Appendix E: Southern Los Cerritos Wetlands Restoration Project – Jurisdictional Delineation Report

Southern Los Cerritos Wetlands Restoration Project

Jurisdictional Delineation Report

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Jurisdictional Delineation Report:
Southern Los Cerritos Wetlands Restoration Project

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Acronyms and Abbreviations

ACOE	Army Corps of Engineers
Cal-IPC	California Invasive Plant Council
CCA	California Coastal Act
CCC	California Coastal Commission
CDFW	California Department of Fish and Wildlife
CFR	Code of Federal Regulations
CSLC	California State Lands Commission
CPRC	California Public Resource Code
CWA	Clean Water Act
CWC	California Water Code
GPS	Global Positioning System
JDR	Jurisdictional Delineation Report
LCW	Los Cerritos Wetlands
LCWA	Los Cerritos Wetlands Authority
MCVII	*A Manual of California Vegetation, Second Edition*
MHTL	Mean High Tide Line
NWI	National Wetlands Inventory
OHWM	Ordinary High Water Mark
RHA	Rivers and Harbors Act
RWQCB	Regional Water Quality Control Board
SLR	Sea Level Rise
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

1.0 Introduction

This report presents the preliminary findings of potential U.S. Army Corps of Engineers (ACOE) and California Coastal Commission (CCC) jurisdiction over the project area associated with the Southern Los Cerritos Wetlands Area. The results of the report will also discuss the potential jurisdictions of California Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW).

1.1 Project Location

The project area is primarily located approximately 0.08 miles southeast of the San Gabriel River Pacific Coast Highway Bridge in the City of Seal Beach, California in the County of Orange (Exhibit A). The Project's central geographic location is Latitude 33.751066°; Longitude -118.099411° primarily in section 11 of Township 5 South, and Range 12 West, on the United Stated Geological Survey (USGS) Seal Beach and Los Alamitos 7.5-minute series topographical quadrangles. The project area is bounded by the San Gabriel River to the west, oil extraction operations to the north, and residential neighborhoods and park space to the east and south (Exhibit B). The property is bordered by industrial, open space and residential land uses.

The property is currently accessible from Pacific Coast Highway via 1st street which extends through the property and leads to the neighboring oil operations. This asphalt access road bisects the site and is subject to several easements for other landowners and for the utilities that run parallel to it both above and below ground. The site is currently closed to the public and is only accessible during public programming or with prior approval from the property owner. The main 100-acre parcel is owned by the Los Cerritos Wetlands Authority (LCWA) who controls access to the property's gates that connect to trails and old maintenance roads that traverse the site. A small 5-acre parcel that the project area partially covers is owned by the California State Lands Commission who the LCWA has a long-term access agreement with to manage that property.

1.2 Project Description

The Los Cerritos Wetlands Authority (LCWA) is a governmental entity developed in 2006 by a joint powers agreement between the State Coastal Conservancy, the Rivers and Mountains Conservancy, and the cities of Seal Beach and Long Beach. It was created with the purpose "to provide for a comprehensive program of acquisition, protection, conservation, restoration, maintenance and operation, and environmental enhancement of the Los Cerritos Wetlands area consistent with the goals of flood protection, habitat protection and restoration, and improved water supply, water quality, groundwater recharge, and water conservation." The LCWA has acquired 165 acres of coastal habitat since its inception. This acreage includes the 100-acre South LCWA Site (AKA Hellman Ranch Lowlands) which falls completely within the proposed project boundary. A majority of the site is comprised of native coastal salt marsh habitat as well as areas occupied by non-native plant species alliances. Mixed in with this are features such as a tidal creek, salt flats, tidal flats, utilities, a developed asphalt roadway, dirt maintenance roadways, dumped fill, and various manmade remnants that have accumulated over time. The 103.54 acre project area also includes 3.5 acres of a parcel of land owned by the California State Lands Commission with whom the

LCWA holds a non-exclusive lease agreement to manage the property. The State Lands Parcel Site is comprised of a mix of tidal wetland in the northern portion of the property where the culvert connects to the San Gabriel River. The majority of this parcel is comprised of a concrete pad that is approximately 0.83 acres. The remaining portion to the southern end of the property was also developed and currently occupied by degrading asphalt that is being covered in various non-native plant species as well as patches of the special status plant species Southern Tarplant (*Centromadia parryi* ssp.*australis*).

The Southern Los Cerritos Wetlands Area is part of the first phase of restoration of the overall Los Cerritos Wetlands Complex that encompasses approximately 503 acres of coastal habitat, both land and water. This restoration project area has been subject to historical degradation and fragmentation and is in need of improved tidal connection as well as other restorative measures in order to improve the site's ecological function and protect the local area from sea level rise due to climate change (Coastal Restoration Consultants, 2021).

The purpose of the proposed project is to restore and enhance the ecological and biological function of historic wetland and transitional habitats as well as provide opportunities for public access. This project will design a tidal wetland restoration plan that takes into consideration sea level rise, cultural resources, the local community, and other private and public entities. Dredging, moving of fill, and removal of contaminated material will likely need to take place throughout the site in order to achieve the goal of maximizing contiguous tidal salt marsh habitat. Currently tidal waters enter the project area through an approximately 48-inch-wide culvert connected to the San Gabriel River. While this culvert does provide some tidal prism, it is heavily muted due to the size and position of this culvert. Therefore, the project will be aiming to create improved tidal connections and is targeting the adjacent Haynes Cooling Channel to achieve this objective. Additionally, there are possible opportunities to work with local surrounding landowners to create a more optimal tidal connection that would allow for higher rates of hydrologic exchange between the marsh and the ocean.

2.0 Methodology

2.1 Presurvey Investigations

A distinct project boundary was determined prior to conducting formal investigations in the field for this Jurisdictional Delineation Report (JDR). The extent of the project boundary was designed to encompass all the areas with potential for overlap with the project activities. Once the boundary was finalized, Tidal Influence wetland ecologists closely reviewed former reports, aerial photographs, and topographic maps of the site to determine areas that were critical to investigate in the field. A grid was overlain on the project area and potential sampling points were chosen where the grid intersected areas that were potential waters of the U.S. and State (including wetlands).The National Wetland Inventory (NWI) was also utilized to create a map of potential wetlands (Exhibit C). While the NWI map was helpful to project potential sampling points it was limited in its accuracy and did not fully capture tidal wetlands within the project boundary. Due to this limitation, previous reports investigating the property were used in conjunction with the NWI map to gain a better understanding of where the current wetland areas potentially occurred. Specifically, a Jurisdictional Delineation of Wetlands and Waters of the United States conducted by Chambers Group, Inc in June 1996 was used in conjunction with other literature from the Los Cerritos Wetlands Restoration Project Program EIR (PEIR) to understand and verify locations of jurisdictional areas throughout the project area.

2.2 Field Survey

The fieldwork for this investigation was conducted by Tidal Influence ecologists Eric Zahn, Marcelo Ceballos, Hannah Craddock, Mark Hannaford, Wanisa Jaikwang, and Jesse Aragon on February 19th, February 26th, March 5th, March 12th, and May 24th, 2021. Previous wetland delineation and biological assessment reports were utilized prior to field visits to select initial survey points. The remotely selected points were shifted based on field conditions and the exact locations were documented with a handheld Trimble Geo 7X handheld Global Positioning System (GPS) device with sub-meter accuracy and marked with a flag. All ecological observations were documented during these field surveys.

Vegetation and land cover data collected for the PEIR in 2018 by Coastal Restoration Consultants were used as reference to delineate jurisdictional waters (including wetlands) occurring within the project area on March 12th, 2021. The Jurisdictional Wetlands Determination Report by Chambers Group from 1996 was also referenced during the preliminary literature investigation. This vegetation data was expanded upon during additional biological surveys when newly encountered plant species and/or communities were observed. A total of 18 soil sampling points were analyzed for potential jurisdictional waters/wetlands (Exhibit D). Each of these 18 points were evaluated according to routine wetland delineation procedures described in the U.S. Army Corps of Engineers 1987 Wetland Delineation Manual (Wetland Manual) and the 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region Version 2.0.

At each sample point, the existence of significantly disturbed conditions, naturally problematic conditions, and “normal circumstances” were considered and recorded on the Wetlands Determination Data Form

for the Arid West Region. All notable site conditions were recorded including observations of recent restoration activity or management of that area as wetlands.

Within an approximately 2-meter squared area around the sample point, the dominant and subdominant plant species were identified, and the wetland indicator status was noted for each plant species. A sampling location was determined to support hydrophytic vegetation if more than 50% of the dominant species were listed as Obligate (OBL), Facultative Wetland (FACW), or Facultative (FAC) species on the Army Corps of Engineers' National Wetland Plant List (Lichvar et al., 2016) or if the hydrophytic plant prevalence index was less than or equal to 3.0.

A soil pit was dug at each of the points to investigate soil characteristics and the potential for hydric soil indicators. All soil pits (field data points for soil inspection and observation) were dug to a depth of 20 inches below natural grade or to the point of obstruction (e.g., compaction or debris) if a 20-inch-deep soil pit was not possible. Soil pits were located in obvious wetland and non-wetland areas to determine the wetland/non-wetland boundary and the presence or absence of hydric soils. Each pit was examined for changes in texture with depth. The depth of each soil texture type was indicated, and soil matrix colors were determined and recorded for each soil texture type according to the Munsell Soil Color Charts (2009). Subsurface soil taken from soil pits was also analyzed visually for redoximorphic features and other hydric soil indicators using *Field Indicators of Hydric Soils in the United States: A guide for Identifying and Delineating Hydric Soils* (USDA, 2006). A sampling location was determined to support hydric soils if at least one hydric soil indicator was present in the soil pit or if problematic hydric soils indicators were observed.

Finally, each sample point was surveyed for the presence of wetland hydrology indicators, including primary indicators like surface water, saturation, biotic crust, salt crust, aquatic invertebrates, and/or other primary wetland hydrology indicators; and secondary indicators like drainage patterns, saturation visible on aerial imagery, and/or other secondary wetland hydrology indicators. Soil pits were utilized to determine the presence or absence of many of these indicators. A sampling location was determined to support wetland hydrology if at least one primary indicator or at least two secondary indicators were observed.

Field data collected by hand on the wetland determination data forms were transcribed to electronic copies during which any existing data gaps were filled and all data was processed to ensure data quality assurance and quality control.

3.0 Regulatory Jurisdictions

The Southern Los Cerritos Wetlands Restoration Project area is located within the city of Seal Beach, California and it contains potential wetland and other aquatic features, environments, and habitats. These waters and wetland features are regulated under federal and state laws. Each of the laws are administered independently and in coordination by the following federal and state agencies: ACOE, United States Fish and Wildlife Service (USFWS), the United States Environmental Protection Agency (USEPA), CCC, CDFW and RWQCB.

If determined applicable by the respective agencies, this JDR provides information for the LCWA to apply for the following authorizations, permits, and policy compliance:

3.1 Federal Regulations

- Section 404 of the Clean Water Act (CWA) (as regulated by ACOE and USEPA)
- Section 401 of the CWA (as regulated by RWQCB)
- Section 10 of the Rivers and Harbors Act (RHA) (as regulated by ACOE)
- Executive Order 11990 (federal protection of wetlands; regulated by relevant federal agencies)

3.2 State of California Regulations

- California Public Resource Code (CPRC) Division 20 Section 30000 et seq. (California Coastal Act; as regulated by the CCC)
- Section 13000 et seq. of the California Water Code (CWC) (the 1969 Porter-Cologne Water Quality Act; as regulated by RWQCB)
- California Fish and Wildlife Code (CFWC) Chapter 6 Section 1600 et seq. (as regulated by CDFW)
- CPRC Division 5 Chapter 7 Section 5810 et seq. (preservation of wetlands; as administered by CDFW and other relevant state resource agencies)
- Executive Order W-59-93 (state policy guidelines for wetlands conservation)

3.3 Description of Federal Regulations

3.3.1 Clean Water Act (CWA)

Pursuant to Section 404 of the CWA, ACOE regulatory jurisdiction is built upon a connection or nexus between the water body and interstate commerce. The connection may be direct, through a tributary system linking a stream channel with navigable waters used in interstate or foreign commerce, or indirect, through a nexus identified in the ACOE regulation. ACOE regulates any activity that would result in the discharge of dredged or fill material into jurisdictional waters of the U.S., which include those waters listed in 33 Code of Federal Regulations 328. ACOE has the principal authority to issue CWA Section 404 Permits with review by the USEPA. The RWQCB certifies that any discharge into jurisdictional waters of the U.S. will comply with state water quality standards, pursuant to Section 401 of the CWA. RWQCB is the lead authority to determine a CWA Section 401 Water Quality Certification or Waiver according to the USEPA.

3.3.2 Rivers and Harbors Act (RHA)

The ACOE regulates discharges of dredged or fill material into waters of the United States. These waters include wetland and non-wetland bodies of water that meet specific criteria. Pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 US Code [u.s.c.] 403), ACOE regulatory jurisdiction, regulates almost all work in, over, and under waters listed as "navigable waters of the U.S." The ACOE regulates activity that results in the alteration of a navigable water of the United States, including the excavation or filling of any such water.

3.3.3 Executive Order 11990

Each federal agency is responsible for preparing the implementing procedures for carrying out the provisions of the Executive Order (EO) 11990. The EO's purpose is to "minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands." Each agency must avoid undertaking, or providing assistance, for any destructive or degrading activity located in wetlands unless the head of the agency finds that there is no "practical alternative" to such activity to the extent permitted by law. Additionally, public review of any plans or proposals for new construction in wetlands must be provided.

3.4 Description of State Regulations

3.4.1 California Coastal Act (CCA)

The California Coastal Commission regulates for coastal resources within the Coastal Zone under jurisdiction of the California Coastal Act of 1976 (CCA), pursuant to Section 30000 et seq. of the CPRC. Of important note for Jurisdictional Delineations of California projects, the CCC retains authorization, permitting, and policy compliance jurisdiction over any portion of a project that is in state waters, on land up to the mean high tide line (MHTL), lands subject to the public trust, or at the discretion of CCC.

3.4.2 Lake and Streambed Alteration Program

The California Department of Fish and Wildlife is authorized to regulate activity that would alter the flow, bed, channel, or bank of streams and lakes, pursuant to Section 1600 et seq. of the CDFW. The channel, bed, or bank of a lake, river, or stream comprises the jurisdictional waters of the state. The CDFW extends its jurisdictional limit to the top of the bank of a stream or lake, or to the continuous outer edge of its riparian extent, whichever is wider.

3.4.3 Porter-Cologne Water Quality Control Act

In addition to the federal CWA regulatory jurisdiction of the RWQCB mentioned above, the RWQCB is authorized to regulate activity that would result in discharge of waste and fill material to waters of California (including saline waters), "isolated" waters and/or wetlands (e.g., vernal pools and seeps), and groundwater within the boundaries of the state (CWC § 13050[e]), pursuant to Section 13000 et seq. of the CWC (the 1969 Porter-Cologne Water Quality Control Act [Porter-Cologne]). RWQCB also adopts and implements water quality control plans that are designed to maintain each region within the state's

"unique characteristics" with regard to natural water quality, actual and potential beneficial uses, maintaining water quality, and addressing the water quality problems of that region. Beneficial uses of state waters are identified within the Porter-Cologne Act that may be protected against degradation and include preservation and enhancement of fish, wildlife, designated biological habitats of special significance, and other aquatic resources or preserves.

3.5 Definition of Wetlands

The jurisdictional regulations of the various federal and state agencies are further utilized to establish the appropriate definition of "wetlands" of a particular study site. The project area is subject to the wetland definitions identified by various characteristics as outlined by the United States Army Corps of Engineers, United States Fish and Wildlife Service, the California Coastal Commission and the California Department of Fish and Wildlife. Each agency, working in accordance to their legislative authority, defines "wetlands" differently and each definition is referenced to identify jurisdictional authority.

3.5.1 Federal Wetlands Definitions

The term "waters of the United States" most often encompasses all federal wetlands and is defined in Corps regulations at 33 CFR Part 328.3(a) as:

"(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(2) All interstate waters including interstate wetlands;

(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect foreign commerce including any such waters:

(i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or

(ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

(iii) Which are used or could be used for industrial purpose by industries in interstate commerce...

(4) All impoundments of waters otherwise defined as waters of the United States under the definition;

(5) Tributaries of waters identified in paragraphs (a) (1)-(4) of this section;

(6) The territorial seas;

(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1)-(6) of this section."

In the absence of wetlands, the limits of Corps jurisdiction in non-tidal waters, such as intermittent streams, extend to the OHWM which is defined at 33 CFR 328.3(e) as:

> *"...that line on the shore established by the fluctuation of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas."*

Federal definitions of what constitutes "wetlands" are primarily derived from two Federal Agencies: the United States Army Corps of Engineers and the United States Fish and Wildlife Service. The USFWS wetland definition and classification system is based on Classification of Wetland and Deepwater Habitats of the United States (Cowardin et al. 1979); however, the ACOE definition is used for regulatory purposes. Wetland delineations for Section 404 purposes as regulated by the ACOE must be conducted according to the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Regional Supplement ACOE 2006) and the Corps of Engineers 1987 Wetland Delineation Manual. Where there are differences between the two documents, the Regional Supplement takes precedence over the 1987 Manual.

The ACOE defines wetlands as:

> *"Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions."*

A federal jurisdictional wetland delineation states that an area must possess three wetland characteristics: 1) hydrophytic vegetation, 2) hydric soils, and 3) wetland hydrology. The wetland characteristics have mandatory criteria that must be satisfied for that particular characteristic to be met. The indicators may be analyzed to determine whether the criteria are satisfied and are listed below.

<u>Hydrophytic Vegetation</u>

Hydrophytic vegetation is plant life that is adapted for life in permanently or periodically saturated soil identified according to a wetland indictor category as included on the Army Corps of Engineers' National Wetland Plant List (Lichvar et al., 2016). The different indicator categories are based on the probability of occurrence in wetlands: Obligate Wetlands (OBL), Facultative Wetlands (FACW), Facultative (FAC), Facultative Upland (FACU), and Obligate Upland (UPL). The Obligate Wetlands, Facultative Wetlands and Facultative categories are considered hydrophytic and the delineation of the hydrophytic vegetation is based on more than 50 percent of the plant species identified in these three categories.

If the plant community passes the dominance test or prevalence index, the vegetation is considered hydrophytic. The dominance test uses the "50/20" rule from the Regional Supplement for determining dominant species. The most abundant species that exceed 50 percent of the total sample survey, plus

additional species that comprise 20 percent of the total dominance measure, indicate dominance. The prevalence index is a weighted-average wetland indicator status of all plant species in the sampling plot, where each indicator status category is given a numeric code (OBL = 1, FACW = 2, FAC = 3, FACU = 4, and UPL = 5) and weighting is by abundance (percent cover). It is a more comprehensive analysis of the hydrophytic status of the community than one based on just a few dominant species

Vegetation alliances identified on the site follows *A Manual of California Vegetation, Second Edition* (MCV II; Sawyer et al., 2009). The MCV II was also used for the Biological Resources Report prepared for the Project and its use in this report ensures consistency.

Hydric Soils

Soils defined as hydric soils form under conditions of "saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part." Hydric soils are defined when one or more of the following criteria are met: all histels except folistels and histosels except folists; or soils that frequently ponded for long duration or very long duration during the growing season; or soils that are frequently flooded for long duration or very long duration during the growing season. Hydric soils are developed when microbial activity causes oxygen depletion with conditions of saturation and hydrologic inundation. Microbial activity is limited to the growing season and when the soil temperature is above biological zero. The Regional Supplement is used to identify hydric soils under a variety of field indicators that include: hydrogen sulfide generation; accumulation of organic matter; and reduction, translocation, and/or accumulation of iron and other reducible elements.

Wetland Hydrology

Wetland hydrology can be a challenging criterion to measure in the field due to variations in water availability seasonally and annually. Visual observation of inundation or saturation, watermarks, recent sediment deposits, surface scour, and oxidized root channels are some of the indicators used to identify wetland hydrology. Wetland hydrology is satisfied if the area is seasonally inundated or saturated to the surface for a minimum of 14 consecutive days during the growing season.

3.5.2 State of California Definition of Wetlands

The State of California applies a broader definition of what constitutes a "wetland" than the Federal government. Two primary State agencies are responsible for defining "wetlands", the California Coastal Commission and the California Department of Fish and Wildlife. The CDFW essentially relies on the USFWS wetland definition and classification system based on Classification of Wetland and Deepwater Habitats of the United States (Cowardin et al. 1979). The CDFW acts as a primary consultant to the CCC and the CCC regulates wetland delineation within what is identified as the Coastal Zone along the coast of California. Through provisions of the California Coastal Act, jurisdictional wetland delineations within the Coastal Zone are conducted based on the "one-parameter method" to define the presence and jurisdictional extent of state wetlands. Under the CCA, wetlands are defined as follows:

"land within the Coastal Zone [that] may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens".

Additionally, wetlands are further defined as:

"land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salts or other substances in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deep-water habitats (14 CCR Section 13577)."

Both the Federal and State definitions focus on the three fundamental wetland characteristics: hydrology, soils, and vegetation. While the ACOE definition requires the existence of all three wetland characteristics for an area to be considered a wetland, the CCC's definition of wetlands is based on the existence of only two characteristics: wetland hydrology sufficient to either support a prevalence of hydrophytic vegetation or promote the formation of hydric soils.

It is noted that, under circumstances, reliable indicators of all required characteristics are not necessarily apparent, and areas may be delineated as wetlands by the ACOE on the basis of indicators of only two of the three characteristics. The CCC routinely makes jurisdictional wetlands determinations based on the presence of one characteristic indicator (i.e., wetland soils or vegetation) under the assumption that wetland hydrology must be present in order for the indicator to be present. Nevertheless, the presence of wetland hydrology during some portion of most years is fundamental to the existence of any wetland, and the CCC will sometimes disregard vegetation or soil indicators when there is sufficient evidence to conclusively refute the presence of wetland hydrology.

4.0 Results

Potential jurisdictional waters (including wetlands) occurring within the project area were delineated and mapped based on federal and state delineation guidance, methodology, and regulatory framework and code, as described above. For the purposes of this site, the jurisdictions for ACOE and CCC were determined for the federal and state jurisdictions, respectively. CDFW jurisdictions were also determined for this site due to its proximity and connection to the San Gabriel River. Jurisdiction areas can be seen graphically on the attached aerial maps (Exhibits E, F, G, H, I).

All federal waters and wetlands (including final acreages and types) delineated within this survey area are considered potential waters of the U.S. prior to a formal jurisdictional determination performed by ACOE. The final determination issued by ACOE may remove or include portions of delineated waters documented in this JDR.

The total area of potential waters of the U.S. and State (including wetlands) within the survey area and a general discussion of the policy governing these regulated areas is provided below. Per ACOE mapping guidelines, the results were mapped on a current color aerial photograph at a scale of 1 inch = 200 feet (Exhibit E), however, an overview map of the entire survey area is shown in Exhibit B. Refer to the attached Wetlands Determination Data Forms (Appendix A) for a full description of sample point results.

4.1 Vegetation

A list of hydrophytic plant species identified within the project area is provided in Table 1. A total of 15 vegetation alliances or communities equaling 92.83 acres were identified within the project area that have potential to be defined as containing hydrophytic plant species that when prevalent could potentially meet the criterion for ACOE or CCC jurisdictional wetlands (Table 2, Exhibit J).

Table 1. Hydrophytic plant species identified with the project boundary.

Scientific Name	Common Name	Wetland Indicator Status	Non-Native	Cal-IPC rating
Tree Species Growth Habit				
Eucalyptus globulus	Tasmanian Bluegum	FACU*	X	limited
Myoporum laetum	Ngaio Tree	FACU	X	moderate
Nicotiana glauca	Tree Tobacco	FAC	X	moderate
Phoenix canariensis	Canary Island Palm	FACU*	X	limited
Schinus terebinthifolius	Brazilian Pepper Tree	FAC	X	moderate
Washingtonia robusta	Mexican Fan Palm	FACW	X	moderate
Shrub Species Growth Habit				
Artemisia californica	California Sagebrush	FACU*		
Atriplex lentiformis	Big Saltbush	FAC		
Baccharis pilularis	Coyote Brush	FAC		

Scientific Name	Common Name	Wetland Indicator Status	Non-Native	Cal-IPC rating
Baccharis salicifolia	Mulefat	FAC		
Isocoma menziesii	Menzies' Goldenbush	FAC		
Peritoma arborea	Bladderpod	FACU*		
Ricinus communis	Castor Bean	FACU	X	limited
Herbaceous Species Growth Habit				
Ambrosia psilostachya	Western Ragweed	FACU		
Anemopsis californica	Yerba Mansa	OBL		
Arthrocnemum subterminale	Parish's Glasswort	OBL		
Atriplex semibaccata	Australian Saltbush	FAC	X	moderate
Bassia hyssopifolia	Five Horn Bassia	FACU	X	limited
Batis maritima	Saltwort	OBL		
Brassica nigra	Black Mustard	FACU*	X	
Bromus diandrus	Ripgut Brome	UPL*	X	moderate
Bromus madritensis	Foxtail Brome	FACU*	X	
Camissoniopsis lewisii	Lewis' Evening Primrose	FACU*		
Carpobrotus edulis	Hottentot-fig	FACU*	X	high
Centaurea melitensis	Tocalote	UPL	X	moderate
Centromadia parryi australis	Southern Tarplant	FACW		
Cirsium vulgare	Bull Thistle	FACU	X	moderate
Conium maculatum	Poison Hemlock	FACW	X	moderate
Cressa truxillensis	Alkali Weed	FACW		
Cuscuta salina	Saltmarsh Dodder	FACW		
Distichilis littoralis	Shoregrass	OBL		
Distichlis spicata	Salt Grass	FAC		
Dittrichia graveolens	Stinkwort	UPL	X	moderate
Eleocharis macrostachya	Common Spikerush	FACW		
Erodium cicutarium	Coastal Heron's Bill	FACU*	X	limited
Frankenia salina	Alkali Heath	FACW		
Foeniculum vulgare	Sweet Fennel	UPL*	X	moderate
Galium angustifolium	Narrowleaf Bedstraw	FACU*		
Glebionis coronaria	Crown Daisy	UPL*	X	limited
Heliotropium curassavicum	Seaside Heliotrope	FACU		
Heterotheca grandiflora	Telegraph Weed	FACU*		
Hirschfeldia incana	Short Podded Mustard	UPL*	X	moderate
Lactuca serriola	Prickly Lettuce	FACU	X	
Laennecia coulteri	Coulter's Horseweed	FAC		
Limonium californicum	California Sealavender	FACW		
Lysimachia arvensis	Scarlet Pimpernel	FAC	X	

Scientific Name	Common Name	Wetland Indicator Status	Non-Native	Cal-IPC rating
Herbaceous Species Growth Habit				
Lycium californicum	California Boxthorn	FAC*		
Marrubium vulgare	White horehound	FACU	X	limited
Malephora crocea	Coppery Mesembryanthemum	FACU	X	watch
Malva parviflora	Cheeseweed Mallow	FACU*	X	
Melilotus albus	White Sweetclover	FACU*	X	
Melilotus indicus	Annual Yellow Sweetclover	FACU	X	
Mesembryanthemum crystallinum	Crystalline Iceplant	FACU	X	moderate
Mesembryanthemum nodiflorum	Slender Leaved Ice Plant	FACU	X	limited
Oxalis pes-caprae	Bermuda Buttercup	FACU*	X	moderate
Polypogon monspeliensis	Rabbit's Foot	FACW	X	limited
Pseudognaphalium luteoalbum	Jersey Cudweed	FACW	X	
Pulicaria paludosa	Spanish False Fleabane	FAC	X	
Raphanus sativus	Wild Radish	FACU*	X	limited
Rumex crispus	Curly Dock	FAC	X	limited
Salicornia bigelovii	Bigelow's Pickleweed	OBL		
Salicornia pacifica	Common Pickleweed	OBL		
Salsola tragus	Russian Thistle	FACU	X	limited
Sonchus oleraceus	Common Sowthistle	UPL	X	
Spergularia marina	Salt Marsh Sand Spurry	OBL		
Symphyotrichum subulatum	Saltmarsh Aster	OBL		
Triglochin concinna	Slender Arrow-Grass	OBL		
Urtica dioica	Stinging nettle	FAC		
Xanthium strumarium	Cocklebur	FAC		

Wetland Indicator Status Abbreviations and Meanings:

OBL – Obligate Wetlands Species. Occur almost always in wetlands.
FACW – Facultative Wetland Species. Usually occur in wetlands, but occasionally found in non-wetlands.
FAC – Facultative Species. Equally likely to occur in wetlands and non-wetlands.
FACU – Facultative Upland Species. Usually occur in non-wetlands but occasionally found in wetlands.
UPL – Obligate Upland Species. Almost always occur under natural conditions in non-wetlands.

** Not listed on National Wetlands List*

Table 2. Total acreages of vegetation alliances and land cover types observed within the project boundary.

Vegetation Alliance	Acres
Cressa truxillensis - Distichlis spicata Herbaceous Alliance	1.43
Distichlis spicata Herbaceous Alliance	0.44
Salicornia pacifica Herbaceous Alliance	20.62
Frankenia salina Herbaceous Alliance	2.77
Ulva lactuca Algal Mat	1.54
Arthrocnemum subterminale Herbaceous Alliance	0.31
Heterotheca grandiflora Herbaceous Stand	5.48
Isomeris arborea (*Peritoma arborea*) Shrub Stand	0.04
Isocoma menziesii Shrubland Alliance	1.52
Baccharis salicifolia Shrubland Alliance	0.58
Bassia hyssopifolia Semi-Natural Herbaceous Stand	0.96
Brassica nigra and other mustards Herbaceous Semi-Natural Alliance	45.34
Bromus diandrus – Bromus rubens Semi-Natural Herbaceous Stand	4.67
Conium maculatum – Foeniculum vulgare Herbaceous Semi-Natural Alliance	2.91
Mesembryanthemum spp. – *Carpobrotus* spp. Herbaceous Semi-Natural Alliance	4.49
Ornamental	0.35
Disturbed – mowed/disked fire break	0.06
Unvegetated Salt Flat	2.93
Unvegetated Tidal Flat	3.40
Developed	3.70
TOTAL	**103.54**

Vegetation Alliance and Land Cover Type Descriptions

Cressa truxillensis - Distichlis spicata Herbaceous Alliance: A total of 1.43 acres of this alliance was identified within the project boundary (Table 2). Alkali weed (*Cressa truxillensis*, FACW) and salt grass (*Distichlis spicata*, FACW) are characteristically present in this alliance with a variety of species that include alkali heath (*Frankenia Salina,* FACW) and species similar to alkali mallow (*Malvella leprosa,* FACU) which can be found within the Los Cerritos Wetlands however is not present in this portion of the wetlands. This alliance is found on the edges of *Salicornia pacifica* stands within the property but above the high tide line and was observed in areas where hydric soils and wetland hydrology indicators were not present on site. Therefore, areas where this alliance are present will not meet the ACOE's criteria threshold for wetland waters of the U.S.

Distichlis spicata Herbaceous Alliance (Salt grass flats): A total of 0.44 acres of this alliance was identified within the project boundary (Table 2). This alliance is dominated by salt grass (*Distichlis spicata*, FAC) with a co-dominance of alkali heath (*Frankenia salina*, FACW), saltwort (*Batis maritima*, OBL), common pickleweed (*Salicornia pacifica*, OBL), alkali weed (*Cressa truxillensis*, FACW), and may also support non-native upland grasses and forbs. This species often forms monotypic stands when it is found above the high tide line where hydric soil and wetland hydrology indicators are not present. Therefore, in some

instances locations where this alliance is present will not meet the ACOE's three criteria threshold for wetland waters of the U.S.

Salicornia pacifica Herbaceous Alliance (Pickleweed mats): A total of 20.62 acres of this alliance was identified within the project boundary (Table 2). This alliance is dominated by Common Pickleweed (*Salicornia pacifica*, OBL) that mixes with other co-dominant species including salt grass (*Distichlis spicata*, FAC), fleshy jaumea (*Jaumea carnosa*, FACW), alkali heath (*Frankenia salina*, FACW), saltwort (*Batis maritima*, OBL) and sea lavender (*Limonium californicum*, FACW). Intermixing with the co-dominant species commonly occurs within the tidal reaches of the site, meanwhile, this species often forms monotypic stands when it is found above the high tide line where hydric soil and wetland hydrology indicators are not present. Therefore, in some instances locations where this alliance is present will not meet the ACOE's three criteria threshold for wetland waters of the U.S.

Frankenia salina Herbaceous Alliance: A total of 2.77 acres of this alliance was identified within the project boundary (Table 2). While alkali heath (*Frankenia salina*, FACW) is common in a variety of alliances, there are numerous locations throughout site where it is found in predominantly monotypic stands. Co-dominant plant species for this alliance commonly include salt grass (*Distichlis spicata*, FAC), alkali heath (*Frankenia salina,* FACW), saltwort (*Batis maritima,* OBL), common pickleweed (*Salicornia pacifica,* OBL), and alkali weed (*Cressa truxillensis,* FACW). This alliance is found above the tidal reaches of the site where hydric soil and wetland hydrology indicators are not present, typically adjacent to pickleweed mats and in upland areas. Therefore, areas where this alliance is present will not meet the ACOE's criteria threshold for wetland waters of the U.S.

Ulva lactuca Algal Mat: A total of 1.54 acres of this alliance was identified within the project boundary (Table 2). This alliance is dominated by the non-vascular algae species sea lettuce (*Ulva lactuca*) and is found exclusively within the tidal channel that allows for tidal flow through the culvert connection. This alliance is found below the high tide line where hydric soil and wetland hydrology indicators are present. Therefore, where this alliance is present will meet the ACOE's criteria threshold for waters of the U.S.

Arthrocnemum subterminale Herbaceous Alliance: A total of 0.31 acres of this alliance was identified within the project boundary (Table 2). This alliance is dominated by Parish's glasswort (*Arthrocnemum subterminale*, FACW) or co-dominant in the herbaceous and subshrub layers with alkali weed (*Cressa truxillensis,* FACW*),* salt grass (*Distichlis spicata,* FAC)*,* alkali heath (*Frankenia salina,* FACW) *and Common Pickleweed* (*Salicornia pacifica,* OBL). While *Arthrocnemum subterminale* can be found in numerous locations throughout the site the largest and most dominant population occurs near an access road toward the northern end of the project site. This alliance is often found outside of the tidal reaches of the site so its presence does not always meet the minimum threshold as waters of the U.S.

Heterotheca grandiflora Herbaceous Stand: A total of 5.48 acres of this alliance was identified within the project boundary (Table 2). This alliance is dominated by telegraph weed (*Heterotheca grandiflora*, UPL) or co-dominate in the shrub canopy with California sagebrush (*Artemisia californica*, FACU) and coyote brush (*Baccharis pilularis*, FACU). This alliance is found above the tidal reaches of the site in areas where sandy fill material is present and hydric soil and wetland hydrology indicators are typically not present. Therefore, where this alliance is present will not meet the ACOE's criteria threshold for wetland waters of the U.S.

Isomeris arborea (*Peritoma arborea*) Shrub Stand: A total of 0.04 acres of this alliance was identified within the project boundary (Table 2). This alliance is dominated by bladderpod (*Peritoma arborea*, UPL). This alliance is only found in a single patch on the property outside of the tidal reach where hydric soil and wetland hydrology indicators are not present. Therefore, where this alliance is present will not meet the ACOE's criteria threshold for wetland waters of the U.S.

Isocoma menziesii Shrubland Alliance: A total of 1.52 acres of this alliance was identified within the project boundary (Table 2). This alliance is dominated by Menzies's golden bush (*Isocoma menziesii*, FAC) or commonly co-dominated in the shrub canopy by California sagebrush (Artemisia californica, FACU), coyote brush (*Baccharis pilularis*, FACU), and Virginia glasswort (*Salicornia depressa*, FACW). This alliance is found in areas above the high tide line where hydric soil and wetland hydrology indicators are typically not present. Therefore, where this alliance is present will not meet the ACOE's criteria threshold for wetland waters of the U.S.

Baccharis salicifolia Shrubland Alliance: A total of 0.58 acres of this alliance was identified within the project boundary (Table 2). In this alliance mulefat (*Baccharis salicifolia, FAC*) is dominant or co-dominant in the shrub canopy with California sagebrush (*Artemisia californica, FACU*), coyote brush (*Baccharis pilularis, FACU*), and arroyo willow (*Salix lasiolepis, FACW*). This alliance is found in a few patches on the property above the high tide line where hydric soil and wetland hydrology indicators are not present. Therefore, where this alliance is present will not meet the ACOE's criteria threshold for wetland waters of the U.S.

Bassia hyssopifolia Semi-Natural Herbaceous Stand: A total of 0.96 acres of this alliance was identified within the project boundary (Table 2). This alliance is dominated by five horn bassia (*Bassia hyssopifolia*, FACU) with other California non-native herbaceous species. On the property these stands occur above the high tide line where hydric soil and wetland hydrology indicators are not present. Therefore, where this alliance is present will not meet the ACOE's criteria threshold for wetland waters of the U.S.

Brassica nigra and other mustards Herbaceous Semi-Natural Alliance: A total of 45.34 acres of this alliance was identified within the project boundary (Table 2). This alliance is dominated by black mustard (*Brassica nigra*, FACU) occurring with other ruderal forbs such as maltese star thistle (*Centaurea melitensis*, FACU) and short podded mustard (*Hirschfeldia incana*, FACU). This alliance occurs above the high tide line where hydric soil and wetland hydrology indicators are not present. Therefore, where this alliance is present will not meet the ACOE's criteria threshold for wetland waters of the U.S.

Bromus diandrus – Bromus rubens Semi-Natural Herbaceous Stand: A total of 4.67 acres of this alliance was identified within the project boundary (Table 2). This alliance is dominated by ripgut brome (*Bromus diandrus*, FACU) occurring with other non-natives in the herbaceous layer. There is a large single occurrence of this alliance on site that is above the high tide line where hydric soil and wetland hydrology indicators are not present. Therefore, where this alliance is present will not meet the ACOE's criteria threshold for wetland waters of the U.S.

Conium maculatum – Foeniculum vulgare Herbaceous Semi-Natural Alliance: A total of 2.91 acres of this alliance was identified within the project boundary (Table 2). This alliance is dominated by poison hemlock (*Conium maculatum*, FACW) and occurs with other non-native plant species in the herbaceous layer. This alliance occurs above the high tide line where hydric soil and wetland hydrology indicators

are not present. Therefore, where this alliance is present will not meet the ACOE's criteria threshold for wetland waters of the U.S.

Mesembryanthemum spp. – *Carpobrotus* spp. Herbaceous Semi-Natural Alliance: A total of 4.49 acres of this alliance was identified within the project boundary (Table 2). This alliance is dominant in the herbaceous layer and can contain iceplant (*Carpobrotus edulis, FACU*), crystalline iceplant (*Mesembryanthemum crystallinum, FACU*), or other ice plant taxa. Emergent trees and shrubs may also be present at low cover within this alliance. This alliance occurs above the high tide line where hydric soils and wetland hydrology indicators are not present. Therefore, where this alliance is present will not meet the ACOE's criteria threshold for wetland waters of the U.S.

Ornamental: A total of 0.35 acres of this land cover type was identified within the project boundary (Table 2). This land cover type includes non-native species such as Mexican fan palm (*Washingtonia robusta*, FACW), Brazilian pepper tree (*Schinus terebinthifolia*, FACU), and other various non-native plant species in the shrub and tree stratum. This land cover type occurs primarily around developed areas on the property that are above the high tide line where hydric soils and wetland hydrology indicators are not present. Therefore, where this alliance is present will not meet the ACOE's criteria threshold for wetland waters of the U.S.

Disturbed – mowed/disked fire break: A total of 0.06 acres of this alliance was identified within the project boundary (Table 2). This land cover type consists of a small area adjacent to a perimeter fence line in the upland areas that was disked to reduce the fire risk in the area. This land cover type is above the high tide line where hydric soil and wetland hydrology indicators are not present. Therefore, where this alliance is present will not meet the ACOE's criteria threshold for wetland waters of the U.S.

Unvegetated Salt Flat: A total of 2.93 acres of this land cover type was identified within the project boundary (Table 2). This land cover type consists of areas absent of any vegetation and is above the high tide line but may contain hydric soil indicates such as a salty crust on the soil surface. Given that unvegetated salt flats lack the vegetative cover required to be considered wetland waters, where this alliance is present will not meet the ACOE's criteria threshold for wetland waters of the U.S.

Unvegetated Tidal Flat: A total of 3.40 acres of this land cover type was identified within the project boundary (Table 2). This land cover type is absent of vegetation but occurs below the high tide line. These areas can show hydric soil and wetland hydrology indicators. Therefore, due a lack of vegetation, where this alliance is present will likely not meet the ACOE's criteria threshold for wetland waters of the U.S. but could qualify as waters of the U.S.

Developed: A total of 3.70 acres of this land cover type was identified within the project boundary (Table 2). This land cover type consists of asphalt roads, concrete pads, established dirt roads and other areas developed prior to acquisition by the LCWA. This land cover type occurs above the high tide line where hydric soil and wetland hydrology indicators are not present. Therefore, where this alliance is present will not meet the ACOE's criteria threshold for wetland waters of the U.S.

4.2 Soils

The project site is composed of five types of soils that include: Balcom clay loam, Bolsa silty clay loam, Bolsa drained-Typic Xerorthents, Myford loamy sand, and Urban land of dredged fill substratum (USDA, 2021; Appendix B). Most of the project site is covered by Bolsa drained-Typic Xerorthents and Bolsa silty clay loam. These determinations are also consistent with previous investigation that have taken place on site.

Bolsa drained-Typic Xerorthent soils consist typically of dredge spoils and are somewhat poorly draining, typically occur in filled marshland and tidal marshes and consist of coarse to loamy grain sizes. The average slope in areas with Bolsa drained-Typic Xerorthent soils range from 0 to 2 percent. Bolsa silty clay loam soils consist of fine to silty grain sizes, are somewhat poorly drained and occur in coastal plain areas. Balcom clay loam soils typically exist along hill slopes and drain well. The average slope in areas with Balcom clay loam soils range from 15 to 30 percent. Myford loamy sand soils have moderately well-draining soils, occur in areas with slopes of 2 to 9 percent, and occur along terraces and backslopes. Urban land of dredged fill substratum soils consist of dredged fill and occur in areas with 0 to 2 percent slopes. (USDA, 2021)

The locations of the 18 soil pits used to investigate the presence of hydric soil are depicted in Exhibit D and photographs are displayed in Appendix C. The soil pit locations were chosen to determine if jurisdictional wetlands extended above the Ordinary High Water Mark (OHWM) where indicators of hydrophytic vegetation appeared to be present. Indicators for hydric soils were found in pits 2, 3, 5, 6, 9, 16, and 18. All soil pits were done in Bolsa-type soils, with soil pits 1 and 7 through 18 collected in Bolsa drained-Typic Xerorthents and soil pits 2 through 6 taken in Bolsa silty clay loam. The leading hydric soil indicators were the presence of Redox Dark Surface (F6) and Sandy Redox (S5). Furthermore, no instances of naturally problematic soils were identified, however all 18 locations (sample points 1 through 18) exhibited soils that were identified to be significantly disturbed. This disturbance was indicated by the presence of debris in the form of glass, gravel, debris, and asphalt.

4.3 Hydrology

The presence of wetland hydrology indicators is evident around the entire perimeter of the project area's tidal reaches and is most notably observed by the presence of high tide line water marks and tidal drainages. Of the 18 locations surveyed for the presence of wetlands hydrology, sample points 2, 3, 5, 6, 9, 11, 12, 13, 14, 16, and 18 contained indicators. Of these points, none were within the reach of the highest high tide. The mean high tide line was not delineated in the field due to the fact that this boundary is encompassed by the limits of Section 404 jurisdiction that extends to the highest high-water line.

A total of 3 land cover types were found to contain wetlands hydrology indicators:

Unvegetated Flats: A total of 6.33 acres of this land cover type is found on the site separated into three distinct locations throughout the project area, some of which is tidally influenced, and the remaining is above high tide lines. This land cover type is predominantly fill consisting of a very high salt content that has resulted in the lack of vegetation establishment with some of it being intertidal and some being non-tidal. Wetland hydrology indicators most common on this land cover type was surface soil cracks and salt crust. Most of this unvegetated land cover type is found above the high-tide line and therefore is seasonally flooded by rainfall or other non-tidal inputs and qualifies as non-wetland waters of the U.S.

Southern Coastal Salt Marsh: A total of 25.57 acres of this land cover type is found on the site adjacent to the tidal channel that flows through the project area. A majority of this land cover type is under both federal and state jurisdiction. Most of this vegetated land cover type is found below the high-tide line and therefore is inundated regularly and qualifies as wetland waters of the U.S.

Subtidal Marine: A total of 1.42 acres of this land cover type is found in the form of a tidal channel that nearly bisects the entire project area. All of this land cover type is found below the high tide line and qualifies as waters of the U.S.

5.0 Jurisdictional Determinations

5.1 Jurisdictional Waters of the U.S. and State

The extent of the potential jurisdictional waters of the United States within the project area is 10.69 acres. Within the jurisdictional waters of the United States, 2.44 acres are potentially wetland waters of the United States. The potential jurisdictional wetlands of the State based on the California Coastal Commission's jurisdiction extends beyond the federal jurisdictional and total 27.19 acres within the project area. California Department of Fish and Wildlife potential jurisdictional wetlands covers 1.42 acres within the CCC jurisdictional boundary. A summary of the jurisdictional waters and wetlands of the U.S. and State, with the corresponding regulatory authority, occurring within the survey area, is provided in Table 3 and mapped in Exhibit E.

Table 3. Summary of potential jurisdictional waters of the U.S. & State (*= 0.05 acres extend outside of the project area; **= 0,02 acres extend outside of the project area).

Type of Potential Jurisdictional Waters of the U.S. and State	Regulatory Authority	Acres
Potential Jurisdictional Waters of the U.S.		
Wetland Waters Section 404	ACOE, USFWS, and RWQCB	2.44*
Waters of the U.S. Section 10	ACOE, USFWS, and RWQCB	8.25**
	Subtotal Potential Jurisdictional Waters of the U.S.	*10.69*
Potential Jurisdictional Wetlands of the State		
Wetland Waters	CCC	27.19
	CDFW	1.42

5.2 ACOE Jurisdiction

5.2.1 ACOE Section 10 Jurisdiction

The project area has a direct connection to the San Gabriel River which is a navigable water of the U.S. that is an extension of the Pacific Ocean (a navigable water of the U.S.). Thus, the marine water within the project area is considered as waters of the U.S. and is subject to ACOE jurisdiction to the mean high-water line under Section 10 of the Rivers and Harbors Act (Exhibit F). This amounts to 8.25 acres of waters of the U.S. on site under the Section 10 definition (Table 3). This amount is lower than previous investigation including the 1995 Chambers Jurisdiction Wetlands Determination which is likely due to habitats shifting overtime due to tidal muting as well as changes in the definitions and determination process of what is considered waters of the U.S.

5.2.2 ACOE Section 404 Jurisdiction

Due to the direct connection with the San Gabriel River, the marine water in the project area is considered as waters of the U.S. and is subject to ACOE jurisdiction at least to the high tide line under Section 404 of the Clean Water Act. There are locations on site where both wetland vegetation and soils are present above the OHWM, so ACOE jurisdiction extends beyond the observed OHWM and are considered as Wetland Waters (Exhibit G). These Wetland Waters account for 2.44 acres on site. This is a decrease compared to previous investigations of the site, but this again is due to habitats shifting over time due to drought conditions as well as changes in the definitions and determination process of what is considered Wetland Waters of the U.S.

Pursuant to the Clean Water Act, ACOE will assert jurisdiction over traditional navigable waters and their adjacent wetlands. This site has a well-documented direct connection to a designated navigable water of the United States. Due to this connection, ACOE will likely verify that a "significant nexus determination" is not required to determine the jurisdictional status of this site. There is a total of 10.69 acres of waters potentially subject to ACOE jurisdiction, of which 8.25 acres is OHWM/Waters of the US and 2.44 acres are wetland waters of the United States. A map of potential ACOE jurisdictional areas is provided in Exhibit E and summarized in Table 3.

5.3 CDFW Jurisdiction

CDFW asserts jurisdiction only over wetland areas that are a part of a river, stream, or lake as defined by CDFW. There is potential that CDFW could determine that this association is present within the survey area due to the connection of the site with the San Gabriel River as well as the overall San Gabriel River Watershed A map showing the potential areas that could be under CDFW jurisdiction is attached as Exhibit H.

5.4 CCC Jurisdiction

Pursuant to the California Coastal Act the CCC will assert jurisdiction over all of the areas satisfying the ACOE jurisdictional criteria for waters and wetlands of the United States. This jurisdictional area usually tends to be more inclusive and extensive than that of ACOE due to the CCC employment of a "one-parameter" approach to delineating jurisdictional wetlands. As described previously CCC wetlands need only contain wetlands hydrology and, hydrophytic vegetation, or hydric soils. Within the project area a total of 27.19 acres are potentially subject to CCC wetland jurisdiction, equaling 16.50 acres more than that of ACOE. This difference is due to areas existing where salt marsh (wetland) vegetation or salt flat habitat extended beyond the limit of the highest high-water line. A map of potential CCC jurisdictional areas is provided in Exhibit I and summarized in Table 3. The 1996 delineation found at total of 23.2 acres of CCC jurisdiction and therefore a larger CCC jurisdiction was identified by this investigation.

6.0 Literature Cited

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Exhibit A

Project Vicinity Map

Project Vicinity

Southern Los Cerritos Wetlands Area - Seal Beach, CA

1 inch = 2,000 feet

0 900 1,800 3,600 5,400 7,200 Feet

Project Boundary

Tidal Influence

Exhibit B

Project Site Map

Produced by Hannah Craddock May 13, 2021

Datum: NAD 1983

Project Site

Southern Los Cerritos Wetlands Area - Seal Beach, CA

1 inch = 458 feet

0 210 420 840 1,260 1,680 Feet

Project Boundary

Tidal Influence

Exhibit C

NWI Potential Wetlands Map

U.S. Fish and Wildlife Service

National Wetlands Inventory

LCWA South Area

May 14, 2021

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

Exhibit D

Soil Sample Locations Map

Soil Sample Locations

Southern Los Cerritos Wetlands Area - Seal Beach, CA

0 180 360 720 1,080 1,440 Feet

Survey Area (103.54 acres)

Soil Sample Locations

Tidal Influence

Coordinate System: NAD 1983 2011
StatePlane California VI FIPS 0406 ft US
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Produced by Hannah Craddock
May 11, 2021
1 inch = 458 feet

Exhibit E

Jurisdictional Wetland Delineation Map

Jurisdictional Wetland Delineation

Southern Los Cerritos Wetlands Area - Seal Beach, CA

0 180 360 720 1,080 1,440 Feet

Survey Area (103.54 acres)

Jurisdictional Waters of the U.S. (8.29 acres)

Jurisdictional Wetland Waters of the U.S. (2.44 acres)

Control Points

Wetland Sampling Point

Upland Sampling Point

Tidal Influence

Coordinate System: NAD 1983 2011
StatePlane California VI FIPS 0406 ft US
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Produced by Hannah Craddock
June 17, 2021
1 inch = 458 feet

Exhibit F

Jurisdictional Waters of the U.S. Map

Jurisdictional Waters of the U.S.

Southern Los Cerritos Wetlands Area - Seal Beach, CA

Survey Area (103.54 acres)

Jurisdictional Waters of the U.S. (8.25 acres)

0 185 370 740 1,110 1,480 Feet

Tidal Influence

Coordinate System: NAD 1983 2011
StatePlane California VI FIPS 0406 ft US
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Produced by Hannah Craddock
June 17, 2021
1 inch = 458 feet

Exhibit G

Jurisdictional Wetland Waters of the U.S. Map

Jurisdictional Wetland Waters of the U.S.

Southern Los Cerritos Wetlands Area - Seal Beach, CA

Survey Area (103.54 acres)

Jurisdictional Wetland Waters of the U.S. (2.44 acres)

0 185 370 740 1,110 1,480 Feet

Tidal Influence

Coordinate System: NAD 1983 2011
StatePlane California VI FIPS 0406 ft US
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Produced by Hannah Craddock
June 17, 2021
1 inch = 458 feet

Exhibit H

Potential CDFW Jurisdictional Wetlands Map

Potential California Department of Fish and Wildlife Jurisdictional Wetlands

Southern Los Cerritos Wetlands Area - Seal Beach, CA

Survey Area (103.54 acres)

Potential CDFW Jurisdictional Wetlands (1.42 acres)

0 185 370 740 1,110 1,480 Feet

Tidal Influence

Coordinate System: NAD 1983 2011
StatePlane California VI FIPS 0406 ft US
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Produced by Hannah Craddock
June 17, 2021
1 inch = 458 feet

Exhibit I

CCC Jurisdictional Wetlands Map

California Coastal Commission Jurisdictional Wetlands

Southern Los Cerritos Wetlands Area - Seal Beach, CA

Survey Area (103.54 acres)

CCC Jurisdictional Wetlands (27.19 acres)

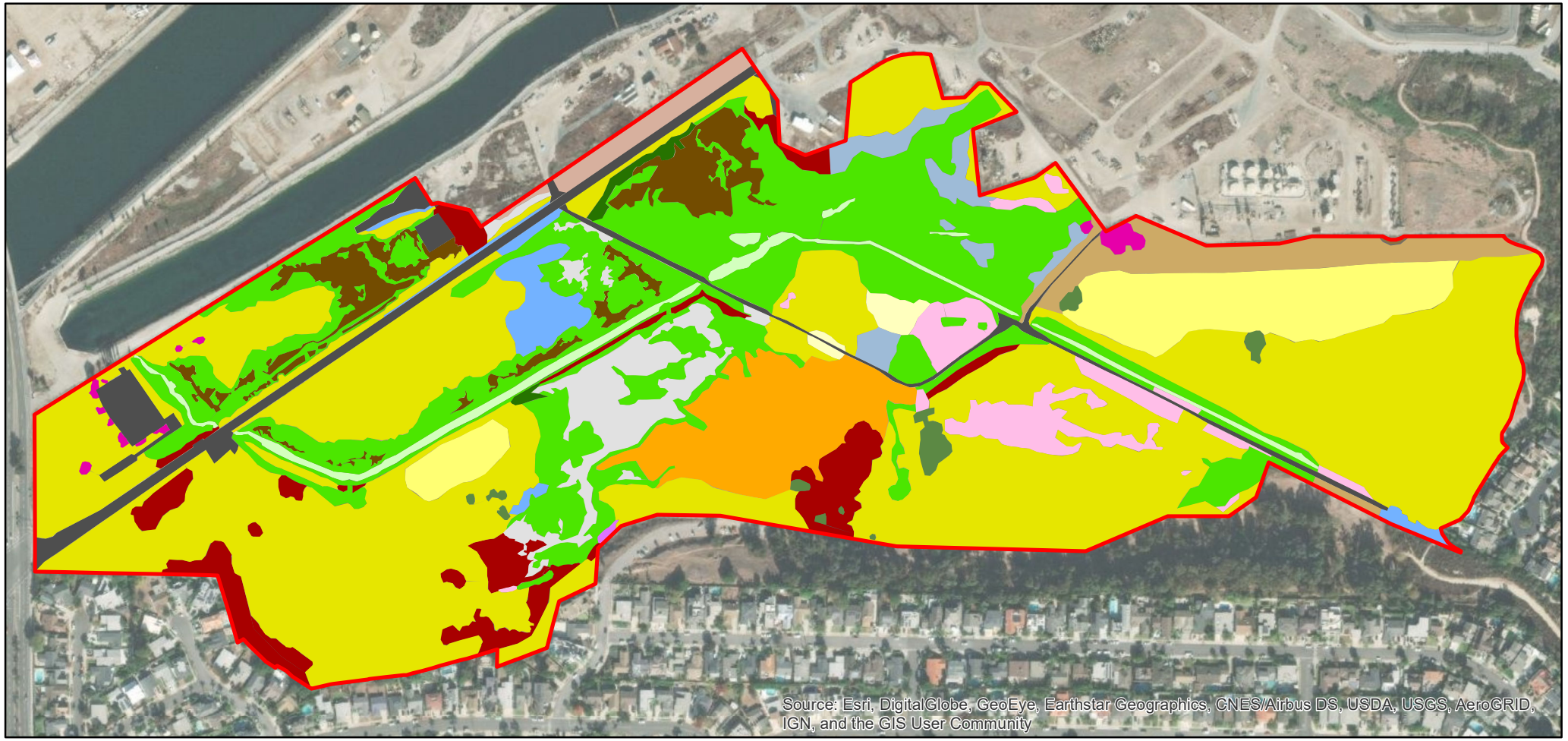
0 185 370 740 1,110 1,480 Feet

Tidal Influence

Coordinate System: NAD 1983 2011
StatePlane California VI FIPS 0406 ft US
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Produced by Hannah Craddock
June 17, 2021
1 inch = 458 feet

Exhibit J

Vegetation Alliances Map



Vegetation Alliances

Southern Los Cerritos Wetlands Area - Seal Beach, CA

- Survey Area (103.54 acres)
- Cressa truxillensis - Distichlis spicata Herbaceous Alliance
- Distichlis spicata Herbaceous Alliance
- Sarcocornia pacifica Herbaceous Alliance
- Frankenia salina Herbaceous Alliance
- Ulva lactuca algal mat
- Arthrocnemum subterminale Herbaceous Alliance
- Heterotheca grandiflora herbaceous stand
- Isomeris arborea shrub stand
- Isocoma menziesii Shrubland Alliance
- Baccharis salicifolia Shrubland Alliance
- Bassia hyssopifolia Semi-Natural Herbaceous Stand
- Brassica nigra and other mustards Herbaceous Semi-Natural Alliance
- Bromus diandrus,rubens Semi-Natural Herbaceous Stand
- Conium maculatum - Foeniculum vulgare Herbaceous Semi-Natural Alliance
- Mesembryanthemum spp. - Carpobrotus spp. Herbaceous Semi-Natural Alliance
- Ornamental
- Disturbed - mowed/disked fire break
- Unvegetated salt flat
- Unvegetated tidal flat
- Developed

Coordinate System: NAD 1983 2011
StatePlane California VI FIPS 0406 ft US
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Produced by Hannah Craddock
May 13, 2021
1 inch = 458 feet

Tidal Influence

0 185 370 740 1,110 1,480
Feet

Appendix A

Wetland Determination Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: LCWA South Area City/County: Seal Beach/Orange County Sampling Date: 2/19/21

Applicant/Owner: Los Cerritos Wetlands Authority State: CA Sampling Point: 1

Investigator(s): Eric Zahn,Marcelo Ceballos Jr,Hannah Craddock Section, Township, Range: T5S, R12W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope (%): 10

Subregion (LRR): LRRC Lat: 33.751714 N Long: -118.095969 W Datum: WGS84

Soil Map Unit Name: Bolsa, drained-Typic Xerothents dredged spoil-Typic Fluvaquents comple NWI classification: PEM1Cx

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: 2m)			
1. Baccharis salicifolia	60	X	FAC
2.			
3.			
4.			
5.			
	60 = Total Cover		
Herb Stratum (Plot size: 2m)			
1. Melilotus indicus	5		FACU
2. Conium maculatum	35		FACW
3.			
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

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: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 35	x 2 = 70
FAC species 60	x 3 = 180
FACU species 5	x 4 = 20
UPL species _____	x 5 = _____
Column Totals: 100 (A)	270 (B)

Prevalence Index = B/A = 2.7

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: 1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-22	2.5Y, 3/2	100	N/A				Sandy	clay balls

[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:

Sandy top layer

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: LCWA South Area City/County: Seal Beach/Orange County Sampling Date: 2/19/21

Applicant/Owner: Los Cerritos Wetlands Authroity State: CA Sampling Point: 2

Investigator(s): Eric Zahn,Marcelo Ceballos Jr,Hannah Craddock Section, Township, Range: T5S, R12W

Landform (hillslope, terrace, etc.): Ditch Local relief (concave, convex, none): Concave Slope (%): 5

Subregion (LRR): LRRC Lat: 33.752207 N Long: -118.09361 W Datum: WGS84

Soil Map Unit Name: Bolsa silty clay loam, drained NWI classification: PEM1Cx

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: 2m)			
1. Conium maculatum	75	X	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	75 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 25 % Cover of Biotic Crust 0

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: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 75	x 2 = 150
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: 75 (A)	150 (B)

Prevalence Index = B/A = 2

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)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
20	7.5YR, 3/1	98	7.5YR, 5/8	2	D	PL	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): _____

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: LCWA South Area City/County: Seal Beach/Orange County Sampling Date: 2/19/21

Applicant/Owner: Los Cerritos Wetlands Authority State: CA Sampling Point: 3

Investigator(s): Eric Zahn,Marcelo Ceballos Jr,Hannah Craddock Section, Township, Range: T5S, R12W

Landform (hillslope, terrace, etc.): Ditch Local relief (concave, convex, none): concave Slope (%): 3

Subregion (LRR): LRRC Lat: 33.752238 N Long: -118.093484 W Datum: WGS84

Soil Map Unit Name: Bolsa silty clay loam, drained NWI classification: PEM1Cx

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: 2m)			
1. Frankenia salina	50	x	FACW
2. Bassia hyssopifolia	50	x	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

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: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 50	x 2 = 100
FAC species _____	x 3 = _____
FACU species 50	x 4 = 200
UPL species _____	x 5 = _____
Column Totals: 100 (A)	300 (B)

Prevalence Index = B/A = 3

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: 3

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
21	2.5YR, 2.5/1	95	7.5YR, 3/4	5	C	PL	Loamy Clay	Loamy 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): _____

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: LCWA South Area City/County: Seal Beach/Orange County Sampling Date: 2/19/21

Applicant/Owner: Los Cerritos Wetlands Authority State: CA Sampling Point: 4

Investigator(s): Eric Zahn,Marcelo Ceballos Jr,Hannah Craddock Section, Township, Range: T5S, R12W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope (%): 5

Subregion (LRR): LRRC Lat: 33.751339 N Long: -118.094047 W Datum: WGS84

Soil Map Unit Name: Bolsa silty clay loam, drained NWI classification: PEM1Cx

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: 2m)			
1. Baccharis salicifolia	35		FAC
2.			
3.			
4.			
5.			
	35 = Total Cover		
Herb Stratum (Plot size: 2m)			
1. Brassica nigra	25		UPL
2. Ambrosia psilostachya	5		FACU
3. Melilotus indicus	25		FACU
4.			
5.			
6.			
7.			
8.			
	55 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust 0

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 35	x 3 = 105
FACU species 30	x 4 = 120
UPL species 25	x 5 = 125
Column Totals: 90 (A)	350 (B)

Prevalence Index = B/A = 3.89

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: 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 Features %	Type[1]	Loc[2]	Texture	Remarks
24	2.5Y/3-2	100					sandy	

[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: LCWA South Area City/County: Seal Beach/Orange County Sampling Date: 2/19/21

Applicant/Owner: Los Cerritos Wetlands Authority State: CA Sampling Point: 5

Investigator(s): Eric Zahn,Marcelo Ceballos Jr,Hannah Craddock Section, Township, Range: T5S, R12W

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR): LRRC Lat: 33.750882 N Long: -118.093482 W Datum: WGS84

Soil Map Unit Name: Bolsa silty clay loam, drained NWI classification: PEMC1x

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: 2m)			
1. Mesembryanthemum nodiflorum	63	x	FACU
2. Laennecia coulteri	35		FAC
3. Brassica nigra	2		UPL
4.			
5.			
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 0 % 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 35	x 3 = 105
FACU species 63	x 4 = 252
UPL species 2	x 5 = 10
Column Totals: 100 (A)	367 (B)

Prevalence Index = B/A = 3.67

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)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
16	5Y, 4/2	90	5YR, 3/4	10	C	PL	Sandy/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): 0-16

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: LCWA South Area City/County: Seal Beach/Orange County Sampling Date: 2/19/21

Applicant/Owner: Los Cerritos Wetlands Authority State: CA Sampling Point: 6

Investigator(s): Eric Zahn,Marcelo Ceballos Jr,Hannah Craddock Section, Township, Range: T5S, R12W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 2

Subregion (LRR): LRRC Lat: 33.750888 N Long: -118.093218 W Datum: WGS84

Soil Map Unit Name: Bolsa silty clay loam, drained NWI classification: PEM1Cx

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: 2m)			
1. Mesembryanthemum nodiflorum	5		FACU
2. Brassica nigra	2		UPL
3.			
4.			
5.			
6.			
7.			
8.			
	7 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 93 % Cover of Biotic Crust 0

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 5	x 4 =	20
UPL species 2	x 5 =	10
Column Totals: 7 (A)		30 (B)

Prevalence Index = B/A = 4.29

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: 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 Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	5Y, 3/2	80	7.5YR, 4/6	20	C	PL	Sandy 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): 0-10

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: LCWA South Area City/County: Seal Beach/Orange County Sampling Date: 2/19/21

Applicant/Owner: Los Cerritos Wetlands Authority State: CA Sampling Point: 7

Investigator(s): Eric Zahn,Marcelo Ceballos Jr,Hannah Craddock Section, Township, Range: T5S, R12W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): convex Slope (%): 10

Subregion (LRR): LRRC Lat: 33.750291 N Long: -118.094235 W Datum: WGS84

Soil Map Unit Name: Bolsa, drained-Typic Xerorthents, dredged spoil- Typic Fluvaquents comp NWI classification: PEM1Cx

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: 2m)			
1. Brassica nigra	25		UPL
2. Hirschfeldia incana	25		FACU
3. Frankenia salina	5		FACW
4. Salicornia pacifica	5		OBL
5. Polypogon monspeliensis	40	x	FACW
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 3 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 5	x 1 = 5
FACW species 45	x 2 = 90
FAC species _____	x 3 = _____
FACU species 25	x 4 = 100
UPL species 25	x 5 = 125
Column Totals: 100 (A)	320 (B)

Prevalence Index = B/A = 3.2

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: 7

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	2.5Y, 3/2	97.5	7.5YR, 5/8	2.5	C	PL	Silt/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:

very small occurances dotted throughout

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: LCWA South Area City/County: Seal Beach/Orange County Sampling Date: 2/26/21

Applicant/Owner: Los Cerritos Wetlands Authority State: CA Sampling Point: 8

Investigator(s): Eric Zahn,Marcelo Ceballos Jr,Hannah Craddock Section, Township, Range: T5S, R12W

Landform (hillslope, terrace, etc.): Terrace/flatform Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): LRRC Lat: 33.751968 N Long: -118.09983 W Datum: WGS84

Soil Map Unit Name: Bolsa, drained-Typic Xerorthents, dredged spoil- Typic Fluvaquents comp NWI classification: R2UBHx

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: 2m)			
1. Arthrocnemum subterminale	20		FACW
2. Salicornia pacifica	10		OBL
3. Mesembryanthemum nodiflorum	5		FACU
4. Cressa truxillensis	15		FACW
5.			
6.			
7.			
8.			
	50 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust 0

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	10	x 1 =	10
FACW species	35	x 2 =	70
FAC species		x 3 =	
FACU species	5	x 4 =	20
UPL species		x 5 =	
Column Totals:	50 (A)		100 (B)

Prevalence Index = B/A = 2

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: 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 Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y, 3/2	100					Clay	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:

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: LCWA South Area City/County: Seal Beach/Orange County Sampling Date: 2/26/21

Applicant/Owner: Los Cerritos Wetlands Authority State: CA Sampling Point: 9

Investigator(s): Eric Zahn,Marcelo Ceballos Jr,Hannah Craddock Section, Township, Range: T5S, R12W

Landform (hillslope, terrace, etc.): Flat land Local relief (concave, convex, none): none Slope (%): 2

Subregion (LRR): LRRC Lat: 33.751895 N Long: -118.099862 W Datum: WGS84

Soil Map Unit Name: Bolsa, drained-Typic Xerorthents, dredged spoil- Typic Fluvaquents comp NWI classification: R2UBHx

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: 2m)			
1. Arthrocnemum subterminale	40	x	FACW
2. Mesembryanthemum nodiflorum	5		FACU
3.			
4.			
5.			
6.			
7.			
8.			
	45 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 55 % Cover of Biotic Crust 0

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: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 40	x 2 = 80
FAC species _____	x 3 = _____
FACU species 5	x 4 = 20
UPL species _____	x 5 = _____
Column Totals: 45 (A)	100 (B)

Prevalence Index = B/A = 2.22

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: 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 Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	2.5Y, 3/2	90	7.5YR, 4/6	10	C	M	Sandy	
10-16	5Y, 3/2	98	10YR, 5/8	2	C	M	Clay	Sandy 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): 0-16

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: LCWA South Area City/County: Seal Beach/Orange County Sampling Date: 2/26/21

Applicant/Owner: Los Cerritos Wetlands Authority State: CA Sampling Point: 10

Investigator(s): Eric Zahn,Marcelo Ceballos Jr,Hannah Craddock Section, Township, Range: T5S, R12W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): convex Slope (%): 2

Subregion (LRR): LRRC Lat: 33.751016 N Long: -118.101627 W Datum: WGS84

Soil Map Unit Name: Bolsa, drained-Typic Xerorthents, dredged spoil- Typic Fluvaquents comp NWI classification: R2UBHx

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: 2m)			
1. Salicornia pacifica	40	x	OBL
2. Cressa truxillensis	20		FACW
3.			
4.			
5.			
6.			
7.			
8.			
	60 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 40 % Cover of Biotic Crust 0

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: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	40	x 1 =	40
FACW species	20	x 2 =	40
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	60 (A)		80 (B)

Prevalence Index = B/A = 1.33

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: 10

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	2.5Y, 3/2	99	2.5YR, 2.5/4	1	C	M	Sandy	Clumps of clay within core

[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): 0-18

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: LCWA South Area City/County: Seal Beach/Orange County Sampling Date: 3/5/21

Applicant/Owner: Los Cerritos Wetlands Authority State: CA Sampling Point: 11

Investigator(s): Hannah Craddock,Marcelo Ceballos,Wanisa Jai Section, Township, Range: T5S, R12W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 3

Subregion (LRR): LRRC Lat: 33.751859 N Long: -118.10031 W Datum: WGS84

Soil Map Unit Name: Bolsa, drained-Typic Xerorthents, dredged spoil- Typic Fluvaquents comp NWI classification: R2UBHx

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: 2m)			
1. Mesembryanthemum nodiflorum	5		FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	5 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 95 % Cover of Biotic Crust 0

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 5	x 4 =	20
UPL species _____	x 5 =	_____
Column Totals: 5 (A)		20 (B)

Prevalence Index = B/A = 4

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: 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 Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5Y, 3/2	100						

[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: Rock

Depth (inches): 12

Hydric Soil Present? Yes ____ No ✔

Remarks:

The area is likely salty fill material

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): 12

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:

Drainage patterns likely due to runoff

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: LCWA South Area City/County: Seal Beach/Orange County Sampling Date: 3/5/21

Applicant/Owner: Los Cerritos Wetlands Authority State: CA Sampling Point: 12

Investigator(s): Hannah Craddock,Marcelo Ceballos,Wanisa Jai Section, Township, Range: T5S, R12W

Landform (hillslope, terrace, etc.): Basin Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR): LRRC Lat: 33.752674 N Long: -118.099921 W Datum: WGS84

Soil Map Unit Name: Bolsa silty clay loam, drained NWI classification: PUSCx

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: 2m)			
1. Arthrocnemum subterminale	25	x	FACW
2. Mesembryanthemum nodiflorum	5		FACU
3. Salicornia pacifica	5		OBL
4. Symphyotrichum subulatum	5		OBL
5.			
6.			
7.			
8.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 60 % Cover of Biotic Crust 0

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: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	25	x 2 =	50
FAC species		x 3 =	
FACU species	5	x 4 =	20
UPL species		x 5 =	
Column Totals:	40 (A)		80 (B)

Prevalence Index = B/A = 2

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: 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 Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	2.5Y, 3/1	100					clay	
2-9	2.5Y, 3/2	100					sandy	

[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): 9

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: LCWA South Area City/County: Seal Beach/Orange County Sampling Date: 3/5/21

Applicant/Owner: Los Cerritos Wetlands Authority State: CA Sampling Point: 13

Investigator(s): Hannah Craddock,Marcelo Ceballos,Wanisa Jai Section, Township, Range: T5S, R12W

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

Subregion (LRR): LRRC Lat: 33.751863 N Long: -118.098854 W Datum: WGS84

Soil Map Unit Name: Bolsa, drained-Typic Xerorthents, dredged spoil- Typic Fluvaquents comp NWI classification: PEM1Cx

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: 2m)			
1. Arthrocnemum subterminale	60	x	FACW
2. Mesembryanthemum nodiflorum	2		FACU
3.			
4.			
5.			
6.			
7.			
8.			
	62 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 38 % 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: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 60	x 2 = 120
FAC species _____	x 3 = _____
FACU species 2	x 4 = _____
UPL species _____	x 5 = 8
Column Totals: 62 (A)	128 (B)

Prevalence Index = B/A = 2.06

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: 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	Remarks
0-12	10YR, 3/2	100						

[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:

No redox

No indicators present, so likely not hydric due to these observations

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): 12

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

Salt crust in the immediate surrounding areas

Area moist likely due to recent rain event

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: LCWA South Area City/County: Seal Beach/Orange County Sampling Date: 3/5/21

Applicant/Owner: Los Cerritos Wetlands Authority State: CA Sampling Point: 14

Investigator(s): Hannah Craddock,Marcelo Ceballos,Wanisa Jai Section, Township, Range: T5S, R12W

Landform (hillslope, terrace, etc.): Ditch Local relief (concave, convex, none): concave Slope (%): 5

Subregion (LRR): LRRC Lat: 33.749846 N Long: -118.097925 W Datum: WGS84

Soil Map Unit Name: Bolsa, drained-Typic Xerorthents, dredged spoil- Typic Fluvaquents comp NWI classification: PEM1Cx

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: 2m)			
1. Rumex crispus	5		FAC
2. Carpobrotus edulis	20		UPL
3. Eleocharis macrostachya	75	x	OBL
4.			
5.			
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

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: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 75	x 1 = 75
FACW species _____	x 2 = _____
FAC species 5	x 3 = 15
FACU species _____	x 4 = _____
UPL species 20	x 5 = 100
Column Totals: 100 (A)	190 (B)

Prevalence Index = B/A = 1.9

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 Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y, 3/2	100					Silty Sand	very saturated

[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:

90% silt, 10% clay

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): 6

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 14

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: LCWA South Area City/County: Seal Beach/Orange County Sampling Date: 3/5/21

Applicant/Owner: Los Cerritos Wetlands Authority State: CA Sampling Point: 15

Investigator(s): Marcelo Ceballos Jr,Hannah Craddock,Wanisa J Section, Township, Range: T5S, R12W

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

Subregion (LRR): LRRC Lat: 33.750239 N Long: -118.097454 W Datum: WGS84

Soil Map Unit Name: Bolsa, drained-Typic Xerorthents, dredged spoil- Typic Fluvaquents comp NWI classification: PEM1Cx

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: 2m)			
1. Salicornia pacifica	40	x	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 60 % Cover of Biotic Crust 0

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: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 40	x 1 =	40
FACW species _____	x 2 =	_____
FAC species _____	x 3 =	_____
FACU species _____	x 4 =	_____
UPL species _____	x 5 =	_____
Column Totals: 40 (A)		40 (B)

Prevalence Index = B/A = 1

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: 15

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5Y, 3/2	100					Sandy	Sandy fill, chunks of clay
12	5Y, 3/2	100					Clay	Chunks of 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:

Mainly sand, but there are chunks of clay. This clay is likely imported from when fill material from the surrounding area was dumped onto the site. The area has an old history of dumping.

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:

Salt crust due to sand fill. No tidal connection.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: LCWA South Area City/County: Seal Beach/Orange County Sampling Date: 3/5/21

Applicant/Owner: Los Cerritos Wetlands Authority State: CA Sampling Point: 16

Investigator(s): Marcelo Ceballos Jr, Hannah Craddock, Wanisa Section, Township, Range: T5S, R12W

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

Subregion (LRR): LRRC Lat: 33.750224 N Long: -118.103226 W Datum: WGS84

Soil Map Unit Name: Bolsa, drained-Typic Xerorthents, dredged spoil- Typic Fluvaquents comp NWI classification: R2UBHx

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: 2m)			
1. Salicornia pacifica	80	x	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
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: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 80	x 1 =	80
FACW species _____	x 2 =	_____
FAC species _____	x 3 =	_____
FACU species _____	x 4 =	_____
UPL species _____	x 5 =	_____
Column Totals: 80 (A)		80 (B)

Prevalence Index = B/A = 1

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: 16

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5Y, 3/2	95	5YR, 3/4	5	D	M	Clay	Spotted redox throughout

[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:

The redox isn't typical but it is distributed throughout

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): 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: LCWA South Area City/County: Seal Beach/Orange County Sampling Date: 3/12/21

Applicant/Owner: Los Cerritos Wetlands Authority State: CA Sampling Point: 17

Investigator(s): Eric Zahn,Marcelo Ceballos Jr,Hannah Craddock Section, Township, Range: T5S, R12W

Landform (hillslope, terrace, etc.): depression in terrace Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR): LRRC Lat: 33.752169 N Long: -118.102477 W Datum: WGS84

Soil Map Unit Name: Bolsa, drained-Typic Xerorthents, dredged spoil- Typic Fluvaquents comp NWI classification: PUBHx

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: 2m)			
1. Bassia hyssopifolia	5		FACU
2. Brassica nigra	20		UPL
3. Atriplex semibaccata	15		FAC
4. Ditrichia graveleons	5		UPL
5. Mesembryanthemum nodiflorum	5		FACU
6. Bromus diandrus	40	x	UPL
7. Galium angustifolium	5		FACU
8. Cressa truxillensis	1		FACW
	100	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

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 1	x 2 = 2
FAC species 15	x 3 = 45
FACU species 18	x 4 = 72
UPL species 66	x 5 = 330
Column Totals: 100 (A)	449 (B)

Prevalence Index = B/A = 4.49

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:

Additional Herb Stratum Species: Melilotus indicus, 3%, FACU. Sonchus oleraceus, 1%, UPL.

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 Features %	Type[1]	Loc[2]	Texture	Remarks
0-18	5YR, 2.5/2	100						

[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:

Rocky fill on top layer, loamy bottom layer

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:

Recent rains may account for saturation

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: LCWA South Area City/County: Seal Beach/Orange County Sampling Date: 3/12/21

Applicant/Owner: Los Cerritos Wetlands Authority State: CA Sampling Point: 18

Investigator(s): Marcelo Ceballos Jr., Hannah Craddock Section, Township, Range: T5S, R12W

Landform (hillslope, terrace, etc.): base of slope Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): LRRC Lat: 33.749934 N Long: -118.100546 W Datum: WGS84

Soil Map Unit Name: Bolsa, drained-Typic Xerorthents, dredged spoil- Typic Fluvaquents comp NWI classification: R2UBHx

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: 2m)			
1. Salicornia pacifica	95	x	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust 0

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: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 95	x 1 = 95
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: 95 (A)	95 (B)

Prevalence Index = B/A = 1

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: 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 Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR, 4/2	100					Sandy clay	
4-7	2.5Y, 4/2	95	7.5YR, 4/4	5	D	M	Clay	
7-16	Gley 1 410Y	100						

[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:

Top layer was sandy clay, lower layer is clay
One layer clearly present due to saturation, hard to discern.

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): 6

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

Rained last 2 days, soil pit was filled with water.
Normal to see rain in this area each winter.
Saturated soils may be due to recent rain storm.

Appendix B

Soil Resource Report

Custom Soil Resource Report
Soil Map

Map Scale: 1:8,960 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 400 800 1600 2400

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

Appendix C

Soil Sample Photos

Soil Sample & Location #1

Soil Sample & Location #2

Soil Sample & Location #3

Soil Sample & Location #4

Soil Sample & Location #5

Soil Sample & Location #6

Soil Sample & Location #7

Soil Sample & Location #8

Soil Sample & Location #9

Soil Sample & Location #10

Soil Sample & Location #11

Soil Sample & Location #12

Soil Sample & Location #13

Soil Sample & Location #14

Soil Sample & Location #15

Soil Sample & Location #16

Soil Sample & Location #17

Soil Sample & Location #18