between dawn and 11 a.m. by a qualified biologist familiar with least Bell's vireo songs, calls, and plumage. Any least Bell's vireos that were observed were recorded and mapped. If observed, data was digitized using ArcGIS.

Belding's Savannah Sparrow. Dudek conducted focused surveys for Belding's Savannah sparrow within the study area. Surveys for Belding's Savannah sparrow followed the CDFW protocol (CDFG 2001).

The surveys were conducted between February 15 and April 30. Survey visits were conducted from 6 a.m. to 10 a.m., and temperatures were acceptable and sunshine optimal. Five surveys were conducted. Any Belding's Savannah sparrows observed were recorded and mapped. If observed, data was digitized using ArcGIS.

Northern Harrier. Dudek conducted focused surveys for northern harrier within the study area. There is currently no survey protocol for northern harrier. Surveys for northern harrier focused on the detection of breeding of the species, since their numbers increase during the fall and winter due to migration. Surveys were conducted in conjunction with other surveys to be efficient with the surveys required. To detect breeding of the species, surveys were conducted during the peak breeding season, which is generally between April 1 and late July. Although there is no guidance for number of visits required, conducting three visits is prudent, and the visits were made once each in April, May, and June. Surveys were performed in suitable grassland and marshland habitat. Survey methods included walking the suitable areas and observing the behavior of harriers. Nesting is often indicated by observation of a food pass from the male to the female; observation of territorial behavior, since the hunting females often search near the nest locations; and observations of young birds, which would indicate a nest site is near. The biologist conducting the surveys is experienced in the behavior of nesting northern harriers. Any harriers observed were recorded and mapped. If observed, data was digitized using ArcGIS.

2.2.5 Jurisdictional Wetlands Delineation

A formal jurisdictional wetlands delineation was conducted in accordance with the following agencies and regulations: (1) the U.S. Army Corps of Engineers (Corps), pursuant to Section 404 of the Federal Clean Water Act; (2) the Regional Water Quality Control Board (Regional Board), pursuant to Section 401 of the Federal Clean Water Act and the Porter-Cologne Act; (3) CDFW, pursuant to Section 1600 of the California Fish and Game Code; and (4) the California Coastal Commission (Commission). Details of the jurisdictional wetlands delineation are provided in the *Results of a Preliminary Jurisdictional Wetland Delineation for the Otay River Estuary Restoration Project (ORERP), South San Diego Bay Unit of the San Diego Bay National Wildlife Refuge* (Dudek March 10, 2015; Appendix B).

The following data sources were reviewed to assist in the delineation effort:

- National Wetlands Inventory Maps (USFWS 2009)
- National Hydric Soils List
- Natural Resource Conservation Service Web Soil Survey (USDA 2009)
- Historical aerial photographs

The wetlands delineation was performed in accordance with the methods prescribed in the Corps's 1987 Wetland Delineation Manual (ACOE 1987), Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (ACOE 2008), and the Corps/Environmental Protection Agency's Rapanos Guidance (ACOE 1987, 2008; ACOE and

EPA 2007). Other references used for the delineation included Reed 1988, SWANCC 2001, USDA 1994, USGS 2007, and USFWS 2008.

Areas under the jurisdiction of the Regional Board generally coincided with waters of the United States; however, isolated waters may have been under the jurisdiction of the Regional Board as waters of the State as provided by the State Porter-Cologne Act. The Corps/Regional Board wetland delineation consists of the field identification of jurisdictional wetlands using the three parameters described in the Corps Manual: hydric soils, hydrology, and hydrophytic vegetation. A predominance of hydrophytic vegetation, where associated with a stream channel, was used to determine CDFW-regulated riparian areas. Wetlands under the jurisdiction of the Commission were delineated using the Cowardin method of wetlands classification (Cowardin et al. 1979), which defines wetland boundaries by a single parameter (i.e., hydric soils, hydrophytic vegetation, or hydrology). In some instances where isolated surface waters are present, the Regional Board may choose to take jurisdiction over these resources under the State's Porter-Cologne Act.

Otay River Floodplain Site

Dudek biologists Andrew Thomson and Kathleen Dayton performed a formal (routine) wetlands delineation within the Otay River Floodplain Site on February 22, 2011. An additional analysis of the site was conducted by Dudek's Stuart Fraser on July 20, 2011, to confirm lack of ponding in the former salt pond areas in the western portion of the site. The Corps conducted fieldwork in August 2012 to refine Corps jurisdictional areas. All areas identified as being potentially subject to the jurisdiction of the Corps, Regional Board, CDFW, and/or the Commission were field verified and mapped.

Hydrology, vegetation, and soils were assessed at 21 geographically distinct sampling locations (Sampling Points 5–25) (Appendix B) throughout the site to determine the presence or absence of wetland field indicators. The overall area was assessed for evidence of an ordinary high water mark, saturation, permanence of surface water, wetland vegetation, and a nexus to traditional navigable waters. A more detailed description of the methods is described below.

The location of sampling points and the limits of wetlands were collected in the field using a 100-scale (1 inch = 100 feet) aerial photograph, topographic base, and GPS equipment with sub-meter accuracy. ArcGIS software was used to compile the information into a geospatial database.

Pond 15 Site

Dudek biologists Andrew Thomson and Kathleen Dayton performed a formal wetlands delineation within the Pond 15 Site on March 13, 2013. All areas identified as being potentially

subject to the jurisdiction of the Corps, Regional Board, CDFW, and/or the Commission were field verified and mapped.

Hydrology, vegetation, and soils were assessed at 15 geographically distinct sampling locations (Sampling Points 1–15) (Appendix B) throughout the site to determine the presence or absence of wetland field indicators. The overall site was assessed for evidence of an ordinary high water mark, saturation, permanence of surface water, wetland vegetation, and a nexus to traditional navigable waters.

The location of sampling points and the limits of wetlands were collected in the field using a 100-scale (1 inch = 100 feet) aerial photograph, topographic base, and GPS equipment with sub-meter accuracy. ArcGIS software was used to compile the information into a geospatial database.

Project Features

Dudek biologist Andrew Thomson performed a formal wetlands delineation within the project features on May 29, 2014. All areas identified as being potentially subject to the jurisdiction of the Corps, Regional Board, CDFW, and/or the Commission were field verified and mapped.

Hydrology, vegetation, and soils were assessed at seven geographically distinct sampling locations (Sampling Points 1–7) (Appendix B) throughout the access route area to determine the presence or absence of wetland field indicators. The overall area was assessed for evidence of an ordinary high water mark, saturation, permanence of surface water, wetland vegetation, and nexus to a traditional navigable water.

The location of sampling points and the limits of wetlands were collected in the field using a 100-scale (1 inch = 100 feet) aerial photograph, topographic base, and GPS equipment with sub-meter accuracy. Dudek GIS technician Lesley Terry digitized the jurisdictional extents based on the GPS data and data collected directly onto field maps using ArcGIS software.

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3 PHYSICAL CHARACTERISTICS

3.1 Site Description

The project site is separated into two non-contiguous areas: the Otay River Floodplain Site and the Pond 15 Site. Both sites will provide wildlife habitat and proximity to the coastline upon completion of the project. The project also includes a number of project features. The lack of significant topographic relief on the Otay River Floodplain Site and Pond 15 Site and surrounding properties allows for broad views across the sites from the neighboring communities of National City, Chula Vista, and Imperial Beach, and the Silver Strand (State Route 75). The project site is surrounded by scenic resources, including San Diego Bay, the Pacific Ocean, and low coastal bluffs and marshlands.

3.1.1 Topography

The approximately 33.5-acre Otay River Floodplain Site is located within the uplands of the Otay River floodplain at the southeastern edge of San Diego Bay, as shown in Figure 2. The relatively flat floodplain gently slopes from southeast to northwest, ranging in elevation from approximately 9.5 to 18.5 feet. The flat elevation of the site and surrounding areas allows for direct views of the adjacent salt ponds and the San Diego Bay to the north. These two features are the most prominent landforms in the general vicinity. The levees that form the salt ponds are visible from around San Diego Bay and much of the developed upland areas that border the San Diego Bay to the south (USFWS 2006b). The San Ysidro Mountain Range and Otay Mountain, which is the highest point in the mountain range, is located more than 12 miles from the project site and is visible on the horizon from the site.

Channelized water flows along the northern boundary of the site through the Otay River and through the center of the site in a north/south direction through Nestor Creek. The western portion of the site contains levees and basins that were constructed as part of the salt ponds system. The eastern portion of the site was formerly used for sewage treatment facilities and agriculture, and is currently dominated by non-native plant species (USFWS 2006b).

The approximately 90.9-acre Pond 15 Site is relatively flat, located directly along the southeastern edge of the San Diego Bay, approximately 1.5 miles west of the Pacific Ocean. The water-filled pond has little to no vegetation due to its high salinity, and often includes periods of very low water levels. The levees and salt ponds, including the Pond 15 Site, are visible throughout the San Diego Bay and much of the developed upland area that borders the south of the San Diego Bay, including the industrially developed sites located east and northeast of the salt ponds.

The prominent visual feature from the Pond 15 Site as viewed from outside the San Diego Bay NWR is the levee barrier system that separates the pond from tidal circulation of the surrounding Bay. Chula Vista Bayfront Park is located approximately 0.5 mile north of the Pond 15 Site. This area also has an uninterrupted view of the Pond 15 Site, with only the waters of the Bay and the access road to the Chula Vista Wildlife Reserve between the two areas. The Pond 15 Site is also visible between 1 to 2 miles across the San Diego Bay from the Bayshore Bikeway and Silver Strand (State Route 75).

3.1.2 Soils

The Otay River Floodplain Site is located at the western terminus of the Otay River within the Otay River floodplain. The floodplain is characterized by soft alluvial/bay deposits under 3 to 5 feet of uncompacted fill soils. The Otay River Floodplain Site is almost entirely composed of Grangeville fine sandy loam at slopes ranging from 0% to 2%. This type of soil is often found in alluvial fans and has a high capacity to transmit water. The soil is considered fertile, with a very high water capacity and a low possibility of erosion. The eastern edge of the site is composed of Visalia gravelly sandy loam ranging from 2% to 5% slope. Visalia gravelly sandy loam is also commonly found in alluvial fans and has a high capacity for transmitting water. However, this soil only contains a moderate available water capacity compared to the soil on the majority of the site. The open space area to the east of the Otay River Floodplain Site contains areas of Riverwash and Tujunga sand, both of which are common in floodplains. These soils have high water-transmitting capabilities and only moderate available water capacity (USDA 2009).

The Pond 15 Site is composed of 140 million gallons of water underlain by Quaternary alluvium. This is silt, sand, clay, and gravel with minor cobbles and boulders generally found in river and stream bottoms, valley fill, floodplains, fans, beach sand, swamps, and sand dune deposits. The Pond 15 Site is within a liquefaction hazard area, or an area with shallow groundwater tables and poorly consolidated granular sediments potentially subject to hazards associated with seismically induced liquefaction, per the City of Chula Vista General Plan Environmental Impact Report Geologic Maps (Figures 5.5-1 and 5.5-2 in the General Plan Environmental Impact Report) (City of Chula Vista 2005).

4 RESULTS OF SURVEY

4.1 Botany – Plant Communities and Floral Diversity

4.1.1 Otay River Floodplain Site

The Otay River Floodplain Site is approximately 33.5 acres, consisting mostly of disturbed and native upland habitat and approximately 6.43 acres of wetland habitat or waters of the United States. Historically, some of the upland areas within the Otay River Floodplain Site supported either freshwater or riparian habitat, but appear to have predominantly been composed of coastal salt marsh habitat (USFWS 2006b). Over time these wetland areas were converted to upland due to channelization of the Otay River, construction of solar salt ponds, and past agricultural activity.

The Otay River Floodplain Site contains five vegetation communities or land covers, as listed in Table 2 and shown in Figure 3, Otay River Floodplain Restoration Site and Project Features Vegetation. Each vegetation community within the project site is described in greater detail below.

Table 2
Vegetation Communities and Land Cover Types for the Otay River Floodplain Site

Vegetation Community/Land Cover Type	Acreage
Isocoma Scrub	11.97
Brackish Water	0.77
Southern Coastal Salt Marsh	1.26
Disturbed Land	8.68
Former Salt Pond Bottom and Borrow Area	10.83
Total	**33.51**

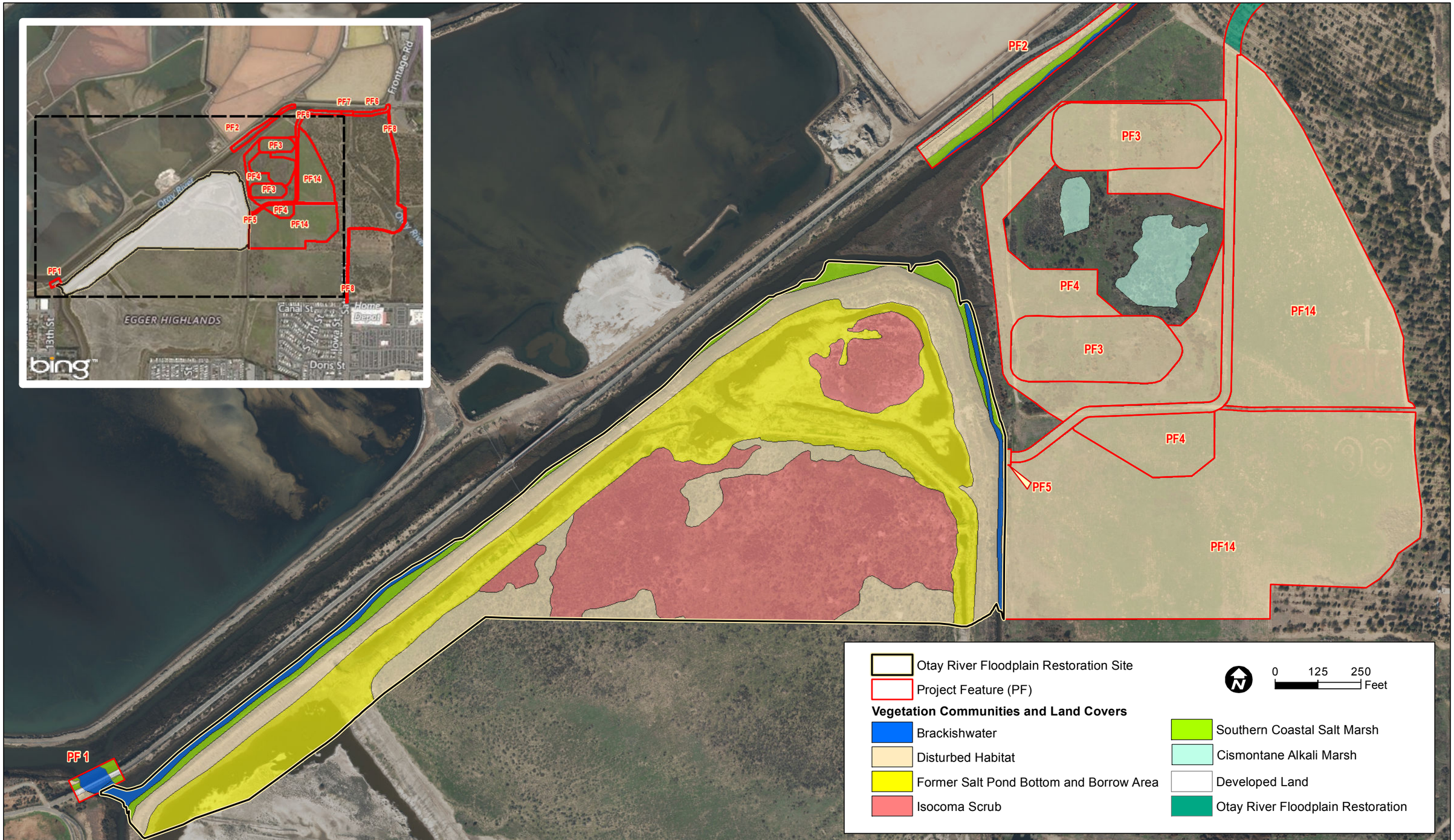
4.1.1.1 Isocoma Scrub; Tier II

Isocoma scrub is dominated by Menzies' goldenbush (*Isocoma menziesii*). The stands of *Isocoma* scrub vegetation on the site, which occur west of Nestor Creek, form a sparse to open shrub layer. The overall height of these shrubs varies from 0 to 3 feet, and overall vegetation shrub cover is approximately 50%. There are a few patches of coastal cholla (*Opuntia prolifera*) within the community, but the community lacks diversity and is predominantly composed of a nearly monotypic stand of Menzies' goldenbush in the shrub layer. The understory is predominantly composed of non-native annual weeds such as stork's bill (*Erodium* spp.), black mustard (*Brassica nigra*), shortpod mustard (*Hirschfeldia incana*), Maltese star-thistle (*Centaurea melitensis*), bromes (*Bromus* spp.), and slender oat (*Avena barbata*).

4.1.1.2 Southern Coastal Salt Marsh; Wetlands

Southern coastal salt marsh typically occurs in bays, lagoons, and estuaries along the coast, and is subject to tidal inundation. Dominant species include alkali seaheath (*Frankenia salina*), seablite (*Suaeda* sp.), and Parish's glasswort (*Arthrocnemum subterminale*) along the drier upper edges of the marshes; Pacific swampfire (*Salicornia pacifica*), dwarf saltwort (*Salicornia bigelovii*), and turtleweed (*Batis maritima*) at middle elevations; and California cordgrass (*Spartina foliosa*) at the lowest elevations.

On site, southern coastal salt marsh generally occurs along the channel of the Otay River that extends along the northern edge of the site, within Nestor Creek, and at the convergence of the Otay River and Nestor Creek. The southern coastal salt marsh on site includes seablite, Pacific swampfire, Parish's glasswort, and California cordgrass.



AERIAL SOURCE: SANDAG IMAGERY 2014

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FIGURE 3

Otay River Floodplain Restoration Site and Project Features Vegetation

Biological Resources Existing Conditions Technical Report for the Otay River Estuary Restoration Project

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4.1.1.3 Brackish Water; Wetlands

Brackish water refers to tidal channels that are unvegetated, and, thus, do not fit into other wetland habitat categories. The lack of vegetation may be due to the depth of water; scouring effects of floods or regular tidal inundation; or human-caused vegetation removal for flood control, access, sand mining, or other purposes.

The brackish water on site receives water from the ocean with regular tidal inundation, and from freshwater influence from upstream sources. One channel is located along the northern edge of the site (Otay River channel) and a second is oriented north/south through the center of the site (Nestor Creek). Within the project site, both channels are subject to regular tidal inundation.

4.1.1.4 Former Salt Pond Bottom and Borrow Area; Tier IV

The former salt pond bottom and borrow areas consist of a series of low-lying areas that are remnants of former industrial salt evaporation pond construction and operations. The bottom and borrow areas are surrounded by a tall levee that separates them from the adjacent tidal channels. The levee was constructed, in part, using soil excavated from within the basin (borrow area). Because of this area's historical long-term use as an industrial salt evaporation pond, the soil conditions are hypersaline, and the land mapped as former salt pond bottom and borrow area does not support vegetation. The former salt pond bottom and borrow areas are located south and west of the Otay River and Nestor Creek channels.

4.1.1.5 Disturbed Land; Tier IV

Disturbed land refers to areas that are not developed but lack vegetation, and generally are the result of severe or repeated mechanical perturbation. The disturbed habitat on site includes an area that was farmed in the past and is periodically mowed by the San Diego Bay NWR to control non-native weeds (specifically crowndaisy [*Glebionis coronaria*]) and for fire management purposes.

4.1.2 Pond 15 Site

The Pond 15 Site consists of approximately 91 acres of disturbed and native upland habitat and approximately 86.27 acres of non-vegetated habitat, including the brines contained in the salt ponds and areas mapped as bay, beach, and disturbed habitat (Figure 4, Pond 15 Restoration Site and Project Features Vegetation). Prior to diking for salt production, the entire area within the Pond 15 Site was composed of intertidal mudflat.

The Pond 15 Site is part of the South Bay Salt Works operation that currently produces salt for commercial purposes using solar radiation to evaporate water from seawater and concentrate and eventually crystallize the salts through a sequential evaporation technique. The salt evaporation ponds are separated from the adjacent San Diego Bay and tidal channels by levees that surround the ponds. These levees reach a maximum elevation of approximately 8 feet, slightly greater than the highest observed water level (7.71 feet North American Vertical Datum [NAVD 88]). The Pond 15 Site includes the vegetation communities or land covers listed in Table 3 and shown in Figure 4. Each vegetation community within the project site is described in greater detail below.

Table 3
Vegetation Communities and Land Cover Types for the Pond 15 Site

Vegetation Community/Land Cover Type	Acreage
Bay	1.15
Beach	0.01
Disturbed Land	2.77
Open Water	82.34
Salt Pond Levee	3.67
Southern Coastal Salt Marsh	0.87
Disturbed Southern Coastal Salt Marsh	0.10
Total	**90.90**

4.1.2.1 Bay

Areas mapped as bay refer to the open water located within the San Diego Bay. An area mapped as bay is located at the north of the Pond 15 Site.

4.1.2.2 Beach

Beach refers to areas that are on the Bay side of the levees and that are subject to tidal inundation but are generally exposed sand. Areas that are mapped as beach are lacking vegetation. Beach areas are infrequently tidally inundated, whereas tidal flat and mudflat areas are inundated on a daily basis.

AERIAL SOURCE: SANDAG IMAGERY 2014

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FIGURE 4

Pond 15 Restoration Site and Project Features Vegetation

Biological Resources Existing Conditions Technical Report for the Otay River Estuary Restoration Project

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4.1.2.3 Disturbed Land

Disturbed land refers to areas that are not developed but lack vegetation, and generally are the result of severe or repeated mechanical perturbation. The disturbed land on site includes the top surface of the levees surrounding the Pond 15 Site. These areas are driven on for vehicular access, and do not support vegetation.

4.1.2.4 Open Water

Open water consists of concentrated brines and areas that are perennially inundated by brines within the Pond 15 Site. The salt pond brines are hypersaline and vary in salinity from pond to pond, depending on its position in the sequential evaporative water process. Overall salinity within the South Bay Salt Works varies from the salinity of south San Diego Bay (32 parts per thousand (ppt)) to 356 ppt, with the Pond 15 Site varying from 71.3 to 128.5 ppt (USFWS 2006b). As a matter of reference, ocean water salinity varies from 32 to 37 ppt (Office of Naval Research 2014).

4.1.2.5 Salt Pond Levee

The salt pond levees separate the salt ponds for controlling the salinity as part of the salts works operation. The levees vary in the degree to which they are compacted, with the lower and outer edges being less compacted, and the surfaces intended for vehicle access being more compacted. Areas with less compaction occasionally support disjunct patches of vegetation, but the compacted areas are devoid of vegetation. Areas intended for driving access that are devoid of vegetation were classified as disturbed habitat to distinguish them in the context of regulated versus non-regulated jurisdictional areas. Patchy vegetation occurring on the salt pond levees consists of a combination of native and non-native species. Native species that occur on the levees are typical of middle and upper salt marsh habitat, such as saltgrass, Parish's glasswort, and seablite. Non-native species occurring on the levees consists of iceplant (*Mesembryanthemum* spp.), bromes, and patches of Australian saltbrush (*Atriplex semibaccata*).

4.1.2.6 Southern Coastal Salt Marsh and Disturbed Southern Coastal Salt Marsh

Southern coastal salt marsh typically occurs in bays, lagoons, and estuaries along the coast and is subject to tidal inundation. Dominant species include alkali seaheath, seablite, and Parish's glasswort along the drier upper edges of the marshes; Pacific swampfire and turtleweed at middle elevations; and cordgrass closest to the water.

On site, southern coastal salt marsh occurs as small patches of vegetation along the levee that surrounds the salt pond. It is classified as a disturbed form of the habitat in areas where there is

overall low vegetative cover of the community. Salt marsh vegetation is also present off site along some of the internal levees of the South Bay Salt Works, on the Otay River and Bay side of the levee system, and along the Palomar Street channel and the channel east of Pond 15. On the Pond 15 Site, the internal levees are lacking in vegetation. The southern coastal salt marsh on site includes seablite, Parish's glasswort, and California cordgrass.

4.1.3 Project Features

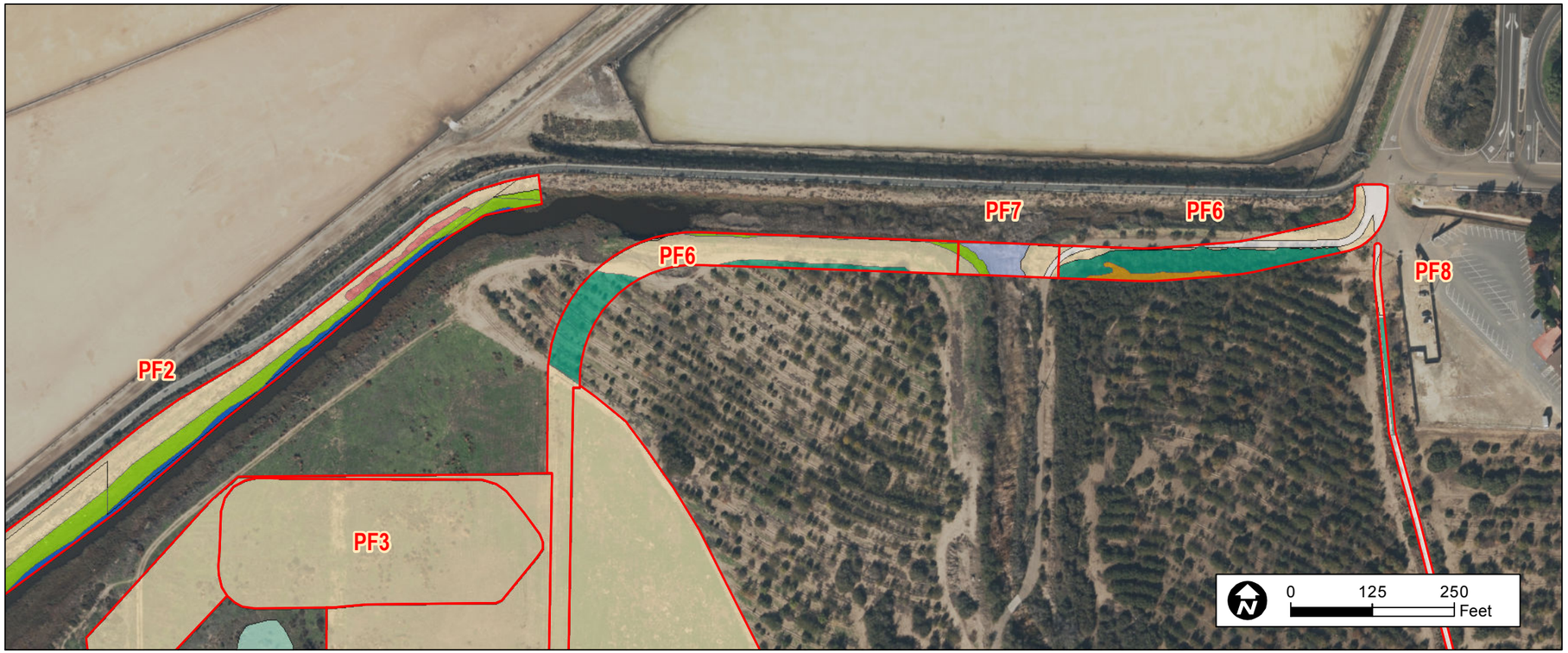
Implementation of the project features in support of the overall habitat restoration activities at the Otay River Floodplain Site and Pond 15 Site would involve approximately 1.61 acres of native vegetation communities and 39.14 acres of non-native vegetation communities and land covers (Figures 5 and 6, Project Features Vegetation). Table 4 provides a summary of the acreage of existing vegetation communities and land cover types associated with the project features.

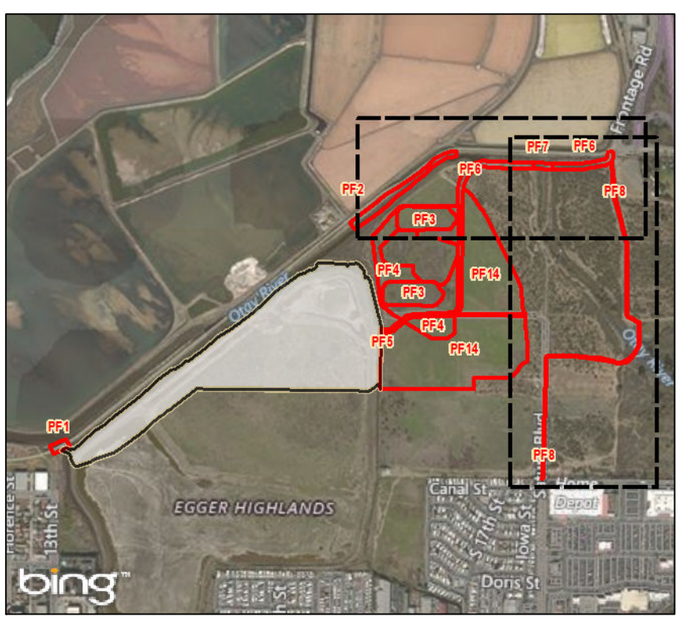
Table 4
Vegetation Communities and Land Covers within the Project Features

Vegetation Community/ Land Cover Type	Project Features (Acres)														
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*Total*
Non-Native Communities and Land Covers															
Brackish Water	0.13	0.08	—	—	—	—	—	—	0.01	—	—	—	—	—	0.21
Developed Land	0.02	—	—	—	—	0.12	0.01	0.74	0.04	0.49	—	—	—	—	1.42
Disturbed Habitat	0.03	0.68	4.07	6.06	0.02	1.87	0.07	0.02	0.04	0.30	0.02	0.02	0.41	21.50	35.11
Salt Flat	—	—	—	—	—	—	—	—	—	0.06	—	—	—	—	0.06
Open Water	—	—	—	—	—	—	—	—	—	0.40	0.79	0.08	0.03	—	1.30
Salt Pond Levee	—	—	—	—	—	—	—	—	0.01	0.45	0.19	0.08	0.31	—	1.04
Non-Native Communities Subtotal	0.18	0.76	4.07	6.06	0.02	1.99	0.08	0.76	0.10	1.70	1.00	1.08	0.75	21.50	39.26
Native Communities															
Otay River Floodplain Restoration	—	—	—	—	—	0.56	—	0.03	—	—	—	—	—	—	0.59
Freshwater Marsh	—	—	—	—	—	—	0.08	—	—	—	—	—	—	—	0.08
Isocoma Scrub	—	0.06	—	—	—	—	—	—	—	—	—	—	—	—	0.06
Mulefat Scrub	—	—	—	—	—	0.06	—	—	—	—	—	—	—	—	0.06
Southern Coastal Salt Marsh	0.06	0.47	—	—	—	0.02	0.02	—	0.06	0.19	—	—	—	—	0.82
Native Communities Subtotal	*0.06*	*0.53*	*0.00*	*0.00*	*0.00*	*0.64*	*0.10*	*0.03*	*0.06*	*0.19*	*0.00*	*0.00*	*0.00*	*0.00*	*1.61*
Total	**0.24**	**1.29**	**4.07**	**6.06**	**0.02**	**2.63**	**0.18**	**0.79**	**0.16**	**1.90**	**1.00**	**0.18**	**0.76**	**21.50**	**40.76**

Project Features:
1 Otay Channel Protection under Bikeway Bridge (Temporary and Permanent)
2 Otay Channel Protection (Permanent)
3 Stockpiles (Permanent)
4 Staging Area (Temporary)
5 Crossing at Nestor Creek (Temporary)

6 Two-Lane Truck Route Connecting Nestor Creek (Temporary)
7 Crossing at Otay River (Temporary)
8 Bike Path Reroute (Temporary)
9 Crossing at Palomar Channel (Temporary)
10 Two-Lane Truck Crossing at Salt Pond levee (Temporary)
11 Levee Modification of Ponds 13 and 14 – North (Temporary and Permanent)
12 Levee Modification of Ponds 13 and 14 – South (Temporary and Permanent)
13 Raised Levee between Ponds 22 and 23 (Permanent)
14 Restoration Area East of Nestor Creek (Permanent)





Otay River Floodplain Restoration Site

Project Feature (PF)

Vegetation Communities and Land Covers

- Brackishwater
- Disturbed Habitat
- Former Salt Pond Bottom and Borrow Area
- Isocoma Scrub
- Southern Coastal Salt Marsh
- Cismontane Alkali Marsh
- Developed Land
- Otay River Floodplain Restoration

AERIAL SOURCE: SANDAG IMAGERY 2014

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FIGURE 5

Project Features Vegetation

Biological Resources Existing Conditions Technical Report for the Otay River Estuary Restoration Project

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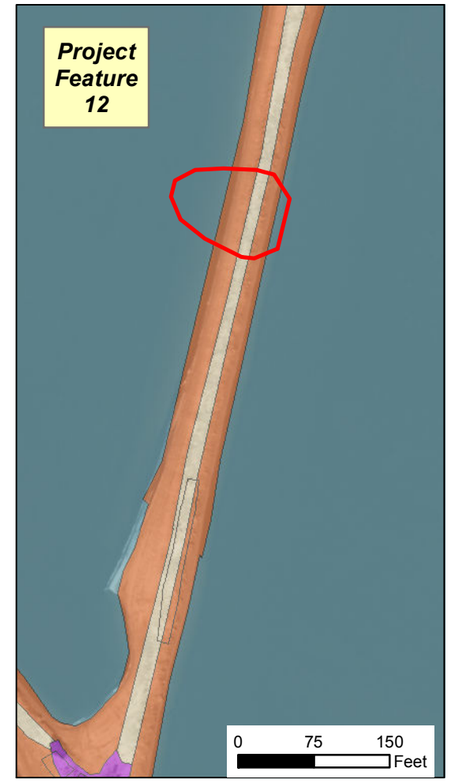

Pond 15 Restoration Site
Project Feature (PF)

Vegetation Communities and Land Covers

- Bay
- Beach
- Brackishwater
- Disturbed Southern Coastal Salt Marsh
- Open Water
- Salt Flats
- Disturbed Habitat
- Developed Land
- Salt Pond Levee
- Southern Coastal Salt Marsh

AERIAL SOURCE: SANDAG IMAGERY 2014

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FIGURE 6

Project Features Vegetation

Biological Resources Existing Conditions Technical Report for the Otay River Estuary Restoration Project

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The proposed action would consist of the following:

1. ***Otay Channel Protection under Bikeway Bridge.*** The channel protection would be a permanent impact except for the impacts to brackishwater which are temporary.
2. ***Otay Channel Protection.*** The channel protection would be a permanent impact.
3. ***Stockpiles.*** Within the proposed staging area, two areas encompassing a total of 4.07 acres would be set aside for stockpiling excavated material.
4. ***Staging Area.*** Implementation of the proposed action would require a site where the logistics of mobilization and demobilization can occur, as well as where other activities related to the proposed action can be coordinated.
5. ***Crossing at Nestor Creek.*** To access the western portion of the Otay River Floodplain Site from the staging area east of Nestor Creek, the contractor would install a temporary crossing across Nestor Creek composed of fill material and associated culverts.
6. ***Truck Route Connecting Nestor Creek.*** The truck construction access route would be used under any one of the three construction material transfer alternatives.
7. ***Crossing at Otay River.*** To access the construction staging area and western portion of the Otay River Floodplain Site from the end of Main Street, the contractor would install a temporary crossing at the Otay River channel.
8. ***Bike Path Reroute.*** The existing bike path would be temporarily rerouted during construction to minimize conflicts between bicyclists and construction vehicles and to ensure user safety.
9. ***Crossing at Palomar Channel.*** The temporary crossing would be composed of fill material and associated culverts to ensure that the temporary crossing would not create impediments to water flow.
10. ***Truck Crossing at Salt Pond Levee***. This would be a temporary impact.
11. ***Pond 13 and Pond 14 Levee Modifications.*** Permanent modifications in the northern areas of these ponds except for areas that will remain within open water; these will be temporary.
12. ***Pond 13 and Pond 14 Levee Modifications.*** Permanent modifications in the southern areas of these ponds except for areas that will remain within open water; these will be temporary.
13. ***Raised Levee between Pond 22 and Pond 23.*** The elevation of the levee that extends for approximately 14,000 feet between Ponds 22 and 23 would be permanently raised by 2 feet to a new crest elevation of +13 feet NAVD 88.

14. ***Restoration Area East of Nestor Creek.*** The 21.5-acre area east of Nestor Creek would be restored to native vegetation following completion of the proposed action. Stockpiled material on the staging area would partially be used for this restoration effort.

4.1.4 Floral Diversity

A total of 61 species of vascular plants, 36 native (59%) and 25 non-native (4%), were identified on the site in 2011. The complete list of plant species identified on site during surveys conducted in 2011 is provided as Appendix A.

4.2 Zoology – Wildlife Diversity

4.2.1 Otay River Floodplain Site

The Otay River Floodplain Site offers moderate habitat value for wildlife species, primarily for migratory birds and common upland species, but also provides foraging habitat for a number of raptor species. The habitat supports a number of upland species prevalent within disturbed and urbanized areas. The habitat within the project site lacks cover and structural diversity and, except for the patches of *Isocoma* scrub, is dominated by non-native species, providing relatively few resources for wildlife. A total of 83 species of wildlife (79 birds and four mammals) were observed on the project site. Typical species commonly observed on site were house finch (*Carpodacus mexicanus*) and lesser goldfinch (*Spinus tristis*). Several swallow species were observed over the survey period, and many individuals were observed foraging in flight over the site. A number of raptor species were observed foraging on small mammals within the vegetation. Coastal shorebirds and gulls were periodically observed flying over the site. No reptile or amphibian species were observed on site. Some species that are likely to occur include western fence lizard (*Sceloporus occidentalis*), side-blotched lizard (*Uta stansburiana*), and gopher snake (*Pituophis melanoleucus*). Common species of mammals recorded in upland parts of the site included brush rabbit (*Sylvilagus bachmani*), coyote (*Canis latrans*), and California ground squirrel (*Spermophilus beecheyi*). Other mammals adapted to living in areas near human disturbance, such as striped skunk (*Mephitis mephitis*) and Virginia opossum (*Didelphis virginica*), may also occur on the site.

4.2.2 Pond 15 Site

The Pond 15 Site offers moderate habitat value for wildlife species, primarily for migratory and water birds, with some support for common upland species that typically inhabit a wide range of sites. During a visit to the site, it was noted that although numbers of birds within the Pond 15 Site were high, species richness was low. In comparison, immediately adjacent to the Pond 15 Site within the San Diego Bay, species richness was very high, as species responded to the tidal

influence cycles and the foraging opportunities within the periodically exposed mudflat. Habitat within the project site consists mostly of saline brines, with a narrow upland perimeter formed by the levee system. There are a few dominant species that use the Pond 15 Site. Within the shorebird group, the most common species included red-necked phalarope (*Phalaropus lobatus*), Wilson's phalarope (*P. tricolor*), western sandpiper (*Calidris mauri*), marbled godwit (*Limosa fedoa*), willet (*Tringa semipalmatus*), and black-necked stilt (*Himantopus mexicanus*). Eared grebes (*Podiceps nigricollis*) represent the largest population of any species occurring within the Pond 15 Site. California brown pelican (*Pelecanus occidentalis californicus*), California gull (*Larus californicus*), double-crested cormorant (*Phalacrocorax auritus*), and elegant terns (*Thalasseus elegans*) also show a large population size at the salt ponds in general. Various levees within the South Bay Salt Works provide nesting habitat for a number of colonial nesting seabirds, including the Federally endangered California least tern (*Sternula antillarum browni*), Caspian tern (*Hydroprogne caspia*), elegant tern, royal tern (*Thalasseus maximus*), gull-billed tern (*Gelochelidon nilotica vanrossemi*), Forster's tern (*Sterna forsteri*), and black skimmer (*Rynchops niger*).

4.3 Sensitive Biological Resources

The following resources are discussed in this section: (1) plant and animal species present in the project vicinity that are given special recognition by Federal, State, or local conservation agencies and organizations owing to declining, limited, or threatened populations that are the result, in most cases, of habitat reduction, and (2) habitat areas that are unique, are of relatively limited distribution, or are of particular value to wildlife. Sources used for determining sensitive biological resources are as follows: the Service (USFWS 2010) and CDFW (CDFG 2009, 2011c) for wildlife; CDFW (CDFG 2011a, 2011b, 2011c) and CNPS (2015) for plants; and Holland (1986) and the City of San Diego (2004) for habitats.

4.3.1 Special-Status Plant Species

4.3.1.1 Otay River Floodplain Site

Three special-status plants were observed during the 2011 surveys of the Otay River Floodplain Site: California desert-thorn (*Lycium californicum*) (CRPR 4.2), estuary seablite (*Suaeda esteroa*) (CRPR 1B.2), and woolly seablite (*Suaeda taxifolia*) (CRPR 4.2) (Table 5 and Figure 7, Otay River Floodplain Restoration Site Special-Status Plant Species).

California desert-thorn is a perennial shrub that is located within coastal bluff scrub or coastal scrub habitats at an elevation ranging from 5 to 150 meters. Within the Otay River Floodplain

Site, approximately 16 individuals were mapped within southern coastal salt marsh and disturbed habitat (Figure 7).

Estuary seablite is a perennial herb that is found within coastal salt marshes and swamps at an elevation ranging from 0 to 5 meters (CNPS 2015). Within the Otay River Floodplain Site, several populations totaling approximately 230 individuals were found within areas mapped as southern coastal salt marsh and estuarine brackish water (Figure 7).

Woolly seablite is a perennial evergreen shrub that occurs between 0 and 50 meters within coastal bluff scrub and dune habitats, as well as along the margins of coastal salt marshes and swamps (CNPS 2015). Small occurrences consisting of 94 individuals are located throughout the Otay River Floodplain Site and within areas designated as project features in areas mapped as southern coastal salt marsh and disturbed habitat.

4.3.1.2 Pond 15 Site

One special-status plant was observed during the 2013 surveys of the Pond 15 Site: estuary seablite, a CRPR 1B.2 species (Table 5 and Figure 8, Pond 15 Restoration Site Special-Status Plant Species). Approximately 129 individuals were mapped within areas of southern coastal salt marsh.

Table 5 lists several sensitive plant species that have a moderate to high potential to occur within the project site based on the location of the site and general soils mapping, or that were observed (see also Figure 9, Ponds 22 and 23 Site Special-Status Plant Species). For each species listed in Table 5, a determination is made regarding the potential for the species to occur, based on the location of the site, habitats present, and degree of disturbance to the vegetation. Table 6 provides the list of those species with no or low potential to occur on site.

Table 5
Special-Status Plant Species Detected or Potentially Occurring on the Project Site

Scientific Name	Common Name	Status Federal/ State/ NCCP	CRPR	Primary Habitat Associations/Life Form/ Blooming Period/Elevation Range (ft amsl)	Status on Site or Potential to Occur
Corethrogyne filaginifolia var. *incana*	San Diego sand aster	None/ None/ None	1B.1	Chaparral, coastal bluff scrub, coastal scrub/perennial herb/ June–September/10–380	Moderate potential to occur but not detected. Although the plant may not have been flowering during the May focused survey, the vegetative form of the species would have been observed and none were detected. There is suitable habitat, and the project site is located within the elevation range for this species.
Lycium californicum	California box-thorn	None/ None/ None	4.2	Costal bluff scrub, coastal scrub/perennial shrub/ December–August/15–590	Observed on the Otay River Floodplain Site during focused plant survey.
Suaeda esteroa	Estuary seablite	None/ None/ None	1B.2	Coastal salt marshes and swamps/perennial herb/May–October (Jan)/<20	Observed during focused plant surveys at Otay River Floodplain Site and Pond 15 Site.
Suaeda taxifolia	Woolly seablite	None/ None/ None	4.2	Coastal bluff scrub, coastal dunes, marshes and swamps (margins of coastal salt)/ perennial evergreen shrub/ January–December/0–165	Observed during focused plant survey on Otay River Floodplain Site.

NCCP = Natural Communities Conservation Plan; ft amsl = feet above mean sea level.
CRPR: California Rare Plant Rank
1B: Plants rare, threatened, or endangered in California and elsewhere
4: Plants of limited distribution – a watch list
Threat Rank
.1 – Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
.2 – Fairly threatened in California (20%–80% occurrences threatened/moderate degree and immediacy of threat)

Table 6
Special-Status Plant Species Not Detected
or with Low or No Potential to Occur on the Project Site

Scientific Name	Common Name	Status Federal/ State/ NCCP	CRPR	Primary Habitat Associations/Life Form/ Blooming Period/Elevation Range (ft amsl)	Status on Site or Potential to Occur
Abronia maritima	Red sand-verbena	None/ None/ None	4.2	Coastal dunes/perennial herb/ February–November/ 10–330	No potential to occur. Although the project site is located within the elevation range for this species, there is no suitable habitat on site.
Acanthomintha ilicifolia	San Diego thorn-mint	FT/SE/ MSCP NE	1B.1	Chaparral, coastal scrub, valley and foothill grassland, vernal pools; clay/annual herb/ April–June/30–3,150	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
Agave shawii var. *shawii*	Shaw's agave	None/ None/ MSCP	2B.1	Coastal bluff scrub, coastal scrub/leaf succulent/ September–May/30–250	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
Ambrosia pumila	San Diego ambrosia	FE/ None/ MSCP NE	1B.1	Chaparral, coastal scrub, valley and foothill grassland, vernal pools; often disturbed, sometimes alkaline/ rhizomatous herb/ May–October/60–1,360	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
Aphanisma blitoides	Aphanisma	None/ None/ None	1B.2	Coastal bluff scrub, coastal dunes, coastal scrub; sandy/ annual herb/March–June/ <1,000	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
Arctostaphylos glandulosa ssp. *crassifolia*	Del Mar manzanita	FE/ None/ MSCP	1B.1	Maritime chaparral; sandy/ evergreen shrub/December–June/<1,200	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.

Table 6
Special-Status Plant Species Not Detected
or with Low or No Potential to Occur on the Project Site

Scientific Name	Common Name	Status Federal/ State/ NCCP	CRPR	Primary Habitat Associations/Life Form/ Blooming Period/Elevation Range (ft amsl)	Status on Site or Potential to Occur
Artemisia palmeri	San Diego sagewort	None/ None/ None	4.2	Chaparral, coastal scrub, riparian forest, scrub, and woodland; sandy, mesic/ deciduous shrub/May–September/50–3,000	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
Astragalus tener var. *titi*	Coastal dunes milk-vetch	FE/SE/ MSCP	1B.1	Coastal bluff scrub, coastal dunes, coastal prairie; mesic, often vernally mesic/annual herb/March–May/<170	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
Atriplex coulteri	Coulter's saltbush	None/ None/ None	1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland; alkaline or clay/perennial herb/March–October/10–1,500	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
Atriplex pacifica	South Coast saltscale	None/ None/ None	1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, playas/ annual herb/March–October/ <500	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
Atriplex parishii	Parish's brittlescale	None/ None/ None	1B.1	Chenopod scrub, playas, vernal pools/annual herb/ June–October/80–6,300	Low potential to occur. There is suitable habitat within the playa on site and the project site is located within the elevation range for this species. However, the species tends to be associated with a claypan soil and vernal pools, which are not present.

Table 6
Special-Status Plant Species Not Detected
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Scientific Name	Common Name	Status Federal/ State/ NCCP	CRPR	Primary Habitat Associations/Life Form/ Blooming Period/Elevation Range (ft amsl)	Status on Site or Potential to Occur
Atriplex serenana var. *davidsonii*	Davidson's saltscale	None/ None/ None	1B.2	Coastal bluff scrub, coastal scrub; alkaline/annual herb/ April–October/30–650	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
Bergerocactus emoryi	Golden-spined cereus	None/ None/ None	2B.2	Closed-cone conifer forest, chaparral, coastal scrub; sandy/shrub/May–June/ 10–1,300	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
Calandrinia breweri	Brewer's calandrinia	None/ None/ None	4.2	Chaparral, coastal scrub; sandy or loamy, disturbed sites and burns/annual herb/March–June/30–4,000	Absent. There is suitable habitat on site and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
California (=*Erodium*) *macrophylla*	Round-leaved filaree	None/ None/ None	1B.1	Cismontane woodland, valley and foothill grassland; clay/ annual herb/March–May/ 50–4,000	Absent. There is suitable habitat and the project site is located within the elevation range for this species, but this species would have been observed during the focused plant survey.
Camissoniopsis lewisii	Lewis's evening primrose	None/ None/ None	3	Coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland; sandy or clay/annual herb/March–May (June)/<1,000	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.

Table 6
Special-Status Plant Species Not Detected
or with Low or No Potential to Occur on the Project Site

Scientific Name	Common Name	Status Federal/ State/ NCCP	CRPR	Primary Habitat Associations/Life Form/ Blooming Period/Elevation Range (ft amsl)	Status on Site or Potential to Occur
Ceanothus verrucosus	Wart-stemmed ceanothus	None/ None/ MSCP	2B.2	Chaparral/evergreen shrub/ December–May/<1,250	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
Centromadia (=*Hemizonia*) *parryi* spp. *australis*	Southern tarplant	None/ None/ None	1B.1	Marshes and swamps (margins), valley and foothill grassland (vernally mesic), vernal pools/annual herb/May–November/<400	Low potential to occur. There is suitable habitat on site and the project site is located within the elevation range for this species. However, the site is too disturbed for the species, and the soils required for the species need to have a clay pan.
Centromadia (=*Hemizonia*) *pungens* ssp. *laevis*	Smooth tarplant	None/ None/ None	1B.1	Chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grassland; alkaline/annual herb/April–September/<1,580	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
Chaenactis glabriuscula var. *orcuttiana*	Orcutt's pincushion	None/ None/ None	1B.1	Coastal bluff scrub, coastal dunes/annual herb/January–August/10–330	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
Chorizanthe orcuttiana	Orcutt's spineflower	FE/SE	1B.1	Maritime chaparral, closed-cone conifer forest, coastal scrub/annual herb/March–May/<400	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.

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Special-Status Plant Species Not Detected
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Scientific Name	Common Name	Status Federal/ State/ NCCP	CRPR	Primary Habitat Associations/Life Form/ Blooming Period/Elevation Range (ft amsl)	Status on Site or Potential to Occur
Cistanthe maritima	Seaside cistanthe	None/ None/ None	4.2	Coastal bluff scrub, coastal scrub, valley and foothill grassland/annual herb/ February–August/6–984	Absent. There is suitable habitat and the project site is located within the elevation range for this species, but the species would have been observed during the focused plant survey.
Chloropyron maritimum ssp. *maritimum*	Salt marsh bird's-beak	FE/SE/ MSCP	1B.2	Coastal dunes, coastal saltwater marshes and swamps/annual herb; hemiparisitic/May–October/ <100	Absent. There is suitable habitat and the project site is located within the elevation range for this species, but the species would have been observed during the focused plant survey.
Dicranostegia orcuttiana	Orcutt's bird's-beak	None/ None/ MSCP	2B.1	Coastal scrub/annual herb/ (Mar) April–July (Sept)/ 30–1,150	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
Corethrogyne filaginifolia var. *linifolia*	Del Mar Mesa sand aster	None/ None/ None	1B.1	Coastal bluff scrub, maritime chaparral (openings), coastal scrub; sandy/perennial herb/ May–September/10–380	Low potential to occur. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would likely have been observed during the focused plant survey.
Deinandra [=Hemizonia] paniculata	Paniculate tarplant	None/ None/ None	4.2	Coastal scrub, valley and foothill grassland, vernal pools; usually vernally mesic/annual herb/April–November/80–3,100	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.

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Special-Status Plant Species Not Detected
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Scientific Name	Common Name	Status Federal/ State/ NCCP	CRPR	Primary Habitat Associations/Life Form/ Blooming Period/Elevation Range (ft amsl)	Status on Site or Potential to Occur
Dudleya blochmaniae spp. *blochmaniae*	Blochman's dudleya	None/ None/ None	1B.1	Chaparral, coastal bluff scrub, coastal scrub, valley and foothill grassland, rocky; often clay or serpentinite/perennial herb/April–June/15–1,500	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
Dudleya variegata	Variegated dudleya	None/ None/ MSCP NE	1B.2	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland, vernal pools; clay/perennial herb/ April–June/<1,900	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
Dudleya viscida	Sticky dudleya	None/ None/ MSCP	1B.2	Coastal bluff scrub, chaparral, coastal scrub; gabbroic soils/ rocky/perennial herb/May–June/30–1,800	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
Eryngium aristulatum var. *hooveri*	Hoover's button-celery	None/ None/ None/ None	1B.1	Vernal pools/annual-perennial herb/July/10–150	Absent. Although the project site is located within the elevation range for this species, there are no vernal pools on site.
Eryngium aristulatum var. *parishii*	San Diego button-celery	FE/SE/ MSCP NE	1B.1	Coastal scrub, valley and foothill grassland, vernal pools, mesic/annual-perennial herb/ April–June/60–2,000	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
Eryngium pendletonense	Pendleton button-celery	None/ None/ None	1B.1	Coastal bluff scrub, valley and foothill grassland, vernal pools; clay, vernally mesic/perennial herb/April–June/50–360	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.

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Scientific Name	Common Name	Status Federal/ State/ NCCP	CRPR	Primary Habitat Associations/Life Form/ Blooming Period/Elevation Range (ft amsl)	Status on Site or Potential to Occur
Erysimum ammophilum	Sand-loving wallflower	None/ None/ MSCP	1B.2	Maritime chaparral, coastal dunes, coastal scrub; sandy, openings/perennial herb/ February–June/<200	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
Euphorbia misera	Cliff spurge	None/ None/ None	2B.2	Coastal bluff scrub, coastal scrub, Mojavean desert scrub; rocky/shrub/December–August/ 30–1,650	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
Ferocactus viridescens	San Diego barrel cactus	None/ None/ MSCP	2B.1	Chaparral, coastal scrub, valley and foothill grassland, vernal pools/perennial stem succulent/ May–June/<1,500	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
Geothallus tuberosus	Campbell's liverwort	None/ None/ None	1B.1	Coastal scrub (mesic), vernal pools; soil/ephemeral liverwort/ NA/30–2,000	Low potential to occur. There is marginal habitat and the project site is located within the elevation range for this species. However, this species is only known from four locations.
Harpagonella palmeri	Palmer's grapplinghook	None/ None/ None	4.2	Chaparral, coastal scrub, valley and foothill grassland; clay/ annual herb/March–May/ 60–3,100	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
Heterotheca sessiliflora ssp. *sessiliflora*	Beach goldenaster	None/ None/ None/	1B.1	Coastal dunes, coastal scrub, coastal chaparral/annual herb/ July–November/<35	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.

Table 6
Special-Status Plant Species Not Detected
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Scientific Name	Common Name	Status Federal/ State/ NCCP	CRPR	Primary Habitat Associations/Life Form/ Blooming Period/Elevation Range (ft amsl)	Status on Site or Potential to Occur
Isocoma menziesii var. *decumbens*	Decumbent goldenbush	None/ None/ None	1B.2	Chaparral, coastal scrub (sandy, often disturbed areas)/ shrub/April–November/ 30–450	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
Iva hayesiana	San Diego marsh-elder	None/ None/ None	2B.2	Marshes and swamps, playas/ perennial herb/April–November/30–1,650	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
Juncus acutus spp. *leopoldii*	Southwestern spiny rush	None/ None/ None	4.2	Coastal dunes (mesic), meadows and alkaline seeps, coastal saltwater marshes and swamps/rhizomatous herb/ May–June/<3,000	Absent within the project site; however, the species was observed during the focused plant survey just off site to the northeast of the Otay River Floodplain Site.
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	None/ None/ None	1B.1	Saltwater marsh and swamps, playas, vernal pools/annual herb/February–June/<4,000	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	None/ None/ None	4.3	Chaparral, coastal scrub/ annual herb/January–July/ <2,900	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
Leptosyne maritima	Sea dahlia	None/ None/ None	2B.2	Coastal bluff scrub, coastal scrub/perennial herb/March–May/16–492	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.

Table 6
Special-Status Plant Species Not Detected
or with Low or No Potential to Occur on the Project Site

Scientific Name	Common Name	Status Federal/ State/ NCCP	CRPR	Primary Habitat Associations/Life Form/ Blooming Period/Elevation Range (ft amsl)	Status on Site or Potential to Occur
Microseris douglasii ssp. *platycarpha*	Small-flowered microseris	None/ None/ None	4.2	Cismontane woodland, coastal scrub, valley and foothill grassland, vernal pools; clay/ annual herb/March–May/ 50–3,500	Absent. There are no suitable clay soils within the project area and this species would have been observed during the focused plant survey.
Myosurus minimus ssp. *apus*	Little mousetail	None/ None/ None	3.1	Vernal pools, valley and foothill grassland; alkaline/annual herb/March–June/60–2,100	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
Nama stenocarpum	Mud nama	None/ None/ None	2B.2	Marshes and swamps, lake margins, riverbanks/annual-perennial herb/January–July/ 15–1,650	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
Nemacaulis denudata var. *denudata*	Coast woolly-heads	None/ None/ None	1B.2	Coastal dunes/annual herb/ April–September/<330	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
Orcuttia californica	California Orcutt grass	FE/SE/ MSCP NE	1B.1	Vernal pools/annual herb/ April–August/50–2,200	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
Orobanche parishii ssp. *brachyloba*	Short-lobed broom-rape	None/ None/ None	4.2	Coastal bluff scrub, coastal dunes, coastal scrub; sandy/ perennial herb parasitic/ April –October/<1,000	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.

Table 6
Special-Status Plant Species Not Detected
or with Low or No Potential to Occur on the Project Site

Scientific Name	Common Name	Status Federal/ State/ NCCP	CRPR	Primary Habitat Associations/Life Form/ Blooming Period/Elevation Range (ft amsl)	Status on Site or Potential to Occur
Phacelia ramosissima var. *austrolitoralis*	South coast branching phacelia	None/ None/ None	3.2	Chaparral, coastal dunes, coastal scrub, coastal salt marshes and swamps; sandy, sometimes rocky/perennial herb/March–August/20–1,000	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
Phacelia stellaris	Brand's star phacelia	FC/ None	1B.1	Coastal dunes, coastal scrub/ annual herb/March–June/ <1,300	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
Piperia cooperi	Chaparral rein orchid	None/ None/ None	4.2	Chaparral, cismontane woodland, valley and foothill grassland/perennial herb/ March–June/50–5,200	Absent. No suitable habitat exists on site and this species would have been observed during the focused plant survey.
Psilocarphus brevissimus var. *multiflorus*	Delta woolly-marbles	None/ None/ None	4.2	Vernal pools/annual herb/ May–June/30–1,650	Absent. Although the project site is located within the elevation range for this species, there are no vernal pools on site.
Quercus dumosa	Nuttall's scrub oak	None/ None/ None	1B.1	Chaparral, coastal scrub, closed-cone coniferous forest; sandy, clay loam/evergreen shrub/February–April/50–1,300	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
Senecio aphanactis	Chaparral ragwort	None/ None/ None	2B.2	Chaparral, cismontane woodland, coastal scrub; sometimes alkaline/annual herb/January–April/50–2,630	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.

Table 6
Special-Status Plant Species Not Detected
or with Low or No Potential to Occur on the Project Site

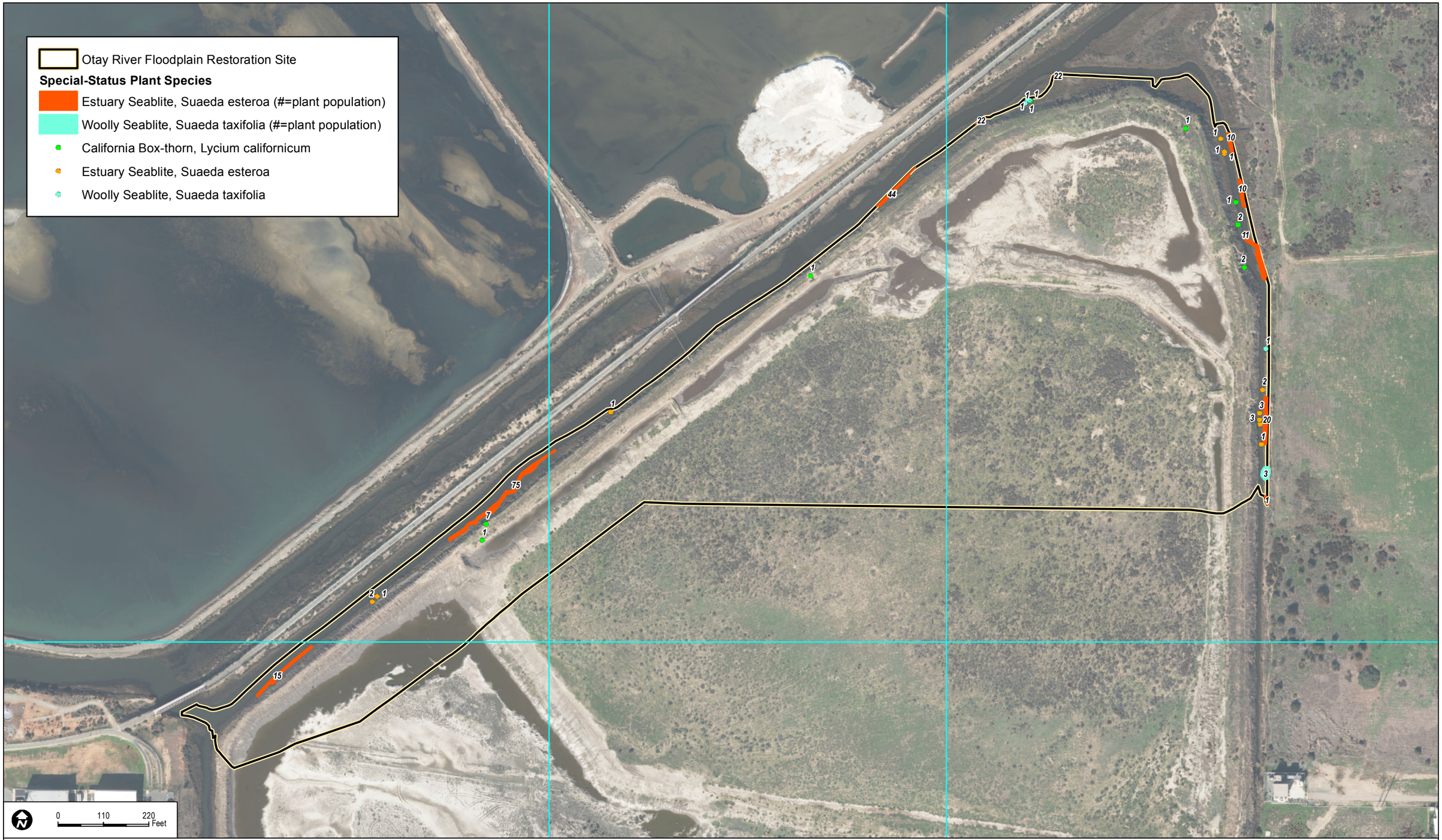
Scientific Name	Common Name	Status Federal/ State/ NCCP	CRPR	Primary Habitat Associations/Life Form/ Blooming Period/Elevation Range (ft amsl)	Status on Site or Potential to Occur
Triquetrella californica	Coastal triquetrella	None/ None/ None	1B.2	Coastal bluff scrub, coastal scrub; soil/moss/NA/30–330	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.

NCCP = Natural Communities Conservation Plan; ft amsl = feet above mean sea level; NA = not applicable
FC: Federal candidate
FE: Federally listed as endangered
FT: Federally listed as threatened
SE: State-listed as endangered

Multiple Species Conservation Program (MSCP):
MSCP: Covered by the MSCP
MSCP NE: Narrow endemic species

CRPR: California Rare Plant Rank
1B: Plants rare, threatened, or endangered in California and elsewhere
2B: Plants rare, threatened, or endangered in California, but more common elsewhere
3: Plants about which we need more information – a review list
4: Plants of limited distribution – a watch list

Threat Rank
.1 – Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
.2 – Fairly threatened in California (20%–80% occurrences threatened/moderate degree and immediacy of threat)
.3 – Not very threatened in California (<20% of occurrences threatened/low degree and immediacy of threat or no current threats known)



AERIAL SOURCE: SANDAG IMAGERY 2014

DUDEK

Figure 7

Otay River Floodplain Restoration Site Special-Status Plant Species

Biological Resources Existing Conditions Technical Report for the Otay River Estuary Restoration Project

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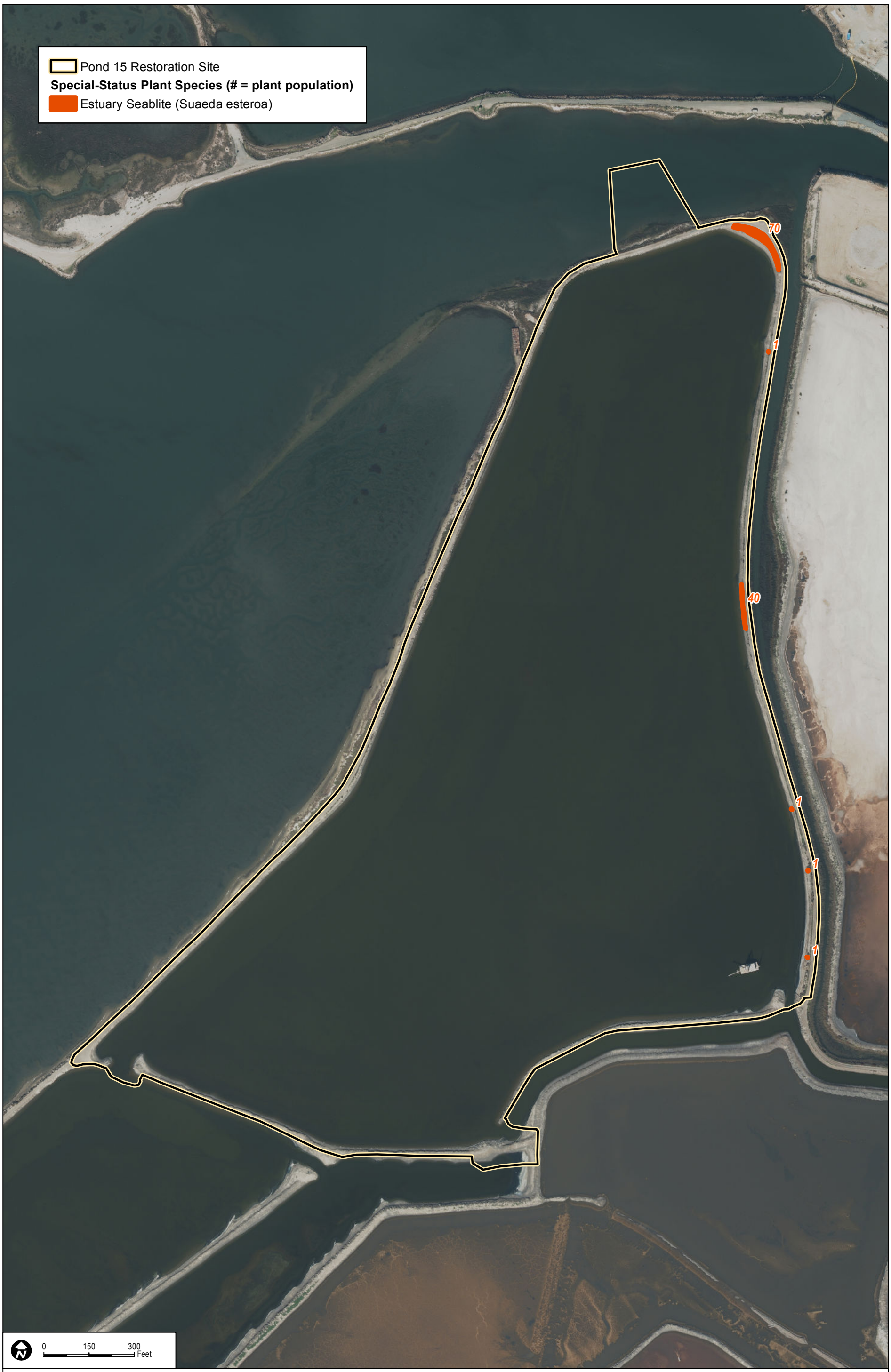

AERIAL SOURCE: SANDAG IMAGERY 2014

FIGURE 8

Pond 15 Restoration Site Special-Status Plant Species

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Biological Resources Existing Conditions Technical Report for the Otay River Estuary Restoration Project

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FIGURE 9

Ponds 22 and 23 Site Special-Status Plant Species

Biological Resources Existing Conditions Technical Report for the Otay River Estuary Restoration Project

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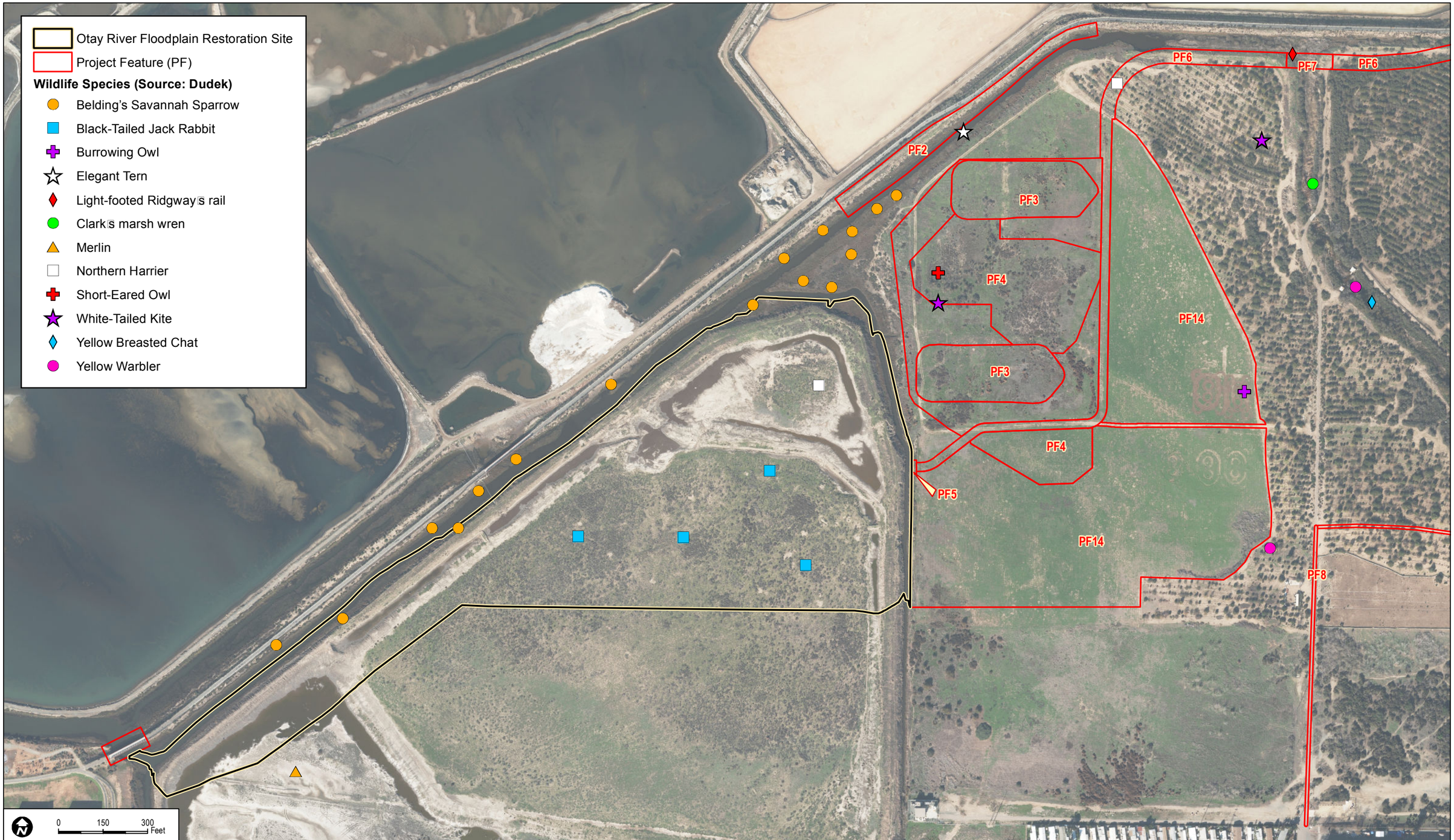

AERIAL SOURCE: SANGIS IMAGERY 2014

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Figure 10

Otay River Floodplain Restoration Site Special Status Wildlife Species

Biological Resources Existing Conditions Technical Report for the Otay River Estuary Restoration Project

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4.3.2 Special-Status Wildlife Species

4.3.2.1 Otay River Floodplain Site

Nine special-status wildlife species were detected within the Otay River Floodplain Site or adjacent to it or the project features during the 2011 surveys: northern harrier, white-tailed kite (*Elanus leucurus*), elegant tern, gull-billed tern, light-footed Ridgway's rail, burrowing owl, short-eared owl (*Asio flammeus*), Belding's Savannah sparrow, and San Diego black-tailed jackrabbit (*Lepus californicus bennettii*) (Figure 10, Otay River Floodplain Restoration Site Special-Status Wildlife Species). Six special-status wildlife species were detected off site to the west or in the Otay River drainage immediately off site during the 2011 surveys: merlin (*Falco columbarius*), northern harrier, white-tailed kite, Clark's marsh wren (*Cistothorus palustris clarkae*), yellow warbler (*Dendroica petechia brewsteri*), and yellow-breasted chat (*Icteria virens*) (Figure 10). Focused survey reports for California gnatcatcher and light-footed Ridgway's rail are provided in Appendix C and Appendix D, respectively.

Observed at the Otay River Floodplain Site

Belding's Savannah Sparrow

Belding's Savannah sparrow, a State-listed endangered species, is found year-round in Southern California coastal salt marshes and is endemic to salt marshes. Its habitat, and in turn its population size, has been greatly reduced by the impacts of increasing human populations (Zembal and Hoffman 2010).

Belding's Savannah sparrow makes its nests in dense pickleweed (swampfire) in small, semi-colonial breeding territories. They are secretive birds and forage throughout the marsh habitats, often far from their nests (Zembal and Hoffman 2010).

During focused surveys for Belding's Savannah sparrow, 18 individuals were observed in the disturbed habitat and southern coastal salt marsh habitats in the channel that runs along the northwest boundary of the project site. A number of these locations are outside the boundary of the Otay River Floodplain Site, but Belding's Savannah sparrow could use on-site areas (Figure 11, Otay River Floodplain Restoration Site Special-Status Nesting Locations).

Burrowing Owl

Burrowing owl inhabits open grasslands with low-level vegetation, and occurs in areas with finer soils without many rocks. It will take a vacant burrow created by a small mammal and enlarge it to create a nesting chamber. It will also remove any vegetation immediately around the burrow and raise the opening to provide a raised perch for watching for predators. It feeds primarily on

arthropods, small mammals and birds, some amphibians, and some reptiles. Burrowing owl hunts mainly at night, but sometimes during the day (Haug et al. 1993).

Burrowing owls are active year-round in Southern California and winter in Northeastern California in suitable habitat. Breeding occurs from October through March, during which time the male prepares a burrow and the female lays one clutch of six to 11 eggs, incubating them for 28 to 30 days (Haug et al. 1993).

During focused species surveys for burrowing owl, one individual was observed in the eastern part of the project site, outside of the Otay River Floodplain Site but within areas that are part of the project features. It was observed flying from a burrow, but was only seen once. Although it was observed at a burrow, there was very little sign, and a repeat visit determined that no additional sign was present.

Elegant Tern

Elegant tern inhabits coastal and island estuaries and sandy habitats in Southern California, Baja California, and Mexico. It feeds on schooling fish species, primarily northern anchovy (*Engraulis mordax*), and rarely on crustaceans, by flying above salt and estuarine waters and diving to catch prey (Burness et al. 1999).

The breeding distribution of elegant tern is limited to a few isolated mainland or island colonies. Pair formation occurs toward the end of migration and at the nesting colony. In San Diego Bay, most pairs are formed by their arrival in early April. Nesting in San Diego Bay begins shortly after arrival in dense, preexisting groups of mixed species of gulls and terns. They nest in flat, sandy habitat with good visibility on marine islands or in estuaries. The nest itself is formed by scraping soft sediments into depressions or by polishing harder sediments and forming a rim out of nearby debris. Elegant terns usually lay one egg that camouflages with the surrounding ground, and they incubate for approximately 26 days (Burness et al. 1999).

During the focused species surveys, one elegant tern was observed in the southern coastal salt marsh habitat hunting along the channel.

AERIAL SOURCE: BING MAPPING SERVICE

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Figure 11

Otay River Floodplain Restoration Site Special Status Nesting Locations

Biological Resources Existing Conditions Technical Report for the Otay River Estuary Restoration Project

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Gull-Billed Tern

Gull-billed tern breeds locally in Southern California, south to Baja California Norte, and has a population size estimated to be 600 to 700 pairs (Molina 2008). Within California, breeding locations include a colony at the Salton Sea and a small colony in San Diego Bay. Gull-billed tern nests on small, bare islets of fine clay within the impoundments at the Salton Sea and isolated sections of earthen levees at the South Bay Salt Works in south San Diego Bay (Molina 2008). It forages along inshore marine habitats such as shallow bays, mudflats, sandy beaches, and dunes, as well as along freshwater drainages and over agricultural fields and scrub habitats (Molina 2008). Its diet varies from small fish to a variety of insects, lizards, and crabs (Molina 2008).

During focused surveys, a number of gull-billed terns were observed flying over or possibly foraging on the site. Although they were not observed actively foraging, the species is known to forage in open fields for invertebrate prey.

Light-Footed Ridgway's Rail

Light-footed Ridgway's rail inhabits coastal wetlands in Southern California and northern Baja California. Predators such as raptors and degradation of wetlands have led to the decline of the species. Light-footed Ridgway's rails lay four to eight eggs (Zembal et al. 2007). The prey of this species typically consists of crustaceans (Eddleman and Conway 1998).

During the focused species surveys for light-footed Ridgway's rail, one individual was observed in the far northeastern portion of the site within the Otay River channel (Appendix D). This location is not within the boundary of the Otay River Floodplain Site, but it is adjacent to one of the project features.

Northern Harrier

Northern harrier inhabits meadows, grasslands, open rangelands, desert sinks, and fresh and saltwater emergent wetlands; this species is rarely found in wooded areas. Northern harrier nests in shrubby vegetation on the ground, usually at the edge of a marsh, and feeds on voles and other small mammals, birds, frogs, small reptiles, crustaceans, and insects; northern harriers rarely feed on fish (Zeiner et al. 1990).

Northern harrier is a permanent resident in the northeastern plateau and coastal areas of California, and a less common resident of the Central Valley. This species is a widespread winter resident and migrant in suitable habitat. Northern harriers breed up to 5,700 feet elevation in the Central Valley and Sierra Nevada, and up to 3,600 feet elevation in northeastern California from April through September, with peak activity in June and July (Zeiner et al. 1990).

During the focused surveys for northern harrier, one to three individuals were observed hunting over the project site in *Isocoma* scrub habitat and disturbed habitat. The species was observed frequently, but never exhibited nesting or territorial behavior. Thus, although the species was observed during almost every survey visit, no breeding activity was detected. The species was also observed off site.

Short-Eared Owl

Short-eared owl inhabits marshes, grasslands, and tundra habitats in North America and Eurasia. It is active during the day and night, and hunts low over the ground. It locates prey mainly by following noises made by the prey, but also by sight. Prey includes small mammals, especially voles, and sometimes birds (Wiggins et al. 2006).

Short-eared owl breeds from late March until mid-June. Pair formation begins in the middle of February, and it selects nests based on food abundance, nesting cover, and area. It constructs nests on the ground by scraping a bowl and lining it with grasses and downy feathers in dry areas with dead and matted-down vegetation. Short-eared owls lay one to 11 eggs, and the female incubates them for 21 to 37 days (Wiggins et al. 2006).

During the focused species surveys, one short-eared owl was observed in the mulefat scrub habitat in the northern one-third of the project site within one of the project features. It was only observed one time, so was assumed to not be breeding on site.

White-Tailed Kite

White-tailed kite is found in open grasslands and other similar habitats. It hunts for food by hovering while visually looking for small mammals on the ground and diving to catch prey. It prefers hunting over ungrazed grasslands, grassy wetlands, fence rows, and irrigation ditches near to grazed lands (Dunk 1995).

White-tailed kite breeds from mid-February through early July. Pairs can be found together year-round, although more pairs form from December through August. They nest in 3- to 50-meter-tall trees that are isolated or in forested areas near grasslands. Nests are constructed in the upper one-third of the trees out of small twigs and are lined with grass, hay, or leaves. The females lay and incubate three to six eggs for 30 to 32 days (Dunk 1995).

During the focused species surveys, two white-tailed kites were observed in the disturbed habitat in a project feature, and one white-tailed kite was observed in the disturbed habitat off site to the east of the project site within or near project features.

San Diego Black-Tailed Jackrabbit

San Diego black-tailed jackrabbit occupies many diverse habitats, but primarily is found in arid regions supporting short-grass habitats. Jackrabbits typically are not found in high grass or dense brush where it is difficult for them to move easily, and the openness of open scrub habitat probably is preferred over dense chaparral. Jackrabbits are common in grasslands that are overgrazed by cattle, and they are well adapted to using low-intensity agricultural habitats. In fact, to a point, drought and overgrazing may create better habitat for black-tailed-jackrabbits. Jackrabbit populations exhibit large fluctuations, and the risk of extirpation from marginal isolated habitat patches probably is high (Hall 1981). Suitable habitat linkages, including agriculture, may be important for colonization of unoccupied habitat patches.

Throughout the focused species surveys, four San Diego black-tailed jackrabbits were observed in the *Isocoma* scrub habitat.

Observed Off Site

A number of special-status wildlife species were observed in off-site areas and could occur on site. Six special-status species were observed off site, including northern harrier and white-tailed kite, which are discussed above and were also observed on site.

Merlin

Merlins inhabit forest and prairie habitats of North America, Europe, and Asia. They feed primarily on small to medium-sized birds that are caught in mid-air during short, quick flights. Because of their small size, they are unable to catch larger birds (Warkentin et al. 2005).

Merlins breed from late April through July, forming pairs 1 to 2 months before nesting. They select nesting sites in riparian and coniferous trees with good views of the surrounding area near open prairie habitats. Merlins do not construct nests, but make changes to preexisting hawk or falcon nests. They lay one to eight eggs that are incubated for 28 to 32 days (Warkentin et al. 2005).

During the focused species surveys, one Merlin was observed in the saltpan/mudflat habitat off site to the south of the project site.

Clark's Marsh Wren

Clark's marsh wren inhabits marshland habitats with cattails and bulrush, within which it constructs nests. It feeds on small insects and spiders found near or at the surface of the water,

and on vegetation stems and leaves. They are rarely seen because they forage so close to the water in dense vegetation (Kroodsma and Verner 1997).

Marsh wren nests from early April through mid-August. It constructs a nest of cattail, sedge, or grass woven to form a completely enclosed nest with a single entrance above the equator of the nest. Males construct many nests that are not used by the female. Females usually lay four to six chocolate-colored eggs, and the female incubates them for 12 to 14 days (Kroodsma and Verner 1997).

During the focused species surveys, one Clark's marsh wren was observed in the Otay River channel off site to the east.

Yellow-Breasted Chat

Yellow-breasted chat occurs in low, dense vegetation in riparian habitats along streams, swamps, and ponds. They range in south-eastern North America, some places in California and the northwest, and northern Central America. They hunt insects and spiders and will feed on fruits and berries when available (Eckerle and Thompson 2001).

Yellow-breasted chat breeds from mid-May through mid-August, forming pairs at the breeding grounds in the beginning of May. Nests are constructed by females near the ground in dense and concealing vegetation. They are made out of grasses, leaves, bark, and weed stems, and are lined with fine grasses, pine needles, and sometimes roots and hair. Females lay three to five eggs and incubate them for 10 to 12 days (Eckerle and Thompson 2001).

During the focused species surveys, one yellow-breasted chat was observed in the riparian habitat off site to the east of the project site.

Yellow Warbler

Yellow warbler inhabits wet, deciduous riparian habitats containing willow species. They occur in Southern California, Central Mexico, Central America, and most of northern North America. They will sometimes consume wild fruits, but feed primarily on insects by gleaning them from vegetation or by hovering and taking them from vegetation (Lowther et al. 1999).

Yellow warbler breeds from late May through the end of July, forming pairs within 3 days of arriving in breeding locations in northern North America. Nests are formed in vegetation forks from 0 to 14 meters above the ground. They construct their nests out of grasses and bark strips, and the outside is covered in plant down and fine fibers. Females lay four to five eggs, and the female incubates them for 11 to 12 days (Lowther et al. 1999).

During the focused species surveys, two yellow warblers were observed near the project site. One was observed in the riparian habitat off site to the east of the project site.

Not Observed at the Otay River Floodplain Site

Least Bell's Vireo

Least Bell's vireo occurs in riparian habitats in California and Baja California. It feeds on a wide variety of insects primarily by gleaning prey from vegetation, but also by hovering and sometimes by chasing and capturing prey in flight. Foraging occurs mainly in the lower to middle levels of vegetation (Kus 2002).

Breeding begins in mid- to late-March and continues through late September. Least Bell's vireo constructs nests in dense vegetation that is 2.8 to 5 meters tall, especially in willows, mulefat (*Baccharis salicifolia*), California wild rose (*Rosa californica*), poison oak (*Toxicodendron diversilobum*), mugwort (*Artemisia douglasiana*), and cottonwood species. The nests are an open cup placed in a tree or shrub, and are constructed out of pieces of soft plants, leaves, bark, and spider webs. Three to four eggs are laid and are incubated by both sexes for approximately 14 days (Kus 2002).

No least Bell's vireos were observed during any focused species surveys.

California Gnatcatcher

California gnatcatcher is almost exclusively associated with coastal sage scrub habitat, especially in habitats with California sagebrush as the predominant plant species. It can occur in chaparral, riparian, and disturbed habitats. It ranges from southern coastal California into most of Baja California, and is found in elevations below 500 meters above sea level. California gnatcatcher feeds primarily on small, less-active insects by gleaning them from leaves and sometimes by fly-catching (Atwood and Bontrager 2001).

Breeding for California gnatcatcher begins in February and lasts through July. Males select nesting sites and both sexes build the nest in a fork of two branches in a plant. The clutch of two to five eggs is incubated for approximately 14 days (Atwood and Bontrager 2001).

During the focused species surveys for California gnatcatcher, no individuals were observed in the project site, but at least one pair was observed off site to the southeast, at least 1,000 feet away.

Focused surveys based on the most recent protocols were conducted within the Otay River Floodplain Site for a number of special-status species, and the results are provided in Tables 7

and 8. Special-status wildlife species that were observed or have potential to occur on the Otay River Floodplain Site are listed in Table 7. Special-status wildlife species with low or no potential to occur, based on location and conditions, are provided in Table 8.

Table 7
Special-Status Wildlife Observed or Potentially Occurring on the Otay River Floodplain Site

Scientific Name	Common Name	Status Federal/ State/MSCP	Primary Habitat Associations	Status On Site or Potential to Occur
Reptiles				
Phrynosoma blainvillii	Coast (San Diego) horned lizard	None/SSC/ MSCP	Coastal sage scrub, annual grassland, chaparral, oak and riparian woodland, coniferous forest.	Moderate potential to occur within the sandy soils and in the *Isocoma* scrub areas.
Aspidoscelis hyperythra	Orange-throated whiptail	None/SSC/ MSCP	Coastal sage scrub, chaparral, grassland, juniper and oak woodland.	Moderate potential to occur within the sandy soils and in the *Isocoma* scrub areas.
Thamnophis hammondii	Two-striped garter snake	None/SSC/ Not Covered	Streams, creeks, pools, streams with rocky beds, ponds, lakes, vernal pools.	Moderate potential. Suitable habitat is present within the freshwater portion of the Otay River channel and Nestor Creek.
Birds				
Athene cunicularia (burrow sites and some wintering sites)	Burrowing owl	BCC/SSC/ MSCP	Grassland, lowland scrub, agriculture, coastal dunes, and other artificial open areas.	Observed. Has been recorded in the region. Numerous holes for their use and sandy soils. However, vegetation grows so tall there is little vantage point for them to use. One owl observed once at the beginning of the breeding season about 1,000 feet to the east. It did not stay to breed. Three were observed nearby in off-site surveys conducted in 2011 (Southwest Wetlands Interpretive Association data).
Asio flammeus	Short-eared owl	None/SSC/ Not Covered	Open areas with few trees, such as grasslands, prairies, dunes, meadows, irrigated lands, saline and fresh emergent wetlands. Breeds in coastal areas in Del Norte and Humboldt Counties, San Francisco Bay Delta, northeastern Modoc plateau, east side of Sierra Nevada from Lake Tahoe south to Inyo	Observed. The species was observed once during other focused surveys, resting under a shrub, in March 2011. It was only observed the one time.

Table 7
Special-Status Wildlife Observed or Potentially Occurring on the Otay River Floodplain Site

Scientific Name	Common Name	Status Federal/ State/MSCP	Primary Habitat Associations	Status On Site or Potential to Occur
			County, and San Joaquin Valley. Uncommon winter migrant in Southern California, and widespread during winter in Central Valley and coastline.	
Circus cyaneus (nesting)	Northern harrier	None/SSC/ MSCP	Open wetlands (nesting), pasture, fields, dry uplands, grasslands, rangelands, coastal sage scrub.	Observed. Suitable foraging areas are present on site. Nesting could occur within the *Isocoma* scrub or possibly the disturbed habitat. One to three harriers were detected during almost every site visit. Observed foraging. In surveys conducted nearby from 2010–2012, west of the site, 42 observations were recorded (SDNHM and ARA 2011). No nesting was detected, but a nesting attempt was observed in 2012 off site near the dirt access road for the sewer pump station.
Cistothorus palustris clarkae	Clark's marsh wren	None/SSC/ Not Covered	Narrowly distributed along the coast of Southern California. Restricted to freshwater and brackish marshes dominated by bulrushes or cattails.	Observed. Eleven individuals detected within the Otay River channel and San Diego Bay coastline immediately off site to the west. Other individuals could be present within suitable habitat in the channel.
Dendroica petechia brewsteri (nesting)	Yellow warbler	None/SSC/ Not Covered	Nests in lowland and foothill riparian woodlands dominated by cottonwoods, alders, and willows; winters in a variety of habitats.	Detected within the eucalyptus on site, and within the willow habitat off site to the east within the Otay River.
Egretta rufescens	Reddish egret	None/None/ MSCP	Saltmarsh, mudflats, coastal lagoons.	High potential to occur on site due to suitable saltmarsh, mudflat, and salt pan present on site.
Elanus leucurus (nesting)	White-tailed kite	None/FP/Not Covered	Open grasslands, savannah-like habitats, agriculture, wetlands, oak woodlands, riparian.	Observed. Suitable foraging areas are present on site. Nesting could occur within the eucalyptus trees on site or the riparian habitat adjacent to the site. Detected during a number of site visits and in nearby areas. Observed foraging; no nesting was detected.

Table 7
Special-Status Wildlife Observed or Potentially Occurring on the Otay River Floodplain Site

Scientific Name	Common Name	Status Federal/ State/MSCP	Primary Habitat Associations	Status On Site or Potential to Occur
Icteria virens (nesting)	Yellow-breasted chat	None/SSC/ Not Covered	Dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush.	Detected within the riparian habitat off site to the east within the Otay River.
Rallus obsoletus levipes	Light-footed Ridgway's rail	FE/SE, FP/ MSCP	Coastal saltmarsh.	Observed. Suitable marsh habitat within the channel of the Otay River. One bird was detected in an area just off site of the Otay River Floodplain Site during focused surveys.
Falco columbarius	Merlin	None/WL/ Not Covered	Coastlines, open grasslands, savannahs, woodlands, lakes, wetlands, montane hardwood-conifer habitats, ponderosa pine. Found throughout western half of California below 4,920 feet.	Observed. Observed perched just off site on a post at the western end of the site. It was only observed once.
Falco peregrinus anatum	American peregrine falcon	BCC/DL/ MSCP	Nests on cliffs, buildings, and bridges; forages in wetlands, riparian, meadows, and croplands, especially where waterfowl are present.	High potential to occur on site for foraging. Species is well known to forage on shorebirds during the winter (USFWS 2006b).
Gelochelidon nilotica vanrossemi	Western gull-billed tern	BCC/SSC/ Not Covered	Nests on protected spits, berms, and islands composed of sand or other small material. Forages primarily in freshwater ponds and flooded agricultural fields. Forages for small fish, crayfish, lizards, butterflies, beetles, crickets, weevils, and occasionally the young chicks of other shorebirds.	Observed. A number of individuals of the species were observed possibly foraging over or flying over the site during focused surveys for other species. Because the species was observed briefly in flight over the site, it was not mapped.
Passerculus sandwichensis beldingi	Belding's Savannah sparrow	None/SE/ MSCP	Saltmarsh, Pacific swampfire.	Observed. Approximately 18 birds were observed on site or within 500 feet, and many were observed nearby off site within the San Diego Bay NWR from 2010 to 2012 (SDNHM and ARA 2011) (Figure 11).

Table 7
Special-Status Wildlife Observed or Potentially Occurring on the Otay River Floodplain Site

Scientific Name	Common Name	Status Federal/ State/MSCP	Primary Habitat Associations	Status On Site or Potential to Occur
Haliaeetus leucocephalus (nesting and nonbreeding/ wintering)	Bald eagle	(FD)/SE/ MSCP	Seacoasts, rivers, swamps, large lakes; winters at large bodies of water in lowlands and mountains.	Could winter or occur on site in transit for foraging; a juvenile was photographed on site in 2013 (Collins, pers. comm. 2014).
Rynchops niger	Black skimmer	BCC/SSC/ Not Covered	Nests on barrier beaches, shell banks, spoil islands, and salt marsh; forages over open water; roosts on sandy beaches and gravel bars.	High potential to occur. Has been observed nearby during 2010 to 2012 surveys, and suitable foraging habitat is present within the lower reaches of the Otay River channel (SDNHM and ARA 2011; USFWS 2006b) (Figure 11).
Chlidonias niger	Black tern	None/SSC/ Not Covered	Freshwater marsh with emergent vegetation; in the Central Valley primarily breed and forage in rice fields and other flooded agricultural fields with weeds and other residual aquatic vegetation.	Moderate potential to occur. Four individuals were observed nearby in off-site areas during 2012 focused surveys (Southwest Wetlands Interpretive Association data). Limited foraging habitat on the project site (SDNHM and ARA 2011).
Branta bernicla	Brant	None/SSC/ Not Covered	Breeding habitat includes the edges of salt marshes in the low Arctic Region. Migratory habitats include shallow marine lakes. Winter range includes intertidal mudflats in shallow marine alters with abundant eelgrass and/or green algae.	Moderate potential to occur. Could occur in the area during winter months, and was observed nearby during surveys conducted from 2010 to 2012. Limited habitat occurs on site (SDNHM and ARA 2011; USFWS 2006b).
Larus californicus	California gull	None/WL/ Not Covered	Nests in alkali and freshwater lacustrine habitats; abundant in coastal and interior lowlands during nonbreeding period.	High potential to occur. Suitable habitat occurs on the north and west portions of the site. Species also observed during surveys conducted nearby off site in 2011 and 2012 (SDNHM and ARA 2011; USFWS 2006b).
Eremophila alpestris actia	California horned lark	None/WL/ Not Covered	Open habitats, grassland, rangeland, shortgrass prairie, montane meadows, coastal plains, fallow grain fields.	High potential to occur on site, especially during winter. Could breed on site (USFWS 2006b).

Table 7
Special-Status Wildlife Observed or Potentially Occurring on the Otay River Floodplain Site

Scientific Name	Common Name	Status Federal/ State/MSCP	Primary Habitat Associations	Status On Site or Potential to Occur
Sternula [=Sterna] antillarum browni (nesting colony)	California least tern	FE/SE/ MSCP	Coastal waters, estuaries, large bays and harbors, mudflats; nests on sandy beaches.	High potential. Suitable flat areas are present and the species is known in the area. Salt pans are present. Known to forage in lower portions of the Otay River channel (SDNHM and ARA 2011; USFWS 2006b) (Figure 11).
Thalasseus [=Sterna] elegans (nesting colony)	Elegant tern	BCC/WL/ MSCP	Coastal waters, estuaries, large bays and harbors, mudflats.	Observed. Suitable flat areas are present and the species is known in the area (salt pans are present). Observed flying over the site a number of times but did not forage on site.
Hydroprogne caspia	Caspian tern	BCC/None/ Not Covered	Coastal estuarine, salt marsh, and barrier islands; nests on islands in rivers and salt lakes.	High potential to occur. Known to reside year-round in coastal San Diego County. Suitable marsh habitat occurs on the north and west portions of the site. Was observed nearby during surveys in 2011 and 2012. Known to forage in the lower portions of the Otay River channel (SDNHM and ARA 2011; USFWS 2006b).
Accipiter cooperii (nesting)	Cooper's hawk	None/WL/ MSCP	Riparian and oak woodlands, montane canyons.	High potential to occur within the willows that are adjacent to the site. Frequently roost and forage in neighboring suburban areas (Collins, pers. comm. 2014). High potential to forage on site and nest in adjacent riparian areas to the east. One was observed flying over the area but did not land or pause on site. It may have been hunting or may have been in transit (USFWS 2006b).
Passerculus sandwichensis rostratus (nonbreeding/ wintering)	Large-billed Savannah sparrow	None/SSC/ MSCP	Saltmarsh, pickleweed (swampfire).	High potential to occur on site during winter due to presence of suitable habitat.

Table 7
Special-Status Wildlife Observed or Potentially Occurring on the Otay River Floodplain Site

Scientific Name	Common Name	Status Federal/ State/MSCP	Primary Habitat Associations	Status On Site or Potential to Occur
Numenius americanus (nesting)	Long-billed curlew	BCC/WL/ MSCP	Nests in upland shortgrass prairies and wet meadows in northeast California; winters in coastal estuaries, open grasslands, and croplands.	High potential to occur on site during the winter for foraging within the marsh areas along the Otay River channel (USFWS 2006b).
Charadrius alexandrinus nivosus (nesting)	Western snowy plover (coastal population)	FT,BCC/ SSC/MSCP	Nests primarily on coastal beaches, in flat open areas, with sandy or saline substrates; less commonly in salt pans, dredged spoil disposal sites, dry salt ponds, and levees.	High potential. Suitable flat areas are present and the species is known for the area. Salt pans are present (USFWS 2006b) (Figure 11).
Plegadis chihi (rookery site)	White-faced ibis	None/WL/ MSCP	Nests in marsh; winter foraging in shallow lacustrine waters, muddy ground of wet meadows, marshes, ponds, lakes, rivers, flooded fields, and estuaries.	High potential to occur on site during the winter for foraging within the salt pond bottom (USFWS 2006b).
Mammals				
Taxidea taxus	American badger	None/SSC/ MSCP	Dry, open, treeless areas; grasslands; coastal sage scrub.	Moderate potential due to sandy soils. No signs of digging were observed.
Chaetodipus californicus femoralis	Dulzura pocket mouse	None/SSC/ Not Covered	Coastal sage scrub, chaparral, riparian-scrub ecotone; more mesic areas.	Moderate potential due to presence of sandy soils and *Isocoma* scrub habitat.
Chaetodipus fallax fallax	Northwestern San Diego pocket mouse	None/SSC/ Not Covered	Coastal sage scrub, grassland, sage scrub-grassland ecotones, sparse chaparral; rocky substrates, loams, and sandy loams.	Moderate potential due to presence of sandy soils and *Isocoma* scrub habitat.
Perognathus longimembris pacificus	Pacific pocket mouse	FE/SSC/ Not Covered	Grassland, coastal sage scrub with sandy soils; along immediate coast.	Moderate potential due to presence of sandy soils and *Isocoma* scrub habitat. Known locations are a long distance from the site (Camp Pendleton and southern Orange County).
Neotoma lepida intermedia	San Diego desert woodrat	None/SSC/ Not Covered	Coastal sage scrub, chaparral, pinyon-juniper woodland with rock outcrops, cactus thickets, dense undergrowth.	Moderate potential due to presence of sandy soils and *Isocoma* scrub habitat.

Table 7
Special-Status Wildlife Observed or Potentially Occurring on the Otay River Floodplain Site

Scientific Name	Common Name	Status Federal/ State/MSCP	Primary Habitat Associations	Status On Site or Potential to Occur
Lepus californicus bennettii	San Diego black-tailed jackrabbit	None/SSC/ Not Covered	Arid habitats with open ground; grasslands, coastal sage scrub, agriculture, disturbed areas, rangelands.	Observed. Several jackrabbits were detected on site during surveys.

Federal Designations:
BCC Fish and Wildlife Service: Birds of Conservation Concern
(FD) Federally delisted; monitored for 5 years
FE Federally listed as endangered
FT Federally listed as threatened
State Designations:
SSC California Species of Special Concern
FP California Department of Fish and Wildlife Protected and Fully Protected Species
DL State delisted
SE State listed as endangered
WL California Department of Fish and Wildlife Watch List
Multiple Species Conservation Program (MSCP):
MSCP Covered by the MSCP
Not Covered Not covered by the MSCP

Table 8
Special-Status Wildlife with Low Potential or No Potential to Occur on the Otay River Floodplain Site

Scientific Name	Common Name	Status Federal / State / MSCP	Primary Habitat Associations	Status On Site or Potential to Occur
Amphibians				
Spea [=Scaphiopus] hammondi	Western spadefoot	None/SSC/ Not Covered	Most common in grasslands, coastal sage scrub near rain pools or vernal pools; riparian habitats.	Low potential. Small amount of suitable habitat is present within the cismontane alkali marsh habitat.
Reptiles				
Salvadora hexalepis virgultea	Coast patch-nosed snake	None/SSC/ Not Covered	Chaparral, washes, sandy flats, rocky areas.	Low potential. Small amount of suitable habitat is present within the *Isocoma* scrub, but there are no rocky areas within the habitat.
Plestiodon skiltonianus interparietalis	Coronado Island skink	None/SSC/ Not Covered	Grassland, woodlands, pine forests, chaparral. Prefers rocky areas near streams with lots of vegetation but is also found away from water.	Low potential. Small amount of suitable habitat is present within the *Isocoma* scrub, but there are no rocky areas within the habitat.

Table 8
Special-Status Wildlife with Low Potential or No Potential to Occur on the Otay River Floodplain Site

Scientific Name	Common Name	Status Federal / State / MSCP	Primary Habitat Associations	Status On Site or Potential to Occur
Crotalus ruber	Northern red-diamond rattlesnake	None/SSC/ Not Covered	Variety of shrub habitats where there is heavy brush, large rocks, or boulders.	Low potential. Small amount of suitable habitat is present within the *Isocoma* scrub, but there are no rocky areas within the habitat.
Birds				
Pelecanus erythrorhynchos	American white pelican	None/SSC/ Not Covered	Nests colonially on isolated islands in freshwater lakes with sandy, earthen, or rocky substrates; minimal disturbance from humans or mammalian predators required, as is close access to productive foraging areas; forages on inland marshes, lakes, or rivers; winters on shallow coastal bays, inlets, and estuaries.	Low potential to occur due to lack of freshwater habitat and the site's proximity to urbanization (USFWS 2006b).
Laterallus jamaicensis coturniculus	California black rail	BCC/ST/ Not Covered	Saline, brackish, and fresh emergent wetlands.	Low potential due to lack of extensive emergent habitat. Species was recorded in the region but is assumed to be extirpated from San Diego County.
Pelecanus occidentalis californicus (nesting colony and communal roosts)	California brown pelican	FD/DL/ MSCP	Open sea, large water bodies, coastal bays, and harbors.	Low potential due to lack of extensive open water. Species could perch on posts located within the site or could occur within the Otay River channel, but the channel is relatively narrow. Species does occur within the region, and was observed nearby in surveys conducted in 2011 and 2012 (SDNHM and ARA 2011; USFWS 2006b).

Table 8
Special-Status Wildlife with Low Potential or No Potential to Occur on the Otay River Floodplain Site

Scientific Name	Common Name	Status Federal / State / MSCP	Primary Habitat Associations	Status On Site or Potential to Occur
Polioptila californica californica	Coastal California gnatcatcher	FT/SSC/ MSCP	Coastal sage scrub, coastal sage scrub–chaparral mix, coastal sage scrub–grassland ecotone, riparian in late summer.	Low potential due to lack of suitable habitat. Focused survey conducted nearby in 2006 was negative. Species was detected off site within suitable habitat. It was observed at the southern portion of the area adjacent to the parking lot near Home Depot.
Gavia immer	Common loon	None/SSC/ Not Covered	Extirpated as a breeder from California; winters in coastal waters such as bays, channels, coves, and inlets; also winters inland at large, deep lakes and reservoirs.	Low potential to occur. Range has been limited in California from anthropogenic activities. Known to visit San Diego coastal areas during winter, but lacks habitat on the project site (USFWS 2006b).
Phalacrocorax auritus	Double-crested cormorant	None/WL/ Not Covered	Nests in riparian trees near ponds, lakes, artificial impoundments, slow-moving rivers, lagoons, estuaries, and open coastlines; winter habitat includes lakes, rivers, and coastal areas.	Low potential to occur. Was observed during surveys nearby off site from 2010 to 2012. Limited suitable habitat on site (SDNHM and ARA 2011; USFWS 2006b).
Buteo regalis (nonbreeding/ wintering)	Ferruginous hawk	BCC/WL/ MSCP	Open, dry country; grasslands; open fields; agriculture.	May forage on site during migration or for wintering. Does not breed in the region.
Aquila chrysaetos (nesting and nonbreeding/ wintering)	Golden eagle	BCC/WL/ MSCP	Open country, especially hilly and mountainous regions; grassland, coastal sage scrub, chaparral, oak savannas, open coniferous forest.	Low potential. May forage over the site but no nesting habitat is present.
Ammodramus savannarum (nesting)	Grasshopper sparrow	None/SSC/ Not Covered	Open grassland and prairie, especially native grassland with a mix of grasses and forbs.	Low potential due to lack of suitable grassland habitat.
Vireo bellii pusillus (nesting)	Least Bell's vireo	FE, BCC/SE/ MSCP	Nests in southern willow scrub with dense cover within 1–2 meters of the ground; habitat includes willows, cottonwoods, baccharis, wild blackberry, or mesquite on desert areas.	Low potential due to lack of suitable habitat. Suitable habitat is located off site to the east within the channel of the Otay River, but this habitat is limited. Focused surveys were negative.

Table 8
Special-Status Wildlife with Low Potential or No Potential to Occur on the Otay River Floodplain Site

Scientific Name	Common Name	Status Federal / State / MSCP	Primary Habitat Associations	Status On Site or Potential to Occur
Lanius ludovicianus	Loggerhead shrike	BCC/SSC/ Not Covered	Nests and forages in open habitats with scattered shrubs, trees, or other perches.	Low potential to occur. Limited perching structures and suitable habitat occur across the project site (USFWS 2006b).
Charadrius montanus (nonbreeding/ wintering)	Mountain plover	BCC/SSC/ MSCP	Nests in open, shortgrass prairies or grasslands; winters in shortgrass plains, plowed fields, open sagebrush, and sandy deserts.	Low potential. Does not nest within the region but may forage on site during winter.
Aythya americana	Redhead	None/SSC/ Not Covered	Breeds in relatively deep (>3 feet) permanent or semi-permanent wetlands of at least 1 acre, with about 75% open water and emergent tules, bulrushes (*Scirpus* spp.), and cattails (*Typha* spp.) up to about 3 feet in height; winters in coastal estuaries and large, deep ponds, lakes, and reservoirs of the interior.	Low potential to occur. Limited suitable habitat occurs on the site. Seven individuals were observed nearby off site in surveys conducted from 2011 to 2012, but none were detected in surveys covering the same area in 2010 (SDNHM and ARA 2011; USFWS 2006b).
Accipiter striatus	Sharp-shinned hawk	None/WL/ Not Covered	Nests in coniferous forests, ponderosa pine, black oak, riparian deciduous, mixed conifer, Jeffrey pine; winters in lowland woodlands and other habitats.	Low potential to occur due to lack of suitable habitat on the project site or nearby areas. Could forage on site during migration or winter (USFWS 2006b).
Aimophila ruficeps canescens	Southern California rufous-crowned sparrow	None/WL/ MSCP	Grass-covered hillsides, coastal sage scrub, chaparral with boulders and outcrops.	Low potential due to small amount of habitat in the *Isocoma* scrub area.
Buteo swainsoni (nesting)	Swainson's hawk	BCC/ST/ MSCP	Open grassland, shrublands, croplands.	May forage on site during migration. Does not breed in the region.
Agelaius tricolor (nesting colony)	Tricolored blackbird	BCC/SSC/ MSCP	Nests near fresh water, emergent wetland with cattails or tules; forages in grasslands, woodland, and agriculture.	Low potential. Small amount of suitable habitat is present.

Table 8
Special-Status Wildlife with Low Potential or No Potential to Occur on the Otay River Floodplain Site

Scientific Name	Common Name	Status Federal / State / MSCP	Primary Habitat Associations	Status On Site or Potential to Occur
Mammals				
Nyctinomops macrotis	Big free-tailed bat	None/SSC/ Not Covered	Rugged, rocky canyons.	No roost habitat is present but could forage on site or overhead.
Choeronycteris mexicana	Mexican long-tongued bat	None/SSC/ Not Covered	Desert and montane riparian, desert succulent scrub, desert scrub, and pinyon–juniper woodland. Roosts in caves, mines, and buildings.	No roost habitat is present but could forage on site or overhead.
Felis concolor	Mountain lion	None/None/ MSCP	Occupies a wide variety of habitats: swamps, riparian woodlands, broken country with good cover of brush or woodland.	Low potential due to location in an urbanized area. Cover is limited on site.
Antrozous pallidus	Pallid bat	None/SSC/ Not Covered	Rocky outcrops, cliffs, and crevices with access to open habitats for foraging.	No roost habitat is present but could forage on site or overhead.
Nyctinomops femorosaccus	Pocketed free-tailed bat	None/SSC	Rocky desert areas with high cliffs or rock outcrops.	No roost habitat is present but could forage on site or overhead.
Euderma maculatum	Spotted bat	None/SSC/ Not Covered	Arid deserts and grasslands through mixed conifer forests; roosts in cliffs, feeds over water and along washes.	No roost habitat is present but could forage on site or overhead.
Eumops perotis californicus	Western mastiff bat	None/SSC/ Not Covered	Roosts in small colonies in cracks and small holes, seeming to prefer artificial structures.	No roost habitat is present but could forage on site or overhead.
Lasiurus blossevillii	Western red bat	None/SSC/ Not Covered	Roosts in forests and woodlands from sea level up through mixed conifer forests. Feeding habitat variable and includes grasslands, shrublands, open woodlands and forests, and croplands. Not found in desert areas.	No roost habitat is present but could forage on site or overhead.

Table 8
Special-Status Wildlife with Low Potential or No Potential to Occur on the Otay River Floodplain Site

Scientific Name	Common Name	Status Federal / State / MSCP	Primary Habitat Associations	Status On Site or Potential to Occur
Invertebrates				
Panoquina errans	Wandering (saltmarsh) skipper	None/None/ MSCP	Occurs strictly in coastal salt marsh habitat where salt grass (*Distichlis spicata*) occurs and functions as the host plant. Marshes with tidal flow are the more likely occupied areas.	Low potential. Some limited areas of the host plant present within the edges of the saltmarsh habitat. In general, salt grass is mixed in with other plant species and does not exist as an isolated stand. Locations where observed as a component species are around the margins of the salt marsh vegetation that line the Otay River and Nestor Creek channels.

Federal Designations:
BCC U.S. Fish and Wildlife Service: Birds of Conservation Concern
(FD) Federally delisted; monitored for 5 years
FE Federally listed as endangered
FT Federally listed as threatened
State Designations:
SSC California Species of Special Concern
DL State delisted
SE State listed as endangered
ST State listed as threatened
WL California Department of Fish and Wildlife Watch List
Multiple Species Conservation Program (MSCP):
MSCP Covered by the MSCP

4.3.2.2 Pond 15 Site

Due to the limited accessibility of the site, focused wildlife surveys were not conducted by Dudek staff. However, observation data was available through State and Federal agencies (SDNHM and ARA 2011), as well as through California Natural Diversity Database records (CDFG 2011b). Three Federally or State-listed species have been observed within the Pond 15 Site: western snowy plover, Belding's Savannah sparrow, and California least tern. One Federally listed endangered species, East Pacific green sea turtle (*Chelonia mydas*), has been recorded adjacent to the Pond 15 Site (SDSU and NOAA 2011). Additionally, nine special-status wildlife species were observed on the site during the surveys conducted in 2010–2012, as listed in Table 9. Special-status species documented for the salt evaporator area and that have high potential to occur within the Pond 15 Site include American peregrine falcon (*Falco peregrinus*

anatum), black skimmer, California brown pelican, California gull, California horned lark (*Eremophila alpestris*), Caspian tern, double-crested cormorant, elegant tern, and long-billed curlew (*Numenius americanus*). Special-status wildlife species with low or no potential to occur are provided in Table 10.

Table 9
Special-Status Wildlife Documented as Present or Potentially Occurring on the Pond 15 Site

Scientific Name	Common Name	Status Federal/ State/MSCP	Primary Habitat Associations	Status on Site or Potential to Occur
Reptiles				
Chelonia mydas	East Pacific green sea turtle	FT/None/ None	Shallow waters of bays, reefs, inlets, and undisturbed sandy beaches for egg laying.	Has been documented within San Diego Bay.
Birds				
Falco peregrinus anatum	American peregrine falcon	BCC/DL/ MSCP	Nests on cliffs, buildings, bridges; forages in wetlands, riparian, meadows, and croplands, especially where waterfowl are present.	High potential to occur on site for foraging. Species is well known to forage on shorebirds during the winter. Individuals observed during surveys conducted from 2010 to 2012 (SDNHM and ARA 2011).
Pelecanus erythrorhynchos	American white pelican	None/SSC/ Not Covered	Nests colonially on isolated islands in freshwater lakes with sandy, earthen, or rocky substrates; minimal disturbance from humans or mammalian predators required, as is close access to productive foraging areas; forages around inland marshes, lakes, or rivers; winters on shallow coastal bays, inlets, and estuaries.	Historically observed roosting on the levees of the salt pond complex. Moderate potential to roost on the levees of the Pond 15 Site (USFWS 2006b).
Passerculus sandwichensis beldingi	Belding's Savannah sparrow	None/SE/ MSCP	Nests and forages in coastal salt marsh dominated by Pacific swampfire.	Documented as occurring within Pond 15 Site; suitable salt marsh habitat occurs in a small area on site. Observed during surveys conducted from 2010 to 2012 (SDNHM and ARA 2011). 211 birds were recorded in 2012. 2015 territory locations are shown in Figure 12.

Table 9
Special-Status Wildlife Documented as Present or Potentially Occurring on the Pond 15 Site

Scientific Name	Common Name	Status Federal/ State/MSCP	Primary Habitat Associations	Status on Site or Potential to Occur
Rynchops niger	Black skimmer	BCC/SSC/ Not Covered	Nests on barrier beaches, shell banks, spoil islands, and salt marsh; forages over open water; roosts on sandy beaches and gravel bars.	High potential to occur. Observed during surveys conducted from 2010 to 2012 (SDNHM and ARA 2011; USFWS 2006b); some suitable nesting areas occur on the southwestern end of the project site, and foraging occurs within the open water areas of the salt pond complex. 2015 nesting locations are shown in Figure 12.
Chlidonias niger	Black tern	None/SSC/ Not Covered	Freshwater marsh with emergent vegetation; in the Central Valley primarily breeds and forages in rice fields and other flooded agricultural fields with weeds and other residual aquatic vegetation.	Moderate potential to occur. Four individuals were observed flying over the area during 2012 focused surveys. Some foraging habitat occurs on the project site. Was not recorded during surveys of the site in 2010–2012 (SDNHM and ARA 2011).
Branta bernicla	Brant	None/SSC/ Not Covered	Breeding habitat includes the edges of salt marshes in the low Arctic region. Migratory habitats include shallow marine lakes. Winter range includes intertidal mudflats in shallow marine alters with abundant eelgrass and/or green algae.	Moderate potential to occur. Could occur in the area during winter and was observed adjacent to the salt ponds during surveys conducted from 2010 to 2012 (SDNHM and ARA 2011). Suitable migratory habitat occurs within project site.
Pelecanus occidentalis californicus (nesting colony and communal roosts)	California brown pelican	FD/DL/ MSCP	Open sea, large water bodies, coastal bays, and harbors.	High potential to occur over open water areas on the project site; has been observed roosting on the salt pond levees. Observed during surveys conducted from 2010 to 2012 (SDNHM and ARA 2011).

Table 9
Special-Status Wildlife Documented as Present or Potentially Occurring on the Pond 15 Site

Scientific Name	Common Name	Status Federal/ State/MSCP	Primary Habitat Associations	Status on Site or Potential to Occur
Larus californicus	California gull	None/WL/ Not Covered	Nests in alkali and freshwater lacustrine habitats; abundant in coastal and interior lowlands during nonbreeding period.	High potential to occur. Suitable habitat occurs on the north and west portions of the site. Observed during surveys conducted from 2010 to 2012 (SDNHM and ARA 2011).
Eremophila alpestris actia	California horned lark	None/WL/ Not Covered	Open habitats, grassland, rangeland, shortgrass prairie, montane meadows, coastal plains, fallow grain fields.	High potential to occur on site, especially during winter. Individuals observed during surveys conducted from 2010 to 2012 (SDNHM and ARA 2011).
Sternula [=Sterna] antillarum browni (nesting colony)	California least tern	FE/SE/ MSCP	Coastal waters, estuaries, large bays and harbors, mudflats; nests on sandy beaches.	High potential. Suitable flat areas are present, and the species is known to nest in the general area. Individuals were observed during surveys conducted from 2010 to 2012 (SDNHM and ARA 2011). 2015 nesting locations are shown in Figure 12.
Hydroprogne caspia	Caspian tern	BCC/None/ Not Covered	Coastal estuarine, salt marsh, and barrier islands; nests on islands in rivers and salt lakes.	High potential to occur. Known to reside year-round in coastal San Diego County. Suitable foraging and nesting habitat occurs on the north and western portions of the site. Was observed nearby during surveys in 2011 and 2012 (SDNHM and ARA 2011). 2015 nesting locations are shown in Figure 12.
Gelochelidon nilotica vanrossemi	Western gull-billed tern	BCC/SSC/Not Covered	Nests on protected spits, berms, and islands composed of sand or other small material. Forages primarily in freshwater ponds and flooded agricultural fields. Forages for small fish, crayfish, lizards, butterflies, beetles, crickets, weevils, and occasionally the young chicks of other shorebirds.	High potential to occur. Suitable foraging and nesting habitat occurs on the north and western portions of the site. Was observed nearby during surveys in 2011 and 2012 (SDNHM and ARA 2011). 2015 nesting locations are shown in Figure 12.

Table 9
Special-Status Wildlife Documented as Present or Potentially Occurring on the Pond 15 Site

Scientific Name	Common Name	Status Federal/ State/MSCP	Primary Habitat Associations	Status on Site or Potential to Occur
Phalacrocorax auritus	Double-crested cormorant	None/WL/ Not Covered	Nests in riparian trees near ponds, lakes, artificial impoundments, slow-moving rivers, lagoons, estuaries, and open coastlines; winter habitat includes lakes, rivers, and coastal areas.	High potential to occur. Large numbers of individuals were observed during surveys conducted from 2010 to 2012 (SDNHM and ARA 2011), and suitable habitat occurs on the project site. 2015 nesting locations are shown in Figure 12.
Thalasseus [=Sterna] elegans (nesting colony)	Elegant tern	BCC/WL/ MSCP	Coastal waters, estuaries, large bays and harbors, mudflats.	High potential to occur. Large numbers of individuals were observed during surveys conducted from 2010 to 2012 (SDNHM and ARA 2011; USFWS 2006b), and suitable habitat occurs on the project site. 2015 nesting locations are shown in Figure 12.
Passerculus sandwichensis rostratus (nonbreeding/ wintering)	Large-billed Savannah sparrow	None/SSC/ MSCP	Saltmarsh, pickleweed (swampfire).	Moderate potential to occur on site during winter due to presence of some suitable habitat on site. Not recorded for the site in 2010–2012 (SDNHM and ARA 2011).
Numenius americanus (nesting)	Long-billed curlew	BCC/WL/ MSCP	Nests in upland shortgrass prairies and wet meadows in northeast California; winters in coastal estuaries, open grasslands, and croplands.	High potential to occur on site during winter for foraging within marsh areas. Individuals were observed during focused surveys conducted from 2010 to 2012 (SDNHM and ARA 2011).
Aythya americana	Redhead	None/SSC/ Not Covered	Breeds in relatively deep (>3 feet) permanent or semi-permanent wetlands of at least 1 acre with about 75% open water and emergent tules, bulrushes (*Scirpus* spp.), and cattails (*Typha* spp.) up to about 3 feet in height; winters in coastal estuaries and large, deep ponds, lakes, and reservoirs of the interior.	Moderate potential to occur. Limited suitable habitat occurs on site. Seven individuals were observed during surveys conducted in 2012, but none were detected in surveys covering the same area in 2010 (SDNHM and ARA 2011).

Table 9
Special-Status Wildlife Documented as Present or Potentially Occurring on the Pond 15 Site

Scientific Name	Common Name	Status Federal/ State/MSCP	Primary Habitat Associations	Status on Site or Potential to Occur
Charadrius alexandrinus nivosus (nesting)	Western snowy plover (coastal population)	FT, BCC/SSC/ MSCP	Nests primarily on coastal beaches in flat, open areas with sandy or saline substrates; less commonly in salt pans, dredged spoil disposal sites, dry salt ponds, and levees.	High potential. Suitable flat areas are present and the species is known to nest and forage near the site, but has not been recorded on the site. 2015 nesting locations are shown in Figure 12 (USFWS 2006b).

Federal Designations:
BCC Fish and Wildlife Service: Birds of Conservation Concern
(FD) Federally delisted; monitored for 5 years
FE Federally listed as endangered
FT Federally listed as threatened
State Designations:
SSC California Species of Special Concern
DL State delisted
SE State listed as endangered
WL California Department of Fish and Wildlife Watch List
Multiple Species Conservation Program (MSCP):
MSCP Covered by the MSCP
Not Covered Not covered by the MSCP

Table 10
Special-Status Wildlife with Low Potential or No Potential to Occur on the Pond 15 Site but That Have Been Recorded at the South Bay Salt Works

Scientific Name	Common Name	Status Federal/ State/MSCP	Primary Habitat Associations	Status on Site or Potential to Occur
			Birds	
Gavia immer	Common loon	None/SSC/ Not Covered	Extirpated as a breeder from California; winters in coastal waters such as bays, channels, coves, and inlets; also winters inland at large, deep lakes and reservoirs.	Low potential to occur. Range has been limited in California from anthropogenic activities. Known to visit San Diego coastal areas during winter, but lacks significant suitable habitat on the project site (USFWS 2006b).
Accipiter cooperii (nesting)	Cooper's hawk	None/WL/ MSCP	Riparian and oak woodlands, montane canyons.	No potential to occur on site for breeding. Could forage on site and nest in nearby woodland areas to the east (SDNHM and ARA 2011; USFWS 2006b).

Table 10
Special-Status Wildlife with Low Potential or No Potential to Occur on the Pond 15 Site but That Have Been Recorded at the South Bay Salt Works

Scientific Name	Common Name	Status Federal/ State/MSCP	Primary Habitat Associations	Status on Site or Potential to Occur
Plegadis chihi (rookery site)	White-faced ibis	None/WL/ MSCP	Nests in marsh; winter foraging in shallow lacustrine waters, muddy ground of wet meadows, marshes, ponds, lakes, rivers, flooded fields, and estuaries.	Low potential to occur on site during the winter for foraging within the marsh areas due to the small size of the area. Was not observed during surveys conducted from 2010 to 2012 (SDNHM and ARA 2011).
Athene cunicularia (burrow sites and some wintering sites)	Burrowing owl	BCC/SSC/ MSCP	Grassland, lowland scrub, agriculture, coastal dunes, and other artificial open areas.	Low potential to occur within Pond 15 Site, but has been recorded in the region. Three were observed nearby in off-site surveys conducted in 2011 (SDNHM and ARA 2011).
Circus cyaneus (nesting)	Northern harrier	None/SSC/ MSCP	Open wetlands (nesting), pasture, fields, dry uplands, grasslands, rangelands, coastal sage scrub.	Low potential to nest within Pond 15 Site, but might forage near or over the site (SDNHM and ARA 2011).
Cistothorus palustris clarkae	Clark's marsh wren	None/SSC/ Not Covered	Narrowly distributed along the coast of Southern California. Restricted to freshwater and brackish marshes dominated by bulrushes or cattails.	Low potential to nest within Pond 15 Site, but might forage near the site (SDNHM and ARA 2011).
Elanus leucurus (nesting)	White-tailed kite	None/FP/Not Covered	Open grasslands, savannah-like habitats, agriculture, wetlands, oak woodlands, riparian.	Low potential to nest within Pond 15 Site, but might forage near the site (SDNHM and ARA 2011).
Rallus obsoletus levipes	Light-footed Ridgway's rail	FE/SE, FP/ MSCP	Coastal saltmarsh.	Low potential to nest within Pond 15 Site, but might forage near the site (SDNHM and ARA 2011).
Invertebrates				
Panoquina errans	Wandering (saltmarsh) skipper	None/None/ MSCP	Occurs strictly in coastal salt marsh habitat where salt grass (*Distichlis spicata*) occurs and functions as the host plant. Marshes with tidal flow are the more likely occupied areas.	Low potential. There are some limited areas of the host plant present mixed in with other plant species, but it does not exist as an isolated stand.

Federal Designations:
BCC Fish and Wildlife Service: Birds of Conservation Concern
FE Federally listed as endangered
State Designations:
SSC California Species of Special Concern
FP California Department of Fish and Wildlife Protected and Fully Protected Species

SE	State listed as endangered
WL	California Department of Fish and Wildlife Watch List
Multiple Species Conservation Program (MSCP):	
MSCP	Covered by the MSCP
Not Covered	Not covered by the MSCP

4.3.3 Sensitive Habitats/Regulated Resources

Sensitive habitats are those that are considered to support unique vegetation communities, sensitive plant and/or wildlife species, or function as corridors for wildlife movement. Unique vegetation communities include habitats found only in the San Diego region, a local representative of species not generally found in San Diego County, or are outstanding examples of CDFW sensitive plant communities. Regulated biological resources may or may not be considered sensitive, but are regulated under Federal, State, and/or local laws.

The project site contains a number of sensitive resources, including *Isocoma* scrub and various wetland communities.

AERIAL SOURCE: BING MAPPING SERVICE

DUDEK

Figure 12

Pond 15 Restoration Site Special Status Nesting Locations

Biological Resources Existing Conditions Technical Report for the Otay River Estuary Restoration Project

Document Path: Z:\Projects\j675801\MAPDOC\MAPS\BioResourcesReport\Fig 12 USFWS Nest Data Pond15.mxd

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The extensive shallow-water habitat and eelgrass (*Zostera* spp.) beds of the south San Diego Bay provide important habitat for a variety of fish, including midwater schooling fish such as northern anchovy, slough anchovy (*Anchoa delicatissima*), and topsmelt (*Atherinops affinis*). Although not present within the Pond 15 Site, an eelgrass survey conducted in San Diego Bay in 2014 indicated that eelgrass occurs along the southern edge of the Chula Vista Wildlife Reserve, approximately 850 feet to the west of the northern portion of the Pond 15 Site (NAVFAC and Port of San Diego 2014). Although the distribution of eelgrass may vary from year to year, the survey indicated a relatively large population within south San Diego Bay (Figure 13, San Diego Bay 2014 Eelgrass Survey).

4.3.4 Wildlife Corridors and Habitat Linkages

Wildlife corridors are linear features that connect large patches of natural open space and provide avenues for the migration of animals. Wildlife corridors contribute to population viability by ensuring continual exchange of genes between populations, providing access to adjacent habitat areas for foraging and mating, and providing routes for recolonization of habitat after local extirpation or ecological catastrophes (e.g., fires).

Habitat linkages are small patches that join larger blocks of habitat and help reduce the adverse effects of habitat fragmentation. Habitat linkages provide a potential route for gene flow and long-term dispersal of plants and animals, and may also serve as primary habitat for smaller animals such as reptiles and amphibians. Habitat linkages may be continuous habitat or discrete habitat islands that function as stepping stones for dispersal.

The project site is located within the Otay River floodplain and within the South Bay Salt Works. As such, wildlife movement often is directed in the path of least resistance, and could easily move within the Otay River Floodplain Site from upstream, more riparian areas to on-site areas that are open and more functional as grassland, to the more saltmarsh and wetland areas within the southern part of San Diego Bay. Wildlife movement is generally unrestricted within the Pond 15 Site, other than general avoidance of human activity as it occurs as part of the operation of the South Bay Salt Works.

4.3.5 Jurisdictional Waters and Wetlands

The jurisdictional delineation identified 97.11 acres of wetlands and non-wetland waters under the joint jurisdiction of the Corps (under the Preliminary Jurisdictional Determination procedures), RWQCB, and Commission (Figures 14 through 17). The delineation also identified 0.62 acres of Commission-only jurisdictional wetlands within project features.

The results of each Federally defined delineation parameter occurring at each data station for the Otay River Floodplain Site, Pond 15 Site, and project features are provided in Table 11. The type and amount of jurisdictional waters occurring within each site are summarized in Tables 12 and 13. The jurisdictional delineation report (Appendix B) includes a greater area within the delineation so that if the project boundary changes, the area will be addressed thoroughly. The acreages and figures presented in this document reflect the current project boundaries. In addition to conducting a jurisdictional delineation, a California Rapid Assessment Method (CRAM) survey was conducted for the Otay River Floodplain Site and Pond 15 Site (Appendix E). CRAM is the most widely used wetland rapid assessment method in the State. The purpose of the assessment was to determine the functional condition of vegetated resources within the project area prior to the onset of the project.

Table 11
Wetland Delineation Sampling Point Summary for All Three Sites

Otay River Floodplain Site						
Data Station	*Wetland Determination Field Indicators*			*Stream Association?*	*Tidal Channel Association?*	*Jurisdiction*
	Vegetation	*Hydric Soils*	*Hydrology*			
5[1]	✓		✓	Yes	No	Commission
6				Yes	No	None
7	✓	✓	✓	Yes	No	Corps, Regional Board, Commission
8	✓			No	No	Commission
9	✓	✓	✓	No	Yes	Corps, Regional Board, Commission
10	✓	✓	✓	No	Yes	Corps, Regional Board, Commission
11	✓		✓	No	Yes	Corps, Regional Board, Commission[2]
12				No	No	None
13	✓	✓		No	No	Commission
14				No	No	None[3]
15	✓		✓	No	No	Commission
16				No	No	None
17	✓		✓	No	Yes	Corps, Regional Board, Commission[2]
18	✓	✓	✓	No	Yes	Corps, Regional Board, Commission
19				No	No	None
20	✓	✓	✓	No	No	Corps, Regional Board, Commission
21	✓			No	No	None
22			✓	No	No	None

Table 11
Wetland Delineation Sampling Point Summary for All Three Sites

Otay River Floodplain Site						
Data Station	*Wetland Determination Field Indicators*			*Stream Association?*	*Tidal Channel Association?*	*Jurisdiction*
	Vegetation	*Hydric Soils*	*Hydrology*			
23				No	No	None
24		✓	✓	No	No	None
25	✓			No	No	None

Salt Ponds 12–15[4]						
Data Station	*Location*	*Wetland Determination Field Indicators*			*Hydrologic Association?*	*Jurisdiction*
		Vegetation	*Hydric Soils*	*Hydrology*		
1	Inside slope (salt pond side) of levee at Pond 15	✓	✓	✓	Salt Pond	Corps, Regional Board, Commission
2	Outer slope of levee adjacent to Palomar Street tidal channel	✓	✓		Tidal Channel	Corps, Regional Board, Commission
3	Top of levee along access road		✓		None	None*
4	Salt marsh habitat on Bay side of salt pond levee	✓	✓	✓	Bay	Corps, Regional Board, Commission
5	Salt marsh habitat on Bay side of salt pond levee	✓	✓	✓	Bay	Corps, Regional Board, Commission
6	Top of levee between salt ponds		✓		None	None*
7	Top of outer salt pond levee				None	None
8	Top of levee between salt ponds	✓	✓		None	None*
9	Inside slope (salt pond side) of levee at Pond 12		✓	✓	Salt Pond	Corps, Regional Board, Commission
10	Top of outer salt pond levee	✓			None	None
11	Salt marsh habitat on Otay River channel side of salt pond levee	✓	✓	✓	Tidal Channel	Corps, Regional Board, Commission
12	Top of outer salt pond levee		✓		None	None*
13	Top of levee between salt ponds		✓		None	None*
14	Outer slope of levee adjacent to Palomar Street tidal channel	✓	✓		Tidal Channel	Corps, Regional Board, Commission
15	Inside slope (salt pond side) of levee at Pond 15		✓	✓	Salt Pond	Corps, Regional Board, Commission

Table 11
Wetland Delineation Sampling Point Summary for All Three Sites

Project Features						
		Wetland Determination Field Indicators				
Data Station	*Location*	*Vegetation*	*Hydric Soils*	*Hydrology*	*Hydrologic Association?*	*Jurisdiction*
1	Northwestern side of Egger Highlands near Silver Strand Bikeway associated with freshwater marsh	✓	✓	✓	Freshwater marsh	Corps, Regional Board, Commission
2	Northwestern side of Egger Highlands near Silver Strand Bikeway associated with mulefat scrub				Mulefat scrub	Commission
3	Northwestern side of Egger Highlands near Silver Strand Bikeway within the Otay River Floodplain Site				Restoration area	Commission[5]
4	Northwestern side of Egger Highlands near Silver Strand Bikeway associated with mulefat scrub				Mulefat scrub	Commission
5	North side of Egger Highlands near Silver Strand Bikeway associated with the Otay River Floodplain Site	✓			Restoration area	Commission[5]
6	North side central section of Egger Highlands near Silver Strand Bikeway associated with southern coastal salt marsh in the channel	✓	✓	✓	Southern coastal salt marsh	Corps, Regional Board, Commission
7	North side central section of Egger Highlands near Silver Strand Bikeway associated with mulefat scrub				Mulefat scrub	Commission

* Although these soils retain hydric soil indicators, the soils were derived from dredged bay mud that was placed on the top of the salt pond levees.

1 Data stations 1–4 are located outside of the Otay River Floodplain Site.

2 Although not all three parameters were met, Corps jurisdiction was presumed because the area was below the elevation of the high tide line (7.79 feet above mean lower low water). See also the section "Corps/Regional Board/Commission Jurisdiction," below.

3 See Data Stations 2, 4, and 7 for the project features.

4 Ponds 12–15 were delineated based on preliminary project design. Only Pond 15 is included in the graphics and acreage quantification for this report, but the results of the data stations are included for all areas.

5 These areas are within the Otay River Floodplain Site, which was recently planted with riparian species. The site is actively irrigated to promote plant establishment. Evident hydric soils and hydrology per the Corps delineation manual are not yet present within the restoration site; therefore, the areas were not classified as Corps jurisdictional, but may eventually develop the indicators necessary to classify these areas as Corps jurisdictional.

Table 12
Wetland Delineation Existing Acreage Summary

Vegetation Community	Jurisdiction
	Corps, Regional Board, Commission
Otay River Floodplain Site	
Non-Wetlands	—
Brackish Water	0.77
Former Salt Pond Bottom and Borrow Area	3.52
Wetlands	—
Southern Coastal Salt Marsh	1.26
Former Salt Pond Bottom and Borrow Area	0.87
Subtotal	*6.43*
Pond 15 Site[1]	
Non-Wetlands	—
Beach	0.01
Bay	1.15
Open Water	82.33
Salt Pond Levee	3.67
Wetlands	—
Southern Coastal Salt Marsh	0.87
Southern Coastal Salt Marsh – disturbed	0.10
Subtotal	*88.14*

Note: Acreages may not total due to rounding.
[1] Ponds 12–15 were delineated, but only Pond 15 is presented in graphics and for acreage.

Otay River Floodplain Site

The results of the study include areas delineated as jurisdictional by the Corps, Regional Board, and the Commission (Figure 14, Otay River Floodplain Restoration Site and Project Features Jurisdictional Delineation). Although the non-tidal portion of the Otay River channel would have qualified for CDFW jurisdiction, the portion is on Federal land, and, thus, not subject to Section 1600 et seq. of the California Fish and Game Code. Representative photos of the study area and sampling locations can be found in Figures 6a and 6b of Appendix B.

Ponds 15 Site

The results of the study include areas delineated as jurisdictional by the Corps, Regional Board, and the Commission (Figure 15, Pond 15 Restoration Site and Project Features Jurisdictional Delineation). The Otay River channel and Palomar Street channel are tidal channels within the study area in the San Diego Bay NWR, and do not qualify for CDFW jurisdiction, and thus are not subject to Section 1600 et seq. of the California Fish and Game Code. Representative photos

of the Ponds 12–15 study area and sampling locations can be found in Figures 7a–7c of Appendix B.

Project Features

The results of the study include areas delineated as jurisdictional by the Corps, Regional Board, and the Commission (Figures 14–17; Table 13). Although the non-tidal portion of the Otay River channel would have qualified for CDFW jurisdiction, the portion is on Federal land within the San Diego Bay NWR, and, thus, is not subject to Section 1600 et seq. of the California Fish and Game Code. Representative photos of the access routes study area and sampling locations can be found in Figures 8a and 8b of Appendix B. In addition to the joint jurisdiction, there are areas that are delineated as Commission-only jurisdiction due to lack of hydric soils and/or hydrology. These include areas that are dominated by mulefat scrub vegetation or were recently restored by River Partners to riparian habitat (designated as Otay River floodplain restoration).

Table 13
Jurisdictional Waters within Project Features

Vegetation Community/ Land Cover Type	Project Features (Acres under Corps, Regional Board, and Commission Jurisdiction, except where noted as Commission-only)*														
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*Total*
Brackish water	0.13	0.08	—	—	—	—	—	—	0.01	—	—	—	—	—	**0.21**
Open water	—	—	—	—	—	—	—	—	—	0.40	0.79	0.08	0.03	—	1.30
Otay River floodplain restoration – Commission only	—	—	—	—	—	0.56	—	—	—	—	—	—	—	—	**0.56**
Freshwater marsh	—	—	—	—	—	—	0.08	—	—	—	—	—	—	—	**0.08**
Mulefat scrub – Commission only	—	—	—	—	—	0.06	—	—	—	—	—	—	—	—	**0.06**
Southern coastal salt marsh	0.06	0.47	—	—	—	0.02	0.02	—	0.06	0.19	—	—	—	—	**0.82**
Total	**0.19**	**0.55**	**—**	**—**	**—**	**0.65**	**0.10**	**—**	**0.07**	**0.59**	**0.79**	**0.08**	**0.03**	**—**	**3.04**

* Commission wetlands define wetland boundaries by a single parameter (i.e., hydric soils, hydrophytic vegetation, or hydrology).
1 Otay Channel Protection under Bikeway Bridge (Temporary and Permanent)
2 Otay Channel Protection (Permanent)
3 Stockpiles (Permanent)
4 Staging Area (Temporary)
5 Crossing at Nestor Creek (Temporary)
6 Two-Lane Truck Route Connecting Nestor Creek (Temporary)
7 Crossing at Otay River (Temporary)
8 Bike Path Reroute (Temporary)
9 Crossing at Palomar Channel (Temporary)
10 Two-Lane Truck Crossing at Salt Pond Levee (Temporary)

11 Levee Modification of Ponds 13 and 14 – North (Temporary and Permanent)
12 Levee Modification of Ponds 13 and 14 – South (Temporary and Permanent)
13 Raised Levee between Ponds 22 and 23 (Permanent)
14 Restoration Area East of Nestor Creek (Permanent)

Corps/Regional Board/Commission Jurisdiction

Areas meeting all three parameters were classified as wetlands under the jurisdiction of the Corps, Regional Board, and the Commission.

Otay River Floodplain Site

Results of the wetland delineation (summarized in Tables 11 and 12) indicate that approximately 6.43 acres of wetlands and non-wetland waters of the United States under the joint jurisdiction of the Corps, Regional Board, and the Commission occur within the Otay River Floodplain Site. The predominant native vegetation communities associated with the wetlands are adjacent to tidal channels and support southern coastal salt marsh. Soils in these areas are characterized by variable textures (including clay loam, sand, loam, clay, loamy sand, loamy clay, and sandy clay loam) with redox dark surfaces or a loamy gleyed matrix. Wetland hydrology indicators present include surface water, high water table, and saturation. Areas supporting all three wetland indicators were mapped as Corps, Regional Board, and Commission wetlands. Additionally, in some locations along the tidal channels, there is a narrow strip along the outer perimeter of the salt marsh habitat where hydrology indicators were not apparent and soils did not have hydric indicators. In these instances, Corps jurisdiction was assumed because they are tidally influenced areas that are below the elevation of the high tide line (7.79 feet above mean lower low water).

A total of 2.13 acres of wetlands occur within the Otay River Floodplain Site, which supports southern coastal salt marsh and former salt pond bottom and borrow area. Because the site is primarily unvegetated, the hydrophytic vegetation parameter was rarely met at the sampling locations. When present, vegetation consisted of species typical of southern coastal salt marsh habitat, including estuary seablite, alkali seaheath, Pacific swampfire, turtleweed, marsh rosemary (*Limonium californicum*), and dwarf saltwort (*Salicornia bigelovii*). Also observed in the southern coastal salt marsh habitat were coast weed (*Amblyopappus pusillus*), slenderleaf iceplant (*Mesembryanthemum nodiflorum*), common iceplant (*Mesembryanthemum crystallinum*), and arrow grass (*Triglochin concinna*). Outside of the tidally influenced areas adjacent to the two tidal channels that abut portions of the site on the southwestern and northeastern flanks, coastal salt marsh habitat is extremely patchy and disturbed, with low cover and low species diversity.

The site contains a series of low-lying areas that are remnants of construction and operation of the former industrial salt evaporation pond. The areas are surrounded by a tall levee that

separates them from the adjacent tidal channels. The levee was constructed, in part, using soil excavated from within the basin (borrow areas) that are lower in elevation than the basin bottom. These unvegetated areas in the bottom of the basin were mapped as former salt pond bottom and borrow areas. Because of their historical long-term use as industrial salt evaporation ponds, the soil conditions are hypersaline, and much of the land does not support vegetation. The functions and values of these areas are considered degraded and low due to the extensive site disturbance, lack of vegetation, lack of surface water hydrologic connectivity, and excessive salinity.

The portions of the former salt pond bottom and borrow area can occasionally become inundated from precipitation, as was the case during the February 2012 site visit. However, with the exception of a few small areas in the southwestern corner, the areas were completely dry during the July 2012 site visit. A review of aerial photographs shows that ponding does not occur in every year, and varies in location and extent. Although the borrow areas may exhibit periods of ponding during the rainy season, the surface water evaporates quickly.

Although not physically connected to either tidal channels or freshwater channels due to the presence of perimeter berms, the Corps classified the former salt pond bottom and borrow area as jurisdictional for the purposes of the Preliminary Jurisdictional Determination (Appendix B). The portions of these areas that support hydrophytic vegetation were classified as wetlands, and the remaining areas below the ordinary high water mark were classified as non-wetlands waters of the United States.

The CRAM Assessment Areas (AAs) within the site were analyzed for a suite of variables that pertain to common attributes that estuarine systems are expected to perform. CRAM consists of scoring the AAs based on the condition metrics and stressor checklist. Results for the Otay River Floodplain Site are summarized below, and details are provided in Appendix E.

Buffer and Landscape Context: The AA at the Otay River Floodplain Site scored 65 for the Buffer and Landscape Context attribute. The entire AA has a buffer, but the aquatic area abundance, buffer width, and buffer condition are diminished due to surrounding land use associated with the Bayshore Bikeway, unnatural berms surrounding the site, and historic agricultural uses nearby.

Notes:
1) Surveys conducted by Merkel & Associates, Inc. in cooperation with Naval Facilities Engineering Command Southwest (NAVFAC SW) Natural Resources and the Port of San Diego

2) This survey is for planning and resource management purposes only and not intended to substitute for site specific/project level surveys

3) Any use of this information should include the following citation: Naval Facilities Engineering Command Southwest, Port of San Diego, 2014. San Diego Bay 2014 Eelgrass Survey. Prepared by Merkel & Associates, Inc.

4) Questions regarding survey methods, data acquisition, and analysis can be directed to:
Keith Merkel, Merkel & Associates, Inc (kmerkel@merkelinc.com)

0 0.5 1 2 3 4 5 6 Kilometers
0 0.5 1 2 3 4 Miles

SAN DIEGO BAY

2014 EELGRASS SURVEY

SOURCE: Merkel & Associates, Inc., Naval Facilities Engineering Command Southwest, Port of San Diego, 2014.

FIGURE 13
San Diego Bay 2014 Eelgrass Survey

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Biological Resources Existing Conditions Technical Report for the Otay River Estuary Restoration Project

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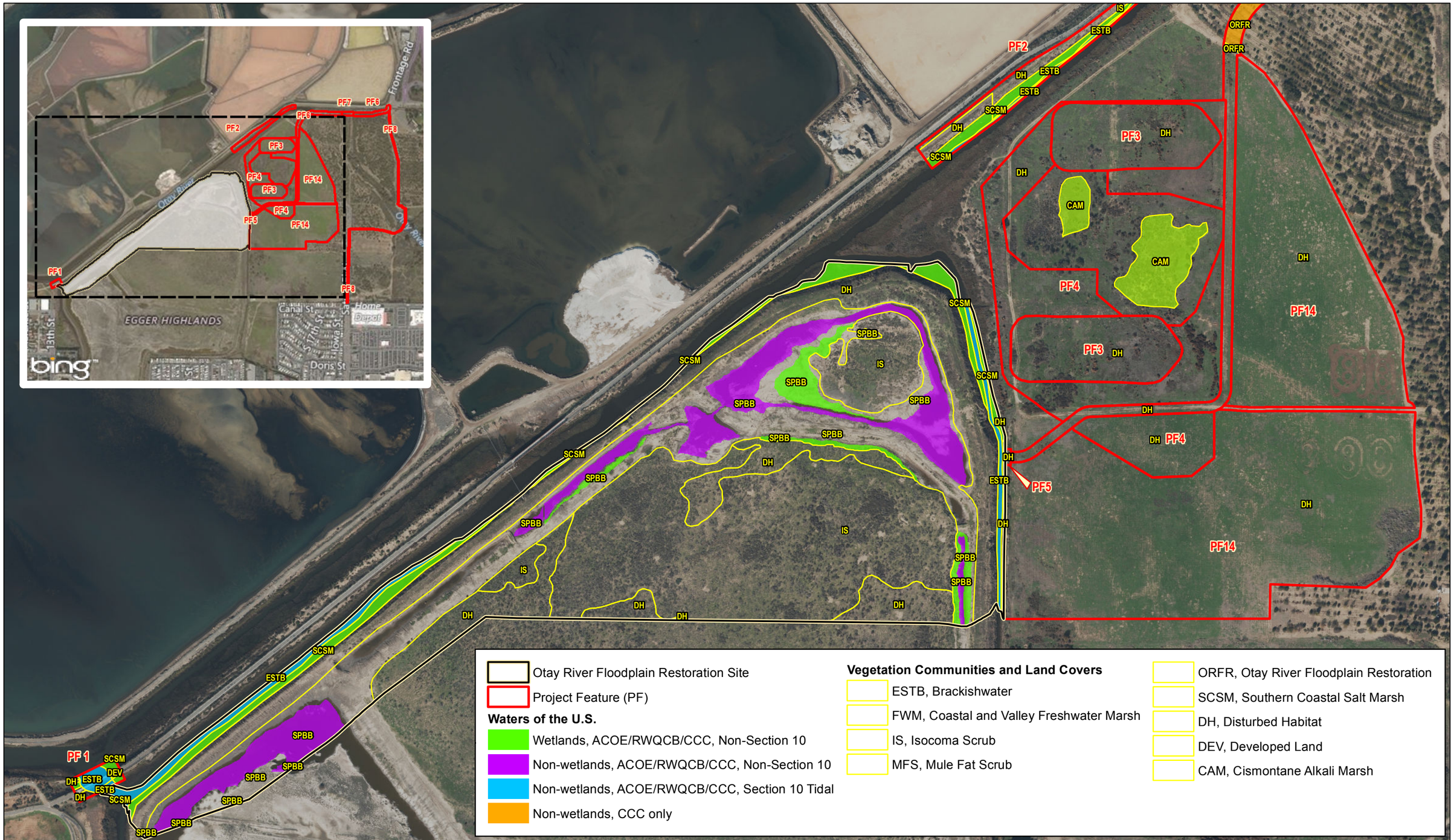

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FIGURE 14

Otay River Floodplain Restoration Site and Project Features Jurisdictional Delineation

Biological Resources Existing Conditions Technical Report for the Otay River Estuary Restoration Project

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FIGURE 15

Pond 15 Restoration Site and Project Features Jurisdictional Delineation

Biological Resources Existing Conditions Technical Report for the Otay River Estuary Restoration Project

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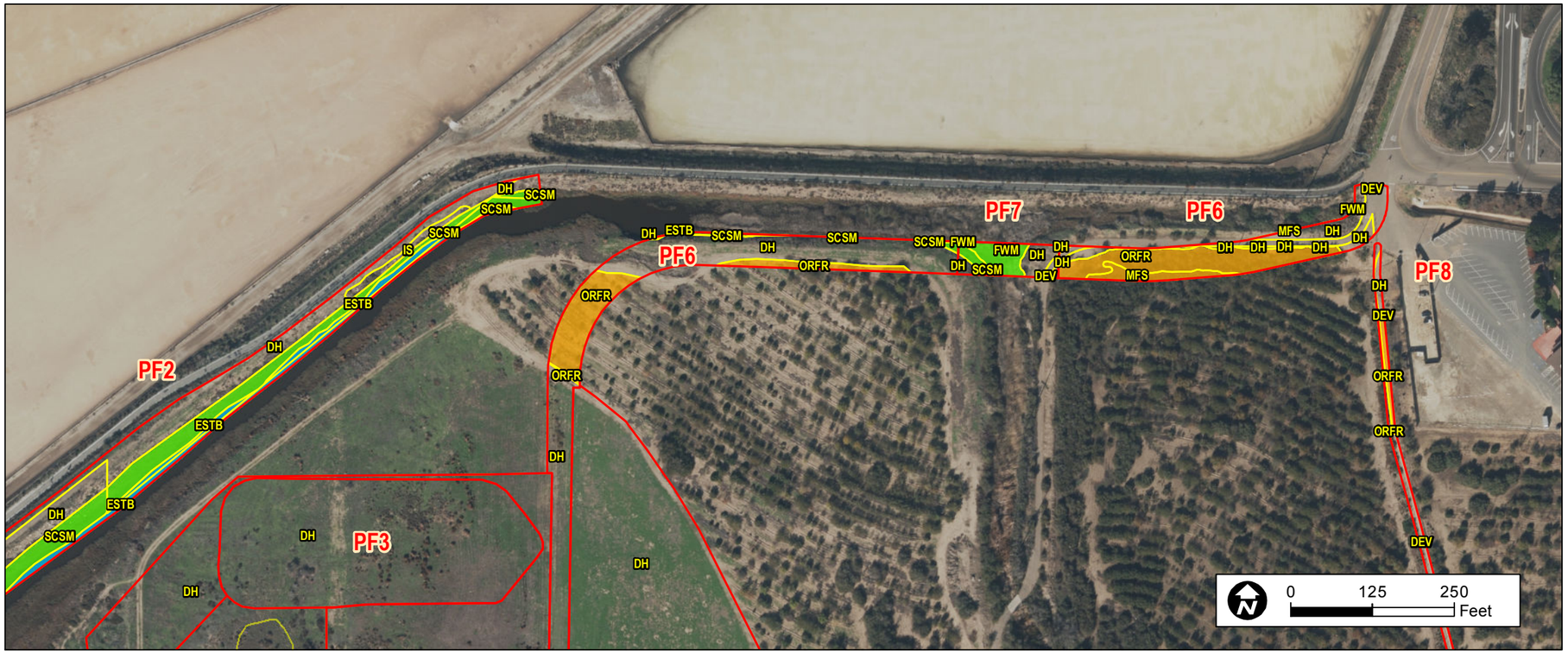

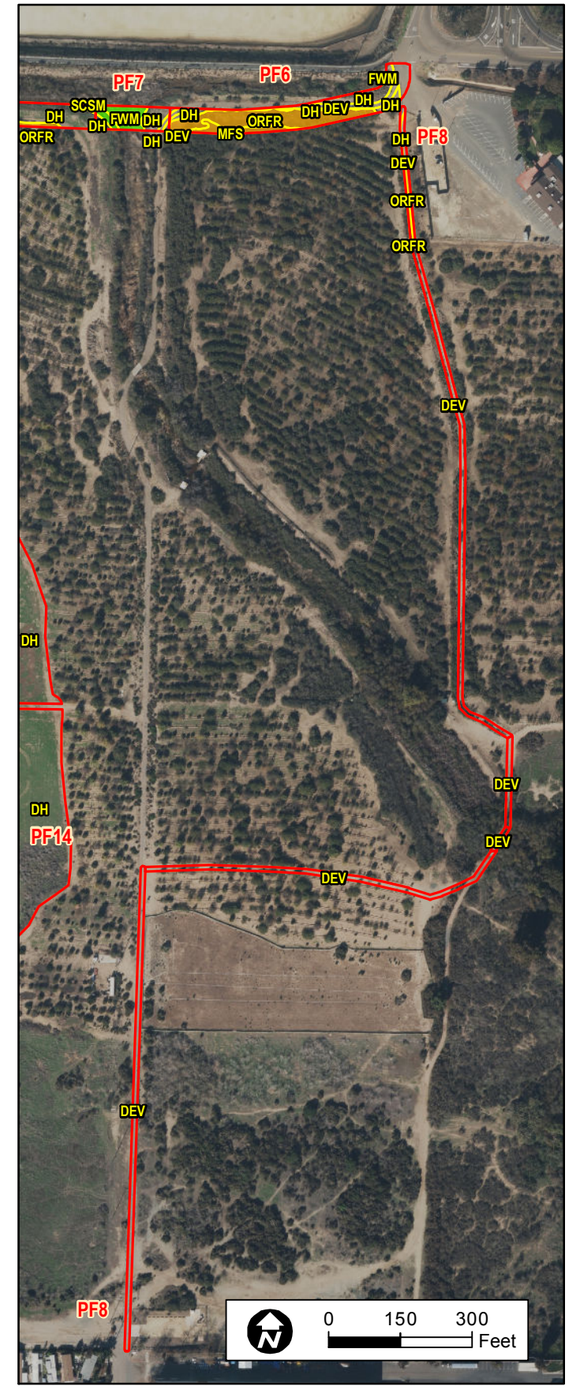

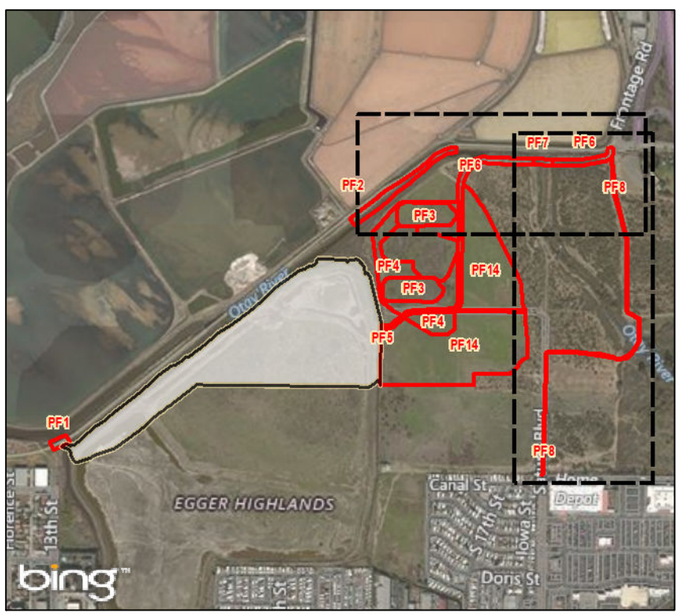

Otay River Floodplain Restoration Site

Project Feature (PF)

Waters of the U.S.

- Wetlands, ACOE/RWQCB/CCC, Non-Section 10
- Non-wetlands, ACOE/RWQCB/CCC, Section 10 Tidal
- Non-wetlands, CCC only

Vegetation Communities and Land Covers

- ESTB, Brackishwater
- FWM, Coastal and Valley Freshwater Marsh
- IS, Isocoma Scrub
- MFS, Mule Fat Scrub
- ORFR, Otay River Floodplain Restoration
- SCSM, Southern Coastal Salt Marsh
- DH, Disturbed Habitat
- DEV, Developed Land
- CAM, Cismontane Alkali Marsh

AERIAL SOURCE: SANDAG IMAGERY 2014

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FIGURE 16

Project Features Jurisdictional Delineation

Biological Resources Existing Conditions Technical Report for the Otay River Estuary Restoration Project

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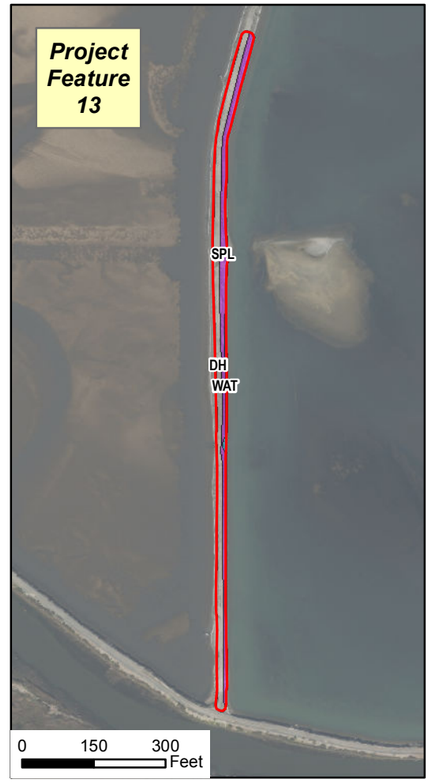

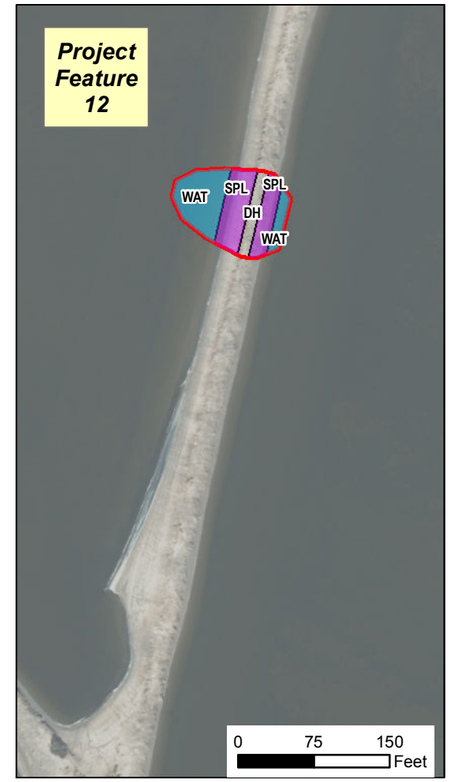

Pond 15 Restoration Site

Project Feature (PF)

Waters of the U.S.

Wetlands (ACOE/RWQCB/CCC) (Non-Section 10)

Non-wetlands (ACOE/RWQCB/CCC) (Non-Section 10)

Non-wetlands (ACOE/RWQCB/CCC) (Section 10 Tidal)

Vegetation Communities and Land Covers

BAY, Bay

BCH, Beach

DEV, Developed Land

DH, Disturbed Habitat

ESTB, Brackishwater

SCSM, Southern Coastal Salt Marsh

SF, Salt Flats

SPL, Salt Pond Levee

WAT, Open Water

dSCSM, Disturbed Southern Coastal Salt Marsh

AERIAL SOURCE: SANDAG IMAGERY 2014

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FIGURE 17

Project Features Jurisdictional Delineation

Biological Resources Existing Conditions Technical Report for the Otay River Estuary Restoration Project

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Hydrology: The Hydrology attribute scored 42. All metrics (Water Source, Hydroperiod, and Hydrologic Connectivity) scored low due to the constructed berms surrounding the AA that affect a potential tidal connection. Hydrology at the site is due to a combination of urban runoff and groundwater (elevated water table), rather than tidal inundation.

Physical Structure: The Physical Structure attribute (including Structural Patch Richness and Topographic Complexity metrics) scored low (38) due to a general lack of structural patch types and low topographic complexity as a consequence of the constructed salt pond setting (i.e., dredged pond area and surrounding berms).

Biotic Structure: The AA is primarily unvegetated, and where there is vegetation, it is dominated by non-native species. The vegetation has little biotic structural diversity and very low horizontal interspersion, which is reflected in the scores for this category (28). The center island within the AA is vegetated with some sparse coast goldenbush shrubs, with primarily non-native slenderleaf iceplant growing in the interstices and occasionally near seasonally ponded areas.

Pond 15 Site

Results of the wetland delineation (summarized in Tables 11 and 12) indicate that approximately 88 acres of wetlands and non-wetland waters of the United States under the joint jurisdiction of the Corps, Regional Board, and the Commission occur within the Pond 15 Site. Of the total area classified as jurisdictional, 0.97 acres was classified as wetlands and 87.16 acres was classified as non-wetland waters of the United States. In general, the jurisdictional features are unvegetated, with the exception of areas that abut the Otay River and the Palomar Street tidal channels, and a few patchy areas along the salt pond levees. The predominant native vegetation community associated with the wetlands is southern coastal salt marsh. Soils in these areas are characterized by variable textures (including sand, clay, sandy loam, clay loam, sandy clay loam, and silty clay loam), often with a with depleted matrix. Wetland hydrology indicators present included high water table, saturation, oxidized rhizospheres along living roots, and aquatic invertebrates. Areas supporting all three wetland indicators were mapped as Corps, Regional Board, and Commission wetlands.

The majority of the Pond 15 Site contains the active salt pond that is a component of the solar salt evaporation system. The salt ponds are surrounded by levees that separate them from the adjacent San Diego Bay and tidal channels. The levees were constructed using soil excavated from within the San Diego Bay, and they reach a maximum elevation that is slightly greater than the highest observed water level (7.79 feet, NAVD 88), approximately 8 feet and up to 12 feet in some places.

A review of aerial photographs shows that the salt ponds and the levees surrounding them have been in the same configuration for decades. The water elevation within the salt ponds is controlled by a tide gate, and, thus, remains relatively constant.

The portions of the site that met all three parameters were classified as wetlands, and the remaining areas below the high tide line (7.79 feet above mean lower low water) were classified as non-wetland waters of the United States. The top of the salt pond levees that is above the high tide line did not meet the three parameters, and was classified as non-jurisdictional.

The CRAM AAs within the Pond 15 Site were analyzed for a suite of variables similar to what was conducted for the Otay River Floodplain Site. Results for the Pond 15 Site are summarized below, and details are provided in Appendix E.

Buffer and Landscape Context: The AA at the Pond 15 Site scored 81 for the Buffer and Landscape Context attribute. The score was relatively high because the entire AA has a buffer, and the buffer extends well beyond the edge of the AA. The Buffer Width score was high due to the CRAM guidelines that allow for the extension of buffer measurements into open water in situations where there is buffer between the AA and the open water (as is the case at this AA). The overall score for Buffer and Landscape Context was slightly diminished due to surrounding land use associated with the salt pond operations and periodic maintenance of the perimeter berms.

Hydrology: The Hydrology attribute scored 25. All metrics (Water Source, Hydroperiod, and Hydrologic Connectivity) scored low due to the constructed berms surrounding the AA that affect a potential tidal connection. Hydrology at the site is due to manually operated tide gates that route water through the evaporative salt pond cycle, rather than natural tidal inundation. There are no freshwater sources from upstream and no natural tidal connection to affect the hydrology of the AA.

Physical Structure: The Physical Structure attribute (including Structural Patch Richness and Topographic Complexity metrics) scored low (25) due to a general lack of structural patch types and low topographic complexity as a consequence of the constructed salt pond setting.

Biotic Structure: The AA is primarily unvegetated. There are a few small patches of vegetated land on the inside slope of the berm within the AA, dominated by non-native slenderleaf iceplant and native Watson's saltbush (*Atriplex watsonii*). Biotic structural diversity and horizontal interspersion are very low, which is reflected in the score (31) for this category.

Project Features

Results of the wetland delineation (Tables 11 and 13) indicate that approximately 3.04 acres of wetlands and non-wetland waters of the United States. under the joint jurisdiction of the Corps, Regional Board, and Commission occur within the project features. The jurisdictional areas are associated with tidal channels, the salt ponds, and the San Diego Bay. The predominant native vegetation community associated with the wetlands is southern coastal salt marsh along the Palomar Street channel. Soils in these areas are characterized by variable textures (including sand, clay, sandy clay, and clay loam), with the predominant soil texture clay loam. Wetland hydrology indicators present included high water table, saturation, surface water, sediment deposits, drift deposits, and drainage patterns. Areas supporting all three wetland indicators were mapped as Corps, Regional Board, and Commission wetlands.

Salt pond levees below the high tide line elevation (7.79 feet above mean lower low water) were classified as jurisdictional waters of the United States, and salt pond levees above the high tide line were classified as non-jurisdictional where the wetland delineation parameters were not present (e.g., hydrophytic vegetation and hydrology).

Commission-Only Jurisdiction

Otay River Floodplain Site

There were no areas classified as jurisdictional only by the Commission within the Otay River Floodplain Site.

Pond 15 Site

There were no areas classified as jurisdictional only by the Commission within the Pond 15 Site.

Non-Jurisdictional Areas

Two areas were mapped by Dudek as mulefat scrub or Otay River floodplain restoration within the project site. The isolated patch of mulefat scrub in the eastern portion of the project site did not meet any of the three criteria (hydric soils, hydrology, or hydrophytic vegetation).

Data station 14 was placed within the isolated patch of mulefat scrub. For the hydrophytic vegetation, the sample was dominated by mulefat, a facultative wetland species, with garland chrysanthemum (*Glebionis coronaria*), an upland species, dominant in the understory. The coverage of dominants across all strata versus the coverage of hydrophytic dominants (i.e., plants with a Facultative (FAC), Facultative Wet (FACW), or Obligate (OBL) rating) was

assessed. The percent cover of dominant hydrophytic species was at 50% but did not exceed 50%, which is necessary to meet the hydrophytic vegetation parameter. This station also failed the prevalence index test, with a value greater than 3.0. Therefore, this location does not support hydrophytic vegetation.

For hydrology, because wetland hydrology indicators are often the most transitory of the three wetland parameters, special attention was paid in assessing the landscape features to determine how water flows through these areas, and, if so, what are the potential sources of hydrology (e.g., rainfall, sheet flow, creek flow). Hydrology indicators such as an ordinary high water mark via a bed and bank, surface cracks, drainage patterns, drift deposits, scour/erosion, saturation, permanence of surface water, and wetland vegetation were not present. The mulefat scrub occurs on a nearly level terrace with a 0–1% slope. This area does not support microtopography conducive to the collection or conveyance of surface flows or groundwater, and no signs of hydrology were identified (e.g., cracked soils, biotic crusts, drainage patterns).

Regarding hydric soils, soils in these areas were composed of a dry, sandy loam with a value of 3 and chroma of 2 with no evidence of mottling. These areas also lacked standard hydric soil indicators typically seen in wetland environments, including sulfate reduction, organic matter accumulation, and presence of saturated or inundated soils (ACOE 2008).

Because the mulefat scrub area lacked all three wetland parameters necessary to define a Corps wetland, and lacked a single parameter needed to define a Commission wetland pursuant to the Cowardin method, this area does not meet the definition of a wetland, and is not jurisdictional by any regulating authority in the context of this analysis.

4.4 Regional Resource Planning Context

The San Diego Multiple Species Conservation Program (MSCP) is a long-term regional conservation plan established to protect sensitive species and habitats in San Diego County. The MSCP is divided into subarea plans that are implemented separately from one another. The entire project site is within the City of San Diego MSCP subarea plan. This subarea encompasses 206,124 acres and is generally characterized by urban land use. The City of San Diego Multi-Habitat Planning Area (MHPA) is a “hard line” preserve developed by the City of San Diego in cooperation with the wildlife agencies, property owners, developers, and environmental groups. The MHPA identifies biological core resource areas and corridors targeted for conservation, within which only limited development may occur (City of San Diego 1997).

The project site is located within the MSCP plan area within southern San Diego. This area is composed of the Otay Mesa and Otay River Valley areas of the MHPA. The Otay River Valley

area supports a number of sensitive species and also provides an important linkage from Otay Mountain and Otay Lakes to the San Diego Bay. Where the river delta mouth opens into the San Diego Bay, the area is divided by dikes into salt ponds. These ponds may potentially support several threatened and endangered species.

Covered species that potentially occur within the City of San Diego's MSCP area include Otay tarplant (*Deinandra conjugens*), Orcutt's bird's-beak (*Dicranostegia orcuttiana*), variegated dudleya (*Dudleya variegata*), San Diego barrel cactus (*Ferocactus viridescens*), western snowy plover, long-billed curlew, Belding's Savannah sparrow, large-billed Savannah sparrow (*Passerculus sandwichensis rostratus*), light-footed Ridgway's rail, California least tern, least Bell's vireo, and California gnatcatcher. Various raptors species, including northern harrier, use the valley area for foraging and nesting.

The following MHPA guidelines pertain to the general vicinity of the project site:

- A11. The existing Western Salt Company salt extraction use is expected to continue for an undetermined period. The sensitive animal and plant species should continue to be managed to ensure protection. If the extraction use is terminated, the site should be converted to a use compatible with the resource goals and objectives of the MHPA and other regulations and the policies applicable to the site, or enhanced/restored.
- A12. Work with SANDAG [the San Diego Association of Governments], South Bay jurisdictions, and the Bayshore Bikeway Committee to develop a bike path in or adjacent to the MHPA in the South San Diego Bay area. Design of the bikeway should minimized disturbance to the natural areas.
- A14. The MHPA boundaries within the proposed Special Study Areas of the Otay-Nestor Community Plan may be modified to reflect future changes to land use designations and may require an amendment to the Subarea Plan. Any such modification shall include a wildlife corridor approximately 1,000 feet in width, preserving connections between the Otay River and the San Diego Bay (City of San Diego 1997).

There are also management policies and directives for the Otay River Valley, Otay River Mouth area, as follows :

- In the long-term, should salt production operations cease, restore the tidelands leased for salt mining to baylands by breaching the levees in several locations, if determined appropriate by the MSCP habitat management technical committee in consultation with the wildlife agencies.

- Convert the agricultural area/tilled lands west of I-5 to sustainable agriculture (e.g., grain crops), or restore to native habitats to provide foraging areas for wildlife. Although appropriate habitats for this area appear to include wetlands (e.g., saltmarsh and riparian habitat) and grasslands, research into historic and possibly pre-historic land uses and habitat types in this area should be conducted to help guide restoration efforts if pursued (City of San Diego 1997).

5 ACKNOWLEDGMENTS

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APPENDIX A

Cumulative List of Vascular Plant and Wildlife Species Observed on the Project Site

APPENDIX A
Cumulative List of Vascular Plant and Wildlife Species Observed on the Project Site

VASCULAR PLANT SPECIES

MONOCOTS

CYPERACEAE—SEDGE FAMILY

Schoenoplectus acutus—hardstem bulrush

JUNCACEAE—RUSH FAMILY

Juncus acutus ssp. *leopoldii*—Leopold's rush

JUNCAGINACEAE—ARROW-GRASS FAMILY

Triglochin maritima—seaside arrowgrass

POACEAE—GRASS FAMILY

Distichlis littoralis—shoregrass
Distichlis spicata—saltgrass
Arundo donax—giant reed
Avena barbata—slender oat
Bromus diandrus—ripgut brome
Bromus madritensis—compact brome
Hordeum murinum—mouse barley
Polypogon monspeliensis—annual rabbitsfoot grass
Schismus barbatus—common Mediterranean grass
Stipa miliacea var. *miliacea*—smilograss

TYPHACEAE—CATTAIL FAMILY

Typha latifolia—broadleaf cattail

EUDICOTS

AIZOACEAE—FIG-MARIGOLD FAMILY

Mesembryanthemum crystallinum—common iceplant
Mesembryanthemum nodiflorum—slenderleaf iceplant

ASTERACEAE—SUNFLOWER FAMILY

Amblyopappus pusillus—dwarf coastweed
Ambrosia psilostachya—Cuman ragweed
Artemisia californica—coastal sagebrush
Baccharis pilularis—coyotebrush

Baccharis sarothroides—desertbroom
Heterotheca grandiflora—telegraphweed
Isocoma menziesii—Menzies' goldenbush
Centaurea melitensis—Maltese star-thistle
Glebionis coronaria—crowndaisy
Sonchus oleraceus—common sowthistle
Baccharis salicifolia—mule-fat

BATACEAE—SALTWORT FAMILY

Batis maritima—turtleweed

BORAGINACEAE—BORAGE FAMILY

Heliotropium curassavicum—salt heliotrope

BRASSICACEAE—MUSTARD FAMILY

Hirschfeldia incana—shortpod mustard
Raphanus raphanistrum—wild radish
Lepidium sp.—pepperweed
Sisymbrium sp.—tumblemustard/rocket

CACTACEAE—CACTUS FAMILY

Cylindropuntia prolifera—coastal cholla
Opuntia littoralis—coastal pricklypear

CARYOPHYLLACEAE—PINK FAMILY

Spergularia marina—salt sandspurry

CHENOPODIACEAE—GOOSEFOOT FAMILY

Arthrocnemum subterminale—Parish's glasswort
Atriplex argentea var. *expansa*—silverscale saltbush
Atriplex serenana var. *serenana*—bractscale
Salicornia pacifica—Pacific swampfire
Suaeda taxifolia—woolly seablite
Suaeda esteroa—seablite
Atriplex semibaccata—Australian saltbush
Salsola tragus—prickly Russian thistle
Kochia scoparia—no common name

CONVOLVULACEAE—MORNING-GLORY FAMILY

Cressa truxillensis—spreading alkaliweed

EUPHORBIACEAE—SPURGE FAMILY

Ricinus communis—castorbean

FABACEAE—LEGUME FAMILY

Astragalus trichopodus—Santa Barbara milkvetch
Melilotus indicus—annual yellow sweetclover

FRANKENIACEAE—FRANKENIA FAMILY

Frankenia salina—alkali seaheath

MALVACEAE—MALLOW FAMILY

Malva parviflora—cheeseweed mallow

ONAGRACEAE—EVENING PRIMROSE FAMILY

Camissoniopsis bistorta—southern suncup

PLUMBAGINACEAE—LEADWORT FAMILY

Limonium californicum—marsh rosemary

POLYGONACEAE—BUCKWHEAT FAMILY

Rumex crispus—curly dock

SALICACEAE—WILLOW FAMILY

Salix lasiolepis—arroyo willow

SAURURACEAE—LIZARD'S-TAIL FAMILY

Anemopsis californica—yerba mansa

SOLANACEAE—NIGHTSHADE FAMILY

Datura wrightii—sacred thorn-apple
Lycium californicum—California desert-thorn
Nicotiana acuminata—manyflower tobacco
Lycium sp.—desert-thorn

URTICACEAE—NETTLE FAMILY

Urtica urens—dwarf nettle

WILDLIFE SPECIES – VERTEBRATES

BIRDS

ACCIPITRIDAE—HAWKS, KITES, EAGLES, AND ALLIES

Accipiter cooperii—Cooper's hawk
Buteo jamaicensis—red-tailed hawk
Buteo lineatus—red-shouldered hawk
Circus cyaneus—northern harrier
Elanus leucurus —white-tailed kite

AEGITHALIDAE—LONG-TAILED TITS AND BUSHTITS

Psaltriparus minimus—bushtit

ALAUDIDAE—LARKS

Eremophila alpestris—horned lark

ALCEDINIDAE—KINGFISHERS

Ceryle alcyon—belted kingfisher

ANATIDAE—DUCKS, GEESE, AND SWANS

Anas americana—American wigeon
Anas clypeata—northern shoveler
Anas crecca—green-winged teal
Anas cyanoptera—cinnamon teal
Anas platyrhynchos—mallard
Anas strepera—gadwall
Aythya affinis—lesser scaup
Bucephala albeola—bufflehead
Oxyura jamaicensis—ruddy duck

APODIDAE—SWIFTS

Chaetura vauxi—Vaux's swift
Aeronautes saxatalis—white-throated swift

ARDEIDAE—HERONS, BITTERNS, AND ALLIES

Ardea herodias—great blue heron
Ardea alba—great egret
Egretta thula—snowy egret
Nycticorax nycticorax—black-crowned night-heron

CARDINALIDAE—CARDINALS AND ALLIES

Passerina caerulea—blue grosbeak

COLUMBIDAE—PIGEONS AND DOVES

Zenaida macroura—mourning dove

CORVIDAE—CROWS AND JAYS

Corvus brachyrhynchos—American crow
Corvus corax—common raven

EMBERIZIDAE—EMBERIZIDS

Melospiza melodia—song sparrow
Passerculus sandwichensis beldingi—Belding's Savannah sparrow
Melozone crissalis—California towhee
Zonotrichia leucophrys—white-crowned sparrow

FALCONIDAE—CARACARAS AND FALCONS

Falco columbarius—merlin
Falco sparverius—American kestrel

FRINGILLIDAE—FRINGILLINE AND CARDUELINE FINCHES AND ALLIES

Carpodacus mexicanus—house finch
Spinus psaltria—lesser goldfinch
Spinus tristis—American goldfinch

HIRUNDINIDAE—SWALLOWS

Hirundo rustica—barn swallow
Petrochelidon pyrrhonota—cliff swallow
Stelgidopteryx serripennis—northern rough-winged swallow
Tachycineta bicolor—tree swallow
Tachycineta thalassina—violet-green swallow

ICTERIDAE—BLACKBIRDS

Agelaius phoeniceus—red-winged blackbird
Icterus cucullatus—hooded oriole
Sturnella neglecta—western meadowlark

LARIDAE—GULLS, TERNS, AND SKIMMERS

Gelochelidon nilotica—gull-billed tern
Larus delawarensis—ring-billed gull
Larus occidentalis—western gull

Rynchops niger—black skimmer
Hydroprogne caspia—Caspian tern
Thalasseus elegans—elegant tern
Sterna forsteri—Forster's tern

MIMIDAE—MOCKINGBIRDS AND THRASHERS

Mimus polyglottos—northern mockingbird

PARULIDAE—WOOD-WARBLERS

Dendroica coronata—yellow-rumped warbler
Dendroica petechia—yellow warbler
Dendroica nigrescens—black-throated gray warbler
Dendroica townsendi—Townsend's warbler
Geothlypis trichas—common yellowthroat
Icteria virens—yellow-breasted chat
Oreothlypis celata—orange-crowned warbler
Wilsonia pusilla—Wilson's warbler

PASSERIDAE—OLD WORLD SPARROWS

* *Passer domesticus*—house sparrow

PHALACROCORACIDAE—CORMORANTS

Phalacrocorax auritus—double-crested cormorant

***RALLIDAE*—RAILS, GALLINULES, AND COOTS**

Fulica americana—American coot

***RECURVIROSTRIDAE*—STILTS AND AVOCETS**

Himantopus mexicanus—black-necked stilt
Recurvirostra americana—American avocet

SCOLOPACIDAE—SANDPIPERS, PHALAROPES, AND ALLIES

Tringa semipalmata—willet
Limosa fedoa—marbled godwit
Numenius americanus—long-billed curlew
Numenius phaeopus—whimbrel

STRIGIDAE—TYPICAL OWLS

Asio flammeus—short-eared owl
Athene cunicularia—burrowing owl

STURNIDAE—STARLINGS

* *Sturnus vulgaris*—European starling

TROCHILIDAE—HUMMINGBIRDS

Calypte anna—Anna's hummingbird

TROGLODYTIDAE—WRENS

Cistothorus palustris clarkae—Clark's marsh wren

TYRANNIDAE—TYRANT FLYCATCHERS

Myiarchus cinerascens—ash-throated flycatcher
Sayornis nigricans—black phoebe
Sayornis saya—Say's phoebe
Tyrannus vociferans—Cassin's kingbird

VIREONIDAE—VIREOS

Vireo gilvus—warbling vireo

MAMMALS

LEPORIDAE—HARES AND RABBITS

Sylvilagus bachmani—brush rabbit
Lepus californicus—black-tailed jackrabbit

CANIDAE—WOLVES AND FOXES

Canis latrans—coyote

SCIURIDAE—SQUIRRELS

Spermophilus beecheyi—California ground squirrel

* signifies introduced (non-native) species

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APPENDIX B

Results of the Jurisdictional Wetlands Delineation

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March 10, 2015 6758-02

Stan Williams
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Subject: ***Results of a Preliminary Jurisdictional Wetland Delineation for the Otay River Estuary Restoration Project (ORERP), South San Diego Bay Unit of the San Diego Bay National Wildlife Refuge***

Dear Mr. Williams:

The proposed Otay River Estuary Restoration Project (ORERP [proposed project]) is a partnership between Poseidon Resources (Poseidon), the U.S. Fish and Wildlife Service (Service or USFWS), and San Diego Bay National Wildlife Refuge (Refuge). The purpose of ORERP is to create, restore, and enhance coastal wetlands to benefit native fish, wildlife, and plant species and to provide habitat for migratory seabirds, shorebirds and salt marsh-dependent species.

This proposed project would occur at two distinct and non-contiguous sites within the South San Diego Bay Unit of the Refuge and would be consistent with the goals and objectives of the Service's San Diego Bay National Wildlife Refuge Comprehensive Conservation Plan (CCP) (USFWS 2006) (Figures 1 and 2). The proposed project would also follow the terms and conditions of the permits issued by the California Coastal Commission (CCC) and San Diego Regional Water Quality Control Board (Regional Board) for Poseidon's Carlsbad Desalination Project.

When completed the creation and restoration of tidal influenced estuarine, and salt marsh habitats within the Refuge by Poseidon would benefit many species of fish found in south San Diego Bay by providing new and expanded nursery and feeding areas. While avoiding and minimizing impacts to existing seabird and shorebird nesting areas, the proposed project would provide additional and enhanced foraging and nesting habitats for federal and state listed birds. These include species such as the endangered light-footed Ridgway's rail (*Rallus obsoletus levipes*), endangered California least tern (*Sternula antillarum browni*), and threatened western snowy plover (*Charadrius alexandrinus nivosus*) and a diversity of migratory seabirds and shorebirds.

This Preliminary Jurisdictional Delineation report combines the results of field findings for three separate surveys that were conducted as the project design has evolved. The first two surveys were previously submitted to the Corps and confirmed during preliminary jurisdictional

determination processes. The third survey consists of access roads and crossings between the two sites. The third location has not been reviewed or confirmed. The Corps recommended that rather than submit a third delineation report for review, to combine all survey results into a single report. Therefore, this report combines the following survey locations:

Site 1: Otay River/Pond 20 Site

On February 22, 2011, Dudek staff conducted a preliminary jurisdictional wetland delineation on the proposed Poseidon salt marsh restoration site (Pond 20 Study Area), located in the South Bay Unit of the San Diego Bay National Wildlife Refuge within the City of San Diego (City), San Diego County, California. The Pond 20 Study Area is located in the southern portion of the City, at the south end of the San Diego Bay (Figure 3). The western portion of the Pond 20 Study Area is owned by the State of California (State) and the eastern portion of the Pond 20 Study Area is owned by the United States of America (US).The U.S. Fish and Wildlife Service manages the Refuge.

Dudek coordinated with the ACOE regarding this delineation. Additional fieldwork was conducted by ACOE in August 2012 to refine ACOE-jurisdictional boundaries. This report presents the results of the analysis and incorporates the additional field information from ACOE (ACOE File #SPL 2011-00743-PJB). The PJD for the Pond 20 Study Area was confirmed by ACOE October 31, 2012 (Attachment 1).

Site 2: Salt Ponds 12-15

On March 13, 2013, Dudek staff conducted a preliminary jurisdictional wetland delineation, on Salt Ponds 12–15 (Salt Ponds 12-15 Study Area) of the Salt Works salt pond complex located in the South Bay Unit of the San Diego Bay National Wildlife Refuge. The Salt Ponds 12-15 Study Area is partially within the City of Chula Vista, National City and the City of San Diego, San Diego County, California. The Salt Ponds 12-15 Study Area is located at the south end of the San Diego Bay (Figures 4a – 4c). The land where the Salt Ponds occur is owned by the California State Lands Commission, State of California (State), but is leased to the U.S. Fish and Wildlife Service (USFWS), which manages the Refuge.

Dudek coordinated with the ACOE regarding this delineation. The PJD for the Salt Ponds 12-15 Study Area was confirmed by ACOE November 12, 2013 (Attachment 2).

Site 3: Access Routes and Crossings

On May 29, 2014, Dudek staff conducted a preliminary jurisdictional wetland delineation on the proposed Poseidon – ORERP access routes (Access Routes Study Area) located in the San Diego

Bay National Wildlife Refuge and northwest of Egger highlands just off of Bay Shore Bikeway (Silver strand Bikeway) San Diego County, California (Figures 5a and 5b). The Access Routes Study Area is owned by the US (southern access route and crossing) and the State (northern access route and crossing). Both areas are within the Refuge boundaries and managed by the USFWS.

The results of the delineation within the Access Routes Study Area are presented in this report, combined with the Pond 20 Study Area and the Salt Ponds 12-15 Study Area.

Initial Focus of Aquatic Resources Subject to Regulation within all Three Sites

Dudek's investigation concentrated on identifying resources that may be subject to regulation under Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act (RHA) as administered U.S. Army Corps of Engineers (ACOE), the Porter Cologne Act as administered by Regional Water Quality Control Board (RWQCB), Section 1600 *et seq*. of the Fish and Code as administered by the California Department of Fish and Wildlife (CDFW), and/or the Coastal Act as administered by the California Coastal Commission (CCC).

STUDY AREA DESCRIPTIONS

Site 1: Otay River/Pond 20 Site

The Pond 20 Study Area occupies approximately 86 acres of the South Bay Unit of the San Diego Bay National Wildlife Refuge. The site is located within Sections 20 and 21, Township 18 South, Range 2 West on the U.S. Geological Survey (USGS) 7.5-minute Imperial Beach quadrangle map (1966); longitude 117°5'46.02" W and latitude 32°35'29.95" N (Figure 2). The Pacific Ocean is approximately 1.5 miles west of the Pond 20 Study Area. Channelized water flows through the site along the northern boundary (Otay River) and through the center of the site in a north-south direction (Nestor Creek). The western portion of the site contains levees and basins that were constructed as part of the former solar salt evaporation system in southern San Diego Bay (Pond 20a) and the eastern portion of the site is land that was formerly used for sewage treatment facilities and agriculture. Elevations in the Study Area range from sea level to approximately 20 feet above mean sea level (AMSL).

Site 2: Salt Ponds 12-15

The South Bay Salt Works occupies approximately 1,068 acres of the San Diego Bay. The South Bay Salt Works operates with a Special Use Permit as a solar salt production facility. The Study Area (Salt Ponds 12–15) occupies approximately 309 acres of the South Bay Unit of the San Diego Bay National Wildlife Refuge. The site is located within Sections 16, 17, 20 and 21,

Township 18 South, Range 2 West on the U.S. Geological Survey (USGS) 7.5-minute Imperial Beach quadrangle map (1966); longitude 117° 6' 24 " W and latitude 32° 36' 05" N (Figure 2). The Pacific Ocean is approximately 1.5 miles west of the Salt Ponds 12-15 Study Area. The Otay River tidal channel flows north into San Diego Bay at the southern and western boundary of the Study Area, and the Palomar Street tidal channel flows north into San Diego Bay at the eastern boundary of the northern portion (Pond 15) of the Study Area. The Salt Ponds 12-15 Study Area contains levees and ponds that were constructed as part of the solar salt evaporation system in southern San Diego Bay. Elevations in the Salt Ponds 12-15 Study Area range from sea level to approximately 12 feet AMSL.

Site 3: Access Routes and Crossings

The study area includes two general locations. One is located northwest of Egger highlands just off of Bay Shore Bikeway (Silver strand Bikeway), west of Interstate 5 (Figure 5a; Southern Location). The second location is within the Salt Works facility located north of Palm Avenue, west of Interstate 5, and east of Silver Strand Boulevard (Figure 5b; Northern Location). These locations are within Sections 16, 17, 20 and 21, Township 18 South, Range 2 West on the U.S. Geological Survey (USGS) 7.5-minute Imperial Beach quadrangle map (1966); longitude 117° 5' 33" W and latitude 32° 35' 40" N and longitude 117° 5' 46 " W and latitude 32° 36' 96" N.

The northern portion of the Access Routes Study Area includes salt ponds (including associated levees and access roads) and the Palomar Street channel, which bisects salt ponds running east to west. The southern portion of the Access Routes Study Area includes the Otay River Floodplain Restoration Site, the Otay River channel, and a tributary channel to the Otay River. Elevations in the Access Routes Study Area range from sea level to approximately 16 feet AMSL.

SUMMARY OF REGULATIONS

The following agencies regulate activities within streams, wetlands, and riparian areas throughout California: ACOE, CDFW, and RWQCB. The ACOE Regulatory Program regulates activities in jurisdictional resources under Section 404 of the CWA and Section 10 of the RHA. The CDFW regulates activities to wetlands and non-wetland waters under Sections 1600–1616 of the Fish and Wildlife Code. The RWQCB regulates activities to wetlands and non-wetland waters exhibiting surface water under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act (Porter-Cologne Act).The CCC also regulates wetlands within the coastal zone pursuant to the California Coastal Act (California Public Resources Code Section 30233).

U.S. Army Corps of Engineers

The ACOE regulates "discharge of dredged or fill material" into "waters of the U.S.," which includes tidal waters, interstate waters, and all other waters that are part of a tributary system to interstate waters or to navigable "waters of the U.S.," the use, degradation, or destruction of which could affect interstate or foreign commerce or which are tributaries to waters subject to the ebb and flow of the tide (33 CFR. 328.3 (a)), pursuant to provisions of Section 404 of the CWA and Section 10 of the RHA. The ACOE jurisdiction within rivers and streams extends to the "ordinary high water mark" (OHWM). The ACOE defines jurisdictional wetlands as areas supporting a predominance of hydrophytic vegetation, hydric soils, and wetland hydrology, in accordance with the procedures established in the ACOE Wetland Delineation Manual (Environmental Laboratory 1987). However, the United States Supreme Court ruling in the *Solid Waste Agency of Northern Cook County vs. United States Army Corps of Engineers, No. 99-1178* (January 9, 2001) ("the SWANCC case"), held that the CWA does not give the federal government regulatory authority over non-navigable, isolated, intrastate waters. Because of this decision, some previously regulated depressional areas such as mudflats, sandflats, wetlands, prairie potholes, wet meadows, playa lakes, natural ponds, and vernal pools, which lack a hydrologic connection to other intra- or inter-state "waters of the U.S.," are no longer regulated by the ACOE. However, some of these areas (e.g., isolated streams, lakes or ponds) may still be regulated by the CDFW under Section 1600 of the Fish and Code or the RWQCB under the Porter-Cologne Act.

For tidally influenced waters, the Corps has two limits to jurisdiction: one for Section 10 and one for Section 404. The shoreward limit to the ACOE Regulatory program jurisdiction under the Section 10 authorities of the RHA in coastal areas extends to the line on the shore reached by the plane of the mean high water, which is 5 feet above MLLW (Mean Lower Low Water (MLLW) = 0 datum). The shoreward limit for the Regulatory programs jurisdiction under the ACOE Section 404 authorities is based on the high tide line, or in the San Diego Bay 7.79 feet above MLLW. If there are wetlands meeting the ACOE criteria abutting or adjacent the high tide line, then the ACOE jurisdiction under section 404 would extend to the limit of those wetlands.

California Department of Fish and Wildlife

In accordance with Section 1600 et seq. of the California Fish and Game Code (Streambed Alteration), the CDFW regulates activities which "will substantially divert, obstruct, or substantially change the natural flow or bed, channel or bank, of any river, stream, or lake designated by the Department in which there is at any time an existing fish or wildlife resource or

from which these resources derive benefit." The CDFW takes jurisdiction to the top of bank of a stream, or the limit of the adjacent riparian vegetation, referred to in this report as "streambed and associated riparian habitats." The exception would be on lands owned by the US, wherein CDFW would not have jurisdiction, as is the case with the Otay River channel on the northeast corner of the Study Area. Applications to the CDFW for Streambed Alteration under Section 1600 et. seq. must include a complete certified California Environmental Quality Act (CEQA) document.

In 14 CCR 1.72, the CDFW defines a "stream" (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation."

In 14 CCR 1.56, the CDFW's definition of "lake" includes "natural lakes or man-made reservoirs." Diversion, obstruction, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife requires authorization from CDFW by means of entering into an agreement pursuant to Section 1602 of the Fish and Game Code.

Section 1600 et seq. does not extend to isolated wetlands and waters, such as small ponds not located on a drainage course, wet meadows, vernal pools, or tenajas, nor does it extend over marine waters influenced by the ebb and flow of the tide that lack a bed and bank form typical of stream channels.

Within estuary environments, a preponderance of evidence standard is necessary where it is not readily apparent where Section 1600 jurisdiction ends. Under this standard, the geometry of the water feature, the predominant salinity of the waters, the composition of vegetation, and the predominant fauna are used to determine the limits of CDFW jurisdiction under section 1600. Waters are not regulated under section 1600 of the Fish and Game Code where waters are principally marine, aquatic shorelines are shaped principally by tidal current and wave action not by fluvial processes, vegetation is saline marsh and not brackish or freshwater vegetation, and marine fish and invertebrate communities are prevalent. Conversely, areas dominated by fresh and brackish salinities and freshwater aquatic species, with fluvial erosion patterns, are regulated under section 1600.

Regional Water Quality Control Board

The RWQCB regulates discharging waste, or proposing to discharge waste, within any region that could affect the "waters of the state" (Water Code Section 13260 (a)), pursuant to provisions of the Porter-Cologne Act. "Waters of the State" are defined as "any surface water or

groundwater, including saline waters, within the boundaries of the state" (Water Code Section 13050 (e)). Although the Porter-Cologne Act definition of "Waters of the State" may not apply on federally owned land, the RWQCB may still assert jurisdiction over qualifying aquatic resources on land owned by the US where the CWA Section 401 applies. Before the ACOE will issue a CWA Section 404 permit, applicants must receive a CWA Section 401 Water Quality Certification from the RWQCB. If a CWA Section 404 permit is not required for the project, the RWQCB may still require a permit (i.e., Waste Discharge Requirement) under the Porter-Cologne Act. Applications to the RWQCB must include a completed certified CEQA document.

California Coastal Commission

Under the California Coastal Act (CCA), the CCC regulates impacts to wetlands in the "coastal zone" and requires a coastal development permit for almost all development within this zone. From three miles seaward the coastal zone generally extends approximately 1,000 yards inland. In less developed areas, it can extend up to 5 miles inland from the mean high tide line, but can also be considerably less than 1,000 yards inland in developed areas. While the Coastal Zone Management Act (CZMA) excludes from its definition of the coastal zone "lands the use of which by law is subject solely to the discretion of or which is held in trust by the Federal Government." (15 USC 1453(1)]), CCC regulations may still apply if the proposed project is a private activity (CCC 2011).

The CCA also protects designated sensitive coastal areas by providing additional review and approvals for proposed actions in these areas. Section 30121 of the CCA defines wetlands as "...lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, swamps, mudflats, and fens…" The CCA allows disking, filling, or dredging of wetlands for certain uses, such as restoration. The CCA also directs each city or county within the coastal zone to prepare a Local Coastal Program (LCP) for Coastal Commission certification (CCC 2009).

In contrast to the ACOE, which uses a three-parameter definition to delineate wetlands, the CCC essentially uses the Cowardin method of wetlands classification, which defines wetland boundaries by a single parameter (i.e., hydric soils, hydrophytic vegetation, or hydrology) (Cowardin et al. 1979).

The CCC wetland definition is generally more encompassing than either the ACOE or CDFW definition in most respects. However, Section 13577(b) of the Administrative Regulations suggests that, where conditions are not capable of supporting hydric soils or hydrophytic vegetation, hydrologic indicators of saturation or surface waters should be expressed on an

annual basis ("at some time during each year") rather than under ordinary high water conditions as is the case under the federal regulatory standard.

METHODS

Data regarding jurisdictional resources present within the Study Area were obtained through a review of pertinent literature and field reconnaissance; both are described in detail below.

Literature Review

The following data sources were reviewed to assist in the delineation effort:

- National Wetlands Inventory Maps (U. S. Fish and Wildlife Service (USFWS 2009))
- National Hydric Soils List
- Natural Resource Conservation Service Websoil Survey (U.S. Department of Agriculture (USDA 2009))
- Historic aerial photographs.

Field Assessment

The delineation work was performed in accordance with the methods prescribed in the ACOE's 1987 Wetland Delineation Manual, Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (September 2008), and the ACOE/Environmental Protection Agency (EPA) Rapanos Guidance (Environmental Laboratory 1987, ACOE 2008, ACOE and EPA 2007). The ACOE and RWQCB wetlands delineation consists of the field identification of jurisdictional wetlands using the three parameters described in the ACOE manual: hydric soils, hydrology, and hydrophytic vegetation. A predominance of hydrophytic vegetation, where associated with a stream channel, was used to determine CDFW-regulated riparian areas. Wetlands under the jurisdiction of the CCC were delineated using the Cowardin method of wetlands classification, which, as previously discussed, defines wetland boundaries by a single parameter (i.e., hydric soils, hydrophytic vegetation, or hydrology). In some instances where isolated surface waters are present, the RWQCB may choose to take jurisdiction over these resources under the State's Porter-Cologne Act.

Site 1: Otay River/Pond 20 Site

Dudek biologists Andrew Thomson and Kathleen Dayton performed a formal (routine) wetlands delineation within the approximately 86-acre Pond 20 Study Area on February 22, 2011. An

additional analysis of the site was conducted by Dudek's Stuart Fraser on July 20, 2011, to confirm lack of ponding in the former salt pond areas in the western portion of the Study Area. The ACOE conducted fieldwork in August 2012 to refine ACOE-jurisdictional areas. All areas identified as being potentially subject to the jurisdiction of the ACOE, RWQCB, CDFW, and the CCC were field verified and mapped.

Hydrology, vegetation, and soils were assessed at 21 geographically distinct sampling locations (Sampling Points 5-25) (Appendix A) throughout the Pond 20 Study Area to determine the presence or absence of wetland field indicators (Figure 3). The overall area was assessed for evidence of an OHWM, saturation, permanence of surface water, wetland vegetation, and nexus to traditional navigable waters. A more detailed description of the methods is described below.

The location of sampling points and the limits of wetlands were collected in the field using a 100 scale (1 inch = 100 feet) aerial photograph, topographic base, and Global Positioning System (GPS) equipment with sub-meter accuracy. ArcGIS software was used to compile the information into a geospatial database.

Site 2: Salt Ponds 12-15

Dudek biologists Andrew Thomson and Kathleen Dayton performed a formal wetlands delineation within the approximately 309-acre Study Area on March 13, 2013. All areas identified as being potentially subject to the jurisdiction of the ACOE, RWQCB, CDFW, and the CCC were field verified and mapped.

Hydrology, vegetation, and soils were assessed at 15 geographically distinct sampling locations (Sampling Points 1–15) (Appendix B) throughout the Study Area to determine the presence or absence of wetland field indicators (Figures 4a–4c). The overall area was assessed for evidence of an OHWM, saturation, permanence of surface water, wetland vegetation, and nexus to traditional navigable waters. A more detailed description of the methods is described below.

The location of sampling points and the limits of wetlands were collected in the field using a 100 scale (1 inch = 100 feet) aerial photograph, topographic base, and Global Positioning System (GPS) equipment with sub-meter accuracy. ArcGIS software was used to compile the information into a geospatial database.

Site 3: Access Routes and Crossings

Dudek biologist Andrew Thomson performed a formal wetlands delineation within the approximately 20-acre Access Routes Study Area on May 29, 2014. All areas identified as being

potentially subject to the jurisdiction of the ACOE, RWQCB, CDFW, and the CCC were field verified and mapped.

Hydrology, vegetation, and soils were assessed at seven geographically distinct sampling locations (Sampling Points 1-7) (Appendix C) throughout the Access Routes Study Area to determine the presence or absence of wetland field indicators (Figures 5a and 5b). The overall area was assessed for evidence of an OHWM, saturation, permanence of surface water, wetland vegetation, and nexus to traditional navigable waters. A more detailed description of the methods is described below.

The location of sampling points and the limits of wetlands were collected in the field using a 100 scale (1 inch = 100 feet) aerial photograph, topographic base, and Global Positioning System (GPS) equipment with sub-meter accuracy. Dudek geographic information system (GIS) technician Lesley Terry digitized the jurisdictional extents based on the GPS data and data collected directly onto field maps into a project-specific GIS using ArcGIS software.

Hydrophytic Vegetation

Dudek consulted the 2012 National Wetland Plant List (NWPL; ACOE 2012) to determine the indicator status of each plant species within each sampling location.

During the delineation, a data station point was considered positive for hydrophytic vegetation if it passed the basic dominance test (Indicator 1), meaning that more than 50% of the dominant species sampled were characterized as either obligate, facultative wetland, and/or facultative per the NWPL. In those cases where the dominance test failed but there were positive indicators of hydric soils and/or hydrology, the vegetation parameter was re-evaluated using the prevalence index (Indicator 2), which takes into account all plant species in the community, not just dominants. The standard plot sampling technique was used to sample vegetation within a two-meter radius for herbaceous vegetation and a four-meter radius for shrubs. All plant species observed during the surveys were identified and recorded.

Hydric Soils

According to the National Technical Committee for Hydric Soils (NTCHS), hydric soils are “soils that are formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part” (USDA Soil Conservation Service 1994). Soil pits were prepared using a shovel to determine if hydric soils were present. The presence of hydric soils was determined through consultations with the 1987 Manual as well

as Field Indicators of Hydric Soils in the United States v. 7.0 (NRCS 2010) and the ACOE's Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)(September 2008). Munsell Soil Color Charts were used to determine soil chroma and value. Where feasible, soil pits were prepared to depths ranging from 10–16 inches. Dry soils were moistened to obtain the most accurate color. In general, soils from test pits were determined to be hydric if they exhibited redoximorphic features (e.g., redox concentrations, redox depletions, reduced matrix or depleted matrix).

Hydrology

Per the guidelines prescribed in the Arid West Supplement (September 2008), wetland hydrology indicators are separated into four major groups: Group A, B, C, and D. Group A indicators are based on direct observations of surface flow, ponding, and soil saturation/groundwater. Group B indicators consist of evidence that the site has been or is currently subjected to ponding including, but not limited to, water marks, drift deposits, and sediment deposits. Group C indicators include signs of previous and/or current saturation including oxidized rhizospheres surrounding living roots and the presence of reduced iron or sulfur, both of which are indicative of extended periods of soil saturation. Group D indicators consist of "vegetation and soil features that are indicative of current rather than historic wet conditions and include a shallow aquitard and results of the FAC-Neutral test." Each group is subdivided into primary and secondary categories based on their frequency and reliability to occur in the Arid West region. Signs of hydrology were investigated on site by intensive field review. Please see Appendices A - C for the completed data station forms.

REVIEW OF SITE HISTORY

Site 1: Otay River/Pond 20 Site

The South San Diego Bay Unit was established in 1999 as a Unit of the San Diego National Wildlife Refuge following the execution of a lease from the California State Lands Commission to the USFWS for 2,209 acres of State Tidelands. An additional 91 acres of land in the Otay River floodplain (encompassing the Study Area evaluated in this document) was acquired by the USFWS for inclusion in this Refuge Unit in January 2000.

On July 13, 2004, the acreage in the South San Diego Bay Unit was added to the Sweetwater Marsh National Wildlife Refuge and both areas were renamed the "San Diego Bay National Wildlife Refuge." The Study Area is encompassed by the San Diego Bay National Wildlife Refuge.

The eastern portion of the Study Area was previously used for sewage treatment facilities and agriculture, but is currently dominated by non-native plant species. Most of the native upland and wetland habitat of the Otay River floodplain was removed during the twentieth century as a result of industrial, agricultural, and municipal activities. Maps dating back to 1916 depict the Otay River in its present channelized configuration (USFWS 2006). A narrow corridor of salt marsh, freshwater marsh, and native riparian habitat are supported within the Otay River channel.

In the western portion of the Study Area, remnant conditions from a former industrial salt evaporation pond (Pond 20a) are present. Solar salt production has occurred in the San Diego Bay for over 100 years (USFWS 2006). Pond 20A was last regularly used as an evaporator pond in the 1940s with a failed subsequent effort in the 1960s to reintegrate the pond into the evaporator process of the salt works (Merkel and Associates, 2008).

Due to construction of levees surrounding Pond 20a, the basin is isolated from tributary fresh or saltwater surface input and experiences occasional storm runoff from the internal pond basin and a roadway surface drain from Palm Avenue (Merkel and Associates, 2008). Seasonal water levels in the basin fluctuate significantly and waters are strongly saline due both to the basin's history as a salt concentrator and the continued closed system evaporative processes occurring in the basin today (Merkel and Associates, 2008). Due to the hypersaline conditions in the basin bottoms of the former industrial salt evaporation ponds, native wetland vegetation and bay invertebrates are essentially absent (USFWS 2006). Highly variable annual precipitation levels influence the location and extent of standing water in the pond.

Site 2: Salt Ponds 12-15

The South Bay Salt Works is an active solar salt production facility that is operated in accordance with a Special Use Permit issued by the Service for solar salt production. The Study Area is entirely within the active South Bay Salt Works production area, and composes Ponds 12–15.

The South San Diego Bay Unit was established in 1999 as a Unit of the San Diego National Wildlife Refuge following the execution of a lease from the California State Lands Commission to the USFWS for 2,209 acres of State Tidelands. An additional 91 acres of land in the Otay River floodplain was acquired by the USFWS for inclusion in this Refuge Unit in January 2000.

On July 13, 2004, the acreage in the South San Diego Bay Unit was added to the Sweetwater Marsh National Wildlife Refuge and both areas were renamed the "San Diego Bay National Wildlife Refuge." The Study Area is encompassed by the San Diego Bay National Wildlife Refuge.

Site 3: Access Routes and Crossings

The site history of the Access Routes Study Area is effectively described above as these areas occur in the same vicinity of Pond 20 (southern area) and Salt Ponds 12-15 (northern area). The only additional information relative to the site history of the Access Routes Study Area is the recent implementation of the Otay River Floodplain Restoration Project (ORFRP). The ORFRP included a large-scale planting area on the floodplain of the Otay River within the Refuge. The site has been planted with riparian trees and shrubs and was irrigated to promote establishment. The Access Routes Study Area encompasses a portion of the ORFRP (Figure 5a).

RESULTS

The results of each federally defined delineation parameter occurring at each field datapoint (field station) for all three sites are located in Table 1. The type and amount of jurisdictional waters occurring within each site are summarized in Table 2.

Table 1
Wetland Delineation Sampling Point Summary for all three sites

Site 1: Otay River/Pond 20 Site						
Data Station[1]	*Wetland Determination Field Indicators*			*Stream Association?*	*Tidal Channel Association?*	*Jurisdiction*
	Vegetation	*Hydric Soils*	*Hydrology*			
5	✓		✓	Yes	No	CCC
6				Yes	No	None
7	✓	✓	✓	Yes	No	ACOE, RWQCB, CCC
8	✓			No	No	CCC
9	✓	✓	✓	No	Yes	ACOE, RWQCB, CCC
10	✓	✓	✓	No	Yes	ACOE, RWQCB, CCC
11	✓		✓	No	Yes	ACOE, RWQCB, CCC[2]
12				No	No	None
13	✓	✓		No	No	CCC
14				No	No	None[3]
15	✓		✓	No	No	CCC
16				No	No	None
17	✓		✓	No	Yes	ACOE, RWQCB, CCC[2]
18	✓	✓	✓	No	Yes	ACOE, RWQCB, CCC

Table 1
Wetland Delineation Sampling Point Summary for all three sites

Site 1: Otay River/Pond 20 Site						
Data Station[1]	*Wetland Determination Field Indicators*			*Stream Association?*	*Tidal Channel Association?*	*Jurisdiction*
	Vegetation	*Hydric Soils*	*Hydrology*			
19				No	No	None
20	✓	✓	✓	No	No	ACOE, RWQCB, CCC
21	✓			No	No	None
22			✓	No	No	None
23				No	No	None
24		✓	✓	No	No	None
25	✓			No	No	None

Site 2: Salt Ponds 12-15						
Data Station	*Location*	*Wetland Determination Field Indicators*			*Hydrologic Association?*	*Jurisdiction*
		Vegetation	*Hydric Soils*	*Hydrology*		
1	Inside slope (salt pond side) of levee at Pond 15	✓	✓	✓	Salt Pond	ACOE, RWQCB, CCC
2	Outer slope of levee adjacent to Palomar Street tidal channel	✓	✓		Tidal Channel	ACOE, RWQCB, CCC
3	Top of levee along access road		✓		None	None*
4	Salt marsh habitat on bay side of salt pond levee	✓	✓	✓	Bay	ACOE, RWQCB, CCC
5	Salt marsh habitat on bay side of salt pond levee	✓	✓	✓	Bay	ACOE, RWQCB, CCC
6	Top of levee between salt ponds		✓		None	None*
7	Top of outer salt pond levee				None	None
8	Top of levee between salt ponds	✓	✓		None	None*
9	Inside slope (salt pond side) of levee at Pond 12		✓	✓	Salt Pond	ACOE, RWQCB, CCC
10	Top of outer salt pond levee	✓			None	None
11	Salt marsh habitat on Otay Channel side of salt pond levee	✓	✓	✓	Tidal Channel	ACOE, RWQCB, CCC
12	Top of outer salt pond levee		✓		None	None*
13	Top of levee between salt ponds		✓		None	None*
14	Outer slope of levee adjacent to Palomar Street tidal channel	✓	✓		Tidal Channel	ACOE, RWQCB, CCC
15	Inside slope (salt pond side) of levee at Pond 15		✓	✓	Salt Pond	ACOE, RWQCB, CCC

Table 1
Wetland Delineation Sampling Point Summary for all three sites

Site 3: Access Routes and Crossings						
Data Station	*Location*	*Wetland Determination Field Indicators*			*Hydrologic Association?*	*Jurisdiction*
		Vegetation	*Hydric Soils*	*Hydrology*		
1	Northwestern side of Egger Highlands near Silver Strand Bikeway associated with Freshwater Marsh	✓	✓	✓	Freshwater marsh	ACOE, RWQCB, CCC
2	Northwestern side of Egger Highlands near Silver Strand Bikeway associated with Mulefat Scrub				Mulefat Scrub	CCC
3	Northwestern side of Egger Highlands near Silver Strand Bikeway within the Otay River Floodplain Restoration				Restoration area	CCC[4]
4	Northwestern side of Egger Highlands near Silver Strand Bikeway associated with Mulefat Scrub				Mulefat Scrub	CCC
5	North side of Egger Highlands near Silver Strand Bikeway associated with the Otay River Floodplain Restoration	✓			Restoration Area	CCC[4]
6	North side central section of Egger Highlands near Silver Strand Bikeway associated with southern coastal salt marsh in the channel	✓	✓	✓	Southern Coastal Salt Marsh	ACOE, RWQCB, CCC
7	North side central section of Egger Highlands near Silver Strand Bikeway associated with Mulefat Scrub				Mulefat Scrub	CCC

* Although these soils retain hydric soil indicators, the soils were derived from dredged bay mud that has been placed on the top of the salt pond levees.
1 Data stations 1–4 are located outside of the Otay River/Pond 20 Study Area.
2 Although not all three parameters were met, ACOE jurisdiction was presumed because the area was below the elevation of the high tide line (7.79 feet above MLLW). See also the Results section below.
3 See Section Non-Jurisdictional Mulefat Scrub below
4 These areas are within the Otay River Floodplain Restoration site, which has been recently planted with riparian species. The site is actively irrigated to promote plant establishment. Evident hydric soils and hydrology per the ACOE delineation manual are not yet present within the restoration site; therefore, the areas were not classified as ACOE jurisdictional but may eventually develop the indicators necessary to classify these areas as ACOE jurisdictional.

Table 2
Wetland Delineation Existing Acreage Summary

Vegetation Community	Jurisdiction	
	ACOE, RWQCB, CCC	*CCC Only*
Site 1: Otay River/Pond 20		
Brackish water	3.31	—
Cismontane Alkali Marsh	1.28	—
Coastal and Valley Freshwater Marsh	0.31	—
Former Salt Pond Bottom and Borrow Area	4.35	—
Mulefat Scrub	—	0.01
Southern Coastal Salt Marsh	6.07	0.04
Subtotal	*15.31*	*0.05*
Site 2: Salt Ponds 12-15		
Beach	0.89	—
Brackishwater	1.69	—
Open Water	270.42	—
Salt Pond Levee	18.16	—
Southern Coastal Salt Marsh	8.12	—
Subtotal	*299.26*	—
Site 3a: Southern Access Roads and Crossings		
Coastal and Valley Freshwater Marsh	0.59	—
Mulefat Scrub	—	0.70
Otay River Floodplain Restoration	—	5.92
Southern Coastal Salt Marsh	0.26	0.10
Former Salt Pond Bottom and Borrow Area	0.07	—
Subtotal	*0.92*	*6.72*
Site 3b: Northern Access Routes and Crossings		
Bay	0.59	—
Brackish water	0.14	—
Southern Coastal Salt Marsh	2.19	—
Salt Pond Levee	0.76	—
Water	3.29	—
Subtotal	*6.97*	—
Grand Total	**322.46**	**6.77**

Note: Acreages may not total due to rounding.

Site 1: Otay River/Pond 20

The results of the study include areas delineated as jurisdictional by the ACOE, RWQCB and the CCC. Although the non-tidal portion of the Otay River channel would have qualified for CDFW jurisdiction, the portion is on federal land, and thus not subject to Section 1600 et seq. of the California Fish and Game Code. Representative photos of the Study Area and sampling locations can be found in Figures 6a and 6b.

Site 2: Salt Ponds 12-15

The results of the study include areas delineated as jurisdictional by the ACOE, RWQCB and the CCC. The Otay River channel and the Palomar Street channel are tidal channels within the study area in the Refuge and do not qualify for CDFW jurisdiction, and thus are not subject to Section 1600 et seq. of the California Fish and Game Code. Representative photos of the Ponds 12-15 Study Area and sampling locations can be found in Figures 7a – 7c.

Site 3:Access Routes and Crossings

The results of the study include areas delineated as jurisdictional by the ACOE, RWQCB, and CCC. Although the non-tidal portion of the Otay River channel would have qualified for CDFW jurisdiction, the portion is on federal land within the Refuge, and thus not subject to Section 1600 et seq. of the California Fish and Game Code. Representative photos of the Access Routes Study Area and sampling locations can be found in Figures 8a and 8b.

ACOE/RWQCB/CCC Jurisdiction

Areas meeting all three parameters were classified as wetlands under the jurisdiction of the ACOE, RWQCB, and CCC.

Site 1: Otay River/Pond 20

Results of the wetland delineation (summarized in Tables 1 and 2) indicate that approximately 15.31 acres of wetlands and non-wetland Waters of the U.S. under the joint jurisdiction of the ACOE, RWQCB, and CCC occur within the Pond 20 Study Area. In general, the predominant native vegetation communities associated with the wetlands are adjacent to tidal channels and support southern coastal salt marsh. Soils in these areas are characterized by variable textures (including clay loam, sand, loam, clay, loamy sand, loamy clay, and sandy clay loam) with redox dark surfaces or a loamy gleyed matrix. Wetland hydrology indicators present include surface

water, high water table, and saturation. Areas supporting all three wetland indicators were mapped as ACOE, RWQCB, and CCC wetlands. Additionally, in some locations along the tidal channels, there is a narrow strip along the outer perimeter of the salt marsh habitat where hydrology indicators were not apparent and soils did not have hydric indicators. In these instances, ACOE jurisdiction was assumed because they are tidally influenced areas that are below the elevation of the high tide line (7.79 feet above MLLW).

There was a total of 8.12 acres of wetlands within the Pond 20 Study Area, all of which supported southern coastal salt marsh. Because the Pond 20 Study Area is primarily unvegetated, the hydrophytic vegetation parameter was rarely met at the sampling locations. When present, vegetation consisted of species typical of southern coastal salt marsh habitat, including estuary seablite (*Suaeda esteroa*), alkali heath (*Frankenia salina*), pacific pickleweed (*Sarcocornia pacifica*), saltwort (*Batis maritima*), sea lavender (*Limonium californica*), and dwarf saltwort (*Salicornia bigelovii*). Also observed in the southern coastal salt marsh habitat were coast weed (*Amblyopappus pusilus*), non-native iceplant (*Mesembryanthemum nodiflorum; M. crystalinum*), and arrow grass (*Triglochin concina*). Outside of the tidally influenced areas adjacent to the two tidal channels that abut portions of the site on the southwestern and northeastern flanks, coastal salt marsh habitat is extremely patchy and disturbed, with low cover and low species diversity.

The Pond 20 Study Area also supports two geographically distinct cismontane alkali marsh areas (1.28 acres) that, based on intensive field review, support greater than 50% hydrophytic vegetation and, in some instances, hydric soils but lack hydrology indicators (Table 1). A sewer treatment facility and settling ponds were formerly located in this area. For the purposes of the PJD, the ACOE determined that although the areas are more than 700 feet from the hydrophytic vegetation associated with the tidal channel, that these areas were close enough to be considered adjacent wetlands under the ACOE's jurisdiction. These areas also meet the definition of wetland pursuant to CCC guidelines. However, because these areas are on federal land and because they are more than 700 feet from the tidal channels, CDFW jurisdiction is not presumed.

The western portion of the Study Area contains a series of low-lying areas that are remnants from the construction and operation of the former industrial salt evaporation pond. The areas are surrounded by a tall levee that separates them from the adjacent tidal channels. The levee was constructed, in part, using soil excavated from within the basin (borrow areas) that are lower in elevation than the basin bottom. These unvegetated areas in the bottom of the basin were mapped as former salt pond bottom and borrow areas. Because of their historical long-term use as industrial salt evaporation ponds, the soil conditions are hypersaline, and much of the land does not support vegetation. The functions and values of these areas are considered degraded and low

due to the extensive site disturbance, lack of vegetation, lack of surface water hydrologic connectivity, and excessive salinity.

The portions of the former salt pond bottom and borrow area can occasionally become inundated from precipitation, as was the case during the February site review. However, with the exception of a few small areas in the southwestern corner, the areas were completely dry during the July 2012 site review. A review of aerial photographs shows that ponding does not occur in every year and varies in location and extent. While the borrow areas may exhibit periods of ponding during the rainy season, the surface water evaporates quickly.

While not physically connected to either tidal channels or freshwater channels due to the presence of perimeter berms, the ACOE classified them as jurisdictional for the purposes of the PJD. The portions of these areas that support hydrophytic vegetation were classified as wetlands, and the remaining areas below the ordinary high water mark were classified as non-wetlands Waters of the U.S.

Site 2: Salt Ponds 12-15

Results of the wetland delineation (summarized in Tables 1 and 2) indicate that approximately 299 acres of wetlands and non-wetland Waters of the U.S. under the joint jurisdiction of the ACOE, RWQCB, and CCC occur within the Salt Ponds 12-15 Study Area. Of the total area classified as jurisdictional, 8.12 acres were classified as wetlands and 291.14 acres were classified as non-wetland Waters of the U.S. In general, the jurisdictional features are unvegetated, with the exception of areas that abut the Otay River and the Palomar Street tidal channels, and a few patchy areas along the salt pond levees. The predominant native vegetation community associated with the wetlands is southern coastal salt marsh. Soils in these areas are characterized by variable textures (including sand, clay, sandy loam, clay loam, sandy clay loam, and silty clay loam) often with a with depleted matrix. Wetland hydrology indicators present included high water table, saturation, oxidized rhizospheres along living roots, and aquatic invertebrates. Areas supporting all three wetland indicators were mapped as ACOE, RWQCB, and CCC wetlands.

The majority of the Salt Ponds 12-15 Study Area contains a series of active salt ponds that are components of the solar salt evaporation system. The salt ponds are surrounded by levees that separate them from the adjacent San Diego Bay and tidal channels. The levees were constructed using soil excavated from within the bay and reach a maximum elevation that is slightly greater than the highest observed water level (7.79 feet; North American Vertical Datum (NAVD 88)), approximately eight feet and up to 12 feet in some places.

A review of aerial photographs shows that the salt ponds, and levees surrounding them, have been in the same configuration for decades. The water elevation within the salt ponds is controlled by a tide gate, and thus remains relatively constant.

The portions of the Salt Ponds 12-15 Study Area that met all three parameters were classified as wetlands, and the remaining areas below the high tide line (7.79 feet above MLLW) were classified as non-wetlands Waters of the U.S. The top of the salt pond levees that is above the high tide line did not meet the three parameters, and was classified as non-jurisdictional.

Site 3: Access Routes and Crossings –Poseidon ORERP

Results of the wetland delineation (summarized in Tables 1 and 2) indicate that approximately 7.89 acres of wetlands and non-wetland Waters of the U.S. under the joint jurisdiction of the ACOE, RWQCB, and CCC occur within the Access Routes Study Area (northern and southern areas combined). Of the total area classified as jurisdictional, 3.04 acres were classified as wetlands and 4.85 acres were classified as non-wetland Waters of the U.S. In general, the jurisdictional features are associated with tidal channels, salt ponds and the San Diego Bay. The predominant native vegetation community associated with the wetlands is southern coastal salt marsh along the Palomar Street channel and freshwater marsh along the Otay River channel. Soils in these areas are characterized by variable textures (including sand, clay, sandy clay and clay loam), with the predominant soil texture clay loam. Wetland hydrology indicators present included high water table, saturation, surface water, sediment deposits, drift deposits and drainage patterns. Areas supporting all three wetland indicators were mapped as ACOE, RWQCB, and CCC wetlands.

A large portion of the southern study area of Site 3 is part of the Otay River Floodplain Restoration site. This area was recently planted with riparian trees and shrubs. The site is being irrigated to promote plant establishment. While these areas did not meet hydric soil and hydrology criteria per the delineation manual, these areas may eventually meet those criteria. However, for this study, these areas were not classified as ACOE jurisdictional.

The salt flats in the northern portion of Site 3 were classified as non-jurisdictional. These areas are not subject to tidal inundation, are primarily above the elevation of the high tide line (7.79 feet above MLLW), and are routinely disturbed to harvest salt.

Salt pond levees below the high tide line elevation (7.79 feet above MLLW) were classified as jurisdictional Waters of the U.S., whereas salt pond levees above the high tide line were

classified as non-jurisdictional where the wetland delineation parameters were not present (e.g., hydrophytic vegetation and hydrology).

CCC-Only Jurisdiction

Site 1: Otay River/Pond 20

There is a 0.04-acre area of southern coastal salt marsh and a 0.01-acre area of mulefat scrub that would be under the jurisdiction of the CCC that occur in the northeastern portion of the site along the freshwater stream channel but are above the OHWM and outside of ACOE and RWQCB jurisdiction. These areas are dominated by more than 50% hydrophytic vegetation (i.e., saltgrass and mulefat), thus meeting the hydrophytic vegetation parameter, and a high water table and saturation indicate hydrology, but they lack hydric soils needed to meet the ACOE's definition of wetland.

Site 2: Salt Ponds 12-15

There were no areas classified as jurisdictional only by CCC within the Salt Ponds 12-15 Study Area.

Site 3: Access Routes and Crossings –Poseidon ORERP

There are some patches of mulefat scrub that would be under the jurisdiction of the CCC that occur in the southern portion of Site 3. These areas did not meet the ACOE delineation criteria for hydrophytic vegetation, hydric soils, or hydrology, and therefore were not classified as ACOE jurisdictional. However, because they are dominated by mulefat, they were classified as CCC jurisdictional. Similarly, the Otay River Floodplain Restoration site was dominated by riparian trees and shrubs that have been recently planted, but the site did not meet the ACOE delineation criteria for hydric soils or hydrology. Therefore, these areas were classified as CCC jurisdictional, but not ACOE jurisdictional. Lastly, there was a small area (0.10 acre) of southern coastal salt marsh dominated by salt grass that did not meet the ACOE delineation criteria and was thus classified as only CCC jurisdictional.

CONCLUSION

In summary, for all study areas combined, there are 322.46 acres of wetlands and non-wetland waters under the joint jurisdiction of the ACOE, RWQCB, and CCC and 6.77 acres of riparian vegetation under the jurisdiction of the CCC only. As such, any impacts to these areas resulting from project implementation shall be subject to the regulations and requirements of the relevant

regulating resource agency authorities. The jurisdictional delineations for two of the study areas (Sites 1 and 2) have already been reviewed and confirmed by ACOE (Appendices D and E). The third study area (Site 3) includes access routes and crossings near both Sites 1 and 2 and will require review and confirmation from ACOE for the preliminary jurisdictional delineation.

If you have any questions or comments regarding the content of this letter, please do not hesitate to call me at 760.479.4282.

Sincerely,

Andrew Thomson
Biologist/Restoration Ecologist

Att: Figure 1, Regional Map
Figure 2, Vicinity Map
Figure 3, Vegetation Communities with Jurisdictional Delineation for the Otay River/Pond 20 Site
Figures 4a–4c, Vegetation Communities with Jurisdictional Delineation for the Salt Ponds 12-15 Site
Figures 5a and 5b, Vegetation Communities with Jurisdictional Delineation for the Access Routes and Crossings Site
Figures 6a and 6b, Representative Site Photos of the Otay River/Pond 10 Study Area
Figures 7a – 7c, Representative Site Photos of the Salt Ponds 12-15 Study Area
Figures 8a and 8b, Representative Site Photos of the Access Routes Study Area

Appendix A, Otay River/Pond 20 Study Area - Wetland Determination Data Forms
Appendix B, Salt Ponds 12-15 Study Area - Wetland Determination Data Forms
Appendix C, Access Routes Study Area - Wetland Determination Data Forms
Appendix D, Otay River/Pond 20 Study Area – Preliminary Jurisdictional Determination Form
Appendix E, Ponds 12-15 Study Area – Preliminary Jurisdictional Determination Form
Appendix F, Site 3 Access Routes Study Area – Preliminary Jurisdictional Determination Form

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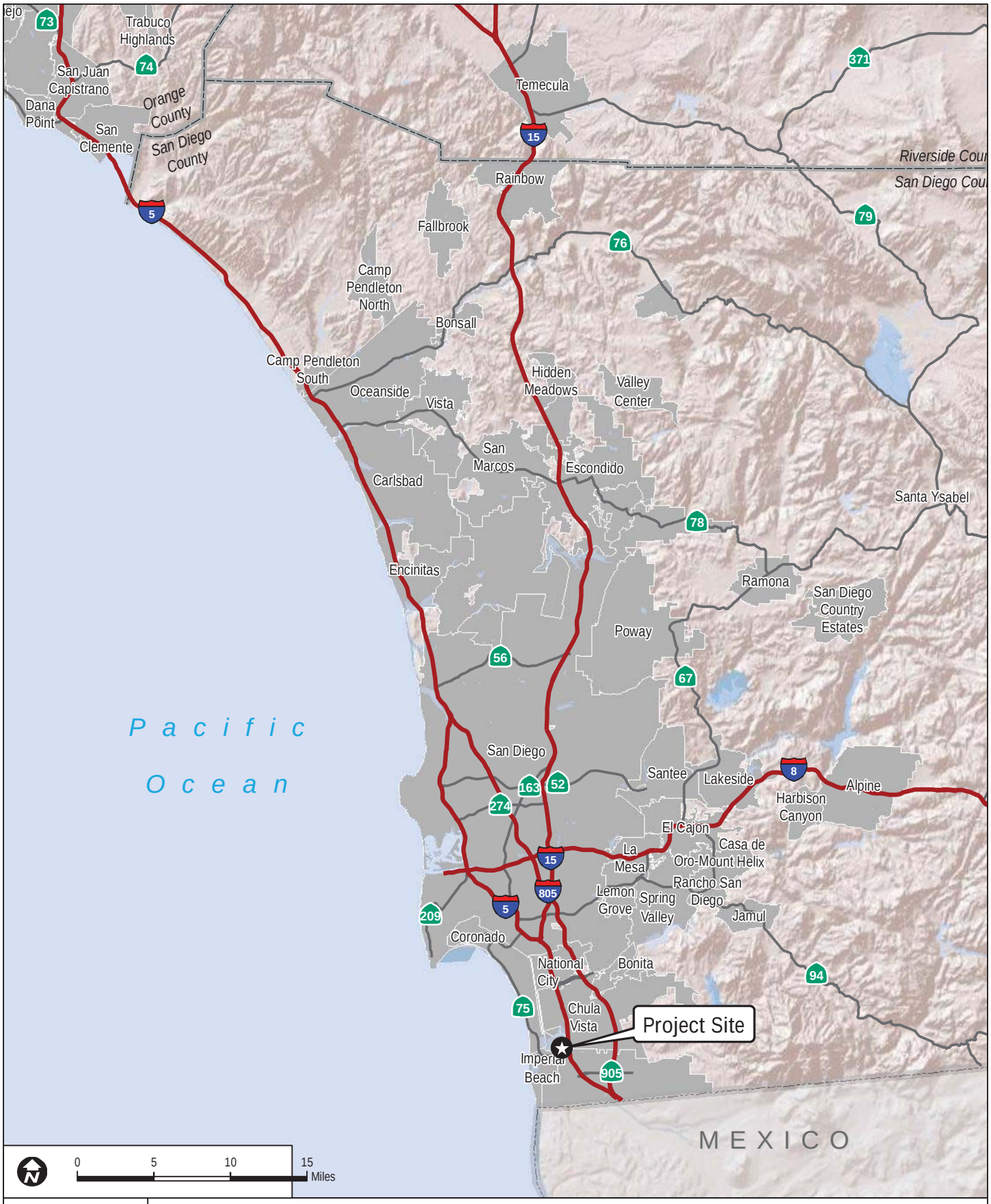

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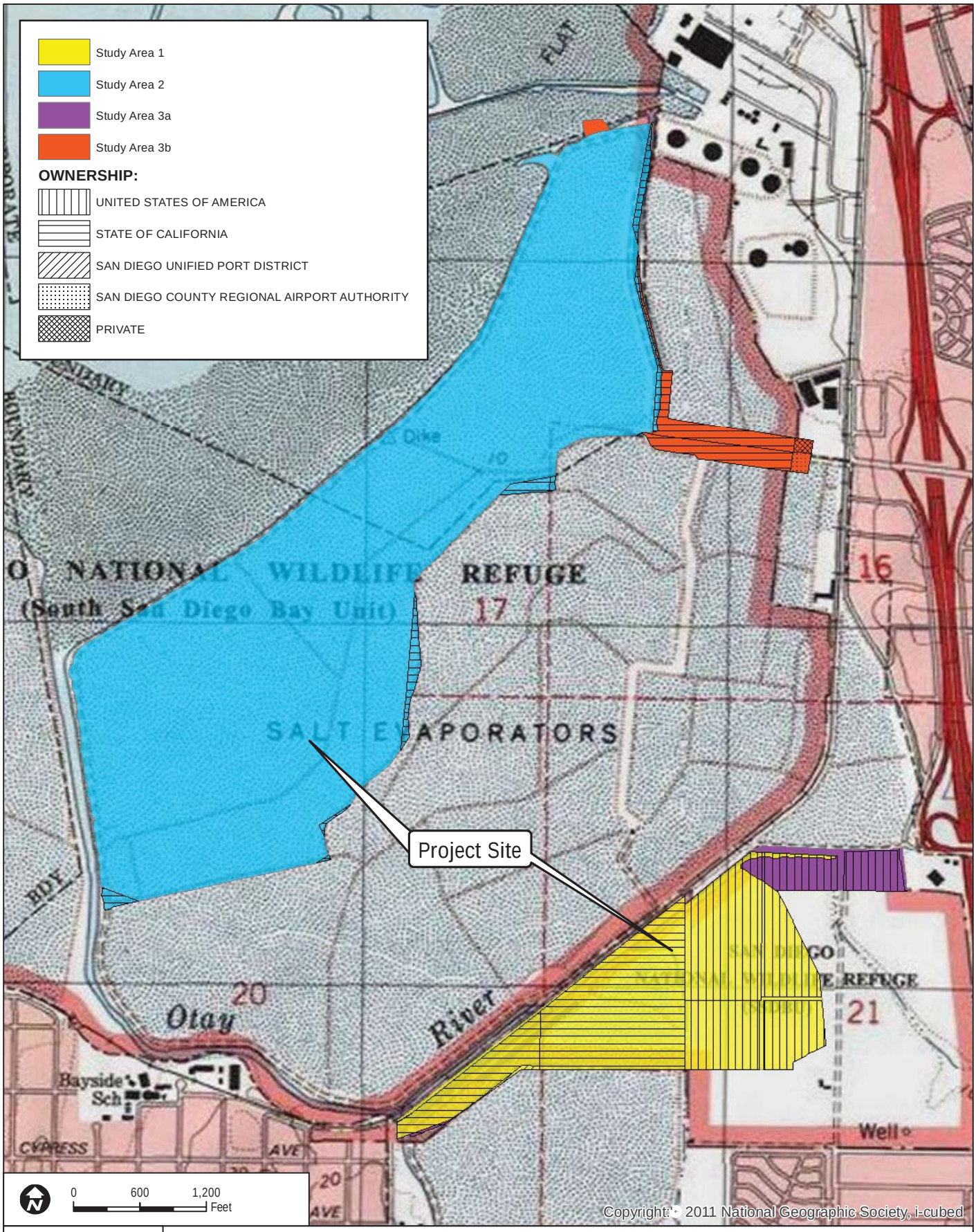
FIGURE 1

Regional Map

Jurisdictional Wetland Delineation for the Otay River Estuary Restoration Project (ORERP)



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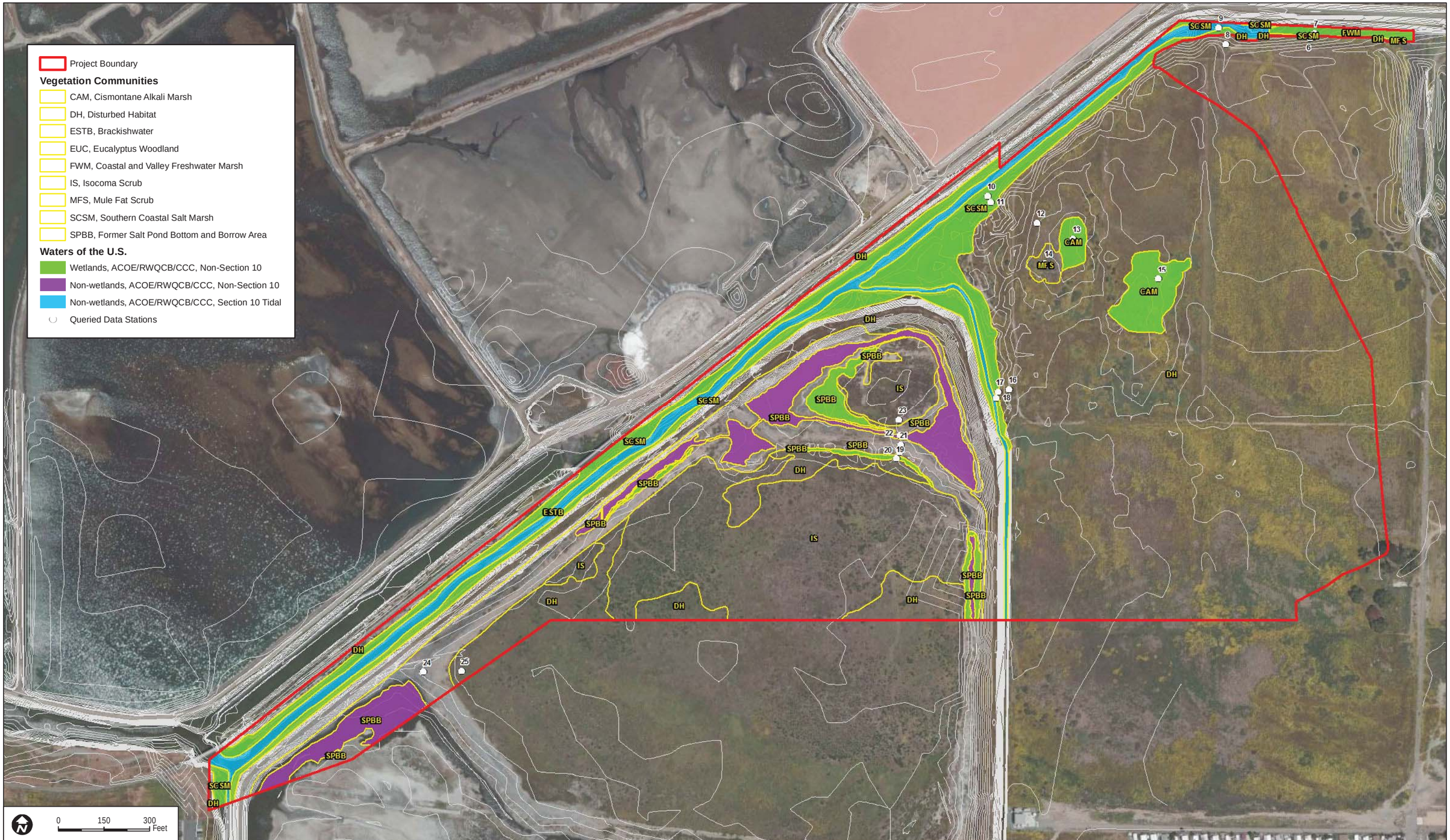
SOURCE: USGS 7.5-Minute Series Quadrangle, USA Topographic Maps Service, Imperial Beach Quadrangle.

FIGURE 2
Vicinity Map

Jurisdictional Wetland Delineation for the Otay River Estuary Restoration Project (ORERP)



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AERIAL SOURCE: BING MAPPING SERVICE

FIGURE 3

Vegetation Communities with Jurisdictional Delineation for the Otay River/Pond 20 Site

Jurisdictional Wetland Delineation for the Otay River Estuary Restoration Project (ORERP)

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AERIAL SOURCE: NAIP 2009

FIGURE 4a

Vegetation Communities with Jurisdictional Delineation for the Salt Ponds 12-15 Site

Jurisdictional Wetland Delineation for the Otay River Estuary Restoration Project (ORERP)

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AERIAL SOURCE: NAIP 2009

FIGURE 4b

Vegetation Communities with Jurisdictional Delineation for the Salt Ponds 12-15 Site

Jurisdictional Wetland Delineation for the Otay River Estuary Restoration Project (ORERP)

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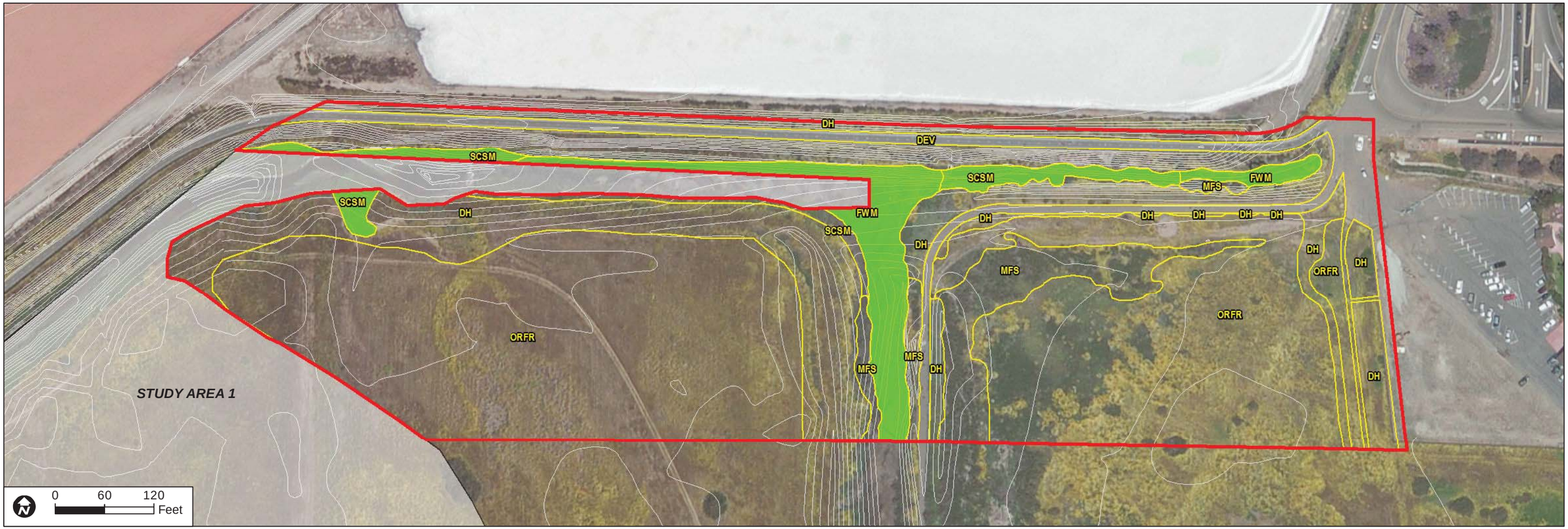
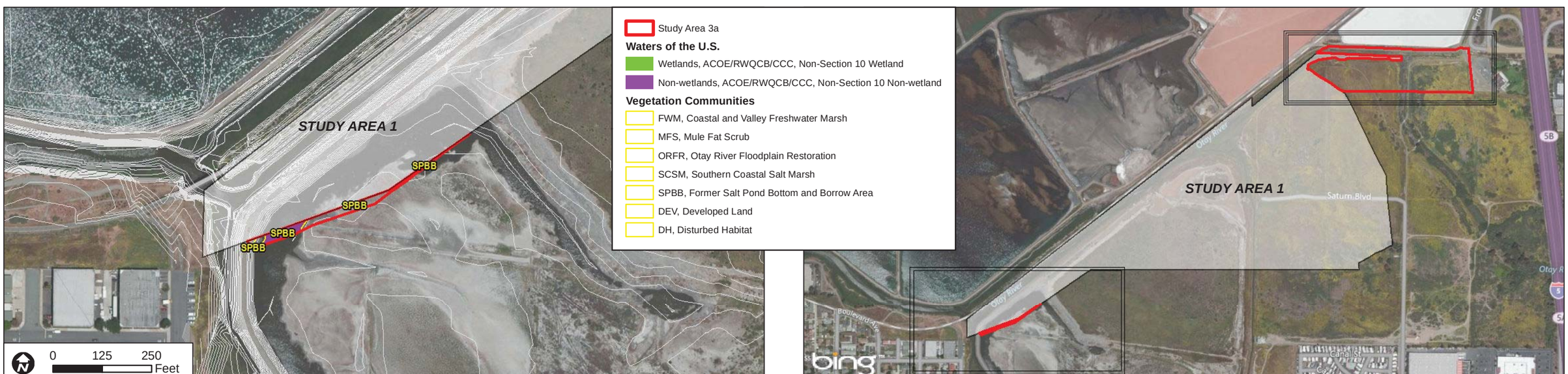
AERIAL SOURCE: NAIP 2009

FIGURE 4c

Vegetation Communities with Jurisdictional Delineation for the Salt Ponds 12-15 Site

Jurisdictional Wetland Delineation for the Otay River Estuary Restoration Project (ORERP)





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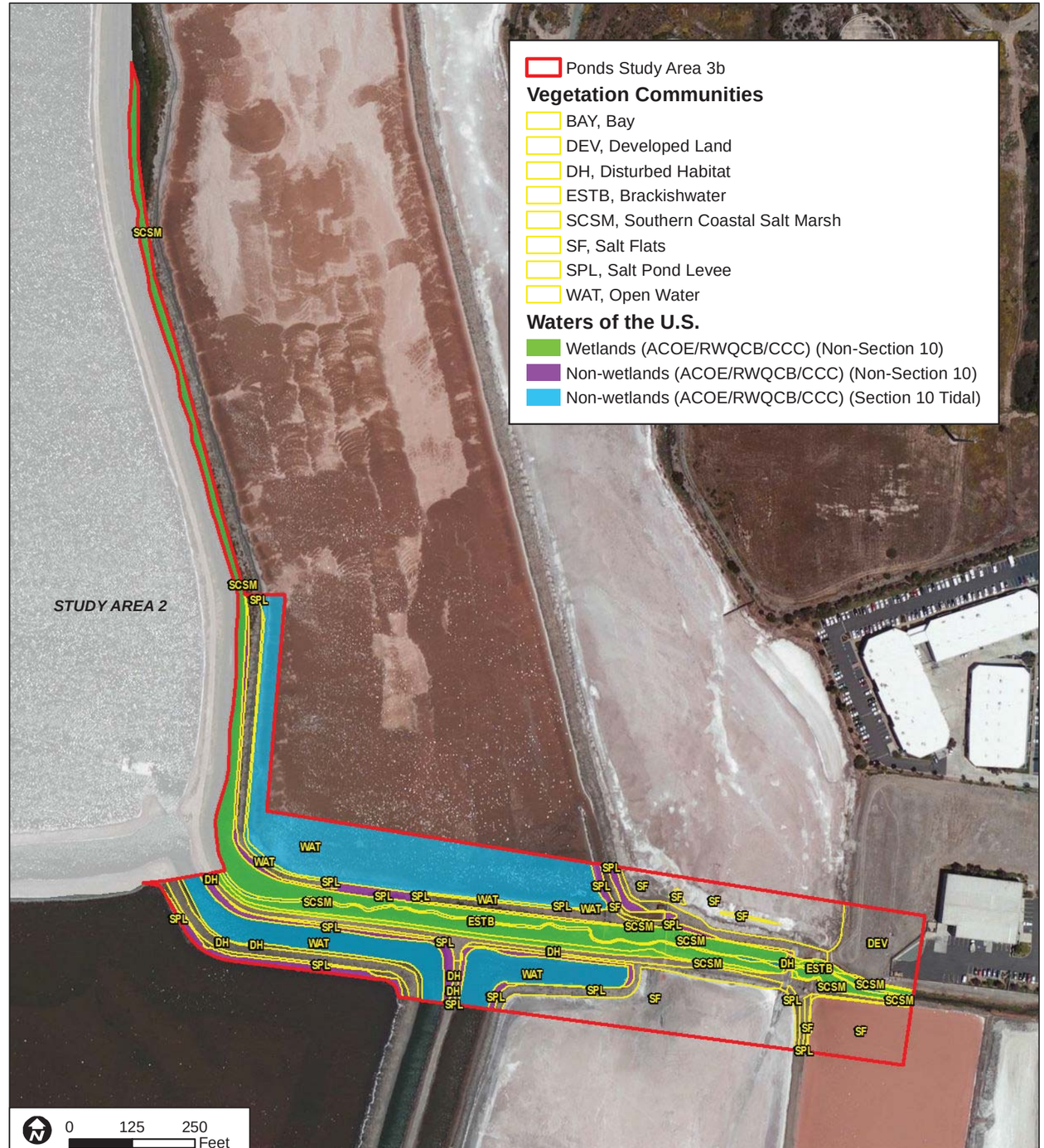
AERIAL SOURCE: BING MAPPING SERVICE

FIGURE 5a

Vegetation Communities with Jurisdictional Delineation for the Southern Access Routes and Crossings Site

Jurisdictional Wetland Delineation for the Otay River Estuary Restoration Project (ORERP)



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AERIAL SOURCE: NAIP 2009

FIGURE 5b

Vegetation Communities with Jurisdictional Delineation for the Northern Access Routes and Crossings Site

Jurisdictional Wetland Delineation for the Otay River Estuary Restoration Project (ORERP)

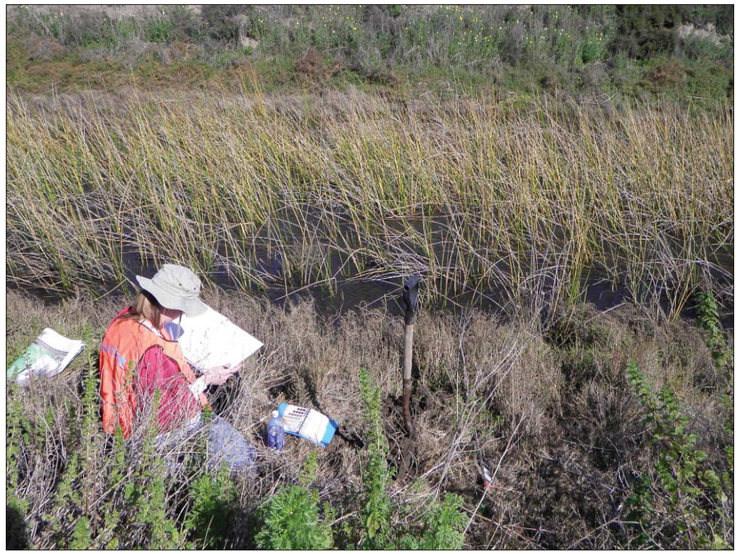

Photo 1: View of the Site Conditions at Data Stations 5, 6 and 7 (February 22, 2011)

Photo 2: View of the Site Conditions at Data Stations 8 and 9 (February 22, 2011)

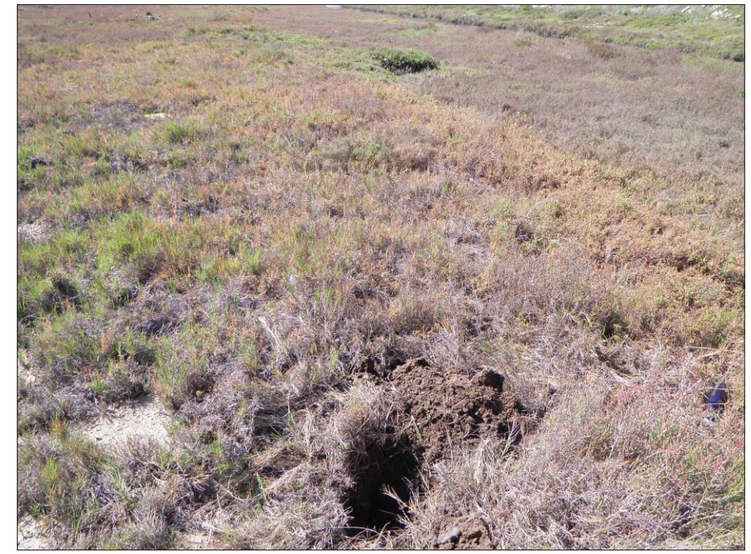

Photo 3: View of the Site Conditions at Data Stations 10 and 11 (February 22, 2011)

Photo 4: View of the Site Conditions at Data Station 15 (February 22, 2011)

Photo 5: View of the Site Conditions at Data Stations 16, 17 and 18 (February 22, 2011)

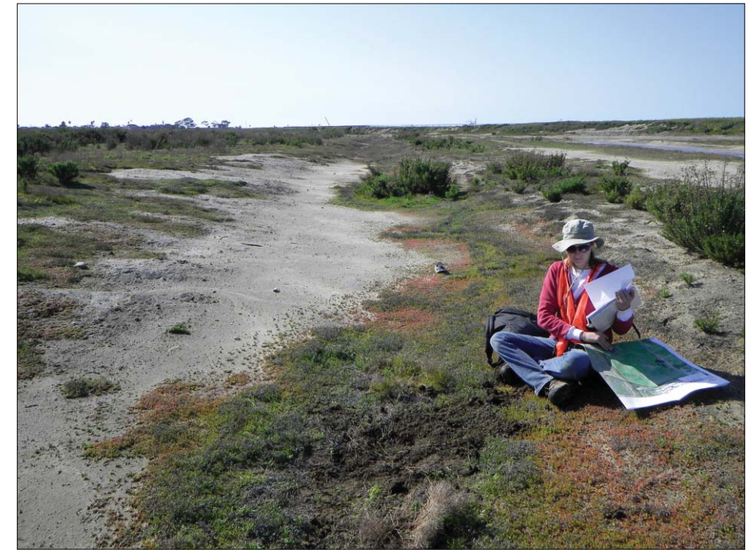

Photo 6: View of the Site Conditions at Data Stations 19, 20 and 21 (February 22, 2011)

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FIGURE 6a

Representative Site Photos of the Otay River/Pond 20 Study Area

Photo 7: View of the Site Conditions at Data Stations 22 and 23 (February 22, 2011)

Photo 8: View of the Site Conditions at Data Station 24 (February 22, 2011)

Photo 9: Representative View of the Salt Panne/Mudflat and Non-vegetated Channel and Floodway Areas (February 22, 2011)

Photo 10: Representative View of the Southern Coastal Salt Marsh Habitat in the Tidal Channel Downstream of the Otay River Channel in the Western Portion of the Site (February 22, 2011)

Photo 11: Representative View of the Southern Coastal Salt Marsh Habitat in the Tidal Channel Downstream of the Otay River Channel in the Eastern Portion of the Site (February 22, 2011)

Photo 12: View of Berm on the Northern Edge of the Old Salt Evaporation Pond (May 19, 2011)

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FIGURE 6b

Representative Site Photos of the Otay River/Pond 20 Study Area

Data Station 1

Data Station 2

Data Station 3

Data Station 4

Data Station 5

Data Station 6

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SOURCE: Dudek 2013

FIGURE 7a

Representative Site Photos of the Salt Ponds 12-15 Study Area

Jurisdictional Wetland Delineation for the Otay River Estuary Restoration Project (ORERP)

Data Station 7

Data Station 8

Data Station 9

Data Station 10

Data Station 11

Data Station 12

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SOURCE: Dudek 2013

FIGURE 7b

Representative Site Photos of the Salt Ponds 12-15 Study Area

Jurisdictional Wetland Delineation for the Otay River Estuary Restoration Project (ORERP)

Data Station 13

Data Station 14

Data Station 15

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SOURCE: Dudek 2013

FIGURE 7c

Representative Site Photos of the Salt Ponds 12-15 Study Area

Jurisdictional Wetland Delineation for the Otay River Estuary Restoration Project (ORERP)

Photo 1: View of the Silver Strand Bikeway that bisects the Study Area (May 27, 2014)

Photo 2: View of the Otay River Floodplain Restoration Project (May 27, 2014)

Photo 3: View of the berm between the Otay River channel and the Otay River Floodplain Restoration Project (May 27, 2014)

Photo 4: View of the soil pit in freshwater marsh habitat associated with the Otay River, data station #1 (May 27, 2014)

Photo 5: View of the soil pit in mulefat scrub habitat along the Silver Strand Bikeway, data station #7 (May 27, 2014)

Photo 6: View of the soil pit in southern coastal salt marsh habitat in the tributary channel to the Otay River, data station #6 (May 27, 2014)

Photo 1: View of typical salt pond levee conditions (March 13, 2013)

Photo 2: View of typical salt flat conditions (March 13, 2013)

Photo 3: View of southern coastal salt marsh habitat associated with the Palomar Street channel (March 13, 2013)

Photo 4: View of the Palomar Street channel at low tide (March 13, 2013)

Photo 5: View of the Bay tie-in point for the Pond 15 salt marsh restoration (March 13, 2013)

Photo 6: View of open water associated with the salt ponds (March 13, 2013)

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FIGURE 8b

Representative Site Photos of the Access Routes Study Area

APPENDIX A

Site 1 Otay River/Pond 20 Study Area – Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Poseidon City/County: San Diego, San Diego Sampling Date: 2/22/11

Applicant/Owner: Poseidon Resources State: CA Sampling Point: 5

Investigator(s): Andy Thomson and Katie Dayton Section, Township, Range: Sections 20 and 21, Township 18S, Range 2W

Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): concave Slope (%): 0-20

Subregion (LRR): C - Mediterranean California Lat: 32°35'29.95"N Long: 117°5'46.02W Datum: NAD83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes ( )	No (●)	Is the Sampled Area within a Wetland? Yes ( ) No (●)
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. Distichlis spicata	50	Yes	FAC
2. California virginica	15	No	OBL
3. Frankenia salina	35	Yes	FACW
4.			
5.			
Total Cover:	100 %		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 % (A/B)

Prevalence Index worksheet:

Total % Cover of	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

[x] Dominance Test is >50%

Prevalence Index is ≤3.0[1]

[ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

[ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-12	7.5 YR 3/2	100					clay loam	
12-15	NA	60					sand	
12-15	7.5 YR 4/1	39	7.5 YR 4/6	1	C	M	clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ●

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ●	Depth (inches): 0
Water Table Present?	Yes ●	No ○	Depth (inches): 16
Saturation Present? (includes capillary fringe)	Yes ●	No ○	Depth (inches): 12

Wetland Hydrology Present? Yes ● No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Poseidon City/County: San Diego, San Diego Sampling Date: 2/22/11

Applicant/Owner: Poseidon Resources State: CA Sampling Point: 6

Investigator(s): Andy Thomson and Katie Dayton Section, Township, Range: Sections 20 and 21, Township 18S, Range 2W

Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): concave Slope (%): 0-20

Subregion (LRR): C - Mediterranean California Lat: 32°35'29.95"N Long: 117°5'46.02W Datum: NAD83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◯	No ◉	
Hydric Soil Present?	Yes ◯	No ◉	**Is the Sampled Area within a Wetland?** Yes ◯ No ◉
Wetland Hydrology Present?	Yes ◯	No ◉	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. Urtica urens	40	Yes	NI
2. Glebionis coronaria	40	Yes	NI
3. Hirschfeldia incana	20	No	NI
4.			
5.			
6.			
7.			
8.			
Total Cover:	100 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum ____ % % Cover of Biotic Crust ____ %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

◉ Dominance Test is >50%

Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◯ No ◉

Remarks:

SOIL

Sampling Point: 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-12	7.5 YR 3/2	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ●

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ●	Depth (inches):
Water Table Present?	Yes ○	No ●	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ●	Depth (inches):

Wetland Hydrology Present? Yes ○ No ●

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Poseidon City/County: San Diego, San Diego Sampling Date: 2/22/11

Applicant/Owner: Poseidon Resources State: CA Sampling Point: 7

Investigator(s): Andy Thomson and Katie Dayton Section, Township, Range: Sections 20 and 21, Township 18S, Range 2W

Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): concave Slope (%): 0-20

Subregion (LRR): C - Mediterranean California Lat: 32°35'29.95"N Long: 117°5'46.02W Datum: NAD83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ◯	
Hydric Soil Present?	Yes ◉	No ◯	**Is the Sampled Area within a Wetland?** Yes ◉ No ◯
Wetland Hydrology Present?	Yes ◉	No ◯	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. Scirpus maritimus	60	Yes	OBL
2.			
3.			
4.			
5.			
Total Cover:	60 %		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum ____ % % Cover of Biotic Crust ____ %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✘ Dominance Test is >50%

Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◉ No ◯

Remarks: Flowing water comprises the remaining 40% cover.

SOIL

Sampling Point: 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks: At least one foot of water is covering soil so no soil sample was taken. Hydric soils are assumed based on inundation and cover of dominance of obligate wetland species.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☒ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ◉	No ○	Depth (inches): 0
Water Table Present?	Yes ◉	No ○	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 0

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Poseidon City/County: San Diego, San Diego Sampling Date: 2/22/11

Applicant/Owner: Poseidon Resources State: CA Sampling Point: 8

Investigator(s): Andy Thomson and Katie Dayton Section, Township, Range: Sections 20 and 21, Township 18S, Range 2W

Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): concave Slope (%): 0-20

Subregion (LRR): C - Mediterranean California Lat: 32°35'29.95"N Long: 117°5'46.02W Datum: NAD83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ◯	
Hydric Soil Present?	Yes ◯	No ◉	**Is the Sampled Area within a Wetland?** Yes ◯ No ◉
Wetland Hydrology Present?	Yes ◯	No ◉	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. Distichlis spicata	100	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	100 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum ____ % % Cover of Biotic Crust ____ %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 % (A/B)

Prevalence Index worksheet:

Total % Cover of	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✘ Dominance Test is >50%

Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◉ No ◯

Remarks: Flowing water comprises the remaining 40% cover.

SOIL

Sampling Point: 8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-7	NA	100					sand	
7-14	7.5 YR 3/3	100					sandy clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ●

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ●	Depth (inches):
Water Table Present?	Yes ○	No ●	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ●	Depth (inches):

Wetland Hydrology Present? Yes ○ No ●

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Poseidon City/County: San Diego, San Diego Sampling Date: 2/22/11

Applicant/Owner: Poseidon Resources State: CA Sampling Point: 9

Investigator(s): Andy Thomson and Katie Dayton Section, Township, Range: Sections 20 and 21, Township 18S, Range 2W

Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): concave Slope (%): 0-20

Subregion (LRR): C - Mediterranean California Lat: 32°35'29.95"N Long: 117°5'46.02W Datum: NAD83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ◯	
Hydric Soil Present?	Yes ◉	No ◯	**Is the Sampled Area within a Wetland?** Yes ◉ No ◯
Wetland Hydrology Present?	Yes ◉	No ◯	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. California virginica	90	Yes	OBL
2. Frankenia salina	10	No	FACW
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	100 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum ____ % % Cover of Biotic Crust ____ %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✘ Dominance Test is >50%

Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◉ No ◯

Remarks: Flowing water comprises the remaining 40% cover.

SOIL

Sampling Point: 9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-2	7.5 YR 4/2	100					loamy sand	
2-6	NA	100					sand	
6-7	GLEY 2.5/SPB	100					clay loam	
7-11	7.5 YR 4/1	100					loamy sand	
11-14	NA	100					sand	saturated

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☒ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ◉	No ○	Depth (inches): 6
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 5

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Poseidon City/County: San Diego, San Diego Sampling Date: 2/22/11

Applicant/Owner: Poseidon Resources State: CA Sampling Point: 10

Investigator(s): Andy Thomson and Katie Dayton Section, Township, Range: Sections 20 and 21, Township 18S, Range 2W

Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): concave Slope (%): 0-20

Subregion (LRR): C - Mediterranean California Lat: 32°35'29.95"N Long: 117°5'46.02W Datum: NAD83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ◯	
Hydric Soil Present?	Yes ◉	No ◯	**Is the Sampled Area within a Wetland?** Yes ◉ No ◯
Wetland Hydrology Present?	Yes ◉	No ◯	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. California virginica	98	Yes	OBL
2. Batis maritima	2	No	OBL
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	100 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum ____ % % Cover of Biotic Crust ____ %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✘ Dominance Test is >50%

Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◉ No ◯

Remarks: Flowing water comprises the remaining 40% cover.

SOIL

Sampling Point: 10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-9	7.5 YR 2.5/1	99	7.5 YR 4/6	1	C	M	clay loam	
9-15	7.5 YR 3/3	90	7.5 YR 4/6	10	C	M	sandy clay loam	Redox also along pore linings

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☒ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ◉	No ○	Depth (inches): 0
Water Table Present?	Yes ◉	No ○	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 0

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Poseidon City/County: San Diego, San Diego Sampling Date: 2/22/11

Applicant/Owner: Poseidon Resources State: CA Sampling Point: 11

Investigator(s): Andy Thomson and Katie Dayton Section, Township, Range: Section 20 and 21, Township 18S, Range 2W

Landform (hillslope, terrace, etc.): Channel Local relief (concave, convex, none): Concave Slope (%): 0-20

Subregion (LRR): C - Mediterranean California Lat: 32 35 29.95 Long: 117 5 46.02 Datum: NAD83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ○ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	
Hydric Soil Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks: Although not all 3 parameters were met, the sampling point is below the high tide line of 7.79 feet (above MLLW) and therefore ACOE jurisdiction is presumed.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *1socoma menziesii*	5	Yes	FAC
2. *Suaeda nigra*	1	No	OBL
3.			
4.			
5.			
Total Cover:	6 %		
Herb Stratum			
1. *Distichlis spicata*	70	Yes	FAC
2. *Salicornia virginica*	10	No	OBL
3. *Frankenia salina*	15	No	FACW
4. *Atriplex semibaccata*	1	No	FAC
5.			
6.			
7.			
8.			
Total Cover:	96 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 4 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	11	x 1 =	11	
FACW species	15	x 2 =	30	
FAC species	76	x 3 =	228	
FACU species		x 4 =	0	
UPL species		x 5 =	0	
Column Totals:	102 (A)		269	(B)

Prevalence Index = B/A = 2.64

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

SOIL

Sampling Point: 11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-4	7.5 YR 2.5/1	100					sandy clay loam	some organic streaking
4-10	7.5 YR 3/2	100					sandy loam	
10-13	7.5 YR 3/2	80					loam	
10-13	7.5 YR 4/1	19	7.5 YR 4/6	1	C	M	loamy clay	
13-15	7.5 YR 3/1	100					clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ●

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ●	Depth (inches):
Water Table Present?	Yes ○	No ●	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ●	Depth (inches):

Wetland Hydrology Present? Yes ● No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Sampling location is below the high tide line (7.79 feet above MLL W) and therefore hydrology is presumed.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Poseidon City/County: San Diego, San Diego Sampling Date: 2/22/11

Applicant/Owner: Poseidon Resources State: CA Sampling Point: 12

Investigator(s): Andy Thomson and Katie Dayton Section, Township, Range: Sections 20 and 21, Township 18S, Range 2W

Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): concave Slope (%): 0-20

Subregion (LRR): C - Mediterranean California Lat: 32 35 29.95 N Long: 117 5 46.02 W Datum: NAD83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◯	No ◉	
Hydric Soil Present?	Yes ◯	No ◉	**Is the Sampled Area within a Wetland?** Yes ◯ No ◉
Wetland Hydrology Present?	Yes ◯	No ◉	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Isocoma menziesii*	10	Yes	FAC
2.			
3.			
4.			
5.			
Total Cover:	10 %		
Herb Stratum			
1. *Glebionis coronaria*	75	Yes	NI
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	75 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 25 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species	10	x 3 =	30
FACU species		x 4 =	0
UPL species	75	x 5 =	375
Column Totals:	85 (A)		405 (B)

Prevalence Index = B/A = 4.76

Hydrophytic Vegetation Indicators:

- ◉ Dominance Test is >50%
- ◉ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◯ No ◉

Remarks:

SOIL

Sampling Point: 12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-14	7.5 YR 3/3	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ●

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ●	Depth (inches):
Water Table Present?	Yes ○	No ●	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ●	Depth (inches):

Wetland Hydrology Present? Yes ○ No ●

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Poseidon City/County: San Diego, San Diego Sampling Date: 2/22/11

Applicant/Owner: Poseidon Resources State: CA Sampling Point: 13

Investigator(s): Andy Thomson and Katie Dayton Section, Township, Range: Sections 20 and 21, Township 18S, Range 2W

Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): concave Slope (%): 0-20

Subregion (LRR): C - Mediterranean California Lat: 32°35'29.95"N Long: 117°5'46.02W Datum: NAD83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ◉	
Hydric Soil Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. Tamarix ramosissima	2	Yes	FAC
2.			
3.			
4.			
5.			
Total Cover:	2 %		
Herb Stratum			
1. Salicornia virginica	75	Yes	OBL
2. Distichlis spicata	10	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	85 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 15 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals:	(A) (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✘ Dominance Test is >50%

Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

SOIL

Sampling Point: 13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-4	7.5 YR 3/2	90	7.5 YR 4/6	10	C	M	loam	
4-15	10 YR 4/3	100					loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Poseidon City/County: San Diego, San Diego Sampling Date: 2/22/11

Applicant/Owner: Poseidon Resources State: CA Sampling Point: 14

Investigator(s): Andy Thomson and Katie Dayton Section, Township, Range: Sections 20 and 21, Township 18S, Range 2W

Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): concave Slope (%): 0-20

Subregion (LRR): C - Mediterranean California Lat: 32 35 29.95 N Long: 117 5 46.02 W Datum: NAD83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◯	No ◉	
Hydric Soil Present?	Yes ◯	No ◉	**Is the Sampled Area within a Wetland?** Yes ◯ No ◉
Wetland Hydrology Present?	Yes ◯	No ◉	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Baccharis salicifolia*	30	Yes	FAC
2. *Nicotiana glauca*	1	No	FAC
3.			
4.			
5.			
Total Cover:	31 %		
Herb Stratum			
1. *Glebionis coronaria*	50	Yes	NI
2. *Mesembryanthemum nodiflorum*	2	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	52 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 48 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species	33	x 3 =	99
FACU species		x 4 =	0
UPL species	50	x 5 =	250
Column Totals:	83 (A)		349 (B)

Prevalence Index = B/A = 4.20

Hydrophytic Vegetation Indicators:

- ◉ Dominance Test is >50%
- ◉ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◯ No ◉

Remarks:

SOIL

Sampling Point: 14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-14	7.5 YR 3/2	100					sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ●

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ●	Depth (inches):
Water Table Present?	Yes ○	No ●	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ●	Depth (inches):

Wetland Hydrology Present? Yes ○ No ●

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Poseidon City/County: San Diego, San Diego Sampling Date: 2/22/11

Applicant/Owner: Poseidon Resources State: CA Sampling Point: 15

Investigator(s): Andy Thomson and Katie Dayton Section, Township, Range: Sections 20 and 21, Township 18S, Range 2W

Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): concave Slope (%): 0-20

Subregion (LRR): C - Mediterranean California Lat: 32°3 5'29.95 "N Long: 117°5'46.02W Datum: NAD83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ◯	
Hydric Soil Present?	Yes ◯	No ◉	**Is the Sampled Area within a Wetland?** Yes ◯ No ◉
Wetland Hydrology Present?	Yes ◉	No ◯	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Suaeda nigra*	5	Yes	OBL
2.			
3.			
4.			
5.			
Total Cover:	5 %		
Herb Stratum			
1. *Salicornia virginica*	90	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	90 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 10 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	95	x 1 =	95
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	95 (A)		95 (B)

Prevalence Index = B/A = 1.00

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◉ No ◯

Remarks:

SOIL

Sampling Point: 15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-4	7.5 YR 3/1	100					loamy clay	
4-12	7.5 YR 3/2	100					sandy loam	
12-15	10 YR 5/3	100					sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ●

Remarks: Dark gray material around roots in soil sample: GLEY2 2.5/ l0B in color; comprised <1% of the sample

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ●	Depth (inches):
Water Table Present?	Yes ●	No ○	Depth (inches): 12
Saturation Present? (includes capillary fringe)	Yes ●	No ○	Depth (inches): 6

Wetland Hydrology Present? Yes ● No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Poseidon City/County: San Diego, San Diego Sampling Date: 2/22/11

Applicant/Owner: Poseidon Resources State: CA Sampling Point: 16

Investigator(s): Andy Thomson and Katie Dayton Section, Township, Range: Sections 20 and 21, Township 18S, Range 2W

Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): concave Slope (%): 0-20

Subregion (LRR): C - Mediterranean California Lat: 32°35'29.95"N Long: 117°5'46.02W Datum: NAD83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☒ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◯	No ◉	
Hydric Soil Present?	Yes ◯	No ◉	**Is the Sampled Area within a Wetland?** Yes ◯ No ◉
Wetland Hydrology Present?	Yes ◯	No ◉	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. Bromus diandrus	1	No	NI
2. Glebionis coronaria	2	Yes	NI
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	3 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	3 %		

% Bare Ground in Herb Stratum 97 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

◉ Dominance Test is >50%

Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◯ No ◉

Remarks:

SOIL

Sampling Point: 16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-15	7.5 YR 3/2	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ●

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ●	Depth (inches):
Water Table Present?	Yes ○	No ●	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ●	Depth (inches):

Wetland Hydrology Present? Yes ○ No ●

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Poseidon | City/County: San Diego, San Diego | Sampling Date: 2/22/11

Applicant/Owner: Poseidon Resources | State: CA | Sampling Point: 17

Investigator(s): Andy Thomson and Katie Dayton | Section, Township, Range: Section 20 and 21, Township 18S, Range 2W

Landform (hillslope, terrace, etc.): Channel | Local relief (concave, convex, none): Concave | Slope (%): 0-20

Subregion (LRR): C - Mediterranean California | Lat: 32 35 29.95 | Long: 117 5 46.02 | Datum: NAD83

Soil Map Unit Name: | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ( ) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (•) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (•)	No ( )	
Hydric Soil Present?	Yes ( )	No (•)	Is the Sampled Area within a Wetland? Yes (•) No ( )
Wetland Hydrology Present?	Yes (•)	No ( )	

Remarks: Although not all 3 parameters were met, the sampling point is below the high tide line of 7.79 feet (above MLLW) and therefore ACOE jurisdiction is presumed.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Distichlis spicata*	30	Yes	FAC
2. *Salicornia virginica*	40	Yes	OBL
3. *Frankenia salina*	15	No	FACW
4.			
5.			
6.			
7.			
8.			
Total Cover:	85 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 15 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	40	x 1 =	40
FACW species	45	x 2 =	90
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	85 (A)		130 (B)

Prevalence Index = B/A = 1.53

Hydrophytic Vegetation Indicators:

- [x] Dominance Test is >50%
- [x] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (•) No ( )

Remarks:

SOIL

Sampling Point: 17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-10	7.5 YR 3/2	100					sandy loam	
10-13	7.5 YR 4/3	95					sandy loam	
10-13	7.5 YR 5/1	5	7.5 YR 4/6	<1	C	M	clay loam	
13-15	7.5 YR 4/3	100	7.5 YR 4/6	1	C	M	loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ●

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☒ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ● Depth (inches):

Water Table Present? Yes ○ No ● Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ● Depth (inches):

Wetland Hydrology Present? Yes ● No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Sampling location is below the high tide line (7.79 feet above MLLW) and therefore hydrology is presumed.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Poseidon City/County: San Diego, San Diego Sampling Date: 2/22/11

Applicant/Owner: Poseidon Resources State: CA Sampling Point: 18

Investigator(s): Andy Thomson and Katie Dayton Section, Township, Range: Sections 20 and 21, Township 18S, Range 2W

Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): concave Slope (%): 0-20

Subregion (LRR): C - Mediterranean California Lat: 32°35'29.95"N Long: 117°5'46.02W Datum: NAD83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ◯	
Hydric Soil Present?	Yes ◉	No ◯	**Is the Sampled Area within a Wetland?** Yes ◉ No ◯
Wetland Hydrology Present?	Yes ◉	No ◯	

Remarks: Approximately 3-foot wide band of ACOE wetland along an open channel.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. Salicornia virginica	100	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	100 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum ____ % % Cover of Biotic Crust ____ %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✘ Dominance Test is >50%

Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◉ No ◯

Remarks:

SOIL

Sampling Point: 18

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-8	7.5 YR 3/2	90	7.5 YR 4/4	10	C	M	clay loam	
8-12	7.5 YR 4/3	75	7.5 YR 4/4	25	C	M	sandy clay loam	
12-15	7.5 YR 5/1	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ◉	No ○	Depth (inches): 10
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 8

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Poseidon City/County: San Diego, San Diego Sampling Date: 2/22/11

Applicant/Owner: Poseidon Resources State: CA Sampling Point: 19

Investigator(s): Andy Thomson and Katie Dayton Section, Township, Range: Sections 20 and 21, Township 18S, Range 2W

Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): concave Slope (%): 0-20

Subregion (LRR): C - Mediterranean California Lat: 32°3 5'29.95 "N Long: 117°5'46.02W Datum: NAD83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◯	No ◉	
Hydric Soil Present?	Yes ◯	No ◉	**Is the Sampled Area within a Wetland?** Yes ◯ No ◉
Wetland Hydrology Present?	Yes ◯	No ◉	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Isocoma menziesii*	10	Yes	FAC
2.			
3.			
4.			
5.			
Total Cover:	10 %		
Herb Stratum			
1. *Mesembranyanthemum crystallinum*	15	Yes	FACU
2. *Melilotus indica*	2	No	FACU
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	17 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 83 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species	10	x 3 =	30
FACU species	17	x 4 =	68
UPL species		x 5 =	0
Column Totals:	27 (A)		98 (B)

Prevalence Index = B/A = 3.63

Hydrophytic Vegetation Indicators:

- ◉ Dominance Test is >50%
- ◉ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◯ No ◉

Remarks:

SOIL

Sampling Point: 19

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-10	7.5 YR 3/3	80					loamy sand	
0-10	7.5 YR 3/1	20					clay loam	
10-15	NA	100					sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ●

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ●	Depth (inches):
Water Table Present?	Yes ○	No ●	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ●	Depth (inches):

Wetland Hydrology Present? Yes ○ No ●

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Poseidon City/County: San Diego, San Diego Sampling Date: 2/22/11

Applicant/Owner: Poseidon Resources State: CA Sampling Point: 20

Investigator(s): Andy Thomson and Katie Dayton Section, Township, Range: Sections 20 and 21, Township 18S, Range 2W

Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): concave Slope (%): 0-20

Subregion (LRR): C - Mediterranean California Lat: 32°3 5'29.95 "N Long: 117°5'46.02W Datum: NAD83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☒ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ◉

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	
Hydric Soil Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks: Sampling point is within the borrow pit of a former salt evaporation pond where there has been substantial topographic disturbance.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Isocoma menziesii*	5	Yes	FAC
2.			
3.			
4.			
5.			
Total Cover:	5 %		
Herb Stratum			
1. *Mesembranyanthemum nodiflorum*	40	Yes	FAC
2. *Amblyopappus pusillus*	3	No	FACW
3. *Melilotus indica*	1	No	FACU
4.			
5.			
6.			
7.			
8.			
Total Cover:	44 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 56 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species		x 1 =	0	
FACW species	3	x 2 =	6	
FAC species	45	x 3 =	135	
FACU species	1	x 4 =	4	
UPL species		x 5 =	0	
Column Totals:	49	(A)	145	(B)

Prevalence Index = B/A = 2.96

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

SOIL

Sampling Point: 20

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-10	7.5 YR 3/1	80	2.5 YR 4/6	20	C	M	sandy loam	
10-15	7.5 YR 4/1	80	2.5 YR 4/8	20	C	M	loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks: There are white mineral deposits intermixed in soil. The soils exhibit low chroma as they are subsoils and likely former bay muds.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☒ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: There is salt crust in a small area, which is likely the result of the site's former use as a salt evaporation pond.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Poseidon City/County: San Diego, San Diego Sampling Date: 2/22/11

Applicant/Owner: Poseidon Resources State: CA Sampling Point: 21

Investigator(s): Andy Thomson and Katie Dayton Section, Township, Range: Sections 20 and 21, Township 18S, Range 2W

Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): concave Slope (%): 0-20

Subregion (LRR): C - Mediterranean California Lat: 32°3 5'29.95 "N Long: 117°5'46.02W Datum: NAD83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☒ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◯ No ◉

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ◯	
Hydric Soil Present?	Yes ◯	No ◉	**Is the Sampled Area within a Wetland?** Yes ◯ No ◉
Wetland Hydrology Present?	Yes ◯	No ◉	

Remarks: Sampling point is within the borrow pit of a former salt evaporation pond where there has been substantial topographical disturbance.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Isocoma menziesii*	20	Yes	FAC
2.			
3.			
4.			
5.			
Total Cover:	20 %		
Herb Stratum			
1. *Mesembryanthemum nodiflorum*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	10 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 70 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species	30	x 3 =	90
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	30 (A)		90 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◉ No ◯

Remarks:

SOIL

Sampling Point: 21

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-13	7.5 YR 3/1	90					sandy loam	
0-13	7.5 YR 3/2	10					clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ●

Remarks: white mineral desposits intermixed in soil

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ●	Depth (inches):
Water Table Present?	Yes ○	No ●	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ●	Depth (inches):

Wetland Hydrology Present? Yes ○ No ●

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Poseidon City/County: San Diego, San Diego Sampling Date: 2/22/11

Applicant/Owner: Poseidon Resources State: CA Sampling Point: 22

Investigator(s): Andy Thomson and Katie Dayton Section, Township, Range: Sections 20 and 21, Township 18S, Range 2W

Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): concave Slope (%): 0-20

Subregion (LRR): C - Mediterranean California Lat: 32°35'29.95"N Long: 117°5'46.02W Datum: NAD83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☒ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◯ No ◉

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◯	No ◉	
Hydric Soil Present?	Yes ◯	No ◉	**Is the Sampled Area within a Wetland?** Yes ◯ No ◉
Wetland Hydrology Present?	Yes ◉	No ◯	

Remarks: Sampling point is within the borrow pit of a former salt evaporation pond where there has been substantial topographical distrubance.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 100 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

◉ Dominance Test is >50%

Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◯ No ◉

Remarks:

SOIL

Sampling Point: 22

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-7	7.5 YR 3/1						sandy clay loam	
7-15	7.5 YR 3/2						sandy clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ●

Remarks: There is a think layer (about 1/4 -inch thick) of salt crystals approximately 3 inches deep in soil pit.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☒ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ●	No ○	Depth (inches): 0
Water Table Present?	Yes ●	No ○	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ●	No ○	Depth (inches): 0

Wetland Hydrology Present? Yes ● No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology indicators at this sampling location are a result of rainwater temporarily ponding in the borrow pit locations during the rainy season.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Poseidon City/County: San Diego, San Diego Sampling Date: 2/22/11

Applicant/Owner: Poseidon Resources State: CA Sampling Point: 23

Investigator(s): Andy Thomson and Katie Dayton Section, Township, Range: Sections 20 and 21, Township 18S, Range 2W

Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): concave Slope (%): 0-20

Subregion (LRR): C - Mediterranean California Lat: 32°3 5'29.95 "N Long: 117°5'46.02W Datum: NAD83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes (●)	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes (●)	No (●)	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Suaeda nigra*	2	Yes	OBL
2.			
3.			
4.			
5.			
Total Cover:	2 %		
Herb Stratum			
1. *Sisymbrium sp.*	40	Yes	NI
2. *Melilotus indica*	30	Yes	FACU
3. *Mesembryanthemum nodiflorum*	10	No	FAC
4. *Amblyopappus pusillus*	2	No	FACW
5. *Lepidium sp.*	1	No	NI
6.			
7.			
8.			
Total Cover:	83 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 17 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	33.3 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	2	x 1 =	2
FACW species	2	x 2 =	4
FAC species	10	x 3 =	30
FACU species	30	x 4 =	120
UPL species	41	x 5 =	205
Column Totals:	85 (A)		361 (B)

Prevalence Index = B/A = 4.25

Hydrophytic Vegetation Indicators:

- (●) Dominance Test is >50%
- (●) Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ( ) No (●)

Remarks:

SOIL

Sampling Point: 23

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-8	7.5 YR 4/2	100					sandy loam	
8-15	NA	100					sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ●

Remarks: white mineral desposits intermixed in soil

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ●	Depth (inches):
Water Table Present?	Yes ○	No ●	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ●	Depth (inches):

Wetland Hydrology Present? Yes ○ No ●

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Poseidon City/County: San Diego, San Diego Sampling Date: 2/22/11

Applicant/Owner: Poseidon Resources State: CA Sampling Point: 24

Investigator(s): Andy Thomson and Katie Dayton Section, Township, Range: Sections 20 and 21, Township 18S, Range 2W

Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): concave Slope (%): 0-20

Subregion (LRR): C - Mediterranean California Lat: 32°35'29.95"N Long: 117°5'46.02W Datum: NAD83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☒ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◯ No ◉

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◯	No ◉	
Hydric Soil Present?	Yes ◉	No ◯	**Is the Sampled Area within a Wetland?** Yes ◯ No ◉
Wetland Hydrology Present?	Yes ◉	No ◯	

Remarks: Sampling point is within the borrow pit of a former salt evaporation pond where there has been substantial topographical distrubance.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 100 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

◉ Dominance Test is >50%

Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◯ No ◉

Remarks:

SOIL

Sampling Point: 24

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-8	5 YR 2.5/1	97	5 YR 3/4	3	C	M	silty clay	
8-14	7.5 YR 3/1	95	7.5 YR 4/6	5	C	M	sandy silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks: There is a think layer (about 1/4 -inch thick) of salt crystals approximately 3 inches deep in soil pit. This salt crust is likely a result of the site's former use as a salt evaporation pond. The soils exhibit low chroma as they are subsoils and likely former bay mud.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☒ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Saltpan. The salt crust is likely a result of the site's former use as a salt evaporation pond.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Poseidon City/County: San Diego, San Diego Sampling Date: 2/22/11

Applicant/Owner: Poseidon Resources State: CA Sampling Point: 25

Investigator(s): Andy Thomson and Katie Dayton Section, Township, Range: Sections 20 and 21, Township 18S, Range 2W

Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): concave Slope (%): 0-20

Subregion (LRR): C - Mediterranean California Lat: 32°3 5'29.95 "N Long: 117°5'46.02W Datum: NAD83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ◯	
Hydric Soil Present?	Yes ◯	No ◉	**Is the Sampled Area within a Wetland?** Yes ◯ No ◉
Wetland Hydrology Present?	Yes ◯	No ◉	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Baccharis sarothroides*	2	No	FACU
2. *Cylindropuntia prolifera*	1	No	NI
3. *Salicornia subterminalis*	5	Yes	OBL
4. *Isocoma menziesii*	3	Yes	FAC
5.			
Total Cover:	11 %		
Herb Stratum			
1. *Erodium cicutarium*	20	Yes	NI
2. *Melilotus indica*	1	No	FACU
3. *Mesembryanthemum nodiflorum*	10	Yes	FAC
4. *Amblyopappus pusillus*	1	No	FACW
5. *Schismus barbatus*	1	No	NI
6.			
7.			
8.			
Total Cover:	33 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 67 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	75.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	5	x 1 =	5	
FACW species	1	x 2 =	2	
FAC species	13	x 3 =	39	
FACU species	3	x 4 =	12	
UPL species	22	x 5 =	110	
Column Totals:	44	(A)	168	(B)

Prevalence Index = B/A = 3.82

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◉ No ◯

Remarks:

SOIL

Sampling Point: 25

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-15	5 YR 3/3	100					loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ●

Remarks: There is a thick layer (about 1/4-inch thick) of salt crystals approximately 3 inches deep in soil pit.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ●	Depth (inches):
Water Table Present?	Yes ○	No ●	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ●	Depth (inches):

Wetland Hydrology Present? Yes ○ No ●

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX B

Site 2 Salt Ponds 12-15 Study Area –
Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Poseidon – Salt Ponds City/County: Chula Vista / SD Sampling Date: 7-23-13
Applicant/Owner: Poseidon / Refuge - Salt Worker State: CA Sampling Point: 1
Investigator(s): ACT & KD Section, Township, Range: _____
Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): _____ Slope (%): 50
Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: _____ NWI classification: _____
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil ✓, or Hydrology ✓ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks: Data station is located on slope of salt pond levee.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
*Sapling/Shrub Stratum (Plot size: 4m x 4m)			
1. Suaeda est	2	N	FACW
2. Atri lind	1	N	N/I
3.			
4.			
5.			
	3 = Total Cover		
Herb Stratum (Plot size: 2 m x 2m)			
1. Mes nod	20	Y	FAC
2. Mes cry	1	N	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	21 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 79 % Cover of Biotic Crust Ø

50/20

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: Data station located on inside slope of levee.
* Shrub cover <5% = doesn't count as vegetated layer

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	—		—				Sand	Sand & shells
3-16	10YR 4/1	99	10YR 3/6	1	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ✓ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ✓ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 16

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Poseidon Salt Ponds City/County: _____ Sampling Date: 3-13-18

Applicant/Owner: _____ State: _____ Sampling Point: 2

Investigator(s): AZT & KP Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil ✓, or Hydrology ✓ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		

Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Atr. lind	5	Y	N/I
2. Suada ester	2	N	FACW
3. ~~Sal~~ Sar pac	5	Y	OBL
4. Fram sal	10	Y	FACW
5.			
	22 = Total Cover		

Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2. Bat mar	30	Y	OBL
3. Mes nod	5	N	FAC
4.			
5.			
6.			
7.			
8.			
	45 = Total Cover		

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 55 % Cover of Biotic Crust Ø

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	7.5YR 4/4	100	—				sandy loam	
2-7	10YR 3/1	99	7.5YR 3/4	1	C	M	"	
7-12	2.5YR 4/3	98	7.5YR 4/6	2	C	M	sand	
12-16	7.5YR 2.5/1	100	—				clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply) NONE

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Poseidon - Salt Ponds City/County: _____ Sampling Date: 3-13-13

Applicant/Owner: _____ State: _____ Sampling Point: 3

Investigator(s): _____ Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation ✓, Soil ✓, or Hydrology ✓ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 158 % Cover of Biotic Crust Ø

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	_____	x 1 = _____
FACW species	_____	x 2 = _____
FAC species	_____	x 3 = _____
FACU species	_____	x 4 = _____
UPL species	_____	x 5 = _____
Column Totals:	_____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: No veg. Sample point is on edge of road above concrete rubble on inside slope of pond levee.

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2								road base - sand/gravel
* 2-16	10YR 3/1	98	10YR 4/6	2	C	M	clay loam	dredged bay mud
2-16	25YR 5/2	99	10YR 5/8	1	C	M	clay loam	"

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

* dredged bay mud, with shells and heterogeneous strata.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply) NONE

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Poseidon- Salt Ponds City/County: _____ Sampling Date: 3-13-13

Applicant/Owner: _____ State: _____ Sampling Point: 4

Investigator(s): _____ Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? NO Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Sar pac	80	Y	OBL
2. Fra sal	10	N	FACW
3.			
4.			
5.			
	90 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Lim cal	1	N	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 99 % Cover of Biotic Crust Ø

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	_____	x 1 = _____
FACW species	_____	x 2 = _____
FAC species	_____	x 3 = _____
FACU species	_____	x 4 = _____
UPL species	_____	x 5 = _____
Column Totals:	_____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Sample point in pickleweed marsh on Bay side of levee.

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/1	75	5YR 4/6	25	C	M	sicl clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): —

Water Table Present? Yes ✓ No ___ Depth (inches): 5

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 2

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Poseidon - Salt Ponds City/County: _____ Sampling Date: 3-13-13

Applicant/Owner: _____ State: _____ Sampling Point: 5

Investigator(s): _____ Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		

Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Sar pac	40	Y	OBL
2. Fra lat	30	Y	FACW
3.			
4.			
5.			
	70 = Total Cover		

Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Lim cal	40	Y	FACW
2. Triglochin concinna	5	N	OBL
3. Batis mar	1	N	OBL
4.			
5.			
6.			
7.			
8.			
	46 = Total Cover		

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 54 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/2	100					Sandy clay	
2-10	10YR 4/2	97	5YR 4/6	3	C	M	Sand	
10-16	10YR 4/2	80	7.5YR 5/8	20	C	M	sandy clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ✓ No ___ Depth (inches): 15

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 10

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Poseidon - Salt Ponds City/County: _____ Sampling Date: _____

Applicant/Owner: _____ State: _____ Sampling Point: 6

Investigator(s): _____ Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)

Are Vegetation ✓, Soil ✓, or Hydrology ✓ significantly disturbed? yes Are "Normal Circumstances" present? Yes _____ No ✓

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust Ø

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	_____	x 1 = _____
FACW species	_____	x 2 = _____
FAC species	_____	x 3 = _____
FACU species	_____	x 4 = _____
UPL species	_____	x 5 = _____
Column Totals:	_____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

Sampling point is on a berm w/in salt ponds. Berm was created by recent dredging.

Sampling Point: 6

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/1	100	—	—	—	—	sandy clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

Dredged mud from salt ponds. Heterogeneous strata & discombobulated texture / constituents.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No ✓	Depth (inches): ___
Water Table Present?	Yes ___	No ✓	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No ✓	Depth (inches): ___

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Poseidon - Salt Ponds City/County: _____ Sampling Date: 3-13-13

Applicant/Owner: _____ State: _____ Sampling Point: 7

Investigator(s): _____ Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		

Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust Ø

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	_____	x 1 = _____
FACW species	_____	x 2 = _____
FAC species	_____	x 3 = _____
FACU species	_____	x 4 = _____
UPL species	_____	x 5 = _____
Column Totals:	_____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

On levee @ road edge - unvegetated

SOIL

Sampling Point: 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	7.5YR 5/4	100	—	—	—	—	Sandy loam	road fill-gravel/sand
8= bottom of pit due to heavily compacted rock layer								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Above high tide elevation

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Poseidon - Salt Ponds City/County: _____ Sampling Date 3-13-13

Applicant/Owner: _____ State: _____ Sampling Point: 8

Investigator(s): _____ Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation ✓, Soil ✓, or Hydrology ✓ significantly disturbed? yes Are "Normal Circumstances" present? Yes _____ No ✓

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Mes nod	90	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust Ø

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	_____	x 1 = _____
FACW species	_____	x 2 = _____
FAC species	_____	x 3 = _____
FACU species	_____	x 4 = _____
UPL species	_____	x 5 = _____
Column Totals:	_____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

On levee between salt ~~between~~ ponds.

SOIL

Sampling Point: 8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5Y 5/3	100					Sand	
6-16	10YR 3/2	100					sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Poseidon – Salt Ponds City/County: _____ Sampling Date: 3-13-13

Applicant/Owner: _____ State: _____ Sampling Point: 9

Investigator(s): _____ Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)

Are Vegetation ✓, Soil ✓, or Hydrology ✓ significantly disturbed? ✓ Are "Normal Circumstances" present? Yes _____ No ✓

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	_____	x 1 = _____
FACW species	_____	x 2 = _____
FAC species	_____	x 3 = _____
FACU species	_____	x 4 = _____
UPL species	_____	x 5 = _____
Column Totals:	_____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

No veg. on inside edge of levee of salt pond

SOIL

Sampling Point: 9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5Y 3/2	100					silty sand	
6-16	2.5Y 3/1	100					silty clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ✓ Aquatic Invertebrates (B13) shells
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Poseidon- Salt Ponds City/County: _____ Sampling Date: 3-13-13

Applicant/Owner: _____ State: _____ Sampling Point: 10

Investigator(s): _____ Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation ✓, Soil ✓, or Hydrology ✓ significantly disturbed? Y Are "Normal Circumstances" present? Yes _____ No ✓

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Sua est	5	Y	FACW
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Mes nod	20	Y	FAC
2. Amb pus	54	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 76 % Cover of Biotic Crust Ø

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:
Sample location is on upper edge of salt pond levee next to access road.

Sampling Point: 10

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5Y 3/3	100					sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply) NONE

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): ___

Water Table Present? Yes ___ No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ___

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Poseidon – Salt Ponds City/County: _____ Sampling Date: 3-8-13

Applicant/Owner: _____ State: _____ Sampling Point: 11

Investigator(s): _____ Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? NO Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____
Hydric Soil Present?	Yes ✓	No _____
Wetland Hydrology Present?	Yes ✓	No _____

Is the Sampled Area within a Wetland? Yes ✓ No _____

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Sar pac	50	Y	OBL
2. Fra sal	10	N	FACW
3. Sue est	2	N	FACW
4.			
5.			
	62 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Tri con	1	N	OBL
2. Bat mar	1	N	OBL
3. Sal big	5	Y	OBL
4.			
5.			
6.			
7.			
8.			
	7 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	_____	x 1 = _____
FACW species	_____	x 2 = _____
FAC species	_____	x 3 = _____
FACU species	_____	x 4 = _____
UPL species	_____	x 5 = _____
Column Totals:	_____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Sampling location is in salt marsh habitat along the Otay River channel.

SOIL

Sampling Point: 11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-7	2.5Y 4/1	85	5Y 4/6	15	C	M		
7-16	5Y 3/1	97	5Y 4/6	3	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ✓ No ___ Depth (inches): 14

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 8

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Poseidon – Salt Ponds City/County: _____ Sampling Date: 3-13-13

Applicant/Owner: _____ State: _____ Sampling Point: 12

Investigator(s): _____ Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation ✓, Soil ✓, or Hydrology ✓ significantly disturbed? yes Are "Normal Circumstances" present? Yes _____ No ✓

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust Ø

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	_____	x 1 = _____
FACW species	_____	x 2 = _____
FAC species	_____	x 3 = _____
FACU species	_____	x 4 = _____
UPL species	_____	x 5 = _____
Column Totals:	_____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

No veg.

Sampling location is on levee btwn salt ponds. Next to road

SOIL

Sampling Point: 12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	N/A	—					Sand	road base
2-16	5Y 2.5/1	95	2.5YR 3/6	5	C	M	sandy	silty clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

Dredged bay mud.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Poseidon - Salt Ponds City/County: _____ Sampling Date: 3-13-13

Applicant/Owner: _____ State: _____ Sampling Point: 13

Investigator(s): _____ Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation ✓, Soil ✓, or Hydrology ✓ significantly disturbed? Y Are "Normal Circumstances" present? Yes _____ No ✓

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks: dredged bay mud.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Mes nod	3	N/A	FAC
2. ~~Mat~~			
3.			
4.			
5.			
6.			
7.			
8.			
	3 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 97 % Cover of Biotic Crust Ø

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: Ø (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	_____	x 1 = _____
FACW species	_____	x 2 = _____
FAC species	_____	x 3 = _____
FACU species	_____	x 4 = _____
UPL species	_____	x 5 = _____
Column Totals:	_____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

Herb strata <5% so doesn't count as a strata.

Sampling location is on top of levee between ponds.

SOIL

Sampling Point: 13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5Y 3/1	100	—				silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

dredged soil. No defined strata.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Shells from dredged material are not natural at location

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Poseidon - Salt Ponds City/County: _____ Sampling Date: _____

Applicant/Owner: _____ State: _____ Sampling Point: 14

Investigator(s): _____ Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? N Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____
Hydric Soil Present?	Yes ✓	No _____
Wetland Hydrology Present?	Yes _____	No ✓

Is the Sampled Area within a Wetland? Yes _____ No ✓

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Sue est	5	Y	FACW
2. Sar pac	5	Y	OBL
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Bat mar	50	Y	OBL
2. Son ole	2	N	NI
3. Malva par	1	N	NI
4. Mes nod	5	N	FAC
5. Atr semi	2	N	FAC
6. Hor mur	1	N	FACU
7.			
8.			
	61 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 39 % Cover of Biotic Crust Ø

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: 14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/3	100	—				loam	
4-10	2.5YR 2.5/1	100	—				clay loam	
10-16	5Y 4/2	100	—				sandy clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Poseidon - Salt Ponds City/County: _____ Sampling Date: 3-13-13

Applicant/Owner: _____ State: _____ Sampling Point: 15

Investigator(s): _____ Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil ✓, or Hydrology ✓ significantly disturbed? Y Are "Normal Circumstances" present? Yes _____ No ✓

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
		= Total Cover	

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	_____	x 1 = _____
FACW species	_____	x 2 = _____
FAC species	_____	x 3 = _____
FACU species	_____	x 4 = _____
UPL species	_____	x 5 = _____
Column Totals:	_____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

Sampling point on inside slope of salt pond levee. Unvegetated.

SOIL

Sampling Point: 15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	5Y 3/1	97	10YR 3/4	3	C	M	silty clay	
8-16	5Y 2.5/1	100					clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ✓ No ___ Depth (inches): 15

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 12

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX C

Site 3 Access Routes Study Area – Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Poseidon - ORERP City/County: San Diego, San Diego Sampling Date: 5/29/14

Applicant/Owner: Poseidon Resources State: CA Sampling Point: C1

Investigator(s): Andy Thomson Section, Township, Range: Sections 20 and 21, Township 18S, Range 2W

Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): concave Slope (%): 0-20

Subregion (LRR): C - Mediterranean California Lat: 32°3 5'29.95 "N Long: 117°5'46.02W Datum: NAD83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ◯	
Hydric Soil Present?	Yes ◉	No ◯	**Is the Sampled Area within a Wetland?** Yes ◉ No ◯
Wetland Hydrology Present?	Yes ◉	No ◯	

Remarks: Sampling point is located at edge of FWM habitat along the Otay River channel.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Heliotropium currassivicum*	30	Yes	FACU
2. *Schoenoplectus californica*	50	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	80 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 20 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	x 1 =	50
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species	30	x 4 =	120
UPL species		x 5 =	0
Column Totals:	80 (A)		170 (B)

Prevalence Index = B/A = 2.13

Hydrophytic Vegetation Indicators:

- ☐ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◉ No ◯

Remarks:

SOIL

Sampling Point: C1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-6	7.5 YR 4/2	95	2.5 YR 4/8	5	C	M	clay loam	
6-16	10 YR 4/1	95	2.5 YR 4/8	5	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks: The soils exhibit low chroma, with Redox features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☒ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ◉	No ○	Depth (inches): 8
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 6

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Data pit began to slowly fill approximately half way with water during analysis.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Poseidon - ORERP City/County: San Diego, San Diego Sampling Date: 5/29/14

Applicant/Owner: Poseidon Resources State: CA Sampling Point: C2

Investigator(s): Andy Thomson Section, Township, Range: Sections 20 and 21, Township 18S, Range 2W

Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): concave Slope (%): 0-20

Subregion (LRR): C - Mediterranean California Lat: 32°3 5'29.95 "N Long: 117°5'46.02W Datum: NAD83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◯	No ◉	
Hydric Soil Present?	Yes ◯	No ◉	**Is the Sampled Area within a Wetland?** Yes ◯ No ◉
Wetland Hydrology Present?	Yes ◯	No ◉	

Remarks: Sampling point is located in MFS along outer edge of the Otay River channel.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Baccharis salicifolia*	80	Yes	FAC
2.			
3.			
4.			
5.			
Total Cover:	80 %		
Herb Stratum			
1. *Ambrosia psilostachya*	30	Yes	FACU
2. *Glebionis coronaria*	30	Yes	Not Listed
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	60 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 40 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	33.3 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species		x 1 =	0	
FACW species		x 2 =	0	
FAC species	80	x 3 =	240	
FACU species	30	x 4 =	120	
UPL species	30	x 5 =	150	
Column Totals:	140	(A)	510	(B)

Prevalence Index = B/A = 3.64

Hydrophytic Vegetation Indicators:

- ◉ Dominance Test is >50%
- ◉ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◯ No ◉

Remarks:

SOIL

Sampling Point: C2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-14	10 YR 3/2	100	none				clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ●

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ●	Depth (inches):
Water Table Present?	Yes ○	No ●	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ●	Depth (inches):

Wetland Hydrology Present? Yes ○ No ●

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Poseidon - ORERP City/County: San Diego, San Diego Sampling Date: 5/29/14

Applicant/Owner: Poseidon Resources State: CA Sampling Point: C3

Investigator(s): Andy Thomson Section, Township, Range: Sections 20 and 21, Township 18S, Range 2W

Landform (hillslope, terrace, etc.): floodplain terrace Local relief (concave, convex, none): none Slope (%): 0-5

Subregion (LRR): C - Mediterranean California Lat: 32°3 5'29.95 "N Long: 117°5'46.02W Datum: NAD83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◯	No ◉	
Hydric Soil Present?	Yes ◯	No ◉	**Is the Sampled Area within a Wetland?** Yes ◯ No ◉
Wetland Hydrology Present?	Yes ◯	No ◉	

Remarks: Sampling point is located in restoration area along bike path.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Baccharis salicifolia*	20	Yes	FAC
2.			
3.			
4.			
5.			
Total Cover:	20 %		
Herb Stratum			
1. *Heliotropium currassivicum*	80	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	80 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 20 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species	20	x 3 =	60
FACU species	80	x 4 =	320
UPL species		x 5 =	0
Column Totals:	100 (A)		380 (B)

Prevalence Index = B/A = 3.80

Hydrophytic Vegetation Indicators:

- ◉ Dominance Test is >50%
- ◉ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◯ No ◉

Remarks:

SOIL

Sampling Point: C3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-4	7.5 YR 3/3	100	none				clay loam	
4-5	5 YR 3/4	100	none				clay	moist from irrigation
5-16	10 YR 3/2	100	none				clay loam	moist from irrigation

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ●

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ●	Depth (inches):
Water Table Present?	Yes ○	No ●	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ●	Depth (inches):

Wetland Hydrology Present? Yes ○ No ●

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Poseidon - ORERP City/County: San Diego, San Diego Sampling Date: 5/29/14

Applicant/Owner: Poseidon Resources State: CA Sampling Point: C4

Investigator(s): Andy Thomson Section, Township, Range: Sections 20 and 21, Township 18S, Range 2W

Landform (hillslope, terrace, etc.): floodplain terrace Local relief (concave, convex, none): none Slope (%): 0-5

Subregion (LRR): C - Mediterranean California Lat: 32°3 5'29.95 "N Long: 117°5'46.02W Datum: NAD83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◯	No ◉	
Hydric Soil Present?	Yes ◯	No ◉	**Is the Sampled Area within a Wetland?** Yes ◯ No ◉
Wetland Hydrology Present?	Yes ◯	No ◉	

Remarks: Sampling point is located in MFS that was existing prior to implementation of floodplain restoration that surrounds this habitat.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Baccharis salicifolia*	80	Yes	FAC
2.			
3.			
4.			
5.			
Total Cover:	80 %		
Herb Stratum			
1. *Heliotropium currassivicum*	2	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	2 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 98 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species	80	x 3 =	240
FACU species	2	x 4 =	8
UPL species		x 5 =	0
Column Totals:	82 (A)		248 (B)

Prevalence Index = B/A = 3.02

Hydrophytic Vegetation Indicators:

- ◉ Dominance Test is >50%
- ◉ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◯ No ◉

Remarks: The vegetation at this location was present prior to restoration implementation.

SOIL

Sampling Point: C4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-14	10 YR 3/2	100	none				clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks: None

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Adjacent areas are irrigated for floodplain restoration site.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Poseidon - ORERP City/County: San Diego, San Diego Sampling Date: 5/29/14

Applicant/Owner: Poseidon Resources State: CA Sampling Point: C5

Investigator(s): Andy Thomson Section, Township, Range: Sections 20 and 21, Township 18S, Range 2W

Landform (hillslope, terrace, etc.): floodplain terrace Local relief (concave, convex, none): none Slope (%): 0-5

Subregion (LRR): C - Mediterranean California Lat: 32°3 5'29.95 "N Long: 117°5'46.02W Datum: NAD83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☒ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◯ No ◉

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ◯	
Hydric Soil Present?	Yes ◯	No ◉	**Is the Sampled Area within a Wetland?** Yes ◯ No ◉
Wetland Hydrology Present?	Yes ◯	No ◉	

Remarks: Sampling point is located in floodplain restoration site between two rows of planted and irrigated shrubs and trees.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix gooddingii*	5	Yes	FACW
2. *Salix lasiolepis*	10	Yes	FACW
3. *Populus fremontii*	5	Yes	Not Listed
4.			
Total Cover:	20 %		
Sapling/Shrub Stratum			
1. *Baccharis salicifolia*	20	Yes	FAC
2. *Sambucus nigra*	5	No	FAC
3. *Salix exigua*	5	No	FACW
4. *Isocoma menziesii*	5	No	FAC
5. *Rosa californica*	2	No	FAC
Total Cover:	37 %		
Herb Stratum			
1. *Heliotropium currassivicum*	2	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	2 %		
Woody Vine Stratum			
1. *Rubus ursinus*	2	Yes	FACU
2. *Vitis girdiana*	1	Yes	FAC
Total Cover:	3 %		

% Bare Ground in Herb Stratum 98 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	7	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	57.1 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	20	x 2 =	40
FAC species	33	x 3 =	99
FACU species	4	x 4 =	16
UPL species	5	x 5 =	25
Column Totals:	62 (A)		180 (B)

Prevalence Index = B/A = 2.90

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◉ No ◯

Remarks: The vegetation at this location was planted as part of the floodplain restoration project. All of the native vegetation is being actively irrigated with drip lines.

SOIL

Sampling Point: C5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-16	10 YR 3/2	100	none				clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ●

Remarks: None. Soil is poorly developed and homogeneous from previous agricultural cultivation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ●	Depth (inches):
Water Table Present?	Yes ○	No ●	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ●	Depth (inches):

Wetland Hydrology Present? Yes ○ No ●

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology indicators present. Area is actively irrigated for floodplain restoration. Soils are moist below about 2 inches from the irrigation.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Poseidon - ORERP City/County: San Diego, San Diego Sampling Date: 5/29/14

Applicant/Owner: Poseidon Resources State: CA Sampling Point: C6

Investigator(s): Andy Thomson Section, Township, Range: Sections 20 and 21, Township 18S, Range 2W

Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): concave Slope (%): 0-5

Subregion (LRR): C - Mediterranean California Lat: 32°3 5'29.95 "N Long: 117°5'46.02W Datum: NAD83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ◯	
Hydric Soil Present?	Yes ◉	No ◯	**Is the Sampled Area within a Wetland?** Yes ◉ No ◯
Wetland Hydrology Present?	Yes ◉	No ◯	

Remarks: Sampling point is located in channel north of bike path.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Heliotropium currassivicum*	2	No	FACU
2. *Sarcoconia pacifica*	50	Yes	OBL
3. *Distichlis spicata*	5	No	FAC
4. *Limonium californicum*	5	No	FACW
5. *Ambrosia psilostachya*	5	No	FACU
6. *Pluchea odorata*	2	No	FACW
7. *Atriplex prostrata*	2	No	FACW
8.			
Total Cover:	71 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 29 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	x 1 =	50
FACW species	9	x 2 =	18
FAC species	5	x 3 =	15
FACU species	7	x 4 =	28
UPL species		x 5 =	0
Column Totals:	71 (A)		111 (B)

Prevalence Index = B/A = 1.56

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◉ No ◯

Remarks: Vegetation is salt marsh. The vegetation community covers the bottom of the channel (there is no active flow path).

SOIL

Sampling Point: C6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-1	10 YR 2/2	100	none				sandy clay	
1-2	10 YR 4/3	90	2.5 YR 3/6	10	C	M	sand	
2-6	10 YR 4/2	80	2.5 YR 3/6	20	C	M	sand	
6-7	2.5 YR 5/4	100	none				clay	
7-11	10 YR 3/2	90	2.5 YR 3/6	10	C	M	sandy clay	
11-16	10 YR 4/1	100	none				clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☒ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks: Sandy redox at 2-6 inches.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☒ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Sampling point is within a defined channel. The bottom of the channel is more swale like: fully vegetated with no active flow path.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Poseidon - ORERP City/County: San Diego, San Diego Sampling Date: 5/29/14

Applicant/Owner: Poseidon Resources State: CA Sampling Point: C7

Investigator(s): Andy Thomson Section, Township, Range: Sections 20 and 21, Township 18S, Range 2W

Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): concave Slope (%): 0-20

Subregion (LRR): C - Mediterranean California Lat: 32°3 5'29.95 "N Long: 117°5'46.02W Datum: NAD83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◯	No ◉	
Hydric Soil Present?	Yes ◯	No ◉	**Is the Sampled Area within a Wetland?** Yes ◯ No ◉
Wetland Hydrology Present?	Yes ◯	No ◉	

Remarks: Sampling point is located in MFS on inner side slope of perimeter berm along channel.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Baccharis salicifolia*	90	Yes	FAC
2.			
3.			
4.			
5.			
Total Cover:	90 %		
Herb Stratum			
1. *Heliotropium currassivicum*	5	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	5 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 95 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species		x 1 =	0	
FACW species		x 2 =	0	
FAC species	90	x 3 =	270	
FACU species	5	x 4 =	20	
UPL species		x 5 =	0	
Column Totals:	95	(A)	290	(B)

Prevalence Index = B/A = 3.05

Hydrophytic Vegetation Indicators:

- ◉ Dominance Test is >50%
- ◉ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◯ No ◉

Remarks:

SOIL

Sampling Point: C7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-14	10 YR 3/3	100	none				loam	on berm

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks: Sampling point is on berm next to channel. Soil is poorly developed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology indicators.

APPENDIX D

Otay River/Pond 20 Study Area – Preliminary Jurisdictional Determination Form

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

District Office: Los Angeles District | File/ORM #: SPL-2011-00743-PJB | PJD Date: Oct 15, 2012

State: CA | City/County: Chula Vista, San Diego

Nearest Waterbody: Otay River and San Diego Bay

Location: TRS, LatLong or UTM: longitude 117°5'46.02" W and latitude 32°35'29.95" N

Name/ Address of Person Requesting PJD: Stan Williams, Poseidon Resources, 501 West Broadway, Suite 2020, San Diego, CA 92101

Identify (Estimate) Amount of Waters in the Review Area:

Non-Wetland Waters: 9,000 linear ft | 60 width | 7.08 acres | Stream Flow: Perennial

Wetlands: 8.23 acre(s) | Cowardin Class: Estuarine

Name of Any Water Bodies on the Site Identified as Section 10 Waters: Tidal: Otay River and Nestor Creek merging into SD Bay | Non-Tidal:

☐ Office (Desk) Determination
☑ Field Determination: Date of Field Trip: multiple dates; see below

SUPPORTING DATA: Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

- ☑ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Dudek JD Report
- ☑ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☑ Office concurs with data sheets/delineation report.
  - ☐ Office does not concur with data sheets/delineation report.
- ☑ Data sheets prepared by the Corps
- ☐ Corps navigable waters' study:
- ☐ U.S. Geological Survey Hydrologic Atlas:
  - ☐ USGS NHD data.
  - ☐ USGS 8 and 12 digit HUC maps.
- ☐ U.S. Geological Survey map(s). Cite quad name:
- ☑ USDA Natural Resources Conservation Service Soil Survey. Citation: Websoil Survey: websoilsurvey.nrcs.usda.gov
- ☑ National wetlands inventory map(s). Cite name: NWI website: www.fws.gov/wetlands
- ☐ State/Local wetland inventory map(s):
- ☐ FEMA/FIRM maps:
- ☐ 100-year Floodplain Elevation is:
- ☑ Photographs: ☑ Aerial (Name & Date): NAIP 2009
  - ☑ Other (Name & Date): Field photos in JD report; 2011
- ☐ Previous determination(s). File no. and date of response letter:
- ☑ Other information (please specify): Historic T Sheet Section 10

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Signature and Date of Regulatory Project Manager (REQUIRED): 10/31/2012

Signature and Date of Person Requesting Preliminary JD (REQUIRED, unless obtaining the signature is impracticable)

EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS:

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

Appendix A - Sites

District Office	Los Angeles District	File/ORM #	SPL-2011-00743-PJB	PJD Date:	Oct 15, 2012
State	CA	City/County	Chula Vista/ San Diego	Person Requesting PJD	Stan Williams (Poseidon Resources)

Site Number	Latitude	Longitude	Cowardin Class	Est. Amount of Aquatic Resource in Review Area	Class of Aquatic Resource
1	32°35'34.34" N	117°5'46.34" W	Riverine	1.28 acres	Non-Section 10 wetland
2	32°35'33.46" N	117°5'52.18" W	Estuarine	6.07 acres	Non-Section 10 wetland
3	32°35'27.91" N	117°5'54.36" W	Estuarine	0.89 acre	Non-Section 10 wetland
4	32°35'27.91" N	117°5'54.36" W	Estuarine	3.46 acres	Non-Section 10 non-wetlanc
5	32°35'41.06" N	117°5'34.95" W	Riverine	0.31 acre	Non-Section 10 wetland
6	32°35'32.56" N	117°5'55.56" W	Estuarine	3.31 acres	Section 10 tidal

Notes:

Initial field work conducted by Dudek on February 22, 2011 and July 20, 2011, followed by field work conducted by ACOE August 1 through August 8, 2012.

Site #1 = Cismontane alkali marsh
Site #2 = Salt marsh associated with Otay River and Nestor Creek channels
Site #3 = Wetlands within Salt Pond 20
Site #4 = Non-wetlands within Salt Pond 20
Site #5 = Fresh water marsh on Otay River upstream of tidal influence
Site #6 = Brackish water of Otay River and Nestor Creek tidal channels

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: County of San Diego, DPW	File Number: SPL-2011-00980-MBS	Date:

Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
	APPROVED JURISDICTIONAL DETERMINATION	D
X	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/cecw/pages/reg_materials.aspx or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

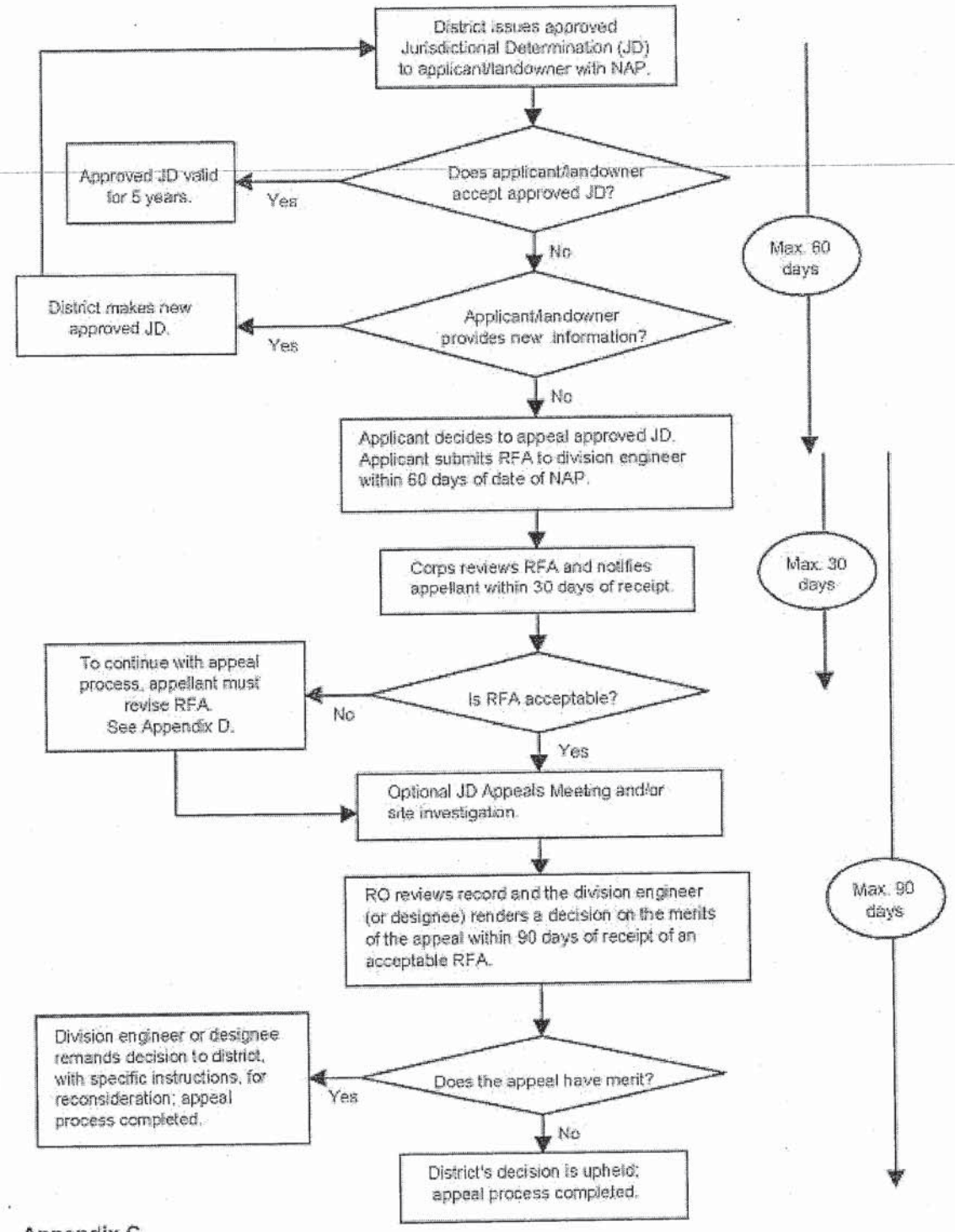
C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.

- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

Administrative Appeal Process for Approved Jurisdictional Determinations



Appendix C

APPENDIX E

Ponds 12-15 Study Area – Preliminary Jurisdictional Determination Form

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT CORPS OF ENGINEERS
REGULATORY DIVISION, CARLSBAD FIELD OFFICE
5900 LA PLACE COURT, SUITE 100
CARLSBAD, CA 92008

November 12, 2013

REPLY TO
ATTENTION OF
Regulatory Division

Mr. Stan Williams
Poseidon Resources
5780 Fleet Street, Suite 140
Carlsbad, CA 92008

SUBJECT: Preliminary Jurisdictional Determination regarding presence/absence of geographic jurisdiction

Dear Mr. Williams:

Reference is made to your request (File No. SPL-2011-00743-MBS) dated July 10, 2013, for a preliminary Department of the Army (DA) jurisdictional determination (JD) for the Poseidon Salt Marsh Restoration Site Ponds 12-15 located in the City of Chula Vista, San Diego County, California (Latitude 32.60321, Longitude -117.10728). As part of the evaluation process, we have made the jurisdictional determination below.

As you may know, the U.S. Army Corps of Engineers' (Corps) evaluation process for determining whether or not a DA permit is needed involves two tests. If both tests are met, then a permit is required. The first test determines whether or not the proposed project is located in a water of the U.S. (i.e., it is within the Corps' geographic jurisdiction). The second test determines whether or not the proposed project is a regulated activity under section 10 of the Rivers and Harbors Act or section 404 of the Clean Water Act (CWA). As part of the evaluation process, pertaining to the first test only, we have made the jurisdictional determination below.

Based on available information, it appears waters of the U.S. may be present on the Poseidon Salt Marsh Restoration Site Ponds 12-15 in the approximate locations noted on the enclosed drawings. The basis for the preliminary JD can be found on the enclosed "Preliminary Jurisdictional Determination Form." Please note preliminary JDs are non-binding ". . . written indications that there may be waters of the United States, including wetlands, on a parcel or indications of the approximate location(s) of waters of the United States or wetlands on a parcel. Preliminary JDs are advisory in nature and may not be appealed" (33 CFR 331.2.). The permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved JD for this site. The option to obtain an approved JD in this instance and at this time has been declined. For purposes of computation of impacts, compensatory mitigation requirements, and other resource protection measures, a permit decision

made on the basis of a preliminary JD will treat all potential waters and wetlands that would be affected in any way by the permitted activity on the site as if they are jurisdictional waters of the U.S.

Please be reminded that preliminary JDs may not be appealed through the Corps' administrative appeal process set out at 33 CFR Part 331. Preliminary jurisdictional determinations are fully explained in the enclosed Regulatory Guidance Letter 08-02, dated June 26, 2008. Further, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 CFR Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 CFR 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

This determination has been conducted to identify the extent of the Corps' CWA jurisdiction on the Poseidon Salt Marsh Restoration Site Ponds 12-15 identified in your request. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are U.S. Department of Agriculture (USDA) program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

If you have any questions, please contact me at 760-602-4836 or via e-mail at Meris.Bantilan-Smith@usace.army.mil.

Please be advised that you can now comment on your experience with Regulatory Division by accessing the Corps web-based customer survey form at: http://per2.nwp.usace.army.mil/survey.html.

Sincerely,

Meris Bantilan-Smith

Meris Bantilan-Smith
Senior Project Manager
South Coast Branch

Enclosures

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

District Office: Los Angeles District | File/ORM #: SPL-2011-00743-MBS | PJD Date: Nov 8, 2013

State: CA | City/County: Chula Vista/San Diego

Nearest Waterbody: San Diego Bay

Location: TRS, LatLong or UTM: 32.60321 N, -117.10728 W

Name/ Address of Person Requesting PJD: Stan Williams, Poseidon Resources, 5780 Fleet Street, Suite 140, Carlsbad, CA 92008

Identify (Estimate) Amount of Waters in the Review Area:

Non-Wetland Waters: 291.14 linear ft | width | acres | Stream Flow: Perennial

Wetlands: 8.12 acre(s) | Cowardin Class: Estuarine

Name of Any Water Bodies on the Site Identified as Section 10 Waters: Tidal: San Diego Bay, Otay River, Palomar Street Chann | Non-Tidal:

☐ Office (Desk) Determination
☑ Field Determination: Date of Field Trip: Nov 4, 2013

SUPPORTING DATA: Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

- ☑ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: See notes.
- ☑ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☑ Office concurs with data sheets/delineation report.
  - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps
- ☐ Corps navigable waters' study:
- ☐ U.S. Geological Survey Hydrologic Atlas:
  - ☐ USGS NHD data.
  - ☐ USGS 8 and 12 digit HUC maps.
- ☐ U.S. Geological Survey map(s). Cite quad name:
- ☑ USDA Natural Resources Conservation Service Soil Survey. Citation: Websoil Survey: websoilsurvey.nrcs.usda.gov
- ☑ National wetlands inventory map(s). Cite name: NWI website: www.fws.gov/wetlands
- ☐ State/Local wetland inventory map(s):
- ☐ FEMA/FIRM maps:
- ☐ 100-year Floodplain Elevation is:
- ☑ Photographs: ☑ Aerial (Name & Date): NAIP 2009
  - ☑ Other (Name & Date): Field photos in JD report: 2013
- ☐ Previous determination(s). File no. and date of response letter:
- ☑ Other information (please specify): See notes.

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

11/12/13
Signature and Date of Regulatory Project Manager (REQUIRED)

11/11/2013
Signature and Date of Person Requesting Preliminary JD (REQUIRED, unless obtaining the signature is impracticable)

EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS:

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

Appendix A - Sites

District Office: Los Angeles District | File/ORM #: SPL-2011-00743-MBS | PJD Date: Nov 8, 2013

State: CA | City/County: Chula Vista/San Diego | Person Requesting PJD: Stan Williams (Poseidon Resources)

Site Number	Latitude	Longitude	Cowardin Class	Est. Amount of Aquatic Resource in Review Area	Class of Aquatic Resource
1	32°36'17.31"N	117° 6'23.71"W	Estuarine	0.89	Section 10 tidal
2	32°35'49.08"N	117° 6'54.03"W	Estuarine	1.69	Section 10 tidal
3	32°36'28.07"N	117° 6'10.83"W	Estuarine	18.16	Non-Section 10 non-wetlanc
4	32°36'19.35"N	117° 6'10.55"W	Estuarine	270.42	Section 10 tidal
5	32°36'42.85"N	117° 6'5.05"W	Estuarine	8.12	Non-Section 10 wetland

Notes:

Site #1 = Beach (associated with the open bay side of the salt pond levees)
Site #2 = Brackishwater (associated with the tidal channels in the Otay River and Palomar Channel)
Site #3 = Salt Pond Levee (area on the salt pond side of the salt pond levees above mean high tide level)
Site #4 = Open Water (includes both the open water in the salt ponds and open water in the bay)
Site #5 = Southern Coastal Salt Marsh and disturbed Southern Coastal Salt Marsh above mean high tide level (salt marsh habitat associated with the tidal channels and the bay side of the shoreline along the salt pond levees)

July 10, 2013. Results of a Preliminary Jurisdictional Wetland Delineation on Salt Ponds 12-15 for the Proposed Poseidon Salt Marsh Restoration Site, City of Chula Vista, California.

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Stan Williams, Poseidon Resources	File Number: SPL-2011-00473-MBS	Date: November 12, 2013

Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
	APPROVED JURISDICTIONAL DETERMINATION	D
X	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://usace.army.mil/inet/functions/cw/cecwo/reg or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:

DISTRICT ENGINEER
Los Angeles District, Corps of Engineers
ATTN: Chief, Regulatory Division
P.O. Box 532711
Los Angeles, CA 90053-2325
Tel. (213) 452-3425

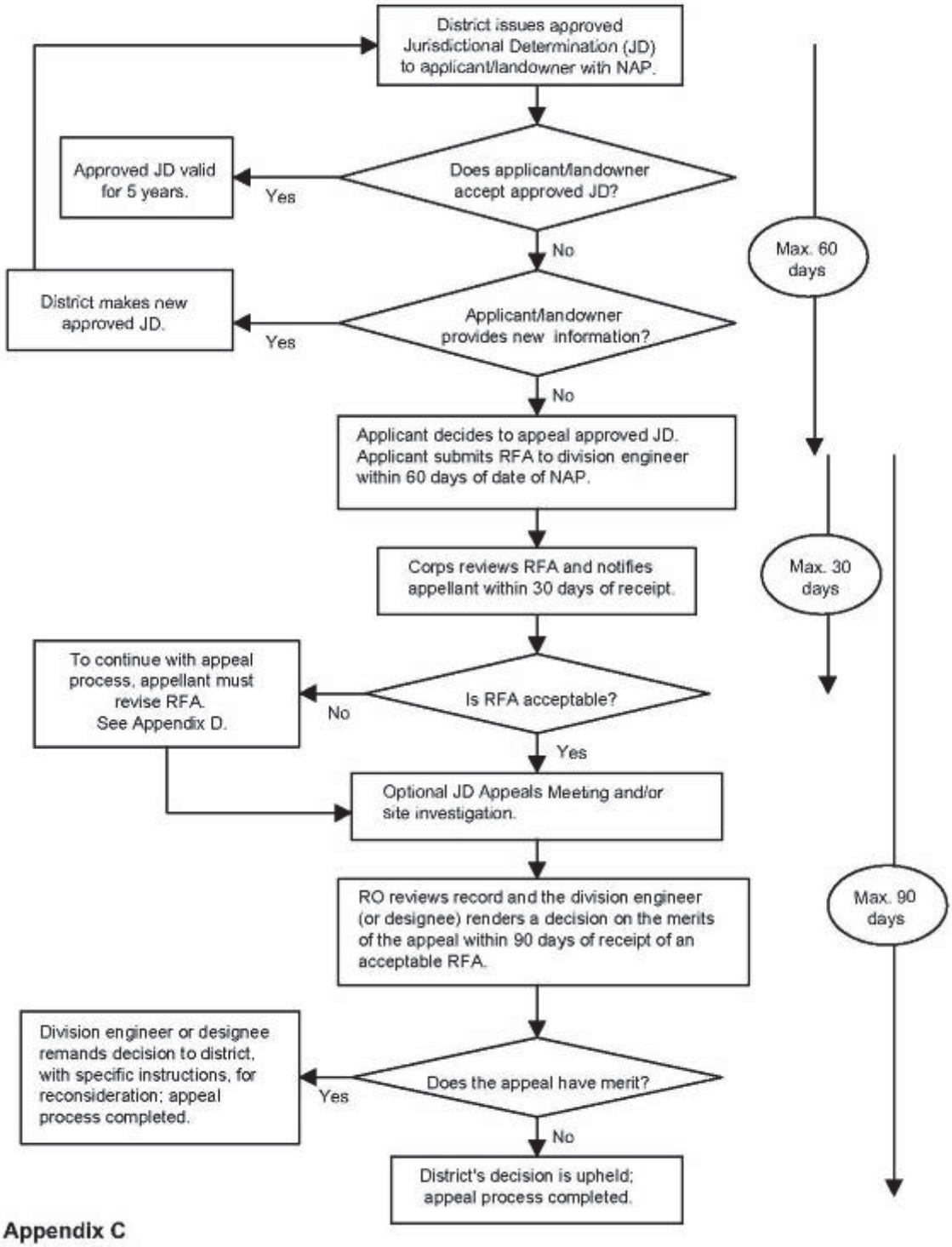
If you only have questions regarding the appeal process you may also contact:

DIVISION ENGINEER
South Pacific Division, Corps of Engineers
Attn: Tom Cavanaugh
Administrative Appeal Review Officer
South Pacific Division, CESPD-PDS-O, 2052B
1455 Market Street, San Francisco, California 94103-1399
Phone: (415) 503-6574 Fax: (415) 503-6646
Email: thomas.j.cavanaugh@usace.army.mil

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

	Date:	Telephone number:
_____ Signature of appellant or agent.		

Administrative Appeal Process for Approved Jurisdictional Determinations



Appendix C

DUDEK

6758-01

SOURCE: NAIP 2009

FIGURE 3

Vegetation Communities with Jurisdictional Delineation

DUDEK

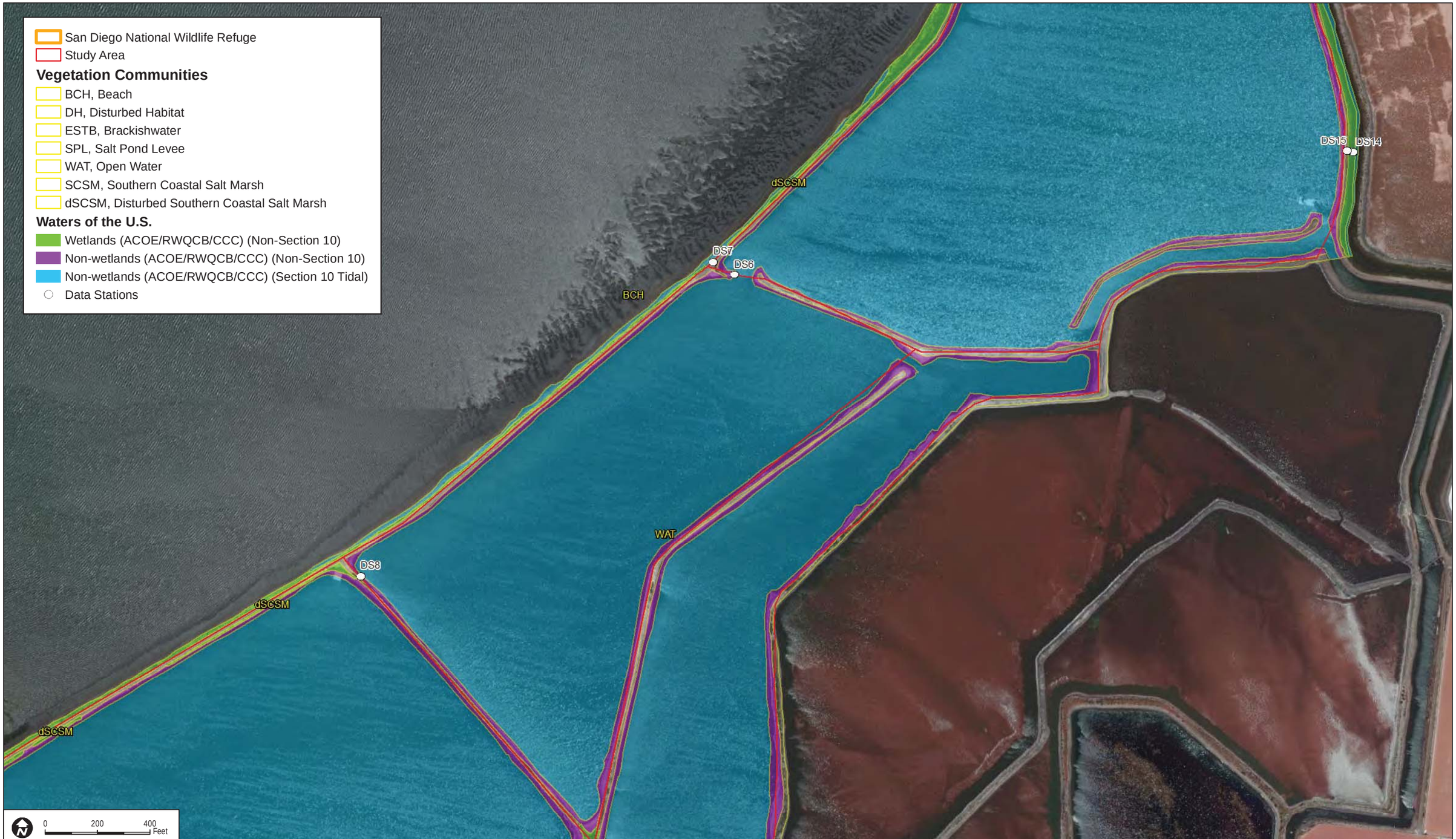
6758-01

SOURCE: NAIP 2009

FIGURE 3a

Vegetation Communities with Jurisdictional Delineation

Preliminary Jurisdictional Wetland Delineation on Salt Ponds 12-15 for the Poseidon Salt Marsh Restoration Site



DUDEK

6758-01

SOURCE: NAIP 2009

FIGURE 3b

Vegetation Communities with Jurisdictional Delineation

Preliminary Jurisdictional Wetland Delineation on Salt Ponds 12-15 for the Poseidon Salt Marsh Restoration Site

DUDEK

6758-01

SOURCE: NAIP 2009

FIGURE 3c

Vegetation Communities with Jurisdictional Delineation

Preliminary Jurisdictional Wetland Delineation on Salt Ponds 12-15 for the Poseidon Salt Marsh Restoration Site

APPENDIX F

Site 3 Access Routes Study Area – Preliminary Jurisdictional Determination Form

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there "*may be*" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

District Office: Los Angeles District | File/ORM #: SPL-2011-00743 | PJD Date: May 27, 2014

State: CA | City/County: Chula Vista/ San Diego

Nearest Waterbody: Otay River and San Diego Bay

Location: TRS, LatLong or UTM: longitude 117°5'46.02" W and latitude 32°35'29.95" N

Name/ Address of Person Requesting PJD: Stan Williams (Poseidon Resources)
5780 Fleet St. Ste. 140
Carlsbad, CA 92008

Identify (Estimate) Amount of Waters in the Review Area:

Non-Wetland Waters: 1,000 linear ft | 50 width | 4.85 acres | Stream Flow: Perennial

Wetlands: 3.04 acre(s) | Cowardin Class: Estuarine

Name of Any Water Bodies on the Site Identified as Section 10 Waters: Tidal: Palomar Channel, salt ponds, San Diego Bay | Non-Tidal:

☐ Office (Desk) Determination
☑ Field Determination: | Date of Field Trip: May 27, 2014

SUPPORTING DATA: Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

- ☑ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Dudek JD Report
- ☑ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☐ Office concurs with data sheets/delineation report.
  - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps
- ☐ Corps navigable waters' study:
- ☐ U.S. Geological Survey Hydrologic Atlas:
  - ☐ USGS NHD data.
  - ☐ USGS 8 and 12 digit HUC maps.
- ☐ U.S. Geological Survey map(s). Cite quad name:
- ☑ USDA Natural Resources Conservation Service Soil Survey. Citation: Websoil Survey: websoilsurvey.nrcs.usda.gov
- ☑ National wetlands inventory map(s). Cite name: NWI website: www.fws.gov/wetlands
- ☐ State/Local wetland inventory map(s):
- ☐ FEMA/FIRM maps:
- ☐ 100-year Floodplain Elevation is:
- ☑ Photographs: ☑ Aerial (Name & Date): Bing 2014
  - ☑ Other (Name & Date): Field photos in JD report; May 27, 2014
- ☐ Previous determination(s). File no. and date of response letter:
- ☑ Other information (please specify): Historic T Sheet Section 10

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Signature and Date of Regulatory Project Manager (REQUIRED)

Signature and Date of Person Requesting Preliminary JD (REQUIRED, unless obtaining the signature is impracticable)

EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS:

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

Appendix A - Sites

District Office	Los Angeles District	File/ORM #	SPL-2011-0000743	PJD Date:	May 27, 2014
State	CA	City/County	Chula Vista/ San Diego	Person Requestinq PJD	Stan Williams (Poseidon Resources)

Site Number	Latitude	Longitude	Cowardin Class	Est. Amount of Aquatic Resource in Review Area	Class of Aquatic Resource
1	32°35'40" N	117°5'33" W	Riverine	0.85 Acres	Non-Section 10 wetland
2	32°35'14" N	117°6'14" W	Estuarine	0.07	Non-Section 10 non-wetlan
3	32°36'18" N	117°5'49" W	Estuarine	0.14	Section 10 tidal
4	32°36'46" N	117°5'58" W	Estuarine	0.76	Non-Section 10 non-wetlan
5	32°36'16" N	117°5'50" W	Estuarine	3.88	Section 10 tidal
6	32°36'18" N	117°5'47" W	Estuarine	2.19	Non-Section 10 wetland

Notes:

Site #1 = Freshwater marsh on Otay River and salt marsh in tributary channel upstream of tidal influence
Site #2 = Non-wetlands within Salt Pond 20
Site #3 = Palomar Street channel brackish water tidal channel
Site #4 = Salt pond levee (levee slope on the salt pond side of the salt pond levees)
Site #5 = Open water in salt ponds and in San Diego Bay at tie-in point for restoration site
Site #6 = Southern coastal salt marsh along Palomar Street channel

APPENDIX C

California Gnatcatcher Survey Report

DUDEK

MAIN OFFICE
605 THIRD STREET
ENCINITAS, CALIFORNIA 92024
T 760.942.5147 T 800.450.1818 F 760.632.0164

June 23, 2011 6758-01

U.S. Fish and Wildlife Service
Attention: Recovery Permit Coordinator
6010 Hidden Valley Road
Carlsbad, California 92009

Subject: ***2011 Focused Presence-Absence California Gnatcatcher Survey Report for the Poseidon Desalination Project Mitigation Site, City of San Diego, California. Permit No. TE-781084***

Dear Recovery Permit Coordinator:

This report documents the results of three protocol-level presence/absence surveys for the coastal California gnatcatcher (*Polioptila californica californica;* CAGN), which were conducted at the approximately 100-acre Poseidon Desalination Project Mitigation site by a Dudek biologist in March and April 2011. The surveys were conducted in all areas of suitable habitat.

The CAGN is a federally listed threatened species and a California Department of Fish and Game species of special concern. It is closely associated with coastal sage scrub habitat and typically occurs below 950 feet elevation and on slopes less than 40% (Atwood 1990), but CAGN have been observed at elevations greater than 2,000 feet. The species is threatened primarily by loss, degradation, and fragmentation of coastal sage scrub habitat and is also impacted by brown-headed cowbird (*Molothrus ater*; cowbird) nest parasitism.

LOCATION AND EXISTING CONDITIONS

The proposed Poseidon Desalination Project mitigation site occupies approximately 100 acres of the South Bay unit of the San Diego Bay National Wildlife Refuge in the City of San Diego (City). The site is located north of Palm Avenue, south of the Salt Works, west of Interstate 5, and east of the developed area of Imperial Beach (Figures 1 and 2). The property is situated centrally within the U.S. Geological Survey 7.5-minute Imperial Beach quadrangle, T18S, R2W; Section 21 (Figure 2).

Land use within the approximately 100-acre mitigation site is currently as a national wildlife refuge that is owned and managed by the U.S. Fish and Wildlife Service (USFWS). Thus, there is no development on site however there is passive recreational use by pedestrians and bike-riders as well as bird watchers. Some of the property appears to have been used for agriculture

in the past due to the presence of weeds and lack of native plant species over a portion of the site. Surrounding land use includes undeveloped refuge lands to the east and south, the salt works to the north, and residential development to the west. Topography at the site is very flat and low elevation, just above sea level and some portions are at or below mean sea level and affected by tidal flows.

According to Bowman (1973), the project site supports predominantly three different soil types: Grangeville fine sandy loam, Visalia gravelly sandy loam, and riverwash. The Grangeville series consists of poorly drained, very deep fine sandy loams derived from granitic alluvium. These soils are on alluvial fans and alluvial plains. The Visalia series consists of moderately well drained, very deep sandy loams derived from granitic alluvium. These soils also are on alluvial fans and food plains. Riverwash occurs in intermittent stream channels. The material is typically sandy, gravelly or cobbly. It is excessively drained and rapidly permeable. Many areas are barren of vegetation or support scattered sycamores, coast live oaks, and sparse shrubs and forbs occur in patches.

VEGETATION COMMUNITIES

Based on species composition and general physiognomy, nine vegetation communities (or habitat types) were identified within the Poseidon Desalination Project Mitigation Site: *Isocoma* scrub, mulefat scrub, coastal and valley freshwater marsh, southern coastal salt marsh, cismontane alkali marsh, brackishwater channel, non-vegetated channel, saltpan/mudflat, and eucalyptus woodland. In addition, one land cover is located on site: disturbed habitat. The suitable habitat for the California gnatcatcher, *Isocoma* scrub and mulefat scrub, is described below, the acreages are presented in Table 1, and the configuration of the vegetation communities are shown in Figure 3.

The *Isocoma* scrub is dominated by coast goldenbush (*Isocoma menziesii*). The stands of *Isocoma* scrub vegetation community form a sparse to open shrub layer. The overall height varies from 0–3 feet tall and overall vegetation shrub cover is approximately 50%. The understory also contains cactus including *Opuntia littoralis.*

The mulefat scrub vegetation community is composed of fragmented patches of a continuous shrub layer where mulefat (*Baccharis salicifolia*) dominates. There are several patches of the vegetation community especially scattered in the eastern portion of the site. The vegetation community is virtually a monotypic stand that is tall (6 feet or taller) and dense.

Table 1
Vegetation Communities and Land Cover Types

Vegetation Community/Land Cover Type	Acreage
Isocoma Scrub	12.34
Mulefat Scrub	0.75
Coastal and Valley Freshwater Marsh	0.33
Southern Coastal Salt Marsh	6.17
Cismontane Alkali Marsh	1.32
Saltpan/Mudflats	6.60
Brackishwater Channel or Floodway	3.31
Non-vegetated Channel or Floodway	4.65
Eucalyptus Woodland	0.75
Disturbed Habitat	64.07
Grand Total	**100.29**

METHODS

Surveys were conducted under the authorization of permit TE-781084 (Dr. Anita M. Hayworth) according to the schedule provided in Table 2. The survey followed the most current protocol established by the U.S. Fish and Wildlife Service, *Coastal California Gnatcatcher (Polioptila californica californica) Presence/Absence Survey Protocol, July 28, 1997* (USFWS 1997).

Suitable habitat within the project was surveyed three times for the CAGN and included the *Isocoma* scrub and mulefat scrub habitats. Although these habitat types are not typically occupied by the gnatcatcher, the structure of the habitat is potentially suitable and the species is known to periodically forage in mulefat scrub. The route selected ensured complete coverage of all suitable habitat within the study area (Figure 3). A topographic map of the site (scale 1 inch = 100 feet) overlain with vegetation polygons was used for the survey. Weather conditions during surveys are provided in Table 2. Binoculars (10×50) were used to aid in detecting and identifying bird species. Taped gnatcatcher vocalizations were played frequently in order to elicit a response from the species, if present. The tape was played approximately every 50–100 feet within suitable habitat. If a gnatcatcher was to be detected, playing of the tape would cease in order to avoid harassment and the gnatcatcher location would be recorded on the site map.

Table 2
Schedule for California Gnatcatcher Survey

Date	Hours	Personnel	Focus	Conditions
3/16/2011	0800–1000	A.Hayworth	California gnatcatcher	58 F, clear, 0–1 mph wind
4/4/2011	00730–0930	A.Hayworth	California gnatcatcher	58–63 F, overcast, 0–1 mph wind
4/25/2011	0700–0900	A.Hayworth	California gnatcatcher	58–61 F; overcast; 0–1 mph wind

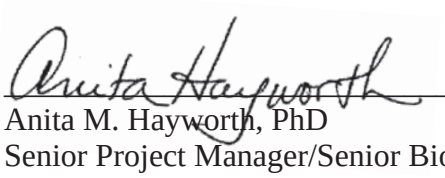
F = degrees Fahrenheit
mph = miles per hour

RESULTS

No California gnatcatchers were observed on site. The habitat is marginal in that it is not composed of the plant species typically used by the gnatcatcher. In addition, the habitat appears to have been planted or hydroseeded based on the composition. The habitat is relatively isolated from other patches of typical coastal sage scrub in the region however if the species dispersed to the Refuge, the habitat could be potentially suitable for occupation. Thirty species of birds were observed during the surveys of the site. A full list of bird species observed during the focused California gnatcatcher survey is provided in Appendix A.

I certify that the information in this survey report and attached exhibits fully and accurately represents my work. Please feel free to contact me at 760.479.4239 with questions or if you require additional information.

Sincerely,



Anita M. Hayworth, PhD
Senior Project Manager/Senior Biologist

Att: Figure 1, Regional Map
Figure 2, Vicinity Map
Figure 3, Biological Resources and Survey Route
Appendix A, Avian Species Observed or Detected During the Focused Survey

cc: Stan Williams, Poseidon
Brian Collins, USFWS
Joe Monaco, Dudek

REFERENCES

Atwood, J.L. 1990. *Status review of the California gnatcatcher (Polioptila california).* Unpublished technical report, Manomet Bird Observatory, Manomet, Massachusetts. 79 pp.

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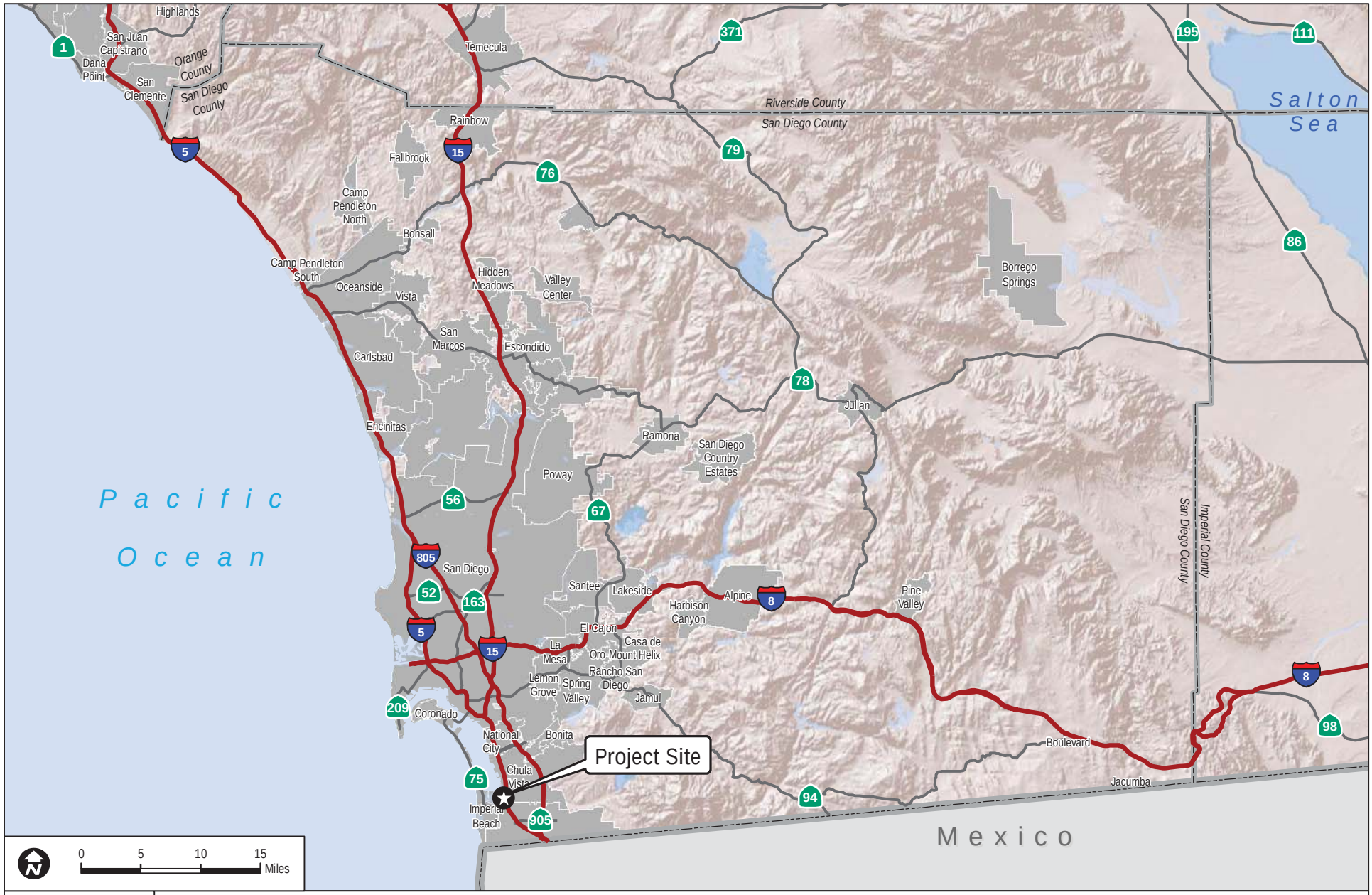

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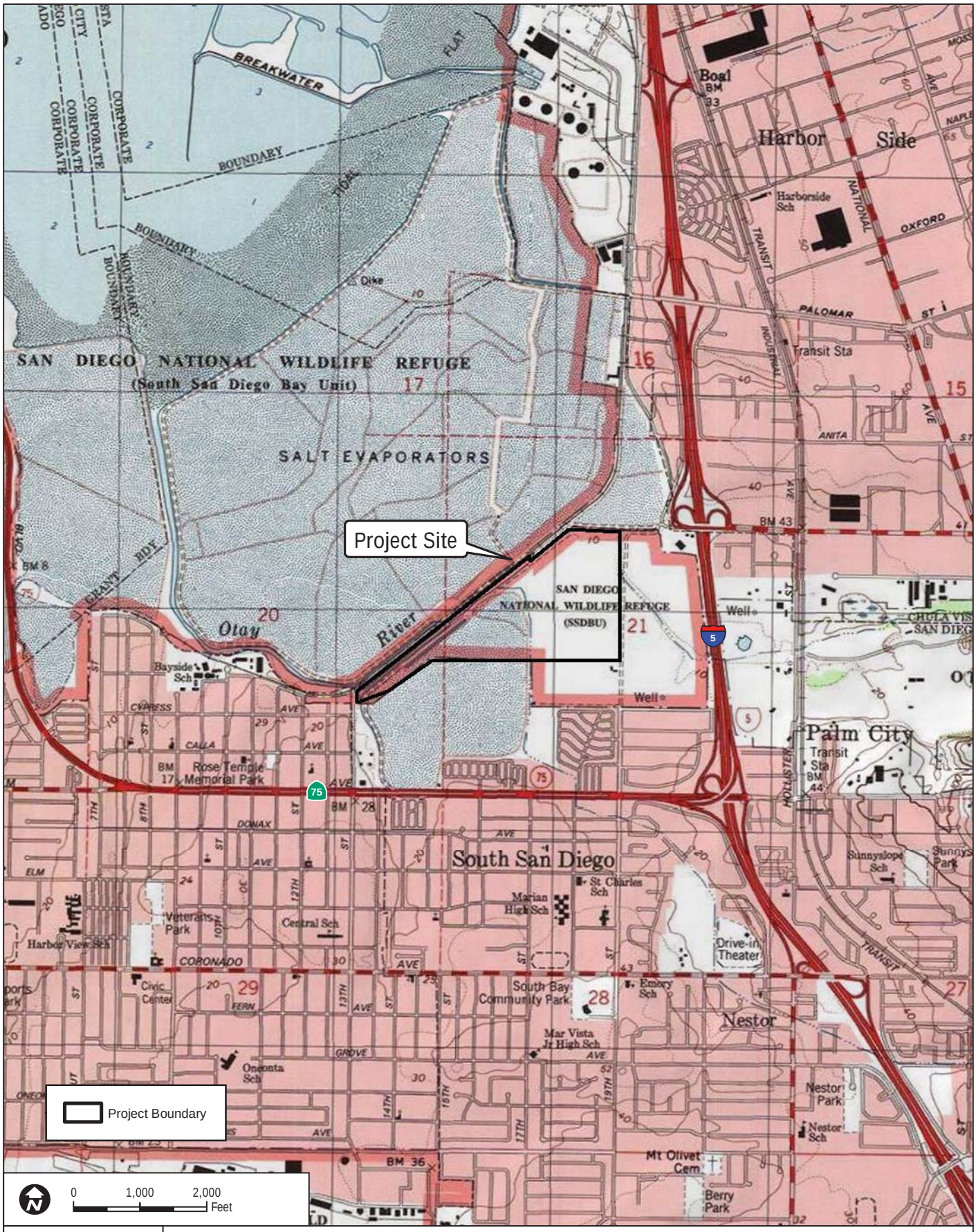
6758-01

FIGURE 1

Regional Map

Carlsbad Desalination Project Mitigation Site - Focused Survey for California Gnatcatcher



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SOURCE: USGS 7.5-Minute Series Quadrangle, USA Topographic Maps Service, Imperial Beach Quadrangle.

FIGURE 2
Vicinity Map

Carlsbad Desalination Project Mitigation Site - Focused Survey for California Gnatcatcher

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6758-01

SOURCE: Digital Global 2008

FIGURE 3

Existing Conditions and Survey Route

Carlsbad Desalination Project Mitigation Site - Focused Survey for California Gnatcatcher

APPENDIX A

Avian Species Observed or Detected During the Focused Survey

APPENDIX A
Avian Species Observed or Detected During the Focused Survey

BIRDS

***ACCIPITRIDAE* – HAWKS, KITES, EAGLES, AND ALLIES**

Buteo jamaicensis – red-tailed hawk
Circus cyaneus – northern harrier

***FALCONIDAE* – FALCONS**

Falco columbarius – merlin
Falco sparverius – American kestrel

***STRIGIDAE* – TRUE OWLS**

Asio flammeus – short-eared owl

***COLUMBIDAE* – PIGEONS AND DOVES**

Zenaida macroura – mourning dove

***APODIDAE* – SWIFTS**

Chaetura vauxi – Vaux's swift

***TROCHILIDAE* – HUMMINGBIRDS**

Calypte anna – Anna's hummingbird

***ALCEDINIDAE* – KINGFISHERS**

Ceryle alcyon – belted kingfisher

***TYRANNIDAE* – TYRANT FLYCATCHERS**

Sayornis nigricans – black phoebe
Tyrannus vociferans – Cassin's kingbird

***HIRUNDINIDAE* – SWALLOWS**

Hirundo rustica – barn swallow
Petrochelidon pyrrhonota – cliff swallow
Stelgidopteryx serripennis – northern rough-winged swallow
Tachycineta bicolor – tree swallow

***ALAUDIDAE* – LARKS**

Eremophila alpestris – horned lark

***CORVIDAE* – CROWS AND JAYS**

Corvus brachyrhynchos – American crow
Corvus corax – common raven

***AEGITHALIDAE* – LONG-TAILED TITS AND BUSHTITS**

Psaltriparus minimus – bushtit

***MIMIDAE* – MOCKINGBIRDS AND THRASHERS**

Mimus polyglottos – northern mockingbird

***PARULIDAE* – WOOD-WARBLERS**

Dendroica coronata – yellow-rumped warbler
Geothlypis trichas – common yellowthroat
Vermivora celata – orange-crowned warbler

***EMBERIZIDAE* – EMBERIZIDS**

Melospiza melodia – song sparrow
Melozone crissalis – California towhee
Zonotrichia leucophrys – white-crowned sparrow

***ICTERIDAE* – BLACKBIRDS**

Agelaius phoeniceus – red-winged blackbird
Sturnella neglecta – western meadowlark

***FRINGILLIDAE* – FRINGILLINE AND CARDUELINE FINCHES AND ALLIES**

Carpodacus mexicanus – house finch
Spinus psaltria – lesser goldfinch

APPENDIX D

Focused Survey for Light-Footed Clapper Rail

Konecny Biological Services
Biological Consulting, Research, Conservation

November 12, 2012

US Fish and Wildlife Service
Attn: Recovery Permit Coordinator
6010 Hidden Valley Road, Suite 100
Carlsbad, CA 92011

Re: Results of a Focused Survey for the Light-footed Clapper Rail at the Poseidon Mitigation Site, South San Diego Bay, San Diego County, California, 2011.

Dear Recovery Permit Coordinator:

This letter report presents the results of a focused survey for the light-footed clapper rail (*Rallus longirostris levipes*) at the Poseidon Mitigation Site in south San Diego Bay, San Diego County, California. The light-footed clapper rail is listed as an endangered species by the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG).

Surveys for the light-footed clapper rail were conducted by wildlife biologist Mr. John Konecny. The surveys were conducted in accordance with the recommendations provided to the USFWS by the Clapper Rail Study Team (2009). This activity is authorized by Konecny Biological Services's (KBS) USFWS section 10(a) permit number TE837308-5, and a CDFG Memorandum of Understanding.

INTRODUCTION

The light-footed clapper rail is a slender, tawny-breasted bird with grayish edges on brown centered back feathers, olive wing coverts, vertical white bars on the flanks, a white stripe over the eye, and a partially orange bill. Light-footed clapper rail occurred historically along the coast of southern California from Carpinteria Marsh in Santa Barbara County south to San Quintín, Baja California, Mexico (Grinnell and Miller 1944, USFWS 1994).

The light-footed clapper rail is a permanent resident of coastal salt marsh traversed by tidal sloughs, usually characterized by cordgrass (*Spartina foliosa*) and pickleweed (*Salicornia* spp.) (Grinnell and Miller 1944, USFWS 1994). Light-footed clapper rails have also nested in freshwater marsh characterized by cattails (*Typha* sp.) and bulrush (*Scirpus* sp.) at Buena Vista, Agua Hedionda, Batiquitos, San Elijo, and San Dieguito Lagoons in San Diego County (Zembal *et al* 2011); and in spiny rush (*Juncus acutus*) at Naval Air Station (NAS) Point Mugu. There is very limited evidence for inter-marsh movement by light-footed clapper rails.

Light-footed clapper rails forage primarily on crustaceans when present. They will also feed on mollusks, small fish, aquatic insects, grasshoppers, small vertebrates, and in some cases, seeds (Eddleman and Conway 1998). Clapper rails forage within emergent vegetation or along the ecotone between mudflats and marsh (Zembal and Fancher 1988). Light-footed clapper rails forage for crabs in the central drains of tidal creeks at low tide. Surface gleaning and shallow probing compose approximately 90% of foraging time. They very irregularly probe deep into the substrate (Zembal and Fancher 1988).

Populations of light-footed clapper rails have undergone decline in the United States due to the rail's limited distribution and destruction and degradation of coastal salt marsh habitat. The statewide light-footed clapper rail population in 2011 was reported to be 441 pairs in 21 marshes (Zembal *et al* 2011), and represents the second highest count since the statewide census began in 1980. The 2011 total is 17 %

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higher than the 2010 count, and is only two pairs lower than the all time high count in 2007. Fifty-six percent of these pairs were found in two coastal salt marsh complexes at Upper Newport Bay and the Tijuana Marsh National Wildlife Refuge (NWR). Five other marshes at NAS Point Mugu, Batiquitos Lagoon, San Elijo Lagoon, Seal Beach NWR, and Kendall-Frost Marsh in Mission Bay, had between 15 and 43 pairs, representing an additional 34% of the state total. The remaining 12 marshes had between one and seven pairs.

Zembal and Massey (1986) have shown that paired light-footed clapper rails can be detected "clappering" throughout the year, but have a bimodal peak in vocalizing during mid-February to mid-April and again in September to October. The initial peak in vocalizing corresponds to the onset of breeding season. In contrast to "clappering", single male and female "kekking" is highly seasonal, almost exclusively occurring between February and June.

PROJECT LOCATION

The Poseidon Mitigation Site is located at the extreme southern end of San Diego Bay, east of the City of Imperial Beach, California (Figure 1). The site is bordered on the north by the Otay River and the Bayshore Bikeway, and lies west of Interstate-5, and north of State Route 75. Specifically, the Poseidon Mitigation Site is located within Township 18 South, Range 2 West, and in Section 21 of the U.S. Geological Survey Imperial Beach, CA-BCN 7.5-minute quadrangle.

PROJECT SITE DESCRIPTION

The Poseidon Mitigation Site is located within the southern end of the San Diego National Wildlife Refuge. Western Salt and its salt evaporation facility is situated to the north and the industrialized South San Diego is located immediately to the south. The majority of the site is ruderal with non-native vegetation, especially in the southern portion of the site. The Otay River runs just north and northeast and has a dense patch of cattail and bulrush just outside the northeast corner of the site. Southern coastal saltmarsh, characterized by alkali-heath (*Frankenia salina*) is present within the channel of the Otay River, and there are patches of coastal goldenbush (*Isocoma veneta* var. *vernonioides*) scattered throughout southern half of the site, and a band of goldenbush is present along the border with the Otay River. A small tributary of the Otay River extends southward, on the western edge of the site. Elevation of the site is approximately 10-feet (4-meters) above mean sea level.

METHODS

Six focused light-footed clapper rail survey events were conducted at least seven days apart over all appropriate marsh habitat at the Poseidon Mitigation Site between March 27th and May 1st, 2011. Dawn surveys were conducted on April 10th, April 17th, and April 24th. Dusk surveys were conducted on March 27th, April 24th, and May 1st. Each survey lasted approximately one and one-half hours. The surveys were conducted in accordance with the recommendations provided to the USFWS by the Clapper Rail Study Team (2009). A summary of the environmental conditions on the six survey dates is provided in Table 1 below.

Table 1. Summary of Weather Conditions During Six Light-footed Clapper Rail Surveys for the Poseidon Mitigation Site in South San Diego Bay, San Diego County, California, 2011.

Survey #	Date	Surveyor (Species)*	Time	Weather Conditions
1	03/27/2011	JK (LFCR)	1650-1815	10% overcast, 65-61°F, wind 7-10 mph
2	04/03/2011	JK (LFCR)	1645-1815	0% overcast, 62-59°F, wind 5-12 mph

3	04/10/2011	JK, (LFCR)	0645-0815	100% overcast, 60-63°F, wind 5-7 mph
4	04/17/2011	JK (LFCR)	0625-0800	100% overcast, 61-63°F, wind 5-7 mph
5	04/24/2011	JK (LFCR)	0630-0800	100% overcast, 64-65°F, wind 7-10 mph
6	05/01/2011	JK (LFCR)	1840-1910	20% overcast, 63-60°F, wind 9-14 mph

* JK-John Konecny; LFCR-Light-footed Clapper Rail

The surveys were conducted by walking the bike path on the northern boundary of the Poseidon Mitigation Site and stopping at stations approximately 100-feet (30-meters) apart and listening for vocalizing light-footed clapper rails. The site was also accessed from the south end, off Saturn Boulevard. If rails were not detected passively, a digital call-prompt of the light-footed clapper rail "dueting" was played with an iPod and amplified speakers at 30-second intervals. A response was listened for approximately ten minutes before proceeding to the next survey station.

RESULTS and DISCUSSION

One pair of light-footed clapper rails was detected just outside of the project boundary in the northeast corner (Figure 2). The pair responded to a call prompt with a duet on the evening of April 3, 2011. The pair was also detected passively on April 17th and 24th. No other light-footed clapper rails were detected within the Poseidon Mitigation Site. Rail habitat does exist through the reach of the Otay River on the northern border of the site but it is of relatively low quality for rails, being short and sparser.

Described as "formerly common in all coastal marshes" by Grinnell and Miller (1944), the light-footed clapper rail has never been a common bird species in the Otay River. Since the light-footed clapper rail range-wide survey was initiated in 1980, there have been one or two light-footed clapper rail pairs in the Otay River dating back to 1995. These pairs were usually located in the cattail patch by the bikeway crossing of the river. Four or five pairs of light-footed clapper rails were in the area in the early 1980's.

The light-footed clapper rail will likely continue to inhabit the freshwater or brackish water marsh in this reach of the Otay River and the numbers may continue to fluctuate depending on the reproductive success of the pair that was identified in 2011. Coastal salt marsh should be incorporated into the design of the mitigation site. With proper planning, a small but sustainable population of light-footed clapper rails may colonize the area.

CERTIFICATION

I certify that the information in this survey report and attached exhibits fully and accurately represent my work. The results of focused surveys for listed species are typically considered valid for one year by the USFWS and CDFG. If you have any questions or require additional information, please call me at (760) 489-5276.

Sincerely,

John K. Konecny
Wildlife Biologist
TE837308-5

REFERENCES CITED

Clapper Rail Study Team. 2009. Survey Guidelines to Determine Presence/Absence of the Light-footed Clapper Rail in Southern California; Recommendations of the Clapper Rail Study Team (John Konecny, Richard Zembal, Susan Hoffman). Draft Recommendations Provided to the Fish and Wildlife Service. 2pp.

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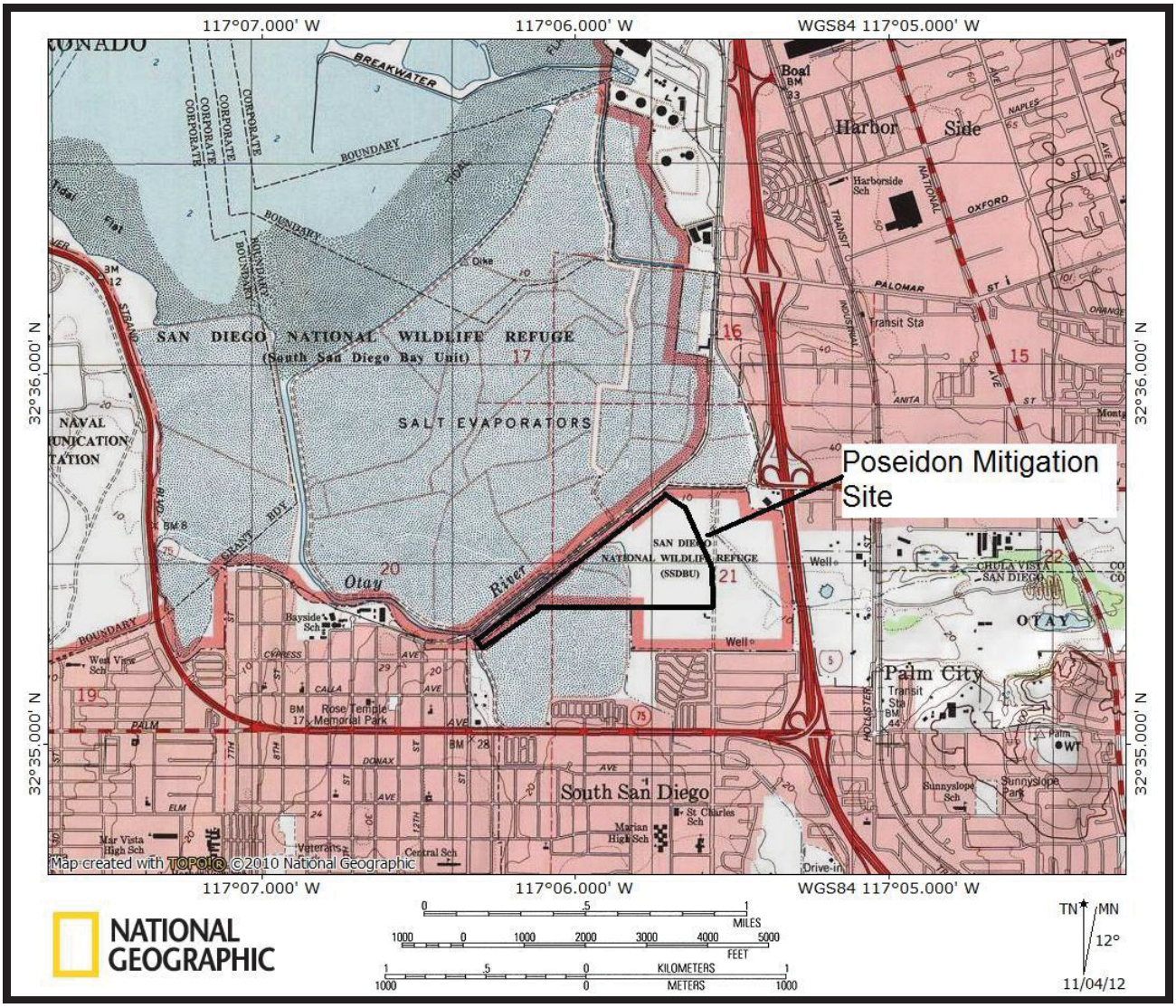

Figure 1. **Location of the Light-footed Clapper Rail Survey Area (black polygon) for the Poseidon Mitigation Site, South San Diego Bay, San Diego County, California, 2011.**

Figure 2. **Location of the Light-footed Clapper Rail Pair (Red P) Detected at the Poseidon Mitigation Site, South San Diego Bay, San Diego County, California, 2011. Project Boundary Shown in Yellow.**

APPENDIX E

CRAM Report

CALIFORNIA RAPID ASSESSMENT METHOD REPORT
for the
Otay River Estuary Restoration Project
San Diego County, California

Prepared for:

Poseidon Resources
5780 Fleet Street, Suite 140
Carlsbad, California 92008
Contact: Stan Williams
Phone: 408.799.3852

Prepared by:

DUDEK
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JANUARY 2016

Printed on 30% post-consumer recycled material.

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1 INTRODUCTION

This document presents the results of an assessment of the baseline ecological conditions and the predicted post-project conditions of the wetland and riparian resources at the proposed Otay River Estuary Restoration Project (ORERP or Project) (Figures 1 and 2).

The proposed ORERP is a partnership between Poseidon Resources (Poseidon), the U.S. Fish and Wildlife Service (Service or USFWS), and San Diego Bay National Wildlife Refuge (Refuge). The purpose of ORERP is to create, restore, and enhance coastal wetlands to benefit native fish, wildlife, and plant species and to provide habitat for migratory seabirds, shorebirds and salt marsh-dependent species.

This proposed Project would occur at two distinct and non-contiguous sites within the South San Diego Bay Unit of the Refuge and would be consistent with the goals and objectives of the Service's San Diego Bay National Wildlife Refuge Comprehensive Conservation Plan (CCP) (USFWS 2006). The proposed project would also follow the terms and conditions of the permits issued by the California Coastal Commission (CCC) and San Diego Regional Water Quality Control Board (Regional Board) for Poseidon's Carlsbad Desalination Project.

When completed the creation and restoration of tidal influenced estuarine, and salt marsh habitats within the Refuge by Poseidon would benefit many species of fish found in south San Diego Bay by providing new and expanded nursery and feeding areas. While avoiding and minimizing impacts to existing seabird and shorebird nesting areas, the proposed project would provide additional and enhanced foraging and nesting habitats for federal and state listed birds. These include species such as the endangered light-footed Ridgway's rail (*Rallus obsoletus levipes*), endangered California least tern (*Sternula antillarum browni*), and threatened western snowy plover (*Charadrius alexandrinus nivosus*) and a diversity of migratory seabirds and shorebirds.

To evaluate the ecological condition of the wetlands and riparian resources that would be affected by the proposed Project, Dudek conducted assessments within the two main components of the Project, including Pond 20 and Pond 15. A total of two Assessment Areas (AAs) were evaluated. The assessment was completed using the most recent version of CRAM, version 6.1 (CWMW 2013). The baseline data collected during this assessment was used as comparative data to evaluate the habitat restoration areas associated with the Project relative to Project goals.

It is important to note that, in this case, a comparison is not being made to the Carlsbad Desalination Project that is mitigating at this site. This is because there were no impacts to wetlands or waters at the desalination plant project site. As part of the Coastal Development Permit (CDP No. E-06-013) for Poseidon's proposal to construct and operate the desalination

facility in Carlsbad, the Commission required Poseidon to prepare a Marine Life Mitigation Plan (MLMP) to address the impacts to be caused by the facility's use of estuarine water and its entrainment of marine organisms. Implementation of the required mitigation to satisfy the MLMP is planned to occur at the Otay River Floodplain Site and at Pond 15. Project construction would result in temporary impacts to jurisdictional waters and wetlands. Therefore, the U.S. Army Corps of Engineers (ACOE) requested the preparation of a functional assessment to characterize the effects of the project on the functions and services of the existing resources to be temporarily impacted.

1.1 California Rapid Assessment Method (CRAM)

The State of California and Federal agencies that comprise the California Wetlands Monitoring Workgroup[1] are promoting the use of rapid assessment methods as a core tool to evaluate wetland resource condition. Dudek evaluated the ecological condition of the Project area utilizing the California Rapid Assessment Method (CRAM; CWMW 2013), which is the most widely used wetland rapid assessment method in the state (www.cramwetlands.org).

The CRAM was developed as a rapid, scientifically defensible, and repeatable assessment methodology that can be used routinely to assess and monitor the condition of wetlands and riparian habitats. The assessment method is a diagnostic tool that can be used to assess the condition of a wetland or riparian site using visual indicators in the field. CRAM identifies six major wetland classes (or types), four of which have sub-types: riverine (confined and non-confined); depressional (individual vernal pools, vernal pool systems, and other depressional wetlands); estuarine (perennial saline, perennial non-saline, and seasonal); playas; slope wetland (seeps and springs, and wet meadows); and lacustrine. AAs are established within each wetland class separately and can represent a portion or encompass the entire wetland community. Each wetland class has a particular set of narrative descriptions that are used to assist in scoring an established AA. Visual indicators are used to choose the best-fit description of habitat condition for a variety of metrics/submetrics within four universal attributes: Buffer and Landscape Context, Hydrology, Physical Structure, and Biotic Structure. Table 1 presents the attributes and metrics/submetrics developed for CRAM that reflect the common, visible characteristics of all wetlands in all regions of California, based on the conceptual models of wetland form and function (CWMW 2013).

[1] The California Wetlands Monitoring Workgroup is a subcommittee of the California Water Quality Monitoring Council (Senate Bill 1070).

Table 1
CRAM Attributes and Metrics

Attributes		Metrics	
Buffer and Landscape Context		Aquatic Area Abundance	
		Buffer	Submetric A: Percent of AA with Buffer
			Submetric B: Average Buffer Width
			Submetric C: Buffer Condition
Hydrology		Water Source	
		Hydroperiod or Channel Stability	
		Hydrologic Connectivity	
Structure	Physical	Structural Patch Richness	
		Topographic Complexity	
	Biotic	Plant Community	Submetric A: Number of Plant Layers Present or Native Species Richness (vernal pools only)
			Submetric B: Number of Co-Dominant Species
			Submetric C: Percent Invasion
		Horizontal Interspersion and Zonation	
		Vertical Biotic Structure	

Source: CWMW 2013.

Letter scores ranging from A to D are assigned to each metric/submetric to reflect alternative states of function. For each metric/submetric, the letter score is converted into the corresponding numeric score: A=12, B=9, C=6, and D=3. The metric/submetric scores are combined to calculate an attribute score, and the attribute scores are combined to calculate an overall AA score. The attribute scores and overall AA scores have a maximum value of 100 and a minimum value of 25. The scores are intended to represent the condition of an AA relative to its best possible condition. CRAM also provides guidelines for identifying the stressors that might account for any low site scores.

CRAM is supported by a website (www.cramwetlands.org) that provides access to an electronic version of the entire manual and training materials. The website also contains downloadable CRAM software and access to the CRAM database, which can be used to upload, view, and retrieve statewide CRAM results.

1.2 Goals of the Assessment

The purpose of the Project is to mitigate impacts from the Carlsbad Desalination Plant through restoring coastal wetlands to benefit native fish, wildlife, and plant species and to provide habitat for migratory seabirds, shorebirds and salt marsh-dependent species. The purpose of this assessment is to determine the functional condition of vegetated resources within the Project area

prior to implementation of the proposed Project relative to anticipated functional condition of restored vegetated resources. This assessment will be used as a tool to compare the ecological baseline conditions of the vegetated resources with the post-Project conditions for the habitat restoration areas.

The three primary goals of this assessment include:

- Assess vegetated jurisdictional resources conditions and identify related stressors;
- Compare existing vegetated jurisdictional resources conditions within the ORERP area to post-construction conditions; and
- Support the application for resource agency permits.

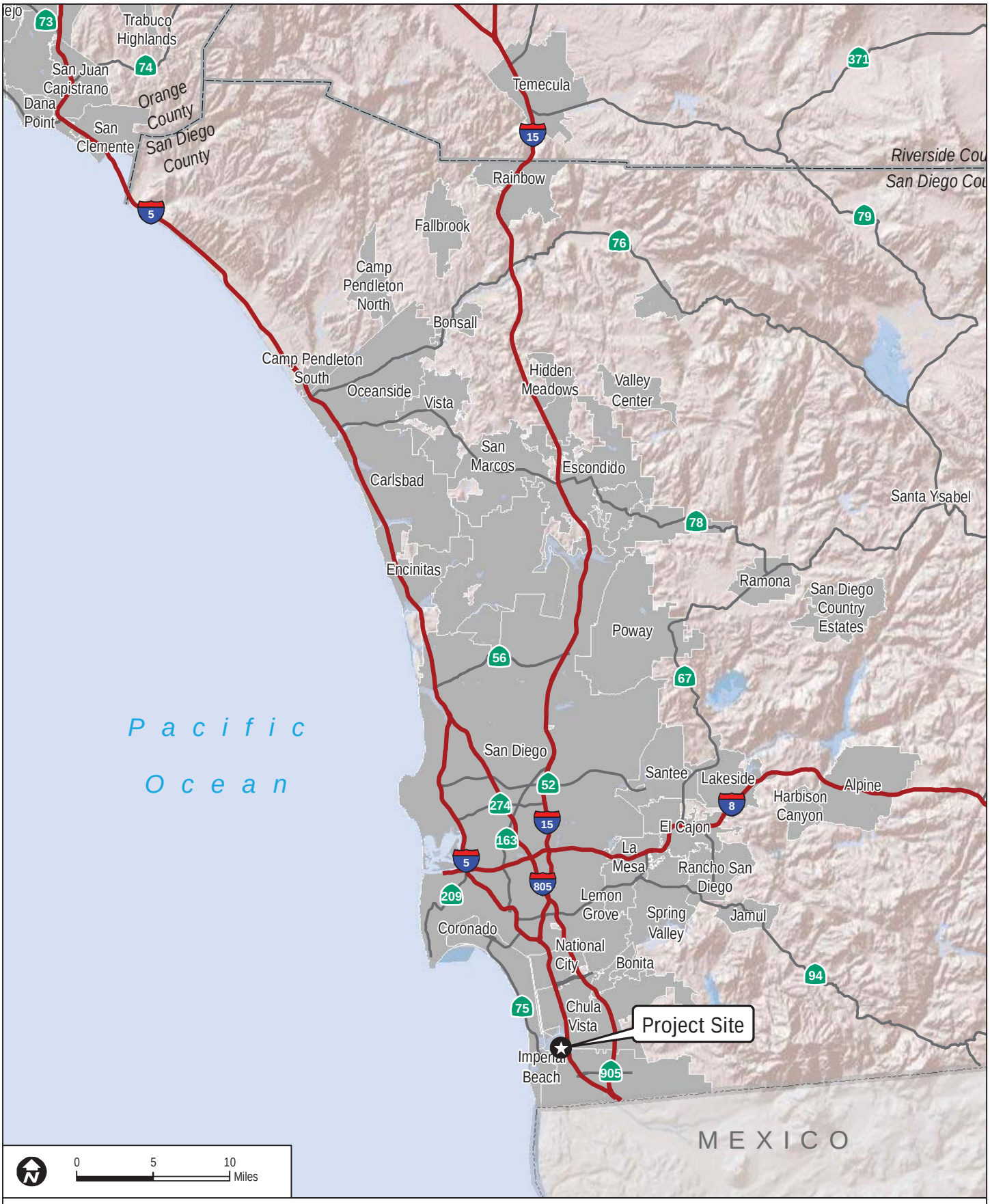

FIGURE 1

Regional Map

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California Rapid Assessment Method Report for the Otay River Estuary Restoration Project

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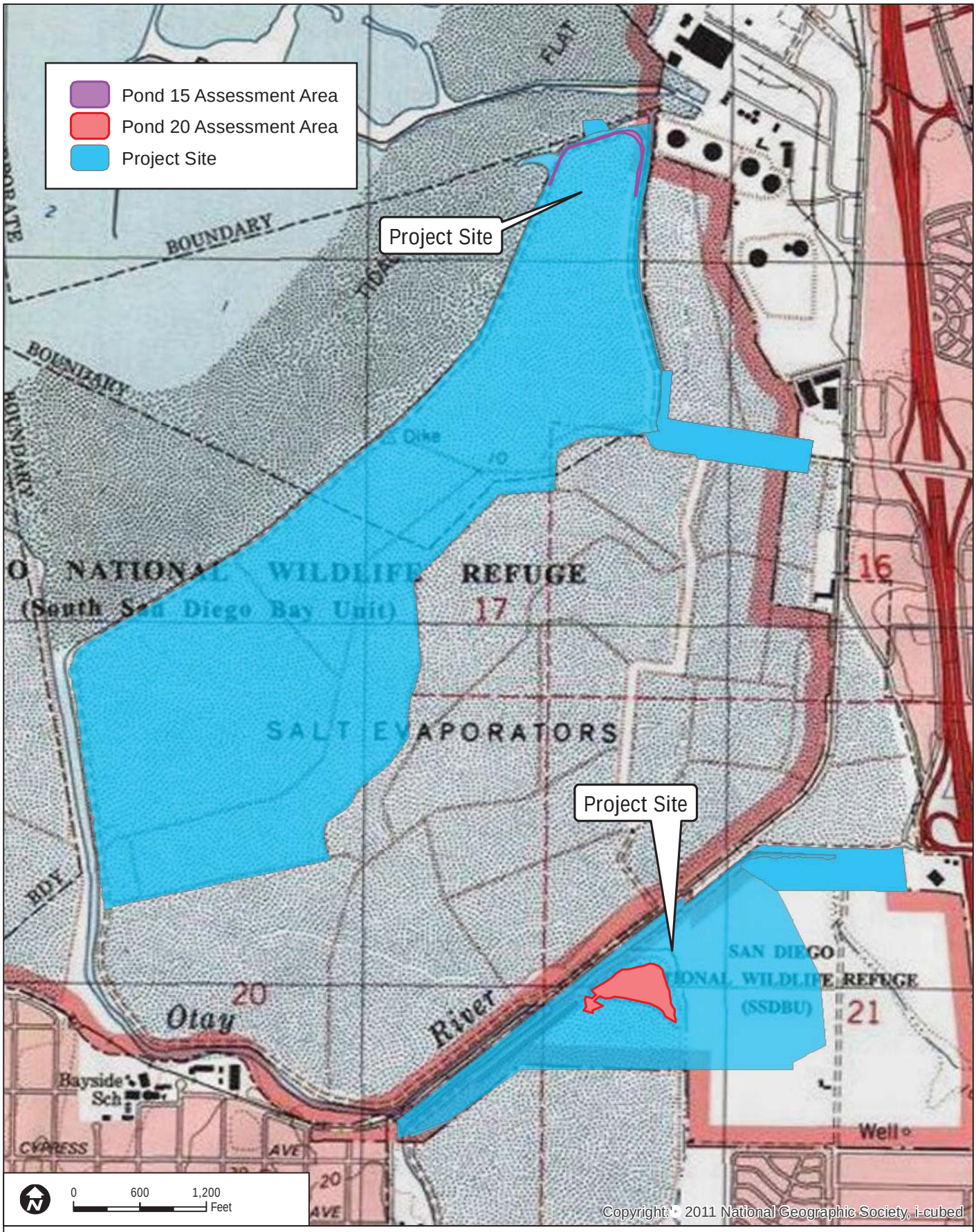

SOURCE: USGS 7.5-Minute Series Quadrangle, USA Topographic Maps Service, Imperial Beach Quadrangle.

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FIGURE 2
Vicinity Map

California Rapid Assessment Method Report for the Otay River Estuary Restoration Project

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2 PROJECT AREA DESCRIPTION

2.1 Project Location

The ORERP site is located at the south end of San Diego Bay, San Diego County, California, within the boundaries of the South San Diego Bay Unit of the San Diego Bay NWR, and is composed of two separate sites: the Otay River Floodplain Site and the Pond 15 Site (see Figures 1 and 2). The first site is an approximately 78-acre area of primarily disturbed uplands and a portion of Pond 20 within the Otay River Floodplain (hereafter referred to as the Otay River Floodplain Site). The Otay River Floodplain Site would be restored to estuarine, intertidal, and upland transition habitats. The second site, a 90-acre active solar salt pond (hereafter referred to as the Pond 15 Site) would be restored to subtidal and intertidal habitats.

2.2 Watersheds

The ORERP is located within the Otay River Watershed in San Diego County, California. The 145-square-mile watershed is situated between the Sweetwater and Tijuana River Watersheds. The Otay River originates in the Cleveland National Forest along Dulzera Creek, with several tributaries including Hollenbeck Canyon Creek, Jamul Creek, and Proctor Valley Creek. Watershed flows are cut off by two reservoirs that are a part of the City of San Diego Water Supply System: the Upper Otay Reservoir and the Lower Otay Reservoir. The Otay River floodway runs westward approximately 11 miles through primarily undeveloped lands from Savage Dam to San Diego Bay. Tributaries in this section of the river include O'Neal Canyon Creek, Poggi Canyon Creek, Salt Creek, Johnson Canyon, Wolf Canyon, and Dennery Canyon.

The Otay River conveys flows from the I-5 bridge through the Otay River Floodplain and estuarine portion of the Otay River. On the west side of I-5, the river channel, which was modified more than 100 years ago, turns northwest toward South Bay Saltworks, then westward along the perimeter of Ponds 48, 20, and 22. After confluence with Nestor Creek, the Otay River continues along the northern edge of the Otay River Floodplain Site, and along the western side of Ponds 23 and 12 until discharging into the San Diego Bay.

Hydraulic conditions along the Otay River are affected by a combination of tidal exchange with San Diego Bay and watershed flows from the Otay River. Tidal influence extends from San Diego Bay toward the floodplain near Pond 48 at the northeastern corner of the Otay River Floodplain Site. However, neither the Pond 15 site nor the Otay River Floodplain Site are directly connected to the San Diego Bay. Pond 15 is an evaporator pond, and water levels are managed by a series of levees and a tide gate. Pond 20 at the Otay River Floodplain Site is disconnected from the San Diego Bay due to berms surrounding the old evaporator pond.

However, surface elevations in the bottom of Pond 20 are low enough to result in seasonal ponding due to the configuration of the perimeter berms surrounding the old pond that do not allow for a water outlet, and an elevated groundwater level.

2.3 Soils

In general, the Otay River floodplain is characterized by soft Alluvial/Bay Deposits under 3 to 5 feet of uncompacted fill soils. The Otay River Floodplain Site is almost entirely composed of Grangeville fine sandy loam at slopes ranging from 0% to 2%. This type of soil is often found in alluvial fans and has a high capacity to transmit water. The soil is considered fertile, with a very high water capacity and a low possibility of erosion. The eastern edge of the site is composed of Visalia gravelly sandy loam ranging from 2% to 5% slope. Visalia gravelly sandy loam is also commonly found in alluvial fans and has a high capacity for transmitting water. However, this soil only contains a moderate available water capacity compared to the soil on the majority of the site. Additionally, the open space area to the east of the Otay River Floodplain Site contains areas of Riverwash and Tujunga sand, both of which are common in floodplains. These soils have high water transmitting capabilities and only moderate available water capacity (NRCS 2011).

2.4 Vegetation

The Otay River Floodplain Site consists mostly of disturbed and native upland habitat, habitat undergoing restoration in the eastern portion of the study area, unvegetated former salt pond, and salt marsh habitat associated with the Otay River and Nestor Creek tidal channels. Historically, some of the upland areas within the Otay River Floodplain Site supported riparian and coastal salt marsh habitat (USFWS 2006). Over time, portions of these former wetland areas were converted to upland due to the channelization of the Otay River, construction of solar salt ponds, and past agricultural activity. The Otay River Floodplain Site includes ten vegetation communities or land covers as listed in Table 2.

Table 2
Otay River Floodplain Site Land Covers and Vegetation Communities

Unvegetated Land Covers and Non-native Communities
Brackishwater
Developed Land
Disturbed Habitat
Former salt pond bottom and borrow area

Table 2
Otay River Floodplain Site Land Covers and Vegetation Communities

Native Communities
Coastal and Valley Freshwater Marsh
Cismontane alkali marsh
Isocoma scrub
Mulefat scrub
Otay River Floodplain Restoration
Southern coastal salt marsh

Source: Dudek 2015

The Pond 15 Site consists of predominantly open water (3-5 feet deep), including the brines contained in the salt ponds, as well as areas mapped as disturbed habitat on the salt pond levees, and small areas of beach and southern coastal salt marsh. Prior to diking for salt production, the entire area within the Pond 15 Site was composed of intertidal mudflat.

The Pond 15 Site is part of a larger South Bay Saltworks operation that currently produces salt for commercial purposes using solar radiation to evaporate water from seawater and concentrate and eventually crystallize the salts through a sequential evaporation technique. The salt evaporation ponds are separated from the adjacent San Diego Bay and tidal channels by levees that surround the ponds. These levees reach a maximum elevation of approximately 8 feet, slightly greater than the highest observed water level (7.71 feet; North American Vertical Datum (NAVD88)). The Pond 15 Site includes the six vegetation communities or land covers listed in Table 3.

Table 3
Pond 15 Land Covers and Vegetation Communities

Unvegetated Land Covers and Non-native Communities
Beach
Disturbed habitat
Open water
Salt pond levee
Native Communities
Southern coastal salt marsh
Disturbed southern coastal salt marsh

Source: Dudek 2015

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3 METHODOLOGY

Prior to visiting the Project area, Dudek assembled background information about the management and history of the Project area's wetlands and waters. Background information gathered included USGS topographic maps, National Wetland Inventory maps, road maps, soil maps, aerial photography, and Project-specific information from the *Results of a Preliminary Jurisdictional Wetland Delineation Report for the Otay River Estuary Restoration Project (ORERP), South San Diego Bay Unit of the San Diego Bay National Wildlife Refuge* (Dudek 2015).

CRAM was not designed for use in the assessment of subtidal habitats and intertidal areas with less than 5% vegetated cover of emergent marsh (CWMW 2009). Thus, much of the Project area composed of open water and mud flats could not be assessed using CRAM. However, the functions and services of these areas before and after the proposed Project were evaluated separately in the Poseidon Mitigation Credit Analysis Marine Life Mitigation Plan – Integrated Restoration Plan (WRA 2013).

Each AA and associated wetlands or waters were classified according to the definitions presented in the CRAM User's Manual, version 6.1. The wetlands or waters were classified based on their general ecological character and first-hand knowledge of biologists who previously assessed the property. Dudek determined the boundary and estimated size of each AA. The AAs included the appropriate portion of each wetlands or waters for assessment using CRAM. Each AA consisted of only one wetland class with enough hydrologic and ecological integrity that could allow detection of changes in the condition of the AA due to identified stressors or management actions apart from natural disturbances or other sources of variability in wetland condition.

During the initial office assessment, background information was collected for each potential AA location and base maps were prepared to evaluate the AAs relative to the surrounding land cover/use. Preliminary scores were developed for some metrics based on the information gathered and recorded in the appropriate datasheets (Appendix A).

Following the background analysis, a site visit was conducted on December 2, 2015, by Dudek biologist Andrew Thomson. The field portion of the CRAM assessment consisted of finding and confirming the boundaries of the AAs, and scoring the AAs based on the condition metrics and stressor checklist. All relevant CRAM datasheets were completed according to the CRAM User's Manual (CWMW 2013).

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4 RESULTS

4.1 Classification of AAs within the Project Area

Two wetland classification sub-types as defined in CRAM were identified within the Project area: riverine (non-confined) and estuarine. However, the areas classified as riverine will not be subject to permanent impacts, and thus were not evaluated in this assessment.

Estuarine systems, as defined by CRAM, consist of aquatic (i.e., sub-tidal) and semi-aquatic (intertidal) environments that are strongly influenced by mixtures of ocean water and upland runoff due to tidal processes operating through an ocean inlet (CWMW 2013). Estuaries are mostly enclosed by land, with natural or unnatural inlets. Sources of freshwater consist of rivers, streams, lakes and reservoirs, point discharges, and storm drains (CWMW 2013). An estuarine wetland consists of the vegetated marsh plain, natural levees, shell beds, submerged plant beds, and other habitat elements created or supported by tidal processes and associated with tidal channels (CWMW 2013). While the wetlands assessed in this study are not classic estuarine systems with natural tidal influence, they are systems that were historically estuarine that have been degraded or altered. Further, the goal of the restoration program is to return the degraded or altered areas to functioning tidal estuarine systems, which will allow comparison of existing conditions with post-construction conditions. Therefore the estuarine module of CRAM was determined to be the most appropriate module for this analysis.

Two estuarine AAs were established for assessment. Figures 3a and 3b provide a depiction of the locations of the AAs. Representative photos are contained in Figure 4. The AAs were assigned an AA boundary based on the AA parameters in CRAM.

4.2 Prediction of Post Project Functions and Services

The purpose of predicting post Project functions and services is to determine the ecological condition of representative jurisdictional areas within the Project area relative to the conditions that are expected after the Project is completed. Dudek used the same version of the CRAM (version 6.1) for both the existing conditions and post-Project conditions.

Dudek evaluated the estuarine areas in the context of the proposed design concept for the Project. The boundary of the AA at the Pond 20 location within the Otay River Floodplain Site remained unchanged in the post-Project analysis (Figure 5a). However, while the general location remained the same, the boundary of the AA at the Pond 15 location was updated based on the projected restoration design and the CRAM criteria for establishing boundaries of an AA (Figure 5b).

Dudek made several assumptions to conduct the post-Project analysis. Dudek evaluated the site from the perspective of the functions and services expected or anticipated after the passage of several years (e.g., five years) following Project construction to allow for the establishment of vegetation in the Project area following the large-scale disturbances resulting from construction. Extensive areas are currently barren or open water, lacking any vegetation at all, and that condition is expected to change following Project construction. Additionally Dudek assumed that the hydrologic conditions (water source, hydroperiod and hydrologic connectivity) would be significantly altered between the pre-Project condition and the post-Project condition, by developing direct tidal connectivity.

4.3 Pre-construction CRAM Scores

The AAs within the Project area were analyzed for a suite of variables that pertain to common attributes that estuarine systems are expected to perform. The fieldwork consisted of locating and confirming the boundaries of each AA, and scoring the AAs based on the condition metrics and stressor checklist contained in CRAM v.6.1.

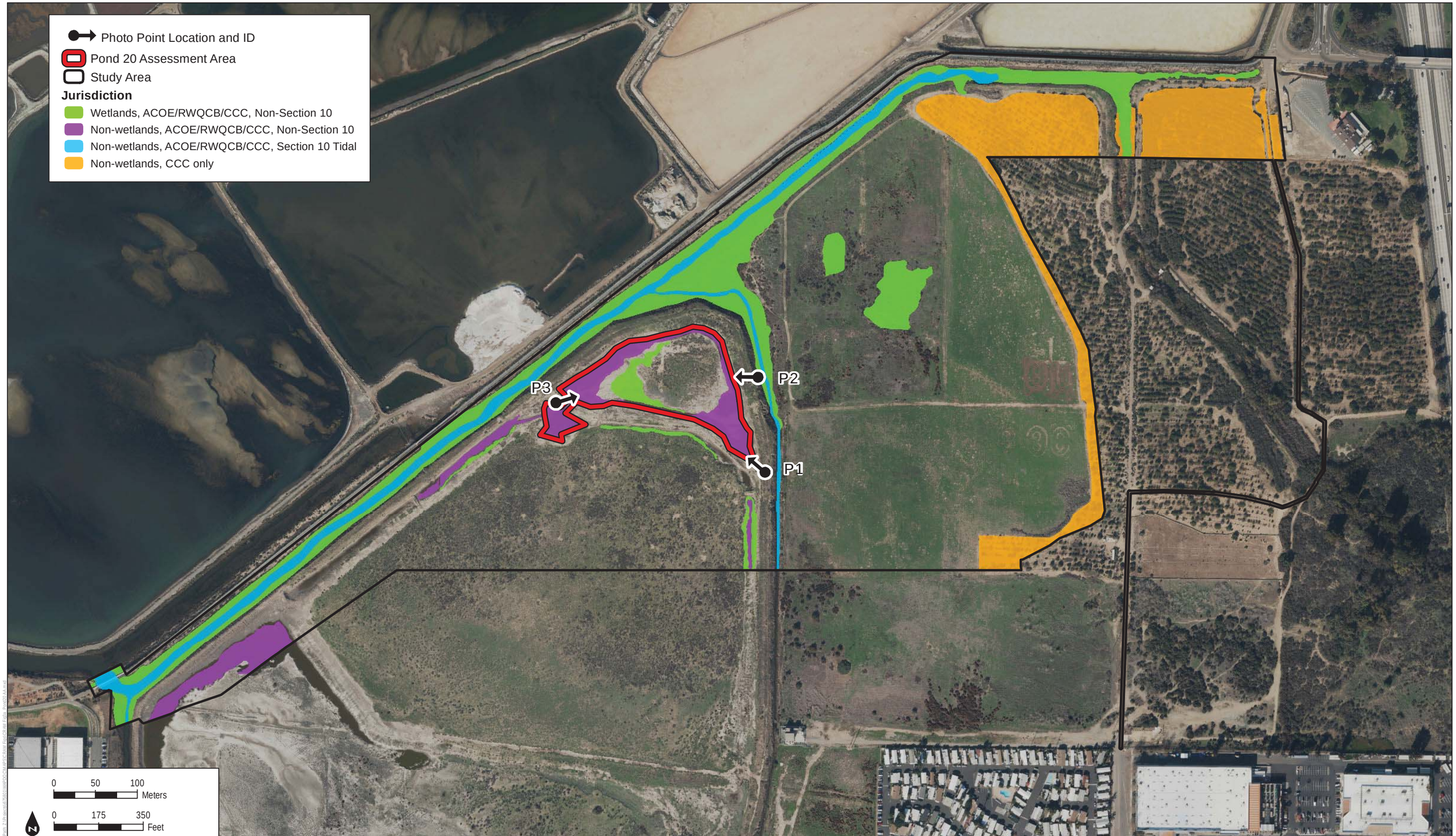
As previously introduced, each of the 14 metrics/submetrics evaluates a specific indicator of ecological condition. Comparisons can be made at the metric/submetric score level where distinctions among the scores are the clearest. The remainder of this section presents a summary of the results contained in the CRAM data sheets (Appendix A). Attribute scores are presented in Chart 1.

4.2.1 Otay River Floodplain Site

Buffer and Landscape Context: The AA at the Otay River Floodplain Site scored 65 for the Buffer and Landscape Context attribute. The entire AA has a buffer, but the aquatic area abundance, buffer width and buffer condition are diminished due to surrounding land use associated with the Bayshore Bikeway, unnatural berms surrounding Pond 20, and historic agricultural uses nearby.

Hydrology: The Hydrology attribute scored 42. All metrics (Water Source, Hydroperiod, and Hydrologic Connectivity) scored low due to the constructed berms surrounding the AA that affect a potential tidal connection. The hydrology at the site is due to a combination of urban runoff and groundwater (elevated water table), rather than tidal inundation.

Physical Structure: The Physical Structure attribute (including Structural Patch Richness and Topographic Complexity metrics) scored low (38) due to a general lack of structural patch types and low topographic complexity as a consequence of the constructed salt pond setting (i.e., dredged pond area and surrounding berms).



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SOURCE: Aerial-SANDAG Imagery 2014

FIGURE 3A

Pond 20 Assessment Area

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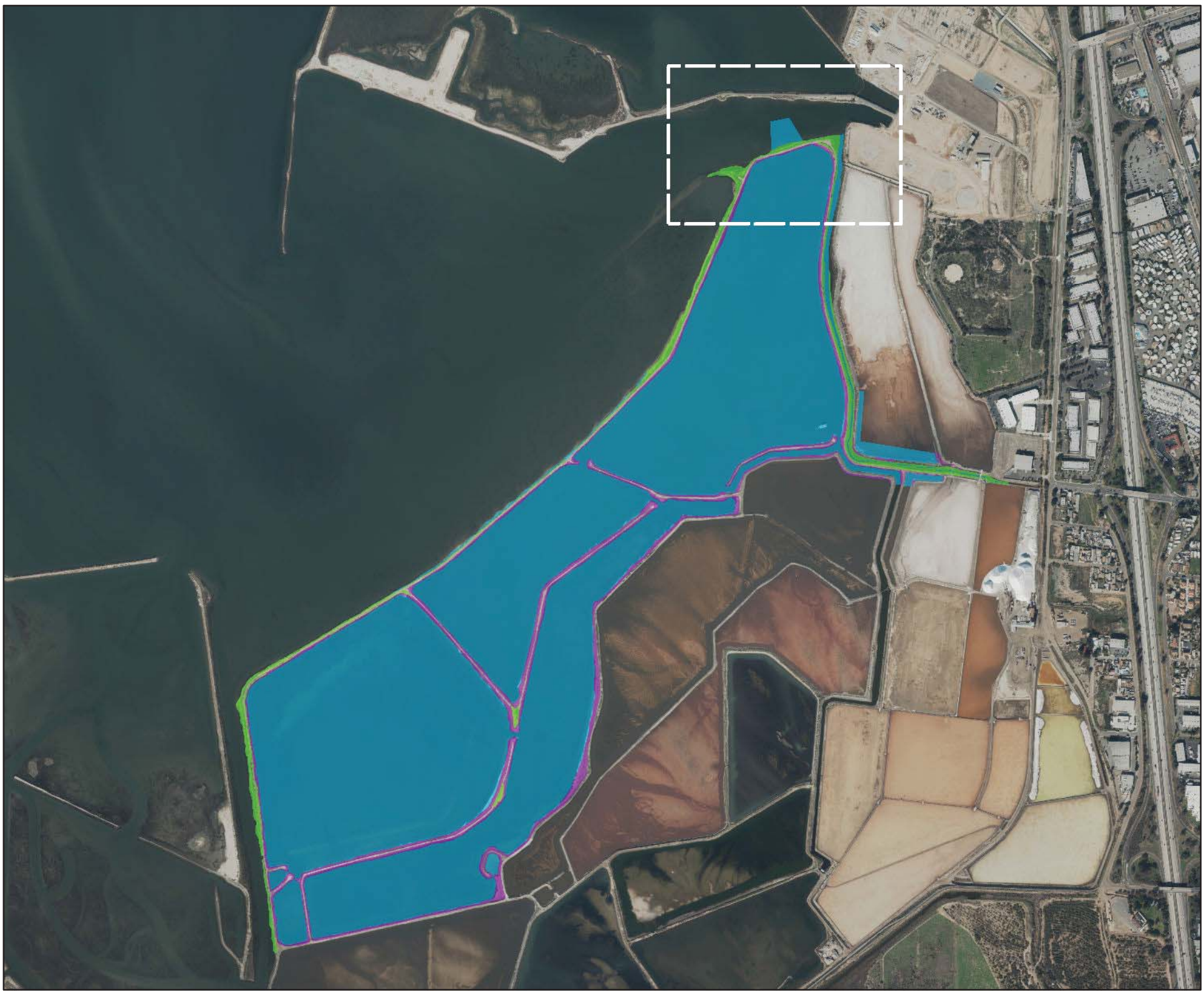

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SOURCE: Aerial-SANDAG Imagery 2014

FIGURE 3B

Pond 15 Assessment Area

California Rapid Assessment Method Report for the Otay River Estuary Restoration Project

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Photo 1: Representative view of Pond 20 Assessment Area

Photo 2: View of Pond 20 Assessment Area from the East

Photo 3: View of Pond 20 Assessment Area from the West

Photo 4: Representative view of Pond 15 Assessment Area

Photo 5: View of Pond 15 Assessment Area from the East

Photo 6: View of Pond 15 Assessment Area from the West

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FIGURE 4
Site Photographs

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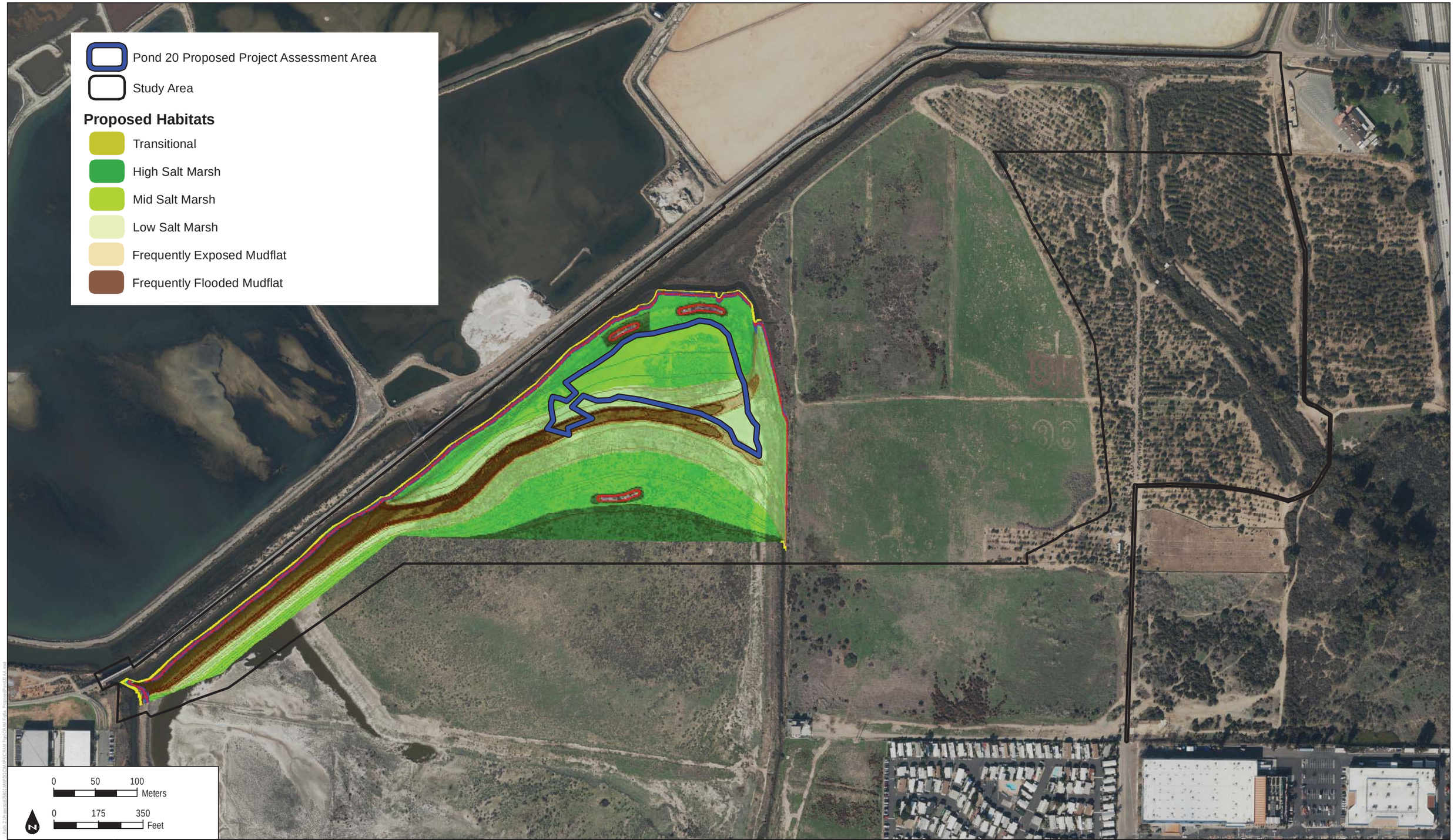

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SOURCE: Aerial-SANDAG Imagery 2014

FIGURE 5A

Pond 20 Proposed Project Assessment Area

California Rapid Assessment Method Report for the Otay River Estuary Restoration Project

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