Draft

Aquatic Resource Delineation Report



Prepared for:



Stanislaus County



November 2016

Draft

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Prepared for:



Stanislaus County 1010 10th Street, Suite 3400 Modesto, CA 95354

Contact:

Keith Boggs Assistant Chief Executive Officer 209/652-1514

Prepared by:

AECOM 2020 L Street, Suite 400 Sacramento, CA 95811

> Contact: Tammie Beyerl Senior Botanist 916/414-5800



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ACRONYMS AND ABBREVIATIONS

CWA	Clean Water Act				
EPA	Environmental Protection Agency				
FAC	Facultative				
FACU	Facultative Upland				
FACW	Facultative Wetland				
GPS	Global Positioning System				
msl	mean sea level				
NRCS	Natural Resources Conservation Service				
NI	No Indicator				
NL	Not Listed				
OBL	Obligate				
OHWM	Ordinary High Water Mark				
RPW	Relatively Permanent Water				
SCS	Soil Conservation Service				
TNW	Traditional Navigable Water				
UPL	Upland				
USACE	U.S. Army Corps of Engineers				
USGS	U.S. Geological Survey				

INTRODUCTION

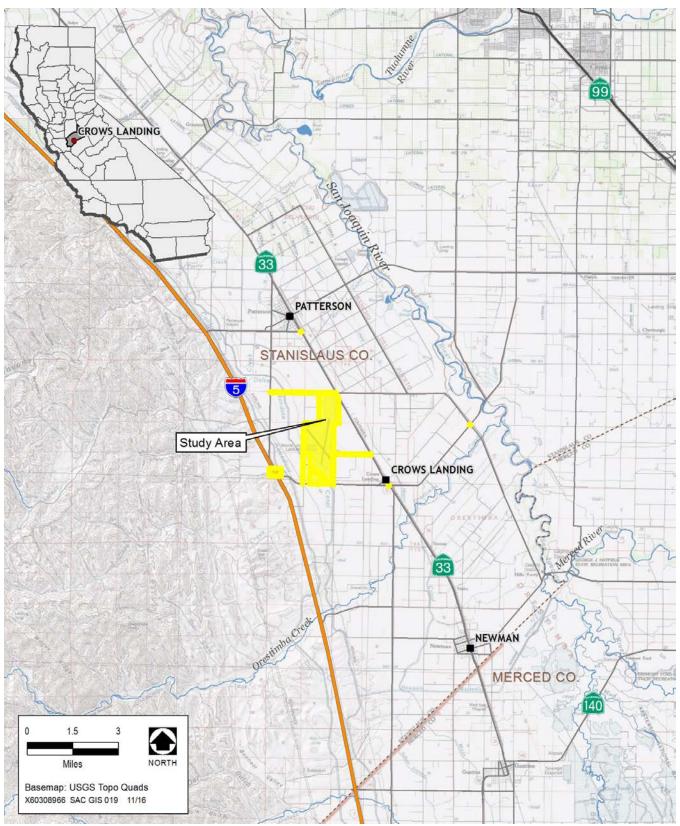
The proposed Crow's Landing Industrial Business Park (CLIBP) (project) is located in Stanislaus County, California. The approximately 1,647-acre study area for this delineation consists of the 1,528-acre CLIBP project site and 119 acres of off-site infrastructure improvement areas. The project site is situated approximately 3 miles southeast of the City of Patterson, 17 miles southwest of the City of Modesto, and 1mile east of Interstate 5 (Exhibit 1). Off-site improvement areas for road and intersection upgrades are located adjacent to and surrounding the project site (Exhibit 1). Access to the study area is available from Bell Road via the Fink Road exit off of Interstate 5.

The study area is located in Sections 8, 9, 17, and 20 within the U.S. Geological Survey (USGS) 7.5-minute Crow's Landing quadrangle, Township 6 South, Range 8 East (Exhibit 2). Site topography is relatively flat with an elevation range of roughly 110 to 200 feet above mean sea level (msl) and slopes generally to the northeast toward State Route 33. The majority of the project site is used for agriculture, consisting of corn, tomato, and legume field crops. Additional crops found in the off-site roadway improvement areas include almond, walnut, and pistachio orchards. A Naval Auxiliary Landing Field that was transferred from the Navy to NASA in 1994 and was decommissioned in 1997 is located in the center of the project site. Beginning in 1999, NASA began the process of transferring ownership of the property to Stanislaus County. Prior to completing the land transfer to Stanislaus County, NASA initiated a series of clean-up operations to remediate soil and groundwater contamination that resulted from operation of the site as a Navy Auxiliary Landing Facility and then as a NASA flight facility.

The site includes two decommissioned military runways and associated aprons and taxiways, internal roadways, a control tower, lighting towers, and remnants of the former airfield lighting and navigational aids (a segmented circle). All structures associated with the defunct Naval facilities have been razed leaving concrete and asphalt pads, paved roads, landscaping, and disturbed ground. Only the former air traffic control tower and former airfield lighting vaults remain. A site that formerly housed Navy ammunition bunkers and refuse disposal pits is located north of the runway intersection. Two excavated sewer treatment basins that were part of the Navy's sewer system are located in the northeast portion of the site, but they are no longer used and overgrown with ruderal vegetation.

A channelized creek, Little Salado Creek, traverses the study area and multiple smaller ditches and basins are also present. Aside from agricultural fields, paved runways are the largest land cover on the project site and paved roadways are the largest land cover in the off-site improvement areas. The Delta-Mendota Canal bisects the project site in a northwest-southeast direction in a separate right-of-way that is excluded from the project site. The California Aqueduct flows in a north-south direction just west of the project boundary. The San Joaquin River, a traditional navigable water of the United States, is located approximately 4 miles east of the project site.

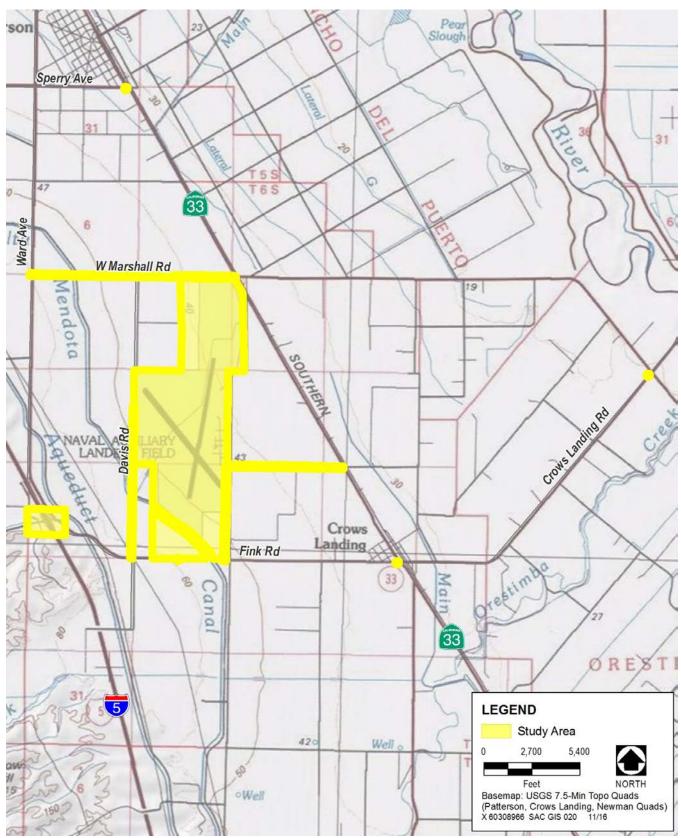
The purpose of this report is to provide an accurate quantification and delineation of waters of the United States, including wetlands, as defined by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA) for the project. The delineation of waters of the United States is considered preliminary until verified by the Sacramento District of the USACE.



Source: Stanislaus County 2013

Regional Location of the Project Site

Exhibit 1



Source: Stanislaus County 2013

Project Site and Vicinity

Exhibit 2

PROJECT DESCRIPTION

The proposed project would be developed over an approximately 30-year timeframe and include the following major components:

- Adoption of a specific plan and rezone to support the development of various aviation-compatible land uses on the former military site;
- Planning and construction of initial "backbone" infrastructure to ready the site for long-term leaseholds and development (e.g., water supply, wastewater, hydrology and drainage improvements, and dry utilities);
- Planning and construction of internal roadways and phased improvements to off-site roads and intersections in the project vicinity;
- Adoption of an Airport Layout Plan (ALP) and Narrative Report to support the development of a public-use, general aviation airport to support and complement the proposed CLIBP; and
- An amendment to the Stanislaus County Airport Land Use Compatibility Plan (ALUCP) to provide new policies specific to the new public-use airport.

The proposed specific plan identifies a suite of general land use types. As shown in Table 1, seven general land use categories were identified for development on the project site. These land uses would be developed in three 10-year phases to create approximately 14,000 to 15,000 jobs at full build out.

As shown in Table 1, approximately 83 percent of the site (or approximately 1,274 of the estimated 1,528 acres) has been identified for development. The remaining 254 acres would accommodate necessary infrastructure. Each broad land use category is described in the specific plan and summarized below. The specific plan also identifies several, more defined land uses that could be developed in the specific plan area in accordance with the broad categories presented in Table 1.

Table 1 Anticipated Development by Land Use Category (acres)							
Land Use	Description	Total Use (acres)					
Logistics/Distribution	Packaging, warehouse, and distribution, etc.	349					
Light Industrial	Light industrial manufacturing, machine shops, etc.	350					
Business Park	Research and development, business support services, etc.	78					
Public Facilities	Municipal and County offices, professional offices, emergency services, etc.	68					
General Aviation	Airport runways, aprons, hangars, etc.	370					
Aviation Related	Parcel distribution, aviation classroom training, etc.	46					
Green Space / Multimodal Transportation Corridor	Bicycle and pedestrian path, greenway, monument to military use.	13					
All Uses by Phase		1,274					
Infrastructure	Internal roadways, water and wastewater systems, stormwater drainage, etc.	254					
Plan Area Total		1,528					

Off-site two-lane roadways would be rebuilt as a part of the project, including portions of Bell Road, Davis Road, Ike Crow Road and Marshall Road. Marshall Road would be expanded from two to four lanes adjacent to the

project site as a part of the project. Proposed improvements at the Fink Road-Interstate 5 interchange include widening beneath the Interstate 5 overpass to construct a left-turn lane to the southbound onramp. Signal lights would also be installed at the following off-site intersection locations:

- Sperry Avenue at State Route 33
- ► Marshall Road at Ward Avenue
- Marshall Road at State Route 33
- Marshall Road at project site entrance
- ► Ike Crow Road at State Route 33
- ► Fink Road at Bell Road
- ► Fink Road at project site entrance
- Crow's Landing Road at Marshall Road
- ► Fink Road at State Route 33
- Fink Road at Interstate 5 northbound ramps

DELINEATION METHODS

Before conducting the field delineation survey of the study area, AECOM wetland ecologists reviewed color aerial imagery of the project site on Google Earth, National Wetlands Inventory (NWI) data, and the Natural Resources Conservation Service's (NRCS) soil survey of *Stanislaus County, California, Western Part* (NRCS Web Soil Survey 2013, 2016) to determine areas of potential USACE jurisdiction. Aquatic resources delineation was conducted at the project site on November 26 and December 26, 2013, by AECOM wetland ecologists Tammie Beyerl and Pam Valle. Delineation of the off-site improvement areas was conducted by AECOM wetland ecologist Charlie Battaglia on October 18, 2016. Daytime temperatures were in the low to high 60°F range and skies were sunny and clear during all of the delineation field surveys. Annual precipitation was below average in the area through December, 2013 (DWR 2013), but was 111 percent of average for the water year as of September 30, 2016 (DWR 2016).

The USACE 1987 wetlands delineation manual (Environmental Laboratory 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Environmental Laboratory 2008) were used to delineate wetlands that are potentially subject to USACE jurisdiction under Section 404 of the CWA. The 1987 manual and 2008 Arid West Supplement provide technical guidelines and methods for the three-parameter approach to determining the location and boundaries of jurisdictional wetlands. This approach requires that an area support positive indicators of hydrophytic vegetation, hydric soils, and wetland hydrology to be considered a jurisdictional wetland. Routine wetland determination data forms were completed for 17 sample points and are provided in Appendix A. Potential jurisdictional areas were identified and mapped in the field and later digitized onto aerial imagery. Sample point locations were recorded digitally using a global positioning system (GPS) data logger (Trimble XH) and imported onto an electronic version of the aerial photograph. GPS data were recorded in North American Datum of 1983.

To determine whether the area at a sample point was dominated by hydrophytic vegetation, plant species at each sample site were recorded and the wetland indicator status was recorded for the dominant species using USACE's *National Wetlands Plant List for the Arid West Region* (Lichvar and Kartesz 2013). A species is considered dominant when that species—individually or collectively—accounts for 50 percent of the total absolute cover in a vegetation stratum. Additional codominant species are identified if those species account for at least 20 percent of the absolute cover in a designated vegetation stratum (Environmental Laboratory 2008).

Hydrophytic species include those listed as obligate (OBL), facultative wetland (FACW), or facultative (FAC) species, which correspond to a given species frequency of occurrence in wetlands. The plant indicator categories are defined as:

- ► OBL: greater than 99 percent occurrence in wetlands,
- ► FACW: between 66 percent and 99 percent occurrence in wetlands, and
- ► FAC: between 33 percent and 66 percent occurrence in wetlands.

For purposes of this delineation, a sample site was considered to have hydrophytic vegetation if greater than 50% of the dominant species had an indicator status of FAC or wetter. This report uses the following indicators to identify species not considered hydrophytic:

- ► *Facultative upland (FACU)* species that usually occur in nonwetlands (67 percent–99 percent estimated probability) but are occasionally found in wetlands (1 percent–33 percent estimated probability),
- *Obligate upland (UPL)* species that may occur in wetlands in another region, but almost always (greater than 99 percent) occur in nonwetlands in California (Region 0) under natural conditions,
- ► *No indicator (NI)*—species for which insufficient information was available to determine an indicator status, and
- ► Not listed (NL)—species not listed in National Wetland Plant List (Lichvar et. al. 2016).

Standard protocol states that a species with an NL designation should be considered UPL when the delineator completes the "Prevalence Index Worksheet" portion of the wetland delineation data form (Environmental Laboratory 2010). Botanical nomenclature follows *The Jepson Manual: Vascular Plants of California, Second Edition* (Baldwin et al. 2012).

Wetland hydrology was assessed by recording observations such as inundation, oxidized rhizospheres along living root channels, and saturation signatures on aerial imagery. In addition, the potentially jurisdictional areas were all evaluated in terms of their status as a navigable waterway or their adjacency or hydrological connection to a navigable waterway.

Waters of the United States were delineated based on the ordinary high water mark (OHWM) using the OHWM field guide (Lichvar and McColley 2008). A drainage feature's OHWM typically corresponds with characteristics such as shelving, scour lines, and other natural linear features which define the bed and bank portion of the channel that floods under normal conditions (USACE 2005).

Soils were examined by digging soil test pits to determine whether hydric soils exist in a sampling location. Soils were described in terms of depth, matrix color, moisture status, and other diagnostic features indicative of hydric soils, such as the presence of concretions and oxidized rhizospheres (a redoximorphic feature, according to Vepraskas [1995]). Hydric soil indicators were based on those provided in the 1987 USACE manual, 2008 Arid West Supplement, *Field Indicators of Hydric Soils in the United States: A Guide for Identifying and Delineating Hydric Soils* (USDA and NRCS 2010), and Vepraskas (1995).

The U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook (USACE 2007) was consulted to aid the preliminary determination that an area would be subject to USACE jurisdiction under CWA Section 404. The significant nexus test—outlined in a memorandum jointly authored by the U.S. Environmental Protection Agency (EPA) and USACE—was applied to each potentially jurisdictional habitat type (Grumbles and Woodley 2008). To facilitate jurisdictional determination consistent with the guidance, each water body delineated was evaluated as a Traditional Navigable Water (TNW), Relatively Permanent Water (RPW), or non-RPW based on the following definitions:

- ► *TNWs*—all waters subject to the ebb and flow of the tide, or waters that are presently used, have been used in the past, or may be used in the future to transport interstate or foreign commerce, and all waters that are navigable in fact under federal law for any purpose
- *RPWs*—waters that flow continuously at least seasonally (typically at least 3 months of the year) and are not TNWs
- ► Non-RPWs—waters that do not have continuous flow at least seasonally
- ► The following types of water bodies are subject to CWA jurisdiction:
- ► all TNWs and adjacent wetlands,
- relatively permanent tributaries of TNWs and wetlands with a continuous surface connection to such tributaries, and
- Non-relatively permanent tributaries of TNWs and adjacent wetlands if they have a significant nexus to a TNW. Non-RPWs and adjacent wetlands are determined to have a significant nexus to a TNW if they significantly affect the chemical, physical, or biological integrity of a downstream TNW.
- The "Clean Water Rule: Definition of Waters of the United States (Final Rule)" was also consulted to aid the preliminary determination that an area would be subject to USACE jurisdiction under CWA Section 404 (80 FR 37054, June 29, 2015). The conclusions of this report are consistent with the new Final Rule.

SOIL SURVEY RESULTS

Table 2 provides a list of the soil map units that occur on the project site, according to the Soil Survey of *Stanislaus County, California, Western Part*, a brief description, and the hydric status of the soil map unit. The locations of these soil units within the study area, as mapped by NRCS, are depicted on the soils map in Appendix B.

Table 2 Soil map units that occur in the study area according to the Soil Survey of <i>Stanislaus County, California, Western Part</i>								
Name	Map Unit	Soil Series	Taxonomic Class	Description	Hydric?			
Capay clay, 0 to 2 percent slopes	100			Very deep, moderately well-drained soils formed in alluvium derived mostly from sandstone and shale. Found on alluvial fans, alluvial flats, interfan basins, and basin rims.				
Capay clay, wet, 0 to 2 percent slopes	101	Сарау	Fine, smectitic, thermic Typic	Used for growing irrigated crops such as tomatoes, sugar beets, beans, and grain sorghum; dryland grain crops; and irrigated or dryland pasture. Vegetation in uncultivated	No			
Capay clay, loamy substratum, 0 to 2 percent slopes	102	Сарау	Haploxererts	areas is typically characterized by dense cover of annual grasses and forbs. These soils have 1 to 2 centimeter wide cracks that open and close at least once each year and remain open for 150 days or less during summer. Some redens have a water table between a	NO			
Capay clay, 0 to 2 percent slopes, rarely flooded	106			open for 150 days or less during summer. Some pedons have a water table between a depth of 4 to 6 feet and some areas are subject to rare, occasional, or frequent flooding.				
Vernalis-Zacharias complex, 0 to 2 percent slopes	120	Vernalis and Zacharias	See series below	See individual descriptions for Vernalis and Zacharias soil series below.	No			
Vernalis loam, 0 to 2 percent slopes	122		Fine-loamy, mixed,	Very deep, well-drained soils on alluvial fans and floodplains. Formed in alluviam from mixed rock sources. Used mostly for irrigated crops, but some areas used for livestock				
Vernalis clay loam, 0 to 2 percent slopes	125	Vernalis	superactive, thermic Calcic Haploxerepts	grazing or dry farming small grains. Uncultivated areas are typically vegetated with annual grasses and forbs. These soils are usually dry between depths of 5 to 15 inches from late April through November or early December and moist in some or all parts the rest of the year.	No			
Stomar clay loam, 0 to 2 percent slopes	130	Stomar	Fine, smectitic, thermic Mollic Haploxeralfs	Very deep, well-drained soils formed in alluvium from sedimentary rocks. Found on dissected alluvial fans and terraces. Used for irrigated cropland including field crops, row crops, and orchards. Also used for dryland crops such as grain and, to a lesser degree, for urban development or livestock grazing. Vegetation in uncultivated areas is typically characterized by annual grasses and forbs. These soils are dry in all parts between depths of 4 to 12 inches from mid-May to November and moist in all parts from mid-December to May.	No			
Zacharias clay loam, 0 to 2 percent slopes	140	Zacharias	Fine-loamy, mixed, superactive, thermic Typic Haploxerepts	Very deep, well-drained soils formed in alluvium from mixed rock. Found on alluvial fans and low stream terraces. Used primarily for irrigated cropland, including field crops, row crops, and orchards; pasture and livestock grazing. Vegetation in uncultivated areas is typically characterized by annual grasses and forbs. These soils are moist between depths of 5 to 15 inches in some or all parts from November until May and dry in all parts the rest of the year.	No			
Dumps	176			No description	No			

Name	Map Unit	Soil Series	Taxonomic Class	Description	Hydric?
Calla-Carbona complex, 30 to 50 percent slopes	255	Calla and Carbona	Calla: Fine- loamy, mixed, superactive, thermic Typic Calcixerepts Carbona: Fine, smectitic, thermic Vertic Haploxerolls	Very deep, well-drained clay and clay loam soils found on dissected and uplifted terraces; parent material is alluvium from calcareous sedimentary rock (Calla) and mixed rock (Carbona). The soil in all parts between 6 and 18 inches is dry from May through October and moist in all parts from late-December to mid-March. These soils are used for livestock grazing or for irrigated orchards. The natural vegetation is annual grasses and forbs such as soft chess, filaree, foxtail fescue, and wild oats.	
Elsalado loam, 0 to 2 percent slopes	274	Elsalado	Coarse-loamy, mixed, superactive, thermic Fluventic Haploxerepts	Deep, well-drained loam soils found on alluvial fans; parent material is alluvium derived from sandstone-shale and the soils are slightly or moderately alkaline. The soil between 7 and 22 inches is dry in all parts from mid-May to November and is moist in all parts from mid-December to May. Used for irrigated cropland, including field crops, row, crops, and orchards. Natural vegetation is annual grasses and forbs.	No

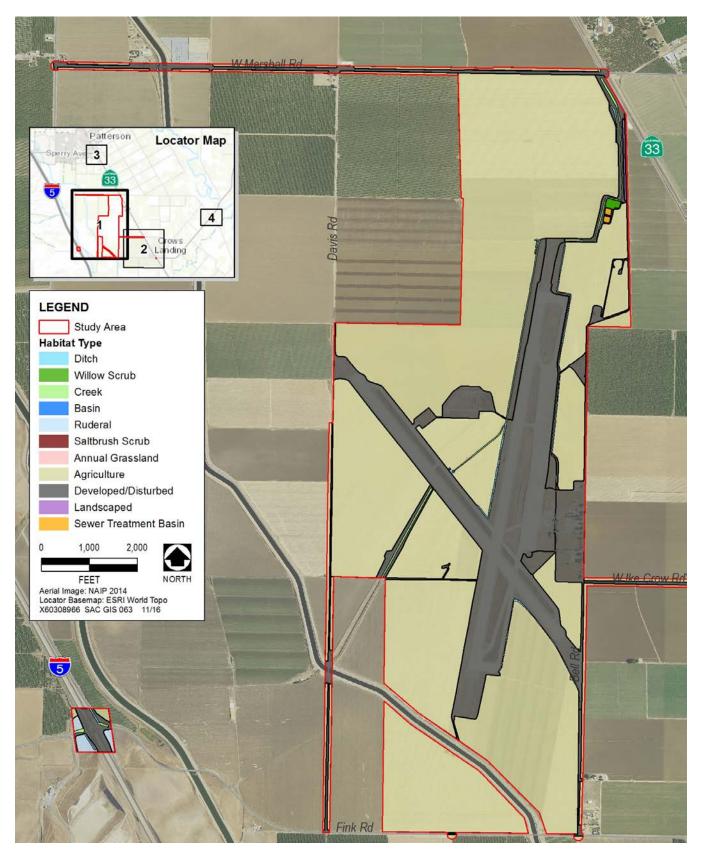
DELINEATION RESULTS

Sites qualifying as waters of the United States according to Section 404 of the CWA are depicted on the aquatic resources delineation maps in Appendix C. Delineation sample sites are also depicted on the aquatic resources delineation map and are cross-referenced to the wetland determination data forms provided in Appendix A. Habitat descriptions for waters of the United States and nonjurisdictional habitats are included below; a habitat map is provided as Exhibit 3. Representative photographs of habitat types described below are provided in Appendix D and a list of plant species observed during the field survey is provided in Appendix E.

JURISDICTIONAL HABITAT TYPES

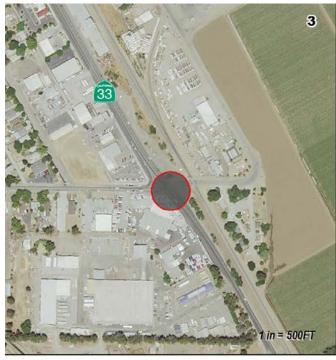
A total of 4.66 acres of potentially jurisdictional waters of the United States, including wetlands, are present within the 1,647-acre study area (Table 3). The study area contains approximately 3.65 acres of RPW in Little Salado Creek and small excavated collection basins. Approximately 1.01 acre of willow scrub wetland is present on the project site adjacent to Little Salado Creek.

Table 3								
Potentially Jurisdictional Features								
Waters of the United States	Acres							
Relatively Permanent Waters (RPW)	3.65							
Little Salado Creek (LSC)	3.60							
LSC1	1.29							
LSC2	0.99							
LSC3	0.98							
LSC4	0.01							
LSC5	0.13							
LSC6	0.20							
Basins (BN)	0.05							
BN1	0.04							
BN2	0.01							
Wetlands Adjacent to RPWs	1.01							
Willow Scrub Wetland (WS1)	1.01							
Total Jurisdictional Features	4.66							
Source: Data compiled by AECOM in 2014								

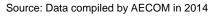


Source: Data compiled by AECOM in 2014

Habitat Map







Habitat Map





LEGEND



1,000 2,000 FEET Aerial Image: NAIP 2014 Locator Basemap: ESRI World Topo X60308966 SAC GIS 064 11/16



Exhibit 3

WATERS OF THE UNITED STATES

RELATIVELY PERMANENT WATERS

RPWs are tributaries to TNWs that typically have continuous flow for at least 3 months of the year. These features meet the criteria of waters of the United States and are subject to USACE jurisdiction under Section 404 of the CWA. RPWs within the project site consist of a channelized creek known as Little Salado Creek and two small excavated basins. These features were delineated based on their OHWM.

SEASONAL STREAM

Little Salado Creek is single-thread, channelized, seasonal stream that flows through the project site in a northeasterly direction. There are a total of approximately 3.60 acres of Little Salado Creek within the study area (3.26 acres on the project site and 0.34 acre in the off-site improvement areas). The average width of the OHWM through the project site is approximately 20 feet, but it ranges from 4 feet to 40 feet in width. The creek bed is characterized by clay loam soil with high shrink swell potential creating large, deep cracks as the channel dries. The channel contains patches of emergent vegetation characterized by weedy wetland species including barnyard grass (*Echinochloa crus-galli*) (FACW), dotted smartweed (*Persicaria punctata*) (OBL), broad-leaved cattail (*Typha latifolia*) (OBL), and tall flatsedge (*Cyperus eragrostis*) (FACW).

Little Salado Creek runs from the eastern foothills of the Diablo Range west of the project site, crosses under the Delta Mendota Canal through a box culvert, and then flows in a modified channel through agricultural fields and onto the project site. On the east side of the Delta-Mendota Canal, Little Salado Creek serves as a tailwater irrigation drain ditch for the surrounding agricultural fields. The channel was straightened, deepened, and confined within earthen levees through the project site beginning in 1943 when the air facility was constructed. Little Salado Creek ends in the northeast corner of the project site where the water is discharged through a culvert under Highway 33 into a single 24-inch diameter drain pipe that flows east along Marshall Road for about 4.5 miles to its final discharge point at the San Joaquin River.

Little Salado Creek crosses through the off-site improvement area at the Interstate 5-Fink Road interchange in a highly modified and fragmented channel that runs along the north side of Fink Road and crosses under the Interstate 5 overpass through a culvert. This is the apparent realigned flow channel of historic Little Salado Creek. Flow in this portion of the creek is ephemeral and vegetation in the channel and on the banks is composed of weedy, primarily upland species including ripgut brome (*Bromus diandrus*) (NL), black mustard (*Brassica nigra*) (NL), and Russian thistle (*Salsola tragus*) (FACU).

Little Salado Creek was delineated as an RPW feature subject to USACE jurisdiction under Section 404 of the CWA because it has an OHWM, supports continuous uninterrupted flow for a portion of the year, and is hydrologically connected to a TNW (i.e., the San Joaquin River). Data forms 1, 2, 6, and 16 in Appendix A contain information about the habitat in the channel of Little Salado Creek in the study area.

BASINS

Two small excavated basins comprising a total of 0.05 acre are present toward the center of the project site where Little Salado Creek meets the edge of a runway. One of the basins is directly connected to Little Salado Creek via culvert while the other is connected by pump. Based on review of aerial imagery, these basins were created in 2011 and are typically inundated for long duration during the growing season. BN1 was created by widening and deepening the channel of Little Salado Creek and building an earthern berm across the downstream end of the excavated area. BN2 was excavated in uplands and water from Little Salado Creek is pumped into BN2. The basins have the same bed substrate as the channel of Little Salado Creek and support the same vegetation assemblages at the high water line. The bottoms of the basins were bare of vegetation during the field delineation and had large deep soil cracks.

These basins were delineated as RPWs subject USACE jurisdiction under Section 404 of the CWA because they each have an OHWM, are continuously inundated for a portion of the year, and were excavated in or are connected to Little Salado Creek.

WETLANDS ADJACENT TO RELATIVELY PERMANENT WATERS

Wetlands adjacent to RPWs are not automatically subject to USACE jurisdiction under Section 404 of the CWA (Grumbles and Woodley 2008). The post-Rapanos guidance significant nexus test requires that wetlands adjacent to RPWs contribute substantially to the physical, chemical, and biological character of the downstream traditionally navigable water (TNW). The significant nexus evaluation includes consideration of hydrologic and ecological factors in addition to the aforementioned physical, chemical, and biological parameters associated with the wetland adjacent to a RPW.

WILLOW SCRUB WETLAND

Approximately 1.01 acre of willow scrub wetland habitat occurs within a created basin adjacent to Little Salado Creek. The basin was created in a cooperative effort by the Boy Scouts of America, the Navy, NRCS, and the Resource Conservation District to provide wildlife habitat. Vegetation in the basin is characterized by dense cover of narrow-leaf willow (*Salix exigua*) (FACW) and Goodding's black willow (*Salix gooddingii*) (FACW). The ground surface below the willows has heavy cover of leaf litter and woody debris and did not support herbaceous vegetation at the time of the delineation. Characteristics such as shelving, scour lines, or other natural linear features indicating an OHWM are not present in this created basin and surface water was not observed in the basin in any aerial imagery going back to 1998. A culvert with a control gate connects the basin to Little Salado Creek through the creek's levee, but water from the creek has not been diverted to the basin for many years.

Oxidized root channels, a primary indicator of wetland hydrology were observed in the willow scrub wetland habitat. Based on the absence of an OHWM, it is assumed that the water table is high in this location and the wetland vegetation is supported by groundwater. Redox dark surface, a hydric soil indicator, was observed in the willow scrub wetland. The willow scrub wetland would be classified under the Cowardin Classification System as a palustrine scrub-shrub, persistent, saturated wetland (Cowardin 1979). This area is not mapped in the National Wetlands Inventory.

This area is considered a jurisdictional habitat by the USACE under Section 404 of the CWA because it is adjacent to Little Salado Creek, a RPW, and meets the three parameter definition of a wetland. Data form 4 provides information about the willow scrub wetland habitat on the project site.

NONJURISDICTIONAL HABITATS

A total of approximately 1,641 acres of nonjurisdictional upland habitats consisting of agriculture, saltbush scrub, sewer treatment basin, landscaped, developed/disturbed areas, and ditches are present on the project site (Table 4). These habitats, except the ditches, are determined to be nonjurisdictional because they are not dominated by hydrophytic vegetation, do not have indicators of wetland hydrology or hydric soils, and/or are located outside an OHWM. The ditches are determined to be nonjurisdictional waters because they have only ephemeral or intermittent flow, are not relocated tributaries or excavated in tributaries, and do not drain wetlands. This delineation is considered preliminary until verified by the USACE.

Table 4						
Potentially Nonjurisdictional Habitats						
Upland Habitat Types	Acres					
Agriculture	1,207.03					
Saltbush Scrub	0.17					
Sewer Treatment Basin	0.89					
Landscaped	1.73					
Developed/Disturbed	423.83					
Ruderal	5.16					
Ditches (D)	2.56					
D1	0.18					
D2	0.01					
D3	0.01					
D4A	0.41					
D4B	0.23					
D4C	0.03					
D4D	0.04					
D4E	0.02					
D4F	0.02					
D4G	0.05					
D5	0.65					
D6	0.34					
D7	0.03					
D8	0.03					
D9	0.03					
D10	0.04					
D11	0.11					
D12	0.03					
D13	0.03					
D14	0.13					
D15	0.14					
Total Nonjuridictional Features	1,641.37					
6367Source: Data compiled by AECOM in 207	14					

AGRICULTURE

The predominant land cover type on the project site is agriculture consisting of sugar beets, peas, beans, tomatoes, grain sorghum, spinach, melons, and corn crops. Outside of the runways and former Naval facilities sites, the remaining lands, approximately 1,146 acres, have been leased to private tenants and actively farmed since the Crows Landing Naval auxiliary Landing Field was commissioned in 1943. The majority of the site was actively farmed prior to 1943. The agricultural lands are harvested seasonally then tilled and replanted. Crops on the project site are irrigated with water taken from Little Salado Creek and pumped through spray irrigation systems and temporary irrigation channels. As evidenced by small areas of the project site, such as the former firing range, that have been taken out of agricultural production, these areas would likely become dominated by ruderal upland vegetation, as described below, if active cultivation and irrigation ceased because they are not supported by natural wetland hydrology. The agricultural lands are considered non-jurisdictional under Section 404 of the CWA because they do not meet the three criteria for wetlands and are not located within the OHWM of a jurisdictional feature.

SALTBUSH SCRUB

Approximately 0.17 acre of saltbush scrub is present on the project site. This habitat was created as part of a cooperative effort by the Boy Scouts of America, the Navy, NRCS, and the Resource Conservation District to provide wildlife habitat. The saltbush scrub habitat is located on the bank of an excavated basin containing willow

scrub habitat, which was also created through the cooperative effort. The saltbush scrub community has a shrub layer dominated exclusively by big saltbush (*Atriplex lentiformis*) (FAC). The herb layer is characterized by low cover of blessed milk thistle (*Silybum marianum*) (NL) and annual yellow sweetclover (*Melilotus indicus*) (FACU). This area is not dominated hydrophytes and lacks hydric soil indicators and evidence of recent wetland hydrology; therefore, it is not subject to USACE jurisdiction under Section 404 of the CWA. Data form 5 in Appendix A provides information about the saltbush scrub habitat on the project site.

Sewer Treatment Basins

Two sewer treatment basins that were excavated in uplands are present on the project site adjacent to Little Salado Creek. The total area of the basins is approximately 0.89 acre. These treatment basins are associated with the former Naval facilities sewer system and are not currently in use. Sewage was previously collected in a concrete trunk line and sent to a processing tank then to these basins for settling and drying. In 2003, the Navy conducted clean-up operations to remove refuse, debris, contaminated soil, and incinerator ash from the basins.

Vegetation in the basins is dominated by upland herbaceous plants including black mustard and annual willowherb (*Epilobium brachycarpum*) (NL). Other common associates include yellow star thistle, blessed milk thistle, curly dock (*Rumex crispus*) (FAC), and common sunflower (*Helianthus annuus*) (FACU). Characteristics such as shelving, destruction of vegetation, presence of litter or debris, or other natural linear features indicating an OHWM are not present in the basins and surface water was observed infrequently in aerial imagery going back to 1998. The basins were completely dry at the time this delineation field survey was conducted. These basins do not exhibit wetland hydrology indicators and are not dominated by wetland vegetation; soil pits were not excavated in this habitat type because the vegetation and hydrology parameters are lacking and they are created sewer treatment basins. It was therefore determined that these features do not meet the three criteria to be considered a jurisdictional wetland feature under Section 404 of the CWA. Data form 3 in appendix A provides information about the sewer treatment basins.

LANDSCAPED

A 1.73-acre strip of roadside landscaping is present along the eastern boundary of the project site between Bell Road and the east side levee of Little Salado Creek. Vegetation in this strip of land is characterized by dense cover of firethorn (*Pyracantha angustifolia*) (NL) and Russian olive (*Elaeagnus angustifolia*) (FAC) with no herbaceous understory. The Russian olive and firethorn were planted in parallel rows and may have been planted as part of the wildlife habitat creation initiated by the Boy Scouts the Navy, NRCS, and the Resource Conservation District. The landscaped vegetation is located in a low-lying landscape position between the toe slope of the levee and the road bed of Bell Road. This area is not dominated hydrophytes and lacks hydric soil indicators and evidence of recent wetland hydrology; therefore, it is not subject to USACE jurisdiction under Section 404 of the CWA. Data form 8 in Appendix A provides information about this landscaped area.

DEVELOPED/DISTURBED

The project site contains approximately 372 acres of developed and disturbed lands. Defunct Naval support facilities, including a control tower, administrative office sites, fire and rescue facilities, former hangar sites and underground fuel storage tanks, and an old school site were located on the east side of the project site between Bell Road and the runways. All structures associated with the Naval facilities have been razed leaving concrete and asphalt pads, paved roads, landscaping, and disturbed ground. Only the former air traffic control tower and former airfield lighting vaults remain. A site that formerly housed Navy ammunition bunkers and refuse disposal pits is located north of the runway intersection and another ammunition area is located on the banks of Little Salado Creek just north of Ike Crow Road. Other developed and disturbed areas on the project site include the runways, a former small arms firing range, and sites that housed soil and groundwater treatment facilities.

Areas categorized as developed/disturbed include areas covered by impervious surfaces, such as the runways and access roads and building foundations, and areas that were subjected to past intensive disturbances, including

complete removal of the native vegetation, soil disturbance, and topographic alteration. These lands either have not fully recovered from past disturbances or are still subjected to ongoing soil and vegetation disturbances and are currently characterized by bare soil or ruderal vegetation cover.

Vegetation around the former Naval support facilities consists of remnant lawn grass dominated by tall fescue (*Festuca arundinacea*) (NL), Kentucky bluegrass (*Poa pratensis*) (FAC), and Bermuda grass (*Cynodon dactylon*) (FACU); landscaped trees and shrubs, including golden wattle (*Acacia longifolia*) (NL), firethorn, European privet (*Ligustrum vulgare*) (UPL), and deodar cedar (*Cedrus deodara*) (NL); and ruderal herbaceous species. Ruderal vegetation found in developed/disturbed areas is dominated by weedy plants adapted to establish on disturbed bare ground. Characteristic species in the ruderal vegetation communities on site include common oat (*Avena sativa*) (UPL), ripgut brome (*Bromus diandrus*) (NL), rattail sixweeks fescue (*Festuca myuros*) (FACU), bur clover (*Medicago polymorpha*) (FACU), Italian thistle (*Carduus pycnocephalus*) (NL), and yellow star thistle.

The developed/disturbed and ruderal areas are considered non-jurisdictional under Section 404 of the CWA because they do not meet the three criteria for wetlands and are not located within the OHWM of a jurisdictional feature. Data forms 7 and 9 in Appendix A provide information on developed/disturbed areas. Sample point 7 is at a former firing range, and sample point 8 is on the levee bank of Little Salado Creek.

DITCHES

A total of 2.56 acres of ditches are present in the study area. There are nine ditches, or ditch fragments, totaling approximately 2.02 acres on the project site, and an additional 6 ditches totaling 0.54 acre in the off-site improvement areas. The ditches consist of agricultural ditches used to deliver irrigation water to crops and recapture irrigation tailwater, and ditches constructed along roadways and runways to convey stormwater runoff. These features flow periodically for short duration during storm events and crop irrigation. Vegetation in the ditches on the project site and off-site roadside ditches is characterized primarily by upland plant species including Johnsongrass (Sorghum halepense) (FACU), black mustard, bristly ox-tongue (Helminthotheca echioides) (FACU), yellow star thistle (Centaurea solstitialis) (NL), ripgut brome, and Russian thistle. Characteristic vegetation in the off-site irrigation ditches consists of a mix of wetland and upland species including barnyard grass, tall flatsedge, pigweed amaranth (Amaranthus albus) (FACU), and field bindweed (Convolvulus arvensis) (NL). One agricultural ditch extending from the south side of Marshall Road southward along the west side of the Delta-Mendota Canal had water in it at the time of the field delineation. All of the remaining ditches were completely dry at the time the delineation field surveys were conducted. The width of the OHWM of the ditches ranges from 2 feet to 14 feet and averages approximately 5 feet on the project site. The ditches in the off-site improvement areas are mostly larger, ranging from 3 to 26 feet in width and averaging 22 feet at the OHWM. The ditches were delineated as nonjurisdictional waters because they have only ephemeral or intermittent flow, are not relocated tributaries or excavated in tributaries, and do not drain wetlands. Data forms 10, 11, 12, 13, 14, 15, and 17 in Appendix A provide information about representative ditches in the study area.

JURISDICTIONAL DETERMINATION

As summarized in Table 2, the 1,647-acre study area contains a total of approximately 4.66 acres of potentially jurisdictional waters of the United States, including wetlands. These potentially jurisdictional waters of the United States consist of 3.60 acres of Little Salado Creek and 0.05 acre of excavated basins. Little Salado Creek and the excavated basins are RPWs. Wetlands in the study area consist of 1.01 acre of willow scrub wetland adjacent to Little Salado Creek. Little Salado Creek is connected to the San Joaquin River, a TNW, through a series of canals that are part of a storm drain system, and is therefore subject to USACE jurisdiction under Section 404 of the CWA. The excavated collection basins (BN1 and BN2) are contiguous with or connected to Little Salado Creek. The willow scrub wetland is adjacent to Little Salado Creek and is connected to the creek by a gated culvert through an earthen levee separating the creek from the basin containing the willow scrub wetland. Non-RPWs and

wetlands adjacent to non-navigable RPWs must have a significant influence on the downstream physical, chemical, and biological integrity of waters of the United States before they may be regulated under Section 404 of the CWA. The willow scrub wetland could have a significant effect on downstream waters due to its hydrological connectivity to Little Salado Creek. Therefore, these features are potentially subject to USACE regulation pursuant to Section 404 of the CWA.

Agriculture, saltbush scrub, sewer treatment basins, landscaped, and developed/disturbed lands lack one or more criteria that define wetlands, do not possess an OHWM, and are located above an OHWM. The roadside and agricultural ditches have only ephemeral or intermittent flow, are not relocated tributaries or excavated in tributaries, and do not drain wetlands. These habitats are generally not subject to regulation by the USACE under Section 404 of the CWA. This jurisdictional determination is preliminary and contingent on verification by USACE.

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APPENDIX A

Wetland Delineation Data Forms

WETLAND DETERMINATION DATA FORM - Arid West Region Project/Site: CDWSD Landom Sampling Date: Lalo Project/Site: CDWSD Sampling Date: Lalo Sampling Date: Lalo Starling Date: Data Sampling Date: Lalo Sampling Date: Lalo Starling Date: Data Sampling Date: Lalo Sampling Date: Lalo Starling Date: Data Sampling Date: Data Sampling Date: Data Starling Date: Data Sampling Date: Data Sampling Date: Data Starling Date: Data Sampling Date: Data Sampling Date: Data Starling Date: Data Sampling Date: Data Sampling Date: Data Starling Data Orthory Data Sampling Date: Data Sampling Date: Data Starling Data Orthory Data Sampling Date: Data Sampling Date: Data Starling Data Orthory Data Sampling Date: Data Data Data Data Starling Data Orthory Data Sampling Da					IA FURI	w – Aria wes	it Region		
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	ayer (if present):	. A					assume	ed hydric	
Type:							1	esent? Yes 📈	No
Depth (inc Remarks:		• \		1		1.4			
interm	No soil p ittent can	val (c)	sample p nannelizi	ed L	is h ittle	sithiv Sola	do creek	not an	9 2
HYDROLOG	θY		2						_

Primary Indicators (minimum of one required: check all that apply) Secondary Indicators (2 or more required)	Wetland Hydrology Indicators:		
 High Water Table (A2) Biotic Crust (B12) Saturation (A3) Aquatic Invertebrates (B13) Drift Deposits (B3) (Riverine) Sediment Deposits (B2) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2) Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Solls (C6) Saturation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Water-Stained Leaves (B9) Other (Explain in Remarks) FAC-Neutral Test (D5) Field Observations: Surface Water Present? Yes No Depth (inches): Depth (inches): Depth (inches): Saturation Present? Yes No Depth (inches): Depth (inches): Saturation Present? Yes No Depth (inches): And Wetland Hydrology Present? Yes No 	Primary Indicators (minimum of one required	check all that apply)	Secondary Indicators (2 or more required)
Ingle Voter Fuble (Ed.) Saturation (A3) Aquatic Invertebrates (B13) Drift Deposits (B3) (Nonriverine) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2) Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Surface Soil Cracks (B6) Kecent Iron Reduction in Tilled Solls (C6) Saturation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Water-Stained Leaves (B9) Other (Explain in Remarks) Field Observations: Surface Water Present? Yes No Depth (inches): Quert Table Present? Yes No Depth (inches): Cincludes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
 Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2) Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Solls (C6) Saturation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Water-Stained Leaves (B9) Other (Explain in Remarks) FAC-Neutral Test (D5) Field Observations: Surface Water Present? Yes No Depth (inches): And the present? Yes No Depth (inches): 			
 Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2) Orayfish Burrows (C8) Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Solls (C6) Saturation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Water-Stained Leaves (B9) Other (Explain in Remarks) FAC-Neutral Test (D5) Field Observations: Surface Water Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Depth (inches): Quertice Capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Solls (C6) Saturation Visible on Aerial Imagery (C9) Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shallow Aquitard (D3) Water-Stained Leaves (B9) Other (Explain in Remarks) FAC-Neutral Test (D5) Field Observations: Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Beth (inches): Gincludes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Solls (C6) Saturation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shallow Aquitard (D3) Water-Stained Leaves (B9) Other (Explain in Remarks) FAC-Neutral Test (D5) Field Observations: Surface Water Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Satura			
✓ Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shallow Aquitard (D3)			
Field Observations:			
Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): (includes capillary fringe) Depth (inches): Wetland Hydrology Present? Yes No Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: No	Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)
Water Table Present? Yes No Depth (inches):	Field Observations:	/	
Saturation Present? Yes Ves No Depth (inches): Q Wetland Hydrology Present? Yes No Depth (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Surface Water Present? Yes N	o Depth (inches):	
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Water Table Present? Yes N		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	(includes capillary fringe)		
Remarks:	Describe Recorded Data (stream gauge, mor	itoring well, aerial photos, previous inspec	ctions), if available:
Remarks:			
	Remarks:		
		8	

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WETLAND DETERMINATION DATA FORM – Arid West Region
Project/Site: Crows Landing City/county: Stanislaus Sampling Date: 11/26/13
Applicant/Owner Stan Stan Stan Stan Stan Stan Stan Stan
Investigator(s): T. BEYET, Y. Valle Section, Township, Range:
Landform (hillslope, terrace, etc.): <u>terrace</u> Local relief (concave, convex, none); NANG, and the set
Subregion (LRR):K_
Soil Map Unit Name: Capay clay, pto 2% slopes, rarely flooded NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
Are Vegetation A/ Soil A/ or Hudration A/
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No Protos: 4803-4805
Hydric Soil Present? Yes V No
Wetland Hydrology Present? Yes <u>V</u> No <u>Within a Wetland?</u> Yes <u>V</u> No <u>No</u>
Remarks: Conal/ chanclized intermitter tareactives etated within Other
1: White China I Change I China I Change Service with in Offwry
Littlesaladocree/C
VEGETATION – Use scientific names of plants.

Trop Stration (D) 1 :	Absolute	Dominant Indicator	Dominance Test worksheet:	_
Tree Stratum (Plot size:)	<u>% Cover</u>	Species? Status		
1		·	 Number of Dominant Species That Are OBL, FACW, or FAC: 	
12. /			$- \qquad \text{Mat Are OBL, FACW, or FAC: } (A)$	
			Total Number of Dominant	
4			_ Species Across All Strata: (B)	
Sapling/Shrub Stratum (Plot size:)		= Total Cover	Percent of Dominant Species That Are OBL, FACW, or FAC:	
			That Are OBL, FACW, or FAC: (Are	0
1			Prevalence Index worksheet:	
2/			Total % Cover of:Multiply by:	
3			OBL species x 1 =	
4			FACW species x 2 =	
5			FAC species x 3 =	
20.(20		= Total Cover	FACU species X 4 =	
Herb Stratum (Plot size: 30×30)		. /		
1. Jupha latitola	20	Y DBL	UPL species x 5 =	
2. Petsicaria purchatum	15	V OBI	Column Totals: (A) (B)	
3. Kumex crispus	S	N FAC	Prevalence Index = B/A =	
A Construction of the second			Hydrophytic Vegetation Indicators:	4
5			Dominance Test is >50%	
6		10		
7.			Prevalence Index is ≤3.0 ¹	
7 8			Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
	10-			
Woody Vine Stratum (Plot size:)	40 =	Total Cover	Problematic Hydrophytic Vegetation ¹ (Explain)	
1.			1	
2			¹ Indicators of hydric soil and wetland hydrology must	
1		/	be present, unless disturbed or problematic.	
	=	Total Cover	Hydrophytic	
% Bare Ground in Herb Stratum 60 % Cover of	of Biotic Crus	,	Vegetation	
Remarks:			Present? Yes No	
Above offwm vesela	tion (msichs of	- Salsola fragus, Brassica	1
nigra, Helianthus annuus, E of upland vegelatation men	=~ ()			
a plant was at a lat	-4.105	ium brach	ycarpum - narrow strip	
of up and vegeratution men	mere	st of The	bank is maintained in a	ĺ
				1

US Army Corps of Engineers barren State (level road)

Arid West - Version 2.0

SOIL								Sampling Point:	
Profile Desc	cription: (Describe	to the dep	oth needed to docu	ment the i	ndicator	or confirm	n the absenc	e of indicators.)	
Depth	Matrix			ox Features	; 1	1 2	T t	Demerte	
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	Loc ²		Remarks	
<u>D-8</u>	7.5YR2.5/2	92	51R5/8_	10	<u> </u>	PL	- <u>Czan</u>	blocky, fragmented	
8-20	104R 3/2	75	104R5/16	25	<u> </u>	M	CL		
-									
							······································		
· · · · ·							<u></u>		
				<u> </u>					
							222		
								· ·	
						<u></u>			
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	oncentration, D=Dep	letion RM	=Reduced Matrix C	S=Covered		d Sand Gi	rains. ² Lo	ocation: PL=Pore Lining, M=Matrix.	
Hydric Soil	Indicators: (Applic	able to all	LRRs. unless othe	rwise note				s for Problematic Hydric Solis ³ :	
Histosol			Sandy Red					Muck (A9) (LRR C)	
	bipedon (A2)		Stripped M					Muck (A10) (LRR B)	
Black H			Loamy Mu	• •	(F1)			ced Vertic (F18)	
	en Sulfide (A4)		Loamy Gle	•	• •		Red F	Parent Material (TF2)	
	d Layers (A5) (LRR (C)	Depleted N	latrix (F3)			Other	r (Explain in Remarks)	
	ick (A9) (LRR D)		🖌 Redox Dar	k Surface (
Depleted	d Below Dark Surfac	e (A11)	Depleted D		• •		9		
	ark Surface (A12)		Redox Dep		-8)			s of hydrophytic vegetation and	
· — ·	lucky Mineral (S1)		Vernal Poo	ls (F9)				l hydrology must be present, disturbed or problematic.	
	Bleyed Matrix (S4)		0				uniess		
1	_ayer (if present):								
Туре:			<u> </u>				Livelain Del	Il Present? Yes No	
Depth (inc	ches):						Hydric Sol		
Remarks:	2000 Lin		1		o l	211	H10 0	salado Creek	
1	BINT 15	Wil	nm or	TWW	1 GT	Tiet-1	THE C	GIADO WEEK	
			6011.11						
HYDROLO	GY		8						
Wetland Hyd	irology Indicators:		<i></i>					•	
Primary Indic	ators (minimum of o	ne require	d: check all that app	y)			<u> </u>	ondary Indicators (2 or more required)	
Surface	Water (A1)		Salt Crust	(B11)			\	Water Marks (B1) (Riverine)	
High Wa	ter Table (A2)		Biotic Cru	st (B12)				Sediment Deposits (B2) (Riverine)	
Saturatio	on (A3)		Aquatic In	vertebrates	s (B13)		Drift Deposits (B3) (Riverine)		
Water M	arks (B1) (Nonriver	ine)	Hydrogen	Sulfide Od	or (C1)		ĭ	Drainage Patterns (B10)	
Sedimen	t Deposits (B2) (Noi	nriverine)	Oxidized I	Rhizospher	es along	Living Roc	ots (C3) [Dry-Season Water Table (C2)	
Drift Dep	osits (B3) (Nonriver	rine) 🦷	Presence	of Reduced	d Iron (C4)	(Crayfish Burrows (C8)	
/ Surface	Soil Cracks (B6)		Recent Irc	n Reductio	n in Tilleo	d Soils (C6	5) <u> </u>	Saturation Visible on Aerial Imagery (C9)	
🖌 Inundatio	on Visible on Aerial I	magery (B	7) Thin Muck	Surface (C	C7)		_ 5	Shallow Aquitard (D3)	
Water-St	ained Leaves (B9)		Other (Exp	olain in Rer	narks)		F	FAC-Neutral Test (D5)	
Field Observ	vations:		/						
Surface Wate	er Present? Y	es	No 📝 Depth (in	ches):		_		20	
Water Table	Present? Ye	es	No 🗾 Depth (in	ches):		_		/	
Saturation Pr		es					and Hydrolog	y Present? Yes No	
(includes cap	illary fringe)								
Describe Rec	corded Data (stream	gauge, mo	onitoring well, aerial	photos, pre	vious ins	pections),	it available:		
				ĕ					
Remarks:	altim 2	1, 20.	ft-						
2.6		~ ~~~	* ¹						
	Remarks: OHWM ~ 30ft Very deep soil cracks								
	very deep	SOUL	UNCLS						
	. \								
·····									

Investigator(s): <u>T. BLYEN, Y. VANE</u> Section, Townshi Landform (hillslope, terrace, etc.): <u>FUMACE</u> Local relief (conc Subregion (LRR): <u>LPRC</u> Lat: <u>37'26'36.9</u>] Soil Map Unit Name: <u>Capay clay, D to 2'/. Slopes, ravey f</u> Are climatic / hydrologic conditions on the site typical for this time of year? Yes <u>X</u> Are Vegetation <u>N</u> , Soil <u>N</u> , or Hydrology <u>N</u> significantly disturbed? Are Vegetation <u>N</u> , Soil <u>N</u> , or Hydrology <u>N</u> naturally problematic?	$\frac{1}{10000000000000000000000000000000000$
Investigator(s): <u>T. BLYEN, Y. VANE</u> Section, Townshi Landform (hillslope, terrace, etc.): <u>FUMACE</u> Local relief (conc Subregion (LRR): <u>LPRC</u> Lat: <u>37'26'36.9</u>] Soil Map Unit Name: <u>Capay clay, D to 2'/. Slopes, ravey f</u> Are climatic / hydrologic conditions on the site typical for this time of year? Yes <u>X</u> Are Vegetation <u>N</u> , Soil <u>N</u> , or Hydrology <u>N</u> significantly disturbed? Are Vegetation <u>N</u> , Soil <u>N</u> , or Hydrology <u>N</u> naturally problematic?	$ \begin{array}{c} \text{State: } \underline{\mathcal{A}} & \text{Sampling Point: } \underline{\mathcal{S}} \\ \text{p, Range: } \underline{\mathcal{A}} & \text{Slope (\%): } \underline{\mathcal{A}} \\ \text{rave, convex, none): } \underline{\mathcal{A}} & \underline{\mathcal{A}} & \underline{\mathcal{A}} \\ \underline{\mathcal{A}} & \underline{\mathcal{A}} & \underline{\mathcal{A}} & \underline{\mathcal{A}} & \underline{\mathcal{A}} & \underline{\mathcal{A}} \\ \underline{\mathcal{A}} & \mathcal$
Investigator(s): <u>LEQUER</u> , <u>Y. Val. C</u> Landform (hillslope, terrace, efc.): <u>Furrack</u> Subregion (LRR): <u>LERC</u> Soil Map Unit Name: <u>Capay clay</u> , <u>O to 2'/. Slopes</u> , <u>ravey</u> <u>f</u> Are climatic / hydrologic conditions on the site typical for this time of year? Yes <u>X</u> Are Vegetation <u>N</u> , Soil <u>N</u> , or Hydrology <u>N</u> significantly disturbed? Are Vegetation <u>N</u> , Soil <u>N</u> , or Hydrology <u>N</u> naturally problematic?	p, Range:
Landrorm (fillislope, terrace, efc.): $\underline{-\mu}MMM$ Local relief (conc Subregion (LRR): \underline{LPRC} Lat: $\underline{37'25'36.9}$) Soil Map Unit Name: $\underline{Capay} Clay, D + \underline{27'} Slopes, ravely f$ Are climatic / hydrologic conditions on the site typical for this time of year? Yes $\underline{X'}$ Are Vegetation \underline{N} , Soil \underline{N} , or Hydrology \underline{N} significantly disturbed? Are Vegetation \underline{N} , Soil \underline{N} , or Hydrology \underline{N} naturally problematic?	save, convex, none): \underline{NONC} Slope (%): \underline{D} \underline{N} Long: $\underline{1210605.82^{11}W}$ Datum:
Soil Map Unit Name: <u>Capay clay</u> , <u>O to 2'/. Slopes</u> , <u>ravey</u> f Are climatic / hydrologic conditions on the site typical for this time of year? Yes <u>X</u> Are Vegetation <u>N</u> , Soil <u>N</u> , or Hydrology <u>N</u> significantly disturbed? Are Vegetation <u>N</u> , Soil <u>N</u> , or Hydrology <u>N</u> naturally problematic?	"N Long: 12106 05.82" W Datum:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes $\underline{\times}$ Are Vegetation \underline{N} , Soil \underline{N} , or Hydrology \underline{N} significantly disturbed? Are Vegetation \underline{N} , Soil \underline{N} , or Hydrology \underline{M} naturally problematic?	
Are Vegetation $N_{,}$, Soil $N_{,}$, or Hydrology $N_{,}$ significantly disturbed? Are Vegetation $N_{,}$, Soil $N_{,}$, or Hydrology $N_{,}$ aturally problematic?	NWI classification:
Are Vegetation <u>IV</u> , Soil <u>IV</u> , or Hydrology <u>IV</u> significantly disturbed? Are Vegetation <u>IV</u> , Soil <u>IV</u> , or Hydrology <u>IV</u> naturally problematic?	
haturally problematic?	No (If no, explain in Remarks.)
Sillena RX OF Fillena Contraction of the second state of the secon	Are "Normal Circumstances" present? Yes No
Sommary OF FINDINGS - Attach site map showing sampling poi	(If needed, explain any answers in Remarks.) nt locations, transects, important features, et
Hydrophytic Vegetation Present? Yes No Is the Sam Hydric Soil Present? Yes No Is the Sam	pled Area
Wetland Hydrology Present? Yes No within a We	etland? Yes No
Remarks: excavated squage treament basin	
January CTreatment basin	
Photos 4808-4812	
VEGETATION – Use scientific names of plants.	
Absolute Dominant Indicate	or Dominance Test worksheet:
	Number of Dominant Species
2	That Are OBL, FACW, or FAC: (A)
3	Total Number of Dominant
4	Species Across All Strata: (B)
	Percent of Dominant Species
<u>Sabilitu/Sittub Stratum (Plot size</u> ,)	That Are OBL, FACW, or FAC: (A/B)
1. Salix exigua L N FACIL	
2	Total % Cover of:Multiply by:
3	OBL species x 1 =
j	FACW species x 2 =
	FAC species x 3 =
terb Suatum (Plot size: <u>20120</u>)	FACU species x 4 = UPL species x 5 =
NL	- Column Totals: (A) (B)
	-
Centaurea solstitialis 5 N HAC	Prevalence Index = B/A =
	Hydrophytic Vegetation Indicators:
Helianthus anims R N FACU	Dominance Test is >50%
Plantago lanceolata SN FAC	Prevalence Index is ≤3.0 ¹
	 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
600 = Total Cover	Problematic Hydrophytic Vegetation ¹ (Explain)
(Plot size:)	<i>3</i> 0
	¹ Indicators of hydric soil and wetland hydrology must
	be present, unless disturbed or problematic.
Born Convertiently a series (1/2)	Hydrophytic Vegetation
Bare Ground in Herb Stratum 40 % Cover of Biotic Crust	Present? Yes No
emarks:	

SOIL		Sampling Point:
Profile Description: (Describe to the depth	needed to document the indicator or o	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type1 L	.oc ² Texture Remarks
Type: C=Concentration, D=Depletion, RM=F	Reduced Matrix, CS=Covered or Coated S	and Grains. ² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Solis ³ :
Hydric Soil Indicators: (Applicable to all L	RRs, unless otherwise noted.)	
Histosol (A1)	Sandy Redox (S5)	1 cm Muck (A9) (LRR C)
Histic Epipedon (A2)	Stripped Matrix (S6)	2 cm Muck (A10) (LRR B)
Black Histic (A3)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Red Parent Material (TF2)
Stratified Layers (A5) (LRR C)	Depleted Matrix (F3)	Other (Explain in Remarks)
1 cm Muck (A9) (LRR D)	Redox Dark Surface (F6)	
Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Thick Dark Surface (A12)	Redox Depressions (F8)	wetland hydrology must be present,
Sandy Mucky Mineral (S1)	Vernal Pools (F9)	unless disturbed or problematic.
Sandy Gleyed Matrix (S4)	8	
Restrictive Layer (if present):		
Туре:	<u> </u>	
Depth (inches):		Hydric Soll Present? Yes No
basin that has upland vegetation	the wetland mybrol	at the bottom of sewage ogy and is dominated by
YDROLOGY		
Wetland Hydrology Indicators:	abaak all that apply)	Secondary Indicators (2 or more required)
Primary Indicators (minimum of one required:		Water Marks (B1) (Riverine)
Surface Water (A1)	Salt Crust (B11)	Valer Marks (B7) (Riverine) Sediment Deposits (B2) (Riverine)
High Water Table (A2)	Biotic Crust (B12)	
Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)
Water Marks (B1) (Nonriverine)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Sediment Deposits (B2) (Nonriverine)	Oxidized Rhizospheres along Livi	
Drift Deposits (B3) (Nonriverine)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Surface Soil Cracks (B6)	Recent Iron Reduction in Tilled So	oils (C6) Saturation Visible on Aerial Imagery (C
Inundation Visible on Aerial Imagery (B7)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)
ield Observations:	/	
	o Depth (inches):	
Netes Table Descent? You No.	o Depth (inches):	/
	o Depth (inches):	Wetland Hydrology Present? Yes No
Saturation Present? Yes N includes capillary fringe)	0 Depart (inches)	Welland Hydrology Protont. 100
Describe Recorded Data (stream gauge, mon	itoring well, aerial photos, previous inspec	tions), if available:
Demarks:	ių ki	
Remarks: Overflow has	SILL NO DILLONG	and no wetland hydrologi
	IN IND VALUNCE	no no wellow hydrologi
	1	U U

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WEILAND D	EIERMINATIO	DATA FOR	M – Arid West Region
Project/Site: CrOWS Landing	Cit	SI SI	anistalis Sampling Date: 11/26
Investigator(s): L. BELLEN, Val	0 50	Hon Town-hi-	State: CA Sampling Point:
Landrom (hillslope, terrace efc.)			
Subregion (LRR): LPRC	Lot 27/		/e, convex, none): <u>NONC</u> Slope (%): <u>2</u> - NLong: <u>12106/05, 681 W</u> Datum:
Soil Map Unit Name: Capay class 0+	Lat: <u>210</u>	5 40,510	2 N Long: 121 06'05, 68'' W Datum:
Are climatic / hydrologic conditions on the site typical fr	CAT SIVE	S, raiery	TIDDOCO NWI classification:
Are Vegetation N Soil N or Hydrology N	-iis une of year?	Yes <u>No</u> No	e (If no, explain in Remarks.) e "Normal Circumstances" present? Yes No
Are Vegetation, Soli, or Hydrology	significantly disti	urbed? Ar	e "Normal Circumstances" present? Yes K. No
SUMMARY OF FINDINGS – Attach site m	ap showing sa	nauc? (If moling point	needed, explain any answers in Remarks.) t locations, transects, important features, e
	No No	Is the Sample	ed Area
Wetland Hydrology Present? Yes	No	within a Wetl	
Remarks: Photo #URIC -UR21 C CAC	itedia		
TROTO TYDIG - 4821 CIEU	crea bas	in with	willows on the basin
	r; create	d habi	tat.
/EGETATION – Use scientific names of pl			
Tree Stratum (Plot size: 40×40)	Absolute Don <u>% Cover Spe</u>	ninant Indicator	Dominance Test worksheet:
1. Salix gooding it		FACIN	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
Z			
3			Total Number of Dominant Species Across All Strata: 3 (B)
4.			(B)
Sapling/Shrub Stratum (Piot size: 40×40)	= Tot	al Cover	Percent of Dominant Species That Are OBL, FACW, or FAC:(OD(A/B
. Jalix exigua	35 Y	FA(L)	
Salix gooding ::	10 Y	FACW	Prevalence Index worksheet: Total % Cover of: Multiply by:
<u>_</u>			OBL species x1 =
			FACW species x 2 =
·			FAC species x 3 =
erb Stratum (Plot size:)	H5 = Tota	I Cover	FACU species x 4 =
1			UPL species x 5 =
	0		Column Totals: (A) (B)
	24		
			Prevalence Index = B/A = Hydrophytic Vegetation Indicators:
			Dominance Test is >50%
/			Prevalence Index is $\leq 3.0^{1}$
			Morphological Adaptations ¹ (Provide supporting
		-	data in Remarks or on a separate sheet)
ody Vine Stratum (Plot size:)	= Total	Cover	Problematic Hydrophytic Vegetation ¹ (Explain)
			¹ Indicators of hydric soll and wetland hydrology must be present, unless disturbed or problematic.
/	= Total		
Bare Ground in Herb Stratum 100 % Cover			Hydrophytic Vegetation
marks: Sround coursed with aver,		F	Present? Yes V No
ground covered with	willow le	eases an	12 bouches as la de
IV CC.			in Druiches, no herb
rmy Corps of Engineers			

SOIL				Sampling Point:
Profile Description: (Describe to the d	epth needed to document the indicator	or confirm	the absence	of indicators.)
Depth Matrix	Redox Features			
$\begin{array}{c} \text{(inches)} & \hline \text{Color (moist)} & \% \\ \hline 0 - 6 & 10 \ YR \ 3/2 \ 95 \\ \hline \end{array}$	<u>Color (moist) % Type</u> SYR46 <u>5</u> <u>C</u> SYR4/6 2D C	PL PL M	<u> </u>	CODYSE, blocky spil
<u>6-20 10 4K-3/3 60</u>				
¹ Type: C=Concentration, D=Depletion, R Hydric Soli Indicators: (Applicable to a Black 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)	all LRRs, unless otherwise noted.) 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)	ed Sand Gra	Indicators1 cm !2 cm !ReducRed POther 3Indicators	cation: PL=Pore Lining, M=Matrix. for Problematic Hydric Soils ³ : Muck (A9) (LRR C) Muck (A10) (LRR B) ced Vertic (F18) larent Material (TF2) (Explain in Remarks) of hydrophytic vegetation and
Sandy Mucky Mineral (S1) Sandy Gleyed Matrix (S4)	Vernal Pools (F9)			hydrology must be present, listurbed or problematic.
Restrictive Layer (if present): Type: Depth (inches):			Hydric Sol	Present? Yes No
Remarks:				
HYDROLOGY				
Wetland Hydrology Indicators:			Seco	ndary Indicators (2 or more required)
Primary Indicators (minimum of one requi	Salt Crust (B11)			Vater Marks (B1) (Riverine)

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
Surface Water (A1) Salt Crust (B11)	Water Marks (B1) (Riverine)
High Water Table (A2) Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)
Saturation (A3) Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)
Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Sediment Deposits (B2) (Nonriverine)) Dry-Season Water Table (C2)
Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Solls (C6)	Saturation Visible on Aerial Imagery (C9)
Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7)	Shailow Aquitard (D3)
Water-Stained Leaves (B9) Other (Explain in Remarks)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No Depth (inches):	
Water Table Present? Yes No Depth (inches):	/
(includes capillary fringe)	ydrology Present? Yes V No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if avail	lable:
Remarks: Point is within an excavated basin conal; connected by control gate.	adjacent lo wrigation
conal; connected by control gate.	

WETLAND	ETERMINATION	DATA FOF	RM – Arid West F	Region	
Project/Site: Crow's Landing					
Applicant/Owner: Stanislaus CE		County: 17	anisialis	Sampling Date: _	11/261
investigator(a): TRANSIC			State: <u>C</u>	A Sampling Point: _	5
investigator(s): T. Beyerl, Y. Val	Sec.	Hon Township	D.		
Landrorm (hillslope, terrace efc.)	· ·			VONP- Slor	0 (8/): 2
Subregion (LRR):	Lat: <u>37 23</u>	5'38.75"	N LONG 121'DK	2'04.55"W	/e (///)
entre land	UL I SIDUES	S. YARRAU	1 TINDIAL	a an	n:
			LINDOCAL INVI	classification:	· · · · · · · · · · · · · · · · · · ·
Are Vegetation \underline{N} , Soil \underline{N} , or Hydrology \underline{N}					
Are Vegetation <u>N</u> , Soil <u>N</u> , or Hydrology <u>N</u>				inces" present? Yes X	No
	naturally problem	atic? (If	f needed, explain any	answers in Remarks.)	
SUMMARY OF FINDINGS – Attach site n	nap showing san	npling poin	t locations, tran	sects, important fea	tures, etc
Hydrophytic Vegetation Present? Yes					
Hydric Soil Present? Yes		is the Sampi	led Area		
Wetland Hydrology Present? Yes		within a Wet	land? Yes	s No 🖉	
Remarks: Photo # 4822-4825					
					1
Point is on top of back	i beside ba	isin co	ntaining W	illow scrub	Vegeta.
					<u> </u>
/EGETATION – Use scientific names of p		_			
Tree Stratum (Plot size:)	Absolute Dom % Cover Spec	inant Indicator			
1/		icor <u>otatus</u>	- I muniper of Domin	ant Species	
2/			Inat Are OBL, FA	CW, or FAC:	(A)
3			Total Number of D	Dominant 3	
4			. Species Across A	Il Strata:	(B)
20120	 # Tota	I Cover	Percent of Domina	ant Species	
Sapling/Shrub Stratum (Plot size: 20×20)	. /	Witness of	That Are OBL, FA	CW, or FAC: <u>33</u>	(A/B)
	<u>80 Y</u>	+AC	Prevalence Index	worksheet:	
2			Total % Cover		
3				x1=	
			FACW species	x 2 =	
·			FAC species	x3 =	-
erb Stratum (Plot size: 20 K 20)	_ <u>_80</u> = Total	Cover		x4=	
Silyoum marianym	IN V	1		x5=	
Metiletus indicus		- ML.		(A)	
	<u> </u>	<u>+ACU</u>	1		(0)
	<u></u>			dex = B/A =	
a 6 a c c c c c c c c c c c c c c c c c			Hydrophytic Vege	ation Indicators:	
			Dominance Tes	st is >50%	
			Prevalence Inde		
2			Morphological A	daptations ¹ (Provide supp	orting
3	15			arks or on a separate shee	
ody Vine Stratum (Plot size:)	15 = Total (Cover	Froblematic Hyd	frophytic Vegetation ¹ (Expl	ain)
/			¹ Indicators of hydria		
/			be present, unless di	soil and wetland hydrology sturbed or problematic.	must
<i>i</i>	= Total C	over	Hydrophytic		
Bare Ground in Herb Stratum % Cove	er of Biotic Crust		Vegetation	/	
marks:			Present?	res No	

Profile Description: (Description: (Descriptin: (Description: (Description: (Description: (Descript	SOIL								Sampling Point: <u>5</u>		
Depth (mothes) Matrix (color (mols) Reduct Features (mols) Treet Loc ⁺ Texture Remarks 0-2.0 10 YE 3/3 6.5 5 YE 4/8 3.5 C M CL bl acky sol bl acky sol 0-2.0 10 YE 3/3 6.5 5 YE 4/8 3.5 C M CL bl acky sol bl ack sol bl acky sol bl acky sol bl acky sol bl ack sol bl ack sol bl acky sol bl ack sol bl acky sol bl acky sol bl acky sol <		rintion: (Describe	to the depth	needed to docu	ment the i	indicator	or confirm	n the absence			
Indexed Color (molet) % Tore' Loc' Texture Remarks 0-2.0 IOYE 3/3 GS GYE 4/8 35 C M CL blacky sol blacky sol 0-2.0 IOYE 3/3 GS GYE 4/8 35 C M CL blacky sol b						s					
2_20 10 12 12 12 12 Type: Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. Location: PL=Pore Lining, M=Matrix, Indicators for Problematic Hydric Solls': Indicators for Problematic Hydric Soll Prosent; Sandy Mucky Mineral (S1) Vermal Pools (F9) Indicators for Problematic Startictive Larger (if present): Type: Indicators for Problematic Startictive Larger (if present): Type: Mydric Soll Prosent? Yes No Vermarks: Concentrations of Recounter Hydric Hydric Hydric Soll Prosent? Yes No Stardice Valance (S1)				Color (moist)	%	Type ¹	_				
1/DE Deconcentration (PDE) problematic Hydric Solls): Indicators (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Sandy Redox (S5) 1 cm Muck (A9) (LRR C) Histosol (A2) Stripped Matrix (S6) 2 cm Muck (A9) (LRR B) Black Histo (A2) Loarny Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Suffied (A4) Loarny Gleyed Matrix (F2) Red Parent Material (TF2) Stratified Layers (A6) (LRR C) Depleted Matrix (F2) Red Parent Material (TF2) Depleted Dark Surface (A11) Depleted Matrix (F2) Red Parent Material (TF2) Thick Dark Surface (A12) Redox Depressions (F8) *Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Gleyed Matrix (S4) Restrictive Layer (If present): Type: Type: Hydric Soll Present? Yes No Permarks: Concurrent contrations one required: check all that apply) Sacondary Indicators (2 or more required): Surface Water (A1) Salt Crust (B11) Water Marks (B1) (Riverine) Surface Water (A1) Salt Crust (B11) Sediment Deposits (B2) (Riverine) Sutartion (A3) Aquatic Invertebrates (B13) Dirth Deposits (B2) (Riverine) Sediment Deposits (B2) (No	0-20	10YR 3/3	65	5YR 4/8	35	C	M	CL	blocky sail and		
1)De. Cocketering (Applicable to all LRRs, unless otherwise noted.) Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Sandy Redox (S5) 1 cm Muck (A9) (LRR C) Histosol (A2) Stripped Matrix (S6) 2 cm Muck (A9) (LRR B) Black Histo (A2) Loarny Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loarny Gleyed Matrix (F2) Red Parent Material (TF2) Stratified Layers (A5) (LRR C) Depleted Matrix (F2) Red Parent Material (TF2) Depleted Dark Surface (A11) Depleted Matrix (F2) Red Parent Material (TF2) Thick Dark Surface (A12) Redox Depressions (F8) *Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Gleyed Matrix (S4) Redox Depressions (F8) *Indicators (2 or more required) Sandy Gleyed Matrix (S4) Redox Depressions (F8) wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if present): Type: Hydric Soil Present? Yes No No YDROLOGY Satoration (A3) A quatic Invertebrates (B13) Derliaege Patterns (B10) Sacondary Indicators (2 or more required) Sutration (A3) A quatic Invertebrates (B13) Drin Deposits (B2) (Nonriverine) Dividicad Phicosp			1. T.			. <u> </u>			·		
Type: Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Sandy Redox (S5) 1 cm Muck (A9) (LRR C) Histo Epipedon (A2) Stripped Matrix (S5) 2 cm Muck (A9) (LRR B) Black Histo (A3) Loarny Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Suffice (A4) Loarny Gleyd Matrix (F2) Red Parent Material (TF2) Stratified Layers (A6) (LRR C) Depleted Matrix (F2) Red Parent Material (TF2) Depleted Below Dark Surface (A11) Depleted Matrix (F2) Red Parent Material (TF2) Thick Dark Surface (A12) Redox Depressions (F8) *Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Gleyed Matrix (S4) Sandy Pools (F9) *ultact Sold Present? Yes No _/ Sandy Gleyed Matrix (S4) Satortext equart for problematic Applicators (2 or more required) Sator Carbon Sum Componentic Material Material (B12) Sacondary Indicators (2 or more required) Surface Water (A1) Sat Crust (B11) Water Marks (B1) (Riverine) Surface Water (A1) Sat Crust (B11) Sediment Deposits (B2) (Riverine) Surface Water (A3) Aquatic Invertebrates (B13) Drit Deposits (B2) (Riverine)				~					1		
Type: Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Solls': Histosol (A1) Sandy Redox (S5) 1 orn Muck (A9) (LRR C) Histosol (A2) Stripped Matrix (S5) 2 orn Muck (A9) (LRR B) Black Histo (A2) Loarny Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Suffice (A4) Loarny Gleyed Matrix (F2) Red Parent Material (TF2) Stratified Layers (A5) (LRR C) Depleted Matrix (F2) Red Parent Material (TF2) Depleted Delow Dark Surface (A11) Depleted Dark Surface (F7) Other (Explain in Remarks) Thick Dark Surface (A12) Redox Depressions (F8) *Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (If present): Type: Hydric Soll Present? Yes No Type: Depth (inches): No Year Active C (C1) Sacondary Indicators (2 or more required) Surface Water (A1) Sat Crust (B11) Sacondary Indicators (2 or more required) Sacondary Indicators (2 or more required) Statration (A3) Aquatic Invertebrates (B13) Dirit Deposits (B2) (Riverine) Sat Crust (B11) Water Marks (B1) (Riverine) Sacondary Indicators (C3) Diralage Patterns (B10) S											
Type: Control indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Solls?: Histosol (A1) Sandy Redox (S5) 1 cm Muck (A9) (LRR C) Histosol (A2) Stripped Matrix (F2) Redox (A10) (LRR B) Biack Histo (A2) Loarny Gleyed Matrix (F2) Red Parent Material (F12) Stratfied Layers (A5) (LRR C) Depleted Matrix (F2) Red Parent Material (F12) Stratfied Layers (A5) (LRR C) Depleted Matrix (F2) Red Parent Material (F12) Depleted Matrix (F2) Red Parent Material (F12) Red Parent Material (F12) Thick Dark Surface (A11) Depleted Matrix (F2) Other (Explain in Remarks) Thick Dark Surface (A12) Redox Depressions (F8) *Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Gleyed Matrix (S4) Sater Cell Cell Featwrees With Abfrupf Aggular Veriant Surface (A11) Sater Credic Featwrees With Abfrupf Aggular Surface Water (A1) Sater Credic Featwrees With Abfrupf Aggular Surface Water (A1) Sater Crust (B11) Water Marks (B1) (Riverine) Surface Water (A1) Sater Crust (B12) Sediment Deposits (B2) (Riverine) Saturation (A				ð.				<u>.</u>	1. 107		
Type: Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Solls': Histosol (A1) Sandy Redox (S5) 1 orn Muck (A9) (LRR C) Histosol (A2) Stripped Matrix (S5) 2 orn Muck (A9) (LRR B) Black Histo (A2) Loarny Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Suffice (A4) Loarny Gleyed Matrix (F2) Red Parent Material (TF2) Stratified Layers (A5) (LRR C) Depleted Matrix (F2) Red Parent Material (TF2) Depleted Delow Dark Surface (A11) Depleted Dark Surface (F7) Other (Explain in Remarks) Thick Dark Surface (A12) Redox Depressions (F8) *Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (If present): Type: Hydric Soll Present? Yes No Type: Depth (inches): No Year Active C (C1) Sacondary Indicators (2 or more required) Surface Water (A1) Sat Crust (B11) Sacondary Indicators (2 or more required) Sacondary Indicators (2 or more required) Statration (A3) Aquatic Invertebrates (B13) Dirit Deposits (B2) (Riverine) Sat Crust (B11) Water Marks (B1) (Riverine) Sacondary Indicators (C3) Diralage Patterns (B10) S			·								
Histosi (A1)	Type: C=C	oncentration, D=Dep	letion, RM=F	Reduced Matrix, C	S=Covered	d or Coate	ed Sand G	rains. ² Lo	cation: PL=Pore Lining, M=Matrix.		
Histic Epipedon (A2) Stripped Matrix (S8) 2 cm Muck (A10) (LRR B) Black Histic (A3) Loamy Wucky Mineral (F1) Reduced Vertic (F18) Hydrogen Sutifie (A4) Loamy Gleyed Matrix (F2) Red Parent Material (TF2) Strattified Layers (A5) (LRR C) Depieted Matrix (F3) Other (Explain in Remarks) 1 cm Muck (A9) (LRR D) Redox Dark Surface (F6) Depieted Below Dark Surface (A11) Depieted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) sandy Gleyed Matrix (S4) vernal Pools (F9) Sandy Gleyed Matrix (S4) unless disturbed or problematic. Sardy Gleyed Matrix (S4) sandy Gleyed Matrix (S4) Sardy Gleyed Matrix (S4) wetand hydrology must be present, unless disturbed or problematic. Sardy Gleyed Matrix (S4) sandy Gleyed Matrix (S4) Type:	lydric Soll	Indicators: (Applic	able to all L			ea.)					
Inside Lipped Victory Loamy Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Sulifie (A4) Loamy Gleyed Matrix (F2) Red Parent Material (TF2) Stratified Layers (A5) (LRR C) Depleted Matrix (F2) Red Parent Material (TF2) I cm Muck (A9) (LRR D) Redox Dark Surface (F5) Other (Explain in Remarks) I cm Muck (A9) (LRR D) Redox Depressions (F8) *Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) Vernal Pools (F9) wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) Vernal Pools (F9) wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) Vernal Pools (F9) wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) Vernal Pools (F9) wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) Vernal York (S4) wetland hydrology indicators: YDROLOGY Sufface Water (A1) Satt Crust (B11) Water Marks (B1) (Riverine) Sufface Water (A1) Satt Crust (B12) Sediment Deposits (B2) (Riverine) Saturation (A3) Aquatic Invertebrates (B13) Drift Deposits (B3) (Nonriverine) D											
Distribution Distribution Distribution Red Parent Material (TF2) Hydrogen Sulfade (A4) Loamy Gleyed Matrix (F2) Red Parent Material (TF2) Stratified Layers (A5) (LRR C) Depleted Matrix (F2) Other (Explain in Remarks) 1 cm Muck (A9) (LRR D) Redox Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) Sandy Gleyed Matrix (S4) Vernal Pools (F9) Sandy Gleyed Matrix (S4) Vernal Pools (F9) Retrictive Layer (If present): Type: Type:						1.7543					
Introduct of the state of											
Statistic Layes (v) (kt) (V) Pedox Dark Surface (F6) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) Sandy Mucky Mineral (S1) Vernal Pools (F9) Sesticitive Layer (If present): Type: Type:		• •	~)			(12)					
			. (0			(F6)					
			e (A11)								
Sandy Mucky Mineral (S1) Vemal Pools (F9) wetland hydrology must be present, unless disturbed or problematic. Sandy Gleyed Matrix (S4) Interst disturbed or problematic. Interst disturbed or problematic. Restrictive Layer (If present): Type: Hydric Soll Present? Yes No Depth (Inches): Interst disturbed or problematic. No Interst disturbed or problematic. Remarks: Concumption of the present? Yes No Interst disturbed or problematic. YDROLOGY Secondary Indicators: Present? Yes No Interst disturbed or problematic. Surface Water (A1) Salt Crust (B11) Secondary Indicators (2 or more required) Secondary Indicators (2 or more required) Surface Water (A1) Salt Crust (B12) Sediment Deposits (B2) (Riverlne) Saturation (A3) Aquatic Invertebrates (B13) Drift Deposits (B3) (Riverlne) Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2) Drift Deposits (B3) (Nonriverine) Presence of Reduced iron (C4) Saturation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shallow Aquitard (D3)	·		S (/ (1 /)					³ Indicators	s of hydrophytic vegetation and		
Sandy Gleyed Matrix (S4) Restrictive Layer (If present): Type:						·					
Restrictive Layer (if present): Type:								unless	disturbed or problematic.		
Depth (inches): Hydric Soil Present? Yes No / Remarks: Concentrations are relict features with abrupt angular Bomdaries and extremely firm texture. YDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required: check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) Salt Crust (B11) Water Marks (B1) (Riverine) Surface Water (A1) Salt Crust (B12) Sediment Deposits (B2) (Riverine) Saturation (A3) Aquatic Invertebrates (B13) Drift Deposits (B3) (Riverine) Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) Surface Soil Cracks (B6) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shallow Aquitard (D3) FAC-Neutral Test (D5) Field Observations: Depth (inches): Depth (inches): Water Table Present? Yes No // Depth (inches): Water Table Present? Yes No // Depth (inches):		-							/		
Water Matrims are relict features with abruft angular bomdaries and extremely firm fexture. YDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required: check all that apply) Surface Water (A1) Salt Crust (B11) High Water Table (A2) Blotic Crust (B12) Saturation (A3) Aquatic Invertebrates (B13) Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3) Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Soils (C6) Surface Soil Cracks (B6) Cher (Explain in Remarks) Water-Stained Leaves (B9) Other (Explain in Remarks) Field Observations: Yes Surface Water Present? Yes Water Table Present? Yes								Hydric Sol	Il Present? Yes No		
Wetland Hydrology Indicators: Primary Indicators (minimum of one required: check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) Salt Crust (B11) Water Marks (B1) (RiverIne) High Water Table (A2) Biotic Crust (B12) Sediment Deposits (B2) (RiverIne) Saturation (A3) Aquatic Invertebrates (B13) Drift Deposits (B3) (RiverIne) Vater Marks (B1) (NonriverIne) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) Sediment Deposits (B2) (NonriverIne) OxidIzed Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2) Drift Deposits (B3) (NonriverIne) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (B7) Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shallow Aquitard (D3) Water-Stained Leaves (B9) Other (Explain in Remarks) FAC-Neutral Test (D5) Field Observations: Yes No Depth (inches): Water Table Present? Yes No	Remarks:	concertra	nons.	ore rel	ict	feat	1196	with	abrupt angular		
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required: check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) Salt Crust (B11) Water Marks (B1) (Riverine) High Water Table (A2) Biotic Crust (B12) Sediment Deposits (B2) (Riverine) Saturation (A3) Aquatic Invertebrates (B13) Drift Deposits (B3) (Riverine) Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) Sediment Deposits (B2) (Nonriverine) OxidIzed Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2) Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Solis (C6) Saturation Visible on Aerial Imagery (B7) Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shallow Aquitard (D3) Water-Stained Leaves (B9) Other (Explain in Remarks) FAC-Neutral Test (D5) Field Observations: Mater Table Present? Yes No Water Table Present? Yes No Depth (inches): Mater Table Present? Yes No	hann	havies an	dext	renely f	-iv m	tex	twe		June		
Wetland Hydrology Indicators: Primary Indicators (minimum of one required: check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) Salt Crust (B11) Water Marks (B1) (Riverine) High Water Table (A2) Biotic Crust (B12) Sediment Deposits (B2) (Riverine) Saturation (A3) Aquatic Invertebrates (B13) Drift Deposits (B3) (Riverine) Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) Sediment Deposits (B2) (Nonriverine) OxidIzed Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2) Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Solis (C6) Saturation Visible on Aerial Imagery (B7) Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shallow Aquitard (D3) Water-Stained Leaves (B9) Other (Explain in Remarks) FAC-Neutral Test (D5) Water Table Present? Yes No Depth (inches): Water and Hydrology Present? Yes Water Table Present? Yes No Depth (inches): Water and Hydrology Present? Yes No	0000										
Primary Indicators (minimum of one required: check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) Salt Crust (B11) Water Marks (B1) (Riverine) High Water Table (A2) Biotic Crust (B12) Sediment Deposits (B2) (Riverine) Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Drift Deposits (B3) (Riverine) Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2) Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (B7) Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shallow Aquitard (D3) Water Stained Leaves (B9) Other (Explain in Remarks) FAC-Neutral Test (D5) Water Table Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches):											
Surface Water (A1)					ы			Seco	ndary indicators (2 or more required)		
Sufface Water (A1)			ne required:								
		• •			· . ·						
Saturation (x5)						(040)		-			
Sectiment Deposits (B2) (Nonriverine) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (B7) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Other (Explain in Remarks) FAC-Neutral Test (D5) Sector (Depth (Inches): Vater Table Present? Yes No V Depth (Inches) Yes _		• • •					Living De				
Drift Deposits (b3) (Noninvernie) Induction of National Interview (b3) Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (B7) Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shallow Aquitard (D3) Shallow Aquitard (D3) Other (Explain in Remarks) FAC-Neutral Test (D5) Surface Water Present? Yes No Depth (inches): Vater Table Present? Yes No Depth (inches):											
			rine)								
							u 30115 (C	-/			
			lmagery (B7)								
Surface Water Present? Yes No // Depth (inches): Nater Table Present? Yes No // Depth (inches): Wetland Hydrology Present? Yes No // Depth (inches):				Other (Ex	plain in Re	ernarks)					
Wetland Hydrology Present? Yes No V Depth (inches):				./							
No V Double Texture Wetland Hydrology Present? Yes No	Surface Wat	er Present? Y		· ·							
Saturation Present? Yes No 🗸 Depth (inches): Wetland Hydrology Present? Yes No 💆	Water Table	Present? Y	'es N	o \underline{V} Depth (ir	iches):						
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	(includes car	nillery fringe)			•				gy Present? Yes No		

Remarks:

	RM – Arid West Region
Project/Site: Crows Landing City/County St	anislaids Sampling Date: 11/26
Applicant/Owner: Stanislaus County	Sampling Date: 11/20
Investigator(s):	State: <u>CA</u> Sampling Point: <u>6</u>
Landform (hillslope, terrace, etc.):Local relief (conc	p, Range:
Subregion (LRR): Let: 37 24 55, 16	ave, convex, none): \underline{Nene} Slope (%): \underline{O}
Soil Map Unit Name: Capay clay, O to 2% slopes, rarel	Long: 121 Ule 31. 62 W Datum:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes \times	4 LODOLO NWI classification:
Are Vegetation A Cost A Cost A	Are "Normal Circumstances" present? Yes <u>×</u> No
SUMMARY OF FINDINGS – Attach site map showing sampling poi	(If needed, explain any answers in Remarks.)
Hydrophytic Vegetation Present? Yes No Is the Sample Hydric Soil Present? Yes No Is the Sample	pled Area
Wetland Hydrology Present? Yes No within a We	etland? Yes No Ves
Remarks: Photos 4826-4828	
canal/channelized creek (Little Salada Creak)
VEGETATION – Use scientific names of plants.	- mesmado creep)
Tree Stratum (Plot size:) Absolute Dominant Indicate % Cover Species? Status	or Dominance Test worksheet:
Inee Stratum (Plot size:) % Cover Species? Status 1/	Number of Dominant Species
2	
3	☐ Total Number of Dominant _ Species Across All Strata: 2 (B)
4	(2)
Sapling/Shrub Stratum (Plot size:) = Total Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
1	Prevalence Index worksheet:
	Total % Cover of: Multiply by:
	OBL species x 1 =
4	_ FACW species x 2 =
Hart Statum (DV)D = Total Cover	FAC species x 3 =
Herb Stratum (Plot size: 10 × 10	FACU species x 4 = UPL species x 5 =
1. Versicaria punctata 30 1 OBL	Column Totals: (A) (B)
2. Echinochiba crus-galli 25 Y FRUN 3. Sorchum halapense 15 N FACILI	
	Prevalence Index = B/A =
EDilobium brachycarpum 10 N NL	Hydrophytic Vegetation Indicators:
Helminthethera echioides 2 N FACH	✓ Dominance Test is >50%
Silybum marianum 2 N NL	Prevalence Index is <3.0 ¹
Brassica nigra	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
	Problematic Hydrophytic Vegetation ¹ (Explain)
rever the otatum (Flot Size:)	8
	'Indicators of hydric soil and wotherd hydrolenus
	¹ indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1	be present, unless disturbed or problematic.
% Bare Ground in Herb Stratum % Cover of Biotic Crust	be present, unless disturbed or problematic. Hydrophytic Vegetation
Bare Ground in Herb Stratum <u>5</u> % Cover of Biotic Crust	be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes <u>No</u>
= Total Cover Sare Ground in Herb Stratum % Cover of Biotic Crust	be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes <u>No</u>
6 Bare Ground in Herb Stratum % Cover of Biotic Crust	be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes <u>No</u>

			1
Sampling	Point:	1	0

Depth	Matrix		Redox Features						
inches) Color (r (moist)				<u>Clay</u>		Remarks
								5 - 	
ype: C=Concentration	n, D=Depletion (Applicable	n, RM=Reduce to all LRRs, u	d Matrix, CS	=Covered wise note	or Coated d.)	d Sand Gr			ore Lining, M=Matrix. atic Hydric Solis ³ :
Histosol (A1) Histic Epipedon (A2 Black Histic (A3) Hydrogen Sulfide (A Stratified Layers (A8 1 cm Muck (A9) (LF) 44) 57 (LRR C) 8R D)		Sandy Redo Stripped Ma Loamy Muci Loamy Gley Depleted Ma Redox Dark Depleted Da	ox (S5) trix (S6) ky Mineral ed Matrix (atrix (F3) Surface (F	(F1) (F2) ⁻ 6)		2 cm Muc Reduced Red Pare	ck (A9) (LR ck (A10) (Ll Vertic (F18 ent Material xplain in Re	RR B) 3) (TF2)
 Depleted Below Date Thick Dark Surface Sandy Mucky Miner Sandy Gleyed Matri 	(A12) al (S1)		Redox Depr Vernal Pools	essions (F			wetland hy		c vegetation and st be present, oblematic.
estrictive Layer (if pr	esent):	5		12			Assu	nech	ydric
Type: Depth (inches):							Hydric Soll Pr		• /
emarks: NO S	oil pit	- poir	nt is	with	nin 1 cre	the	OHWM	nofe	a .

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required: ch	Secondary Indicators (2 or more required)	
Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (Riverine)
High Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)
Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)
Water Marks (B1) (Nonriverine)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Sediment Deposits (B2) (Nonriverine)	Oxidized Rhizospheres along Livir	ng Roots (C3) Dry-Season Water Table (C2)
Drift Deposits (B3) (Nonriverine)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Surface Soil Cracks (B6)	Recent Iron Reduction in Tilled So	ils (C6) Saturation Visible on Aerial Imagery (C9)
Inundation Visible on Aerial Imagery (B7)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)
Field Observations:	1	
Surface Water Present? Yes No _	Depth (inches):	
Water Table Present? Yes No _	Depth (inches):	
Saturation Present? Yes No _	Depth (inches):	Wetland Hydrology Present? Yes 📈 No
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monito	nng well, aenal photos, previous inspect	ions), it available:
Remarks:		
3		

WETLAND DE	TERMINATION	DATA FOR	M – Arid West Regio	n	
Project/Site: Crows Landing	Ciby	County St	michaus		121/1-
Applicative where $\gamma \gamma \gamma$					2012
Investigator(s):	P Sec	fion Township	State: CA		
	1	-1	· ^ -	A	
Soil Map Unit Name: <u>Capay</u> <u>clay</u> , <u>D</u> to Are climatic / hydrologic conditions on the site typical for	21/ SIDO	05	10 Long: 121 10 25	<u></u> Datum:	
Are climatic / hydrologic conditions on the site typical for	this time of year?	V X	NWI classifie	cation:	
Are Vegetation N , Soil N , or Hydrology N Are Vegetation N , Soil N , or Hydrology N	significantly dist.	res <u> </u>	р (If по, explain in F	(emarks.)	
Are Vegetation _/, Soil _/, or Hydrology _/	significantiy distu		e "Normal Circumstances" j	present? Yes X	No
			needed, explain any answe	rs in Remarks.)	
SUMMARY OF FINDINGS – Attach site ma	p showing sar	npling point	locations, transects	, important featur	es, etc.
Hydrophytic Vegetation Present? Yes	/				_ <u></u>
Hydric Soil Present? Yes Wetland Hydrology Present? Yes		Is the Sample		/	
Wetland Hydrology Present? Yes	No		and? Yes		
Remarks: 4836-4838 Upland	auderal	C]] .	1 0 1		·
Luce a frage of a	Mamaj-	tield u	rithin fierced	area that	
was a former firing ran	gen				
VEGETATION – Use scientific names of pla					
	Absolute Dom	inant Indicator	Dominance Test works	haat	······
Tree Stratum (Plot size:)	% Cover Sner	cies? Statue	Number of Dominant Sp		
1			That Are OBL, FACW, or	FAC:	(A)
			Total Number of Domina	nf .	
3 4			Species Across All Strate	u	(B)
	17 E Tab		Percent of Dominant Spe	cies	
Sapling/Shrub Stratum (Plot size:)	104		That Are OBL, FACW, or	FAC:	(A/B)
			Prevalence Index works	heet:	
				Multiply by:	
			OBL species		
5.			FACW species		
	= Tota		FAC species		
Herb Stratum (Plot size: 20x20) 1. Avena sativa			FACU species	X4=	-
1. <u>Hvena sativa</u> 2. <u>Bromus diandrus</u>	25 Y	_ LAL	Column Totals:		(B)
3. Festuca mauros	15 K	$-\underline{DL}$			
4. Am sinckia intermedia	25 1	-FACY		B/A =	
5. Medicago Dolumorena	ID N	-NL FACU	Hydrophytic Vegetation I		
6. Hordeum murinum	S N	FACY	Dominance Test is >5 Prevalence Index is <3		
. Corduns pychocephallys	2 N	- M	Morphological Adaptat		_
B. Convolvulus avensis	N	NL	data in Remarks or	on a separate sheet)	
other 2%	95 = Total	Cover	Problematic Hydrophyl	ic Vegetation ¹ (Explain)	
Woody Vine Stratum (Plot size:) 1/ /			•		
			¹ Indicators of hydric soil and be present, unless disturbe	d wetland hydrology mu	st
	= Total (— — — –			
6 Bare Ground in Herb Stratum			Hydrophytic Vegetation	/	
Remarks:	of Biotic Crust		Present? Yes	No	
· · · · · · · · · · · · · · · · · · ·					

20 20

SOIL		Sampling Point:
Profile Description: (Describe to the de	epth needed to document the indicator o	r confirm the absence of indicators.)
Depth <u>Matrix</u>	Redox Features	Loc ² Texture Remarks
(inches) Color (moist) %	Color (moist) % Type ¹	
×		
······································		
		2 Det
		logad Orgina 21 configure DI = Porce Lining M=Matrix
¹ Type: C=Concentration, D=Depletion, R	M=Reduced Matrix, CS=Covered or Coated	I Sand Grains. ² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Solis ³ :
Hydric Soll Indicators: (Applicable to a		
Histosol (A1)	Sandy Redox (S5)	1 cm Muck (A9) (LRR C) 2 cm Muck (A10) (LRR B)
Histic Epipedon (A2)	Stripped Matrix (S6) Loamy Mucky Mineral (F1)	2 chi Muck (ATO) (ETRE B)
Black Histic (A3)	Loamy Gleyed Matrix (F2)	Red Parent Material (TF2)
Hydrogen Sulfide (A4)	Depleted Matrix (F3)	Other (Explain in Remarks)
Stratified Layers (A5) (LRR C) 1 cm Muck (A9) (LRR D)	Redox Dark Surface (F6)	
Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)	
Thick Dark Surface (A12)	Redox Depressions (F8)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Vernal Pools (F9)	wetland hydrology must be present,
Sandy Gleyed Matrix (S4)	8	unless disturbed or problematic.
Restrictive Layer (if present):		
Туре:		
Depth (inches):	<u> </u>	Hydric Soll Present? Yes No
	a la lateria co	
NU DOIL PIT-	- no hydophytic ve	getation or wetland
hudrology and all	a was formatly u	ad for a forma range and.
WIN SIT	e was larrier of or	sed for a firing range and. De safe to dig.
minitions could be	present so may not	DE SUFE TO CIZ.
HYDROLOGY		
Wetland Hydrology Indicators:		
Primary Indicators (minimum of one requi	red: check all that apply)	Secondary Indicators (2 or more required)
Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (Riverine)
High Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)
Saturation (A3)	Aquatic invertebrates (B13)	Drift Deposits (B3) (Riverine)
Water Marks (B1) (Nonriverine)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Sediment Deposits (B2) (Nonrivering		iving Roots (C3) Dry-Season Water Table (C2)
Drift Deposits (B3) (Nonriverine)	Presence of Reduced Iron (C4)	
Surface Soil Cracks (B6)	Recent Iron Reduction in Tilled	
Inundation Visible on Aerial Imagery		Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)
Field Observations:		
	No Depth (inches):	
	-	
Saturation Present? Yes	No Depth (inches):	
(includes capillary fringe) Describe Recorded Data (stream gauge, I	monitoring well, aerial photos, previous insp	ections), if available:
Remarks:		
T SHEFT FEET FEET		
	a.	

WETLAND DETERMINATION DATA FORM – Arid West Region

				1
	county: Star	islaus_	Sampling Date: 22	613
14	<u> </u>	State: <u>CA</u>	Sampling Point:	
Sect	ion, Township, Ra	nge:		
Loca	al relief (concave,	convex, none): <u>ConC</u>	ave Siope (%):	2
Lat:		Long:	Datum:	
slopes, c	arely floo	dedNWI classifi	cation:	
			75.42	D
showing sar	npling point l	ocations, transects	s, important feature	s, etc.
			No	
een Lit	rle salad	o creek ba	K/ evee a	7
le.				G
nts.				
		Dominance Test work	sheet:	
<u>% Cover</u> Spe	<u>Ecies?</u> <u>Status</u> <u>FAC</u>			(A)
		Species Across All Stra	.ta: <u>~</u>	(B)
60 = To	tal Cover	Percent of Dominant S That Are OBL, FACW,	or FAC: <u>SO</u>	(A/B)
	Lat:	Section, Township, Ra Section, Township, Ra Local relief (concave, Slopes, <u>rarewflow</u> is time of year? Yes <u>No_</u> is time of year? Year? Year? No_ No_ No_ No_ No_ No_ No_ No_	Section, Township, Range:	State: Sampling Point: 8 Section, Township, Range:

3			Total Number of Dominant Species Across All Strata:	2	(B)
4	60		Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)
1. Pyracantha angustitolia	25	NL	Prevalence Index worksheet:		
2			Total % Cover of:	Multiply by:	_
3			OBL species x	1 =	
4			FACW species x	2 =	_
5			FAC species x	3 =	_
	25	= Total Cover	FACU species x	4 =	_
Herb Stratum (Plot size:)			UPL species x	5 =	_
1			– Column Totals: (A	v	_ (B)
2			_		
3			- Prevalence Index = B/A =		
4			- Hydrophytic Vegetation Indica	itors:	
5			_ Dominance Test is >50%		
6			Prevalence Index is ≤3.0 ¹		
7	•	·	_ Morphological Adaptations ¹ data in Remarks or on a		ing
8	•		- Problematic Hydrophytic Ve	getation ¹ (Explain	n)
Woody Vine Stratum (Plot size:)		_ = Total Cover			
1			¹ Indicators of hydric soil and wet	land hydrology m	nust
2.			be present, unless disturbed or p	problematic.	
% Bare Ground in Herb Stratum % Cover		_ = Total Cover	Hydrophytic Vegetation Present? Yes	No	
Remarks: leaf lifter and brand	hes	m herb la	yer		
			l		

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm Depth Matrix Redox Features (inches) Color (moist) % Type ¹ Loc ²	
Depth Matrix Redox Features	n the absence of indicators.)
	Texture Remarks
0-20 101R3/5 100	C
	-
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand G	rains. ² Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
Histosol (A1) Sandy Redox (S5)	1 cm Muck (A9) (LRR C)
Histosof (A1) Stripped Matrix (S6)	2 cm Muck (A10) (LRR B)
Black Histic (A3) Loamy Mucky Mineral (F1)	Reduced Vertic (F18)
Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2)	Red Parent Material (TF2)
Stratified Layers (A5) (LRR C) Depleted Matrix (F3)	Other (Explain in Remarks)
1 cm Muck (A9) (LRR D) Redox Dark Surface (F6)	
Depleted Below Dark Surface (A11) Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Thick Dark Surface (A12) Redox Depressions (F8) Sandy Mucky Mineral (S1) Vernal Pools (F9)	wetland hydrology must be present,
Sandy Mucky Mineral (S1) Vernal Pools (F9) Sandy Gleyed Matrix (S4)	unless disturbed or problematic.
Restrictive Layer (if present):	
	/
Depth (inches):	Hydric Soll Present? Yes No _/
Remarks:	
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (2 or more required)
Primary Indicators (minimum of one required; check all that apply)	
Surface Water (A1) Sait Crust (B11)	Water Marks (B1) (Riverine)
High Water Table (A2) Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)
Saturation (A3) Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine) Drainage Patterns (B10)
Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Living Ro	
	Crayfish Burrows (C8)
Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Soils (C	
Surface Soil Cracks (B6) Recent Iron Reduction in Filled Soils (C Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9) Other (Explain in Remarks)	FAC-Neutral Test (D5)
Field Observations:	
Field Observations:	
Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches):	land Hydrology Present? Yes No
Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): (includes capillary fringe) Wet	land Hydrology Present? Yes No
Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches):	
Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): (includes capillary fringe) Wet	
Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Uncludes capillary fringe) No Depth (inches): Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections)	, if available:
Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Uncludes capillary fringe) No Depth (inches): Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections)	, if available:
Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Gincludes capillary fringe) No Depth (inches): Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections)	, if available:
Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): (includes capillary fringe) Wet Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections)	, if available:

WETLAND DETERMINATION	DATA FORM – Arid West Region
Project/Site: Crows Landing City/	county: Stanislaus Sampling Date: 126/13
Applicant/Owner: Stanislaus County	
Investigator(s): T. Beyer Y. Valle Section	State: CA+ Sampling Point:
Landform (hillslope, terrace, etc.):	al relief (concave, convex, none): <u>NONE</u> Slope (%): <u>2</u>
Subregion (LRR): LPRC	Slope (%): Slope (%):
Subregion (LRR): <u>LEKC</u> Soll Map Unit Name: <u>Capcy Clay</u> <u>D</u> to <u>Z'1</u> . <u>Slopes</u>	vare in flooded much in the Datum:
The cimatic / hydrologic conditions on the site typical for this time of year?	
Are Vegetation $\underline{N}_{\underline{N}}$, Soil $\underline{N}_{\underline{N}}$, or Hydrology $\underline{N}_{\underline{N}}$ significantly distur	
Are Vegetation, Soil, or Hydrology naturally problema	
SUMMARY OF FINDINGS – Attach site map showing sam	pling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No	
Hydric Soil Present? Yes No	is the Sampled Area
Wetland Hydrology Present? Yes No	within a Wetland? Yes No
Remarks: Upland point on biok of al	mnelized creek (Little Salado
Creak)	melized creek (Little Salado)
- ciex)	

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute Dominant Indicate	Dominance Test worksheet:
1	<u>% Cover Species? Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC:
	· · · · · · · · · · · · · · · · · · ·	Total Number of Dominant Species Across All Strata: (B)
Sapling/Shrub Stratum (Plot size:)	= Total Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
		Prevalence Index worksheet:
3		Total % Cover of: Multiply by:
		OBL species x 1 =
		FACW species x 2 =
5		FAC species x 3 =
Herb Stratum (Plot size: 20×20)	= Total Cover	FACU species x 4 =
1. Brassica nigra	40 Y NL	UPL species x 5 =
2. Sorghum halapense		Column Totals: (A)
3. Silybum marianum	5 N NL	Prevalence Index = B/A =
		Hydrophytic Vegetation Indicators:
5	·	Dominance Test is >50%
· · · · · · · · · · · · · · · · · · ·		Prevalence Index is <3.0 ¹
7		Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
Woody Vine Stratum (Plot size:)	<u> </u>	Problematic Hydrophytic Vegetation ¹ (Explain)
1	·	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
% Bare Ground in Herb Stratum 25 % Cover	= Total Cover	Hydrophytic Vegetation Present? Yes No
Remarks:		
Vesetation is main	trined; in the	e process of Jarning
weeds along the creek		
\bigcirc		

SOIL				8	Sampling Point:
Profile Description: (Describe to the dep	oth needed to docu	ment the indicator	or confirm	n the absence	e of indicators.)
Depth Matrix		ox Features		T	Demerice
(inches) Color (moist)%	Color (moist)	<u>%</u> <u>Type</u> ¹	Loc ²	Texture	Remarks
0-20 104R4/4 98	SYR 4/6	<u>2</u> <u>C</u>	<u>M</u>	SLL	silty clay looun
					n red for r
			·		
6 <u>.</u>					920
Type: C=Concentration, D=Depletion, RM	Reduced Matrix, C	S=Covered or Coat	ed Sand G	rains. ² Lo	ocation: PL=Pore Lining, M=Matrix.
Hydric Soll Indicators: (Applicable to al	LRRs, unless othe	rwise noted.)		Indicator	s for Problematic Hydric Solis ³ :
Histosol (A1)	Sandy Red				Muck (A9) (LRR C)
Histic Epipedon (A2)	Stripped M	atrix (S6)		2 cm	Muck (A10) (LRR B)
Black Histic (A3)	Loamy Mu	cky Mineral (F1)			ced Vertic (F18)
Hydrogen Sulfide (A4)	Loamy Gle	yed Matrix (F2)		Red F	Parent Material (TF2)
Stratified Layers (A5) (LRR C)	Depleted N	latrix (F3)		Other	(Explain in Remarks)
1 cm Muck (A9) (LRR D)	Redox Dar	k Surface (F6)			
Depleted Below Dark Surface (A11)	Depleted D	ark Surface (F7)			
Thick Dark Surface (A12)	Redox Dep	pressions (F8)			s of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Vernal Poo	ls (F9)			I hydrology must be present,
Sandy Gleyed Matrix (S4)				unless	disturbed or problematic.
Restrictive Layer (if present):					
Type:					
Depth (inches):				Hydric Sol	Il Present? Yes No _/
Soil is in art Soil dredged from YDROLOGY					
Wetland Hydrology Indicators:					
Primary Indicators (minimum of one require	d: check all that app	lv)		Seco	ndary Indicators (2 or more required)
	Salt Crust		2		Water Marks (B1) (Riverine)
Surface Water (A1)	Biotic Cru				Sediment Deposits (B2) (Riverine)
High Water Table (A2)		•			Drift Deposits (B3) (Riverine)
Saturation (A3)		ivertebrates (B13)			Drainage Patterns (B10)
Water Marks (B1) (Nonriverine)	-	Sulfide Odor (C1)			-
Sediment Deposits (B2) (Nonriverine)		Rhizospheres along		· · —	Dry-Season Water Table (C2)
Drift Deposits (B3) (Nonriverine)		of Reduced Iron (C		_	Crayfish Burrows (C8)
Surface Soil Cracks (B6)	Recent In	on Reduction in Tille	ed Soils (Cl	3) 3	Saturation Visible on Aerial Imagery (C
Inundation Visible on Aerial Imagery (B	37) Thin Muci	k Surface (C7)			Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Other (Ex	plain in Remarks)		F	FAC-Neutral Test (D5)
Field Observations:	/				
Surface Water Present? Yes	No / Depth (in	iches):			
		iches):			
			1	and Uvdralas	y Present? Yes No _/
Saturation Present? Yes		iches):	AAGU		Jy 118361111 183 188
includes capillary fringe) Describe Recorded Data (stream gauge, m	onitoring well, aerial	photos, previous Ins	spections),	if available:	
Remarks: bank (beem)	of cha	nnelized	Cree	zK ; n	nollusc shells for
M Soil pit				J	
,					
			~		
			20		

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WETLAND DETERM	INATION DATA FOR	RM – Arid West Region
		anislaus_ sampling Date: 12/26/
Applicant/Owner: Stanislaus Countr	1	
Investigator(s): T. BELLER, Y. Valle	Section Township	State: <u>CA</u> Sampling Point: <u>ID</u> , Range:
Landform (hillslope, terrace, etc.): <u>Herraue</u>	Section, Township,	, Range:
Subregion (LRR): LPRC	Local relier (conca	ve, convex, none): None Slope (%):
Soll Map Unit Name: Capay Clay, 0 to 2%	Sloop6	Long: Datum:
Are climatic / hydrologic conditions on the site typical for the i	ownes	NWI classification:
Are climatic / hydrologic conditions on the site typical for this tim Are Vegetation $\underline{N}_{}$, Soil $\underline{N}_{}$, or Hydrology $\underline{N}_{}$ signif		
Are Vegetation, Soil/, or Hydrology _/ signif		re "Normal Circumstances" present? Yes K No
Clining By C Trues and the second sec	ally problematic? (If	f needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map sho	wing sampling poin	t locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No _V		
Hydric Soil Present? Yes No	is the Sampl	
Wetland Hydrology Present? Yes No V	within a Wet	
Remarks: Photos 4850-4854 Rimo	ff dilala Fr	
along perimiter of agricultu	cal Crow con	reing parallel to running
Remarks: Photos 4850-4854 Rmo along perimiter of agriculture agricultural tailwater,	THE THER WAN	ren's stor munator ranoff &
VEGETATION - Use scientific names of plants.		·
	olute Dominant Indicator	Dominance Test worksheet:
1 /	over Species? Status	 Number of Dominant Species
2		That Are OBL, FACW, or FAC: (A)
3		Total Number of Dominant
4		Species Across All Strata: (B)
	= Total Cover	Percent of Dominant Species
Sapling/Shrub Stratum (Plot size:)		That Are OBL, FACW, or FAC: (A/B)
1		Prevalence Index worksheet:
2		Total % Cover of: Multiply by:
4		OBL species x 1 =
5		FACW species x 2 =
1		FAC species x 3 =
Herb Stratum (Plot size:)	= Total Cover	FACU species x 4 = UPL species x 5 =
1. Sorghum halepense 40	2 P EACU	
2. Brassica nigra Is	Y NL	Column Totals: (A) (B)
3. Salsola tragus 15 A. Erigeron bonoriansis 10	- Y FACU	Prevalence Index = B/A =
h i i i i i i i i i i i i i i i i i i i	NFACU	Hydrophytic Vegetation Indicators:
Melilotus indians 5	- N NL	Dominance Test is >50%
	- N PACH	Prevalence Index is ≤3.0 ¹
3		Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
an	= Total Cover	Problematic Hydrophytic Vegetation ¹ (Explain)
		(Copieration (Copieration)
·		¹ Indicators of hydric soil and wetland hydrology must
		be present, unless disturbed or problematic.
	= Total Cover	Hydrophytic Venetities
6 Bare Ground in Herb Stratum % Cover of Biotic	Crust	Vegetation Present? Yes No
Remarks:		

SOIL	Sampling Point:	
Profile Description: (Describe to the depth needed to document the indicator or confirm Depth Matrix Redox Features	n the absence of indicators.)	
Depth Matrix Redox Features (inches) Color (moist) % Type ¹ Loc ²	Texture Remarks	1
		_
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Gra	rains. ² Location: PL=Pore Lining, M=Matrix.	
Hydric Soli Indicators: (Applicable to all LRRs, unless otherwise noted.)	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.	1
Restrictive Layer (if present): Type: Depth (inches):	Hydric Soll Present? Yes No	
Remarks: No soil pit excavated; point is with that does not support hydrophytic veget	hina runoff/rehurnditu ation.	4

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Wetland Hydrology Indicators:	· · · · · · · · · · · · · · · · · · ·
Primary indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
Surface Water (A1) Sait Crust (B11)	Water Marks (B1) (Riverine)
High Water Table (A2) Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)
Saturation (A3) Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)
Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Li	ving Roots (C3) Dry-Season Water Table (C2)
Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4)	
Surface Soil Cracks (B6) Recent Iron Reduction in Tilled	Solis (C6) Saturation Visible on Aerial Imagery (C9)
Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9) Other (Explain in Remarks)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No Depth (inches):	-
Water Table Present? Yes No // Depth (inches):	
Saturation Present? Yes No V Depth (inches):	Wetland Hydrology Present? Yes No
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspi	ections), if available:
agricultural tailwater	ormwater runoff and
oHwm=6ft.	· · · · · · · · · · · · · · · · · · ·

WETLAND DETERMINATION	DATA FORM – Arld West Region
	round: Stanislaus Sampling Date: 12/26/13
Applicant/Owner: Stanislaus County	
Investigator(s): T. Beyer K. Valle Sec	tion, Township, Range: Sampling Point:
Landform (hillslope, terrace, etc.): terrace	
Subregion (LRR): LERC	
Soil Map Unit Name: Capay Clay, D to Zil. Slope	5. racely flooded Ning description
Are climatic / hydrologic conditions on the site typical for this time of year?	
Are vegetation <u>(v</u> , Soil <u>/v</u> , or Hydrology <u>/v</u> significantly distu	interi? Are "Normal Circumstances" in the second
Are Vegetation _//, Soil _//, or Hydrology _//_ naturally problem	hatic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sar	
Hydrophytic Vegetation Present? Yes No	
Hydric Soil Present? Yes No V	Is the Sampled Area
Wetland Hydrology Present? Yes No _/	within a Wetland? Yes No
Remarks: Photos 4855-4857 Runoff ditch	running parallel to paled sond
Remarks: Photos 4855-4857 Runoff ditch Leading from support facilities to	runway,
VEGETATION – Use scientific names of plants.	
Absolute Dom	

Tree Stratum (Plot size:)	% Course	Special Oli	Dominance lest worksheet:
1		Species? Status	Number of Dominant Species That Are OBL, FACW, or FAC: (A
2 3 4			Total Number of Dominant Species Across All Strata:(B)
Sapling/Shrub Stratum (Plot size:)	<u>~</u>	= Total Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: (A/
1			Prevalence Index worksheet:
			Total % Cover of:Multiply by:
3			OBL species x1 =
4			FACW species X 2 =
5/	,		FAC species x 2 = x 3 = x 3 =
		= Total Cover	FACU species x 3 = FACU species x 4 =
Herb Stratum (Plot size:)			
1. Centaurea solstitualis	_35	Y_NL	UPL species x 5 =
2. Helmin the theca echipides	<u>25</u>	Y FACY	Column Totals: (A) (B)
3. Sorghum halepense	20	Y FACU	Prevalence index = B/A =
4. Brassica Nigra	15	N NI-	Hydrophytic Vegetation Indicators:
5			Dominance Test is >50%
6			$_$ Prevalence Index is $\leq 3.0^1$
7			Morphological Adaptations ¹ (Provide supporting
8	<u>_</u>		data in Remarks or on a separate sheet)
Woody Vine Stratum (Plot size:)	95 =	Total Cover	Problematic Hydrophytic Vegetation ¹ (Explain)
1			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
% Bare Ground in Herb Stratum % Cover o	=	Total Cover	Hydrophytic Vegetation Present? Yes No
Remarks:		P.	
			8

SOIL			Sampling Point:
Profile Description: (Describe to the dept	th needed to document the indicator or	confirm the absence of	of indicators.)
Depth Matrix	Redox Features		
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture	Remarks
87. 1			
		· ·	
			1.0
······································			
		<u> </u>	
Type: C=Concentration, D=Depletion, RM=	Reduced Matrix, CS=Covered or Coated	Sand Grains. ² Loca	ation: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators: (Applicable to all			for Problematic Hydric Solls ³ :
Histosol (A1)	Sandy Redox (S5)		uck (A9) (LRR C) uck (A10) (L RR B)
Histic Epipedon (A2)	Stripped Matrix (S6) Loamy Mucky Mineral (F1)		d Vertic (F18)
Black Histic (A3) Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)		rent Material (TF2)
Hydrogen Sunde (A4) Stratified Layers (A5) (LRR C)	Depleted Matrix (F3)		Explain in Remarks)
1 cm Muck (A9) (LRR D)	Redox Dark Surface (F6)		
Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)	•	
Thick Dark Surface (A12)	Redox Depressions (F8)		of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Vernal Pools (F9)		ydrology must be present, sturbed or problematic.
Sandy Gleyed Matrix (S4)			subed of problemate.
Restrictive Layer (if present):			/
Туре:		Uvdela Soli I	Present? Yes No
Depth (inches):		-	
Remarks: No soil pit exc conveyonce ditch the	avaited, point is c at does not suppor	t nydrophyt	te vegetation.
YDROLOGY			
Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required			dary Indicators (2 or more required)
Surface Water (A1)	Salt Crust (B11)		ater Marks (B1) (Riverine)
High Water Table (A2)	Biotic Crust (B12)		diment Deposits (B2) (Riverine)
Saturation (A3)	Aquatic Invertebrates (B13)		ift Deposits (B3) (Riverine) ainage Patterns (B10)
Water Marks (B1) (Nonriverine)	Hydrogen Sulfide Odor (C1)		-
Sediment Deposits (B2) (Nonriverine)	Oxidized Rhizospheres along Liv		ayfish Burrows (C8)
Drift Deposits (B3) (Nonriverine)	Presence of Reduced Iron (C4)		turation Visible on Aerial Imagery (C
Surface Soil Cracks (B6)	Recent Iron Reduction in Tilled S		allow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Other (Explain in Remarks)		C-Neutral Test (D5)
Water-Stained Leaves (B9)			
ield Observations:	No Depth (inches):	÷	
	No Depth (inches):		/
		Motional Liveling Logist	Present? Yes No
Saturation Present? Yes N	lo V Depth (inches):	wetland Hydrology	
Describe Recorded Data (stream gauge, mo	nitoring well, aerial photos, previous inspe	ctions), if available:	~
Remarks: Deck of Line M	Legelloine chara	a mater a	Noff from roads
nd facilities; cone	hat conveys storm	K. Wilth	of phuzm - 2f
na tan million june	multa in up and	SIVIUN	

WETLAND DETERMINATION DATA FORM – Arid West Region

	City/County: Stanislaus Sampling Date: 10/18/16
Applicant/Owner: Stamislaus County	State: CA Sampling Point: 12
	Section, Township, Range:
Landform (hillslope, terrace, etc.): <u>terrace</u> Subregion (LRR): <u>LRRC</u> Lat: <u>37</u>	Local relief (concave, convex, none): Slope (%):
Subregion (LRR): Lat: 37	7"24 21.89" N Long: 121" 4"52,25 W Datum: NAD 83
Soil Map Unit Name: Capay day, wet D-2	27, Slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of ye	
Are Vegetation <u>N</u> , Soil <u>N</u> , or Hydrology <u>N</u> significantly	disturbed? Are "Normal Circumstances" present? Yes No
Are Vegetation <u>N</u> , Soil <u>N</u> , or Hydrology <u>N</u> naturally pro-	oblematic? (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 V Hydric Soil Present? Yes V Wetland Hydrology Present? Yes No	Is the Sampled Area within a Wetland? Yes No
Remarks: Small basin used to pump / Fill	with water; port of erop irrigation (3). Basin everent dry so upland veg
System (Ike Crow Rd - Hwy 3	3). Basin corrent dry so upland veg
is colonizing.	

VEGETATION – Use scientific names of plants.

					.	
			Indicator	Dominance Test worksheet:		
Tree Stratum (Plot size:)			<u>Status</u>	Number of Dominant Species	2	
1				That Are OBL, FACW, or FAC:		(A)
2				Total Number of Dominant	3	
3				Species Across All Strata:		(B)
4						
		= Total C	over	Percent of Dominant Species That Are OBL, FACW, or FAC:	66	(A/B)
Sapling/Shrub Stratum (Plot size:)		-				(,,,,,)
1				Prevalence Index worksheet:		
2				Total % Cover of:	Multiply by:	
3				OBL species x 1	=	
4				FACW species x 2		
e				FAC species x 3		
0						
Herb Stratum (Plot size:)		= Total C	over	FACU species x 4		
1. <u>Echinochloa</u> crus-galli	35	У	FACIO	UPL species x 5		
			OBL	Column Totals: (A)		_ (B)
2. WPMA INFITUTE	20		NL	Prevalence Index = B/A =		
3. convolvolvs arrensis	20	<u> </u>				
4. Engeron bomariensis	10	<u></u>	FACU	Hydrophytic Vegetation Indicate	ors:	
5. Lyperus eragiostis		2	FACW	Dominance Test is >50%		
6. Amaranthus albus	5	~	FACU	Prevalence Index is ≤3.0 ¹		
7. Leptochloa Fascicularis	5	N	PL	Morphological Adaptations ¹ (F	Provide suppor	ting
8. Malva neglecta	<1	N	NL	data in Remarks or on a se	•	
	100	= Total C	over	Problematic Hydrophytic Vege	etation ¹ (Explai	n)
Woody Vine Stratum (Plot size:)		50/20	0401			
1				¹ Indicators of hydric soil and wetla		nust
2				be present, unless disturbed or pre-	oblematic.	
٤		= Total C	- <u></u>	Hydrophytic		
1			Ovei	Vegetation		
% Bare Ground in Herb Stratum % Cove	er of Biotic C	rust		Present? Yes	No	
Remarks:				·		

- - --

Vinundation Visible on Aerial Imagery (B7)

Water-Stained Leaves (B9)

Field Observations:

12

SOIL			Sampling Point:		
Profile Description: (Describe to the d	epth needed to document the indicator or	confirm the abse	nce of indicators.)		
Depth <u>Matrix</u>	Redox Features				
(inches) Color (moist) %	Color (moist)%Type ¹	Loc ² Texture	e Remarks		
······					
	M=Reduced Matrix, CS=Covered or Coated		² Location: PL=Pore Lining, M=Matrix.		
Hydric Soil Indicators: (Applicable to			tors for Problematic Hydric Soils ³ :		
Histosol (A1)	Sandy Redox (S5)		m Muck (A9) (LRR C)		
Histic Epipedon (A2)	Stripped Matrix (S6)		m Muck (A10) (LRR B) educed Vertic (F18)		
Black Histic (A3) Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1) Loamy Gleyed Matrix (F2)		ed Parent Material (TF2)		
Stratified Layers (A5) (LRR C)	Depleted Matrix (F3)		her (Explain in Remarks)		
1 cm Muck (A9) (LRR D)	Redox Dark Surface (F6)	_ 0.			
Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)				
Thick Dark Surface (A12)	Redox Depressions (F8)	³ Indica	tors of hydrophytic vegetation and		
Sandy Mucky Mineral (S1)	Vernal Pools (F9)		and hydrology must be present,		
Sandy Gleyed Matrix (S4)		unle	ss disturbed or problematic.		
Restrictive Layer (if present):					
Туре:					
Depth (inches):		Hydric	Soil Present? Yes No		
Remarks: NO Soil pit	1- Law	1			
100 2011 111	Thepan				
i seni					
HYDROLOGY					
Wetland Hydrology Indicators:					
Primary Indicators (minimum of one requ	ired; check all that apply)	<u>S</u> i	econdary Indicators (2 or more required)		
Surface Water (A1)	Salt Crust (B11)	_	_ Water Marks (B1) (Riverine)		
High Water Table (A2)	Biotic Crust (B12)	Biotic Crust (B12) Sediment Deposits (B2) (Riveri			
Saturation (A3)	Aquatic Invertebrates (B13) Drift Deposits (B3) (Riverine)		_ Drift Deposits (B3) (Riverine)		
Water Marks (B1) (Nonriverine)	Hydrogen Sulfide Odor (C1)	_	_ Drainage Patterns (B10)		
Sediment Deposits (B2) (Nonriverin	e) Oxidized Rhizospheres along Liv	ving Roots (C3)	_ Dry-Season Water Table (C2)		
Drift Deposits (B3) (Nonriverine)	Presence of Reduced Iron (C4)		Crayfish Burrows (C8)		
Surface Soil Cracks (B6)	Surface Soil Cracks (B6) Recent iron Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (C9)				

- Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)
- _ Shallow Aquitard (D3) FAC-Neutral Test (D5)

Surface Water Present?	Yes No	Depth (inches):			
Water Table Present?	Yes No	Depth (inches):			
Saturation Present? (includes capillary fringe)	Yes No	Depth (inches):	Wetla	nd Hydrology Present?	Yes No
Describe Recorded Data (s	stream gauge, monit	oring well, aerial photos, pr	evious inspections), if	available:	
Remarks: man-m pumps water which	ade, crea and cul to lar is also	ted, irright cart and e ger ditch t portially	on basin; ontrol go o south within	flow contro che trat across Ike project bo	iled by moves crow Rd, oundary.
US Army Corps of Engineers		HWM = 2			Arid West – Version 2.0

____ Thin Muck Surface (C7)

Other (Explain in Remarks)

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: <u>Crows Landing</u> City/County: <u>Stanislaus</u> Sampling Date: 10/18/12 Applicant/Owner: <u>Stanislaus County</u> State: <u>CA</u> Sampling Point: <u>13</u>
Investigator(s): Rattaglia Section, Township, Range:
Landform (hillslope, terrace, etc.): Ferrace Local relief (concave, convex, none): None Slope (%): Subregion (LRR): LRRC Lat: 37°26'7,02''N Long: L21°6'8,13''W Datum: NAD 83
Subregion (LRR): Lar: JIZG TIDE TO LONG. ILT COTTO Datum. I to C
Soil Map Unit Name: Zacharias day loam, 0-2% slopes NWI classification: Nine - Sile Pd
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
Hydric Soil Present? Yes <u>Ves</u> No <u>Ves</u> within a Wetland? Yes <u>No</u> <u>No</u>
Wetland Hydrology Present? Yes Vo
Remarks: Small basin NW corner of marshall Rd \$ Hwy 33; used to hold / distribute irrigation water to field crops, part of irrigation
ditch

VEGETATION – Use scientific names of plants.

	Absolute	Dominan	t Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size:) 1	<u>% Cover</u>			Number of Dominant Species That Are OBL, FACW, or FAC: (A	N)
23				Total Number of Dominant Species Across All Strata:	3)
4				Percent of Dominant Species 50 (A	VB)
Sapling/Shrub Stratum (Plot size:)				Prevalence index worksheet:	
12.				Total % Cover of: Multiply by:	
3.				OBL species x 1 =	
4.				FACW species x 2 =	
5				FAC species x 3 =	
- S		= Total C	over	FACU species x 4 =	
Herb Stratum (Plot size:)		-		UPL species x 5 =	
1. Echinochlon crus-galli	30	У	FAC	Column Totals: (A)	(B)
2. Amaranthus albus	20	<u> </u>	FACU		
3. Lypenus eragrostis	5	N	FACW	Prevalence Index = B/A =	
4. RUMEX Crispus	5	N	FAC	Hydrophytic Vegetation Indicators:	
5				Dominance Test is >50%	
6				Prevalence Index is ≤3.0 ¹	
7				Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	9
8				Problematic Hydrophytic Vegetation ¹ (Explain)	
Woody Vine Stratum (Plot size:)		_ = Total C 30/12	over		
1		~ /		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	st
2		_ = Total C	over	Hydrophytic Vegetation	
% Bare Ground in Herb Stratum % Cove	er of Biotic C	rust		Present? Yes No	_
Remarks:			<i>.</i> C.		
i.					

SOIL

Sampling Point:

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth	Matrix			x Features					
(inches)	Color (moist)	<u>%</u> (Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks	;
———									
					<u></u>				
								· · · · · · · · · · · · · · · · · · ·	
	·							· · · · ·	
	• ·								
¹ Type: C=Co	oncentration, D=Deple	tion. RM=Rec	luced Matrix. CS		I or Coate		ains ² Loca	tion: PL=Pore Lining,	M=Matrix
	ndicators: (Applical							or Problematic Hydrid	
Histosol	(A1)		Sandy Redo	x (S5)				ıck (A9) (LRR C)	
Histic Ep	vipedon (A2)		Stripped Ma	trix (S6)				ick (A10) (LRR B)	
Black Hi	stic (A3)		Loamy Mucl	ky Mineral	l (F1)			d Vertic (F18)	
Hydroge	n Sulfide (A4)		Loamy Gley	ed Matrix	(F2)		Red Par	ent Material (TF2)	
	I Layers (A5) (LRR C)		Depleted Ma	atrix (F3)			Other (E	xplain in Remarks)	
1 cm Mu	ck (A9) (LRR D)		Redox Dark	Surface (F6)				
Depleted	Below Dark Surface	(A11) .	Depleted Da	irk Surfac	e (F7)				
	irk Surface (A12)		Redox Depr	•	⁻ 8)		³ Indicators of	f hydrophytic vegetatio	n and
	lucky Mineral (S1)		Vernal Pools	s (F9)			wetland hy	drology must be prese	ent,
	leyed Matrix (S4)						unless dist	turbed or problematic.	
Restrictive I	ayer (if present):								
Туре:									
Depth (inc	:hes):						Hydric Soil P	resent? Yes	No
Remarks:	Vo Soil pit	taka	n, As	ag/1	iriga	tion	basim	1s dearly	detired

HYDROLOGY

Wetland Hydrology Indicators:						
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)					
	 Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) ving Roots (C3) Dry-Season Water Table (C2) Crayfish Burrows (C8) 					
Field Observations:						
Surface Water Present? Yes No Depth (inches):						
Water Table Present? Yes No Depth (inches):						
Saturation Present? Yes No Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes <u>V</u> No					
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspe	ections), if available:					
Remarks:						
man. made created irrigation basin	: flow controlled by pumps					
man. made created irrigation basin and control gate that moves we	ater to larger ditch to					
south, nevoss marshall Rd, which is outside project boundary						
Deep seil racks present. 10	HWM = 20 Feet)					

WETLAND DETERMINATION DATA FORM – Arid West Region

	City/County: State: C4 Sampling Date: 12/18/16 State: C4				
Investigator(s): Battaglia					
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none): Slope (%):				
Landform (hillslope, terrace, etc.): <u>terrace</u>	7267,82"N Long: 12182,38"W Datum: NAD 83				
Soil Map Unit Name: Elsalado 10AM, 0-24, Slo					
Are climatic / hydrologic conditions on the site typical for this time of ye					
Are Vegetation \underline{N} , Soil \underline{N} , or Hydrology \underline{N} significantly	y disturbed? Are "Normal Circumstances" present? Yes No				
Are Vegetation \underline{N} , Soil \underline{N} , or Hydrology \underline{N} naturally pre-	roblematic? (If needed, explain any answers in Remarks.)				
SUMMARY OF FINDINGS – Attach site map showing	g sampling point locations, transects, important features, etc.				
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No	Is the Sampled Area				
Remarks: Frigation canal used to distribute water to field crops (marshall Rd, east if ward Are), parallel to pulta-Madota Canal.					
(MWShall Rd, east of Wark a	promiler TU parta onta lanal.				

VEGETATION – Use scientific names of plants.

	Absolute	Dominant	Indicator	Dominance Test worksheet:		
Tree Stratum (Plot size:) 1		Species?		Number of Dominant Species That Are OBL, FACW, or FAC:		(A)
23				Total Number of Dominant Species Across All Strata:	ſ	(B)
4		 ≕ Total Co	ver	Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)
1. Salix goodingii	2	N	FACW	Prevalence Index worksheet:		
2				Total % Cover of:	Multiply by:	
3				OBL species x *		
4				FACW species x2		
5				FAC species x 3		
		= Total Co		FACU species x4		
Herb Stratum (Plot size:)		- 10tai 00	VCI	UPL species x 5		_
1. Echinochloa crus-galli	60	Y	FAC	Column Totals: (A)		
2. Xanthium strumarium	10		FAC			_ (D)
3. Amaranthus albus			Fren	Prevalence Index = B/A =		
4. Lyprus eragrostis		4.5	FRW	Hydrophytic Vegetation Indicat	ors:	
5				Dominance Test is >50%		
6				Prevalence Index is ≤3.0 ¹		
7				Morphological Adaptations ¹ (Provide sunnort	ina
8				data in Remarks or on a s	eparate sheet)	n g
	80	= Total Co		Problematic Hydrophytic Veg	etation ¹ (Explai	n)
Woody Vine Stratum (Plot size:)		40/16	VCI			
1				¹ Indicators of hydric soil and wetla	and hydrology m	nust
2				be present, unless disturbed or pr	roblematic.	
		= Total Cov	ver	Hydrophytic		
% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust				Vegetation Present? Yes	No	
Remarks:				·····		
						2.4

SOIL

Sampling Point:

4

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Profile Desc	ription: (Describe t	o the depth	needed to docur	nent the in	dicator o	or confirm	the absence of	indicators.)	
Depth Matrix Redox Features									
(inches)	Color (moist)	%	Color (moist)		Type ¹	Loç ²	Texture	Remar	kş
			<u>.</u>	· ·					
				· ·				·	
¹ Type: C=C	oncentration, D=Depl	etion RM=R	educed Matrix. CS	S=Covered	or Coate	d Sand Gr	ains. ² Locati	ion: PL=Pore Linin	g, M≕Matrix.
Hydric Soil	Indicators: (Applica	ble to all LF	Rs, unless othe	rwise note	d.)		Indicators for	r Problematic Hyd	
Histosol			_ Sandy Red				1 cm Muo	ck (A9) (LRR C)	
	bipedon (A2)		Stripped Ma					ck (A10) (LRR B)	
Black Hi			Loamy Muc	. ,	(F1)			Vertic (F18)	
	n Sulfide (A4)		Loamy Gley	-			Red Pare	ent Material (TF2)	
	Layers (A5) (LRR C	;)	Depleted M		. ,		Other (Ex	plain in Remarks)	
1 cm Mu	ick (A9) (LRR D)		Redox Dark	CSurface (F	-6)				
Deplete	Below Dark Surface	e (A11)	Depleted D	ark Surface	e (F7)				
Thick Da	ark Surface (A12)		Redox Dep	ressions (F	8)		³ Indicators of	hydrophytic vegeta	tion and
Sandy N	lucky Mineral (S1)		Vernal Poo	ls (F9)			wetland hyd	drology must be pro	esent,
Sandy G	Bleyed Matrix (S4)						unless dist	urbed or problemat	ic.
Restrictive	Layer (if present):								
Type:									
Depth (in	ches):						Hydric Soil Pr	resent? Yes	No
Remarks:	No soil pit wetland v ag fields	taken	as clea	ring de	E Fire	d ree	· ration	cahal	with
	wetland it	ectati	on the hu	1 drolo		unt	and be	unal de	toh is
		0 / 1	a da			up .		10.00 000	
	ng fierds	DC [4	nas						
HYDROLO	GY								

Wetland Hydrology Indicators:						
Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required)						
 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 Livin Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled So Thin Muck Surface (C7) Other (Explain in Remarks) 	Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) ug Roots (C3) Dry-Season Water Table (C2) Crayfish Burrows (C8) ills (C6) 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? Yes No // Depth (inches): (includes capillary fringe) Wetland Hydrology Present? Yes No Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:						
Remarks: Large ditch/canal parallel to mendota canal. Water appears to be pumped into ditch to south, across Murshill Rd which is everently full of water, and moved into this ditch periodically via control gate. Deep soil cracks present.						
US Army Corps of Engineers	(ottwm =	= 16 - feet Arid West – Version 2.0				

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Crow's Landing C	ity/County: Stan's laus Sampling Date: (0)18/16
Applicant/Owner: stanislaus County	State: CA Sampling Point: 15
Investigator(s): <u>C. Battaglia</u> s	Section, Township, Range:
Landform (hillslope, terrace, etc.):t	_ocal relief (concave, convex, none): Slope (%):
Subregion (LRR): LR Lat: _37	23 48,44 W Long: 21 8 18,931 W Datum:
Soil Map Unit Name:	NWI classification: None_
Are climatic / hydrologic conditions on the site typical for this time of year	r? Yes No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly d	isturbed? Are "Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology naturally prob	lematic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing	sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No	Is the Sampled Area within a Wetland? Yes No
Remarks: Roadside ditch dommated	by upland vegetation and lacking
indicators of hydrology; a	proves to convey runoff only in large rain overity.
VEGETATION – Use scientific names of plants.	

	Absolute			Dominance Test worksheet:		
Tree Stratum (Plot size:) 1	<u>% Cover</u>	Species	? <u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC		(A)
3				Total Number of Dominant Species Across All Strata:	3	(B)
4		= Total C	over	Percent of Dominant Species That Are OBL, FACW, or FAC	33	(A/B)
1				Prevalence Index worksheet		
2				Total % Cover of:	Multiply by:	
3				OBL species		_
4.				FACW species		
5.				FAC species		
		= Total C	over	FACU species		
Herb Stratum (Plot size:)				UPL species		
1. Bromus diandrus	40		NL	Column Totais:		
2. Conjum maculatum	35	У	FAC			_ (0)
3. Brassica nigra	10	<u> </u>	NL	Prevalence Index = B/A	=	
4. Asclepias Fascicularis	4	N	FAC	Hydrophytic Vegetation Indi	cators:	
5. Grindelia camporum	3	N	FACN	Dominance Test is >50%		
6. Carduus pycnocephlus	Z	N	NL	Prevalence Index is ≤3.0 ¹		
7. RUMER Crispus	_/	N	FAC	Morphological Adaptations data in Remarks or on	¹ (Provide support a separate sheet)	ting
8	95	- Total C		Problematic Hydrophytic V	/egetation ¹ (Explai	n)
Woody Vine Stratum (Plot size:)	_/	- Total C	7.5/19			
1	· <u></u>			¹ Indicators of hydric soil and w be present, unless disturbed or		nust
2						
Stratum // Sere Ground in Herb Stratum // Sere Ground // Sere Gr				Hydrophytic Vegetation Present? Yes	No	
Remarks:						

SOI	L
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Profile Desc	ription: (Describe to	b the depth n	eeded to docur	ment the ir	ndicator (or confirm	the absence	of indicators.)	
Depth	Matrix		Redo	x Features					
(inches)	Color (moist)	%(Color (moist)		Type ¹	Loc2	Texture	Remarks	
						·			
					<u> </u>				
				- —					
				/					
¹ Type: C=C	oncentration, D=Deple	etion, RM=Rec	duced Matrix, CS	S=Covered	or Coate	d Sand Gra		ation: PL=Pore Lining, M=Matrix.	
Hydric Soil	Indicators: (Applica	ble to all LRF	Rs, unless othe	rwise note	d.)		Indicators	for Problematic Hydric Soils ³ :	
Histosol	(A1)		/Sandy Red	ox (S5)			1 cm M	luck (A9) (LRR C)	
Histic E	pipedon (A2)		Stripped Ma	atrix (S6)			2 cm M	luck (A10) (LRR B)	
Black H	istic (A3)	/	Loamy Muc	ky Mineral	(F1)		Reduce	ed Vertic (F18)	
Hydroge	en Sulfide (A4)		Loamy Gley	yed Matrix	(F2)		Red Pa	irent Material (TF2)	
Stratifie	d Layers (A5) (LRR C) /	Depleted M	latrix (F3)			Other (Explain in Remarks)		
1 cm Mi	uck (A9) (LRR D)		Redox Dark	k Surface (I	F6)				
Deplete	d Below Dark Surface	(A11)	Depleted D	ark Surface	∋ (F7)				
Thick D	ark Surface (A12)		Redox Dep	ressions (F	8)		³ Indicators	of hydrophytic vegetation and	
Sandy M	/lucky Mineral (S1)	/	Vernal Poo	ls (F9)			wetland h	nydrology must be present,	
Sandy C	Gleyed Matrix (S4)	/					unless di	sturbed or problematic.	
Restrictive	Layer (if present):	ν							
Type:			_						
Death (in							Hydric Soil	Present? Yes No	
Remarks:			106010	1.6	01	- 1	nal ulo	ng edge of domnated by	
/ (0///0///	Man-made	dital	cleric	a-etin		<i>chan</i>	ver alu	it east of	
	Interstate	5 500	th boun	a on	ram	P. P!	teh is	ciomnatia 69	
	voland vere	tation	and la	0/05	H X P	ind	I Catur.	2	
	6								

HYDROLOGY

Wetland Hydrology Indicators:							
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)						
Surface Water (A1) Salt Crust (B11)	Water Marks (B1) (Riverine)						
High Water Table (A2) Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)						
Saturation (A3) Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)						
Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)						
Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Livi	ng Roots (C3) Dry-Season Water Table (C2)						
Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4)	Crayfish Burrows (C8)						
Surface Soil Cracks (B6) Recent Iron Reduction in Tilled So	bils (C6) Saturation Visible on Aerial Imagery (C9)						
Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7)	Shallow Aquitard (D3)						
Water-Stained Leaves (B9) Other (Explain in Remarks)	FAC-Neutral Test (D5)						
Field Observations:							
Surface Water Present? Yes No _/_ Depth (inches):							
Water Table Present? Yes No Ver Depth (inches):							
Saturation Present? Yes No Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes No						
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	tions), if available:						
Remarks: man-made ditch parallel to Interstate	5 conveys storm run, FF						
from upper watershed . An intermitten	stream tarrine and ways						
OF FINK Road Land Fill, but runoff fro	Remarks: man-made ditch parallel to interstate 5 conveys storm run, Ef from upper watershed. An intermitten stream torminates upslope OF FINK Road Landfill, but runo FF from culverts and roadways						
makes it way into this ditch. No HYD indicators, so Other							
based on width of ditch (x=8'	·)						

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Crow's Lunding		Citv/Cour	ntv: Sta	nislaws Sampling Date: 10/18/16
Applicant/Owner: Stand slave County				State: Sampling Point:6
Investigator(s): C. Battaglia				
Landform (hillslope, terrace, etc.):				
Subregion (LRR):				
Soil Map Unit Name:	_ Lai. <u>2 i</u>			
	1	0. X	1 1	NWI classification:
Are climatic / hydrologic conditions on the site typical for this				
Are Vegetation \underline{N} , Soil \underline{N} , or Hydrology \underline{N} s				"Normal Circumstances" present? Yes No
Are Vegetation \underline{N} , Soil \underline{N} , or Hydrology \underline{N} n	• •		•	eeded, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map	showing	sampli	ing point l	ocations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes N	0		the Complet	
Hydric Soil Present? Ves N	•		the Sampled	
Wetland Hydrology Present? Yes No	0	441	unn a vycliai	
Wetland Hydrology Present? Yes No Remarks: Road side ditch dom Indicators IF hydrol	inste	1 by	1 uplan	nd vegetation and lacking
Indicators IF hydrol	095;	app	oars to	convey storm rynoFF
only during large	FILS	hy	rin e	vents . This ditch is likely
VEGETATION – Use scientific names of plan	ts. rec	aligni	nental	- hisporic, Little Salano Greek
	Absolute	-	nt Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	<u>% Cover</u>	<u>Species</u>	? Status	Number of Dominant Species
1	·			That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3		·		Species Across All Strata: (B)
4				Percent of Dominant Species
Sapling/Shrub Stratum (Plot size:)	·		over	That Are OBL, FACW, or FAC: (A/B)
1				Prevalence Index worksheet:
2				Total % Cover of: Multiply by:
3		·		OBL species x 1 =
4				FACW species x 2 =
5/				FAC species x 3 =
Herb Stratum (Plot size:)		= Total C	over	FACU species x 4 =
1. Bromus diandrus	70	У	NL	UPL species x 5 =
2. Brassica NISTA	10	4	NL	Column Totals: (A) (B)
3. Salsola tragus	10	N	FACU	Prevalence Index = B/A =
4. Grindelin camporum	10	N	FACW	Hydrophytic Vegetation Indicators:
5				Dominance Test is >50%
6				Prevalence Index is ≤3.0 ¹
7			:	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
8				Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size:)	100	= Total C	over 50	
			20	¹ Indicators of hydric soil and wetland hydrology must
2	·			be present, unless disturbed or problematic.
		= Total C	over	Hydrophytic
% Bare Ground in Herb Stratum % Cover	of Biotic Cr			Vegetation
Remarks:		<u></u>		Present? Yes No

SOIL

Profile Desc	ription: (Describe to	the depth ne	eded to docu	nent the i	ndicator	or confirm	the absence	of indicators.)					
Depth	Matrix			x Features	<u> </u>								
(inches)	Color (moist)	<u>%</u> C	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks					
						/							
						1							
						<u> </u>							
							<u>`</u>						
					/								
				/			`						
				/									
¹ Type: C=C	oncentration, D=Deple	tion, RM=Red	luced Matrix,	S=Covered	l or Coate	d Sand Gr	ains. ² Loc	ation: PL=Pore Lining, M=Matrix.					
Hydric Soil	Indicators: (Applicat	ole to all LRR	s, unless othe	rwise note	ed.)		Indicators	for Problematic Hydric Soils ³ :					
Histosol			Sandy Red				1 cm M	luck (A9) (LRR C)					
	pipedon (A2)		Stripped M					luck (A10) (LRR B)					
Black Hi			_ /	cky Mineral	(F1)		_	ed Vertic (F18)					
	n Sulfide (A4)		Loamy Gle	-				arent Material (TF2)					
	i Lavers (A5) (LRR C)		Z Depleted N	-	(• =)			Explain in Remarks)					
	ick (A9) (LRR D)		Redox Dar		F6)								
	Below Dark Surface	(A11)	Depleted D		-								
	ark Surface (A12)		Redox Dep				³ Indicators	of hydrophytic vegetation and					
—	• •	1	Vernal Poo		0)		wetland hydrology must be present,						
	lucky Mineral (S1)			15 (1 5)			unless disturbed or problematic.						
	Bleyed Matrix (S4)												
	Layer (if present):												
Туре:													
Depth (in	ches):		-					Present? Yes No					
Remarks:	Mm-made	ditel	paralle	eling	Fink	Rd	, Dital	n is dominated by					
	upland ve	s and	I lacks	HFY.	DN	<i>idica</i>	tors.						
	• (L	112									

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
Surface Water (A1) Salt Crust (B11)	Water Marks (B1) (Riverine)
High Water Table (A2) Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)
Saturation (A3) Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)
Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Livi	ng Roots (C3) Dry-Season Water Table (C2)
Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Surface Soil Cracks (B6) Recent Iron Reduction in Tilled So	bils (C6) Saturation Visible on Aerial Imagery (C9)
Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9) Other (Explain in Remarks)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No V Depth (inches):	
Water Table Present? Yes No Depth (inches):	
Saturation Present? Yes No Depth (inches):	Wetland Hydrology Present? Yes No
(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	tions), if available:
	muchs mater under T-5 and
Remarks: Rondside (Fink Rd.) ditch that co	
Remarks: Rondside (Fink Rd.) ditch hut co	e in watershed in areas of
Remarks: Rondside (Fink Rd.) ditch tut co the CA Aqueduct. Originates upslop	e in watershed in areas of F historic Little salado CK.
Remarks: Rondside (Fink Rd.) ditch that co the CA Aqueduct. Originates upstop agriculture, Located in onea of	= in watershed in areas of = of historic Little Saladock, upstream in agriculture fields
the CA Aqueduct. Originates upstop agriculture, Located in onea of Magniculture to the formulates	e in watershed in areas of of historic Little saladock. upstream in agriculture fields based on ava. undth of ditch
Remarks: Rondside (Fink Rd.) ditch that co the CA Agueduct. Originates upshop agriculture. Located in crea of channel, but creek terminates NO HYD indicators, so Other	e in watershed in areas of = of historic Little saladock. upstream in agriculture fields based on avg. undth of ditch
Remarks: Rondside (Fink Rd.) ditch tut co the CA Aqueduct. Originates upstop agriculture. Located in onea of channel, but creek terminates NO HYD indicators, so Other (Other US Army Corps of Engineers	with = 5')

Project/Site: <u>Crows Landing</u>	Cit	y/County:	Star	ISAUS	_ Sampling Date: _// _/ // // // // // // // // // // //
pplicant/Owner: _Stanislavs County				State: <u>CA</u>	_ Sampling Point:/7
vestigator(s) CIBATTRALIA	Se	ction Tow	inshin Rai	10A'	
andform (hillslope, terrace, etc.):	Lo	cal relief (concave, o	convex, none):	ne Slope (%):
ubregion (LRR): LRnc I	Lat: <u>37°2</u>	2421.	14"N	Long: 121052	7. 21 W Datum: NAD 83
andform (hillslope, terrace, etc.):	rate ;	Zacho	2-2	Stope NWI classifi	ication: None
re climatic / hydrologic conditions on the site typical for this tir	ne of year?	Yes 🔽	No	(If no, explain in I	Remarks.)
re Vegetation _ 🖊 _, Soil _ 🖊 _, or Hydrology _ 📈 _ sign					
re Vegetation, Soil, or Hydrology natu	rally proble	matic?	(If ne	eded, explain any answ	ers in Remarks.)
UMMARY OF FINDINGS – Attach site map sh	owing sa	ampling	point lo	ocations, transect	s, important features, etc.
			-		
Hydrophytic Vegetation Present? Yes <u>Ves</u> No Hydric Soil Present? Yes <u>Ves</u> No			Sampled		
Wetland Hydrology Present? Yes Vo				id? Yes	
Remarks: Shallow ag ditch draining Lots of soil distribund Irrigation create the	ift to	mato	Field:	s (Ike Cro	w Rd east of Bell
Lots of soil distribune	e tro	mag	oper	tions com!	bined with
Irrigation create the	cond	itions	pre	Sen T	
EGETATION – Use scientific names of plants.					
A	bsolute D	ominant I		Dominance Test wor	ksheet:
Tree Stratum (Plot size:) <u>%</u>	Cover S	pecies?	<u>Status</u>	Number of Dominant S	Species
				That Are OBL, FACW,	or FAC: (A)
3				Total Number of Domi Species Across All Str	
4					
	=	Total Cove	er	Percent of Dominant S That Are OBL, FACW,	or FAC: (A/B)
Sapling/Shrub Stratum (Plot size:)				Prevalence Index wo	
2				Total % Cover of:	
3				OBL species	x 1 =
l					x 2 =
j					x 3 =
Herb Stratum (Plot size:)	= `	Total Cove	er		x 4 =
Echimochioa crus-galli	40	У	FAC		x 5 = (B)
Cyperu- eragiosts	5	NI	FACW		(A) (B)
Leptochlog fascie viaris	5	<u>~</u>	NL		(= B/A =
	<u>< </u>	<u>N 1</u>	FACU	Hydrophytic Vegetati	
				Dominance Test is Prevalence Index	
)					aptations ¹ (Provide supporting
3			[data in Remark	s or on a separate sheet)
	50 =		er	Problematic Hydro	phytic Vegetation ¹ (Explain)
Voody Vine Stratum (Plot size:)	Z	5/10		t	
·				'Indicators of hydric so be present, unless dist	il and wetland hydrology must urbed or problematic.
2		Entel C ::			
-		Fotal Cove		Hydrophytic Vegetation	
6 Bare Ground in Herb Stratum 50 % Cover of I	Biotic Crust			Present? Ye	es <u> </u>

2.2.2.

SO	L
----	---

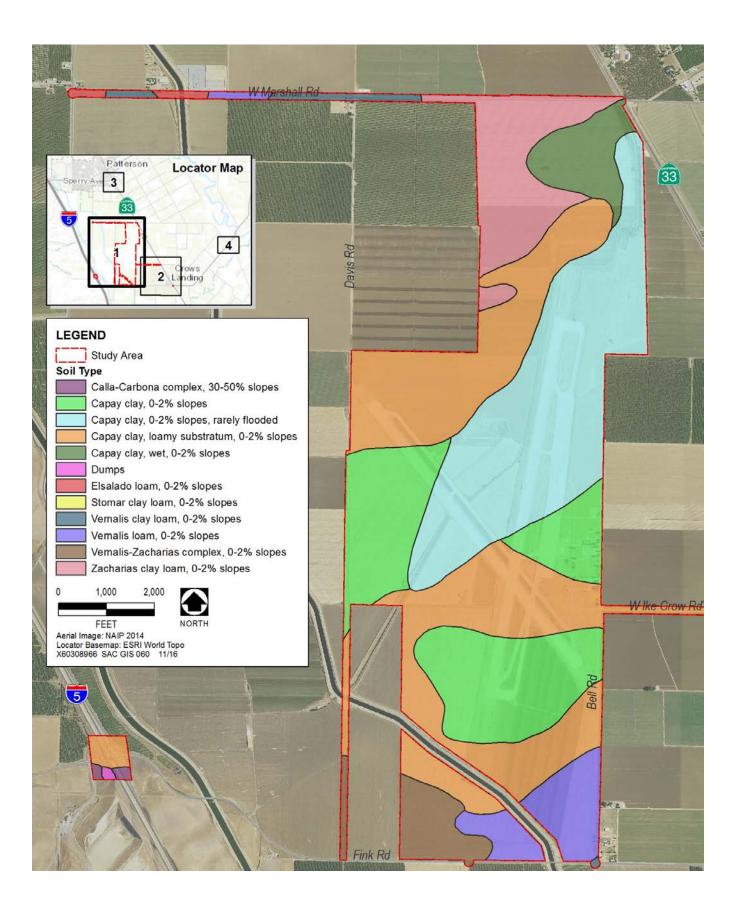
Depth Matrix	Redox Features			
(inches) Color (moist) %	<u>Color (moist) % Typ</u>		Texture	Remarks
		/		
		·		
¹ Type: C=Concentration, D=Depletion, R		oated Sand Gra	ains. ² Location	n: PL=Pore Lining, M=Matrix. Problematic Hydric Soils ³ :
Hydric Soil Indicators: (Applicable to a				-
Histosol (A1)	Śandy Redox (S5)			(A9) (LRR C)
Histic Epipedon (A2)	Stripped Matrix (S6)		Reduced V	(A10) (LRR B)
Black Histic (A3)	Loamy Mucky Mineral (F1)			t Material (TF2)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2) Depleted Matrix (F3)			lain in Remarks)
Stratified Layers (A5) (LRR C)	Redox Dark Surface (F6)			
1 cm Muck (A9) (LRR D)	Depleted Dark Surface (F7)	\		
Depleted Below Dark Surface (A11)	Redox Depressions (F8))	³ Indicators of b	ydrophytic vegetation and
Thick Dark Surface (A12)	Vernal Pools (F9)			ology must be present,
Sandy Mucky Mineral (S1) Sandy Gleyed Matrix (S4)			-	bed or problematic.
Restrictive Layer (if present):				
Туре:				Mag
	n as clearly definition of hydrology africe & hydrology & to mato ag/tomo			sent? Yes <u>No</u>
Depth (inches):				

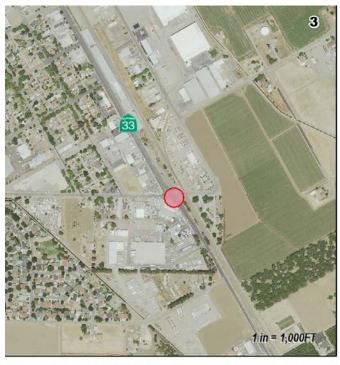
HYDROLOGY

Wetland Hydrology Indicators:									
Primary Indicators (minimum of one required; check	Secondary Indicators (2 or more required)								
Surface Water (A1)	Water Marks (B1) (Riverine)								
High Water Table (A2)	Sediment Deposits (B2) (Riverine)								
Saturation (A3)	Drift Deposits (B3) (Riverine)								
Water Marks (B1) (Nonriverine)	Drainage Patterns (B10)								
Sediment Deposits (B2) (Nonriverine)	Roots (C3) Dry-Season Water Table (C2)								
Drift Deposits (B3) (Nonriverine)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)							
V Surface Soil Cracks (B6)	Recent Iron Reduction in Tilled Soils	(C6) Saturation Visible on Aerial Imagery (C9)							
Inundation Visible on Aerial Imagery (B7)									
Water-Stained Leaves (B9)	FAC-Neutral Test (D5)								
Field Observations:									
Surface Water Present? Yes No/	Depth (inches):								
Water Table Present? Yes No _/	_ Depth (inches):								
Saturation Present? Yes <u>Ves</u> No No	/etland Hydrology Present? Yes No								
Describe Recorded Data (stream gauge, monitoring	well, aerial photos, previous inspection	ns), if available:							
Remarks: peop soil cracks & fine/sandy sediment accumulated in difeh from consistent runoff from ag/formato Field combined with disturbance of soils due to disging difehes and vatering during growing									
of soils due to d	55 mg ditches and								
season. (OHWM =	: 10 feet)								

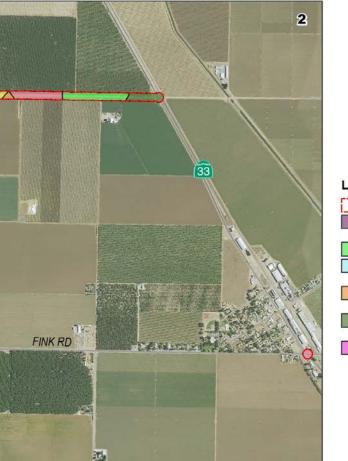
APPENDIX B

Soils Map



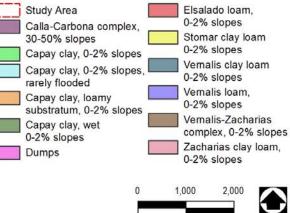








LEGEND



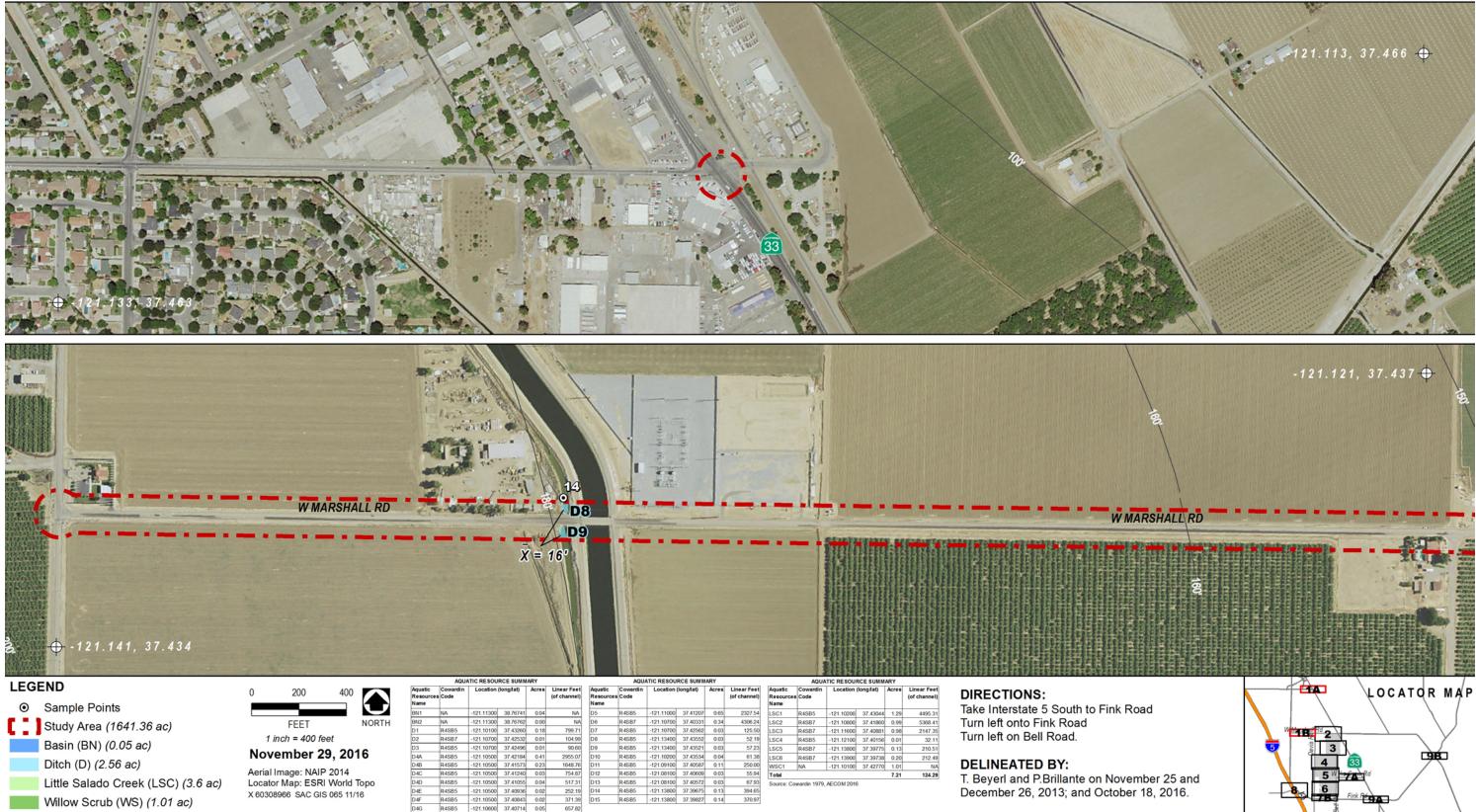
NORTH

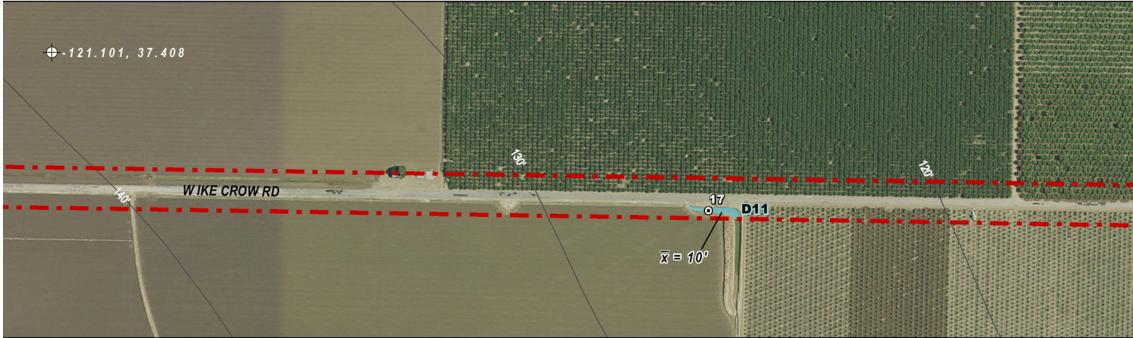
FEET Aerial Image: NAIP 2014 Locator Basemap: ESRI World Topo X60308966 SAC GIS 061 11/16

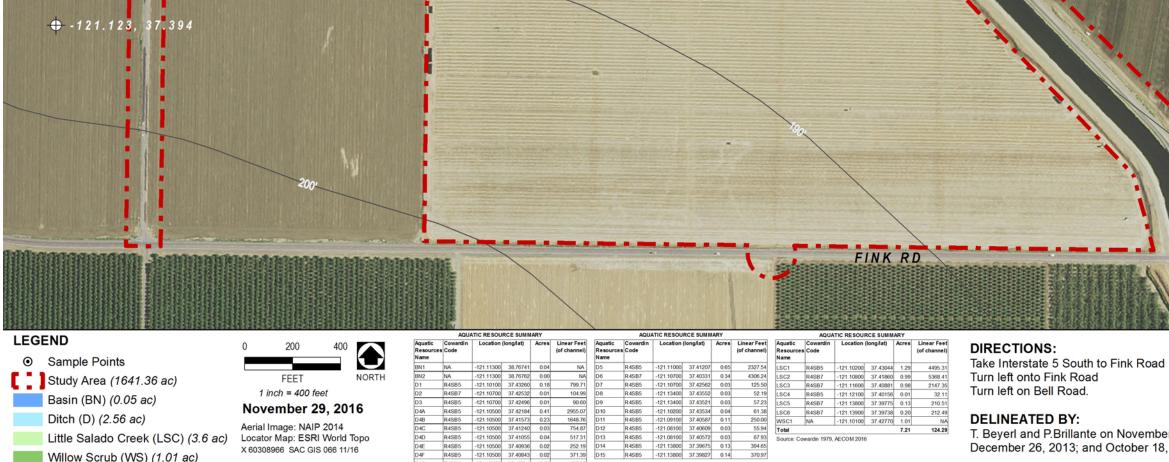
APPENDIX C

Wetland Delineation Map









D13

D 14 D 15

 R4SB5
 -121.13800
 37.39675
 0.13

 R4SB5
 -121.13800
 37.39827
 0.14

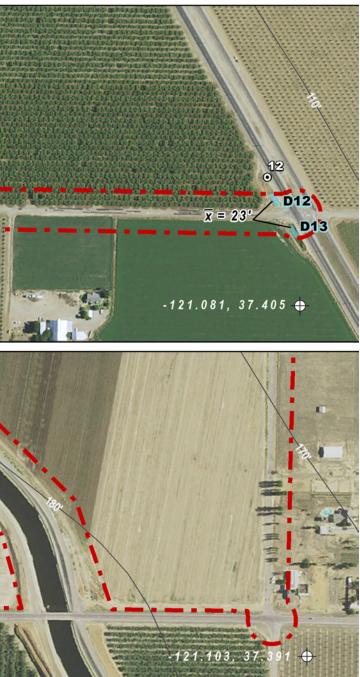
252.19 371.39

T. Beyerl and P.Brillante on November 25 and December 26, 2013; and October 18, 2016.

124.29

Little Salado Creek (LSC) (3.6 ac)

Willow Scrub (WS) (1.01 ac)



Mar Bar Rd 2

3

4

6

LOCATOR MAP

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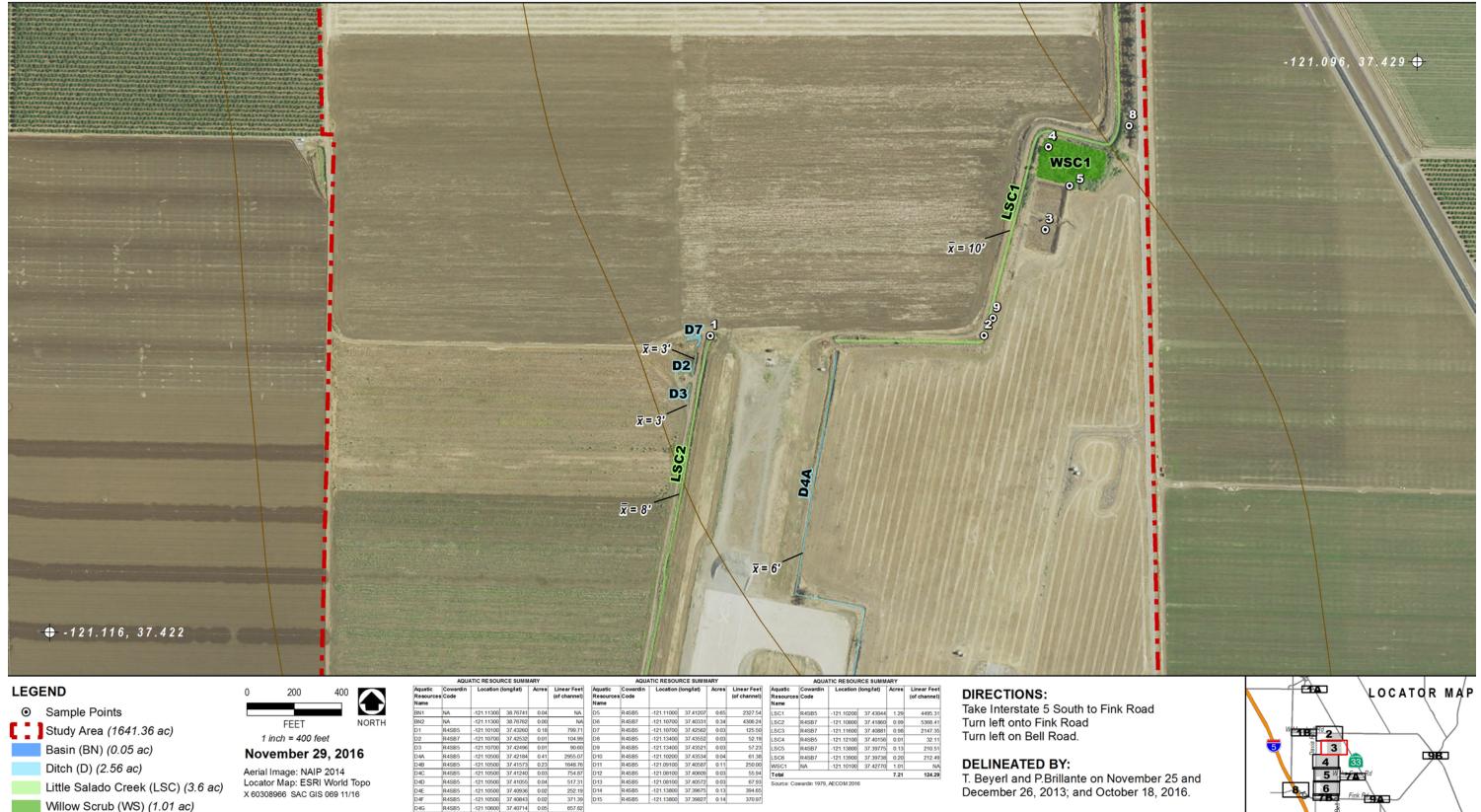


			AQUATIC RESOURCE SUMMARY					AQUATIC RESOURCE SUMMARY						AQUATIC RESOURCE SUMMARY						
LEGEND	0 200 4	00	Aquatic Resourc	Cowardin es Code	Location (long/lat)	Acres	Linear Feet (of channel)	Aquatic Resources	Cowardin S Code	Location	(long/lat)		Linear Feet (of channel)	Aquatic Resources	Cowardin Code	Location (Ion	g/lat) Acres	Linear Feet (of channel)	DIRECTIO
 Sample Points 			Name BN1	NA	-121.11300	38.76741	0.04	NA	Name D5	R4SB5	-121.11000	37.41207	0.65	2327.54	Name LSC1	R4SB5	-121.10200 3	7.43044 1.2	4495.31	Take Intersta
🚺 📕 Study Area (1641.36 ac)	FEET	NORTH	BN2 D1	NA R4SB5	-121.11300			NA 799.71	D6 D7	R4SB7 R4SB5	-121.10700		0.34	4306.24 125.50	LSC2 LSC3	R4SB7 R4SB7		7.41860 0.9	5368.41 2147.35	Turn left onto
Basin (BN) (0.05 ac)	1 inch = 400 feet		D2	R4SB7	-121.10700	37.42532	0.01	104.99	D8	R4SB5	-121.13400	37.43552	0.03	52.19	LSC4	R4SB5	-121.12100 3	7.40156 0.0	32.11	Turn left on I
	November 30, 2	2016	D3 D4A	R4SB5 R4SB5	-121.10700 -121.10500	37.42184	0.41	90.60 2955.07	D9 D10	R4SB5 R4SB5	-121.13400 -121.10200	37.43534	0.03	57.23 61.38	LSC5 LSC6	R4SB7 R4SB7	-121.13800 3 -121.13900 3	7.39775 0.13 7.39738 0.2	210.51	
Ditch (D) (2.56 ac)	Aerial Image: NAIP 201	4	D4B D4C	R4SB5 R4SB5	-121.10500				D11 D12	R4SB5 R4SB5	-121.09100		0.11	250.00 55.94	WSC1	NA	-121.10100 3	7.42770 1.0		DELINEAT
Little Salado Creek (LSC) (3.6 ac)	Locator Map: ESRI Wo		D4D	R4SB5	-121.10500	37.41055	0.04	517.31	D13	R4SB5	-121.08100	37.40572	0.03	67.93	Source: Co	wardin 1979,	AECOM 2016	1.2	124.23	1. Beyen and
Willow Scrub (WS) (1.01 ac)	X 60308966 SAC GIS 067	11/16	D4E D4F	R4SB5 R4SB5	-121.10500 -121.10500			252.19 371.39	D 14 D 15	R4SB5 R4SB5	-121.13800 -121.13800		0.13	394.65 370.97						December 2
			D4G	R4SB5	-121.10600	37.40714	0.05	657.82												

TONS: Instate 5 South to Fink Road onto Fink Road on Bell Road.

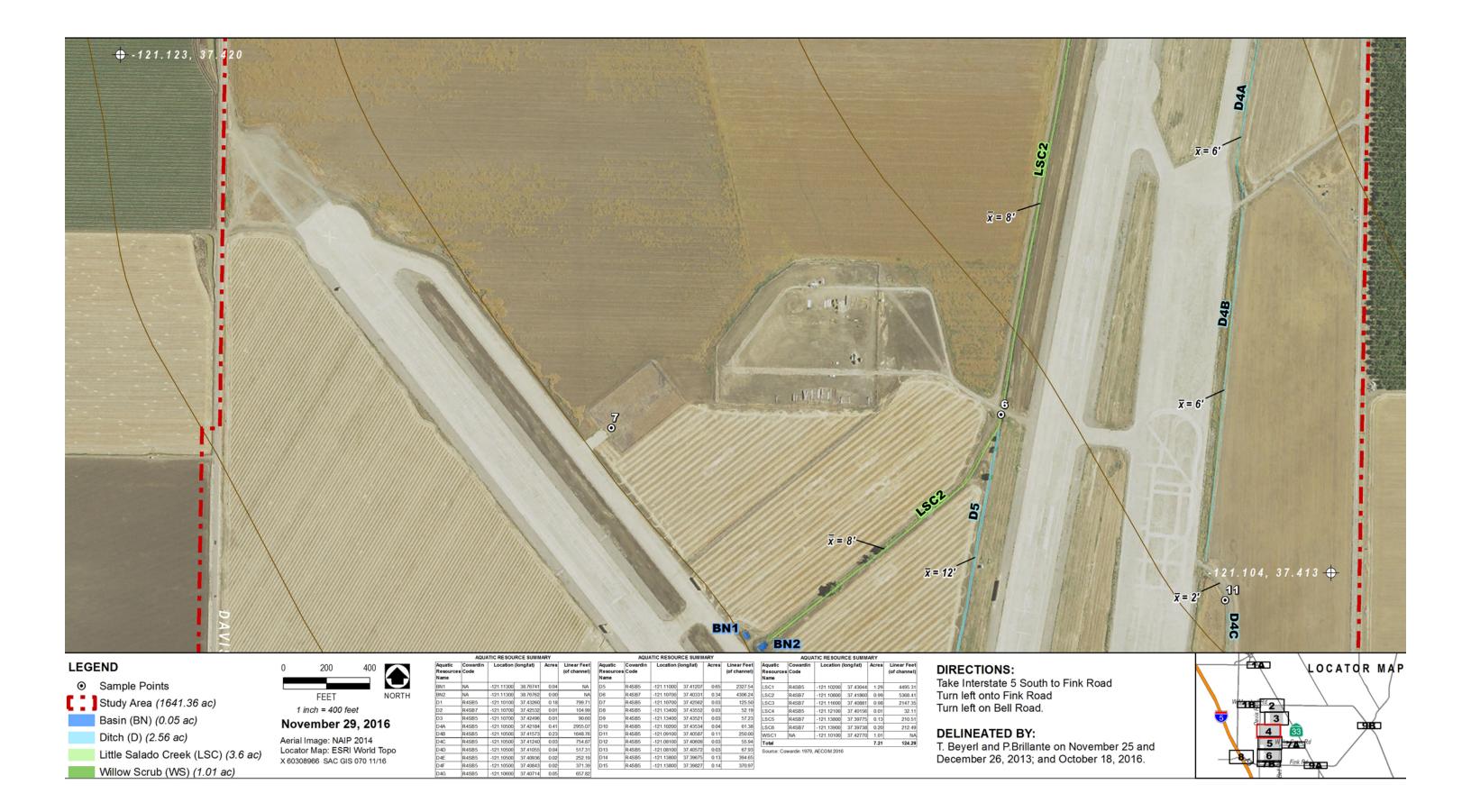




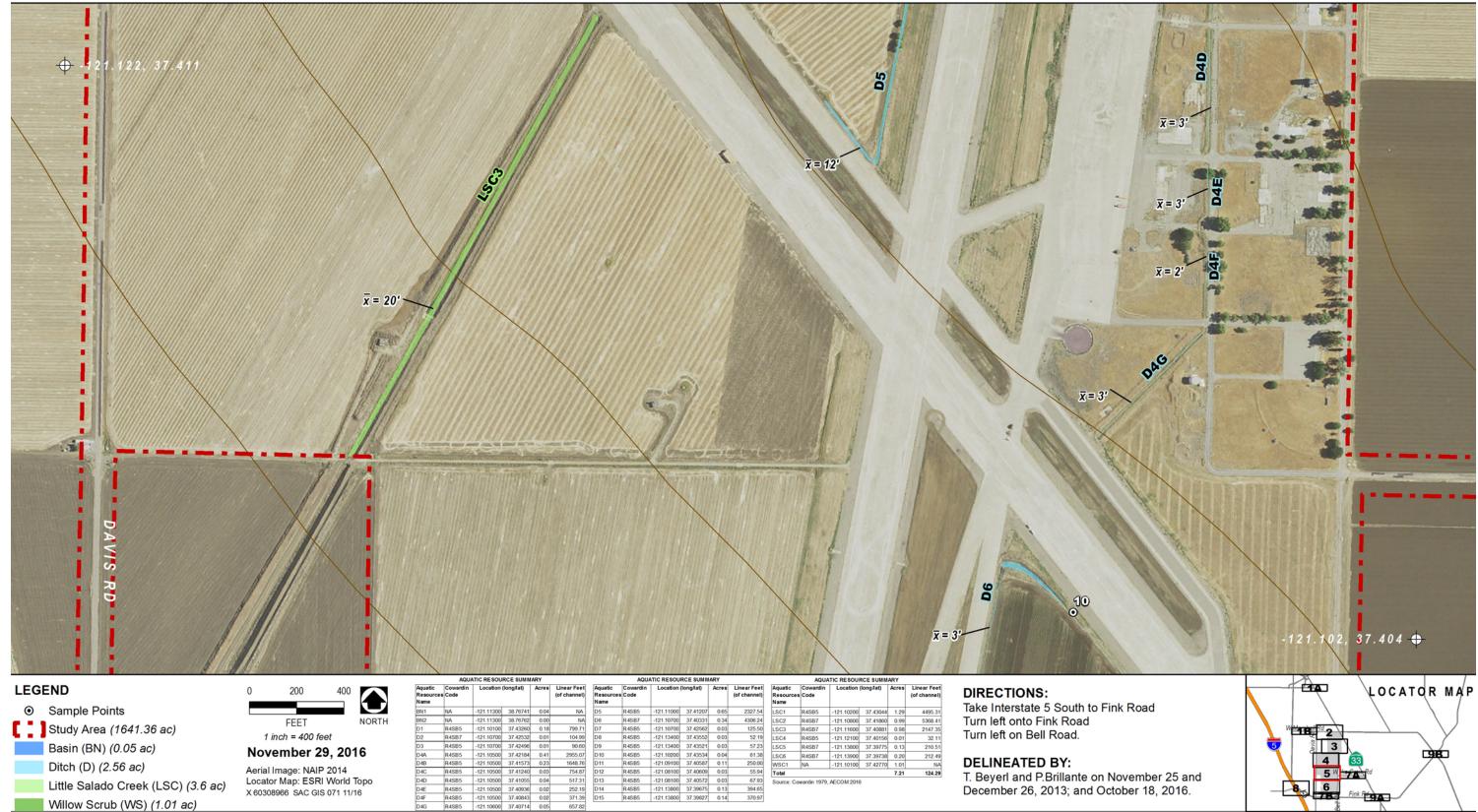


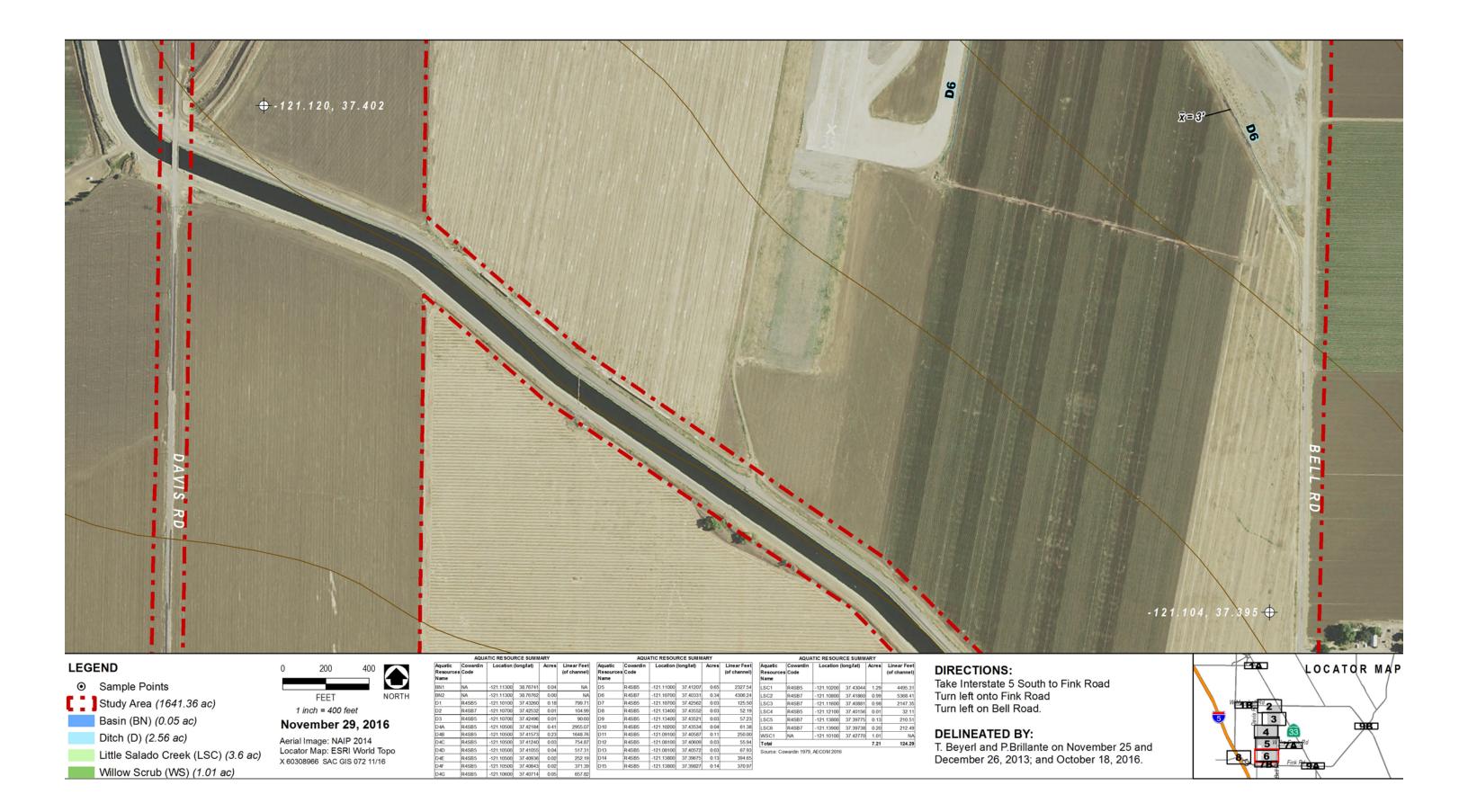
Willow Scrub (WS) (1.01 ac)

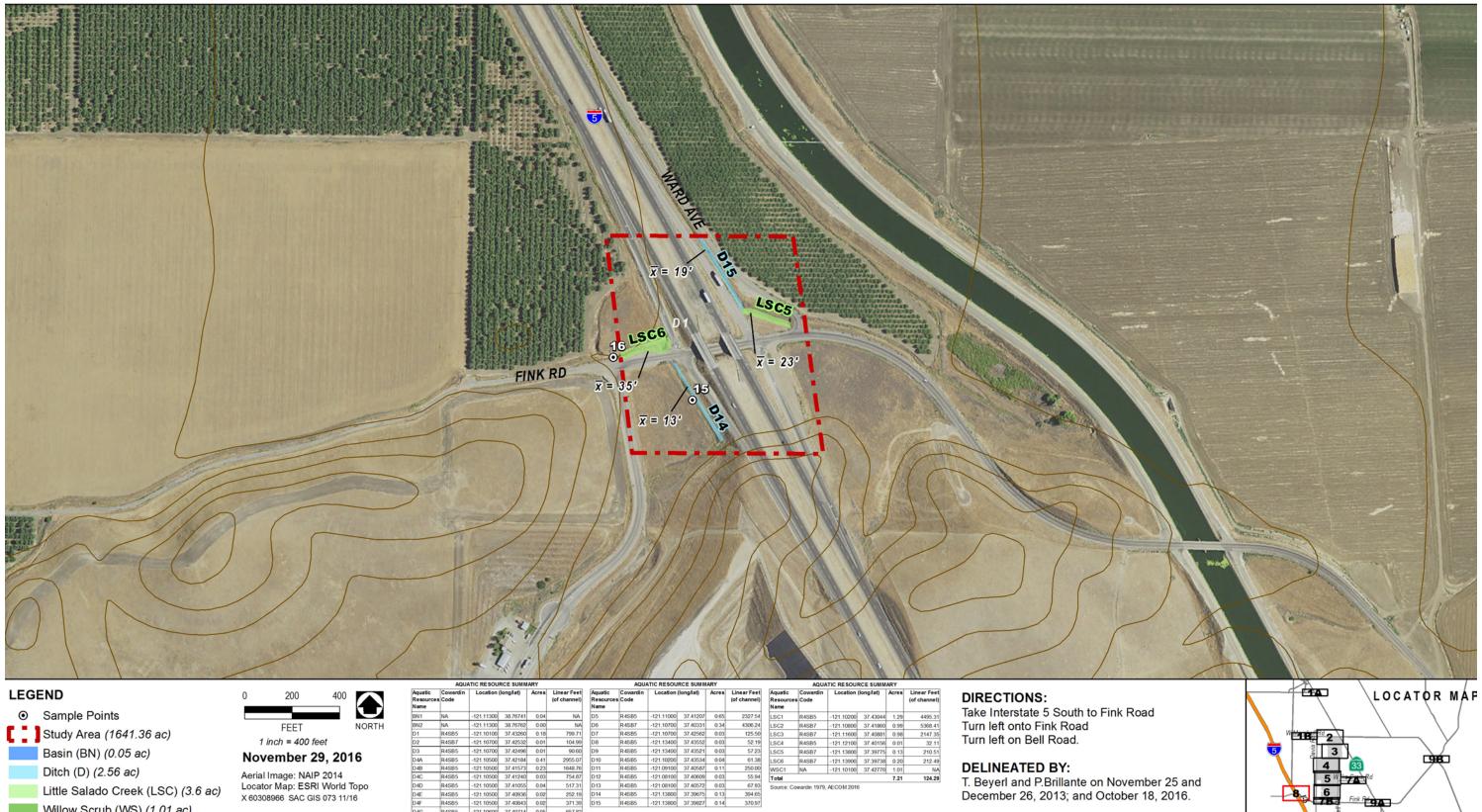
C-5



AECOM Wetland Delineation Map







							AQU	ATIC RESOU	RCE SUMM	IARY			AQU	ATIC RESOU	RCE SUMM	ARY			AQUA	TIC RESOU	RCE SUMMA	NRY .		
L	LEGEND	0	200	400	\frown	Aquatic Resource Name	Cowardin s Code	Location	(long/lat)	Acres	Linear Feet (of channel)	Aquatic Resources	Cowardin s Code	Location ((long/lat)	Acres	Linear Feet (of channel)	Aquatic Resources	Cowardin Code	Location	(long/lat)		Linear Feet (of channel)	DIREC
	 Sample Points 				$\mathbf{\nabla}$	BN1	NA	-121.11300	38.76741	0.04	NA	D5	R4SB5	-121.11000	37,41207	0.65	2327.54	LSC1	R4SB5	-121.10200	37.43044	1.29	4495.31	Take In
			FEET		NORTH	BN2	NA	-121.11300			NA	D6	R4SB7	-121.10700			4306.24	LSC2	R4SB7	-121.10800	37.41860	0.99	5368.41	Turn le
- L	Study Area (1641.36 ac)	1	inch = 400 fee	ot		D1	R4SB5 R4SB7	-121.10100			799.71	D7 D8	R4SB5 R4SB5	-121.10700			125.50 52.19	LSC3 LSC4	R4SB7 R4SB5	-121.11600		0.98	2147.35 32.11	Turn le
	Basin (BN) <i>(0.05 ac)</i>				4.0	D3	R4SB5	-121.10700			90.60	D9	R4SB5	-121.13400			57.23	LSC5	R4SB7	-121.12100			210.51	
	Busin (BN) (0.00 uc)	NOV	ember 29	9, 20	16	D4A	R4SB5	-121.10500			2955.07	D10	R4SB5	-121.10200			61.38	LSC6	R4SB7	-121.13900			212.49	DELIN
	Ditch (D) (2.56 ac)	Aerial	Image: NAIP	2014		D4B	R4SB5 R4SB5	-121.10500			1648.76 754.87	D11	R4SB5 R4SB5	-121.09100			250.00 55.94	WSC1	NA	-121.10100	37.42770	-		DELIN
- 2	.,.,		or Map: ESRI		Topo	D40	R4SB5	-121.10500			517.31	D12	R4SB5	-121.08100			67.93	Total	muandia ±070	AECOM 201		7.21	124.29	T. Beye
	Little Salado Creek (LSC) (3.6 ac)		18966 SAC GIS			D4E	R4SB5	-121.10500			252.19	D14	R4SB5	-121.13800			394.65	Source: Co	wardin 1979,	AECOM 201	,			Decem
		X 6030	10900 SAC GIS	0/5 11	10	D4F	R4SB5	-121.10500	37.40843	0.02	371.39	D15	R4SB5	-121.13800	37.39827	0.14	370.97							Decem
	Willow Scrub (WS) (1.01 ac)					D4G	R4SB5	-121.10600	37.40714	0.05	657.82													

APPENDIX D



Little Salado Creek at Sample Point 2 contains a patch of cattails within the channel.



View of Little Salado Creek upstream of Sample Point 2 showing the levee bank, ruderal vegetation, and adjacent agricultural fields.



Little Salado Creek at Sample Point 6.



Small basin (BN1) excavated within the channel of Little Salado Creek.



Little Salado Creek is culverted under the runway.



Typical ditch found beside the runways on the project site; Sample Point 10.



Narrow runoff ditch running beside a road leading from the former Naval support facilities to the main runway; Sample Point 11.



The understory of the willow scrub wetland is covered by heavy leaf litter and woody debris; Sample Point 4.

Appendix D



Wetland soil in the willow scrub wetland habitat is characterized by a redox dark surface. This soil has a very dark grayish brown (10 YR 3/2) top layer 6 inches thick with 5 percent prominent redox concentrations occurring as soft masses and pore linings.



Characteristic upland soils on the project site are dark brown (10 YR 3/3) with relict redox concentrations that are extremely firm and have abrupt boundaries. This soil is from Sample Point 5 in the saltbush scrub habitat.

Appendix D



Sewer treatment basin with ruderal upland vegetation at Sample Point 3.



Developed/disturbed areas include the levees on either side of Little Salado Creek and this former Navy munitions facility (top right).



Disturbed soil mounds with ruderal vegetation and an old paved road at the site of a former Naval munitions facility.



Ruderal vegetation at Sample Point 7, the site of a former firing range.



Realigned channel of Little Salado Creek (LSC4) along Fink Road east side of I-5.



Realigned channel of Little Salado Creek (LSC5) along Fink Road west side of I-5.



Vegetated agricultural ditch (D11) at intersection of Ike Crow Road and Highway 33 (sample point 12).



Agricultural ditch (D9) at intersection of Marshall Road and Highway 33 (sample point 3).

Appendix D



Agricultural ditch (D8) crossing Marshall Road parallel to Delta-Mendota Canal (sample point 4).



Roadside ditch (Dx) along southbound ramp onto I-5.

Appendix D

APPENDIX E

Plant Species Observed on the Project Site

Scientific Name	Common Name	Indicator Status ¹
Acacia longifolia	Golden wattle	NL
Amaranthus albus	Pigweed amaranth	FACU
Amsinckia intermedia	Common fiddleneck	NL
Asclepias fascicularis	Narrow-leaf milkweed	FAC
Atriplex lentiformis	Big saltbush	FAC
Avena sativa	Common oat	UPL
Bidens frondosa	Devil's beggartick	FACW
Brassica nigra	Black mustard	NL
Bromus diandrus	Ripgut brome	NL
Bromus hordeaceus	Soft chess	FACU
Bromus madritensis	Red brome	UPL
Carduus pycnocephalus	Italian thistle	NL
Cedrus deodara	Deodar cedar	NL
Centaurea solstitialis	Yellow star thistle	NL
Conium maculatum	Poison hemlock	FAC
Convolvulus arvensis	Field bindweed	NL
Cynodon dactylon	Bermuda grass	FACU
Cyperus eragrostis	Tall flatsedge	FACW
Distichlis spicata	Saltgrass	FAC
Echinochloa crus-galli	Barnyard grass	FAC
Elaeagnus angustifolia	Russian olive	FAC
Epilobium brachycarpum	Annual fireweed	FAC
Epilobium ciliatum	Fringed Willowherb	FACW
Erigeron bonariensis	Asthmaweed	FACU
Erodium cicutarium	Redstem filaree	NL
Festuca arundinacea	Tall fescue	FACU
Festuca myuros	Rattail sixweeks fescue	FACU
Festuca perennis	Italian ryegrass	NL
Grindelia camporum	Common gumplant	FACW
Helianthus annuus	Common sunflower	FACU
Helminthotheca echioides	Bristly ox-tongue	FACU
Hordeum murinum	Wall barley	FACU
Juniperus sp.	Juniper	NL
Ligustrum vulgare	European privet	UPL
Leptochloa fusca ssp. fascicularis	Bearded sprangletop	NL
Malva neglecta	Common mallow	NL
Medicago sativa	Alfalfa	UPL
Medicago polymorpha	Bur clover	FACU
Melilotus indicus	Yellow sweetclover	FACU
Morus alba	White mulberry	FACU
Persicaria punctata	Dotted smartweed	OBL

Scientific Name	Common Name	Indicator Status ¹
Photinia sp.	Photinia	NL
Plantago lanceolata	English Plantain	FAC
Poa pratensis	Kentucky bluegrass	FAC
Populus fremontii ssp. fremontii	Fremont cottonwood	NL
Pyracantha anfustifolia	Firethorn	NL
Rosa cultivar	Domestic rose	NL
Rubus armeniacus	Himalayan blackberry	FACU
Rumex crispus	Curly dock	FAC
Rumex pulcher	Fiddle dock	FAC
Salix exigua	Narrow-leaf willow	FACW
Salix gooddingii	Goodding's black willow	FACW
Salsola tragus	Russian thistle	FACU
Sorghum halepense	Johnsongrass	FACU
Silybum marianum	Blessed milk thistle	NL
Typha latifolia	Broad-leaved cattail	OBL
Vicia villosa	Hairy vetch	NL
Xanthium strumarium	Rough cocklebur	FAC

APPENDIX F

Aquatic Resource Excel Sheet

Waters_Name	State	Cowardin_Code	HGM_Code	Meas_Type	Amount	Units	Waters_Type	Latitude	Longitude
LSC1	CALIFORNIA	R4SB5	RIVERINE	Linear	4495.31	FOOT	RPW	37.43044000	-121.10200000
LSC2	CALIFORNIA	R4SB7	RIVERINE	Linear	5368.41	FOOT	RPW	37.41860000	-121.10800000
LSC3	CALIFORNIA	R4SB7	RIVERINE	Linear	2147.35	FOOT	RPW	37.40881000	-121.11600000
LSC4	CALIFORNIA	R4SB5	RIVERINE	Linear	32.11	FOOT	RPW	37.40156000	-121.12100000
LSC5	CALIFORNIA	R4SB7	RIVERINE	Linear	210.51	FOOT	RPW	37.39775000	-121.13800000
LSC6	CALIFORNIA	R4SB7	RIVERINE	Linear	212.49	FOOT	RPW	37.39738000	-121.13900000
D1	CALIFORNIA	R6	RIVERINE	Linear	799.71	FOOT	NRPW	37.43260000	-121.10100000
D2	CALIFORNIA	R6	RIVERINE	Linear	104.99	FOOT	NRPW	37.42532000	-121.10700000
D3	CALIFORNIA	R6	RIVERINE	Linear	90.6	FOOT	NRPW	37.42496000	-121.10700000
D4A	CALIFORNIA	R6	RIVERINE	Linear	2955.07	FOOT	NRPW	37.42184000	-121.10500000
D4B	CALIFORNIA	R6	RIVERINE	Linear	1648.76	FOOT	NRPW	37.41573000	-121.10500000
D4C	CALIFORNIA	R6	RIVERINE	Linear	754.87	FOOT	NRPW	37.41240000	-121.10500000
D4D	CALIFORNIA	R6	RIVERINE	Linear	517.31	FOOT	NRPW	37.41055000	-121.10500000
D4E	CALIFORNIA	R6	RIVERINE	Linear	252.19	FOOT	NRPW	37.40936000	-121.10500000
D4F	CALIFORNIA	R6	RIVERINE	Linear	371.39	FOOT	NRPW	37.40843000	-121.10500000
D4G	CALIFORNIA	R6	RIVERINE	Linear	657.82	FOOT	NRPW	37.40714000	-121.10600000
D5	CALIFORNIA	R6	RIVERINE	Linear	2327.54	FOOT	NRPW	37.41207000	-121.11000000
D6	CALIFORNIA	R6	RIVERINE	Linear	4306.24	FOOT	NRPW	37.40331000	-121.10700000
D7	CALIFORNIA	R6	RIVERINE	Linear	125.5	FOOT	NRPW	37.42562000	-121.10700000
D8	CALIFORNIA	R4SB5	RIVERINE	Linear	52.19	FOOT	NRPW	37.43552000	-121.13400000
D9	CALIFORNIA	R4SB5	RIVERINE	Linear	57.23	FOOT	NRPW	37.43551000	-121.13400000
D10	CALIFORNIA	R4SB7	RIVERINE	Linear	61.38	FOOT	NRPW	37.43534000	-121.10200000
D11	CALIFORNIA	R4SB7	RIVERINE	Linear	250	FOOT	NRPW	37.40587000	-121.09100000
D12	CALIFORNIA	R4SB7	RIVERINE	Linear	55.94	FOOT	NRPW	37.40609000	-121.08100000
D13	CALIFORNIA	R4SB7	RIVERINE	Linear	67.93	FOOT	NRPW	37.40572000	-121.10500000
D14	CALIFORNIA	R6	RIVERINE	Linear	394.65	FOOT	NRPW	37.39674538	-121.1384959
D15	CALIFORNIA	R6	RIVERINE	Linear	370.97	FOOT	NRPW	37.39826606	-121.1381987
BN1	CALIFORNIA		DEPRESS	Area	0.02	ACRE	IMPNDMNT	37.41249816	-121.1128184
BN2	CALIFORNIA		DEPRESS	Area	0.03	ACRE	IMPNDMNT	37.41236116	-121.1125613
WS1	CALIFORNIA	PSS1	DEPRESS	Area	1.01	ACRE	RPWWN	37.42769900	-121.10127100

Waters_Type		Description
DELINEATE		Delineation Only - PJD or No JD Required
IMPNDMNT		Impoundments
ISOLATE		Isolated (interstate or intrastate) waters, including isolated wetlands
NRPW		Non-RPWs that flow directly or indirectly into TNWs
NRPWW		Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
RPW		Relatively Permanent Waters (RPWs) that flow directly or indirectly into TNWs
RPWWD		Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
RPWWN		Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
TNW		TNWs, including territorial seas
TNWRPW		Tributary consisting of both RPWs and non-RPWs
TNWW		Wetlands adjacent to TNWs
UPLAND		Uplands
HGM_Code	Name	Description
DEPRESS	Depressional	Depressional is characterized by a water source consisting of return flow from groundwater and interflow with primarily vertical hydrodynamics.
ESTUARINEF		The water source of the estuarine fringe consists of overbank flow from estuaries, with bidirectional and horizontal hydrodynamics being dominant.
LACUSTRINF		A Lacustrine fringe has a dominant water source of lake overbank flow, and the dominant hydrodynamics are bidirectional and horizontal.
MINSOILFLT		Mineral soil flats have a water source of precipitation, and vertical hydrodynamics are dominant.
ORGSOILFLT	Organic Soil Flats	Organic soil flats have precipitation as the water source, and its dominant hydrodynamic is vertical.
RIVERINE	Riverine	Riverine is characterized by a water source of overbank flow from a channel, and hydrodynamics which are predominantly unidirectional and horizontal.
SLOPE	Slope	The Slope wetland class is characterized by a water source of return flow from groundwater, with principally unidirectional and horizontal hydrodynamics.

Cowardin_Code	Category	Description	Name
E	Estuarine	Estuarine - Consists of deepwater tidal habitats and adjacent tidal wetlands that are usually semienclosesd by land but have open, partly obstructed, or	E-ESTI
		sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land. The salinity may be	
		periodically increased above that of the open ocean by evaporation. Along some low-energy coastlines there is appreciable dilution of sea water. Offshore	;
		areas with typical estuarine plants and animals, such as red mangroves and eastern oysters, are also included in the Estuarine System.	
E1	Estuarine	Subtidal, Estuarine	E1-EST
E1AB	Estuarine	Aquatic Bed, Estuarine	E1AB-E
E1AB1	Estuarine	Algal, Aquatic Bed, Subtidal, Estuarine	E1AB1
E1AB3	Estuarine	Rooted Vascular, Aquatic Bed, Subtidal, Estuarine	E1AB3
E1AB4	Estuarine	Floating Vascular, Aquatic Bed, Subtidal, Estuarine	E1AB4
E1AB5	Estuarine	Unknown Submergent, Aquatic Bed, Subtidal, Estuarine	E1AB5
E1AB6	Estuarine	Unknown Surface, Aquatic Bed, Subtidal, Estuarine	E1AB6
E1OW	Estuarine	Open Water, Subtidal, Estuarine (used on older maps)	E1OW-
E1RB	Estuarine	Rock Bottom, Subtidal, Estuarine	E1RB-
E1RB1	Estuarine	Bedrock, Rock Bottom, Subtidal, Estuarine	E1RB1
E1RB2	Estuarine	Rubble, Rock Bottom, Subtidal, Estuarine	E1RB2
E1RF	Estuarine	Reef, Subtidal, Estuarine	E1RF-E
E1RF2	Estuarine	Mollusc, Reef, Subtidal, Estuarine	E1RF2
E1RF3	Estuarine	Worm, Reef, Subtidal, Estuarine	E1RF3
E1UB	Estuarine	Unconsolidated Bottom, Subtidal, Estuarine	E1UB-
E1UB1	Estuarine	Cobble-Gravel, Unconsolidated Bottom, Subtidal, Estuarine	E1UB1
E1UB2	Estuarine	Sand, Unconsolidated Bottom, Subtidal, Estuarine	E1UB2
E1UB3	Estuarine	Mud, Unconsolidated Bottom, Subtidal, Estuarine	E1UB3
E1UB4	Estuarine	Organic, Unconsolidated Bottom, Subtidal, Estuarine	E1UB4
E2	Estuarine	Intertidal, Estuarine	E2-EST
E2AB	Estuarine	Aquatic Bed, Intertidal, Estuarine	E2AB-E
E2AB1	Estuarine	Algal, Aquatic, Bed, Intertidal, Estuarine	E2AB1
E2AB3	Estuarine	Rooted Vascular, Aquatic Bed, Intertidal, Estuarine	E2AB3
E2AB4	Estuarine	Floating Vascular, Aquatic Bed, Intertidal, Estuarine	E2AB4
E2AB5	Estuarine	Unknown Submergent, Aquatic Bed, Intertidal, Estuarine	E2AB5
E2AB6	Estuarine	Unknown Surface, Aquatic Bed, Intertidal, Estuarine	E2AB6
E2EM	Estuarine	Emergent, Intertidal, Estuarine	E2EM-
E2EM1	Estuarine	Persistent, Emergent, Intertidal, Estuarine	E2EM1
E2EM2	Estuarine	Nonpersistent, Emergent, Intertidal, Estuarine	E2EM2
E2FO	Estuarine	Forested, Intertidal, Estuarine	E2FO-I
E2FO1	Estuarine	Broad-Leaved Deciduous, Forested, Intertidal, Estuarine	E2FO1
E2FO2	Estuarine	Needle-Leaved Deciduous, Forested, Intertidal, Estuarine	E2FO2
E2FO3	Estuarine	Broad-Leaved Evergreen, Forested, Intertidal, Estuarine	E2FO3
E2FO4	Estuarine	Needle-Leaved Evergreen, Forested, Intertidal, Estuarine	E2FO4
E2FO5	Estuarine	Dead, Forested, Intertidal, Estuarine	E2FO5
E2FO6	Estuarine	Indeterminate Deciduous, Forested, Intertidal, Estuarine	E2FO6
E2F07	Estuarine	Indeterminate Evergreen, Forested, Intertidal, Estuarine	E2F07
E2RF	Estuarine	Reef, Intertidal, Estuarine	E2RF-E
E2RF2	Estuarine	Mollusc, Reef, Intertidal, Estuarine	E2RF2
E2RF3	Estuarine	Worm, Reef, Intertidal, Estuarine	E2RF3
E2RS	Estuarine	Rocky Shore, Intertidal, Estuarine	E2RS-I
E2RS1	Estuarine	Bedrock, Rocky Shore, Intertidal, Estuarine	E2RS1
E2RS2	Estuarine	Rubble, Rocky Shore, Intertidal, Estuarine	E2RS2
E2SB	Estuarine	Stream Bed, Intertidal, Estuarine	E2SB-E
E2SB3	Estuarine	Cobble-Gravel, Stream Bed, Intertidal, Estuarine	E2SB3
E2SB4	Estuarine	Sand, Stream Bed, Intertidal, Estuarine	E2SB4
E2SB5	Estuarine	Mud, Stream Bed, Intertidal, Estuarine	E2SB5
E2SB6	Estuarine	Organic, Stream Bed, Intertidal, Estuarine	E2SB6
E2SS	Estuarine	Scrub-Shrub, Intertidal, Estuarine	E2SS-E
E2SS1	Estuarine	Broad-Leaved Deciduous, Scrub-Shrub, Intertidal, Estuarine	E2SS1
E2SS2	Estuarine	Needle-Leaved Deciduous, Scrub-Shrub, Intertidal, Estuarine	E2SS2
E2SS3	Estuarine	Broad-Leaved Evergreen, Scrub-Shrub, Intertidal, Estuarine	E2SS3
E2SS4	Estuarine	Needle-Leaved Evergreen, Scrub-Shrub, Intertidal, Estuarine	E2SS4
E2SS5	Estuarine	Dead, Scrub-Shrub, Intertidal, Estuarine	E2SS5

STUARINE, SUBTIDAL B-ESTUARINE, SUBTIDAL, AQUATIC BED 31-ESTUARINE, SUBTIDAL, AQUATIC BED, ALGAL 33-ESTUARINE, SUBTIDAL, AQUA BED, ROOT VASC 34-ESTUARINE, SUBTIDAL, AQUA BED, FLOT VASC 35-ESTUARINE, SUBTIDAL, AQUA BED, UNK SUB 36-ESTUARINE, SUBTIDAL, AQUA BED, UNK SUR *N*-ESTUARINE, SUBTIDAL, OPEN WATER 3-ESTUARINE, SUBTIDAL, ROCK BOTTOM 31-ESTUARINE, SUBTIDAL, ROCK BOTTOM, BEDROK 32-ESTUARINE, SUBTIDAL, ROCK BOTTOM, RUBBLE -ESTUARINE, SUBTIDAL, REEF 2-ESTUARINE, SUBTIDAL, REEF, MOLLUSC -3-ESTUARINE, SUBTIDAL, REEF, WORM 3-ESTUARINE, SUBTIDAL UNCONSOLIDATED BOTTM 31-ESTUARINE, SUBTIDAL, UNCONSOL BOTOM, COB 32-ESTUARINE, SUBTIDAL, UNCONSOL BOT, SAND 33-ESTUARINE, SUBTIDAL, UNCONSOL BOT, MUD 34-ESTUARINE, SUBTIDAL, UNCONSOL BOT, ORG STUARINE, INTERTIDAL B-ESTUARINE, INTERTIDAL, AQUATIC BED 31-ESTUARINE, INTERTIDAL, AQUA BED, ALGAL 33-ESTUARINE, INTERTIDAL, AQUA BED, ROOT VA 34-ESTUARINE, INTERTIDAL, AQUABED, FLOAT VA 35-ESTUARINE, INTERTIDAL, AQUABED, UNK SUB B6-ESTUARINE, INTERTIDAL, AQUABED, UNK SUR I-ESTUARINE, INTERTIDAL, EMERGENT M1-ESTUARINE, INTERTIDAL, EMERGENT, PERSIST 12-ESTUARINE, INTERTIDAL, EMERGENT, NONPERS)-ESTUARINE, INTERTIDAL, FORESTED)1-ESTUARINE, INTERTIDAL, FORESTED, BLD 2-ESTUARINE, INTERTIDAL, FORESTED, NLD 3-ESTUARINE, INTERTIDAL, FORESTED, BLE 04-ESTUARINE, INTERTIDAL, FORESTED, NLE 05-ESTUARINE, INTERTIDAL, FORESTED, DEAD 06-ESTUARINE, INTERTIDAL, FORESTED, IND 7-ESTUARINE, INTERTIDAL, FORESTED, INE -ESTUARINE, INTERTIDAL, REEF 2-ESTUARINE, INTERTIDAL, REEF, MOLLUSC -3-ESTUARINE, INTERTIDAL, REEF, WORM S-ESTUARINE, INTERTIDAL, ROCKY SHORE S1-ESTUARINE, INTERTIDAL, ROCK SHR, BEDROK 2-ESTUARINE, INTERTIDAL, ROCK SHR, RUBBLE B-ESTUARINE, INTERTIDAL, STREAM BED 33-ESTUARINE, INTERTIDAL, STREAM BED, COBBL 34-ESTUARINE, INTERTIDAL, STREAM BED, SAND 35-ESTUARINE, INTERTIDAL, STREAM BED, MUD 86-ESTUARINE, INTERTIDAL, STREAM BED, ORGAN S-ESTUARINE, INTERTIDAL, SCRUB-SHRUB 1-ESTUARINE, INTERTIDAL, SCRUB-SHRUB, BLD 2-ESTUARINE, INTERTIDAL, SCRUB-SHRUB, NLD 3-ESTUARINE, INTERTIDAL, SCRUB-SHRUB, BLE 4-ESTUARINE, INTERTIDAL, SCRUB-SHRUB, NLE S5-ESTUARINE, INTERTIDAL, SCRUB-SHRUB, DEAD

E2S86 Estuarine Indeterminate Deciduous, Scrub-Shrub, Intertidal, Estuarine E2S87 Estuarine Indeterminate Evergreen, Scrub-Shrub, Intertidal, Estuarine E2US Estuarine Cobble, Unconsolidated Shore, Intertidal, Estuarine E2US3 Estuarine Cobble, Unconsolidated Shore, Intertidal, Estuarine E2US3 Estuarine Mud, Unconsolidated Shore, Intertidal, Estuarine E2US4 Estuarine Mud, Unconsolidated Shore, Intertidal, Estuarine E2US4 Estuarine Cracustrine - Includes wetlands and deepwater habitats with all of the following characteristics: (1) situated in a topographic depression or a channel; (2) lacking trees, shrubs, persistent emergents, emergent mosses or lichens with greater than 30% areal coverage; and (3) total to a (2 a acres). Similar wetland and deepwater habitats totaling less than 8 has are also included in the Lacustrine system if an active wave-bedrock shoreline feature makes up all or part of the boundary, or if the water depth in the deepest part of the basin exceeds 2 m (6.6 feet Lacustrine varine waters may be tidal or nontidal, but ocean-derived salinity is always less than 0.5%. L1 Lacustrine Lacustrine Lacustrine L1AB Lacustrine Aquatic Bed, Limnetic, Lacustrine L1AB Lacustrine Aquatic Bed, Limnetic, Lacustrine L1AB Lacustrine Aquatic Bed, Limnetic, Lacustrine L1AB <th>E23</th> <th>200</th>	E23	200
E2US Estuarine Unconsolidated Shore, Intertidal, Estuarine E2US1 Estuarine Cobble, Unconsolidated Shore, Intertidal, Estuarine E2US3 Estuarine Sand, Unconsolidated Shore, Intertidal, Estuarine E2US4 Estuarine Organic, Unconsolidated Shore, Intertidal, Estuarine L Lacustrine Inconsolidated Shore, Intertidal, Estuarine L Lacustrine Inconsolidated Shore, Intertidal, Estuarine L Lacustrine Includes wetlands and deepwater habitats with all of the following characteristics: (1) situated in a topographic depression or a channel; (2) lacking trees, shrubs, persistent mergents, emergent mosses or lichens with greater than 30% areal coverage; and (3) total a (20 acres). Similar wetland and deepwater habitats totaling less than 8 ha are also included in the Lacustrine vare-bedrock shoreline feature makes up all or part of the boundary, or if the water depth in the deepest part of the basin exceeds 2 m (6.6 feet Lacustrine - Includes wetlands and deepwater habitats totaling less than 0.5%. L1 Lacustrine Lacustrine - Includes wetland and deepwater habitats totaling less than 0.5%. L1 Lacustrine Aquatic Bed, Limmetic, Lacustrine L1AB Lacustrine Aquatic Bed, Limmetic, Lacustrine L1AB Lacustrine Aquatic Bed, Limmetic, Lacustrine L1AB Lacustrine Aquatic Bed, Limmetic, Lacustrin	50	200
E2US1 Estuarine Coble, Unconsolidated Shore, Intertidal, Estuarine E2US2 Estuarine Sand, Unconsolidated Shore, Intertidal, Estuarine E2US4 Estuarine Mud, Unconsolidated Shore, Intertidal, Estuarine E2US4 Estuarine Organic, Unconsolidated Shore, Intertidal, Estuarine E2US4 Estuarine Organic, Unconsolidated Shore, Intertidal, Estuarine L Lacustrine Lacustrine Inconsolidated Shore, Intertidal, Estuarine L Lacustrine Inconsolidated Shore, Intertidal, Estuarine bedrock shoreline feature Inconsolidated Shore, Intertidal, Estuarine L Lacustrine Inconsolidated Shore, Intertidal, Estuarine Lacustrine Inconsolidated Shore, Intertidal, Estuarine L1 Lacustrine Inconsolidated Shore, Intertidal, Estuarine L2 Lacustrine Inconsolidated Shore, Intertidal, Estuarine L2 Lacustrine Inconsolidated Shore, Intertidal, Estuarine L3 Lacustrine Inconsolidated Shore, Intertidal, Estuarine L4 Lacustrine Inconsolidated Shore, Intertidal, Estuarine L4 Lacustrine Inconsolidated Shore, Interidal, Estuarine L4 <t< td=""><td>E2</td><td>2SS</td></t<>	E2	2SS
E2US2 Estuarine Sand, Unconsolidated Shore, Intertidal, Estuarine E2US3 Estuarine Mud, Unconsolidated Shore, Intertidal, Estuarine E2US4 Estuarine Organic, Unconsolidated Shore, Intertidal, Estuarine L Lacustrine Lacustrine - Includes wetlands and deepwater habitats with all of the following characteristics: (1) situated in a topographic depression or a channel; (2) lacking trees, shrubs, persistent emergents, emergent mosses or lichens with greater than 30% areal coverage; and (3) total a ha (20 acres). Similar wetland and deepwater habitats totaling less than 8 ha are also included in the Lacustrine System if an active wave-bedrock shoreline feature makes up all or part of the boundary, or if the water depth in the deepest part of the basin exceeds 2 m (6.6 feet Lacustrine waters may be tidal or nontidal, but ocean-derived salinity is always less than 0.5%. L1 Lacustrine Lacustrine wetland and deepwater habitats with all of the following characteristics: (1) situated in a topographic depression or a channel; (2) lacking trees, shrubs, persistent emergents, emergent mosses or lichens with greater than 30% areal coverage; and (3) total a ha (20 acres). Similar wetland and deepwater habitats totaling less than 8 ha are also included in the Lacustrine state wave-bedrock shoreline feature makes up all or part of the boundary, or if the water depth in the deepest part of the basin exceeds 2 m (6.6 feet Lacustrine waters may be tidal or nontidal, but ocean-derived salinity is always less than 0.5%. L14 Lacustrine Aquatic Bed, Limnetic, Lacustrine L1AB Lacustrine Aquatic Bed, Limn	E2'	2US
E2US2 Estuarine Sand, Unconsolidated Shore, Intertidal, Estuarine E2US3 Estuarine Mud, Unconsolidated Shore, Intertidal, Estuarine E2US4 Estuarine Organic, Unconsolidated Shore, Intertidal, Estuarine L Lacustrine Lacustrine Lacustrine - Includes wetlands and deepwater habitats with all of the following characteristics: (1) situated in a topographic depression or a channel; (2) lacking trees, shrubs, persistent emergents, emergent mosses or lichens with greater than 30% areal coverage; and (3) total a ha (20 acres). Similar wetland and deepwater habitats totaling less than 8 ha are also included in the Lacustrine System if an active wave-bedrock shoreline feature makes up all or part of the boundary, or if the water depth in the deepest part of the basin exceeds 2 m (6.6 feet Lacustrine waters may be tidal or nontidal, but ocean-derived salinity is always less than 0.5%. L1 Lacustrine Lacustrine waters may be tidal or nontidal, but ocean-derived salinity is always less than 0.5%. L1AB Lacustrine Lacustrine waters may be tidal or nontidal, but ocean-derived salinity is always less than 0.5%. L1AB Lacustrine Aquatic Bed, Limnetic, Lacustrine L1AB Lacustrine Rooted	E2	2US
E2US3EstuarineMud, Unconsolidated Shore, Intertidal, EstuarineE2US4EstuarineOrganic, Unconsolidated Shore, Intertidal, EstuarineLLacustrineLacustrine - Includes wetlands and deepwater habitats with all of the following characteristics: (1) situated in a topographic depression or a channel; (2) lacking trees, shrubs, persistent emergents, emergent mosses or lichens with greater than 30% areal coverage; and (3) total a ha (20 acres). Similar wetland and deepwater habitats totaling less than 8 ha are also included in the Lacustrine System if an active wave- bedrock shoreline feature makes up all or part of the boundary, or if the water depth in the deepest part of the basin exceeds 2 m (6.6 feet Lacustrine - Includes wetlands and deepwater habitats with all of the following characteristics: (1) situated in a topographic depression or a channel; (2) lacking trees, shrubs, persistent emergents, emergent mosses or lichens with greater than 30% areal coverage; and (3) total a ha (20 acres). Similar wetlands and deepwater habitats totaling less than 0.5%.L1LacustrineLacustrine - Includes wetlands and deepwater habitats totaling less than 0.5%. Lacustrine in cludes wetlands and deepwater habitats totaling less than 0.5%.L1ABLacustrineAquatic Bed, Limnetic, Lacustrine a (2) acres). Similar wetland and deepwater habitats totaling less than 0.5%.L1ABLacustrineAquatic Bed, Limnetic, LacustrineL1ABLacustrineAquatic Bed, Limnetic, LacustrineL1ABLacustrineAquatic Bed, Limnetic, LacustrineL1AB3LacustrineRooted Vascular, Aquatic Bed, Limnetic, LacustrineL1AB4LacustrineUnknown Submergent, Aquatic Bed, Limnetic, LacustrineL1AB5 <td>E2</td> <td>2US</td>	E2	2US
E2US4Estuarine LacustrineOrganic, Unconsolidated Shore, Intertidal, Estuarine Lacustrine - Includes wetlands and deepwater habitats with all of the following characteristics: (1) situated in a topographic depression or a channel; (2) lacking trees, shrubs, persistent emergents, emergent mosses or lichens with greater than 30% areal coverage; and (3) total a ha (20 acres). Similar wetland and deepwater habitats totaling less than 8 ha are also included in the Lacustrine System if an active wave- bedrock shoreline feature makes up all or part of the boundary, or if the water depth in the deepest part of the basin exceeds 2 m (6.6 feet Lacustrine - Includes wetlands and deepwater habitats with all of the following characteristics: (1) situated in a topographic depression or a channel; (2) lacking trees, shrubs, persistent emergents, emergent mosses or lichens with greater than 30% areal coverage; and (3) total a ha (20 acres). Similar wetland and deepwater habitats with all of the following characteristics: (1) situated in a topographic depression or a channel; (2) lacking trees, shrubs, persistent emergents, emergent mosses or lichens with greater than 30% areal coverage; and (3) total a ha (20 acres). Similar wetland and deepwater habitats totaling less than 8 ha are also included in the Lacustrine System if an active wave- bedrock shoreline feature makes up all or part of the boundary, or if the water depth in the deepest part of the basin exceeds 2 m (6.6 feet Lacustrine waters may be tidal or nontidal, but ocean-derived salinity is always less than 0.5%.L1ABLacustrineAquatic Bed, Limnetic, LacustrineL1ABLacustrineAquatic Bed, Limnetic, LacustrineL1ABLacustrineAquatic Bed, Limnetic, LacustrineL1AB3LacustrineAquatic Bed, Limnetic, LacustrineL1AB4Lacustrine <t< td=""><td></td><td>2US</td></t<>		2US
LLacustrineLacustrineLacustrine - Includes wetlands and deepwater habitats with all of the following characteristics: (1) situated in a topographic depression or a channel; (2) lacking trees, shrubs, persistent emergents, emergent mosses or lichens with greater than 30% areal coverage; and (3) total a (20 acres). Similar wetland and deepwater habitats totaling less than 8 ha are also included in the Lacustrine System if an active wave- bedrock shoreline feature makes up all or part of the boundary, or if the water depth in the deepest part of the basin exceeds 2 m (6.6 feet Lacustrine - Includes wetlands and deepwater habitats totaling less than 8 ha are also included in the Lacustrine System if an active wave- bedrock shoreline feature makes up all or part of the boundary, or if the water depth in the deepest part of the basin exceeds 2 m (6.6 feet Lacustrine - Includes wetlands and deepwater habitats totaling less than 8 ha are also included in the Lacustrine System if an active wave- bedrock shoreline feature makes up all or part of the boundary, or if the water depth in the deepest part of the basin exceeds 2 m (6.6 feet Lacustrine - Includes wetlands and deepwater habitats totaling less than 8 ha are also included in the Lacustrine System if an active wave- bedrock shoreline feature makes up all or part of the boundary, or if the water depth in the deepest part of the basin exceeds 2 m (6.6 feet Lacustrine vaters may be tidal or nontidal, but ocean-derived salinity is always less than 0.5%.L1ABLacustrineAquatic Bed, Limnetic, LacustrineL1AB3LacustrineAquatic Bed, Limnetic, LacustrineL1AB4LacustrineAquatic Bed, Limnetic, LacustrineL1AB5LacustrineFloating Vascular Aquatic Bed, Limnetic, LacustrineL1AB5LacustrineHohoom Submergent, Aquatic Bed, Limneti		2US
 channel; (2) lacking trees, shrubs, persistent emergents, emergent mosses of lichens with greater than 30% areal coverage; and (3) total a ha (20 acres). Similar wetland and deepwater habitats totaling less than 8 ha are also included in the Lacustrine System if an active wave-bedrock shoreline feature makes up all or part of the boundary, or if the water depth in the deepest part of the boasin exceeds 2 m (6.6 feet Lacustrine + Includes wetlands and deepwater habitats with all of the following characteristics: (1) situated in a topographic depression or a channel; (2) lacking trees, shrubs, persistent emergents, emergent mosses or lichens with greater than 30% areal coverage; and (3) total a tacustrine + Includes wetlands and deepwater habitats with all of the following characteristics: (1) situated in a topographic depression or a channel; (2) lacking trees, shrubs, persistent emergents, emergent mosses or lichens with greater than 30% areal coverage; and (3) total a tacustrine + Includes wetlands and deepwater habitats totaling less than 8 ha are also included in the Lacustrine system if an active wave-bedrock shoreline feature makes up all or part of the boundary, or if the water depth in the deepest part of the basin exceeds 2 m (6.6 feet Lacustrine waters may be tidal or nontidal, but ocean-derived salinity is always less than 0.5%. L1AB Lacustrine Aquatic Bed, Limnetic, Lacustrine L1AB1 Lacustrine Algal, Aquatic Bed, Limnetic, Lacustrine L1AB2 Lacustrine Aquatic Bed, Limnetic, Lacustrine L1AB3 Lacustrine Rooted Vascular, Aquatic Bed, Limnetic, Lacustrine L1AB4 Lacustrine Unknown Sudrage, Aquatic Bed, Limnetic, Lacustrine L1AB5 Lacustrine Unknown Sudrage, Aquatic Bed, Limnetic, Lacustrine L1AB6 Lacustrine Bedrock, Rook Bottom, Limnetic, Lacustrine L1AB6 Lacustrine Bedrock, Rook Bottom, Limnetic, Lacustrine L1RB1 Lacustrine Bedrock, Rook Bottom, Limnetic, Lacustrine <li< td=""><td></td><td>-LAC</td></li<>		-LAC
L1LacustrineLacustrineLacustrine - Includes wetlands and deepwater habitats with all of the following characteristics: (1) situated in a topographic depression or a channel; (2) lacking trees, shrubs, persistent emergent mosses or lichens with greater than 30% areal coverage; and (3) total a ha (20 acres). Similar wetland and deepwater habitats totaling less than 8 ha are also included in the Lacustrine System if an active wave- bedrock shoreline feature makes up all or part of the boundary, or if the water depth in the deepest part of the basin exceeds 2 m (6.6 feature Lacustrine waters may be tidal or nontidal, but ocean-derived salinity is always less than 0.5%.L1ABLacustrineAquatic Bed, Limnetic, LacustrineL1AB1LacustrineAquatic Bed, Limnetic, LacustrineL1AB2LacustrineAquatic Bed, Limnetic, LacustrineL1AB3LacustrineRooted Vascular, Aquatic Bed, Limnetic, LacustrineL1AB4LacustrineFloating Vascular, Aquatic Bed, Limnetic, LacustrineL1AB5LacustrineFloating Vascular, Aquatic Bed, Limnetic, LacustrineL1AB4LacustrineUnknown Submergent, Aquatic Bed, Limnetic, LacustrineL1AB5LacustrineUnknown Sutface, Aquatic Bed, Limnetic, LacustrineL1AB6LacustrineOpen Water/Unknown Bottom, Limnetic, LacustrineL10WLacustrineRock Bottom, Limnetic, LacustrineL1RBLacustrineRock Bottom, Limnetic, LacustrineL1RB1LacustrineRock Bottom, Limnetic, LacustrineL1RB2LacustrineRock Bottom, Limnetic, LacustrineL1RB2LacustrineRock Bottom, Limnetic, LacustrineL1RB4Lac	area exceeds 8 formed or	L) (C
L1AB1LacustrineAlgal, Aquatic Bed, Limnetic, LacustrineL1AB2LacustrineAquatic Moss, Aquatic Bed, Limnetic, LacustrineL1AB3LacustrineRooted Vascular, Aquatic Bed, Limnetic, LacustrineL1AB4LacustrineFloating Vascular, Aquatic Bed, Limnetic, LacustrineL1AB5LacustrineUnknown Submergent, Aquatic Bed, Limnetic, LacustrineL1AB6LacustrineUnknown Sufface, Aquatic Bed, Limnetic, LacustrineL1OWLacustrineOpen Water/Unknown Bottom, Limnetic, Lacustrine (used on older maps)L1RBLacustrineBedrock, Rock Bottom, Limnetic, LacustrineL1RB1LacustrineRubble, Rock Bottom, Limnetic, LacustrineL1B2LacustrineUnconsolidated Bottom, Limnetic, Lacustrine	area exceeds 8 formed or	I-LA
L1AB2LacustrineAquatic Moss, Aquatic Bed, Limnetic, LacustrineL1AB3LacustrineRooted Vascular, Aquatic Bed, Limnetic, LacustrineL1AB4LacustrineFloating Vascular, Aquatic Bed, Limnetic, LacustrineL1AB5LacustrineUnknown Submergent, Aquatic Bed, Limnetic, LacustrineL1AB6LacustrineUnknown Sufface, Aquatic Bed, Limnetic, LacustrineL1AB6LacustrineUnknown Surface, Aquatic Bed, Limnetic, LacustrineL1OWLacustrineOpen Water/Unknown Bottom, Limnetic, Lacustrine (used on older maps)L1RBLacustrineRock Bottom, Limnetic, LacustrineL1RB1LacustrineBedrock, Rock Bottom, Limnetic, LacustrineL1RB2LacustrineRubble, Rock Bottom, Limnetic, LacustrineL1UBLacustrineUnconsolidated Bottom, Limnetic, Lacustrine	L1/	1AB-
L1AB3LacustrineRooted Vascular, Aquatic Bed, Limnetic, LacustrineL1AB4LacustrineFloating Vascular, Aquatic Bed, Limnetic, LacustrineL1AB5LacustrineUnknown Submergent, Aquatic Bed, Limnetic, LacustrineL1AB6LacustrineUnknown Sufface, Aquatic Bed, Limnetic, LacustrineL1OWLacustrineOpen Water/Unknown Bottom, Limnetic, Lacustrine (used on older maps)L1RBLacustrineRock Bottom, Limnetic, LacustrineL1RB1LacustrineBedrock, Rock Bottom, Limnetic, LacustrineL1RB2LacustrineRubble, Rock Bottom, Limnetic, LacustrineL1UBLacustrineUnconsolidated Bottom, Limnetic, Lacustrine	L1/	1AB [·]
L1AB3LacustrineRooted Vascular, Aquatic Bed, Limnetic, LacustrineL1AB4LacustrineFloating Vascular, Aquatic Bed, Limnetic, LacustrineL1AB5LacustrineUnknown Submergent, Aquatic Bed, Limnetic, LacustrineL1AB6LacustrineUnknown Sufface, Aquatic Bed, Limnetic, LacustrineL1OWLacustrineOpen Water/Unknown Bottom, Limnetic, Lacustrine (used on older maps)L1RBLacustrineRock Bottom, Limnetic, LacustrineL1RB1LacustrineBedrock, Rock Bottom, Limnetic, LacustrineL1RB2LacustrineRubble, Rock Bottom, Limnetic, LacustrineL1UBLacustrineUnconsolidated Bottom, Limnetic, Lacustrine	L1/	1AB
L1AB4LacustrineFloating Vascular, Aquatic Bed, Limnetic, LacustrineL1AB5LacustrineUnknown Submergent, Aquatic Bed, Limnetic, LacustrineL1AB6LacustrineUnknown Surface, Aquatic Bed, Limnetic, LacustrineL1OWLacustrineOpen Water/Unknown Bottom, Limnetic, Lacustrine (used on older maps)L1RBLacustrineRock Bottom, Limnetic, LacustrineL1RB1LacustrineBedrock, Rock Bottom, Limnetic, LacustrineL1RB2LacustrineRubble, Rock Bottom, Limnetic, LacustrineL1UBLacustrineUnconsolidated Bottom, Limnetic, Lacustrine	L1/	1AB
L1AB5LacustrineUnknown Submergent, Aquatic Bed, Limnetic, LacustrineL1AB6LacustrineUnknown Surface, Aquatic Bed, Limnetic, LacustrineL1OWLacustrineOpen Water/Unknown Bottom, Limnetic, Lacustrine (used on older maps)L1RBLacustrineRock Bottom, Limnetic, LacustrineL1RB1LacustrineBedrock, Rock Bottom, Limnetic, LacustrineL1RB2LacustrineRubble, Rock Bottom, Limnetic, LacustrineL1UBLacustrineUnconsolidated Bottom, Limnetic, Lacustrine		1AB4
L1AB6LacustrineUnknown Surface, Aquatic Bed, Limnetic, LacustrineL1OWLacustrineOpen Water/Unknown Bottom, Limnetic, Lacustrine (used on older maps)L1RBLacustrineRock Bottom, Limnetic, LacustrineL1RB1LacustrineBedrock, Rock Bottom, Limnetic, LacustrineL1RB2LacustrineRubble, Rock Bottom, Limnetic, LacustrineL1UBLacustrineUnconsolidated Bottom, Limnetic, Lacustrine		1AB
L1OWLacustrineOpen Water/Unknown Bottom, Limnetic, Lacustrine (used on older maps)L1RBLacustrineRock Bottom, Limnetic, LacustrineL1RB1LacustrineBedrock, Rock Bottom, Limnetic, LacustrineL1RB2LacustrineRubble, Rock Bottom, Limnetic, LacustrineL1UBLacustrineUnconsolidated Bottom, Limnetic, Lacustrine		1AB
L1RBLacustrineRock Bottom, Limnetic, LacustrineL1RB1LacustrineBedrock, Rock Bottom, Limnetic, LacustrineL1RB2LacustrineRubble, Rock Bottom, Limnetic, LacustrineL1UBLacustrineUnconsolidated Bottom, Limnetic, Lacustrine		100
L1RB1LacustrineBedrock, Rock Bottom, Limnetic, LacustrineL1RB2LacustrineRubble, Rock Bottom, Limnetic, LacustrineL1UBLacustrineUnconsolidated Bottom, Limnetic, Lacustrine		1RB
L1RB2 Lacustrine Rubble, Rock Bottom, Limnetic, Lacustrine L1UB Lacustrine Unconsolidated Bottom, Limnetic, Lacustrine		1RB
L1UB Lacustrine Unconsolidated Bottom, Limnetic, Lacustrine		1RB
		1UB
LIODI Lacustine Gobble-Gravel, Onconsolidated Dottom, Linnetto, Lacustine		1UB
L1UB2 Lacustrine Sand, Unconsolidated Bottom, Limnetic, Lacustrine		1UB
L1UB3 Lacustrine Mud, Unconsolidated Bottom, Limnetic, Lacustrine		1UB
L1UB4 Lacustrine Organic, Unconsolidated Bottom, Limnetic, Lacustrine		1UB
L2 Lacustrine Littoral, Lacustrine		2-LA
L2AB Lacustrine Aquatic Bed, Littoral, Lacustrine		2-LA 2AB-
		2AB
		2AD 2AB
L2AB3 Lacustrine Rooted Vascular, Aquatic Bed, Littoral, Lacustrine		2AB
L2AB4 Lacustrine Floating Vascular, Aquatic Bed, Littoral, Lacustrine		
L2AB5 Lacustrine Unknown Submergent, Aquatic Bed, Littoral, Lacustrine		2AB
L2AB6 Lacustrine Unknown Surface, Aquatic Bed, Littoral, Lacustrine		2AB
L2EM Lacustrine Emergent, Littoral, Lacustrine		2EM
L2EM2 Lacustrine Nonpersistent, Emergent, Littoral, Lacustrine		2EM
L2OW Lacustrine Open Water/Unknown Bottom, Littoral, Lacustrine		20W
L2RB Lacustrine Rock Bottom, Littoral, Lacustrine		2RB
L2RB1 Lacustrine Bedrock, Rock Bottom, Littoral, Lacustrine		2RB
L2RB2 Lacustrine Rubble, Rock Bottom, Littoral, Lacustrine		2RB
L2RS Lacustrine Rocky Shore, Littoral, Lacustrine		2RS
L2RS1 Lacustrine Bedrock, Rocky Shore, Littoral, Lacustrine	L21	2RS
L2RS2 Lacustrine Rubble, Rocky Shore, Littoral, Lacustrine	L21	2RS
L2UB Lacustrine Unconsolidated Bottom, Littoral, Lacustrine	L21	2UB
L2UB1 Lacustrine Cobble-Gravel, Unconsolidated Bottom, Littoral, Lacustrine	L2!	2UB
L2UB2 Lacustrine Sand, Unconsolidated Bottom, Littoral, Lacustrine	L2!	2UB
L2UB3 Lacustrine Mud, Unconsolidated Bottom, Littoral, Lacustrine		2UB
L2UB4 Lacustrine Organic, Unconsolidated Bottom, Littoral, Lacustrine		2UB
L2US Lacustrine Unconsolidated Shore, Littoral, Lacustrine		2US
L2US1 Lacustrine Cobble-Gravel, Unconsolidated Shore, Littoral, Lacustrine		205
L2US2 Lacustrine Sand, Unconsolidated Shore, Littoral, Lacustrine		2052
L2US3 Lacustrine Mud, Unconsolidated Shore, Littoral, Lacustrine		
	121	2US:

SS6-ESTUARINE, INTERTIDAL, SCRUB-SHRUB, IND SS7-ESTUARINE, INTERTIDAL, SCRUB-SHRUB, INE JS-ESTUARINE, INTERTIDAL, UNCONSOL SHORE JS1-ESTUARINE, INTERTIDAL, UNCONSOL SHR, COB JS2-ESTUARINE, INTERTIDAL, UNCONSOL SHR, SAN JS3-ESTUARINE, INTERTIDAL, UNCONSOL BOT, MUD JS4-ESTUARINE, INTERTIDAL, UNCONSOL SHR, ORG ACUSTRINE

ACUSTRINE, LIMNETIC

B-LACUSTRINE, LIMNETIC, AQUA BED B1-LACUSTRINE, LIMNETIC, AQUA BED, ALGAL B2-LACUSTRINE, LIMNETIC, AQUA BED, AQUA MOS B3-LACUSTRINE, LIMNETIC, AQUA BED, ROOT VAS B4-LACUSTRINE, LIMNETIC, AQUA BED, FLOT VAS B5-LACUSTRINE, LIMNETIC, AQUA BED, UNK SUB B6-LACUSTRINE, LIMNETIC, AQUA BED, UNK SURF W-LACUSTRINE, LIMNETIC, OPEN WATER/UNK BOT B-LACUSTRINE, LIMNETIC, ROCK BOTTOM RB1-LACUSTRINE, LIMNETIC, ROCK BOT, BEDROCK RB2-LACUSTRINE, LIMNETIC, ROCK BOT, RUBBLE JB-LACUSTRINE, LIMNETIC, UNCONSOL BOTTOM JB1-LACUSTRINE, LIMNETIC, UNCONSOL BOT, COGGLE B2-LACUSTRINE, LIMNETIC, UNCONSOL BOT, SAND B3-LACUSTRINE, LIMNETIC, UNCONSOL BOT, MUD IB4-LACUSTRINE, LIMNETIC, UNCONSOL BOT, ORGANI ACUSTRINE, LITTORAL B-LACUSTRINE, LITTORAL, AQUA BED B1-LACUSTRINE, LITTORAL, AQUA BED, ALGAL B2-LACUSTRINE, LITTORAL, AQUA BED, AQUA MOS B3-LACUSTRINE, LITTORAL, AQUA BED, ROOT VAS B4-LACUSTRINE, LITTORAL, AQUA BED, FLOT VAS B5-LACUSTRINE, LITTORAL, AQUA BED, UNK SUB B6-LACUSTRINE, LITTORAL, AQUA BED, UNK SURF M-LACUSTRINE, LITTORAL, EMERGENT M2-LACUSTRINE, LITTORAL, EMERGENT, NONPERS W-LACUSTRINE, LITTORAL, OPEN WATER RB-LACUSTRINE, LITTORAL, ROCK BOTTOM B1-LACUSTRINE, LITTORAL, ROCK BOT, BEDROCK B2-LACUSTRINE, LITTORAL, ROCK BOT, RUBBLE S-LACUSTRINE, LITTORAL, ROCKY SHORE RS1-LACUSTRINE, LITTORAL, ROCKY SHR, BEDROCK S2-LACUSTRINE, LITTORAL, ROCKY SHR, RUBBLE JB-LACUSTRINE, LITTORAL, UNCONSOL BOT JB1-LACUSTRINE, LITTORAL, UNCONSOL BOT, COBBLE IB2-LACUSTRINE, LITTORAL, UNCONSOL BOT, SAND B3-LACUSTRINE, LITTORAL, UNCONSOL BOT, MUD IB4-LACUSTRINE, LITTORAL, UNCONSOL BOT, ORGAN JS-LACUSTRINE, LITTORAL, UNCONSOL SHORE JS1-LACUSTRINE, LITTORAL, UNCONSOL SHR, COBBLE IS2-LACUSTRINE, LITTORAL, UNCONSOL SHR, SAND IS3-LACUSTRINE, LITTORAL, UNCONSOL SHR, MUD

L2US4	Lacustrine	Organic, Unconsolidated Shore, Littoral, Lacustrine	L2US4
L2US5	Lacustrine	Vegetated, Unconsolidated Shore, Littoral, Lacustrine	L2US5
Μ	Marine	Marine - Consists of the open ocean overlying the continental shelf and its associated high-energy coastline. Marine habitats are exposed to the waves and currents of the open ocean and the water regimes are determined primarily by the ebb and flow of oceanic tides. Salinities exceed 30% with little or and dilution except subject to the mouths of actuaring. Shellow except lindentations or have without enpressible fractionates inflow and exceed 30% with little or	M-MAR
		no dilution except outside the mouths of estuaries. Shallow coastal indentations or bays without appreciable freshwater inflow, and coasts with exposed rocky islands that provide the mainland with little or no shelter from wind and waves, are also considered part of the Marine System because they	
		generally support typical marine biota.	
M1	Marine	Subtidal Marine	M1-MA
M1AB	Marine	Aquatic Bed, Subtidal, Marine	M1AB-I
M1AB1	Marine	Algal, Aquatic Bed, Subtidal, Marine	M1AB1
M1AB3	Marine	Rooted Vascular, Aquatic Bed, Subtidal, Marine	M1AB3
M1AB5	Marine	Unknown Submergent, Aquatic Bed, Subtidal, Marine	M1AB5
M1OW	Marine	Open Water, Subtidal, Marine (Used on older maps)	M10W-
M1RB	Marine	Rock Bottom Subtidal Marine	M1RB-
M1RB1	Marine	Bedrock, Rock Bottom, Subtidal, Marine	M1RB1
M1RB2	Marine	Rubble, Rock Bottom, Subdtidal, Marine	M1RB2
M1RF	Marine	Nonpersistent, Emergent, Lower Perennial, Riverine	M1RF-I
M1RF1	Marine	Coral, Reef, Subtidal, Marine	M1RF1
M1RF3	Marine	Worm, Reef, Subtidal, Marine	M1RF3
M1UB	Marine	Unconsolidated Bottom, Subtidal, Marine	M1UB-
M1UB1	Marine	Cobble-Gravel, Unconsolidated, Subtidal, Marine	M1UB1
M1UB2	Marine	Sand, Unconsolidated Bottom, Subtidal, Marine	M1UB2
M1UB3	Marine	Mud, Unconsolidated Bottom, Subtidal, Marine	M1UB3
M1UB4	Marine	Organic, Unconsolidated Bottom, Subtidal, Marine	M1UB4
M2	Marine	Intertidal, Marine	M2-MA
M2AB	Marine	Aquatic Bed, Intertidal, Marine	M2AB-I
M2AB1	Marine	Algal, Aquatic Bed, Intertidal, Marine	M2AB1
M2AB3	Marine	Rooted Vascular, Aquatic Bed, Intertidal, Marine	M2AB3
M2AB5	Marine	Unknown Submergent, Aquatic Bed, Intertidal, Marine	M2AB5
M2RF M2RF1	Marine Marine	Reef, Intertidal, Marine Coral, Reef, Intertidal, Marine	M2RF-I M2RF1
M2RF3	Marine	Worm, Reef, Intertidal, Marine	M2RF1 M2RF3
M2RS	Marine	Rocky Shore, Intertidal, Marine	M2RS-
M2RS1	Marine	Bedrock, Rocky Shore, Intertidal, Marine	M2RS1
M2RS2	Marine	Rubble, Rocky Shore, Intertidal, Marine	M2RS2
M2US	Marine	Unconsolidated Shore, Intertidal, Marine	M2US-I
M2US1	Marine	Cobble-Gravel, Unconsolidated Shore, Intertidal, Marine	M2US1
M2US2	Marine	Sand, Unconsolidated Shore, Intertidal, Marine	M2US2
M2US3	Marine	Mud, Unconsolidated Shore, Intertidal, Marine	M2US3
M2US4	Marine	Organic, Unconsolidated Shore, Intertidal, Marine	M2US4
P	Palustrine	Palustrine - Includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that	P-PALL
	1 didstille	occur in tidal areas where salinity due to ocean-derived salts is below 0.5%. It also includes wetlands lacking such vegetation, but with all of the following characteristics: (1) area less than 8 ha (20 acres); (2) active wave-formed or bedrock shoreline features lacking; (3) water depth in the deepest part of	
		basin less than 2 m at low water; and (4) salinity due to ocean-derived salts less than 0.5%.	
PAB	Palustrine	Aquatic Bed, Palustrine	PAB-P/
PAB1	Palustrine	Algal, Aquatic Bed, Palustrine	PAB1-F
PAB2	Palustrine	Aquatic Moss, Aquatic Bed, Palustrine	PAB2-F
PAB3	Palustrine	Rooted Vascular, Aquatic Bed, Palustrine	PAB3-F
PAB4	Palustrine	Floating Vascular, Aquatic Bed, Palustrine	PAB4-F
PAB5	Palustrine	Unknown Submergent, Aquatic Bed, Palustrine	PAB5-F
PAB6	Palustrine	Unknown Surface, Aquatic Bed, Palustrine	PAB6-F
PEM	Palustrine	Emergent, Palustrine	PEM-P
PEM1	Palustrine	Persistent, Emergent, Palustrine	PEM1-I
PEM2	Palustrine	Nonpersistent, Emergent, Palustrine	PEM2-I
PFO	Palustrine	Forested, Palustrine	PFO-P/
PFO1	Palustrine	Broad-Leaved Deciduous, Forested, Palustrine	PFO1-F
	Palustrine	Needle-Leaved Deciduous, Forested, Palustrine	PFO2-F
PF02			
PFO2 PFO3	Palustrine	Broad-Leaved Evergreen, Forested, Palustrine	PFO3-F

S4-LACUSTRINE, LITTORAL, UNCONSOL SHR, ORGAN S5-LACUSTRINE, LITTORAL, UNCONSOL SHR, VEGET ARINE

IARINE, SUBTIDAL B-MARINE, SUBTIDAL, AQUATIC BED B1-MARINE, SUBTIDAL, AQUATIC BED, ALGAL B3-MARINE, SUBTIDAL, AQUATIC BED, ROOT VASC B5-MARINE, SUBTIDAL, AQUATIC BED, UNK SUB W-MARINE, SUBTIDAL, OPEN WATER B-MARINE, SUBTIDAL, ROCK BOTTOM B1-MARINE, SUBTIDAL, ROCK BOTTOM, BEDROCK B2-MARINE, SUBTIDAL, ROCK BOTTOM, RUBBLE F-MARINE, SUBTIDAL, REEF F1-MARINE, SUBTIDAL, REEF, CORAL F3-MARINE, SUBTIDAL, REEF, WORM B-MARINE, SUBTIDAL, UNCONSOLIDATED BOTTOM B1-MARINE, SUBTIDAL, UNCONSOL BOTTOM, COBBL B2-MARINE, SUBTIDAL, UNCONSOL BOTTOM, SAND B3-MARINE, SUBTIDAL, UNCONSOL BOTTOM, MUD B4-MARINE, SUBTIDAL, UNCONSOL BOTTOM, ORGAN ARINE, INTERTIDAL B-MARINE, INTERTIDAL, AQUATIC BED B1-MARINE, INTERTIDAL, AQUATIC BED, ALGAL B3-MARINE, INTERTIDAL, AQUAT BED, ROOT VASC B5-MARINE, INTERTIDAL, AQUATIC BED, UNK SUB F-MARINE, INTERTIDAL, REEF F1-MARINE, INTERTIDAL, REEF, CORAL F3-MARINE, INTERTIDAL, REEF, WORM S-MARINE, INTERTIDAL, ROCKY SHORE S1-MARINE, INTERTIDAL, ROCKY SHORE, BEDROCK S2-MARINE, INTERTIDAL, ROCKY SHORE, RUBBLE S-MARINE, INTERTIDAL, UNCONSOLIDATED SHORE S1-MARINE, INTERTIDAL, UNCONSOL SHORE, COBB S2-MARINE, INTERTIDAL, UNCONSOL SHORE, SAND S3-MARINE, INTERTIDAL, UNCONSOL SHORE, MUD S4-MARINE, INTERTIDAL, UNCONSOL SHORE, ORG LUSTRINE

-PALUSTRINE, AQUA BED 1-PALUSTRINE, AQUA BED, ALGAL 2-PALUSTRINE, AQUA BED, AQUATIC MOSS 3-PALUSTRINE, AQUA BED, ROOTED VASC 4-PALUSTRINE, AQUA BED, FLOAT VASC 5-PALUSTRINE, AQUA BED, UNK SUB 6-PALUSTRINE, EMERGENT 1-PALUSTRINE, EMERGENT, PERSISTENT 12-PALUSTRINE, FORESTED 1-PALUSTRINE, FORESTED, BLD 2-PALUSTRINE, FORESTED, BLE 3-PALUSTRINE, FORESTED, BLE 4-PALUSTRINE, FORESTED, NLE

PFO5	Palustrine	Dead, Forested, Palustrine	PFO5-PALUSTRINE, FOF
PFO6	Palustrine	Indeterminate Deciduous, Forested, Palustrine	PFO6-PALUSTRINE, FOF
PFO7	Palustrine	Indeterminate Evergreen, Forested, Palustrine	PF07-PALUSTRINE, FOF
PML	Palustrine	Moss-Lichens, Palustrine	PML-PALUSTRINE, MOS
PML1	Palustrine	Moss, Moss-Lichens, Palustrine	PML1-PALUSTRINE, MOS
PML2	Palustrine	Lichen, Moss-Lichen, Palustrine	PML2-PALUSTRINE, MO
POW	Palustrine	POW-PALUSTRINE, OPEN WATER	POW-PALUSTRINE, OPE
PRB	Palustrine	Rock Bottom, Palustrine	PRB-PALUSTRINE, ROCI
PRB1	Palustrine	Bedrock, Rock Bottom, Palustrine	PRB1-PALUSTRINE, ROO
PRB2	Palustrine	Rubble, Rock Bottom, Palustrine	PRB2-PALUSTRINE, ROO
PSS	Palustrine	Scrub-Shrub, Palustrine	PSS-PALUSTRINE, SCRU
PSS1	Palustrine	Broad-Leaved Deciduous, Scrub-Shrub, Palustrine	PSS1-PALUSTRINE, SCF
PSS2	Palustrine	Needle-Leaved Deciduous, Scrub-Shrub, Palustrine	PSS2-PALUSTRINE, SCF
PSS3	Palustrine	Broad-Leaved Evergreen, Scrub-Shrub, Palustrine	PSS3-PALUSTRINE, SCF
PSS4	Palustrine	Needle-Leaved Evergreen, Scrub-Shrub, Palustrine	PSS4-PALUSTRINE, SCF
PSS5	Palustrine	Dead, Scrub-Shrub	PSS5-PALUSTRINE, SCR
PSS6	Palustrine	Indeterminate Deciduous, Scrub-Shrub, Palustrine	PSS6-PALUSTRINE, SCR
PSS7	Palustrine	Indeterminate Evergreen, Scrub-Shrub, Palustrine	PSS7-PALUSTRINE, SCR
PUB	Palustrine	Unconsolidated Bottom, Palustrine	PUB-PALUSTRINE, UNCO
PUB1	Palustrine	Cobble-Gravel, Unconsolidated Bottom, Palustrine	PUB1-PALUSTRINE, UNC
PUB2	Palustrine	Sand, Unconsolidated Bottom, Palustrine	PUB2-PALUSTRINE, UNC
PUB3	Palustrine	Mud, Unconsolidated Bottom, Palustrine	PUB3-PALUSTRINE, UNC
PUB4	Palustrine	Organic, Unconsolidated Bottom, Palustrine	PUB4-PALUSTRINE, UNC
RP	Riparian	Riparian - Plant communities contiguous to and affected by surface and subsurface hydrologic features of perennial or intermittent lotic and lentic water	RP-RIPARIAN
	Пранан	bodies (rivers, streams, lakes, or drainage ways). Riparian areas have one or both of the following characteristics: 1) distinctively different vegetative	
		species than adjacent areas, and 2) species similar to adjacent areas but exhibiting more vigorous or robust growth forms. Riparian areas are usually	
		transitional between wetland and upland.	
RP1	Riparian	Lotic, Riparian	RP1-RIPARIAN, LOTIC
RP1EM	Riparian	Emergent, Lotic, Riparian	RP1EM-RIPARIAN, LOTIO
RP1FO	Riparian	Forested, Lotic, Riparian	RP1FO-RIPARIAN, LOTIC
RP1F06	Riparian	Decidous, Forested, Lotic, Riparian	RP1F06-RIPARIAN, LOT
RP1F07	Riparian	Evergreen, Forested, Lotic, Riparian	RP1F07-RIPARIAN, LOT
RP1F08	Riparian	Mixed, Forested, Lotic, Riparian	RP1F08-RIPARIAN, LOT
RP1SS	Riparian	Scrub-Shrub, Lotic, Riparian	RP1SS-RIPARIAN, LOTIC
RP1SS6	Riparian	Decidous, Scrub-Shrub, Lotic, Riparian	RP1SS6-RIPARIAN, LOTI
RP1SS7	Riparian	Evergreen, Scrub-Shrub, Lotic, Riparian	RP1SS7-RIPARIAN, LOTI
RP1SS8	Riparian	Mixed, Scrub-Shrub, Lotic, Riparian	RP1SS8-RIPARIAN, LOTI
RP2	Riparian	Lentic, Riparian	RP2-RIPARIAN, LENTIC
RP2EM	Riparian	Emergent, Lentic, Riparian	RP2EM-RIPARIAN, LENT
RP2FO	Riparian	Forested, Lentic. Riparian	RP2FO-RIPARIAN, LENT
RP2FO6	Riparian	Decidous, Forested, Lentic, Riparian	RP2F06-RIPARIAN, LEN
RP2F07	Riparian	Evergreen, Forested, Lentic, Riparian	RP2F07-RIPARIAN, LEN
RP2F08	Riparian	Mixed, Forested, Lentic, Riparian	RP2F08-RIPARIAN, LEN
RP2SS	Riparian	Scrub-Shrub, Lentic, Riparian	RP2SS-RIPARIAN, LENT
RP2SS6	Riparian	Decidous, Scrub-Shrub, Lentic, Riparian	RP2SS6-RIPARIAN, LEN
RP2SS7	Riparian	Evergreen, Scrub-Shrub, Lentic, Riparian	RP2SS7-RIPARIAN, LEN
RP2SS8	Riparian	Mixed, Scrub-Shrub, Lentic, Riparian	RP2SS8-RIPARIAN, LEN
R 2000	Riverine	Riverine - Includes all wetlands and deepwater habitats contained within a channel, with two exceptions: (1) wetlands dominated by trees, shrubs,	R-RIVERINE
IX	KIVEIIIIE	persistent emergents, emergent mosses, or lichens, and (2) habitats with water containing ocean-derived salts in excess of 0.5%.	
D1	Divorino	Tidal, Riverine	R1-RIVERINE, TIDAL
R1 R1AB	Riverine	Aquatic Bed, Tidal, Riverine	R1AB-RIVERINE, TIDAL
	Riverine		R1AB1-RIVERINE, TIDAL,
R1AB1 R1AB2	Riverine	Algal, Aquatic Bed, Tidal, Riverine Aquatic Moss, Aquatic Bed, Tidal, Riverine	R1AB2-RIVERINE, TIDAL,
	Riverine		
R1AB3	Riverine	Rooted Vascular, Aquatic Bed, Tidal, Riverine	R1AB3-RIVERINE, TIDAL
R1AB4 R1AB5	Riverine	Floating Vascular, Aquatic Bed, Tidal, Riverine	R1AB4-RIVERINE, TIDAL
	Riverine	Unknown Submergent, Aquatic Bed, Tidal, Riverine	R1AB5-RIVERINE, TIDAL
R1AB6	Riverine	Unknown Surface, Aquatic Bed, Tidal, Riverine	R1AB6-RIVERINE, TIDAL
R1EM	Riverine	Emergent, Tidal, Riverine	R1EM-RIVERINE, TIDAL,
R1EM2	Riverine	Nonpersistent, Emergent, Tidal, Riverine	R1EM2-RIVERINE, TIDAL

-PALUSTRINE, FORESTED, DEAD S-PALUSTRINE, FORESTED, INDET DEC PALUSTRINE, FORESTED, INDETER EVER PALUSTRINE, MOSS-LICHENS I-PALUSTRINE, MOSS-LICHENS, MOSS 2-PALUSTRINE, MOSS-LICHEN, LICHEN -PALUSTRINE, OPEN WATER PALUSTRINE, ROCK BOTTOM I-PALUSTRINE, ROCK BOTTOM, BEDROCK 2-PALUSTRINE, ROCK BOTTOM, RUBBLE PALUSTRINE, SCRUB-SHRUB -PALUSTRINE, SCRUB-SHRUM, BLD 2-PALUSTRINE, SCRUB-SHRUB, NLD 3-PALUSTRINE, SCRUB-SHRUB, BLE I-PALUSTRINE, SCRUB-SHRUB, NLE -PALUSTRINE, SCRUB-SHRUB, DEAD -PALUSTRINE, SCRUB-SHRUB, INDET DEC PALUSTRINE, SCRUB-SHRUB, INDET EVER PALUSTRINE, UNCONSOL BOT I-PALUSTRINE, UNCONSOL BOT, COBBLE 2-PALUSTRINE, UNCONSOL BOT, SAND 3-PALUSTRINE, UNCONSOL BOT, MUD 1-PALUSTRINE, UNCONSOL BOT, ORGANIC IPARIAN

M-RIPARIAN, LOTIC, EMERGENT O-RIPARIAN, LOTIC, FORESTED O6-RIPARIAN, LOTIC, FORESTED, DECIDOUS O7-RIPARIAN, LOTIC, FORESTED, EVERGREEN O8-RIPARIAN, LOTIC, FORESTED, MIXED S-RIPARIAN, LOTIC, SCRUB-SHRUB SS6-RIPARIAN, LOTIC, SCRUB-SHRUB, DECIDOUS S7-RIPARIAN, LOTIC, SCRUB-SHRUB, EVERGREEN S8-RIPARIAN, LOTIC, SCRUB-SHRUB, MIXED RIPARIAN, LENTIC M-RIPARIAN, LENTIC, EMERGENT O-RIPARIAN, LENTIC, FORESTED O6-RIPARIAN, LENTIC. FORESTED, DECIDOUS O7-RIPARIAN, LENTIC, FORESTED, EVERGREEN O8-RIPARIAN, LENTIC, FORESTED, MIXED S-RIPARIAN, LENTIC, SCRUB-SHRUB S6-RIPARIAN, LENTIC, SCRUB-SHRUB, DECIDOUS S7-RIPARIAN, LENTIC, SCRUB-SHRUB, EVERGREEN SS8-RIPARIAN, LENTIC, SCRUB-SHRUB, MIXED /ERINE IVERINE, TIDAL 3-RIVERINE, TIDAL, AQUATIC BED 31-RIVERINE, TIDAL, AQUATIC BED, ALGAL 32-RIVERINE, TIDAL, AQUA BED, MOSS 33-RIVERINE, TIDAL, AQUA BED, ROOTED VASC 34-RIVERINE, TIDAL, AQUA BED, FLOATING VASC 35-RIVERINE, TIDAL, AQUA BED, UNK SUBMERGEN 36-RIVERINE, TIDAL, AQUA BED, UNK SURFACE A-RIVERINE, TIDAL, EMERGENT I2-RIVERINE, TIDAL, EMERGENT, NONPERSISTENT

R1RB	Riverine	Rock Bottom, Tidal, Riverine	R1RB-R
R1RB1	Riverine	Bedrock, Rock Bottom, Tidal, Riverine	R1RB1-
R1RB2	Riverine	Rubble, Rock Bottom, Tidal, Riverine	R1RB2-
R1RS	Riverine	Rocky Shore, Tidal, Riverine	R1RS-R
R1RS1	Riverine	Bedrock, Rocky Shore, Tidal, Riverine	R1RS1-
R1RS2	Riverine	Rubble, Rocky Shore, Tidal, Riverine	R1RS2-
R1SB	Riverine	Streambed, Tidal, Riverine	R1SB-R
R1SB1	Riverine	Bedrock. Streambed, Tidal, Riverine	R1SB1-
R1SB2	Riverine	Rubble, Streambed, Ridal, Riverine	R1SB2-
R1SB3	Riverine	Cobble-Gravel, Streambed, Tidal, Riverine	R1SB3-
R1SB4	Riverine	Sand, Streambed, Tidal, Riverine	R1SB4-
R1SB5	Riverine	Mud, Streambed, Tidal, Riverine	R1SB5-
R1SB6	Riverine	Organic, Streambed, Tidal, Riverine	R1SB6-
R1SB7	Riverine	Vegetated, Streambed, Tidal, Riverine	R1SB7-
R1UB	Riverine	Unconsolidated Bottom, Tidal, Riverine	R1UB-R
R1UB1	Riverine	Cobble-Gravel, Unconsolidated Bottom, Tidal, Riverine	R1UB1-
R1UB2	Riverine	Sand, Unconsolidated Bottom, Tidal, Riverine	R1UB2-
R1UB3	Riverine	Mud, Unconsolidated Bottom, Tidal, Riverine	R1UB3-
R1UB4	Riverine	Organic, Unconsolidated Bottom, Tidal, Riverine	R1UB4-
R1US	Riverine	Unconsolidated Shore, Tidal, Riverine	R1US-R
R1US1	Riverine	Cobble-Gravel, Unconsolidated Shore, Tidal, Riverine	R1US1-
R1US2	Riverine	Sand, Unconsolidated Shore, Tidal, Riverine	R1US2-
R1US2			R1US3-
R1US3 R1US4	Riverine	Mud, Unconsolidated Shore, Tidal, Riverine	
R1US4 R1US5	Riverine	Organic, Unconsolidated Shore, Tidal, Riverine	R1US4- R1US5-
R1035 R2	Riverine Riverine	Vegetated, Unconsolidated Shore, Tidal, Riverine Lower Perennial, Riverine	R2-RIVE
R2AB			R2AB-R
R2AB1	Riverine Riverine	Aquatic Bed, Lower Tidal, Riverine	R2AB-N R2AB1-I
R2AB1 R2AB2		Algal, Aquatic Bed, Lower Tidal, Riverine	R2AB1- R2AB2-
R2AB2 R2AB3	Riverine Riverine	Aquatic Moss, Aquatic Bed, Lower Tidal, Riverine	RZABZ- R2AB3-
R2AB3	Riverine	Rooted Vascular, Aquatic Bed, Lower Tidal, Riverine	R2AB3- R2AB4-
R2AB4 R2AB5		Floating Vascular, Aquatic Bed, Lower Tidal, Riverine	
R2AB5 R2AB6	Riverine Riverine	Unknown Submergent, Aquatic Bed, Lower Tidal, Riverine	R2AB5- R2AB6-
R2EM	Riverine	Unknown Surface, Aquatic Bed, Lower Tidal, Riverine	R2ADO- R2EM-R
R2EM2	Riverine	Emergent, Lower Tidal, Riverine	R2EM-P
R2EM2 R2RB	Riverine	Nonpersistent, Emergent, Lower Tidal, Riverine Rock Bottom, Lower Perennial, Riverine	R2EM2- R2RB-R
R2RB1	Riverine		R2RB1-
R2RB2		Bedrock, Rock Bottom, Lower Perennial, Riverine	R2RB2-
R2RB2	Riverine Riverine	Rubble, Rock Bottom, Lower Perennial, Riverine Rocky Shore, Lower Tidal, Riverine	R2RD2- R2RS-R
R2RS1	Riverine	Bedrock, Rocky Shore, Lower Tidal, Riverine	R2RS1-
R2RS2		Rubble, Rocky Shore, Lower Tidal, Riverine	R2RS2-
R2UB	Riverine Riverine	Unconcolidated Bottom, Lower Perennial, Riverine	R2UB-R
R2UB1	Riverine	Cobble-Gravel, Unconsolidated Bottom, Lower Perennial, Riverine	R2UB1-
R2UB2	Riverine	Sand, Unconsolidated Bottom, Lower Perennial, Riverine	R2UB2-
R2UB2	Riverine	Mud, Unconsolidated Bottom, Lower Perennial, Riverine	R2UB3-
R2UB3 R2UB4	Riverine	Organic, Unconsolidated Bottom, Lower Perennial, Riverine	R2UB4-
R2UB4 R2US	Riverine	Unconsolidated Shore, Lower Tidal, Riverine	R2US-R
R2US1	Riverine	Cobble-Gravel, Unconsolidated Shore, Lower Tidal, Riverine	R2US1-
R2US2	Riverine	Sand, Unconsolidated Shore, Lower Tidal, Riverine	R2US2-
R2US3	Riverine	Rooted Vascular, Unconsolidaated Shore, Lower Tidal, Riverine	R2US3-
R2US4	Riverine	Floating Vascular, Unconsolidated Shore, Lower Tidal, Riverine	R2US4-
R2US4 R2US5	Riverine	Unknown Submergent, Unconsolidated Shore, Lower Tidal, Riverine	R2US5-
R2US5 R2US6	Riverine	Unknown Sufface, Unknown Surface, Lower Tidal, Riverine	R2US6-
R2036 R3	Riverine	Upper Perennial, Riverine	R3-RIVE
R3AB	Riverine	Aquatic Bed, Upper Perennial, Riverine	R3AB-R
R3AB1	Riverine	Algal, Aquatic Bed, Upper Perennial, Riverine	R3AB1-
R3AB1	Riverine	Aquatic Moss, Aquatic Bed, Upper Perennial, Riverine	R3AB1- R3AB2-
R3AB2 R3AB3	Riverine	Rooted Vascular, Aquatic Bed, Upper Perennial, Riverine	R3AB2- R3AB3-
R3AB3	Riverine	Floating Vascular, Aquatic Bed, Upper Perennial, Riverine	R3AB3- R3AB4-
			NJAD4-

RIVERINE, TIDAL, ROCK BOTTOM 1-RIVERINE, TIDAL, ROCK BOTTOM, BEDROCK 2-RIVERINE, TIDAL, ROCK BOTTOM, RUBBLE RIVERINE, TIDAL, ROCKY SHORE 1-RIVERINE, TIDAL, ROCKY SHORE, BEDROCK 2-RIVERINE, TIDAL, ROCKY SHORE, RUBBLE -RIVERINE, TIDAL, STREAMBED 1-RIVERINE, TIDAL, STREAMBED, BEDROCK 2-RIVERINE, TIDAL, STREAMBED, RUBBLE 3-RIVERINE, TIDAL, STREAMBED, COBBLE 4-RIVERINE, TIDAL, STREAMBED, SAND 5-RIVERINE, TIDAL, STREAMBED, MUD 6-RIVERINE, TIDAL, STREAMBED, ORGANIC 7-RIVERINE, TIDAL, STREAMBED, VEGETATED RIVERINE, TIDAL, UNCONSOLIDATED BOTTOM 1-RIVERINE, TIDAL, UNCONSOL BOTTOM, COBBLE 2-RIVERINE, TIDAL, UNCONSOL BOTTOM, SAND 3-RIVERINE, TIDAL, UNCONSOL BOTTOM, MUD 4-RIVERINE, TIDAL, UNCONSOL BOTTOM, ORGAN RIVERINE, TIDAL, UNCONSOL SHORE 1-RIVERINE, TIDAL, UNCONSOL SHORE, COBBLE 2-RIVERINE, TIDAL, UNCONSOL SHORE, SAND 3-RIVERINE, TIDAL, UNCONSOL SHORE, MUD 4-RIVERINE, TIDAL, UNCONSOL SHORE, ORGANIC 5-RIVERINE, TIDAL, UNCONSOL SHORE, VEGETAT VERINE, LOWER PERENNIAL -RIVERINE, LOWER PEREN, AQUA BED 1-RIVERINE, LOWER PEREN, AQUA BED, ALGAL 2-RIVERINE, LOWER PEREN, AQUA BED, AQ MOSS 3-RIVERINE, LOWER PEREN, AQUA BED, ROOT VASC 4-RIVERINE, LOWER PEREN, AQUA BED, FLOAT VAS 5-RIVERINE, LOWER PEREN, AQUA BED, UNK SUB 6-RIVERINE, LOWER PEREN, AQUA BED, UNK SURF -RIVERINE, LOWER PEREN, EMERGENT 2-RIVERINE, LOWER PEREN, EMERGENT, NONPERS RIVERINE, LOWER PEREN, ROCK BOTTOM 1-RIVERINE, LOWER PEREN, ROCK BOT, BEDROCK 2-RIVERINE, LOWER PEREN, TOCK BOT, RUBBLE RIVERINE, LOWER PEREN, ROCKY SHORE 1-RIVERINE, LOWER PEREN, ROCKY SHORE, BEDRK 2-RIVERINE, LOWER PEREN, ROCKY SHORE, RUBBL RIVERINE, LOWER PEREN, UNCONSOL BOT 1-RIVERINE, LOWER PEREN, UNCONSOL BOT, COB 2-RIVERINE, LOWER PEREN, UNCONSOL BOT, SAN 3-RIVERINE, LOWER PEREN, UNCONSOL BOT, MUD 4-RIVERINE, LOWER PEREN, UNCONSOL BOT, ORG RIVERINE, LOWER PEREN, UNCONSOL SHORE 1-RIVERINE, LOWER PEREN, UNCONSOL SHR, COB 2-RIVERINE, LOWER PEREN, UNCONSOL SHR, SAN 3-RIVERINE, LOWER PEREN, UNCONSOL SHR, RV 4-RIVERINE, LOWER PEREN, UNCONSOL SHR, FV 5-RIVERINE, LOWER PEREN, UNCONSOL SHR, UN SUB 6-RIVERINE, LOWER PEREN, UNCONSOL SHR, UNK SUR VERINE. UPPER PERENNIAL -RIVERINE, UPPER PEREN, AQUA BED 1-RIVERINE, UPPER PEREN, AQUA BED, ALGAL 2-RIVERINE, UPPER PEREN, AQUA BED, AQUA MOSS 3-RIVERINE, UPPER PEREN, AQUA BED, ROOT VAS 4-RIVERINE, UPPER PEREN, AQUA BED, FLOAT VAS

R3AB5	Riverine	Unknown Submergent, Aquatic Bed, Upper Perennial, Riverine	R3AB5
R3AB6	Riverine	Unknown Surface, Aquatic Bed, Upper Perennial, Riverine	R3AB6
R3RB	Riverine	Rock Bottom, Upper Perennial, Riverine	R3RB-
R3RB1	Riverine	Bedrock, Rock Bottom, Upper Perennial, Riverine	R3RB1
R3RB2	Riverine	Rubble, Rock Bottom, Upper Perennial, Riverine	R3RB2
R3RS	Riverine	Rocky Shore, Upper Perennial, Riverine	R3RS-
R3RS1	Riverine	Bedrock, Rocky Shore, Upper Perennial, Riverine	R3RS1
R3RS2	Riverine	Rubble, Rocky Shore, Upper Perennial, Riverine	R3RS2
R3UB	Riverine	Unconsolidated Bottom, Upper Perennial, Riverine	R3UB-
R3UB1	Riverine	Cobble-Gravel, Unconsolidated Bottom, Upper Perennial, Riverine	R3UB1
R3UB2	Riverine	Sand, Unconsolidated Bottom, Upper Perennial, Riverine	R3UB2
R3UB3	Riverine	Mud, Unconsolidated Bottom, Upper Perennial, Riverine	R3UB3
R3UB4	Riverine	Organic, Unconsolidated Bottom, Upper Perennial, Riverine	R3UB4
R3US	Riverine	Unconsolidated Shore, Upper Perennial, Riverine	R3US-
R3US1	Riverine	Cobble-Gravel, Unconsolidated Shore, Upper Perennial, Riverine	R3US1
R3US2	Riverine	Sand, Unconsolidated Shore, Upper Perennial, Riverine	R3US2
R3US3	Riverine	Mud, Unconsolidated Shore, Upper Perennial, Riverine	R3US3
R3US4	Riverine	Organic, Unconsolidated Shore, Upper Perennial, Riverine	R3US4
R3US5	Riverine	Vegetated, Unconsolidated Shore, Upper Perennial, Riverine	R3US
			VEGE
R4	Riverine	Intermittent, Riverine	R4-RI\
R4SB	Riverine	Streambed, Intermittent, Riverine	R4SB-
R4SB1	Riverine	Bedrock, Streambed, Intermittent, Riverine	R4SB1
R4SB2	Riverine	Rubble, Streambed, Intermittent, Riverine	R4SB2
R4SB3	Riverine	Cobble-Gravel, Streambed, Intermittent, Riverine	R4SB3
R4SB4	Riverine	Sand, Streambed, Intermittent, Riverine	R4SB4
R4SB5	Riverine	Mud, Streambed, Intermittent, Riverine	R4SB5
R4SB6	Riverine	Organic, Streambed, Intermittent, Riverine	R4SB6
R4SB7	Riverine	Vegetated, Streambed, Intermittent, Riverine	R4SB7
R5	Riverine	Unknown Perennial, Riverine	R5-RI\
R5AB	Riverine	Aquatic Bed, Unknown Perennial, Riverine	R5AB-
R5AB1	Riverine	Algal, Aquatic Bed, Unknown Perennial, Riverine	R5AB1
R5AB2	Riverine	Aquatic Moss, Aquatic Bed, Unknown Perennial, Riverine	R5AB2
R5AB3	Riverine	Rooted Vascular, Aquatic Bed, Unknown Perennial, Riverine	R5AB3
R5AB4	Riverine	Floating Vascular, Aquatic Bed, Unknown Perennial, Riverine	R5AB4
R5AB5	Riverine	Unknown Submergent, Aquatic Bed, Unknown Perennial, Riverine	R5AB5
R5AB6	Riverine	Unknown Surface, Aquatic Bed, Unknown Perennial, Riverine	R5AB6
R5RB	Riverine	Rock Bottom, Unknown Perennial, Riverine	R5RB-
R5RB1	Riverine	Bedrock, Rock Bottom Unknown Perennial, Riverine	R5RB1
R5RB2	Riverine	Rubble, Rock Bottom, Unknown Perennial, Riverine	R5RB2
R5RS	Riverine	Rocky Shore, Unknown Perennial, Riverine	R5RS-
R5RS1	Riverine	Bedrock, Rocky Shore, Unknown Perennial, Riverine	R5RS1
R5RS2	Riverine	Rubble, Rocky Shore, Unknown Perennial, Riverine	R5RS2
R5UB	Riverine	Unconsolidated Bottom, Unknown Perennial, Riverine	R5UB-
R5UB1	Riverine	Cobble-Gravel, Unconsolidated Bottom, Unknown Perennial, Riverine	R5UB1
R5UB2	Riverine	Sand, Unconsolidated Bottom, Unknown Perennial, Riverine	R5UB2
R5UB3	Riverine	Mud, Unconsolidated Bottom, Unknown Perennial, Riverine	R5UB3
R5UB4	Riverine	Organic, Unconsolidated Bottom, Unknow Perennial, Riverine	R5UB4
R5US	Riverine	Unconsolidated Shore, Unknown Perennial, Riverine	R5US-
R5US1	Riverine	Cobble-Gravel, Unconsolidated Shore, Riverine	R5US1
R5US2 R5US3	Riverine	Sand, Unconsolidated Shore, Unknown Perennial, Riverine	R5US2
	Riverine	Mud, Unconsolidated Shore, Unknown Perennial, Riverine	R5US3
R5US4	Riverine	Organic, Unconsolidated Shore, Unknown Perennial, Riverine	R5US4
R5US5	Riverine	Vegetated, Unconsolidated Shore, Unknown Perennial, Riverine	R5US
R6	Riverine	A wetland, spring, stream, river, pond or lake that only exists for a short period	R6 - R
U	Uplands	Upland - Not a wetland or deepwater habitat of the United States as described by Cowardin.	U-UPL

B5-RIVERINE, UPPER PEREN, AQUA BED, UNK SUB B6-RIVERINE, UPPER PEREN, AQUA BED, UNK SURF B-RIVERINE, UPPER PEREN, ROCK BOTTOM B1-RIVERINE, UPPER PEREN, ROCK BOT, BEDROCK B2-RIVERINE, UPPER PEREN, ROCK BOT, RUBBLE S-RIVERINE, UPPER PEREN, ROCKY SHORE S1-RIVERINE, UPPER PEREN, ROCKY SHR, BEDROCK S2-RIVERINE, UPPER PEREN, ROCKY SHR, RUBBLE B-RIVERINE, UPPER PEREN, UNCONSOL BOT B1-RIVERINE, UPPER PEREN, UNCONSOL BOT, COBBLE B2-RIVERINE, UPPER PEREN, UNCONSOL BOT, SAND B3-RIVERINE, UPPER PEREN, UNCONSOL BOT, MUD B4-RIVERINE, UPPER PEREN, UNCONSOL BOT, ORGAN S-RIVERINE, UPPER PEREN, UNCONSOL SHR S1-RIVERINE, UPPER PEREN, UNCONSOL SHR, COBBLE S2-RIVERINE, UPPER PEREN, UNCONSOL SHR, SAND S3-RIVERINE, UPPER PEREN, UNCONSOL SHR, MUD S4-RIVERINE, UPPER PEREN, UNCONSOL SHR, ORGANIC S5-RIVERINE, UPPER PEREN, UNCONSOL SHR, ETATED RIVERINE, INTERMIT B-RIVERINE, INTERMIT, STREAMBED B1-RIVERINE, INTERMIT, STREAMBED, BEDROCK B2-RIVERINE, INTERMIT, STREAMBED, RUBBLE B3-RIVERINE, INTERMIT, STREAMBED, COBBLE B4-RIVERINE, INTERMIT, STREAMBED, SAND B5-RIVERINE, INTERMIT, STREAMBED, MUD B6-RIVERINE, INTERMIT, STREAMBED, ORGANIC B7-RIVERINE, INTERMIT, STREAMBED, VEGETATED RIVERINE, UNKNOWN PERENNIAL B-RIVERINE, UNK PEREN, AQUA BED B1-RIVERINE, UNK PEREN, AQUA BED, ALGAL B2-RIVERINE, UNK PEREN, AQUA BED, AQUA MOSS B3-RIVERINE, UNK PEREN, AQUA BED, ROOT VASC B4-RIVERINE, UNK PEREN, AQUA BED, FLOAT VASC B5-RIVERINE, UNK PEREN, AQUA BED, UNK SUB B6-RIVERINE, UNK PEREN, AQUA BED, UNK SURF B-RIVERINE, UNK PEREN, ROCK BOTTOM B1-RIVERINE, UNK PEREN, ROCK BOTTOM, BEDROCK B2-RIVERINE, UNK PEREN, ROCK BOTTOM, RUBBLE S-RIVERINE, UNK PEREN, ROCKY SHORE S1-RIVERINE, UNK PEREN, ROCKY SHORE, BEDROCK S2-RIVERINE, UNK PEREN, ROCKY SHORE, RUBBLE B-RIVERINE, UNK PEREN, UNCONSOLIDATED BOTTOM B1-RIVERINE, UNK PEREN, UNCONSOL BOT, COBBLE B2-RIVERINE, UNK PEREN, UNCONSOT BOT, SAND B3-RIVERINE, UNK PEREN, UNCONSOL BOT, MUD B4-RIVERINE, UNK PEREN, UNCONSOL BOT, ORGANIC S-RIVERINE, UNK PEREN, UNCONCOL SHORE S1-RIVERINE, UNK PEREN, UNCONSOL SHR, COBBLE S2-RIVERINE, UNK PEREN, UNCONSOL SHR, SAND S3-RIVERINE, UNK PEREN, UNCONSOL SHR, MUD S4-RIVERINE, UNK PEREN, UNCONSOL SHR, ORGANIC S5-RIVERINE, UNK PEREN, UNCONSOL SHR, VEGETATED **RIVERINE, EPHEMERAL** PLANDS