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June 20, 2011
Project Number: 11-97460

Ms. Shari Hammond, Senior Planner
Office of Campus Planning and Design
Facilities Management - MC 1030
University of California Santa Barbara
Santa Barbara, CA 93106

Subject: **Wetland Delineation Results for the San Joaquin Student Housing Project, University of California Santa Barbara, County of Santa Barbara, CA**

Dear Ms. Hammond,

Rincon Consultants, Inc. (Rincon) has completed a wetland delineation for the proposed San Joaquin Student Housing project, located on El Colegio Road at the University of California, Santa Barbara (UCSB). The project is in a preliminary design phase, and includes student housing, dining facilities, and associated infrastructure such as roads and bike paths. Rincon conducted the wetland delineation to determine the location and extent of sensitive wetland resources in the vicinity of the project site which may constrain project design. Specifically, the delineation evaluated a coastal freshwater marsh system in the parcel east of the project site (study area or site) to confirm the extent of areas that meet California Coastal Commission's (CCC) wetland definition. The CCC wetland boundaries provide the basis for defining the limits of a 100-foot avoidance buffer.

The wetland delineation methods were based on the United States Army Corps of Engineers' (Corps) vegetation, soils and hydrology criteria for wetlands, pursuant to Section 404 of the Clean Water Act (1972). These criteria were adapted and utilized as the foundation for a delineation of areas that meet CCC criteria for wetlands, as described below. Following delineation of the extent of CCC wetlands, the location of the 100-foot avoidance buffer was calculated utilizing GIS software (Figure 1). Additional discussion of applicable regulatory policies and delineation methods is provided at the end of this report.

METHODOLOGY

Rincon biologists Brett Hartman and Steve Hongola conducted the San Joaquin Housing wetland delineation on April 27, 2011. The delineation was completed in accordance with the methods described in the Corps Manual (Environmental Laboratory, 1987) and the Arid West Supplement (Corps 2008), and adapted to meet CCC criteria. The entire study area was walked to determine the extent of potential wetland areas. Data was then collected from soil pits at seven (7) sample points to determine if jurisdictional waters, including

wetlands, exist onsite. Sample points focused on the western parcel boundary adjacent to the project site for the purpose of precisely delineating the wetland boundary and associated buffer. The wetland boundary was mapped on a more general scale based on the presence of hydrophytic vegetation in the eastern and northern portions if the study area.

Following soil pit analyses, a soil probe was used to sample adjacent areas to aid in the determination of the wetland boundary. Data collected at each point included plant species composition (to determine the presence/absence of hydrophytic vegetation), presence/absence of positive indicators of wetland hydrology, and presence/absence of positive indicators of hydric soils. All field data collected onsite were entered on the Wetland Determination Data Forms (Arid West Region), which are attached at the end of this report.

Although a data point is considered to be within a Corps jurisdictional wetland if the area meets all three wetland parameters, the CCC generally requires the presence of only one wetland parameter for an area to qualify as a wetland. Areas that contained one of the three wetland parameters (hydrophytic vegetation, hydric soils, wetland hydrology) were considered to be potential areas of Coastal Commission defined wetlands, and are included on the attached map. In some cases, the CCC delineated wetlands exceeded what would normally be considered Corps jurisdiction. Examples include 1) swale or drainage systems with indicators of hydrologic flows but lacking the associated hydric soils and/or hydrophytic vegetation, and 2) the upland fringe of wetland areas that may contain hydrophytic vegetation, or isolated stands of hydrophytes that may persist due to the presence of a shallow water table. By definition facultative (FAC) species are equally likely to occur in wetlands or non-wetlands. Therefore, in isolated stands where FAC species are observed without associated facultative wetland (FACW) or obligate wetland (OBL) species, or without connectivity to hydric soils or wetland hydrology, hydrophytic vegetation for the purposes of CCC wetland delineation is assumed to be absent.

Aerial photographs, topographic maps, soil survey, general site observations, wetland delineation results, and other available background information were used to better characterize the nature of the project site and to map the extent of potential wetlands on the subject parcel. Rincon biologists recorded observations of vegetation, hydrology, and soils, and delineated wetlands on the ground using field measurements, general wetland observations, and pin flags. Once the parameters of determining wetlands were established, the extent of wetlands was delineated and mapped on an aerial photograph, aided by data points taken by a Trimble® Geo XT GPS unit. Although hydric soils were determined present at several points within the extended wetland system located on-site, the wetland boundary was mapped in the field based on the extent of continuous hydrophytic vegetation and the location of non-wetland sample points. Note that a Significant Nexus Evaluation was not performed for this wetland delineation.

RESULTS

The study area contains a system of swales and depressional wetlands that collect water in a drainage in the northeastern portion of the property. The extent of the wetland complex,

location of culverts, and location of Sample Points 1 – 7 and associated soil probes are shown in Figure 1. Completed field data sheets are attached at the end of this report. Representative photos of the site are included as Photographs 1 – 4.

The results of each wetland parameter and the jurisdictional delineation are discussed in more detail in the following subsections. For clarity of presentation, hydrology is presented first to describe the drainage features and patterns on-site, followed by soils and vegetation.

Hydrology

The study area is situated within the drainage area for Goleta Slough, which discharges into the Pacific Ocean at Goleta Beach, approximately 1.6 miles to the east. The site contains a system of swales and depressional wetlands that ultimately collect water in a drainage located on the northeastern portion of the property.

At the southern end of the site, water from surface runoff and a culvert that discharges from under El Colegio Road collects and flows through via two swales before discharging into the drainage on the northeast portion of the property. In the northwestern portion of the property, water collects in a large depression, with overflows discharging into the drainage in the northeast portion of the property. Water is then discharged through a culvert under the access road to Mesa Road and the Storke family student housing complex. The hydrologic observations recorded in April 2011 indicated that the majority of the network of depressions and swales had indicators of wetland hydrology, included ponded water, a high water table, saturated soils, oxidized rhizospheres, and few and infrequent sediment and debris deposits.

In one portion of the site indicators of wetland hydrology were present, but hydric soils and hydrophytic vegetation were absent. Specifically, a small depression surrounding Sample Point 5 appears to have been created in part by vehicular traffic, with evidence of a remnant access road that has since been replaced by a route further south. Surface soil cracks and a salt crust were observed at the time of survey. However, this area was completely devoid of vegetation and lacked hydric soil indicators. Given that this area is situated at the upper limits of and is hydrologically connected with the swale system, it was included as part of the delineation area for CCC wetlands.

Soils

Hydric soil criteria are typically met when indicators demonstrate that the soil is saturated or flooded for a sufficient duration during the growing season to generate anaerobic conditions. Soils were evaluated primarily for the presence of low chroma and/or gleyed coloration, with other indicators such as the presence of mottles and organic layers. Upland areas generally lack these distinctive hydric soils field indicators, making it possible to delineate a wetland/upland boundary.

Upland soils on site (Sample Points 4, 5 and 6) are predominantly reddish brown (7.5 YR 4/3) sandy loam to dark brown (10YR 3/3) silty clay loam soils, with slight organic

enrichment. In contrast, positive indicators for hydric soils were observed within the large depression at the northern end of the property, and in the system of swales at the southern end of the property. In the western portion of the depression at the northern end of the property (Sample Point 7), a histic epipedon (surface organic layer at least 8 inches deep) over low chroma sandy loam soils (7.5 YR 2.5/1) was observed. Both the histic epipedon and the low chroma soils are positive indicators of hydric soil conditions. In addition, soils were saturated at time of survey. The soils in the swale system in the southern portion of the property (Sample Points 1 – 3) are predominantly very dark brown (10 YR 4/3) organically enriched silty clay loam soils with blue-gray mottles (5 YR 4/1) as distinct streaks along the pore linings and indiscrete mottles covering 30% of the matrix. Few areas within the swale system are dark brown (10 YR 3/2) gravelly sandy loams over fine silty sand soils with faint stratification layers indicating past deposition. Below 4 inches, these soils have a low chroma (10 YR 4/1) and have 10% prominent and distinct red mottles (2.5 YR 4/6) and 2.5% prominent gleyed mottles (10 Y 6). The stratified layers and the presence of a depleted matrix below a dark surface are both positive indicators of hydric soils.

The United States Department of Agriculture identified three soil types within the project boundary (NRCS 1981). From north to south these include Milpitas-Positas fine sandy loams, 2 to 9 percent slopes (MeC), Camarillo fine sandy loam (Ca), and Concepcion fine sandy loam, 2 to 9 percent slopes, eroded (CgC2). Of these, only Camarillo fine sandy loam (Ca), which are alluvial soils in depressions derived from calcerous rock, is listed on the NRCS Hydric Soils List for Santa Barbara County, California (NRCS 2009).

Vegetation

Vegetation within the study area is comprised of a diverse mixture of ornamental species, non-native species, and native vegetation. Planted Canary Island Date palms (*Phoenix canariensis)* and Monterey pines (*Pinus radiata*) are common, with stands of Pampas grass (*Cortaderia selloana*), non-native grassland, and remnant coastal sage scrub dominated by coyote brush (*Baccharis pilularis*) in the upland portions of the site. Within the swale system in the southern portion of the study area, hydrophytic vegetation includes a stand of arroyo willow (*Salix lasiolepis*) located at the discharge point of the culvert under El Colegio Road, and herbaceous vegetation dominated by saltgrass (*Distichlis spicata*), willow dock (*Rumex salicifolius*), curly dock (*Rumex crispus*), common spikerush (*Eleocharis macrostachya*), alta fescue (*Festuca arundinacea*), sedges (*Cyperus* spp.), bristly ox-tongue (*Picris echiodies*), prickly sowthistle (*Sochus asper*), and alkali heath (*Frankenia salina*). An additional stand of mulefat (*Baccharis salicifolia*) was observed just north of the willow stand in the southern portion of the site. Although a soil probe revealed this area lacked indicators of hydric soils and wetland hydrology, this stand was included in the delineation of CCC wetlands due to the fact that mulefat is a FACW species and would therefore indicate a potential high water table.

Bulrushes (*Scirpus spp.*), cattails (*Typha latifolia*) and arroyo willows are present in the large depression in the northern portion of the study area. These species also occur within the standing water adjacent to the culvert that discharges water from the northeastern portion of the site. In addition, portions of the depressional wetland in the northern portion of the

site contain open areas with a salt crust on the surface. Elements of salt marsh vegetation were observed, including pickleweed (*Salicornia virginica*) and saltgrass (*Distichlis spicata*), indicating this parcel may form part of the upper limits of the Goleta Slough system.

CONCLUSION

The study area contains an extensive system of swales, depressional wetlands and drainages that collect and discharge water through a culvert located in the northeastern portion of the site. This wetland system is dominated by hydrophytic vegetation and ponds sufficiently during the winter to exhibit wetland hydrology and hydric soil characteristics. The features constitute the limit of CCC wetlands as depicted on Figure 1, with the associated 100-foot buffer zone calculated using GIS software. The adjacent areas that surround the wetland do not contain dominant hydrophytic vegetation, hydric soils, or wetland hydrology and therefore do not constitute CCC wetlands.

If you have any questions regarding this report or its findings, please contact us.

Sincerely,
RINCON CONSULTANTS, INC.

Steven J. Hongola
Biological Program Manager

John Dreher Jr.
Principal Biologist

Attachments: *References*
Regulatory Background and Definitions
Wetland Delineation Map
Site Photographs
Wetland Determination Data Forms (Arid West Region)

REFERENCES

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U.S. Army Corps of Engineers (Corps). 2008. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region.* Environmental Laboratory, U.S. Army Engineer Research and Development Center, Wetlands Regulatory Assistance Program, Vicksburg, Mississippi.

REGULATORY BACKGROUND AND DEFINITIONS

Rincon conducted this wetland delineation in accordance with the methods described in the Corps' *Wetland Delineation Manual* (Corps Manual [Environmental Laboratory 1987]), and additional local guidance released in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Arid West Supplement [Corps 2008]). According to the Corps Manual, identification of wetlands is based on a three-criterion approach involving indicators of hydrophytic vegetation, hydric soil, and wetland hydrology. The Arid West Supplement presents regional wetland indicators, delineation guidance, and other information that is specific to the Arid West Region. However, identification of CCC qualifying wetlands was based on a one-criteria approach involving the presence of hydrophytic vegetation, hydric soils, or wetland hydrology.

U.S. Army Corps of Engineers

Specific data is needed to determine the presence or absence of wetlands. Such data are generally collected using the routine methods described in the Corps Manual and Arid West Supplement. The Corps requires that positive indicators for three criteria must be present (hydrophytic vegetation, hydric soil, and hydrology [described below]) to be considered a jurisdictional wetland for the purpose of federal regulations.

California Coastal Commission

The California Coastal Commission (CCC), with the assistance of California Department of Fish and Game (CDFG), is responsible for determining the presence of wetlands subject to regulation under the California Coastal Act. As the primary wetland consultant to the CCC, the CDFG essentially relies on the U.S. Fish and Wildlife Service (USFWS) wetland definition and classification system as the methodology for wetland determinations, with some minor changes in classification terminology. A major difference is that the CDFG and the CCC require the presence of only one wetland parameter (e.g., hydrology, hydric soils, or hydrophytic vegetation) for an area to qualify as a wetland. Section 30121 of the California Coastal Act (1976), the statute governing the CCC, broadly defines wetlands as:

> "Lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, or fens."

However, the CCC Administrative Regulations (Section 13577 (b)) provides a more explicit definition:

> "Wetlands are lands 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 or drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salt or other substance 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 deepwater habitats."

In addition, Coastal Plan Policy 9-9 specifically regulates wetlands, and provides a definition of those so regulated, as relevant to the current project:

"A buffer strip, a minimum of 100 feet in width, shall be maintained in natural condition along the periphery of all wetlands. No permanent structures shall be permitted within the wetland or buffer area except structures of a minor nature, i.e., fences, or structures necessary to support the uses in Policy 9-10. The upland limit of a wetland shall be defined as: 1) the boundary between land with predominantly hydrophytic cover and land with predominantly mesophytic or xerophytic cover; or 2) the boundary between soil that is predominantly hydric and soil that is predominantly nonhydric; or 3) in the case of wetlands without vegetation or soils, the boundary between land that is flooded or saturated at some time during years of normal precipitation and land that is not. Where feasible, the outer boundary of the wetland buffer zone should be established at prominent and essentially permanent topographic or man-made features (such as bluffs, roads, etc.). In no case, however, shall such a boundary be closer than 100 feet from the upland extent of the wetland area, nor provide for a lesser degree of environmental protection than that otherwise required."

Hydrophytic Vegetation

Hydrophytic vegetation is one of the three criteria necessary for wetland consideration and is defined as macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present (or plants typically adapted to growing in areas possessing hydrologic conditions and saturated soils). Emphasis is placed on the assemblage of plant species that exert a controlling influence on the character of the plant community, rather than on indicator species. Vegetation is considered to be hydrophytic when more than 50 percent of the dominant plant species of all vegetative strata (or those species making up at least 20 percent of absolute cover) have a Wetland Indicator Status of Facultative (FAC), Facultative Wetland (FACW), or Obligate Wetland (OBL) according to the USFWS' *National List of Wetland Plants that Occur in Wetlands* (Reed 1988). Plant species are assigned a wetland indicator status according to their probability of occurring in wetlands.

The *National List* separates vascular plants into the following six basic categories based on plant species frequency of occurrence in wetlands:

- Obligate Wetland (OBL). Occur almost always (estimated probability >99%) under natural conditions in wetlands.
- Facultative Wetland (FACW). Usually occur in wetlands (estimated probability 67%-99%), but occasionally found in non-wetlands.

- Facultative (FAC). Equally likely to occur in wetlands or non-wetlands (estimated probability 34%-66%).
- Facultative Upland (FACU). Usually occur in non-wetlands (estimated probability 67%-99%), but occasionally found in wetlands (estimated probability 1%-33%).
- Obligate Upland (UPL). May occur in wetlands in another region, but occur almost always (estimated probability >99%) under natural conditions in non-wetlands in the region specified.
- Non-Indicator Plants (NI). Status not assigned. Species is assumed to be upland.

The Corps considers dominance by OBL, FACW and FAC species to be a positive indicator of hydrophytic vegetation. An area is considered to have hydrophytic vegetation when greater than 50 percent of the dominant species in each vegetative stratum (tree, shrub, and herb) fall within these categories.

To determine presence of hydrophytic vegetation, data on vegetation is recorded on field data forms, including the percent absolute cover and the Wetland Indicator Status of each species. The vegetation present is divided, when appropriate, into four strata (tree, sapling/shrub, herb, and woody vine), and plant species in each stratum are ranked according to their dominance. A stratum, for sampling purposes, is defined as having 5 percent or more total plant cover; if not, that stratum is not included in the data for that observation point. Absolute cover percentage for individual species is estimated for the entire area of concern. Absolute cover is converted to relative cover to determine which species comprised at least 20 percent of the community. Species that contribute to a cumulative total of 50 percent of the total dominant coverage within a stratum, plus any species that comprised at least 20 percent of the total dominant coverage within a stratum, are noted on wetland delineation field data sheets. More than 50 percent of dominant species at each data point has to possess a Wetland Indicator Status of FAC, FACW, or OBL in order for the data point to be dominated by hydrophytic vegetation.

Hydric Soil

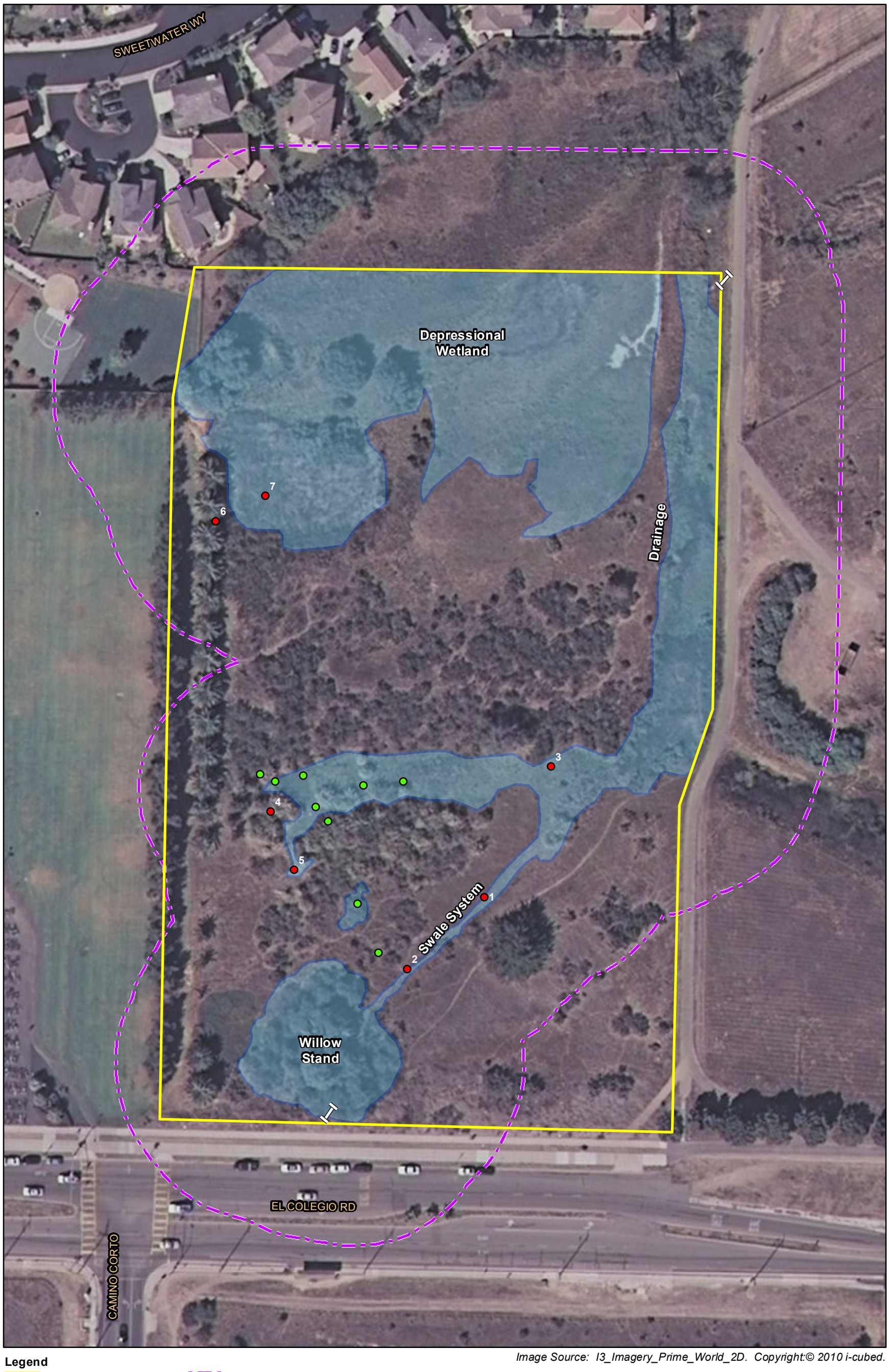
Hydric soils are saturated or inundated for a sufficient duration during the growing season to develop anaerobic or reducing conditions that favor the growth and regeneration of hydrophytic vegetation. In California, sufficient duration is considered a minimum of two weeks during the growing season. The hydric soil field indicators applicable for all regions, and indicators specifically designed for the Arid West, include (but are not limited to) inundation or saturation, stratified layers, thick dark surfaces, dark (low chroma) soil colors, bright redoximorphic concentrations (concentrations of oxidized minerals such as iron), and gleying, which indicates reducing conditions by a blue-grey color. Soils of each data point must possess at least one positive indicator of hydric soils in order to determine that a data point possesses hydric soils. Additional supporting information includes documentation of soil as hydric or reference to wet conditions in local soils surveys, both of which must be verified in the field.

Soil testing is conducted at data observation points (or soil pits) to determine whether or not the local soil profile contains hydric soil morphologies. Soil pits are dug to the level necessary to establish whether or not hydric characteristics were present within typical rooting depths (up to 18 inches deep). Indicators of hydric soils, such as buried organic matter, organic streaking, reduced soil conditions, gleyed or low-chroma soils, or sulfidic odor, are recorded if present. Soils at each data point need to possess at least one positive indicator of hydric soils to be considered a hydric soil. Soil color is evaluated with a Munsell soil color chart. Generally, hydric soils are dark in color or may be gleyed (bluish, greenish, or grayish) resulting from soil development under anoxic (without oxygen) conditions. Bright redox concentrations within an otherwise dark soil matrix indicate periodic saturation with intervening periods of soil aeration. The soil matrix is the portion of the soil layer that has the predominant color. Hydric soils are typically identified by the presence of redox concentrations associated with reduced iron or manganese.

Wetland Hydrology

Wetland hydrology is indicated when inundation or soil saturation occurs with a frequency and duration long enough to cause the development of hydric soils and plant communities dominated by hydrophytic vegetation. Hydrology conditions are met if (1) an area is inundated permanently or periodically, (2) has soil saturated to the surface at some time during the growing season of the prevalent vegetation, and/or (3) the area at least shows evidence of drainage patterns (well-defined bed and banks). Areas with evident characteristics of wetland hydrology are those where the presence of water has an overriding influence on characteristics of vegetation and soils due to anaerobic and reducing conditions, respectively. Hydrology of the selected locations within the study area was evaluated through direct observation of primary and/or secondary indicators (including Arid West Supplement indicators) of hydrology. At least one of the primary indicators of hydrology or at least two of the secondary indicators of hydrology have to exist at each data point in order to determine that a point possessed indicators of hydrology in the field.

Hydrology of the selected locations within the study area is evaluated through direct observation of indicators of hydrology (including all Arid West Supplement indicators). Positive evidence of wetland hydrology indicators are evaluated in the field, including (but not limited to) oxidized root channels, soil saturation, surface water, and drainage patterns. Per the Arid West Supplement, hydrology indicators are separated into primary and secondary groups, with only one primary indicator and two or more secondary indicators necessary to indicate wetland hydrology.



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Legend

- Study Area
- 100-ft Buffer
- Soil Probe
- CCC Wetlands
- Wetland Sample Point
- Culvert

N

0 40 80 Feet

Wetland Delineation

Figure 1

Photograph 1. View north of the study area from El Colegio Road. Vegetation within the site is comprised of a mix of non-native species as well as native wetland and upland plants.

Photograph 2. View southwest of the swale constructed to accommodate flows from the culvert under El Colegio Road. Note the hydrophytic vegetation in the foreground and stand of willows in the background.

Photograph 3. View west of Sample Point 3. This area receives flows from two swale systems. Note the dense cover of *Distichlis spicata*.

Photograph 4. View west from the culvert located in the northeast portion of the parcel. *Typha latifolia* associated with the drainage can be seen in the foreground, with the depressional wetland dominated by *Scirpus* spp. and associated willow stands in the background.

Wetland and Other Waters Determination Data Form

Habitat Type _____
Wetland/Other Waters Type Coastal freshwater marsh

Project/Site: San Joaquin Housing project City/County: Santa Barbara Sampling Date: 27Apr11
Applicant/Owner: U.C. Santa Barbara State: CA Sampling Point: 1
Investigator(s): Brett D. Hartman, Steve Hongola NWI Classification: Freshwater Emergent Wetland
Landform (hillslope, terrace, etc.) Marine terrace Local relief (concave, convex, none) Undulating Slope % 2%
Subregion (LRR) Mediterranean CA (LRR C) Soil Map Unit Name: Concepcion fine sandy loam, 2 to 9 percent slopes, eroded (CgC2).
Are climatic/hydrologic conditions on the site typical for this time of year? Yes *(If no, explain in remarks.)*
Are vegetation No, soil No, or hydrology No significantly disturbed? Are normal circumstances present? Yes
Are vegetation No, soil No, or hydrology No 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? Yes Hydric soil? Yes Wetland hydrology? Yes Is sampled area a wetland? Yes Other waters? _____

USACE Jurisdiction

Abutting Waters ____ Adjacent to Waters ____ Tributary to Waters Yes Isolated (with interstate commerce) ____ Isolated (non-jurisdictional) ____
Explain:

Evaluation of Features Designated "Other Waters of the United States"

Ordinary High Water Mark (OHWM) Characteristics: Line Impressed on Bank ☐ Shelving ☐ Changes in Character of Soil ☐ Bed and Bank ☐
Destruction of Terrestrial Vegetation ☐ Presence of Litter and Debris ☑ Scour ☐ Deposition ☑ Other (please specify) ☐
Feature Designation: Perennial ☐ Intermittent ☐ Ephemeral ☐ Blue-line on USGS Quad ☐
Natural Drainage ☐ Artificial Drainage ☑ Navigable Water ☐

Remarks

3' wide swale, accomodates flows from culvert under El Colegio Rd; drains through culvert in north of property, part of Goleta Slough system

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50%=____ 20%=____ Total Cover:			

Sapling/Shrub Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50%=____ 20%=____ Total Cover:			

Herb Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. Rumex salicifolius	35%	Yes	OBL
2. Festuca arundinacea	20%	Yes	FAC
3. Sonchus asper	5%	No	FAC
4. Digitaria sanguinalis	2%	No	FACU
5. Picris echioides	1%	No	FAC
6.			
7.			
8.			
50%= 32% 20%= 12.5% Total Cover:			

Woody/Vine Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
50%=____ 20%=____ Total Cover:			

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

Dominance Test Worksheet
Number of dominant species that are OBL, FACW, or FAC: 2 (A)
Total number of dominant species across all strata: 2 (B)
Percent of dominant species that are OBL, FACW, or FAC: 100% (AB)

Prevalence Index Worksheet

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators
____ Dominance Text is >50%
____ Prevalence Index is ≤ 3.0[1]
____ Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)
[1] *Indicators of hydric soil and wetland hydrology must be present.*

Hydrophytic Vegetation? Yes

Sampling Point 1

Soils

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
5"	7.5YR 3/1							Silty clay loam, dark OM surface
18"	10YR 4/3		5YR 4/1		C	PL, M		Silty clay loam

[1]Types: C = Concentration D = Depletion RM = Reduced Matrix [2]Location: PL = Pore Lining RC = Root Channel 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 (AG) (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 Vetric (F18)
- ☐ Red Parent Materials (TF2)
- ☐ Vegetated Sand/Gravel Bars
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: _____ Depth (Inches) _____ Hydric Soil? Yes

Remarks

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☑ Sediment Deposits (B2) (Nonriverine)
- ☑ Drift Deposits (B3) (Nonriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed 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) _____ Wetland Hydrology? Yes ☑ No ☐

Water Table Present? Yes ☐ No ☑ Depth (inches) _____

Saturation Present? Yes ☐ No ☑ Depth (inches) _____ *(includes capillary fringe)*

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

Remarks

Pit located in 3' wide swale, appears to have been dredged to accommodate flows from culvert under El Colegio Rd.

Wetland and Other Waters Determination Data Form

Habitat Type _____
Wetland/Other Waters Type Coastal freshwater marsh

Project/Site: San Joaquin Housing project City/County: Santa Barbara Sampling Date: 27Apr11
Applicant/Owner: U.C. Santa Barbara State: CA Sampling Point: 2
Investigator(s): Brett D. Hartman, Steve Hongola NWI Classification: Freshwater Emergent Wetland
Landform (hillslope, terrace, etc.) Marine terrace Local relief (concave, convex, none) Undulating Slope % 2%
Subregion (LRR) Mediterranean CA (LRR C) Soil Map Unit Name: Concepcion fine sandy loam, 2 to 9 percent slopes, eroded (CgC2).
Are climatic/hydrologic conditions on the site typical for this time of year? Yes *(If no, explain in remarks.)*
Are vegetation No, soil No, or hydrology No significantly disturbed? Are normal circumstances present? Yes
Are vegetation No, soil No, or hydrology No 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? Yes Hydric soil? Yes Wetland hydrology? Yes Is sampled area a wetland? Yes Other waters? _____

USACE Jurisdiction

Abutting Waters ____ Adjacent to Waters ____ Tributary to Waters Yes Isolated (with interstate commerce) ____ Isolated (non-jurisdictional) ____
Explain:

Evaluation of Features Designated "Other Waters of the United States"

Ordinary High Water Mark (OHWM) Characteristics: Line Impressed on Bank ☐ Shelving ☐ Changes in Character of Soil ☐ Bed and Bank ☐
Destruction of Terrestrial Vegetation ☐ Presence of Litter and Debris ☑ Scour ☐ Deposition ☑ Other (please specify) ☐
Feature Designation: Perennial ☐ Intermittent ☐ Ephemeral ☐ Blue-line on USGS Quad ☐
Natural Drainage ☐ Artificial Drainage ☑ Navigable Water ☐

Remarks

2' wide swale, accomodates flows from culvert under El Colegio Rd; drains through culvert in north of property, part of Goleta Slough system

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50%=____ 20%=____ Total Cover:			

Sapling/Shrub Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50%=____ 20%=____ Total Cover:			

Herb Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. Eleocharis macrostachya	90%	Yes	OBL
2. Sonchus asper	1%	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
50%=45% 20%=18% Total Cover:			

Woody/Vine Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
50%=____ 20%=____ Total Cover:			

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

Dominance Test Worksheet
Number of dominant species that are OBL, FACW, or FAC: 1 (A)
Total number of dominant species across all strata: 1 (B)
Percent of dominant species that are OBL, FACW, or FAC: 100% (AB)

Prevalence Index Worksheet

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators
____ Dominance Text is >50%
____ Prevalence Index is ≤ 3.0[1]
____ Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)
[1]*Indicators of hydric soil and wetland hydrology must be present.*

Hydrophytic Vegetation? Yes

Sampling Point 2

Soils

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
9"	10YR 3/1							Silty clay loam, OM enrichment
18"	7.5YR 4/2	>60%						Silty clay loam

[1]Types: C = Concentration D = Depletion RM = Reduced Matrix [2]Location: PL = Pore Lining RC = Root Channel 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 (AG) (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 Vetric (F18)
- ☐ Red Parent Materials (TF2)
- ☐ Vegetated Sand/Gravel Bars
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: _____ Depth (Inches) _____ Hydric Soil? Yes

Remarks

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☑ Sediment Deposits (B2) (Nonriverine)
- ☑ Drift Deposits (B3) (Nonriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed 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) _____ Wetland Hydrology? Yes ☑ No ☐

Water Table Present? Yes ☐ No ☑ Depth (inches) _____

Saturation Present? Yes ☐ No ☑ Depth (inches) _____ *(includes capillary fringe)*

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

Remarks

Pit located in 2' wide swale,

Wetland and Other Waters Determination Data Form

Habitat Type _____

Wetland/Other Waters Type Coastal freshwater marsh

Project/Site: San Joaquin Housing project City/County: Santa Barbara Sampling Date: 27Apr11

Applicant/Owner: U.C. Santa Barbara State: CA Sampling Point: 3

Investigator(s): Brett D. Hartman, Steve Hongola NWI Classification: Freshwater Emergent Wetland

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

Subregion (LRR) Mediterranean CA (LRR C) Soil Map Unit Name: Camarillo fine sandy loam (Ca)

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

Are vegetation No, soil No, or hydrology No significantly disturbed? Are normal circumstances present? Yes

Are vegetation No, soil No, or hydrology No 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? Yes Hydric soil? Yes Wetland hydrology? Yes Is sampled area a wetland? Yes Other waters? _____

USACE Jurisdiction

Abutting Waters ____ Adjacent to Waters Yes Tributary to Waters Yes Isolated (with interstate commerce) ____ Isolated (non-jurisdictional) ____

Explain:

Evaluation of Features Designated "Other Waters of the United States"

Ordinary High Water Mark (OHWM) Characteristics: Line Impressed on Bank ☐ Shelving ☐ Changes in Character of Soil ☐ Bed and Bank ☐
Destruction of Terrestrial Vegetation ☐ Presence of Litter and Debris ☐ Scour ☐ Deposition ☐ Other (please specify) ☐
Feature Designation: Perennial ☐ Intermittent ☐ Ephemeral ☐ Blue-line on USGS Quad ☐
Natural Drainage ☐ Artificial Drainage ☐ Navigable Water ☐

Remarks

Pit located in wide depression that collects runoff from two swales located upslope; part of Goleta Slough system

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50%=____ 20%=____ Total Cover:			

Sapling/Shrub Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2. 10%			
3. 2.5%			
4.			
50%=____ 20%=____ Total Cover:			

Herb Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. Distichlis spicata	90%	Yes	FACW
2. Festuca arundinacea	5%	No	FAC
3. Rumex salicifolius	2%	No	OBL
4. Picris echioides	1%	No	FAC
5.			
6.			
7.			
8.			
50%= 49% 20%= 19% Total Cover:			

Woody/Vine Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
50%=____ 20%=____ Total Cover:			

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

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 1 (A)

Total number of dominant species across all strata: 1 (B)

Percent of dominant species that are OBL, FACW, or FAC: 100% (AB)

Prevalence Index Worksheet

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators

____ Dominance Text is >50%
____ Prevalence Index is ≤ 3.0[1]
____ Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation? Yes

Sampling Point 3

Soils

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
4"	10YR 3/2							Gravelly sandy loam; OM streaking
18"	10YR 4/1		2.5 YR 4/6	10%	C	RC		Fine silty sand; faint stratified layers
			10Y 6	2.5%	D	M		

[1]Types: C = Concentration D = Depletion RM = Reduced Matrix [2]Location: PL = Pore Lining RC = Root Channel 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 (AG) (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 Vetric (F18)
- ☐ Red Parent Materials (TF2)
- ☐ Vegetated Sand/Gravel Bars
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: _____ Depth (Inches) _____ Hydric Soil? Yes

Remarks

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☑ Sediment Deposits (B2) (Nonriverine)
- ☑ Drift Deposits (B3) (Nonriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☑ Oxidized Rhizospheres (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed 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) _____ Wetland Hydrology? Yes ☑ No ☐

Water Table Present? Yes ☑ No ☐ Depth (inches) 17"

Saturation Present? Yes ☐ No ☑ Depth (inches) _____ *(includes capillary fringe)*

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

Remarks

Habitat Type _____

Wetland and Other Waters Determination Data Form

Wetland/Other Waters Type _____

Project/Site: San Joaquin Housing project City/County: Santa Barbara Sampling Date: 27Apr11

Applicant/Owner: U.C. Santa Barbara State: CA Sampling Point: 4

Investigator(s): Brett D. Hartman, Steve Hongola NWI Classification: Freshwater Forested/SCrub

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

Subregion (LRR) Mediterranean CA (LRR C) Soil Map Unit Name: Camarillo fine sandy loam (Ca)

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

Are vegetation No, soil No, or hydrology No significantly disturbed? Are normal circumstances present? Yes

Are vegetation No, soil No, or hydrology No 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? No Hydric soil? No Wetland hydrology? No Is sampled area a wetland? No Other waters? No

USACE Jurisdiction

Abutting Waters ____ Adjacent to Waters ____ Tributary to Waters ____ Isolated (with interstate commerce) ____ Isolated (non-jurisdictional) ____

Explain:

Evaluation of Features Designated "Other Waters of the United States"

Ordinary High Water Mark (OHWM) Characteristics: Line Impressed on Bank ☐ Shelving ☐ Changes in Character of Soil ☐ Bed and Bank ☐
Destruction of Terrestrial Vegetation ☐ Presence of Litter and Debris ☐ Scour ☐ Deposition ☐ Other (please specify) ☐
Feature Designation: Perennial ☐ Intermittent ☐ Ephemeral ☐ Blue-line on USGS Quad ☐
Natural Drainage ☐ Artificial Drainage ☐ Navigable Water ☐

Remarks

Pit located at upper end of swale system; in adjacent uplands

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50%=____ 20%=____ Total Cover:			

Sapling/Shrub Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50%=____ 20%=____ Total Cover:			

Herb Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. Cortaderia selloana	60%	Yes	
2. Digitaria sanguinalis	30%	Yes	FACU
3. Picris echioides	5%	No	FAC
4.			
5.			
6.			
7.			
8.			
50%= 47% 20%= 19% Total Cover:			

Woody/Vine Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
50%=____ 20%=____ Total Cover:			

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

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 0 (A)

Total number of dominant species across all strata: 2 (B)

Percent of dominant species that are OBL, FACW, or FAC: 0% (AB)

Prevalence Index Worksheet

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators

____ Dominance Text is >50%
____ Prevalence Index is ≤ 3.0[1]
____ Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation? No

Sampling Point 4

Soils

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
18"	7.5YR 3/3							Sandy loam
								Few iron stains, OM streaking

[1]Types: C = Concentration D = Depletion RM = Reduced Matrix [2]Location: PL = Pore Lining RC = Root Channel 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 (AG) (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 Vetric (F18)
- ☐ Red Parent Materials (TF2)
- ☐ Vegetated Sand/Gravel Bars
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: _____ Depth (Inches) _____ Hydric Soil? No

Remarks

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift Deposits (B3) (Nonriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed 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) _____ Wetland Hydrology? Yes ☐ No ☑

Water Table Present? Yes ☐ No ☑ Depth (inches) _____

Saturation Present? Yes ☐ No ☑ Depth (inches) _____ *(includes capillary fringe)*

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

Remarks

Habitat Type _____

Wetland and Other Waters Determination Data Form

Wetland/Other Waters Type _____

Project/Site: San Joaquin Housing project City/County: Santa Barbara Sampling Date: 27Apr11

Applicant/Owner: U.C. Santa Barbara State: CA Sampling Point: 5

Investigator(s): Brett D. Hartman, Steve Hongola NWI Classification: Freshwater Forested/SCrub

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

Subregion (LRR) Mediterranean CA (LRR C) Soil Map Unit Name: Camarillo fine sandy loam (Ca)

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

Are vegetation No, soil No, or hydrology No significantly disturbed? Are normal circumstances present? Yes

Are vegetation No, soil No, or hydrology No 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? No Hydric soil? No Wetland hydrology? Yes Is sampled area a wetland? No Other waters? No

USACE Jurisdiction

Abutting Waters ____ Adjacent to Waters ____ Tributary to Waters ____ Isolated (with interstate commerce) ____ Isolated (non-jurisdictional) ____

Explain:

Evaluation of Features Designated "Other Waters of the United States"

Ordinary High Water Mark (OHWM) Characteristics: Line Impressed on Bank ☐ Shelving ☐ Changes in Character of Soil ☐ Bed and Bank ☐
Destruction of Terrestrial Vegetation ☐ Presence of Litter and Debris ☐ Scour ☐ Deposition ☐ Other (please specify) ☐
Feature Designation: Perennial ☐ Intermittent ☐ Ephemeral ☐ Blue-line on USGS Quad ☐
Natural Drainage ☐ Artificial Drainage ☐ Navigable Water ☐

Remarks

Pit located in small depression that appears to be a result of OHV activity; evidence of remnant road

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50%=____ 20%=____ Total Cover:			

Sapling/Shrub Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50%=____ 20%=____ Total Cover:			

Herb Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
50%=____ 20%=____ Total Cover:			

Woody/Vine Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
50%=____ 20%=____ Total Cover:			

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

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 0 (A)

Total number of dominant species across all strata: 0 (B)

Percent of dominant species that are OBL, FACW, or FAC: 0% (AB)

Prevalence Index Worksheet

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators

____ Dominance Text is >50%
____ Prevalence Index is ≤ 3.0[1]
____ Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation? No

Sample point devoid of vegetation

Sampling Point 5

Soils

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
18"	7.5YR 3/3		5YR 4/3 (faint, few)					Sandy loam

[1]Types: C = Concentration D = Depletion RM = Reduced Matrix [2]Location: PL = Pore Lining RC = Root Channel 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 (AG) (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 Vetric (F18)
- ☐ Red Parent Materials (TF2)
- ☐ Vegetated Sand/Gravel Bars
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: _____ Depth (Inches) _____ Hydric Soil? No

Remarks

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift Deposits (B3) (Nonriverine)
- ☑ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed 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) _____ Wetland Hydrology? Yes ☑ No ☐

Water Table Present? Yes ☐ No ☑ Depth (inches) _____

Saturation Present? Yes ☐ No ☑ Depth (inches) _____ *(includes capillary fringe)*

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

Remarks

Salt crust and soil cracking evident

Habitat Type: Ornamental

Wetland and Other Waters Determination Data Form

Wetland/Other Waters Type: _____

Project/Site: San Joaquin Housing project City/County: Santa Barbara Sampling Date: 27Apr11

Applicant/Owner: U.C. Santa Barbara State: CA Sampling Point: 6

Investigator(s): Brett D. Hartman, Steve Hongola NWI Classification: None

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

Subregion (LRR) Mediterranean CA (LRR C) Soil Map Unit Name: Milpitas-Positas fine sandy loams, 2 to 9 percent slopes (MeC)

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

Are vegetation No, soil No, or hydrology No significantly disturbed? Are normal circumstances present? Yes

Are vegetation No, soil No, or hydrology No 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? No Hydric soil? No Wetland hydrology? No Is sampled area a wetland? No Other waters? No

USACE Jurisdiction

Abutting Waters ____ Adjacent to Waters ____ Tributary to Waters ____ Isolated (with interstate commerce) ____ Isolated (non-jurisdictional) ____

Explain:

Evaluation of Features Designated "Other Waters of the United States"

Ordinary High Water Mark (OHWM) Characteristics: Line Impressed on Bank ☐ Shelving ☐ Changes in Character of Soil ☐ Bed and Bank ☐
Destruction of Terrestrial Vegetation ☐ Presence of Litter and Debris ☐ Scour ☐ Deposition ☐ Other (please specify) ☐
Feature Designation: Perennial ☐ Intermittent ☐ Ephemeral ☐ Blue-line on USGS Quad ☐
Natural Drainage ☐ Artificial Drainage ☐ Navigable Water ☐

Remarks

Pit located adjacent to depressional wetland on north side of property; in adjacent uplands under a row of canary island date plams

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.	80%	Yes	
2.			
3.			
4.			
50%=____ 20%=____ Total Cover:			

Sapling/Shrub Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50%=____ 20%=____ Total Cover:			

Herb Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. Digitaria sanguinalis	25%	Yes	FACU
2. Bromus diandrus	10%	Yes	
3. Bromus molis	2%	No	
4.			
5.			
6.			
7.			
8.			
50%=18 20%=7 Total Cover:			

Woody/Vine Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
50%=____ 20%=____ Total Cover:			

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

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 0 (A)

Total number of dominant species across all strata: 3 (B)

Percent of dominant species that are OBL, FACW, or FAC: 0% (AB)

Prevalence Index Worksheet

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators

____ Dominance Text is >50%
____ Prevalence Index is ≤ 3.0[1]
____ Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation? No

Sampling Point 6

Soils

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
4.5"	10YR 3/3							Silty clay loam
18"	7.5YR 3/2 - 3/5							Sandy loams

[1]Types: C = Concentration D = Depletion RM = Reduced Matrix [2]Location: PL = Pore Lining RC = Root Channel 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 (AG) (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 Vetric (F18)
- ☐ Red Parent Materials (TF2)
- ☐ Vegetated Sand/Gravel Bars
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: _____ Depth (Inches) _____ Hydric Soil? No

Remarks

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift Deposits (B3) (Nonriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed 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) _____ Wetland Hydrology? Yes ☐ No ☑

Water Table Present? Yes ☐ No ☑ Depth (inches) _____

Saturation Present? Yes ☐ No ☑ Depth (inches) _____ *(includes capillary fringe)*

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

Remarks

Wetland and Other Waters Determination Data Form

Habitat Type _____
Wetland/Other Waters Type Coastal freshwater marsh

Project/Site: San Joaquin Housing project City/County: Santa Barbara Sampling Date: 27Apr11
Applicant/Owner: U.C. Santa Barbara State: CA Sampling Point: 7
Investigator(s): Brett D. Hartman, Steve Hongola NWI Classification: Freshwater emergent wetland
Landform (hillslope, terrace, etc.) Marine terrace Local relief (concave, convex, none) Undulating Slope % 1%
Subregion (LRR) Mediterranean CA (LRR C) Soil Map Unit Name: Milpitas-Positas fine sandy loams, 2 to 9 percent slopes (MeC)
Are climatic/hydrologic conditions on the site typical for this time of year? Yes *(If no, explain in remarks.)*
Are vegetation No, soil No, or hydrology No significantly disturbed? Are normal circumstances present? Yes
Are vegetation No, soil No, or hydrology No 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? Yes Hydric soil? Yes Wetland hydrology? Yes Is sampled area a wetland? Yes Other waters? _____

USACE Jurisdiction

Abutting Waters ____ Adjacent to Waters ____ Tributary to Waters ____ Isolated (with interstate commerce) ____ Isolated (non-jurisdictional) ____
Explain:

Evaluation of Features Designated "Other Waters of the United States"

Ordinary High Water Mark (OHWM) Characteristics: Line Impressed on Bank ☐ Shelving ☐ Changes in Character of Soil ☐ Bed and Bank ☐
Destruction of Terrestrial Vegetation ☐ Presence of Litter and Debris ☐ Scour ☐ Deposition ☐ Other (please specify) ☐
Feature Designation: Perennial ☐ Intermittent ☐ Ephemeral ☐ Blue-line on USGS Quad ☐
Natural Drainage ☐ Artificial Drainage ☐ Navigable Water ☐

Remarks

Pit located in depressional wetland on north side of property; part of Goleta Slough wetland system

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50%=____ 20%=____ Total Cover:			

Sapling/Shrub Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50%=____ 20%=____ Total Cover:			

Herb Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. Scirpus spp.	100%	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
50%=18 20%=7 Total Cover:			

Woody/Vine Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
50%=____ 20%=____ Total Cover:			

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

Dominance Test Worksheet
Number of dominant species that are OBL, FACW, or FAC: 1 (A)
Total number of dominant species across all strata: 1 (B)
Percent of dominant species that are OBL, FACW, or FAC: 100% (AB)

Prevalence Index Worksheet

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators
____ Dominance Text is >50%
____ Prevalence Index is ≤ 3.0[1]
____ Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)
[1]*Indicators of hydric soil and wetland hydrology must be present.*

Hydrophytic Vegetation? Yes

Veg consists of dense Scripus cover, including thatch

Sampling Point 7

Soils

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
8"	Organic layer							Histic epipedon
18"	7.5YR 2.5/1							Sandy loam

[1]Types: C = Concentration D = Depletion RM = Reduced Matrix [2]Location: PL = Pore Lining RC = Root Channel 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 (AG) (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 Vetric (F18)
- ☐ Red Parent Materials (TF2)
- ☐ Vegetated Sand/Gravel Bars
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: _____ Depth (Inches) _____ Hydric Soil? Yes

Remarks

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift Deposits (B3) (Nonriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed 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) _____ Wetland Hydrology? Yes ☑ No ☐

Water Table Present? Yes ☐ No ☑ Depth (inches) _____

Saturation Present? Yes ☑ No ☐ Depth (inches) _____ *(includes capillary fringe)*

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

Remarks