ESA

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memorandum

date	March 30, 2018
to	B.F. Sisk Safety of Dams Project File D130314.04
from	Brian Pittman and Rebecca Acosta
subject	B.F. Sisk Dam SRA Vegetation Survey

Environmental Science Associates' (ESA) surveyed the B.F. Sisk Dam and surrounding San Luis State Recreation Area (referred to as the "project site") to identify vegetation types in the vicinity of the Sisk Dam and reservoir. Wildlife and special status species observed during the survey were also noted.

ESA wildlife biologists Julie Remp and Rebecca Acosta surveyed the project site on June 13 and 14, 2016, to characterize vegetation types and ground-truth vegetation mapping based on analysis of aerial photographs. The biologists surveyed all vegetation cover in places which were visible from publicly accessible paths or roadways. The vegetation types identified were:

- California sagebrush (*Artemisia californica*) scrub
- Blue oak (*Quercus douglasii*) woodland
- Cottonwood (*Populus fremontii*) stand
- California buckeye (*Aesculus californica*) grove
- Coyote brush (*Baccharis pilularis*)- silver lupine (*Lupinus albifrons*) scrub
- Non-native grassland

Wildlife species observed included endemic tule elk (*Cervus canadensis nannodes*), western burrowing owl (*Athene cunicularia*), a California species of special concern, and Swainson's hawk (*Buteo swainsoni*), a California Threatened species. The full list of wildlife observed is below.

- California ground squirrel (*Otospermophilus beecheyi*)
- Tule elk (*Cervus canadensis nannodes*): 12-15 individuals on east side of dam on slope
- American Crow (*Corvus brachyrhynchos*): crow nests visible in power towers
- Common raven (*Corvus corax*)
- Turkey vulture (*Cathartes aura*)
- Red-tailed hawk (*Buteo jamaicensis*): juvenile
- Western burrowing owl (*Athene cunicularia hypugaea*): perched in grassland south of reservoir
- Loggerhead shrike (*Lanius ludovicianus*)
- Brewer's blackbird (*Euphagus cyanocephalus*)
- Western kingbird (*Tyrannus verticalis*)
- Mourning dove (*Zenaida macroura*)

- Western meadowlark (*Sturnella neglecta*)
- California horned lark (*Eremophila alpestris actia*)
- Yellow-billed magpie (*Pica nuttalli*)
- Oriole sp. (*Icterus* sp.)
- Black phoebe (*Sayornis nigricans*)
- Swainson's hawk (*Buteo swainsoni*)
- Cottontail rabbit (*Sylvilagus sp.*)
- California quail (*Callipepla californica*)
- Great blue heron (*Ardea Herodias*)
- Great egret (*Ardea alba*)
- Snowy egret (*Egretta thula*)
- Killdeer (*Charadrius vociferous*)
- Mallard (*Anas platyrhynchos*)
- Scrub jay (*Aphelocoma californica*)
- Bald eagle (*Haliaeetus leucocephalus*): west of reservoir
- White pelican (*Pelecanus erythrorhynchos*)
- House finch (*Haemorhous mexicanus*)
- Monarch butterfly (*Danaus plexippus*)

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

June 23, 2010

Regulatory Division SPK-2010-00683

Patti Clinton
Bureau of Reclamation
1243 N Street
Fresno, California 93721-1813

Dear Ms. Clinton:

We are responding to your May 21, 2010 request for a preliminary jurisdictional determination (JD), in accordance with our Regulatory Guidance Letter (RGL) 08-02, for the Sisk Dam Corrective Action site. The approximately 2,578.80-acre site is located on San Luis Creek at San Luis Reservoir, in Sections 13, 26, 27, 28, 33, and 34, Township 10 S, Range 9 E, and an unsectioned portion of the San Luis Dam USGS 7.5 minute quadrangle, near Latitude 37.04872°, Longitude -121.07453°, Merced County, California.

Based on available information, **we concur with the estimate of potential waters of the United States, as depicted on the January 5, 2010, Figures 4a-e, entitled *Preliminary Boundaries of Waters of the United States, Including Wetlands*, prepared by North State Resources, Inc**. The approximately 28.728 acres of wetlands and 893.085 acres of other water bodies present within the survey area may be jurisdictional waters of the United States. These waters may be regulated under Section 404 of the Clean Water Act.

A copy of our RGL 08-02 Preliminary Jurisdictional Determination Form for this site is enclosed. Please sign and return a copy of the completed form to this office. Once we receive a copy of the form with your signature we can accept and process a Pre-Construction Notification or permit application for your proposed project.

You should not start any work in potentially jurisdictional waters of the United States unless you have Department of the Army permit authorization. You may request an approved JD for this site at any time prior to starting work within waters. In certain circumstances, as described in RGL 08-02, an approved JD may later be necessary.

You should provide a copy of this letter and notice to all other affected parties, including any individual who has an identifiable and substantial legal interest in the property.

This preliminary determination has been conducted to identify the potential limits of wetlands and other water bodies which may be subject to Corps of Engineers' jurisdiction for the particular site identified in this request. A Notification of Appeal Process and Request for

Appeal (RFA) form is enclosed to notify you of your options with this determination. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

We appreciate your feedback. At your earliest convenience, please tell us how we are doing by completing the customer survey on our website under *Customer Service Survey*.

Please refer to identification number SPK-2010-00683 in any correspondence concerning this project. If you have any questions, please contact Zachary Simmons at our California South Branch, 1325 J Street, Room 1480, Sacramento, California 95814-2922, email *Zachary.M.Simmons@usace.army.mil*, or telephone 916-557-6746. For more information regarding our program, please visit our website at *www.spk.usace.army.mil/regulatory.html*.

Sincerely,

ORIGINAL SIGNED

Paul Maniccia
Chief, California South Branch

Enclosure(s)

Copy furnished without enclosure(s):

Scott Goebl, North State Resources, Inc., 11321 20th Street, Sacramento, California 95814-4233
Dale Harvey, Central Valley Regional Water Quality Control Board, 1685 E Street, Fresno, California 93706-2007
Jason Brush, U.S. Environmental Protection Agency, Region IX, Wetlands Regulatory Office (WTR-8), 75 Hawthorne Street, San Francisco, California 94105-3901

B.F. Sisk Dam Corrective Action Project

Delineation of Waters of the United States

B.F. Sisk Dam
Central Valley Project, California

Draft
March 2010

U.S. Department of the Interior
Bureau of Reclamation

State of California
Department of Water Resources

Mission of the Bureau of Reclamation

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Department of Water Resources Mission Statement

To manage the water resources of California in cooperation with other agencies, to benefit the State's people, and to protect, restore, and enhance the natural and human environments.

B.F. Sisk Dam Corrective Action Project

Delineation of Waters of the United States

B.F. Sisk Dam
Central Valley Project, California

Prepared by:

North State Resources, Inc.
5000 Bechelli Lane, Suite 203
Redding, CA 96002

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Chapter 1
Summary

On behalf of the U.S. Bureau of Reclamation (Reclamation), North State Resources, Inc. (NSR) conducted a delineation of waters of the United States occurring within the 2,578.80-acre B.F. Sisk Dam Corrective Action Project site (study area). The study area is located on lands surrounding the B.F. Sisk Dam, San Luis Reservoir, and O'Neill Forebay, approximately 12 miles west of the city of Los Banos, Merced County, California.

The field delineation was conducted by NSR between August 31 and September 18, 2009. A total of 921.813 acres of waters of the United States were mapped within the study area. Waters of the United States occur as lacustrine (891.000 acres), ephemeral and intermittent streams (0.335 acre, 6,401.77 linear feet), ditches (1.656 acres, 15,149.17 linear feet), fresh emergent wetlands (16.559 acres), and seasonal wetlands (12.169 acres).

This delineation of waters of the United States is subject to verification by the U.S. Army Corps of Engineers (Corps). NSR advises all parties to treat the information contained herein as preliminary until the Corps provides written verification of the boundaries of its jurisdiction.

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Chapter 2 Project Location

The study area is located approximately 12 miles west of the city of Los Banos, California on State Route (SR) 152 (Figure 1). It is in the *San Luis Dam, California* 7.5-minute U.S. Geological Survey (USGS) quadrangle, Township 10S, Range 8E, Sections 13, 27, 28, 33, and 34 Mount Diablo Base and Meridian, and portions of the Gonzaga land grant (Figure 2). The center of the study area is located at approximately UTM 10 S 672239m E, 4101640m N (NAD 83 datum).

2.1 Acreage

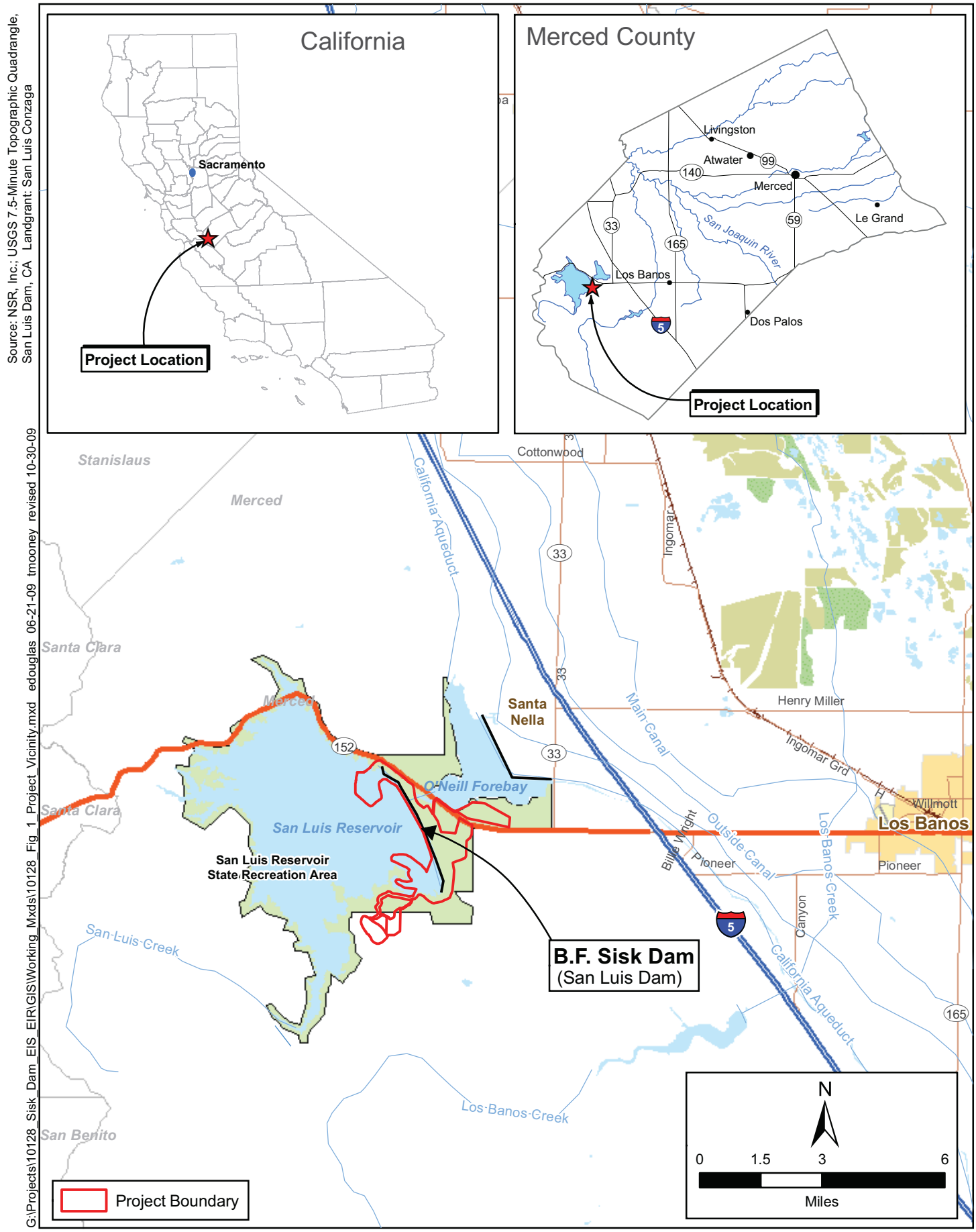
The study area encompasses 2,578.80 acres.

2.2 Proximity to Major Highways and Streets

The study area corresponds to the area surrounding the B.F. Sisk Dam, which is a large dam visible from miles to the east. To reach the site, exit Interstate Highway 5 at SR 152 and head west. Travel on SR 152 for approximately 2.5 miles to the SR 33/Gonzaga Road intersection. From the SR 152 exit ramp, turn left, then right at the stop sign and follow Gonzaga Road west. Pass through the intersection with Basalt Hill Road and proceed forward to the security booth. Authorization to proceed on site is required. Contacts include: Mandeep Bling [(209) 827-5110; Department of Water Resources], Lee Sencenbaugh [(209) 826-1197; Department of Parks and Recreation], and Patti Clinton [(559) 487-5127, Reclamation].

2.3 USGS Hydrologic Unit

The study area is located within the *Panoche-San Luis Reservoir* USGS Hydrologic Map Unit (Cataloging Unit Number 18040014).



Source: NSR, Inc.; USGS 7.5-Minute Topographic Quadrangle, San Luis Dam, CA Landgrant: San Luis Conzaga

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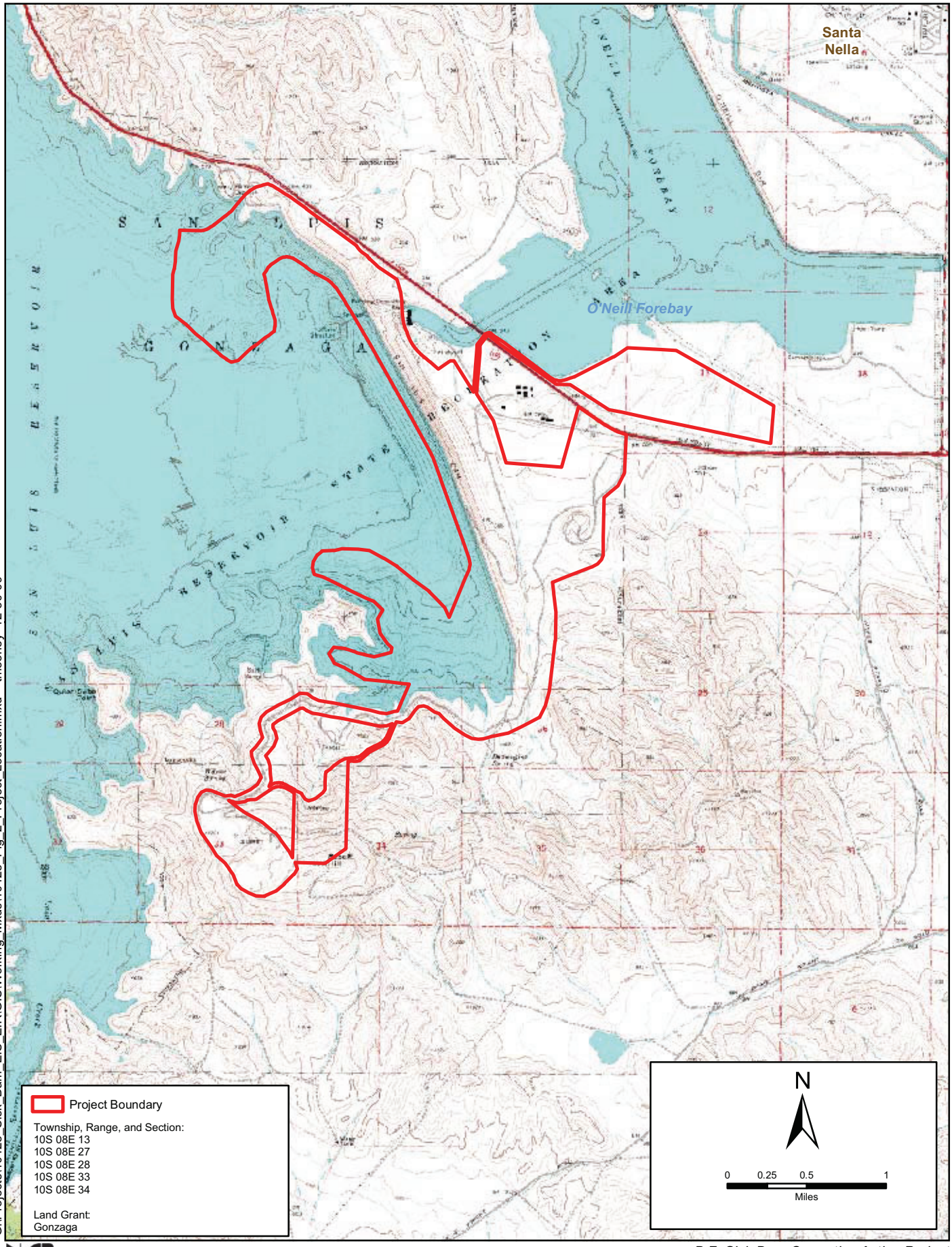
North State Resources, Inc.

B.F. Sisk Dam Corrective Action Project

Figure 1
Project Vicinity



Source: NSR, Inc.; USGS 7.5-Minute Topographic Quadrangle, San Luis Dam, CA Landgrant: San Luis Conzaga

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North State Resources, Inc.

B.F. Sisk Dam Corrective Action Project

Figure 2
Project Location

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Chapter 3
Environmental Setting

3.1 Current/Recent Land Use

The San Luis Reservoir functions as an out-of-channel water storage/hydropower generation facility. Waters are pumped into the reservoir from the California Aqueduct for agricultural or power generation uses when needed. Aquatic recreation, such as windsurfing, fishing, and motor boating, occurs on the reservoir. Camping, hunting, picnicking, and other land-based uses occur as allowable within the state and federally owned and managed lands surrounding the reservoir. Sisk Dam is part of the San Luis Joint-Use Complex, which is owned by Reclamation and is operated and maintained by the California Department of Water Resources (DWR).

3.2 Site Topography and Elevation

The topography of the site varies significantly from relatively flat or gently rolling in the northeast sections of the study area, to steep and mountainous in the southwest. The elevation of the study area ranges between 230 feet above mean sea level (msl) near O'Neill Forebay to almost 1,600 feet above msl in the quarry near Basalt Hill.

3.3 Climate

Climate within the study area is as follows:

Type. The study area is characterized by a climate with cool, moist winters and hot or warm, dry summers.

Precipitation. Precipitation in the study area primarily falls as rain. Average annual rainfall is approximately 9.5 inches (Western Regional Climate Center 2009). For the period between August 31, 2008 and August 31, 2009, 7.89 inches of precipitation (rain) was recorded, which is 83 percent of normal; 2009 was the third year of an on-going statewide drought.

Air Temperature. Air temperatures in the study area range between an average January high of 55 degrees Fahrenheit (ºF), and an average July high of 96 ºF. The year-round average high is approximately 76 ºF (Western Regional Climate Center 2009).

Growing Season. The growing season (i.e., 70 percent probability of an air temperature of 28 ºF or higher) in the study area is between 200 and 280 days and occurs from February through October. The soil temperature regime is thermic (USDA Soil Conservation Service 1990).

3.4 Hydrology/Hydrologic Features

The study area lies within the San Luis Creek watershed, which historically drained to the San Francisco Bay via the San Joaquin River. Today, however, the hydrology of the watershed has been significantly altered by the development of the B.F. Sisk Dam and O'Neill Forebay. Since completion of San Luis Dam, runoff from San Luis Creek has been captured in San Luis Reservoir and diverted for State Water Project and Central Valley Project purposes.

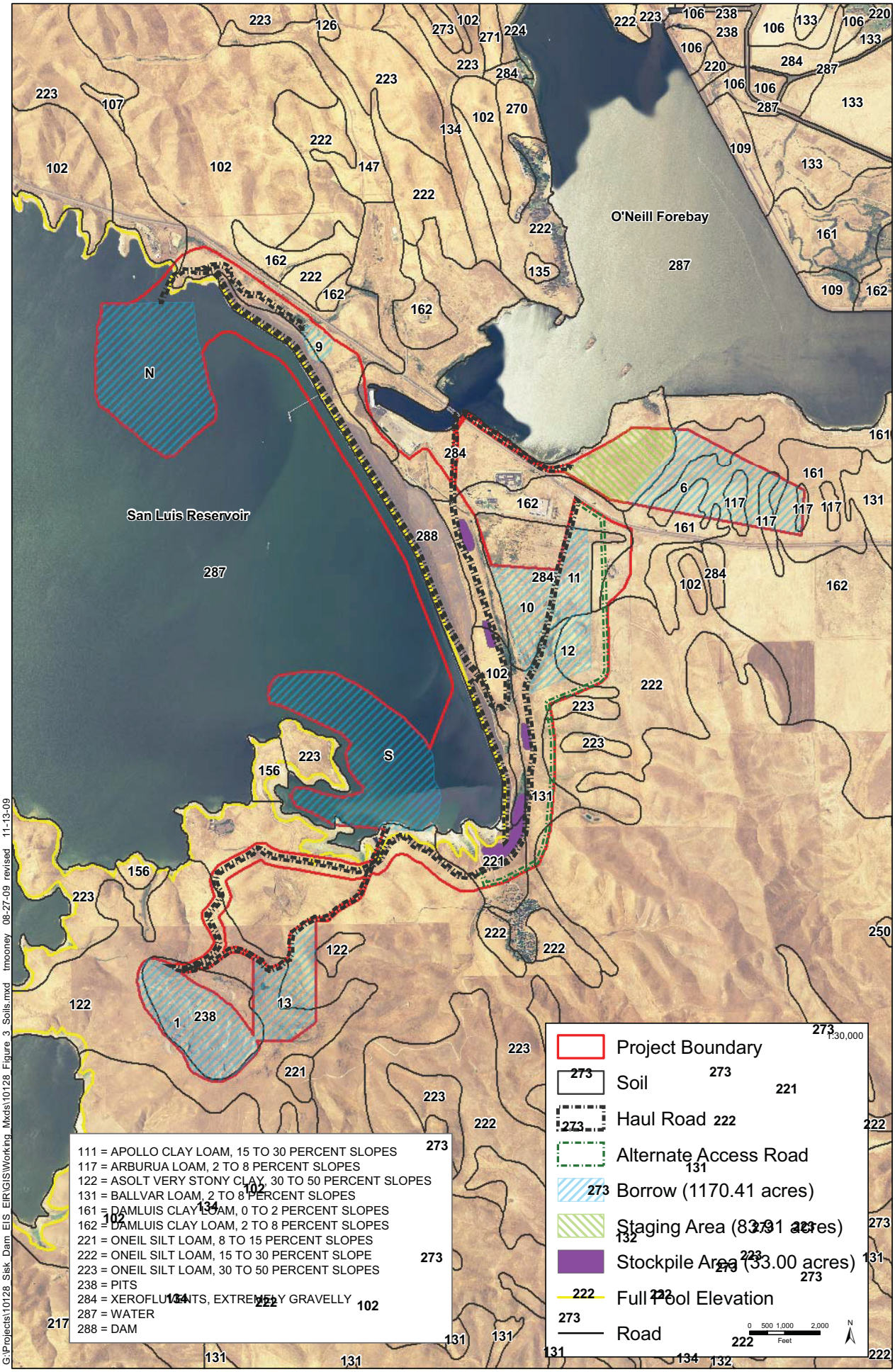
The hydrology in the study area is provided by precipitation events and by leakage of the B.F. Sisk Dam. Through the use of piezometers and comparison of the piezometer data to the level of the San Luis Reservoir, the DWR has established a direct correlation between reservoir level and the ground water level in the riparian and fresh emergent wetland areas just east of the dam (Pam Borba pers. comm.). Dam seepage is the main source of hydrology for the wetland areas within close proximity of the dam.

Although the correlation between reservoir level and ground water level is not as strong in the grassland areas east and west of Basalt Hill Road, dam seepage may influence ground water levels as far as the California Department of Forestry and Fire Protection (CalFire) station east of Basalt Hill Road (Pam Borba pers. comm.). The depressions found in this portion of the study area generally exhibit hydrophytic vegetation and other wetland indicators, suggesting that they pond or at a minimum maintain greater moisture than the surrounding higher terrain. The depressions generally lack stream channels leading to or from them. Data indicating whether the moisture supporting the potential wetland conditions is from precipitation events or high ground water was inconclusive during the field visit.

3.5 Soil Map Units

The soil map units within the study area and vicinity are described in the *Soil Survey of Merced County, California, Western Part* (USDA Soil Conservation Service 1990) and are shown in Figure 3. One of the soil map units (Xerofluvents, extremely gravelly) is identified as a hydric soil (USDA Natural Resources Conservation Service 2007). Descriptive information about each soil map unit follows.

Insert Figure 3



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North State Resources, Inc.

B.F. Sisk Dam Corrective Action Project

Figure 3
Soils

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111 – Apollo clay loam, 15 to 30 percent slopes. Apollo clay loam, 15 to 30 percent slopes is a deep, well drained soil on low foothills. It was derived from, and is still underlain by, soft, calcareous shale and sandstone; depth to the soft shale and limestone is 40 to 60 inches. Permeability is moderately slow. Available water capacity (the ability of the soil to hold moisture) is high to very high. Effective rooting depth is limited by soft shale or sandstone. The soil is considered non-hydric (USDA Natural Resources Conservation Service 2007). The sub-group taxonomy of the Apollo soil series is *thermic Calcic Haploxerolls*. Apollo clay loam, 15 to 30 percent slope occurs southeast and directly north of the dam (Figure 3).

117 – Arburua loam, 2 to 8 percent slopes. Arburua loam, 2 to 8 percent slopes is a moderately deep, well drained soil on foothills. It is derived from, and is underlain by, calcareous shale and sandstone at a depth of 20 to 40 inches. Permeability is moderate. Available water capacity is low to moderate. The soil is considered non-hydric (USDA Natural Resources Conservation Service 2007).

Effective rooting depth is limited by the shale or sandstone layer at 20 to 40 inches. The sub-group taxonomy of the Arburua soil series is *thermic Typic Xerorthents*. This soil map unit occurs in small polygons in the northeast section of the study area.

122 – Asolt very stony clay, 30 to 50 percent slopes. Asolt very stony clay, 30 to 50 percent slopes is a deep, well drained soil on mountains. It is derived from basic volcanic rock. Permeability is slow. Available water capacity is low to moderate. Effective rooting depth is limited by basic volcanic rock at a depth of 40 to 60 inches. The soil surface is 15 to 35 percent stone covered, and the surface layer is a stony clay about 30 inches deep. The depth to the basic volcanic rock is about 40 to 60 inches. The soil is considered non-hydric (USDA Natural Resources Conservation Service 2007). The sub-group taxonomy of the Asolt soil series is *thermic Typic Chromoxererts*. This soil map unit occurs in the southwestern section of the study area near Basalt Hill.

131 – Ballvar loam, 2 to 8 percent slopes. Ballvar loam, 2 to 8 percent slopes is a very deep, well drained soil on alluvial fans. Permeability is moderately slow. Available water capacity is high. Effective rooting depth is 60 inches or more. It formed in mixed alluvium derived from sedimentary rock. The texture of the upper layer varies from sandy clay loam to clay loam, silty clay loam, very fine sandy loam, or sandy loam. The soil is considered non-hydric (USDA Natural Resources Conservation Service 2007). The sub-group taxonomy of the Ballvar soil series is *thermic Typic Haploxerolls*. This soil map unit occurs east of the southern half of the dam.

161 – Damluis clay loam, 0 to 2 percent slope; **162 – Damluis clay loam, 2 to 8 percent slopes**. Damluis clay loam soils are very deep, well drained soils on low terraces. They formed in alluvium derived from various kinds of rock.

Permeability is slow. Available water capacity is high. Effective rooting depth is 60 inches or more. The surface layer is a clay loam to about 22 inches, then, to a depth of 60 inches or more is a gravelly sandy loam. Both map units are considered non-hydric (USDA Natural Resources Conservation Service 2007). The subgroup taxonomy of the Damluis soil series is *thermic Calcic Pachic Argixerolls*. These soil map units occur in the portion of the study area that is east of the dam and south of O'Neill Forebay.

221 – Oneil silt loam, 8 to 15 percent slopes; **222 – Oneil silt loam, 15 to 30 percent slopes**; **223 – Oneil silt loam, 30 to 50 percent slopes**. Oneil silt loam soils are moderately deep, well drained soils found on foothills. The three Oneil silt loam soils that occur within the study area differ primarily by the slope of the hills they occur in. They are all formed in material derived dominantly from calcareous shale and sandstone. The permeability is low to moderate. Effective rooting depth is limited by sandstone or shale at a depth of 20 to 40 inches. The soil texture is a silt loam to the sandstone and shale at depths of 20 to 40 inches. All three map units are considered non-hydric (USDA Natural Resources Conservation Service 2007). The subgroup taxonomy of the Oneil soil series is *thermic Calcic Haploxerolls*. These soil map units occur in the portion of the study area that is south and east of the south end of the dam.

238 – Pits. This map unit consists of a basalt rock quarry that provided source material for the Sisk Dam and now contains soil material and rock. The quarry is located on top of Basalt Hill. Large quantities of rock parent material, dumped piles of mined rock debris, and young fine textured wind-blown alluvium are present within the quarry area. Pits are non-hydric (USDA Natural Resources Conservation Service 2007). Pit soils occur in the portion of the study area that is south of the reservoir on the top of Basalt Hill.

284 – Xerofluvents, extremely gravelly. Xerofluvents, extremely gravelly soils are a diverse group of very deep, poorly drained to well drained soils in channels, and on old plains in and adjacent to streams on mountains and foothills. They formed from gravelly alluvium derived from various kinds of rock. Permeability is slow to moderately rapid. Available water capacity is very low to low. Effective rooting depth is 60 inches or more. The water table is at a depth of 40 to 72 inches from December through March. This soil is subject to long periods of flooding from January through March, and it is considered a hydric soil for that reason (USDA Natural Resources Conservation Service 2007). It is used as a source for gravel. Xerofluvents are their own subgroup. This soil map unit occurs in two polygons east of the center of the dam.

287 – Water. The water soil map unit refers to the inundated soils under the San Luis Reservoir and O'Neill Forebay.

288 – Dam. The dam soil map unit refers to the area of the constructed Sisk dam, which primarily consists of rock from the nearby quarry on Basalt Hill.

3.6 Vegetation Communities

The study area includes five vegetative alliances as defined in *Manual of California Vegetation* (Sawyer and Keeler-Wolf 1995) and two habitat types per *A Guide to Wildlife Habitats of California* (WHR) (Mayer and Laudenslayer Jr. 1988). California annual grassland is the dominant alliance in the study area. Four alliances are closely associated with the seepage areas and ditches along the toe of Sisk Dam, and portions of the full-bank reservoir shorelines: Big Saltbush Shrubland, Coyote Bush Shrubland, Mixed Willow Woodland, and Cattail. All of these alliances are surrounded at least partially by annual grassland alliances. WHR types were used to map barren areas, and a single stand of chaparral-like shrub dominated by a plant uncommon to the region.

3.6.1 California Annual Grassland

California annual grassland is the largest vegetative alliance occurring in the study area and is dominated by non-native annual grasses and forbs. This alliance occurs on all the soil map units and land types present on the site with minor differences in species composition based on location. The dominant non-native grasses include wild oats (Avena barbata – UPL[1]), ripgut brome (Bromus diandrus – UPL), and soft chess (Bromus hordeaceus – FACU). The dominant non-native forbs include black mustard (Brassica nigra – UPL) and broad-leaved pepperweed (Lepidium latifolium – FACW). These dominants are representative of nearly all of the areas mapped as California annual grassland, except for areas adjacent to and within the seepage wetlands and associated ditches along the toe of Sisk Dam. On the steep hillsides to the south of the reservoir, the native forb, hayfield tarweed (Hemizonia congesta – UPL), is also relatively abundant.

The annual grassland along the toe of Sisk Dam has the greatest diversity of native plants, and also the greatest concentration of broad-leaved pepperweed. Non-natives present in these more mesic areas include Mediterranean barley (Hordeum murinum – FAC), curly dock (Rumex crispus – FACW), horehound (Marrubium vulgare - FAC), and cocklebur (Xanthium strumarium – FAC). Native grasses and forbs were a very minor component within the annual grassland as a whole, but were most abundant within the more mesic areas mentioned above. These natives include, vinegar weed (Trichostema lanceolatum – UPL), salt heliotrope (Heliotropium curassavicum – OBL), purple needle grass (Nassella pulchra – UPL), and gum plant (Grindelia camporum – FACU).

[1] Wetland indicator status for plant species is based on *National List of Plant Species That Occur in Wetlands: California (Region 0)* (Reed 1988) and includes the following categories:
Obligate Wetland (OBL) – Plants that occur almost always in wetlands
Facultative Wetland (FACW) – Plants that usually occur in wetlands, but also occur in non-wetlands (i.e., uplands)
Facultative (FAC) – Plants with a similar likelihood of occurring in both wetlands and uplands
Facultative Upland (FACU) – Plants that usually occur in uplands, but also occur in wetlands
Obligate Upland (UPL) – Plants that occur almost always in uplands

Coyote Bush Shrubland

Coyote Bush Shrubland is distinguished by dense stands of coyote bush (Baccharis pilularis - UPL) in upland positions adjacent to the intermittent drainages or the reservoir shorelines (bank full). Big saltbush (Atriplex lentiformis – FAC) is a minor component of this alliance and occurs at the upper and drier edges of the stands. Herbaceous vegetation is largely absent under the shrub canopy, and in some of the stands, broad-leaved pepperweed occurs within canopy gaps and along edges.

Big Saltbush Shrubland

Big Saltbush Shrubland occurs as scattered clusters and as moderately dense linear stands along the intermittent drainages and portions of the reservoir shorelines. In its overall range, big saltbush is associated with riparian zones and the margins of wetlands, but is uncommon as a riparian associate in the Central Valley (Meyer 2005). The largest and densest stand adjacent to the study area is along the southern shoreline (bank full) of San Luis Reservoir. This stand includes hundreds of individuals of big saltbush that are concentrated at the base of a drainage and extend along the reservoir shoreline for approximately a quarter mile. The large stand of big saltbush near the toe of Sisk Dam is associated with adjacent stands of coyote bush and a lone honey mesquite (Prosopis glandulosa ssp. torreyana - UPL). Grasslands adjacent to the Big Saltbush Shrubland stands have higher concentrations of salt heliotrope than the grasslands at large within the study area. Big saltbush, along with salt heliotrope and honey mesquite, are all classified as halophytes.

Mixed Willow Woodland

Mixed Willow Woodland alliance is dominated by native trees associated with riparian woodlands: Fremont cottonwood (Populus fremontii spp. fremontii – FACW), red willow (Salix laevigata - FACW), and black willow (Salix gooddingii – OBL). The dominant shrub in this habitat type is mule fat (Baccharis salicifolia – FACW), which forms dense stands surrounding the cottonwoods and willows.

Cattail Alliance

Cattail Herbaceous Vegetation occurs in seasonal wetlands as inclusions or adjacent to Mixed Willow Woodland. Narrowleaf cattail (Typha angustifolia – OBL) is the dominant species in the Cattail stands, dusky willow (Salix melanopsis – FACW) is subdominant in one of the stands. Dominant non-natives associated with this alliance are broad-leaved pepperweed and poison hemlock (Conium maculatum – FACW).

Mixed Chaparral

Mixed chaparral habitat is comprised of a single stand of dense shrubs on a steep slope northwest of Borrow Area 1. The dominant shrub in this stand is silver buffaloberry (Shepherdia argentea – UPL). Subdominant shrubs in this stand are blue elderberry (Sambucus mexicana – FAC) and wild rose (Rosa sp.).

Barren

Barren habitat is comprised of the disturbed areas that have less than 2 percent total vegetative cover. A representative Barren site is located on the hilltop quarry located southwest of the dam.

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Chapter 4
Methods

4.1 Field Delineation

The routine delineation of wetlands and "other waters" within the study area was based on field observations of positive indicators for wetland vegetation, hydrology, and soils; and indicators of "other waters." This methodology is consistent with the approach outlined in *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (U. S. Army Corps of Engineers 2006). Taxonomic nomenclature for plant species is in accordance with *The Jepson Manual* (Hickman 1993). Wetland indicator status for plant species was confirmed using Reed (1988), and the "50/20 Rule" was applied to determine plant dominance (U. S. Army Corps of Engineers 2006). The presence of primary and/or secondary wetland hydrology indicators was documented for each wetland feature.

A soil pit was dug in each representative wetland feature. Soil pits were dug to a depth sufficient to document the presence or confirm the absence of hydric soil indicators. Soils were examined in order to assess field indicators of hydric soils. Positive indicators of hydric soils were observed in the field in accordance with the criteria outlined in *Field Indicators of Hydric Soils in the United States* (Hurt, and Vasilas 2006). Soil colors were determined using a Munsell® soil color chart. The hydric status of each soil map unit was reviewed using *Hydric Soils list for Merced County, California Western Part* (USDA Natural Resources Conservation Service 2007). At least one set of paired data points was selected to best represent the wetland feature type and the adjacent uplands. Data points were also placed in suspect areas to confirm wetland or upland status.

Delineation of "other waters" was based on presence of an ordinary high water mark (OHWM) as defined in Corps regulations (33 CFR 328.3 and 33 CFR 328.4). Physical characteristics of an OHWM include a natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, presence of litter and debris, leaf litter disturbed or washed away, scour, deposition, presence of bed and bank, and water staining. At least one set of paired data points was then selected to best represent the "other waters" and adjacent upland conditions for each "other waters" type.

Forty-nine data points representing each feature type and the associated upland were characterized and documented throughout the study area. Field

observations were conducted between August 31 and September 18, 2009. Routine wetland determination data forms are presented in Appendix A. Representative photographs of features delineated are presented in Appendix B.

The boundaries of delineated features and all 3-parameter data point locations were mapped using a Trimble Pathfinder Geo XH Global Positioning System (GPS) capable of sub-foot accuracy. Where the use of the GPS was not practicable, the features were delineated by hand onto ortho-rectified color aerial photographs. After the field delineation, the GPS data were overlain on the ortho-rectified color aerial photograph of the study area to generate a delineation map.

4.2 Evaluation of Federal Jurisdiction

Isolated, non-navigable, intrastate waters are not subject to federal jurisdiction based on guidance issued in response to the U.S. Supreme Court's decision in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* ("SWANCC decision") (Guzy and Anderson 2001). Additionally, the memorandum providing guidance to implement the U.S. Supreme Court's decision in *Rapanos v. United States* and *Carabell v. United States*, referred to as "Rapanos" (Grumbles and Woodley 2008), was considered in determining federal jurisdiction. Under this guidance, wetland features that are not adjacent to (i.e., bordering, contiguous, or neighboring) a traditional navigable water (TNW) or abutting a relatively permanent water (RPW) are subject to a significant nexus evaluation. In these circumstances, the significant nexus evaluation is used by the Corps (and Environmental Protection Agency) to determine whether a particular wetland or "other water" has a "significant nexus" to a TNW; and is, therefore, subject to regulation under the federal Clean Water Act, (i.e., "waters of the United States").

Approved Jurisdictional Determinations and Preliminary Jurisdictional Determinations are tools used by the Corps to help implement Section 404 of the Clean Water Act. In order to obtain an Approved Jurisdictional Determination, as required to determine a feature as non-jurisdictional, the Corps must conduct a significant nexus evaluation to assess the characteristics and functions of the aquatic features to determine if they significantly affect the chemical, physical, or biological integrity of downstream navigable waters. Alternatively, an applicant can request a Preliminary Jurisdictional Determination in which case the Corps will treat all features as waters of the United States for permitting purposes (Riley 2008).

For the purposes of this wetland delineation, the jurisdictional status of the wetlands and other waters observed in the study area were all considered jurisdictional, and the applicant is requesting a Preliminary Jurisdictional Determination.

4.3 Problematic Vegetation, Soils, and Hydrology

Problematic vegetation, soils, and hydrology were observed at various locations in the study area. In each case, the procedure followed to determine the feature's wetland status was based on the discussion and guidance for problematic vegetation, soils, and hydrology provided in the Manual and/or Manual Supplement. The problematic determinations stem from: (1) the manipulation of the natural flow regime and topography from the construction and operation of the Sisk Dam (starting in 1962); (2) the dry season site visit coupled with the current drought conditions on the site; and (3) sparse vegetative cover, or colonization of some wetland features by upland annual plant species.

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Chapter 5
Results

The boundaries and acreages of waters of the United States within the study area are illustrated in the series of figures representing the boundaries of waters of the United States, including wetlands (Figure 4 series – attached in the pocket). Waters of the United States within the study area occupy a total of 921.813 acres and include lacustrine, ephemeral and intermittent streams, ditches, fresh emergent wetland, and seasonal wetland. An acreage summary of the waters of the United States delineated within the study area is presented in Table 1. A detailed tabulation of the acreage (and linear footage – as appropriate) is also presented in the tables on Figures 4b through 4e, Appendix C.

Table 1. Acreage Summary of Jurisdictional Waters of the United States Within the B.F. Sisk Dam Corrective Action Project Study Area, Merced County, California

Waters of the United States	Total Acreage	Total Linear Feet
Wetlands		
Fresh Emergent Wetland	16.559	N/A
Seasonal Wetland	12.169	N/A
Total Wetlands	**28.728**	**N/A**
Other Waters		
Lacustrine	891.000	N/A
Ephemeral Drainage	0.298	5,586.77
Intermittent Stream	0.037	815.00
Ditch	1.656	15,149.17
Settling Pond	0.094	N/A
Total Other Waters	**893.085**	21,550.94
Total Jurisdictional Waters of the United States	**921.813**	21,550.91

5.1 Characterization of Delineated Features

The following description of the waters of the United States, including wetlands provides details about specific wetland features observed and documented in the study area. In some cases, there were many features of one type (e.g., seasonal wetland), so details typical of the feature type are described. As presented in Table 1, there are two types of wetlands and five types of "other waters".

In some cases, several wetland types combine to create a complex feature. So that this characterization of the delineated features provides a comprehensive description, the feature types associated with specific functions are lumped together. For example, most of the fresh emergent wetlands are associated with dam seepage, but the seepage is then conveyed out of the study area via ditches. As a result, the discussion lumps the features associated with this function as the Seep Wetland Complex.

Each heading in the following discussion identifies the feature type or function, and is followed by representative feature labels from Figures 4b – 4e. References are also made to corresponding data sheets (Appendix A) and to representative photographs (Appendix B).

5.1.1 Lacustrine (LAC 1, LAC2, and LAC3)

The Lacustrine features correspond to the San Luis Reservoir below the full pool elevation, and combined they are the largest (891.000 acres) feature type delineated. The full pool elevation is the elevation at which the DWR considers the reservoir to be full. There is no spillway, but water is pumped into or out of the reservoir via a large pumping system. The marks on the ground corresponding to the full pool elevation include eroded shoreline, shelving, changes in the character of the soil, destruction of terrestrial vegetation, and the presence of fluvial litter and debris. Data point 46 (Figure 4d) documents the lacustrine conditions found in a small inlet of the San Luis Reservoir. During the field visit, the San Luis Reservoir was at historic low levels, but despite the dry conditions, the field indicators of the high water mark in the vicinity of data point 46 and at other locations around the reservoir were obvious.

The reservoir functions as out-of-channel water storage to serve the State Water Project and the Central Valley Project. The natural San Luis Creek drainage is insufficient to fill the reservoir, so water is either pumped into or out of the reservoir from the State Water Project or Central Valley Project canals depending on water need and availability. In addition to supporting agricultural and municipal water needs, the reservoir supports recreation such as boating and fishing.

5.1.2 Seep Wetland Complex (from south to north – ED6, FEW10, FEW7, FEW6, D9, FEW3, FEW8, D7, FEW9, D2, SW4, D3, D6, D5, and D8)

This complex of fresh emergent wetlands, seasonal wetlands, and drainage ditches are formed from, or convey, waters that seep through the dam from the reservoir. A correlation that ties the hydration of the wetland features and ditches to the level of the reservoir has been documented by the DWR (Pam Borba, Pers. Comm.). The hydration of these wetland and ditch features may undergo long- or short- periods of inundation depending on the duration (or lack thereof) of full capacity reservoir height. In addition, if the reservoir has been low for several years, the next time it is full, the dam leaks more at first then slows down over time as the air spaces between soil particles in the dam are

replaced with water. Some hydration of the features also results from precipitation events.

Seep wetland complex features (e.g., FEW9; Photographs 4, 5, and 6) occur in areas with long-duration saturation or inundation creating an anaerobic environment suitable for hydrophytic plants. The features occur in the deeper depressions close to the toe of Sisk Dam where seepage creates long-duration ponding or soil saturation. The length of inundation is dependent on the reservoir level behind the dam; the features are inundated for long-duration when the reservoir is full for a long period of time, or the features may remain dry during years (such as in 2009) when the reservoir level is very low for the whole year. Herbaceous plant species dominate the seep wetland features, although portions of the features are also vegetated by hydrophytic trees and shrubs. Dominant species include: narrowleaf cattail, broad-leaved pepperweed, poison hemlock, Fremont cottonwood, red willow, black willow, and mule fat.

Wetland hydrology criteria are met through the observation of sediment deposits, surface soil cracks, oxidized rhizospheres, and the FAC-neutral test. Soils were mottled with redox features and fit the Redox Depressions (F8) hydric soil indicator description. Seep wetland complex features occur with the most frequency in depressions close to the dam. Data points 5, 6, 9, 12, 14, and 15 are among those documenting the habitats.

The wetlands documented in the seep wetland complex occur on gentle slopes (e.g., FEW10), in depressions (e.g., FEW9), and on flat surfaces (e.g., SW4). The ditches were created to bisect and connect the various wetland features, and the main “drain” of the whole complex is the large, deep ditch (D8; Photograph 10) north of the complex. The primary function of the seep wetland complex is to collect and transport the seepage water. The secondary functions of the complex are: sediment and toxicant retention, flood-flow attenuation, production export, aquatic diversity and abundance, and wildlife diversity and abundance (Schneider, and Sprecher 2000). See Photographs 3–10 (Appendix B) for images of the seep wetland complex.

Other seep wetlands (e.g., FEW15; Photograph 11) occur north of the dam. Although the features exhibit many of the characteristics and serve similar functions as the seep wetland complex described above, they do not drain through the D8 ditch. These wetland and ditch features (e.g., D10; Photograph 12) flow off-site and are presumed to reach O’Neill Forebay.

5.1.3 Seasonal wetlands (SW30, SW31, FEW1, FEW2, SW27, SW5, SW32, SW1, SW2, SW3, SW28, SW26, SW29, SW21, SW22, SW6, SW20, SW45, SW24, SW7, SW25, SW8, SW10, SW11, SW23, SW15, SW14, SW9, SW 19)

The vast majority of the seasonal wetland features mapped within the study area occur east of the seep wetland complex, in the vicinity of Basalt Hill Road. The closer these features are to the dam, the greater likelihood that their hydration is

related to water seepage through the dam during high reservoir periods. However, the correlation between seepage and seasonal wetland hydration gets weaker with distance east of the dam. Because each seasonal wetland occurs in a depression (some very slight, some deep and well pronounced), precipitation is thought to play an important role in the hydration of the features, whether or not they receive seepage from the reservoir.

Most of the features (e.g., SW19, SW24, SW7, SW19) are extensions of the grassland habitats they occur in. The dominant species are marginally hydrophytic (FAC) grasses or herbaceous plant species, and in most cases, the depressions are slight, and the boundaries of the features are gradual. The most reliable boundary indicator observed was the change from upland to wetland vegetation. In these cases, the hydric soil indicators [Redox Depression (Photograph 16)] continue across the wetland – upland boundary due to capillary pull. The most common hydrology indicators are surface soil cracks, sediment deposits, and oxidized rhizospheres.

The weak hydrophytic vegetation parameter (and in some cases the weak wetland hydrology parameter) make it difficult to determine how frequently these features become saturated. Some may only be saturated for long duration during wetter than normal precipitation years, or in years of high precipitation coupled with high reservoir levels (producing contributing soil saturation from seepage and precipitation).

Contrast the shallow depression seasonal wetlands with the deeper depressions (e.g., SW27, SW5, FEW1, FEW2) and the dominant plants become much more hydrophytic, and the indicators of hydric soils and wetland hydrology get much more pronounced. These deeper depression seasonal wetlands occur closer to the dam. The ground water level may be higher in years of high reservoir levels, and the deeper depressions may be closer to that groundwater level. Closer proximity to the groundwater level coupled with normal or above normal precipitation rates likely result in long duration inundation of these features, which produce the stronger wetland indicators.

For the most part, no surface channel was evident that connects these seasonal wetlands to the seep wetland complex ditches. As such, the functions of the features are not related to drainage, but are purely related to more “natural” functions such as: sediment and toxicant retention, flood-flow attenuation, production export, aquatic diversity and abundance, and wildlife diversity and abundance (Schneider, and Sprecher 2000).

Data points 4, 10, 19, 21, 23, 24, 31, 32, 35, 37, 39, and 41 (also see Photographs 13–18) document seasonal wetland features. The dominant plant species found within them consist of hydrophytic grasses such as Mediterranean barley and squirreltail fescue (*Vulpia bromoides* – FACW), and herbaceous species such as broad-leaved pepperweed, salt heliotrope, curly dock, and horehound. In some instances, typically closer to the dam where seepage

appears to play a greater role in the hydration of the features, tree (e.g., Fremont cottonwood) and shrub species (e.g., mule fat) are also present.

The wetland hydrology indicators observed in the seasonal wetland features include water marks, sediment deposits, surface soil cracks, and oxidized rhizospheres. Hydric soil criteria are met through the observation of redox features described under the Redox Depressions hydric soil indicator. Because of the prolonged drought, it is highly possible that these features have not been hydrated for a number of years. But because they lie within depressional microtopography, are dominated by hydrophytes, and have hydric soil indicators, they could not be excluded from the wetland classification.

5.1.4 Ephemeral Drainage (ED13, ED3, ED4, ED9, ED6, ED5)

Ephemeral drainages are features that flow during precipitation events and for short periods following the precipitation (less than 14 days). There is no ground water component adding to the duration of flow after a precipitation event. Most of the natural stream channels found within the study area are considered ephemeral drainages due to the well drained soils on the slopes they are found upon, the low annual precipitation rates, and the lack of wetland conditions at the source of the stream. [Wetlands at the source of a stream might slowly release waters after a storm event and contribute to a longer flow regime within the drainage – an intermittent stream flow regime (see below)].

Data points 43 (Photographs 19 and 20) and 47 (Photograph 21) document representative 2- and 1-foot-wide (respectively) ephemeral drainages. In each case, there is a defined bed and bank, evidence of scour and deposition, the features occur at the bottom of small drainage basins, and they are visible on aerial images. The features are not wetlands because the vegetation parameter is not met; the soils may or may not be met due to their recent deposition or frequent scour. The ephemeral drainages are considered "other waters of the United States." They function largely to concentrate and convey accumulated waters (from precipitation events) from the hills surrounding the study area. There is no influence of seepage waters from the reservoir.

5.1.5 Intermittent Stream (IS1)

Intermittent streams are features that flow seasonally, but exhibit a groundwater component in addition to the collection and conveyance of precipitation and sheet flow from adjacent slopes. The intermittent streams often have a wetland feature at the source that absorbs and then slowly releases waters, or they are influenced by high ground water. Intermittent streams are characterized as bed and bank features that exhibit evidence of scour and deposition. One intermittent stream (IS1) was mapped within the study area. Although conditions were dry during the site visit, feature IS1 provides drainage for a moderately large seasonal wetland (SW22; 0.668 acres) and wetlands (e.g., SW32, SW21) that are not directly connected (Figure 4c). Feature SW22 and the other upslope seasonal wetlands may be wet during periods of high water in

the reservoir, which would likely add a ground water component to the flow within IS1.

Chapter 6
Conclusion

A total of 921.813 acres of waters of the United States, including wetlands were delineated within the study area. To support a "preliminary verification," all features identified herein and shown on the Figure 4 series are assumed to be federally jurisdictional. Waters of the United States identified in this report are subject to verification by the Corps. NSR advises all interested parties to treat the information contained herein as preliminary pending written verification of jurisdictional boundaries by the Corps.

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Chapter 7
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7.1 Personal Communication

Pam Borba. Hydrologist. San Luis Field Division. California Department of Water Resources. Comments during a site orientation meeting. August 31, 2009.

Appendix A

Data Forms

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type STEEP WETLAND COMPLEX
Wetland Type SEASONAL WTLD

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 8/31/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 1
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.) DITCH Local relief (concave, convex, none) CONCAVE Slope % 0-2
Subregion (LRR) LRR-C Soil Map Unit Name: DAMLUIS CLAY LOAM 2-8%
Are climatic/hydrologic conditions on the site typical for this time of year? YES *(If no, explain in remarks.)*
Are vegetation NO, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? *(If needed, explain any answers in Remarks.)*

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? YES Hydric soil? YES Wetland hydrology? YES Is sampled area a wetland? YES Other waters? YES

USACE Jurisdiction

Adjacent to Waters X Tributary to Waters X Isolated (with interstate commerce) ____ Isolated (non jurisdictional) ____
Explain: DITCH + ADJACENT WETLANDS

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank X Scour X Ordinary High Water Mark Mapped X
Feature Designation: Perennial ____ Intermittent X Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage X Navigable Water ____

DAM SEEPAGE COLLECTION DITCH + WETLANDS.
DITCH ~ 2-5' WIDE

Remarks

DITCH CAPTURES DAM SEEPAGE WHEN DAM IS FULL. DP. DOCUMENTS THAT WETLAND CONDITIONS OCCUR ADJACENT TO THE DITCH. LABELLED AS SEASONAL WETLAND.

Vegetation

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

Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status
1. Baccharis viminea	25	YES	FACW
2. Atriplex lentiformis	20	YES	FAC
3.			
4.			
50%=22.5 20%=9 Total Cover:	45		

Herb Stratum (use scientific names)	% Cover	Species?	Status
1. Lepidium latifolium	60	YES	FACW
2. Bromus diandrus	15	NO	UPL
3. Bromus hordeaceous	15	NO	FACU
4.			
5.			
6.			
7.			
50%=45 20%=18 Total Cover:	90		

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

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

Baccharis viminea = B. salicifolia

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 3 (A)
Total number of dominant species across all strata: 3 (B)
Percent of dominant species that are OBL, FACW, or FAC: 100 (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

Hydrophytic Vegetation Indicators

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

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

Hydrophytic Vegetation? YES

Sampling Point 1

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5YR 4/3	90	2.5YR 5/4	10	RM	M	SANDY LOAM	
6-12	2.5YR 4/3	60	2.5YR 5/4	40	RM	M	SANDY LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- X Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? YES

Remarks COLORS + LACK OF REDOX FEATURES FAIL TO INDICATE HYDRIC SOILS. HOWEVER, THERE IS AMPLE EVIDENCE OF FLOW; SOILS ARE COARSE + DATA POINT IS WITHIN THE NORMAL CHANNEL. THIS MEETS THE VEGETATED SAND / GRAVEL BAR INDICATOR.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1) (Nonriverine)
- ____ Sediment Deposits (B2) (Nonriverine)
- X 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)
- X Oxidized Rhizospheres (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Plowed Soils (C6)
- ____ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) ____ Wetland Hydrology? Yes X No ____

Water Table Present? Yes ____ No X Depth (inches) ____

Saturation Present? Yes ____ No X Depth (inches) ____ *(includes capillary fringe)*

Describe Recorded Data (stream gauge, monitoring well, aerial photos, and previous inspections), if available:
DWR GROUND WATER WELLS + PERS. COMM.

Remarks SUFFICIENT INDICATORS OF WETLAND HYDROLOGY.

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type ANNUAL GRASSLAND
Wetland Type UPLAND

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 8/31/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 2
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.) _____ Local relief (concave, convex, none) CONCAVE Slope % 5 %
Subregion (LRR) LRR-C Soil Map Unit Name: DAM LUIS CLAY LOAM 2-8%
Are climatic/hydrologic conditions on the site typical for this time of year? YES *(If no, explain in remarks.)*
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N 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? N Hydric soil? N Wetland hydrology? N Is sampled area a wetland? NO Other waters? N

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks

UPLAND PAIR TO DP 1

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%=____ 20%=____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%=____ 20%=____ Total Cover:			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Bromus diandrus	20	YES	UPL
2. Brassica nigra	10	NO	UPL
3. Centaurea solstitialis	2	NO	UPL
4.			
5.			
6.			
7.			
50%= 16 20%= 6.4 Total Cover: 32			
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%=____ 20%=____ Total Cover:			

% Bare Ground in Herb Stratum 68 **% Cover of Biotic Crust** ____

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 0 (A)
Total number of dominant species across all strata: 1 (B)
Percent of dominant species that are OBL, FACW, or FAC: 0 (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

Hydrophytic Vegetation Indicators

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

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

Hydrophytic Vegetation? NO

Sampling Point 2

Soils

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/4	100	—	—	—	—	GRAVELLY LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? N

Remarks NONE HYDRIC SOILS.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No — Depth (inches) — Wetland Hydrology? Yes ____ No X

Water Table Present? Yes ____ No — Depth (inches) —

Saturation Present? Yes ____ No — Depth (inches) — *(includes capillary fringe)*

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

—

Remarks NO WETLAND HYDROLOGY INDICATORS.

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type: GRASSLAND
Wetland Type: UPLAND

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 8/31/07
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 3
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.): PLAIN Local relief (concave, convex, none): NONE Slope %: 0-2%
Subregion (LRR): LRR-C Soil Map Unit Name: XEROFLUVENTS, EXTREMELY GRAVELLY
Are climatic/hydrologic conditions on the site typical for this time of year? YES (If no, explain in remarks.)
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? YES Hydric soil? NO Wetland hydrology? NO Is sampled area a wetland? NO Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks DATA POINT DOCUMENTS UPLAND CONDITIONS PRESENT W/ A SUSPECT WETLAND AREA. UPLAND PAIR TO DP 4.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%=____ 20%=____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Atriplex lentiformis	5	YES	FAC
2. Baccharis pilularis	5	YES	UPL
3.			
4.			
50%=____ 20%=____ Total Cover:	10		
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Lepidium latifolium	70	YES	FACW
2. Bromus diandrus	10	NO	UPL
3. Bromus hordeaceus	10	NO	FACU
4. Bromus inermis	10	NO	UPL
5.			
6.			
7.			
50%=50 20%=20 Total Cover:	100		
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%=____ 20%=____ Total Cover:			

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

Dominance Test Worksheet
Number of dominant species that are OBL, FACW, or FAC: 2 (A)
Total number of dominant species across all strata: 3 (B)
Percent of dominant species that are OBL, FACW, or FAC: 66 (AB)

Prevalence Index Worksheet

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

Prevalence Index = B/A = ____

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

Hydrophytic Vegetation? YES

Sampling Point 3

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/3	100	—	—	—	—	GRAVELLY LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? NO

Remarks NON HYDRIC SOILS.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) ____ Wetland Hydrology? Yes ____ No X

Water Table Present? Yes ____ No X Depth (inches) ____

Saturation Present? Yes ____ No X Depth (inches) ____ *(includes capillary fringe)*

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

Remarks NO INDICATORS OF WETLAND HYDROLOGY

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type: GRASSLAND
Wetland Type: SEASONAL WETLAND

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 8/31/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 4
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.): FLAT Local relief (concave, convex, none): NONE Slope %: 0-2%
Subregion (LRR): LRR-C Soil Map Unit Name: Xerofluvents, EXTREMELY GRAVELLY
Are climatic/hydrologic conditions on the site typical for this time of year? YES (If no, explain in remarks.)
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? YES Hydric soil? YES Wetland hydrology? YES Is sampled area a wetland? YES Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks

SEEP AREA VISIBLE ON AERIAL. WETLAND INDICATORS OBSERVED.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix laevigata	5	YES	FACW
2.			
3.			
50%= 2.5 20%= 1 Total Cover:	5		
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Baccharis pilularis	15	YES	UPL
2.			
3.			
4.			
50%= 20%= Total Cover:	15		
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Typha latifolia	40	YES	OBL
2. Lepidium latifolium	20	YES	FACW
3. Gratiola ebracteata	10	N	OBL
4. Bromus diandrus	15	N	UPL
5. B. hordeaceus	15	N	FACU
6.			
7.			
50%= 50 20%= 20 Total Cover:	100		
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%= 20%= Total Cover:			

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

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 3 (A)
Total number of dominant species across all strata: 4 (B)
Percent of dominant species that are OBL, FACW, or FAC: 100 (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A =

Hydrophytic Vegetation Indicators

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

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

Hydrophytic Vegetation? YES

Sampling Point 4

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/2	95	10YR 3/1	5	D	PL	GRAVELLY LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? YES

Remarks FAINT REDOX FEATURES OBSERVED. = HYDRIC SOILS.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) ____ Wetland Hydrology? Yes X No ____

Water Table Present? Yes ____ No X Depth (inches) ____

Saturation Present? Yes ____ No X Depth (inches) ____ *(includes capillary fringe)*

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

SEEP AREA WHERE DAM IS FULL.

Remarks

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type: DITCH
Wetland Type: EMERGENT WETLAND

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/1/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 5
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.): DITCH Local relief (concave, convex, none): CONCAVE Slope %: 0-2%
Subregion (LRR): LRR-C Soil Map Unit Name: Ballvar Loam 2-8%
Are climatic/hydrologic conditions on the site typical for this time of year? YES *(If no, explain in remarks.)*
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? *(If needed, explain any answers in Remarks.)*

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? YES Hydric soil? YES Wetland hydrology? YES Is sampled area a wetland? YES Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks SEASONAL EMERGENT WETLAND ASSOCIATED WITH DITCH THAT CAPTURES SEEPAGE FROM DAM, IS RIPARIAN + EMERGENT IN PLANT COMPOSITION. BOUNDED TO WEST BY A STEEP BANK W/ ATRIPLEX.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix laevigata	40	YES	FACW
2.			
3.			
50%= 20 20%= 8 Total Cover: 40			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%= ____ 20%= ____ Total Cover: ____			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Typha latifolia	35	YES	OBL
2. Juncus tenois	20	YES	FACW
3. Conyza canadensis	5	NO	FAC
4.			
5.			
6.			
7.			
50%= 30 20%= 12 Total Cover: 60			
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%= ____ 20%= ____ Total Cover: ____			

% Bare Ground in Herb Stratum 40 **% Cover of Biotic Crust** —

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 3 (A)
Total number of dominant species across all strata: 3 (B)
Percent of dominant species that are OBL, FACW, or FAC: 100 (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

Hydrophytic Vegetation Indicators

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

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

Hydrophytic Vegetation? YES

Sampling Point 5

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	85	7.5YR 4/4	15	C	M	CLAY LOAM	
6-12	10YR 3/2	60	2.5YR 5/4	30	D	M	SANDY LOAM	
		AND	7.5YR 5/6	10	C	M	"	"

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? YES

Remarks HYDRIC SOILS.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1) (Nonriverine)
- X Sediment Deposits (B2) (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)
- X Oxidized Rhizospheres (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Plowed Soils (C6)
- ____ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes X No ____

Water Table Present? Yes ____ No X Depth (inches) —

Saturation Present? Yes ____ No X Depth (inches) — *(includes capillary fringe)*

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

Remarks SEEP DITCH + ADJACENT WETLANDS.

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type: DITCH
Wetland Type: EMERGENT WL

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/1/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 6
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.): DITCH Local relief (concave, convex, none): CONCAVE Slope %: 0-2%
Subregion (LRR): LRR-C Soil Map Unit Name: Ballvar Loam 2-8%
Are climatic/hydrologic conditions on the site typical for this time of year? YES (If no, explain in remarks.)
Are vegetation NO, soil NO, or hydrology NO significantly disturbed? Are normal circumstances present? YES
Are vegetation NO, soil NO or hydrology NO naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? YES Hydric soil? YES Wetland hydrology? YES Is sampled area a wetland? YES Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

NO DEFINED BED & BANK IN THIS SECTION OF WETLAND.

Remarks

EAST BOUNDARY OF LARGE "SEEP DITCH" WETLAND.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus fremontii	10	Y	FACW
2. Salix lasiolepis	30	Y	FACW
3.			

50%= 20 20%= 8 Total Cover: 40

Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status
1.			
2.			
3.			
4.			

50%= ____ 20%= ____ Total Cover: ____

Herb Stratum (use scientific names)	% Cover	Species?	Status
1. Typha latifolia	40	YES	OBL
2. Hordeum leporinum	35	Y	FAC
3. Polypogon monspeliensis	15	N	FACW
4. Conyza canadensis	10	N	FAC
5.			
6.			
7.			

50%= ____ 20%= ____ Total Cover: 100

Woody/Vine Stratum (use scientific names)	% Cover	Species?	Status
1.			
2.			

50%= ____ 20%= ____ Total Cover: ____

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

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 4 (A)
Total number of dominant species across all strata: 4 (B)
Percent of dominant species that are OBL, FACW, or FAC: 100 (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

Hydrophytic Vegetation Indicators

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

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

Hydrophytic Vegetation? YES

Sampling Point 6

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/4	95	7.5YR 4/6	5	C	M	GRAVELLY CLAY LOAM	
4-10	10YR 4/4	70	7.5YR 4/6	25	C	M	"	"
			GLEY1 4/10GY	5	D	M	"	"

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? YES

Remarks HYDRIC SOILS.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1) (Nonriverine)
- X Sediment Deposits (B2) (Nonriverine)
- X 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)
- X Oxidized Rhizospheres (C3)
- X Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Plowed Soils (C6)
- ____ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes X No ____

Water Table Present? Yes ____ No X Depth (inches) —

Saturation Present? Yes ____ No X Depth (inches) — *(includes capillary fringe)*

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

Remarks WETLAND HYDROLOGY.

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type: GRASSLAND
Wetland Type: UPLAND

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/1/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 7
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.) _____ Local relief (concave, convex, none) _____ Slope % 0-2
Subregion (LRR) LRR-C Soil Map Unit Name: Ballvar Loam 2-8%
Are climatic/hydrologic conditions on the site typical for this time of year? YES (If no, explain in remarks.)
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? NO Hydric soil? NO Wetland hydrology? NO Is sampled area a wetland? NO Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks UPLAND PAIR TO #6

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%= ____ 20%= ____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Acacia sp	3	Y	UPL
2. Atriplex lentiformis	3	N	FAC
3.			
4.			
50%= 3 20%= 1.2 Total Cover: 6			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Hordeum leporinum	35	Y	FAC
2. Bromus hordeaceus	35	Y	FACU
3. Centaurea solstitialis	5	N	UPL
4. Grindelia camporum	15	N	FACW
5. Avena barbata	10	N	UPL
6.			
7.			
50%= 50 20%= 20 Total Cover: 100			
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%= ____ 20%= ____ Total Cover: ____			

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

Dominance Test Worksheet
Number of dominant species that are OBL, FACW, or FAC: 2 (A)
Total number of dominant species across all strata: 4 (B)
Percent of dominant species that are OBL, FACW, or FAC: 50 (AB)

Prevalence Index Worksheet

Total % Cover of:		Multiply by	
OBL Species	0	x 1 =	0
FACW Species	0	x 2 =	0
FAC Species	38	x 3 =	114
FACU Species	50	x 4 =	200
UPL Species	18	x 5 =	90
Column Totals	106 (A)		404 (B)

Prevalance Index = B/A = 3.7

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

Hydrophytic Vegetation? N

Sampling Point 7

Soils

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/3	100	—	—	—	—	GRAVELLY LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: ? Depth (Inches) / Hydric Soil? NO

Remarks NON HYDRIC SOILS

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No ~ Depth (inches) ~ Wetland Hydrology? Yes ____ No X

Water Table Present? Yes ____ No ~ Depth (inches) ~

Saturation Present? Yes ____ No ~ Depth (inches) ~ *(includes capillary fringe)*

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

Remarks NO WETLAND HYDROLOGY INDICATORS.

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type MEADOW
Wetland Type UPLAND

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/1/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 8
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.) PLAIN Local relief (concave, convex, none) CONVEX Slope % 2-5
Subregion (LRR) LRR-C Soil Map Unit Name: Xerofluvents, Extremely gravelly
Are climatic/hydrologic conditions on the site typical for this time of year? YES (If no, explain in remarks.)
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N 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? N Hydric soil? YES Wetland hydrology? NO Is sampled area a wetland? NO Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks UPLAND PAIR TO DP. 9.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%= 20%= Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Atriplex lentiformis	5	Y	FAC
2.			
3.			
4.			
50%= 2.5 20%= 1 Total Cover:	5		
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Hordeum leporinum	25	Y	FAC
2. Bromus hordeaceus	20	Y	FACU
3. B. diandros	20	Y	UPL
4. Grindelia camporum	20	Y	FACW
5. Croton setigerus (DOVE WEED)	15	N	UPL
6. Lepidium latifolium	10	N	FACW
7.			
50%= 50 20%= 20 Total Cover:	100		
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%= 20%= Total Cover:			

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

Dominance Test Worksheet
Number of dominant species that are OBL, FACW, or FAC: 2 (A)
Total number of dominant species across all strata: 5 (B)
Percent of dominant species that are OBL, FACW, or FAC: 40 (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A =

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

Hydrophytic Vegetation? NO

Sampling Point 8

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/4	85	10YR 3/2	10	C	M	GRAVELLY LOAM	
			10YR 5/2	5	D	M	"	"

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? YES

Remarks SOME HYDRIC SOIL INDICATORS PRESENT.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No ____ Depth (inches) ____ Wetland Hydrology? Yes ____ No X

Water Table Present? Yes ____ No ____ Depth (inches) ____

Saturation Present? Yes ____ No ____ Depth (inches) ____ *(includes capillary fringe)*

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

Remarks NO WETLAND HYDROLOGY INDICATORS.

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type GRASSLAND
Wetland Type EMERG. WETLAND

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/1/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 9
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.) _____ Local relief (concave, convex, none) CONCAVE Slope % 0-2
Subregion (LRR) LRR-C Soil Map Unit Name: Xerofluvents, EXTREMELY GRAVELLY
Are climatic/hydrologic conditions on the site typical for this time of year? YES *(If no, explain in remarks.)*
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N 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? Y Hydric soil? Y Wetland hydrology? Y Is sampled area a wetland? YES Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks ANOTHER "SEEP WETLAND" THAT HYDRATES FROM DAM LEAKAGE WHEN RES. IS FULL.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus fremontii	5	Y	FACW
2. Salix laevigata	3	Y	FACW
3.			

50%= 4 20%= 1.6 Total Cover: 8

Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status
1.			
2.			
3.			
4.			

50%= ____ 20%= ____ Total Cover: ____

Herb Stratum (use scientific names)	% Cover	Species?	Status
1. Typha latifolia	35	Y	OBL
2. Conyza canadensis	30	Y	FAC
3. Grindelia camporum	15	N	FACU
4. Lepidorum latifolia	15	N	FACW
5.			
6.			
7.			

50%= 47.5 20%= 19 Total Cover: 95

Woody/Vine Stratum (use scientific names)	% Cover	Species?	Status
1.			
2.			

50%= ____ 20%= ____ Total Cover: ____

% Bare Ground in Herb Stratum 5-10% **% Cover of Biotic Crust** —

Dominance Test Worksheet
Number of dominant species that are OBL, FACW, or FAC: 4 (A)
Total number of dominant species across all strata: 4 (B)
Percent of dominant species that are OBL, FACW, or FAC: 100 (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

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

Hydrophytic Vegetation? YES

Sampling Point 9

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10"	10YR 4/4	80	GLEY1 5/10Y	5	D	M	GRAVELLY	LOAM
			7.5YR 4/6	15	C	M	"	"

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? YES

Remarks HYDRIC SOILS

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1) (Nonriverine)
- X Sediment Deposits (B2) (Nonriverine)
- X 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)
- X Oxidized Rhizospheres (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Plowed Soils (C6)
- ____ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes X No ____

Water Table Present? Yes ____ No X Depth (inches) ~

Saturation Present? Yes ____ No X Depth (inches) ~ *(includes capillary fringe)*

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

Remarks WETLAND HYDROLOGY

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type: MEADOW
Wetland Type: SEASONAL WL

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/1/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 10
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.): FLAT Local relief (concave, convex, (none)): Slope %: 0-2%
Subregion (LRR): LRR-C Soil Map Unit Name: Xerofluvents, Extremely gravelly
Are climatic/hydrologic conditions on the site typical for this time of year? YES (If no, explain in remarks.)
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation YES, soil N, or hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? YES Hydric soil? YES Wetland hydrology? YES Is sampled area a wetland? YES Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks HIGH PERCENTAGE OF BARE GROUND = PROBLEMATIC VEG. COLONIZATION BY ANNUAL UPLAND SPECIES. VEG PARAMETER NOT MET, HOWEVER SOILS AND HYDROLOGY SUPPORT WETLAND DETERMINATION.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%= ____ 20%= ____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Atriplex lentiformis	2	YES	FAC
2.			
3.			
4.			
50%= 1 20%= .4 Total Cover:	2		
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Hordeum leporinum	50	YES	FAC
2. Grindelia camporum	10	N	UPL
3. Bromus hordeaceus	5	N	FACU
4. Avena fatua	2	N	UPL
5.			
6.			
7.			
50%= 33½ 20%= 13.4 Total Cover:	67		
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%= ____ 20%= ____ Total Cover:			

% Bare Ground in Herb Stratum 33 % Cover of Biotic Crust 60

Dominance Test Worksheet

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

Prevalence Index Worksheet

Total % Cover of:		Multiply by	
OBL Species	0	x 1 =	
FACW Species	0	x 2 =	
FAC Species	50	x 3 =	150
FACU Species	5	x 4 =	20
UPL Species	14	x 5 =	70
Column Totals	69 (A)		240 (B)

Prevalance Index = B/A = 240/69 = 3.4

Hydrophytic Vegetation Indicators

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

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

Hydrophytic Vegetation? YES

Sampling Point 10

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8"	10YR 4/4	90	10YR 3/1	5	D	M	GRAVELLY LOAM	
			7.5YR 5/8	5	C	M	"	"

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? YES

Remarks STRONG HYDRIC SOILS INDICATORS

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes X No ____

Water Table Present? Yes ____ No X Depth (inches) —

Saturation Present? Yes ____ No X Depth (inches) — *(includes capillary fringe)*

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

Remarks STRONG WETLAND HYDROLOGY INDICATORS.

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type MEADOW
Wetland Type UPLAND

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/1/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 11
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.) FLAT Local relief (concave, convex, none) NONE Slope % 0-2
Subregion (LRR) LRR-C Soil Map Unit Name: Xerofluvents, Extremely Gravelly
Are climatic/hydrologic conditions on the site typical for this time of year? YES *(If no, explain in remarks.)*
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? *(If needed, explain any answers in Remarks.)*

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? NO Hydric soil? NO Wetland hydrology? NO Is sampled area a wetland? NO Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks UPLAND PAIR TO DP 10.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%=____ 20%=____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%=____ 20%=____ Total Cover:			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Bromus hordeaceous	60	Y	FACU
2. B. diandrus	25	Y	UPL
3. Grindelia camporum	20	Y	UPL
4. Croton setigerus	5	N	UPL
5.			
6.			
7.			
50%=____ 20%=____ Total Cover: 100			
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%=____ 20%=____ Total Cover:			

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

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 0 (A)
Total number of dominant species across all strata: 3 (B)
Percent of dominant species that are OBL, FACW, or FAC: 0 (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

Hydrophytic Vegetation Indicators

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

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

Hydrophytic Vegetation? NO

Sampling Point 11

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/4	100	—	—	—	—	GRAVELLY LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? NO

Remarks UPLAND SOILS

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) ____ Wetland Hydrology? Yes ____ No X

Water Table Present? Yes ____ No X Depth (inches) ____

Saturation Present? Yes ____ No X Depth (inches) ____ *(includes capillary fringe)*

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

Remarks UPLAND HYDROLOGY

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type DAM SIDE + ROADSIDE
Wetland Type EMERGENT WL

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/1/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 12
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.) HILLSIDE Local relief (concave, convex, none) NONE Slope % 10%
Subregion (LRR) LRR-C Soil Map Unit Name: DAM
Are climatic/hydrologic conditions on the site typical for this time of year? YES (If no, explain in remarks.)
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? YES Hydric soil? YES Wetland hydrology? YES Is sampled area a wetland? YES Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks SMALL "SEEP" WETLAND ON DAM SLOPE.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%= ____ 20%= ____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Salix exigua	50	YES	OBL
2.			
3.			
4.			
50%= 25 20%= 10 Total Cover:	50		
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Typha latifolia	50	Y	OBL
2. Lepidium latifolium	20	Y	FACW
3.			
4.			
5.			
6.			
7.			
50%= 35 20%= 14 Total Cover:	70		
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%= ____ 20%= ____ Total Cover:			

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

Dominance Test Worksheet
Number of dominant species that are OBL, FACW, or FAC: 3 (A)
Total number of dominant species across all strata: 3 (B)
Percent of dominant species that are OBL, FACW, or FAC: 100 (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

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

Hydrophytic Vegetation? YES

Sampling Point 12

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8"	10YR 2/2	90	10YR 3/1	10	D	M	GRAVELLY	LOAM

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? YES

Remarks HYDRIC SOILS

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1) (Nonriverine)
- ____ Sediment Deposits (B2) (Nonriverine)
- X 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)
- X Oxidized Rhizospheres (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Plowed Soils (C6)
- ____ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes X No ____

Water Table Present? Yes ____ No X Depth (inches) ~

Saturation Present? Yes ____ No X Depth (inches) ~ *(includes capillary fringe)*

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

Remarks WETLAND HYDROLOGY. DRAINS TO MAIN "SEEP" DITCH.

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type DAM SIDE
Wetland Type UPLAND

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/1/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 13
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.) HILLSIDE Local relief (concave, convex, none) NONE Slope % 5%
Subregion (LRR) LRR-C Soil Map Unit Name: Apollo Clay Loam 15-30% SLOPES
Are climatic/hydrologic conditions on the site typical for this time of year? YES *(If no, explain in remarks.)*
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? *(If needed, explain any answers in Remarks.)*

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? NO Hydric soil? NO Wetland hydrology? YES Is sampled area a wetland? NO Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks UPLAND PAIR TO # 14.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%=____ 20%=____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%=____ 20%=____ Total Cover:			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Silybum marianum	40	Y	UPL
2. Brassica nigra	40	Y	UPL
3. Bromus madritensis	20	Y	UPL
4.			
5.			
6.			
7.			
50%=____ 20%=____ Total Cover:	100		
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%=____ 20%=____ Total Cover:			

% Bare Ground in Herb Stratum <1 **% Cover of Biotic Crust** —

Dominance Test Worksheet
Number of dominant species that are OBL, FACW, or FAC: 0 (A)
Total number of dominant species across all strata: 3 (B)
Percent of dominant species that are OBL, FACW, or FAC: 0 (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

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

Hydrophytic Vegetation? NO

Sampling Point B

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/3	75	10YR 4/4	25	RM	M	LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? NO

Remarks COLORS NOT DARK ENOUGH FOR F-C. ~~NO~~ INSUFFICIENT REDOX FEATURES.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes X No ____

Water Table Present? Yes ____ No X Depth (inches) ~

Saturation Present? Yes ____ No X Depth (inches) — *(includes capillary fringe)*

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

Remarks HYDROLOGY MET.

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type: DAM SIDE
Wetland Type: FRESH EMERGENT WTLD

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/1/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 14
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.): HILLSIDE Local relief (concave, convex, none): NONE Slope %: 5%
Subregion (LRR): LRR-C Soil Map Unit Name: Appolo Clay loam 15-30%
Are climatic/hydrologic conditions on the site typical for this time of year? YES (If no, explain in remarks.)
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? YES Hydric soil? YES Wetland hydrology? YES Is sampled area a wetland? YES Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks

DP DOCUMENTS TW WETLAND SIDE OF TRANSITIONAL HABITAT.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%=____ 20%=____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%=____ 20%=____ Total Cover:			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Lepidium latifolium	100	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
50%=____ 20%=____ Total Cover:			
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%=____ 20%=____ Total Cover:			

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

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

Prevalence Index Worksheet

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

Prevalence Index = B/A = ____

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

Hydrophytic Vegetation? YES

Sampling Point 14

Soils

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8"	10YR 3/2	95	10YR 3/3	5	D	M	LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? YES

Remarks SLOPE. WATER ASSUMED TO COME FROM SUBSURFACE. WEAK INDICATORS OK DUE TO LOCATION AT UPSLOPE (START) OF WETLAND.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes X No ____

Water Table Present? Yes ____ No X Depth (inches) —

Saturation Present? Yes ____ No X Depth (inches) — *(includes capillary fringe)*

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

WETLAND HYD.

Remarks

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type DAM
Wetland Type EMERGENT WTLD

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/1/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 15
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.) HILLSLOPE Local relief (concave, convex, none) CONCAVE Slope % 5%
Subregion (LRR) LRR-C Soil Map Unit Name: Apollo Clay Loam 15-30%
Are climatic/hydrologic conditions on the site typical for this time of year? YES *(If no, explain in remarks.)*
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? *(If needed, explain any answers in Remarks.)*

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? YES Hydric soil? YES Wetland hydrology? YES Is sampled area a wetland? YES Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks

SMALL SEEP WETLAND AT BASE OF DAM. WETLAND IS SURROUNDED BY ROAD + OTHER BANKS (OBVIOUS UPLANDS). NO PAIR POINT INSTALLED.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%=____ 20%=____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%=____ 20%=____ Total Cover:			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Typha latifolia	50	Y	OBL
2. Lepidium latifolium	30	Y	FACW
3. Conium maculatum	20	Y	OBL
4.			
5.			
6.			
7.			
50%=____ 20%=____ Total Cover: 100			
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%=____ 20%=____ Total Cover:			

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

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 3 (A)

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

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

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

Hydrophytic Vegetation Indicators

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

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

Hydrophytic Vegetation? YES

Sampling Point 15

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/2	95	7.5YR 4/6	5	C	M	GRAVELLY LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? YES

Remarks HYDRIC SOILS

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1) (Nonriverine)
- ____ Sediment Deposits (B2) (Nonriverine)
- X 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)
- X Oxidized Rhizospheres (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Plowed Soils (C6)
- ____ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) ____ Wetland Hydrology? Yes X No ____

Water Table Present? Yes ____ No X Depth (inches) ____

Saturation Present? Yes ____ No X Depth (inches) ____ *(includes capillary fringe)*

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

Remarks WETLAND HYDROLOGY

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type: DITCH
Wetland Type: VEGETATED DITCH

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/1/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 16
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.): DITCH Local relief (concave, convex, none): CONCAVE Slope %: 2%
Subregion (LRR): LRR-C Soil Map Unit Name: Apollo Clay Loam 15-30%
Are climatic/hydrologic conditions on the site typical for this time of year? YES (If no, explain in remarks.)
Are vegetation N, soil N, or hydrology P significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? YES Hydric soil? YES Wetland hydrology? YES Is sampled area a wetland? YES Other waters? YES

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank X Scour X Ordinary High Water Mark Mapped X
Feature Designation: Perennial ____ Intermittent X Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage X Navigable Water ____

Remarks DITCH TO COLLECT DAM SEEPAGE. ONLY FLOWS WHEN RES. IS FULL.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%= ____ 20%= ____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%= ____ 20%= ____ Total Cover:			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Polygonum monspeliensis	70%	Y	FACW
2. Juncus xiphioides	10	N	OBL
3. Typha latifolia	10	N	OBL
4.			
5.			
6.			
7.			
50%= 45 20%= 18 Total Cover: 90			
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%= ____ 20%= ____ Total Cover:			

% Bare Ground in Herb Stratum 10 % Cover of ~~Biotic~~ SALT Crust 10

Dominance Test Worksheet

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

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

Hydrophytic Vegetation Indicators

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

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

Hydrophytic Vegetation? YES

Sampling Point 16

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/2	80	7.5YR 4/4	20	C	M	COBBLY LOAM	VERY HARD, COULD ONLY DIG 3".

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: COBBLE Depth (Inches) 3" Hydric Soil? YES

Remarks VERY HARD, CRACKED SOIL.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) ~ Wetland Hydrology? Yes X No ____

Water Table Present? Yes ____ No X Depth (inches) ~

Saturation Present? Yes ____ No X Depth (inches) ~ *(includes capillary fringe)*

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

Remarks DITCH BOTTOM

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type GRASSLAND
Wetland Type UPLAND

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/2/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 17
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.) PLAIN Local relief (concave, convex, none) CONCAVE Slope % 0-2
Subregion (LRR) LRR-C Soil Map Unit Name: Dometvis Clay loam 2-8%
Are climatic/hydrologic conditions on the site typical for this time of year? YES *(If no, explain in remarks.)*
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N 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? N Hydric soil? N Wetland hydrology? N Is sampled area a wetland? NO Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks SMALL SHALLOW DEPRESSION - SUSPECT WETLAND. FAILED TO MEET WETLAND PARAMETERS.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%=____ 20%=____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%=____ 20%=____ Total Cover:			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Marrubium vulgare.	40	Y	FAC
2. Amsinkia menziesii	25	Y	UPL
3. Bromus hordeaceus	20	Y	FACU
4. B. diandrus	10	N	UPL
5. Brassica nigra	5	N	UPL
6.			
7.			
50%=____ 20%=____ Total Cover: 100			
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%=____ 20%=____ Total Cover:			

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

Dominance Test Worksheet

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

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

Percent of dominant species that are OBL, FACW, or FAC: 33 (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

Hydrophytic Vegetation Indicators

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

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

Hydrophytic Vegetation? NO

Sampling Point 17

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 4/3	100	—	—	—	—	CLAY LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? N

Remarks NON-HYDRIC SOILS

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes ____ No X

Water Table Present? Yes ____ No X Depth (inches) —

Saturation Present? Yes ____ No X Depth (inches) — *(includes capillary fringe)*

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

Remarks NO WETLAND HYDROLOGY INDICATORS

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type: GRASSLAND
Wetland Type: UPLAND

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 2/4/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 18
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.): TERRACE Local relief (concave, convex, none): CONCAVE Slope %: 0-2
Subregion (LRR): LRR-C Soil Map Unit Name: DAMCUS CLAY LOAM, 2-8%
Are climatic/hydrologic conditions on the site typical for this time of year? YES (If no, explain in remarks.)
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? NO Hydric soil? YES Wetland hydrology? YES Is sampled area a wetland? NO Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks

OBVIOUS DEPOSITION AREA FOR SEDIMENT FROM ROAD + DAM EROSION. FAILS TO MEET VEG PARAMETER AND IS NOT A WETLAND.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%= ____ 20%= ____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Atriplex lentiformis	45	YES	FAC
2.			
3.			
4.			
50%= 22.5 20%= 9 Total Cover:	45		
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Bromus diandrus	20	YES	UPL
2. B. hordeaceous	20	YES	FACU
3. Brassica nigra	10	N	UPL
4. Bromus madritensis	10	N	UPL
5. Centaurea solstitialis	5	N	UPL
6.			
7.			
50%= 32.5 20%= 13 Total Cover:	65		
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%= ____ 20%= ____ Total Cover:			

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

Dominance Test Worksheet

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

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

Percent of dominant species that are OBL, FACW, or FAC: 33 (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A =

Hydrophytic Vegetation Indicators

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

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

Hydrophytic Vegetation? NO

Sampling Point 18

Soils

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/4	100	—	—	—	—	SANDY LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- X Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? YES

Remarks STRIATED SOIL W/ LAYERS OF FLUVIAL DEPOSITION

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes X No ____

Water Table Present? Yes ____ No X Depth (inches) —

Saturation Present? Yes ____ No X Depth (inches) — *(includes capillary fringe)*

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

Remarks DP IN A DEPOSITION ZONE FROM EROSION FROM ROADWAY.

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type GRASSLAND
Wetland Type SEASONAL WTLD

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/2/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 19
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.) LINEAR DEPRESSION Local relief (concave, convex, none) CONCAVE Slope % 0-2
Subregion (LRR) LRR-C Soil Map Unit Name: Xerofluvents, EXTREMELY GRAVELLY
Are climatic/hydrologic conditions on the site typical for this time of year? YES *(If no, explain in remarks.)*
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? *(If needed, explain any answers in Remarks.)*

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? YES Hydric soil? YES Wetland hydrology? YES Is sampled area a wetland? YES Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks DEPRESSIONAL AREA IN MIDDLE OF THE MEADOW. FED BY SEEPS TO SOUTH. DRAINS VIA EROSIONAL CHANNELS TO NORTH. (CHANNELS ARE BRAIDED, NARROW (<1'), VEGETATED W/ UPL GRASS).

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%=____ 20%=____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%=____ 20%=____ Total Cover:			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Hordeum leporinum	85	Y	FAC
2. Grindelia camporum	10	N	FACW
3. Croton setigerus	5	N	UPL
4.			
5.			
6.			
7.			
50%=____ 20%=____ Total Cover: 100			
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%=____ 20%=____ Total Cover:			

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

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

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

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

Hydrophytic Vegetation? YES

Sampling Point 19

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 4/4	80	2.5Y 4/2	20	D	M	GRAVELLY CLAY LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? YES

Remarks REDOX FEATURE VERY PRONOUNCED.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes X No ____

Water Table Present? Yes ____ No X Depth (inches) ____

Saturation Present? Yes ____ No X Depth (inches) — *(includes capillary fringe)*

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

Remarks WETLAND HYDROLOGY PRESENT.

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type GRASSLAND
Wetland Type UPLAND

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/2/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 20
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.) LINEAR DEPRESSION Local relief (concave, convex, none) CONCAVE Slope % 0-2
Subregion (LRR) LRR-C Soil Map Unit Name: Xerofluvents, Ext. Gravelly
Are climatic/hydrologic conditions on the site typical for this time of year? YES (If no, explain in remarks.)
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? NO Hydric soil? YES Wetland hydrology? NO Is sampled area a wetland? NO Other waters? NO

USACE Jurisdiction

Adjacent to Waters ___ Tributary to Waters ___ Isolated (with interstate commerce) ___ Isolated (non jurisdictional) ___
Explain:

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ___ Scour ___ Ordinary High Water Mark Mapped ___
Feature Designation: Perennial ___ Intermittent ___ Ephemeral ___ Blue-line on USGS Quad ___
Natural Drainage ___ Artificial Drainage ___ Navigable Water ___

Remarks UPLAND PAIR TO #19. LATERAL MOVEMENT OF WATER IN SOILS LIKELY SUPPORTS THE OBSERVED REDOX FEATURES IN THIS UPLAND SIDE OF THE TRANSITIONAL HABITAT. VEG & HYDRO NOT MET.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%=___ 20%=___ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%=___ 20%=___ Total Cover:			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Hordeum leporinum	30	Y	FAC
2. Bromus diandrus	20	Y	UPL
3. B. Hordeaceus	20	Y	FACU
4. Avena fatua	20	Y	UPL
5. Brassica nigra	5	N	UPL
6. Croton setigerus	5	N	UPL
7.			
50%=___ 20%=___ Total Cover: 100			
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%=___ 20%=___ Total Cover:			

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

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 1 (A)
Total number of dominant species across all strata: 4 (B)
Percent of dominant species that are OBL, FACW, or FAC: 25% (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A = ___

Hydrophytic Vegetation Indicators

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

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

Hydrophytic Vegetation? NO

Sampling Point 20

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 4/4	80	2.5Y 4/2	20	D	M	GR. CLAY LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: ~ Depth (Inches) ~ Hydric Soil? YES

Remarks SAME SOILS AS DP 19 - HYDRIC

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) ~ Wetland Hydrology? Yes ____ No X

Water Table Present? Yes ____ No X Depth (inches) ~

Saturation Present? Yes ____ No X Depth (inches) ~ *(includes capillary fringe)*

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

Remarks NO WETLAND HYDROLOGY INDICATORS.

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type MEADOW
Wetland Type SEASONAL WTLD

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/2/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 21
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.) BOTTOM Local relief (concave, convex, none) CONCAVE Slope % 0-2
Subregion (LRR) LRR-C Soil Map Unit Name: Xerofluvents, Extremely Gravelly
Are climatic/hydrologic conditions on the site typical for this time of year? YES *(If no, explain in remarks.)*
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? *(If needed, explain any answers in Remarks.)*

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? YES Hydric soil? YES Wetland hydrology? YES Is sampled area a wetland? YES Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks

WETLAND SIDE OF BOUNDARY FROM UPLAND TO WTLD.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus fremontii	10	YES	FACW
2.			
3.			
50%= ____ 20%= ____ Total Cover:	10		
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%= ____ 20%= ____ Total Cover:			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Lepidium latifolium	50	Y	FACW
2. Typha latifolia	25	Y	OBL
3. Hordium leporinum	20	Y	FAC
4. Grindelia camporum	5	N	FACW
5.			
6.			
7.			
50%= ____ 20%= ____ Total Cover:	100		
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%= ____ 20%= ____ Total Cover:			

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

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 4 (A)
Total number of dominant species across all strata: 4 (B)
Percent of dominant species that are OBL, FACW, or FAC: 100 (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

Hydrophytic Vegetation Indicators

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

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

Hydrophytic Vegetation? YES

Sampling Point 21

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/3	85	7.5YR 4/6	15	C	M	GRAVELLY LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? X

Remarks HYDRIC SOILS

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1) (Nonriverine)
- ____ Sediment Deposits (B2) (Nonriverine)
- X 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)
- X Oxidized Rhizospheres (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Plowed Soils (C6)
- ____ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes X No ____

Water Table Present? Yes ____ No X Depth (inches) ^

Saturation Present? Yes ____ No X Depth (inches) ~ *(includes capillary fringe)*

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

Remarks WETLAND HYDROLOGY

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type GRASSLAND
Wetland Type UPLAND

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/2/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 22
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.) VALLEY BOTTOM Local relief (concave, convex, none) CONCAVE Slope % 0-2
Subregion (LRR) LRR-C Soil Map Unit Name: Xerofluvents, FLOOD CONTROL
Are climatic/hydrologic conditions on the site typical for this time of year? YES *(If no, explain in remarks.)*
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? *(If needed, explain any answers in Remarks.)*

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? NO Hydric soil? NO Wetland hydrology? NO Is sampled area a wetland? NO Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks UPLAND PAIR TO 21.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%=____ 20%=____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%=____ 20%=____ Total Cover:			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Bromus diandrus	80	Y	UPL
2. Avena fatua	10	N	UPL
3. Brassica nigra	7	N	UPL
4. Centaurea solstitialis	3	N	UPL
5.			
6.			
7.			
50%=____ 20%=____ Total Cover:	100		
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%=____ 20%=____ Total Cover:			

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

Dominance Test Worksheet

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

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

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

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

Hydrophytic Vegetation Indicators

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

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

Hydrophytic Vegetation? NO

Sampling Point 22

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/3	100	—	—	—	—	GRAVELLY LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? NO

Remarks UPLAND SOILS

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes ____ No X

Water Table Present? Yes ____ No X Depth (inches) —

Saturation Present? Yes ____ No X Depth (inches) — *(includes capillary fringe)*

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

Remarks

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type GRASSLAND
Wetland Type SEASONAL WTLD

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/2/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 23
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.) TERRACE Local relief (concave, convex, none) CONCAVE Slope % 2-5
Subregion (LRR) LRR-C Soil Map Unit Name: Xerofluvents, Extremely Gravelly
Are climatic/hydrologic conditions on the site typical for this time of year? YES *(If no, explain in remarks.)*
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? *(If needed, explain any answers in Remarks.)*

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? YES Hydric soil? YES Wetland hydrology? YES Is sampled area a wetland? YES Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks NO UPLAND PAIR TAKEN. WETLAND ENDS W/ HYDROPHYTES (H. leporinum). SEE DP 20 FOR UPL. DATA.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%= ____ 20%= ____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%= ____ 20%= ____ Total Cover:			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Hordeum leporinum	85	Y	FAC
2. Grindelia camporum	5	N	UPL
3. Lepidium latifolium	10	N	FACW
4.			
5.			
6.			
7.			
50%= ____ 20%= ____ Total Cover:	100		
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%= ____ 20%= ____ Total Cover:			

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

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

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

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

Hydrophytic Vegetation? YES

Sampling Point 23

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 6/2	65	10YR 5/8	35	C	M	GRAVELLY CLAY LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? YES

Remarks HYDRIC SOILS

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1) (Nonriverine)
- ____ Sediment Deposits (B2) (Nonriverine)
- X 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)
- X Oxidized Rhizospheres (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Plowed Soils (C6)
- ____ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes X No ____

Water Table Present? Yes ____ No X Depth (inches) —

Saturation Present? Yes ____ No X Depth (inches) — *(includes capillary fringe)*

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

Remarks WETLAND HYDROLOGY

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type: GRASSLAND
Wetland Type: SEASONAL WETLAND

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/2/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 24
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.): TERRACE Local relief (concave, convex, none): CONCAVE Slope %: 2-5%
Subregion (LRR): LRR-C Soil Map Unit Name: Xerofluvents, Extremely Gravelly
Are climatic/hydrologic conditions on the site typical for this time of year? YES (If no, explain in remarks.)
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N 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? ____ Hydric soil? YES Wetland hydrology? YES Is sampled area a wetland? YES Other waters? NO

USACE Jurisdiction

Adjacent to Waters X Tributary to Waters X Isolated (with interstate commerce) ____ Isolated (non jurisdictional) ____
Explain: VIA DITCHES

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks SHALLOW DEPRESSION W/ SANDY SOILS. BORDERLINE WETLAND.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%= ____ 20%= ____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%= ____ 20%= ____ Total Cover:			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Vulpia bromoides	40	Y	FACW
2. Heliotropium curassavicom	20	Y	OBL
3. Bromus diandrus	20	Y	UPL
4. B. madritensis	10	N	UPL
5. Grindelia camporum	10	N	FACW
6.			
7.			
50%= ____ 20%= ____ Total Cover: 100			
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%= ____ 20%= ____ Total Cover:			

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

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 2 (A)
Total number of dominant species across all strata: 3 (B)
Percent of dominant species that are OBL, FACW, or FAC: 66 (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

Hydrophytic Vegetation Indicators

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

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

Hydrophytic Vegetation? YES

Sampling Point 24

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	2.5Y 5/3	75	10YR 3/3	20	D	M	SANDY LOAM	
			7.5YR 4/4	5	C	M	"	"

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: ~ Depth (Inches) ~ Hydric Soil? YES

Remarks HYDRIC SOIL.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) ~ Wetland Hydrology? Yes X No ____

Water Table Present? Yes ____ No X Depth (inches) ~

Saturation Present? Yes ____ No X Depth (inches) ~ *(includes capillary fringe)*

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

Remarks WETLAND HYDROLOGY WEAK, BUT PRESENT.

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type GRASSLAND
Wetland Type UPLAND

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/2/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 25
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.) TERRACE Local relief (concave, convex, none) CONVEX Slope % 0-5
Subregion (LRR) LRR-C Soil Map Unit Name: Xerofluvents, Extremely Gravelly
Are climatic/hydrologic conditions on the site typical for this time of year? YES *(If no, explain in remarks.)*
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? *(If needed, explain any answers in Remarks.)*

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? NO Hydric soil? NO Wetland hydrology? NO Is sampled area a wetland? NO Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks

UPLAND PAIR TO DP24.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%=____ 20%=____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%=____ 20%=____ Total Cover:			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Bromus diandrus	30	Y	UPL
2. Bromus hordeaceous	20	Y	FACU
3. Centaurea sp	20	Y	FACU
4. Brassica nigra	20	Y	UPL
5. Avena fatua	5	N	UPL
6. Bromus madritensis	5	N	UPL
7.			
50%=____ 20%=____ Total Cover: 100			
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%=____ 20%=____ Total Cover:			

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

Dominance Test Worksheet

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

Total number of dominant species across all strata: 4 (B)

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

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

Hydrophytic Vegetation Indicators

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

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

Hydrophytic Vegetation? NO

Sampling Point 25

Soils

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/4	100	—	—	—	—	SANDY LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? NO

Remarks NON-HYDRIC SOILS

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes ____ No X

Water Table Present? Yes ____ No X Depth (inches) —

Saturation Present? Yes ____ No X Depth (inches) — *(includes capillary fringe)*

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

Remarks UPLAND HYDROLOGY

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type GRASSLAND
Wetland Type UPLAND

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/3/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 26
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.) SWALE Local relief (concave, convex, none) CONCAVE Slope % 2-5
Subregion (LRR) LRR-C Soil Map Unit Name: Pamluis Clay Loam 2-8%
Are climatic/hydrologic conditions on the site typical for this time of year? YES *(If no, explain in remarks.)*
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? *(If needed, explain any answers in Remarks.)*

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? NO Hydric soil? NO Wetland hydrology? NO Is sampled area a wetland? NO Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks SMALL UPLAND SWALE - NON-WETLAND.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%=____ 20%=____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%=____ 20%=____ Total Cover:			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Bromus hordeaceous	45	YES	FACU
2. B. diandrus	45	Y	UPL
3. Brassica negra	10	N	UPL
4.			
5.			
6.			
7.			
50%=____ 20%=____ Total Cover:	100		
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%=____ 20%=____ Total Cover:			

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

Dominance Test Worksheet
Number of dominant species that are OBL, FACW, or FAC: 0 (A)
Total number of dominant species across all strata: 2 (B)
Percent of dominant species that are OBL, FACW, or FAC: 0 (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

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

Hydrophytic Vegetation? NO

Sampling Point 26

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/3	100	—	—	—	—	CLAY LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? NO

Remarks NON - HYDRIC SOILS

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) ~ Wetland Hydrology? Yes ____ No X

Water Table Present? Yes ____ No X Depth (inches) ~

Saturation Present? Yes ____ No X Depth (inches) ~ *(includes capillary fringe)*

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

Remarks NO WETLAND HYDROLOGY INDICATORS.

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type GRASSLAND
Wetland Type UPLAND

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/3/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 27
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.) SWALE Local relief (concave, convex, none) CONCAVE Slope % 2-5
Subregion (LRR) LRR-C Soil Map Unit Name: Arbuckle Loam 2-9%
Are climatic/hydrologic conditions on the site typical for this time of year? YES (If no, explain in remarks.)
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? NO Hydric soil? YES Wetland hydrology? YES Is sampled area a wetland? NO Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

NO DEFINED BED + BANK OR SCOUR + DEPOSITION OBSERVED.

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks

SUSPECT SWALE = NON-WETLAND. AND NOT AN "OTHER WATERS".

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%= ____ 20%= ____ Total Cover: ____			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%= ____ 20%= ____ Total Cover: ____			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Avena fatua	50	Y	UPL
2. Bromus hordeaceus	20	Y	FACU
3. Bromus diandrus	15	N	UPL
4. Brassica nigra	10	N	UPL
5. Rumex crispus	5	N	FACW
6.			
7.			
50%= ____ 20%= ____ Total Cover: 100			
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%= ____ 20%= ____ Total Cover: ____			

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

Dominance Test Worksheet
Number of dominant species that are OBL, FACW, or FAC: 0 (A)
Total number of dominant species across all strata: 2 (B)
Percent of dominant species that are OBL, FACW, or FAC: 0 (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

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

Hydrophytic Vegetation? NO

Sampling Point 27

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/4	100	—	—	—	—	LOAM	
4-12	10YR 4/4	60	10YR 3/3	40	SEE NOTES		LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- X Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? YES

Remarks NO REDOX FEATURES APPARENT, HOWEVER SOIL PROFILE SHOWS SEDIMENT LAYERS SUGGESTING FLUVIAL DEPOSITION. CONSIDERED HYDRIC.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes X No ____

Water Table Present? Yes ____ No X Depth (inches) —

Saturation Present? Yes ____ No X Depth (inches) ____ *(includes capillary fringe)*

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

NONE

Remarks A FEW SOIL CRACKS PRESENT. = SUFFICIENT WETLAND HYDRO INDICATORS.

NSR North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type GRASSLAND
Wetland Type UPLAND

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/3/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 28
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.) MINOR SWALE Local relief (concave, convex, none) CONCAVE Slope % 0-2
Subregion (LRR) LRR-C Soil Map Unit Name: Dam/vis Clay Loam 2-8%
Are climatic/hydrologic conditions on the site typical for this time of year? YES (If no, explain in remarks.)
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? NO Hydric soil? NO Wetland hydrology? NO Is sampled area a wetland? NO Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks

UPLAND SWALE.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%= ____ 20%= ____ Total Cover: ____			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%= ____ 20%= ____ Total Cover: ____			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Bromus hordeaceus	50	YES	FACU
2. Avena fatua	30	Y	UPL
3. Hordeum leporinum	15	N	FAC
4. Amsinkia menziesii	5	N	UPL
5.			
6.			
7.			
50%= ____ 20%= ____ Total Cover: ____			
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%= ____ 20%= ____ Total Cover: ____			

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

Dominance Test Worksheet

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

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

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

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

Hydrophytic Vegetation Indicators

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

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

Hydrophytic Vegetation? NO

Sampling Point 28

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/3	100	—	—	—	—	GRAVELLY LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]

- _____ 1 cm Muck (A9) (LRR C)
- _____ 2 cm Muck (A10) (LRR B)
- _____ Reduced Vetric (F18)
- _____ Red Parent Materials (TF2)
- _____ Vegetated Sand/Gravel Bars
- _____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? NO

Remarks UPLAND SOILS

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes ____ No X

Water Table Present? Yes ____ No X Depth (inches) —

Saturation Present? Yes ____ No X Depth (inches) — *(includes capillary fringe)*

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

Remarks NO WETLAND HYDROLOGY INDICATORS.

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type GRASSLAND
Wetland Type DITCH

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/3/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 29
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.) DITCH Local relief (concave, convex, none) CONCAVE Slope % 0-2
Subregion (LRR) LRR-C Soil Map Unit Name: Xerofluvents, Extremely gravelly
Are climatic/hydrologic conditions on the site typical for this time of year? YES (If no, explain in remarks.)
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? NO Hydric soil? YES Wetland hydrology? YES Is sampled area a wetland? NO Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ✓ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks

DITCH HABITAT. SOILS + HYDROLOGY INDICATORS PRESENT, BUT PRESUME LACK OF VEG SUGGEST INUNDATION OR SATURATION IS FOR INSUFFICIENT DURATION TO SUPPORT DOMINANT HYDROPHYTIC VEGS.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%=____ 20%=____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%=____ 20%=____ Total Cover:			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Hordeum leporinum	70	Y	FAC
2. Bromus hordeaceous	20	Y	FACU
3. Bromus madritensis	10	N	UPL
4.			
5.			
6.			
7.			
50%=____ 20%=____ Total Cover:	100		
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%=____ 20%=____ Total Cover:			

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

Dominance Test Worksheet
Number of dominant species that are OBL, FACW, or FAC: 1 (A)
Total number of dominant species across all strata: 2 (B)
Percent of dominant species that are OBL, FACW, or FAC: 50 (AB)

Prevalence Index Worksheet

Total % Cover of:		Multiply by	
OBL Species	✓	x 1 =	
FACW Species	✓	x 2 =	
FAC Species	70	x 3 =	210
FACU Species	20	x 4 =	80
UPL Species	10	x 5 =	50
Column Totals	100 (A)		340 (B)

Prevalance Index = B/A = 3.4

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

Hydrophytic Vegetation? NO

Sampling Point 29

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	2.5Y 5/3	70	2.5Y 3/2	25	D	RC	SANDY LOAM	
			7.5YR 4/6	5	C	M	"	"

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? YES

Remarks HYDRIC SOILS

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1) (Nonriverine)
- ____ Sediment Deposits (B2) (Nonriverine)
- ____ 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)
- X Oxidized Rhizospheres (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Plowed Soils (C6)
- ____ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes X No ____

Water Table Present? Yes ____ No X Depth (inches) —

Saturation Present? Yes ____ No X Depth (inches) — *(includes capillary fringe)*

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

Remarks WETLAND HYDROLOGY

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type GRASSLAND
Wetland Type UPLAND

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/3/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 30
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.) PLAIN Local relief (concave, convex, none) MINOR DEPRESSION Slope % 0-2%
Subregion (LRR) LRR-C Soil Map Unit Name: Xerofluvents, Extremely Gravelly
Are climatic/hydrologic conditions on the site typical for this time of year? YES *(If no, explain in remarks.)*
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? *(If needed, explain any answers in Remarks.)*

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? NO Hydric soil? YES Wetland hydrology? YES Is sampled area a wetland? NO Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks SEE NOTE ON FORM 09. SATURATION MUST BE FOR INSUFFICIENT DURATION, OR SUFFICIENTLY INFREQUENT TO SUPPORT DOMINANT HYDROPHYTIC VEG. NON-WETLAND.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%=____ 20%=____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%=____ 20%=____ Total Cover:			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Hordeum leporinum	50	Y	FAC
2. Bromus hordeaceous	20	Y	FACU
3. Avena fatua	20	Y	UPL
4. Erodium botrys	10	N	UPL
5.			
6.			
7.			
50%=____ 20%=____ Total Cover:			
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%=____ 20%=____ Total Cover:			

% Bare Ground in Herb Stratum 0 **% Cover of Biotic Crust** 2

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 1 (A)
Total number of dominant species across all strata: 3 (B)
Percent of dominant species that are OBL, FACW, or FAC: 33% (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

Hydrophytic Vegetation Indicators

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

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

Hydrophytic Vegetation? NO

Sampling Point 30

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5Y 6/2	70	10YR 5/6	25	C	M	GLAY LOAM	
			GLEY1 6/10Y	5	D	M		

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? X

Remarks CLEAR REDOX FEATURES PRESENT = HYDRIC SOILS.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1) (Nonriverine)
- ____ Sediment Deposits (B2) (Nonriverine)
- ____ 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)
- X Oxidized Rhizospheres (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Plowed Soils (C6)
- ____ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes X No ____

Water Table Present? Yes ____ No X Depth (inches) —

Saturation Present? Yes ____ No X Depth (inches) — *(includes capillary fringe)*

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

Remarks WEAK WETLAND HYDROLOGY INDICATORS.

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type GRASSLAND
Wetland Type SEASONAL WTLD

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/3/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 31
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.) MINOR DEPRESSION Local relief (concave, convex, none) CONCAVE Slope % 0-2
Subregion (LRR) LRR-C Soil Map Unit Name: Xerofluvents, Ext. Gravelly
Are climatic/hydrologic conditions on the site typical for this time of year? YES *(If no, explain in remarks.)*
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? *(If needed, explain any answers in Remarks.)*

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? YES Hydric soil? YES Wetland hydrology? YES Is sampled area a wetland? YES Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks SMALL POLYGON WHERE ALL THE UPLAND GRASSES FELL OUT & THE HORDEUM IS CLEARLY DOMINANT. WETLAND. USE DP 30 AS UPLAND PAIR.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%=____ 20%=____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%=____ 20%=____ Total Cover:			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Hordeum leporinum	100	YES	FAC
2.			
3.			
4.			
5.			
6.			
7.			
50%=____ 20%=____ Total Cover:			
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%=____ 20%=____ Total Cover:			

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

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

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

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

Hydrophytic Vegetation? YES

Sampling Point 31

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5Y 4/2	90	10YR 5/6	50	C	M	GRAVELLY LOAM	(EXTREMELY HARD)

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: NO Depth (Inches) — Hydric Soil? YES

Remarks HYDRIC SOILS

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1) (Nonriverine)
- ____ Sediment Deposits (B2) (Nonriverine)
- ____ 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)
- X Oxidized Rhizospheres (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Plowed Soils (C6)
- ____ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes X No ____

Water Table Present? Yes ____ No X Depth (inches) —

Saturation Present? Yes ____ No X Depth (inches) — *(includes capillary fringe)*

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

Remarks WETLAND HYDROLOGY

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type: GRASSLAND
Wetland Type: SEASONAL WTLD

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/3/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 32
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.): MINOR DEPRESSION Local relief (concave, convex, none): CONVEX Slope %: 2%
Subregion (LRR): LRR-C Soil Map Unit Name: Xerofluvents Very Gravelly
Are climatic/hydrologic conditions on the site typical for this time of year? YES (If no, explain in remarks.)
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? YES Hydric soil? YES Wetland hydrology? YES Is sampled area a wetland? YES Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks

SMALL DEPRESSION. MEETS THE 3 WETLAND PARAMETERS.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%= ____ 20%= ____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%= ____ 20%= ____ Total Cover:			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Lepidium latifolium	35	Y	FACW
2. Bromus hordeaceus	25	Y	FACU
3. Heliotropion curassavicum	25	Y	OBL
4. Rumex crispus	10	N	FACW
5. Hordeum leporinum	5	N	FAC
6.			
7.			
50%= ____ 20%= ____ Total Cover:			
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%= ____ 20%= ____ Total Cover:			

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

Dominance Test Worksheet
Number of dominant species that are OBL, FACW, or FAC: 2 (A)
Total number of dominant species across all strata: 3 (B)
Percent of dominant species that are OBL, FACW, or FAC: 66 (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

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

Hydrophytic Vegetation? YES

Sampling Point 32

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/3	90	7.5YR 5/6	10	C	M	GRAVELLY LOAM	
4-10	10YR 3/2	80	10YR 4/4	20	D	M	"	"

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? YES

Remarks HYDRIC SOILS.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1) (Nonriverine)
- ____ Sediment Deposits (B2) (Nonriverine)
- X 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)
- X Oxidized Rhizospheres (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Plowed Soils (C6)
- ____ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes X No ____

Water Table Present? Yes ____ No X Depth (inches) ~

Saturation Present? Yes ____ No X Depth (inches) ~ *(includes capillary fringe)*

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

Remarks WETLAND HYDROLOGY

NSR North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type GRASSLAND
Wetland Type UPLAND

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/3/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 33
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.) PLAIN Local relief (concave, convex, none) NONE Slope % 0-2
Subregion (LRR) LRR-C Soil Map Unit Name: Xerofluvents, Ext. Gravelly
Are climatic/hydrologic conditions on the site typical for this time of year? YES *(If no, explain in remarks.)*
Are vegetation N, soil N, or hydrology NO significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? *(If needed, explain any answers in Remarks.)*

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? NO Hydric soil? NO Wetland hydrology? NO Is sampled area a wetland? NO Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks

UPLAND PAIR TO DP 32.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%= ____ 20%= ____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%= ____ 20%= ____ Total Cover:			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Bromus hordeaceous	60	Y	FACU
2. Grindelia camporum	25	Y	FACW
3. Bromus diandrus	10	N	UPL
4. Lepidium latifolium	5	N	FACW
5.			
6.			
7.			
50%= ____ 20%= ____ Total Cover:			
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%= ____ 20%= ____ Total Cover:			

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

Dominance Test Worksheet

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

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

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

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

Hydrophytic Vegetation Indicators

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

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

Hydrophytic Vegetation? NO

Sampling Point 33

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 5/4	100	—	—	—	—	GRAVELLY LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? NO

Remarks NON HYDRIC SOILS

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes ____ No X

Water Table Present? Yes ____ No X Depth (inches) —

Saturation Present? Yes ____ No X Depth (inches) — *(includes capillary fringe)*

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

Remarks UPLAND HYDROLOGY.

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type GRASSLAND
Wetland Type UPLAND

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/14/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 34
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.) PLAIN Local relief (concave, convex, none) CONCAVE Slope % 2-5%
Subregion (LRR) LRR-C Soil Map Unit Name: Xerofluvents, extremely gravelly
Are climatic/hydrologic conditions on the site typical for this time of year? YES (If no, explain in remarks.)
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? NO Hydric soil? NO Wetland hydrology? NO Is sampled area a wetland? NO Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks UPLAND SWALE - MAY CONVEY WATER DURING STORM EVENTS, BUT CURRENTLY THERE ARE NO WETLAND PARAMETERS MET OR INDICATORS OF FLOW.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%= ____ 20%= ____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Baccharis pilularis	4	YES	UPL
2.			
3.			
4.			
50%= 2 20%= 0.8% Total Cover:	4		
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Bromus hordeaceous	25	Y	FACU
2. Hordeum leporinum	25	Y	FAC
3. Bromus madritensis	25	Y	UPL
4. Bromus diandrus	10	N	UPL
5. Erodium botrys	5	N	UPL
6.			
7.			
50%= 45 20%= 18 Total Cover:	90		
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%= ____ 20%= ____ Total Cover:			

% Bare Ground in Herb Stratum 10 **% Cover of Biotic Crust** ____

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 1 (A)
Total number of dominant species across all strata: 4 (B)
Percent of dominant species that are OBL, FACW, or FAC: 25 (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

Hydrophytic Vegetation Indicators

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

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

Hydrophytic Vegetation? NO

Sampling Point 34

Soils

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 4/3	100	—	—	—	—	GRAVELLY LOAM	
3-8	10YR 5/4	100	—	—	—	—	"	"

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? NO

Remarks NON-HYDRIC SOILS

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes ____ No X

Water Table Present? Yes ____ No X Depth (inches) —

Saturation Present? Yes ____ No X Depth (inches) — *(includes capillary fringe)*

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

Remarks UPLAND HYDROLOGY

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type GRASSLAND
Wetland Type SEASONAL WTLD

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/14/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 35
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.) _____ Local relief (concave, convex, none) CONCAVE Slope % 2-4%
Subregion (LRR) LRR-C Soil Map Unit Name: Xerofluvents, Extremely Gravelly
Are climatic/hydrologic conditions on the site typical for this time of year? YES *(If no, explain in remarks.)*
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? *(If needed, explain any answers in Remarks.)*

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)
Hydrophytic vegetation? YES Hydric soil? YES Wetland hydrology? YES Is sampled area a wetland? YES Other waters? NO

USACE Jurisdiction
Adjacent to Waters X Tributary to Waters X Isolated (with interstate commerce) ____ Isolated (non jurisdictional) ____
Explain:

Evaluation of features designated "Other Waters of the United States"
Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks
DEPRESSIONAL LANDFORM MEETS THE 3-PARAMETER WETLAND TEST.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%= ____ 20%= ____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Atriplex lentiformis	5	Y	FAC
2.			
3.			
4.			
50%= 2.5 20%= 1 Total Cover:	5		
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Hordeum leporinum	40	YES	FAC
2. Bromus hordeaceus	20	Y	FACU
3. Heliotropium curassavicum	20	Y	OBL
4. Grindelia camporum	10	NO	FACW
5. Lepidium latifolium	5	N	FACW
6. Erodium botrys	5	N	UPL
7.			
50%= 50 20%= 20 Total Cover:	100		
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%= ____ 20%= ____ Total Cover:			

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 15

Dominance Test Worksheet
Number of dominant species that are OBL, FACW, or FAC: 3 (A)
Total number of dominant species across all strata: 4 (B)
Percent of dominant species that are OBL, FACW, or FAC: 75 (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

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

Hydrophytic Vegetation? YES

Sampling Point 35

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 4/3	95	7.5YR 4/6	5	C	M	GRAVELLY LOAM	
3-8	10YR 5/4	97	7.5YR 5/6	3	C	M	"	"

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? YES

Remarks WEAK, BUT SUFFICIENT INDICATORS OF HYDRIC SOILS.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) ~ Wetland Hydrology? Yes X No ____

Water Table Present? Yes ____ No X Depth (inches) ~

Saturation Present? Yes ____ No X Depth (inches) 0 (includes capillary fringe)

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

Remarks SUFFICIENT INDICATORS OF WETLAND HYDROLOGY.

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type: Grassland
Wetland Type: UPLAND

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/14/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 36
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.): SWALE Local relief (concave, convex, none): CONCAVE Slope %: 3-5%
Subregion (LRR): LRR-C Soil Map Unit Name: Xerofluvents, Extremely Gravelly
Are climatic/hydrologic conditions on the site typical for this time of year? YES (If no, explain in remarks.)
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? NO Hydric soil? YES Wetland hydrology? NO Is sampled area a wetland? NO Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks

DOWNSTREAM END OF WET SWALE. WATER MOST EITHER SOAK IN OR SPREAD OUT BECAUSE HYDROPHYTIC VEG. DISAPPEARS.

Vegetation

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

Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status
1. Atriplex truncatiformis	1	YES	FAC
2.			
3.			
4.			
50%= .5 20%= .2	Total Cover: 1		

Herb Stratum (use scientific names)	% Cover	Species?	Status
1. Bromus diandrus	20	Y	UPL
2. B. hordeaceus	20	Y	FACU
3. B. madritensis	15	N	UPL
4. Hordeum leporinum	15	N	FAC
5. Brassica nigra	15	N	UPL
6. Croton setigerus	5	N	UPL
7. Erodium botrys	10	N	UPL
50%= ____ 20%= ____	Total Cover:		

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

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

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 1 (A)
Total number of dominant species across all strata: 3 (B)
Percent of dominant species that are OBL, FACW, or FAC: 33 (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A =

Hydrophytic Vegetation Indicators

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

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

Hydrophytic Vegetation? NO

Sampling Point 36

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 4/4	85	7.5YR 5/6	10	D	PL	GRAVELLY LOAM	
			7.5YR 6/1	5	D	PL		

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? YES

Remarks

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No ____ Depth (inches) ____ Wetland Hydrology? Yes ____ No X

Water Table Present? Yes ____ No ____ Depth (inches) ____

Saturation Present? Yes ____ No ____ Depth (inches) ____ *(includes capillary fringe)*

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

— DOWNSTREAM END OF SWALE - NO WETLAND HYDRO INDICATORS

Remarks

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type GRASSLAND
Wetland Type SEASONAL WTLD

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/14/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 37
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.) SWALE Local relief (concave, convex, none) CONCAVE Slope % 2-4
Subregion (LRR) LRR-C Soil Map Unit Name:
Are climatic/hydrologic conditions on the site typical for this time of year? YES (If no, explain in remarks.)
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? YES Hydric soil? YES Wetland hydrology? YES Is sampled area a wetland? YES Other waters? NO

USACE Jurisdiction

Adjacent to Waters ____ Tributary to Waters X Isolated (with interstate commerce) ____ Isolated (non jurisdictional) ____
Explain: CONNECTED VIA UPLAND SWALES AND DITCHES

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks

SMALL SWALE WITH WETLAND PARAMETERS. DOES NOT APPEAR TO CONTINUE DOWNSLOPE TO ANY OTHER FEATURE.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%= ____ 20%= ____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Atriplex lentiformis	5	YES	FAC
2. Baccharis pilularis	5	YES	UPL
3.			
4.			
50%= 5 20%= 2 Total Cover: 10			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Vulpia bromoides	25	YES	FACW
2. Hordeum leporinum	25	YES	FAC
3. Bromus diandrus	25	YES	UPL
4. B. hordeaceus	15	N	FACU
5. Brassica nigra	10	N	UPL
6.			
7.			
50%= ____ 20%= ____ Total Cover: 100			
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%= ____ 20%= ____ Total Cover: ____			

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

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 3 (A)
Total number of dominant species across all strata: 5 (B)
Percent of dominant species that are OBL, FACW, or FAC: 60 (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A =

Hydrophytic Vegetation Indicators

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

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

Hydrophytic Vegetation? YES

Sampling Point 37

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 4/4	85	7.5YR 5/6	10	D	PL	GRAVELLY	LOAM
			7.5YR 4/1	5	D	PL	"	"

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? YES

Remarks HYDRIC SOILS

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes X No ____

Water Table Present? Yes ____ No X Depth (inches) —

Saturation Present? Yes ____ No X Depth (inches) — *(includes capillary fringe)*

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

Remarks WETLAND HYDROLOGY INDICATORS.

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type GRASSLAND
Wetland Type UPLAND

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/14/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 38
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.) SWALE Local relief (concave, convex, none) CONCAVE Slope % 0-3
Subregion (LRR) LRR-C Soil Map Unit Name: Xerofluvents, Ext. Gravelly
Are climatic/hydrologic conditions on the site typical for this time of year? YES (If no, explain in remarks.)
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? NO Hydric soil? YES Wetland hydrology? NO Is sampled area a wetland? NO Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks

DOWNSLOPE END OF A DEPRESSIONAL AREA. DP DOCUMENTS NON-WETLAND CONDITIONS.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%= ____ 20%= ____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Atriplex lentiformis	5	YES	FAC
2.			
3.			
4.			
50%= 2.5 20%= 1 Total Cover:	5		
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Vulpia bromoides	25	Y	FACU
2. Bromus hordeaceus	20	Y	FACU
3. B. madritensis	20	Y	UPL
4. Erodium botrys	20	Y	UPL
5. Brassica negra	15	N	UPL
6.			
7.			
50%= ____ 20%= ____ Total Cover:			
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%= ____ 20%= ____ Total Cover:			

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

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 2 (A)

Total number of dominant species across all strata: 5 (B)

Percent of dominant species that are OBL, FACW, or FAC: 40 (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

Hydrophytic Vegetation Indicators

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

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

Hydrophytic Vegetation? NO

Sampling Point 38

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/4	95	10YR 3/2	5	RM	M	SANDY LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? NO

Remarks HYDRIC SOILS

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes ____ No X

Water Table Present? Yes ____ No X Depth (inches) —

Saturation Present? Yes ____ No X Depth (inches) — *(includes capillary fringe)*

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

Remarks

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type: GRASSLAND
Wetland Type: SEASONAL WTLD

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/14/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 39
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.): SWALE Local relief (concave, convex, none): CONCAVE Slope %: 0-2
Subregion (LRR): LRR-C Soil Map Unit Name: Xerofluvents, Ext. Gerville
Are climatic/hydrologic conditions on the site typical for this time of year? YES (If no, explain in remarks.)
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? YES Hydric soil? YES Wetland hydrology? YES Is sampled area a wetland? YES Other waters? NO

USACE Jurisdiction

Adjacent to Waters ____ Tributary to Waters X Isolated (with interstate commerce) ____ Isolated (non jurisdictional) ____
Explain: CONNECTED VIA UPLAND SWALES.

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks

SMALL DEPRESSIONAL WETLAND.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%= ____ 20%= ____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%= ____ 20%= ____ Total Cover:			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Vulpia bromoides	40	Y	FACW
2. Heliotropium curassavicum	20	Y	OBL
3. Bromus hordeaceus	10	N	FACU
4. Erodium botrys	15	N	UPL
5. Lepidium latifolium	5	N	FACW
6. Brassica nigra	5	N	UPL
7.			
50%= 47.5 20%= 19 Total Cover:	95		
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%= ____ 20%= ____ Total Cover:			

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust 20

Dominance Test Worksheet

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

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

Hydrophytic Vegetation Indicators

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

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

Hydrophytic Vegetation? YES

Sampling Point 39

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/6	85	10YR 4/2	10	D	M	SANDY LOAM	
			7.5YR 4/6	5	C	RC	"	"

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? YES

Remarks HYDRIC SOILS.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) ~ Wetland Hydrology? Yes X No ____

Water Table Present? Yes ____ No X Depth (inches) ~

Saturation Present? Yes ____ No X Depth (inches) ~ *(includes capillary fringe)*

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

Remarks WETLAND HYDROLOGY

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type: GRASSLAND
Wetland Type: UPLAND

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/14/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 40
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.): SWALE Local relief (concave, convex, none): CONCAVE Slope %: ~5
Subregion (LRR): LRR-C Soil Map Unit Name: BALLVAR LOAM, 2-8% SLOPES
Are climatic/hydrologic conditions on the site typical for this time of year? YES (If no, explain in remarks.)
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? NO Hydric soil? NO Wetland hydrology? NO Is sampled area a wetland? NO Other waters? NO

USACE Jurisdiction

Adjacent to Waters ___ Tributary to Waters ___ Isolated (with interstate commerce) ___ Isolated (non jurisdictional) ___
Explain:

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ___ Scour ___ Ordinary High Water Mark Mapped ___
Feature Designation: Perennial ___ Intermittent ___ Ephemeral ___ Blue-line on USGS Quad ___
Natural Drainage ___ Artificial Drainage ___ Navigable Water ___

Remarks

DOWNSTREAM END OF SMALL WETLAND. (UPLAND PAIR TO DP 41.)

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%=___ 20%=___ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%=___ 20%=___ Total Cover:			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Marrubium vulgare	30	Y	FAC
2. Bromus diandrus	40	Y	UPL
3. Bromus madritensis	20	Y	UPL
4. Brassica nigra	10	N	UPL
5. Silybum marianum	10	N	UPL
6.			
7.			
50%=___ 20%=___ Total Cover:			
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%=___ 20%=___ Total Cover:			

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

Dominance Test Worksheet
Number of dominant species that are OBL, FACW, or FAC: 1 (A)
Total number of dominant species across all strata: 3 (B)
Percent of dominant species that are OBL, FACW, or FAC: 33 (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A = ___

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

Hydrophytic Vegetation? NO

Sampling Point 40

Soils

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/2	100	—	—	—	—	LOAM	—

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? NO

Remarks NON-HYDRIC SOILS

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes ____ No X

Water Table Present? Yes ____ No X Depth (inches) —

Saturation Present? Yes ____ No X Depth (inches) — *(includes capillary fringe)*

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

Remarks

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type: GRASSLAND
Wetland Type: SEASONAL NTLD

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 7/14/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 41
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.): DEPRESSION Local relief (concave, convex, none): CONCAVE Slope %: ~2
Subregion (LRR): LRR-C Soil Map Unit Name: BALLVAR LOAM 2-5%
Are climatic/hydrologic conditions on the site typical for this time of year? YES (If no, explain in remarks.)
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? YES Hydric soil? YES Wetland hydrology? YES Is sampled area a wetland? YES Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks

SMALL WETLAND POLYGON FORMED WHERE VALLEY AREA IS CONSTRICTED B/W ROAD PRISM & HELI PAD HILL.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%= ____ 20%= ____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Baccharis salicifolia	10	YES	FACW
2.			
3.			
4.			
50%= 5 20%= 2 Total Cover: 10			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Lepidium latifolium	60	YES	FACW
2. Marrubium vulgare	20	YES	FAC
3. Bromus madritensis	5	N	UPL
4. Conium maculatum	5	N	OBL
5.			
6.			
7.			
50%= 45 20%= 18 Total Cover: 90			
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%= ____ 20%= ____ Total Cover:			

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust —

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 3 (A)
Total number of dominant species across all strata: 3 (B)
Percent of dominant species that are OBL, FACW, or FAC: 100 (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

Hydrophytic Vegetation Indicators

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

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

Hydrophytic Vegetation? YES

Sampling Point 41

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/2	95	10YR 3/6	5	RM	M	LOAM	
			7.5YR 5/8	2	C	PL		

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: NONE Depth (Inches) — Hydric Soil? YES

Remarks HYDRIC SOILS

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1) (Nonriverine)
- ____ Sediment Deposits (B2) (Nonriverine)
- X 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)
- X Oxidized Rhizospheres (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Plowed Soils (C6)
- ____ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes X No ____

Water Table Present? Yes ____ No X Depth (inches) —

Saturation Present? Yes ____ No X Depth (inches) — *(includes capillary fringe)*

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

Remarks WETLAND HYDROLOGY

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type: GRASSLAND
Wetland Type: UPLAND

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/14/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 4.2
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.): RAVINE Local relief (concave, convex, none): CONCAVE Slope %: 5
Subregion (LRR): LRR-C Soil Map Unit Name: BALLIVAR LOAM 2-9%
Are climatic/hydrologic conditions on the site typical for this time of year? YES *(If no, explain in remarks.)*
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? *(If needed, explain any answers in Remarks.)*

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? NO Hydric soil? NO Wetland hydrology? NO Is sampled area a wetland? NO Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks

SMALL SWALE IN THE LANDSCAPE DOES NOT SATISFY WETLAND PERAMETERS OR SHOW INDICATIONS OF FLOW (E.G., SCOUR + DEPOSITION). - NON WETLAND.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%= ____ 20%= ____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%= ____ 20%= ____ Total Cover:			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Bromus hordeaceous	20	Y	FACU
2. Bromus diandrus	20	Y	UPL
3. Bromus madritensis	10	N	UPL
4. Croton setigerus	5	N	UPL
5. Erodium botrys	10	N	UPL
6.			
7.			
50%= 33 20%= 13 Total Cover: 65			
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%= ____ 20%= ____ Total Cover:			

% Bare Ground in Herb Stratum 35 **% Cover of Biotic Crust** ____

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 0 (A)
Total number of dominant species across all strata: 2 (B)
Percent of dominant species that are OBL, FACW, or FAC: 0 (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

Hydrophytic Vegetation Indicators

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

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

Hydrophytic Vegetation? NO

Sampling Point 42

Soils

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	7.5YR 4/6	100	—	—	—	—	GRAVELLY LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? NO

Remarks NON-HYDRIC SOILS

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes ____ No X

Water Table Present? Yes ____ No X Depth (inches) —

Saturation Present? Yes ____ No X Depth (inches) — *(includes capillary fringe)*

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

Remarks NO INDICATORS OF WETLAND HYDROLOGY

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type: GRASSLAND
Wetland Type: EPHEMERAL DRAINAGE

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/14/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 43
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.): DRAINAGE Local relief (concave, convex, none): CONCAVE Slope %: 5-8
Subregion (LRR): LRR-C Soil Map Unit Name: BALLVAR LOAM 2-8% SLOPE
Are climatic/hydrologic conditions on the site typical for this time of year? YES (If no, explain in remarks.)
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? NO Hydric soil? NO Wetland hydrology? YES Is sampled area a wetland? NO Other waters? YES

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank X Scour X Ordinary High Water Mark Mapped X — ~2' WIDE
Feature Designation: Perennial ____ Intermittent ____ Ephemeral X Blue-line on USGS Quad ____
Natural Drainage X Artificial Drainage ____ Navigable Water ____

Remarks

SMALL 2' EPHEMERAL DRAINAGE. VEGETATED W/ ANNUAL GRASSES MAKING OHWM DIFFICULT TO DISCERN, BUT A WELL DEFINED BED & BANK BISECTS THIS SECTION OF THE STUDY AREA. - SEE PHOTO.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%= ____ 20%= ____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%= ____ 20%= ____ Total Cover:			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Bromus diandrus	40	Y	UPL
2. Bromus inermos	40	Y	UPL
3. Brassica negra	20	Y	UPL
4.			
5.			
6.			
7.			
50%= ____ 20%= ____ Total Cover: 100			
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%= ____ 20%= ____ Total Cover: ____			

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

Dominance Test Worksheet
Number of dominant species that are OBL, FACW, or FAC: 0 (A)
Total number of dominant species across all strata: 3 (B)
Percent of dominant species that are OBL, FACW, or FAC: 0/3 (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

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

Hydrophytic Vegetation? NO

Sampling Point 43

Soils

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6"	10YR 4/3	100	—	—	—	—	SANDY LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? NO

Remarks SANDY LOAM, WITH NO OBSERVABLE REDOX FEATURES. LIKELY WELL DRAINED + PERIODICALLY SCOURED.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes X No ____

Water Table Present? Yes ____ No X Depth (inches) —

Saturation Present? Yes ____ No X Depth (inches) — *(includes capillary fringe)*

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

SMALL (2') EPHEMERAL DRAINAGE.

Remarks

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type GRASSLAND
Wetland Type UPLAND

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/18/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 44
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.) TERRACE Local relief (concave, convex, none) CONCAVE Slope % 0
Subregion (LRR) LRR-C Soil Map Unit Name: Xerofluvents, Ext. gravelly
Are climatic/hydrologic conditions on the site typical for this time of year? YES *(If no, explain in remarks.)*
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? *(If needed, explain any answers in Remarks.)*

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? YES Hydric soil? NO Wetland hydrology? NO Is sampled area a wetland? NO Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks

MINOR DEPRESSIONS ALONG NARROW HAUL ROAD PORTION OF STUDY AREA. SOILS ARE VERY HARD, PACKED GRAVELLY LOAM BUT HAVE NO INDICATORS OF LONG DURATION SATURATION.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%= ____ 20%= ____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%= ____ 20%= ____ Total Cover:			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Lepidium latifolium	25	YES	FACW
2. Vulpia bromoides	25	Y	FACU
3. Bromus diandrus	20	Y	UPL
4. Hordeum leporinum	10	N	FAC
5. Bromus hordeaceus	10	N	FACU
6.			
7.			
50%= 45 20%= 18 Total Cover: 90			
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%= ____ 20%= ____ Total Cover:			

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

Dominance Test Worksheet
Number of dominant species that are OBL, FACW, or FAC: 2 (A)
Total number of dominant species across all strata: 3 (B)
Percent of dominant species that are OBL, FACW, or FAC: 66 (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

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

Hydrophytic Vegetation? X

Sampling Point 44

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/3	100	—	—	—	—	GRAVELLY LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

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

Remarks VERY HARD SOIL, COULD ONLY DIG TO 4". IN THAT 4", THERE IS NO INDICATION OF LONG DURATION SATURATION.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes ____ No X

Water Table Present? Yes ____ No X Depth (inches) —

Saturation Present? Yes ____ No X Depth (inches) — *(includes capillary fringe)*

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

NO INDICATORS OF WETLAND HYDROLOGY.

Remarks

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type: DAM SERVICE AREA
Wetland Type: UPLAND

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/18/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 45
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.): DEPRESSION Local relief (concave, convex, none): CONCAVE Slope %: 0-2
Subregion (LRR): LRR-C Soil Map Unit Name: Xerofluvents, Ext. Gravelly
Are climatic/hydrologic conditions on the site typical for this time of year? YES (If no, explain in remarks.)
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? NO Hydric soil? NO Wetland hydrology? NO Is sampled area a wetland? NO Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks SMALL SHALLOW DEPRESSION W/SOME HYDROPHYTIC VEG. FAILS TO MEET SOILS OR HYDROLOGY PARAMETERS.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%= ____ 20%= ____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Baccharis pilularis	40	YES	UPL
2.			
3.			
4.			
50%= 20 20%= 8 Total Cover:	40		
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Lepidium latifolium	40	YES	FACW
2.			
3.			
4.			
5.			
6.			
7.			
50%= 20 20%= 8 Total Cover:	40		
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%= ____ 20%= ____ Total Cover:			

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

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 1 (A)
Total number of dominant species across all strata: 2 (B)
Percent of dominant species that are OBL, FACW, or FAC: 50 (AB)

Prevalence Index Worksheet

Total % Cover of:		Multiply by	
OBL Species	____	x 1 =	____
FACW Species	40	x 2 =	80
FAC Species	____	x 3 =	____
FACU Species	____	x 4 =	____
UPL Species	40	x 5 =	200
Column Totals	80 (A)		280 (B) 3.5

Prevalance Index = B/A = 3.5 80/280 24/40

Hydrophytic Vegetation Indicators

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

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

Hydrophytic Vegetation? NO

Sampling Point 45

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/3	100	—	—	—	—	GRAVELLY LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: / Depth (Inches) / Hydric Soil? NO

Remarks HARD SOIL, BUT NO INDICATORS OF HYDRIC CONDITIONS.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes ____ No NO

Water Table Present? Yes ____ No X Depth (inches) —

Saturation Present? Yes ____ No X Depth (inches) — *(includes capillary fringe)*

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

INSUFFICIENT INDICATORS OF WETLAND HYDROLOGY

Remarks /

SAN LUIS

North State Resources

Habitat Type RESERVOIR

Wetland Determination Data Form - Arid West Region

Wetland Type DEEP WATER

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/18/09

Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 46

Investigator(s): J. Colescott

Landform (hillslope, terrace, etc.) RESERVOIR Local relief (concave, convex, none) CONCAVE Slope % 2-5

Subregion (LRR) LRR-C Soil Map Unit Name: WATER

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

Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES

Are vegetation N, soil N, or hydrology N naturally problematic? *(If needed, explain any answers in Remarks.)*

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? YES Hydric soil? YES Wetland hydrology? YES Is sampled area a wetland? NO Other waters? YES

USACE Jurisdiction

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

Explain: SAN LUIS RES.

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank X Scour ____ Ordinary High Water Mark Mapped X

Feature Designation: Perennial ____ Intermittent X Ephemeral ____ Blue-line on USGS Quad X

Natural Drainage ____ Artificial Drainage X Navigable Water ____

Remarks DP DOCUMENTS THAT MODEL DERIVED OHWM IS ACCURATE. DP LOCATED AT UPPER LIMITS OF HIGH WATER IN A BEACH (WAVE BREAKING) AREA.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix laevigata	5	Y	FACW
2. Populus fremontii	5	Y	FACW
3.			

50%= 5 20%= 2 Total Cover: 10

Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status
1. Baccharis viminar	10	Y	FACW
2.			
3.			
4.			

50%= 5 20%= 2 Total Cover: 10

Herb Stratum (use scientific names)	% Cover	Species?	Status
1. Brassica nigra	25	Y	UPL
2. Heliotropium curassavicum	10	Y	OBL
3.			
4.			
5.			
6.			
7.			

50%= 17.5 20%= 7 Total Cover: 35

Woody/Vine Stratum (use scientific names)	% Cover	Species?	Status
1.			
2.			

50%= ____ 20%= ____ Total Cover: ____

% Bare Ground in Herb Stratum 75% % Cover of Biotic Crust ____

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 4 (A)

Total number of dominant species across all strata: 5 (B)

Percent of dominant species that are OBL, FACW, or FAC: 80 (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

Hydrophytic Vegetation Indicators

X Dominance Test is >50%

____ Prevalence Index is ≤ 3.0[1]

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

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation? YES

Sampling Point 46

Soils

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5Y 4/2	100	—	—	—	—	COMPACTED GRAVELLY SAND	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vetric (F18)
- ___ Red Parent Materials (TF2)
- ___ Vegetated Sand/Gravel Bars
- X Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? YES

Remarks CLEAR LAYERS OF FLUVIAL SEDIMENTATION.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ___ No X Depth (inches) — Wetland Hydrology? Yes X No ___

Water Table Present? Yes ___ No X Depth (inches) —

Saturation Present? Yes ___ No X Depth (inches) — *(includes capillary fringe)*

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

Remarks 1" BATH TUB" RING CLEARLY VISIBLE

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type: GRASSLAND
Wetland Type: Eph. Stream

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/18/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 47
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.): DRAINAGE Local relief (concave, convex, none): CONCAVE Slope %: ~10%
Subregion (LRR): LRR-C Soil Map Unit Name: ONEIL SILT LOAM, 30-50%
Are climatic/hydrologic conditions on the site typical for this time of year? YES (If no, explain in remarks.)
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? NO Hydric soil? YES Wetland hydrology? YES Is sampled area a wetland? NO Other waters? YES

USACE Jurisdiction

Adjacent to Waters ____ Tributary to Waters X Isolated (with interstate commerce) ____ Isolated (non jurisdictional) ____
Explain: TRIB TO SAN LUIS RES.

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank X Scour Y Ordinary High Water Mark Mapped X — 1' WIDE
Feature Designation: Perennial ____ Intermittent ____ Ephemeral X Blue-line on USGS Quad ____
Natural Drainage X Artificial Drainage ____ Navigable Water ____

Remarks SMALL (1-FOOT WIDE) BED + BANK DRAINAGE. LIKELY EPHEMERAL FLOW PATTERNS. NO UPLAND PAIR TAKEN

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%= ____ 20%= ____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%= ____ 20%= ____ Total Cover:			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Avena fatua	30	Y	UPL
2. Bromus hordeaceus	30	Y	FACU
3. Bromus madritensis	20	Y	UPL
4. Erodium botrys	10	N	UPL
5. Brassica nigra	10	N	UPL
6.			
7.			
50%= ____ 20%= ____ Total Cover:			
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%= ____ 20%= ____ Total Cover:			

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

Dominance Test Worksheet
Number of dominant species that are OBL, FACW, or FAC: 0 (A)
Total number of dominant species across all strata: 3 (B)
Percent of dominant species that are OBL, FACW, or FAC: 0 (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

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

Hydrophytic Vegetation? NO

Sampling Point 47

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/3	60	10YR 3/2	40	—	—	STNDY LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- X Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? YES

Remarks SEDIMENTARY STRATIONS FROM FLUVIAL DEPOSITION

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes X No ____

Water Table Present? Yes ____ No X Depth (inches) —

Saturation Present? Yes ____ No X Depth (inches) — *(includes capillary fringe)*

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

SCOUR + DEPOSITION OBSERVABLE THRU DENSE HERBACEOUS VEG.

Remarks

North State Resources

Habitat Type SCRUB SHROB ISLAND

Wetland Determination Data Form - Arid West Region

Wetland Type UPLAND

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 9/18/09

Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 48

Investigator(s): J. Colescott

Landform (hillslope, terrace, etc.) HILLSIDE Local relief (concave, convex, none) NONE Slope % 40

Subregion (LRR) LRR-C Soil Map Unit Name: Asolt very stony clay 30-50%

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

Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES

Are vegetation N, soil N, or hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? NO Hydric soil? NO Wetland hydrology? NO Is sampled area a wetland? NO Other waters? NO

USACE Jurisdiction

Adjacent to Waters ___ Tributary to Waters ___ Isolated (with interstate commerce) ___ Isolated (non jurisdictional) ___

Explain:

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ___ Scour ___ Ordinary High Water Mark Mapped ___

Feature Designation: Perennial ___ Intermittent ___ Ephemeral ___ Blue-line on USGS Quad ___

Natural Drainage ___ Artificial Drainage ___ Navigable Water ___

Remarks

SMALL SHROB ISLAND W/ 1 DRAINAGE WAS A SUSPECT SEEP. NO WETLAND INDICATORS MET.

Vegetation

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

Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status
1. Shepherdia argentae (SILVER BUFFALO BERRY)	80	Y	UPL
2. Sambucus mexicana	20	Y	FAC
3.			
4.			
50%= ___ 20%= ___ Total Cover:	100		

Herb Stratum (use scientific names)	% Cover	Species?	Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
50%= ___ 20%= ___ Total Cover:			

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

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust ___

Dominance Test Worksheet

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

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

Percent of dominant species that are OBL, FACW, or FAC: 50 (AB)

Prevalence Index Worksheet

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

Prevalance Index = B/A = ___

Hydrophytic Vegetation Indicators

___ Dominance Text is >50%

___ Prevalence Index is ≤ 3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation? NO

Sampling Point 48

Soils

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	100	—	—	—	—	SANDY CLAY	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: — Depth (Inches) — Hydric Soil? NO

Remarks NON HYDRIC SOILS

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) — Wetland Hydrology? Yes ____ No X

Water Table Present? Yes ____ No X Depth (inches) —

Saturation Present? Yes ____ No X Depth (inches) — *(includes capillary fringe)*

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

Remarks NO WETLAND HYDROLOGY INDICATORS

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type: QUARRY
Wetland Type: UPLAND

Project/Site: Sisk Dam Corrective Action Project City/County: Merced County Sampling Date: 7/18/09
Applicant/Owner: U.S. Bureau of Reclamation State: CA Sampling Point: 49
Investigator(s): J. Colescott
Landform (hillslope, terrace, etc.): Quarry Local relief (concave, convex, none): PIT Slope %: 0-100%
Subregion (LRR): LRR-C Soil Map Unit Name: PITS
Are climatic/hydrologic conditions on the site typical for this time of year? YES *(If no, explain in remarks.)*
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YES
Are vegetation N, soil N, or hydrology N naturally problematic? *(If needed, explain any answers in Remarks.)*

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? NO Hydric soil? NO Wetland hydrology? YES Is sampled area a wetland? NO Other waters? NO

USACE Jurisdiction

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

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks CONSIDERED A "PUDDLE". FLAT QUARRY AREA PUDDLES IN SEVERAL MINOR DEPRESSIONS. NOT CONSIDERED A WETLAND DUE TO A LACK OF DOMINANT HYDROPHYTES AND NO DEVELOPED HYDRIC SOILS.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
50%= ____ 20%= ____ Total Cover:			
Sapling/Shrub Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%= ____ 20%= ____ Total Cover:			
Herb Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1. Trichostema lanceolata	5	Y	UPL
2. Bromus hordeaceus	5	Y	FACU
3. Hemizonia fitchii	5	Y	FAC
4. Vulpia bromoides	5	Y	FACU
5.			
6.			
7.			
50%= 10 20%= 4 Total Cover: 20			
Woody/Vine Stratum (use scientific names)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%= ____ 20%= ____ Total Cover:			

% Bare Ground in Herb Stratum 80 **% Cover of Biotic Crust** 30

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 2 (A)
Total number of dominant species across all strata: 4 (B)
Percent of dominant species that are OBL, FACW, or FAC: 50 (AB)

Prevalence Index Worksheet

Total % Cover of:		Multiply by	
OBL Species	—	x1 =	
FACW Species	5	x2 =	10
FAC Species	5	x3 =	15
FACU Species	5	x4 =	20
UPL Species	5	x5 =	25
Column Totals	20 (A)		70 (B)

Prevalance Index = B/A = 3.5 (20 / 70 = 3.5)

Hydrophytic Vegetation Indicators

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

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

Hydrophytic Vegetation? NO

Sampling Point 49

Soils

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/3	100	—	—	—	—	GRAVELLY LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: ROCK Depth (Inches) 2" Hydric Soil? NO

Remarks ROCKY GRAVEL TO SURFACE W/ VERY THIN LAYER OF SOIL ON TOP. NO HYDRIC SOIL INDICATORS OBSERVED.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) ____ Wetland Hydrology? Yes X No ____

Water Table Present? Yes ____ No X Depth (inches) ____

Saturation Present? Yes ____ No X Depth (inches) ____ *(includes capillary fringe)*

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

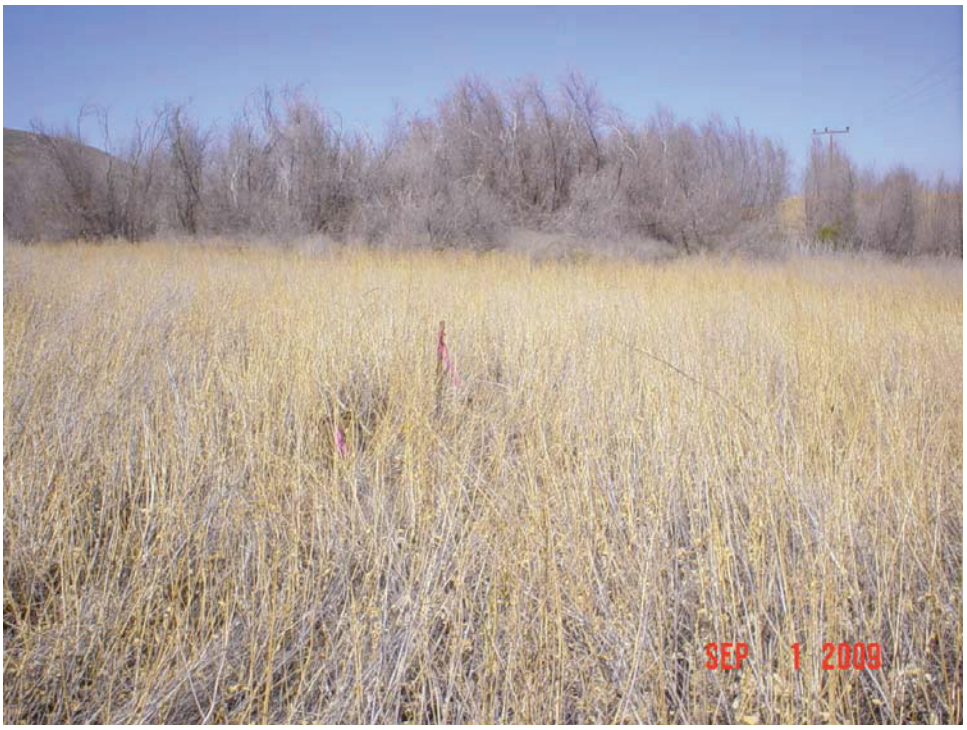
Remarks CLEAR EVIDENCE OF PONDING

Appendix B

Representative Photographs
August 31 to September 18, 2009

Photograph 1. Cover photograph. Looking southwest from the eastern edge of the study area, south of State Route 152 and Gonzaga Road. Visible in the photograph is the dam, the seep wetlands at the base of the dam, and Basalt Hill Road.

Photograph 2. To provide a sense of scale, this view is from the top of the dam looking northeast. The seep wetlands described in the photographs that follow can be seen as the narrow string of trees and darker vegetation just beyond the straight gravel road in the sunny portion of the photograph.



Photograph 3. Seepage wetlands occur in the lands east of the foot of the dam. Starting at the south end of the dam, data point 14 (shovel) documents the first of a series of wetland features (FEW10) created from dam seepage. These wetland features are connected via a series of ditches that help to convey the waters to O'Neill Forebay. The next several photographs depict several of the wetland features and ditches that convey these waters.

Photograph 4. Looking southeast at the north end of FEW9, another seep wetland in the complex mentioned in Photograph 3. The photograph is taken from a low bench near the eastern foot of the dam.

Photograph 5. Data point 5 located on the western edge of FEW9. The data point is located at the base of a small rise at the abrupt upland boundary to the wetland feature. Note the dense cattail understory and red willow overstory.

Photograph 6. Looking west at FEW9, data points 6 (shovel in background) and 7 (backpack) document the eastern edge of the FEW9 feature. The data points are located south of the point Photograph 4 was taken from (see Figure 4c).

Photograph 7. Looking northeast from approximately 0.1 mile north of the point Photograph 4 was taken from. The darker vegetation between the toe of the slope and the pickup truck is the wetland feature (SW4) associated with the conveyance of dam seepage. Data points 1 and 2 are located just out of the photograph to the right.

Photograph 8. Data points 1 (shovel) and 2 (backpack) document the seasonal wetland (SW4) and adjacent upland, respectively.

Photograph 9. Data points 21 and 22 document the seasonal wetland (SW6) and adjacent upland, respectively, that occurs at the northern boundary of the central portion of the study area (see Figure 4c). The feature extends beyond the boundaries of the study area and functions as a collection area for runoff of precipitation and dam seepage that occurs east of the dam. SW4, SW6, and SW20 are part of the same large seasonal wetland.

Photograph 10. Looking northwest at D8. This ditch is the main outflow conveyance feature of the seepage collected in the wetlands and ditch features pictured above. This ditch flows north to O'Neill Forebay. The channel width at this point is estimated at 8 feet, based on weak indicators of an ordinary high water mark.

Photograph 11. Data point 15 (shovel) documents a small fresh emergent wetland (FEW4) located on the north side of the dam in the north western portion of the study area. This feature is also a seep wetland and a number of ditches (e.g., D12) help to convey these waters to the O'Neal Forebay.

Photograph 12. Data point 16 documents a ditch (D10) that conveys seepage waters toward O'Neill Forebay on the north side of the dam.

Photograph 13. A number of seasonal wetlands occur east of the dam. This photograph of SW32 shows the feature's close proximity to FEW9. Data point 11 (backpack) documents the feature, and data point 10 (shovel) documents the adjacent uplands.

Photograph 14. Data points 19 (shovel) and 20 (GPS unit) document the boundaries of SW22. As is evident in the photograph, the boundary is very subtle. In this case, hydric soil indicators were observed at both points, but the vegetation and hydrology indicators were missing from the upland point.

Photograph 15. Data point 23 documents another small seasonal wetland (SW24). Each of the seasonal wetland features that occur east of the dam are depressional, and the three wetland parameters are evident, but it is not certain whether dam seepage plays a role in their hydration. As depressional features, they may only be hydrated during winter precipitation events.

Photograph 16. The soils at data point 23 show the prominent redox features.

Photograph 17. Data point 28 (shovel) documents upland conditions in a suspect wetland located north of State Route 152. The aerial photograph of the study area shows a drainage-like feature here. This data point was installed at the low point of the feature, but no wetland parameters were met.

Photograph 18. Data point 31 documents the seasonal wetland (SW19) that occurs in a very shallow depression in the portion of the study area north of State Route 152. The indicators are weak, but sufficient for the feature to be considered a wetland.

Photograph 19. Several ephemeral drainages exit the hills surrounding the study area. Here, DP 43 documents this 2-foot wide ephemeral drainage (ED5). Although annual upland vegetation has colonized the feature, and the soils are not hydric, the bed and bank feature with evidence of scour and deposition qualifies as an "other waters" of the United States.

Photograph 20. The incised channel of ED5 is more pronounced on the west side of Basalt Hill Road.

Photograph 21. Data point 47 documents another small ephemeral drainage (ED3). Similar to ED5, upland vegetation has colonized this drainage, but strong evidence of scour and deposition, and a pronounced bed and bank qualify this feature as an “other waters”.

Photograph 22. Data point 46 documents the San Luis Reservoir below the full pool elevation. The dam can be seen in the background, and a temporary road in the foreground. Scattered debris has been trapped within the stems of the shrub (seep willow) growing along the upper water mark and other indicators help to define the “bathtub ring” at full pool elevation.

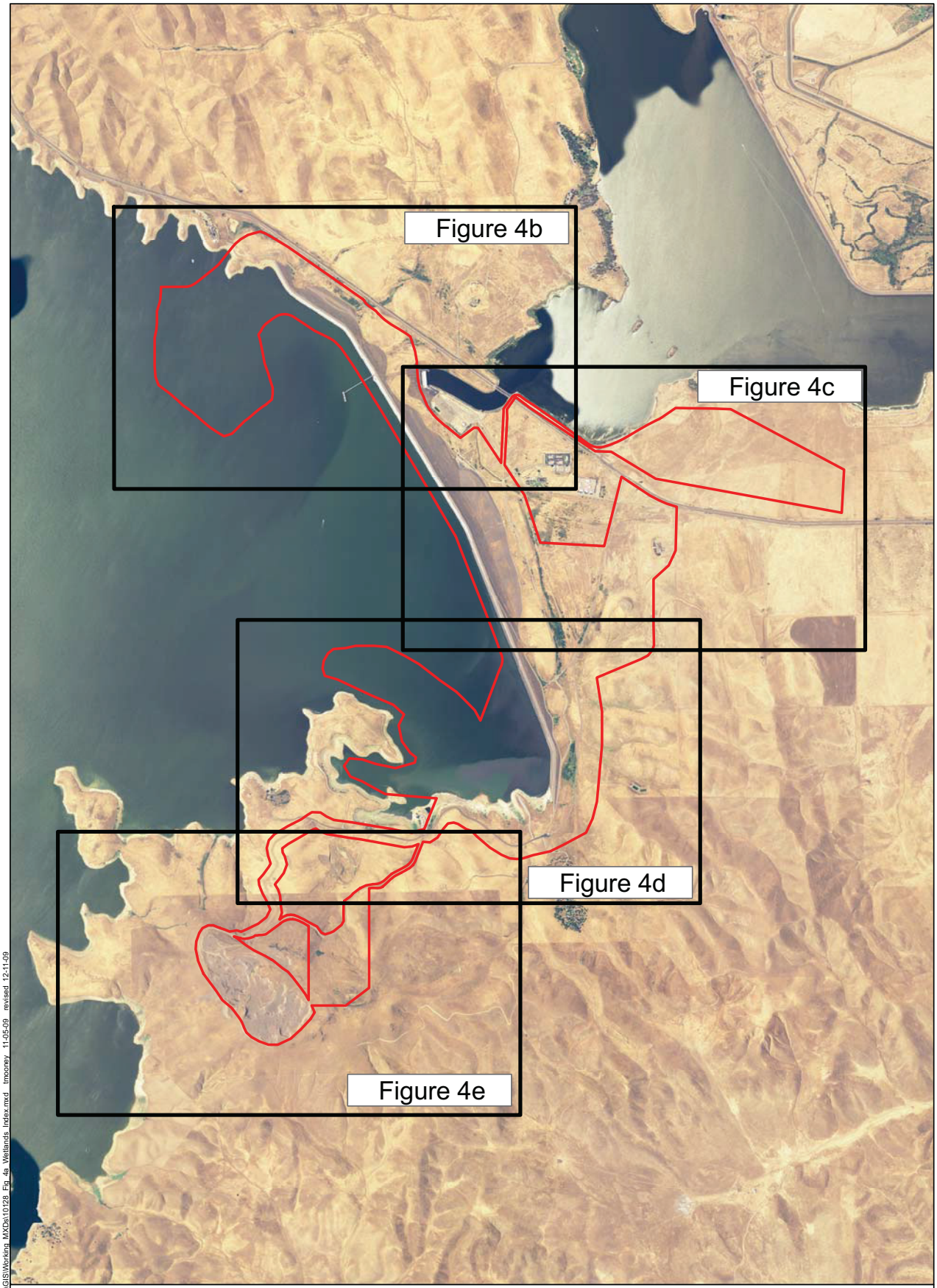
Photograph 23. Another view of the lake bottom documented by data point 46 (shovel in background).

Photograph 24. This photograph shows the single “mixed chaparral” stand of silver buffaloberry. The species is not a wetland indicator, but there is a small ephemeral drainage leading from it. Data point 48 documents that the three wetland parameters were met within the stand. Also visible in the photograph is the “mud slide area” depicted on Figure 4e. Although small rivulets are visible within the mud slide, they are a remnant of the slide and are not considered waters.

Photograph 25. Data point 49 documents that the small “puddles” that have formed within the quarry on top of Basalt Hill are not wetlands. The features are almost devoid of vegetation, the soil layer is very thin on top of rock, with no hydric soil indicators. Only the wetland hydrology parameter is met (see data sheet 49).

APPENDIX C

Figures 4a – 4e
Preliminary Boundaries of Waters of the United States, Including Wetlands



Project Boundary
Index Frame

0 0.25 0.5 1 Mile

N

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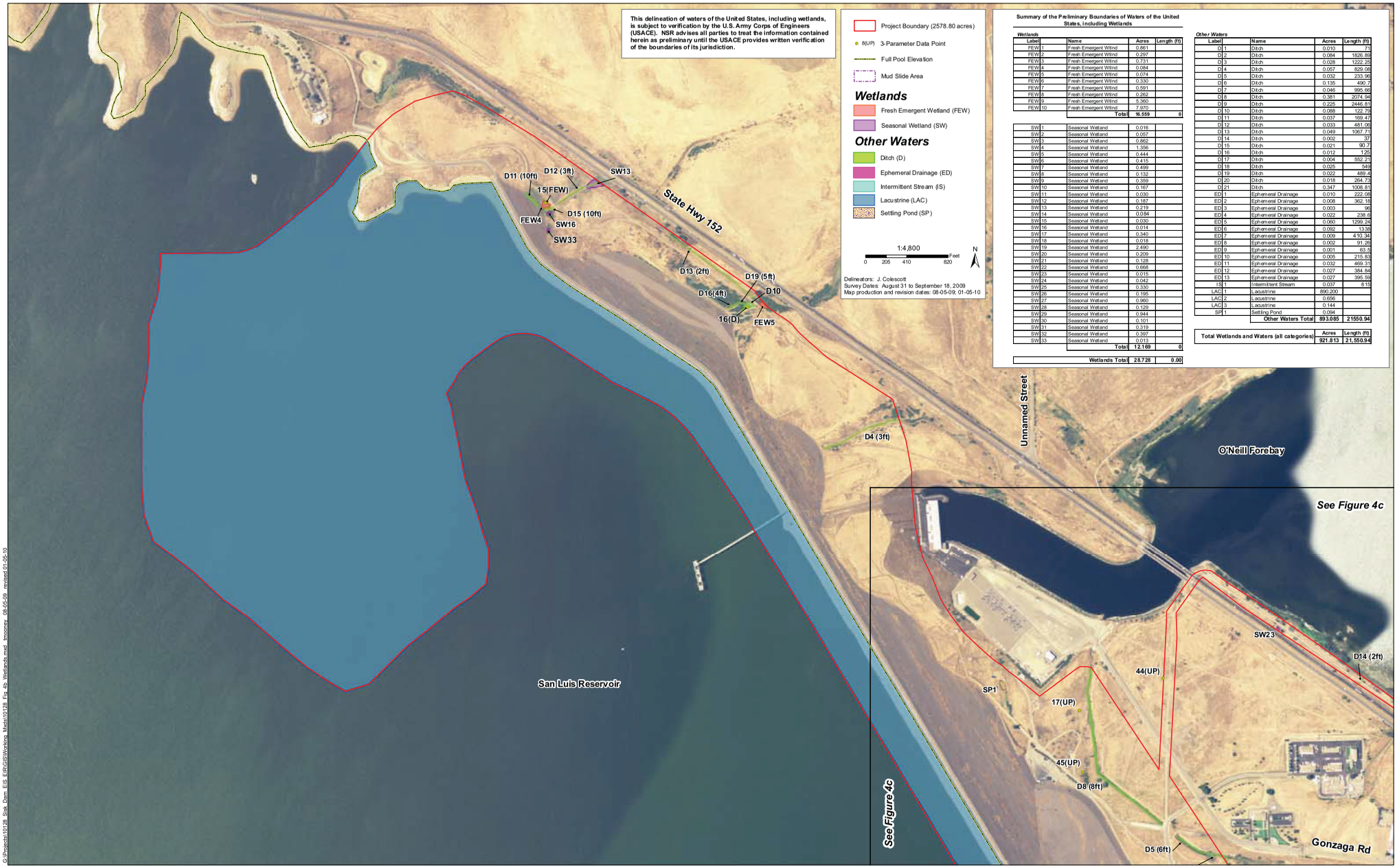
North State Resources, Inc.

B.F. Sisk Dam Corrective Action Project EIS/EIR

Figure 4a
Preliminary Boundaries of Waters of the United States, Including Wetlands
Sheet Index



Summary of the Preliminary Boundaries of Waters of the United States, including Wetlands

Wetlands

Label	Name	Acres	Length (ft)
FEW 1	Fresh Emergent Wtlnd	0.861	
FEW 2	Fresh Emergent Wtlnd	0.297	
FEW 3	Fresh Emergent Wtlnd	0.731	
FEW 4	Fresh Emergent Wtlnd	0.084	
FEW 5	Fresh Emergent Wtlnd	0.074	
FEW 6	Fresh Emergent Wtlnd	0.330	
FEW 7	Fresh Emergent Wtlnd	0.591	
FEW 8	Fresh Emergent Wtlnd	0.262	
FEW 9	Fresh Emergent Wtlnd	5.360	
FEW 10	Fresh Emergent Wtlnd	7.970	
	Total	**16.559**	**0**
SW 1	Seasonal Wetland	0.016	
SW 2	Seasonal Wetland	0.057	
SW 3	Seasonal Wetland	0.862	
SW 4	Seasonal Wetland	1.356	
SW 5	Seasonal Wetland	0.444	
SW 6	Seasonal Wetland	0.415	
SW 7	Seasonal Wetland	0.499	
SW 8	Seasonal Wetland	0.132	
SW 9	Seasonal Wetland	0.359	
SW 10	Seasonal Wetland	0.167	
SW 11	Seasonal Wetland	0.030	
SW 12	Seasonal Wetland	0.187	
SW 13	Seasonal Wetland	0.219	
SW 14	Seasonal Wetland	0.084	
SW 15	Seasonal Wetland	0.030	
SW 16	Seasonal Wetland	0.014	
SW 17	Seasonal Wetland	0.340	
SW 18	Seasonal Wetland	0.018	
SW 19	Seasonal Wetland	2.490	
SW 20	Seasonal Wetland	0.209	
SW 21	Seasonal Wetland	0.128	
SW 22	Seasonal Wetland	0.668	
SW 23	Seasonal Wetland	0.015	
SW 24	Seasonal Wetland	0.042	
SW 25	Seasonal Wetland	0.330	
SW 26	Seasonal Wetland	0.195	
SW 27	Seasonal Wetland	0.960	
SW 28	Seasonal Wetland	0.129	
SW 29	Seasonal Wetland	0.844	
SW 30	Seasonal Wetland	0.101	
SW 31	Seasonal Wetland	0.319	
SW 32	Seasonal Wetland	0.397	
SW 33	Seasonal Wetland	0.013	
	Total	**12.169**	**0**
	Wetlands Total	**28.728**	**0.00**

Other Waters

Label	Name	Acres	Length (ft)
D 1	Ditch	0.010	71
D 2	Ditch	0.094	1626.89
D 3	Ditch	0.028	1222.25
D 4	Ditch	0.057	829.08
D 5	Ditch	0.032	233.96
D 6	Ditch	0.135	490.7
D 7	Ditch	0.046	995.66
D 8	Ditch	0.381	2074.94
D 9	Ditch	0.225	2446.81
D 10	Ditch	0.088	122.75
D 11	Ditch	0.037	169.47
D 12	Ditch	0.033	481.06
D 13	Ditch	0.049	1067.71
D 14	Ditch	0.002	37
D 15	Ditch	0.021	90.7
D 16	Ditch	0.012	1.25
D 17	Ditch	0.004	552.21
D 18	Ditch	0.025	549
D 19	Ditch	0.022	489.4
D 20	Ditch	0.018	264.73
D 21	Ditch	0.347	1008.81
ED 1	Ephemeral Drainage	0.010	222.08
ED 2	Ephemeral Drainage	0.008	362.18
ED 3	Ephemeral Drainage	0.003	96
ED 4	Ephemeral Drainage	0.022	238.6
ED 5	Ephemeral Drainage	0.060	1299.24
ED 6	Ephemeral Drainage	0.092	1338
ED 7	Ephemeral Drainage	0.009	410.34
ED 8	Ephemeral Drainage	0.002	91.26
ED 9	Ephemeral Drainage	0.001	63.5
ED 10	Ephemeral Drainage	0.005	215.83
ED 11	Ephemeral Drainage	0.032	469.31
ED 12	Ephemeral Drainage	0.027	384.84
ED 13	Ephemeral Drainage	0.027	395.59
IS 1	Intermittent Stream	0.037	815
LAC 1	Lacustrine	890.200	
LAC 2	Lacustrine	0.656	
LAC 3	Lacustrine	0.144	
SP 1	Settling Pond	0.094	
	Other Waters Total	**893.085**	**21550.94**

Total Wetlands and Waters (all categories)	Acres	Length (ft)
	921.813	**21,550.94**

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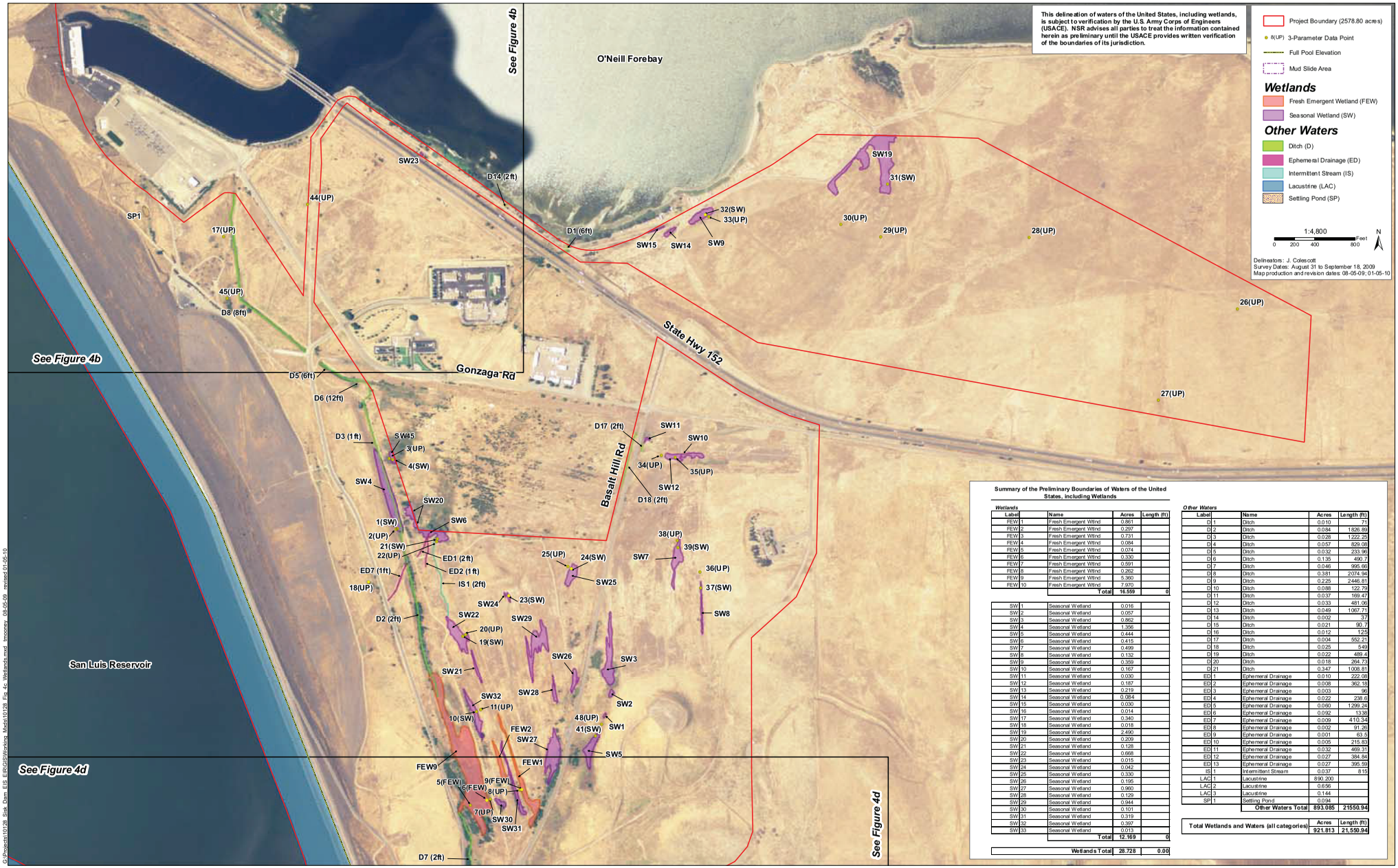
Figure 4b
Preliminary Boundaries of Waters of the United States, including Wetlands



Summary of the Preliminary Boundaries of Waters of the United States, including Wetlands

Wetlands

Label	Name	Acres	Length (ft)
FEW 1	Fresh Emergent Wtlnd	0.861	
FEW 2	Fresh Emergent Wtlnd	0.297	
FEW 3	Fresh Emergent Wtlnd	0.731	
FEW 4	Fresh Emergent Wtlnd	0.084	
FEW 5	Fresh Emergent Wtlnd	0.074	
FEW 6	Fresh Emergent Wtlnd	0.330	
FEW 7	Fresh Emergent Wtlnd	0.591	
FEW 8	Fresh Emergent Wtlnd	0.262	
FEW 9	Fresh Emergent Wtlnd	5.360	
FEW 10	Fresh Emergent Wtlnd	7.970	
	Total	16.559	0
SW 1	Seasonal Wetland	0.016	
SW 2	Seasonal Wetland	0.057	
SW 3	Seasonal Wetland	0.862	
SW 4	Seasonal Wetland	1.356	
SW 5	Seasonal Wetland	0.444	
SW 6	Seasonal Wetland	0.415	
SW 7	Seasonal Wetland	0.499	
SW 8	Seasonal Wetland	0.132	
SW 9	Seasonal Wetland	0.359	
SW 10	Seasonal Wetland	0.167	
SW 11	Seasonal Wetland	0.030	
SW 12	Seasonal Wetland	0.187	
SW 13	Seasonal Wetland	0.219	
SW 14	Seasonal Wetland	0.084	
SW 15	Seasonal Wetland	0.030	
SW 16	Seasonal Wetland	0.014	
SW 17	Seasonal Wetland	0.340	
SW 18	Seasonal Wetland	0.018	
SW 19	Seasonal Wetland	2.490	
SW 20	Seasonal Wetland	0.209	
SW 21	Seasonal Wetland	0.128	
SW 22	Seasonal Wetland	0.668	
SW 23	Seasonal Wetland	0.015	
SW 24	Seasonal Wetland	0.042	
SW 25	Seasonal Wetland	0.330	
SW 26	Seasonal Wetland	0.195	
SW 27	Seasonal Wetland	0.960	
SW 28	Seasonal Wetland	0.129	
SW 29	Seasonal Wetland	0.944	
SW 30	Seasonal Wetland	0.101	
SW 31	Seasonal Wetland	0.319	
SW 32	Seasonal Wetland	0.397	
SW 33	Seasonal Wetland	0.013	
	Total	12.169	0
	Wetlands Total	28.728	0.00

Other Waters

Label	Name	Acres	Length (ft)
D 1	Ditch	0.010	71
D 2	Ditch	0.084	1826.89
D 3	Ditch	0.028	1222.25
D 4	Ditch	0.057	829.08
D 5	Ditch	0.032	233.96
D 6	Ditch	0.135	490.7
D 7	Ditch	0.046	995.96
D 8	Ditch	0.381	2074.94
D 9	Ditch	0.225	2446.81
D 10	Ditch	0.088	122.79
D 11	Ditch	0.037	169.47
D 12	Ditch	0.033	481.06
D 13	Ditch	0.049	1067.71
D 14	Ditch	0.002	37
D 15	Ditch	0.021	90.7
D 16	Ditch	0.012	125
D 17	Ditch	0.004	552.21
D 18	Ditch	0.025	549
D 19	Ditch	0.022	489.4
D 20	Ditch	0.018	284.72
D 21	Ditch	0.347	1008.81
ED 1	Ephemeral Drainage	0.010	222.08
ED 2	Ephemeral Drainage	0.008	362.18
ED 3	Ephemeral Drainage	0.003	96
ED 4	Ephemeral Drainage	0.022	238.6
ED 5	Ephemeral Drainage	0.060	1299.24
ED 6	Ephemeral Drainage	0.092	1338
ED 7	Ephemeral Drainage	0.009	410.34
ED 8	Ephemeral Drainage	0.002	91.26
ED 9	Ephemeral Drainage	0.001	63.5
ED 10	Ephemeral Drainage	0.005	215.83
ED 11	Ephemeral Drainage	0.032	469.31
ED 12	Ephemeral Drainage	0.027	384.84
ED 13	Ephemeral Drainage	0.027	395.59
IS 1	Intermittent Stream	0.037	815
LAC 1	Lacustrine	890.200	
LAC 2	Lacustrine	0.656	
LAC 3	Lacustrine	0.144	
SP 1	Settling Pond	0.094	
	Other Waters Total	893.085	21550.94

Total Wetlands and Waters (all categories)	Acres	Length (ft)
	921.813	21,550.94

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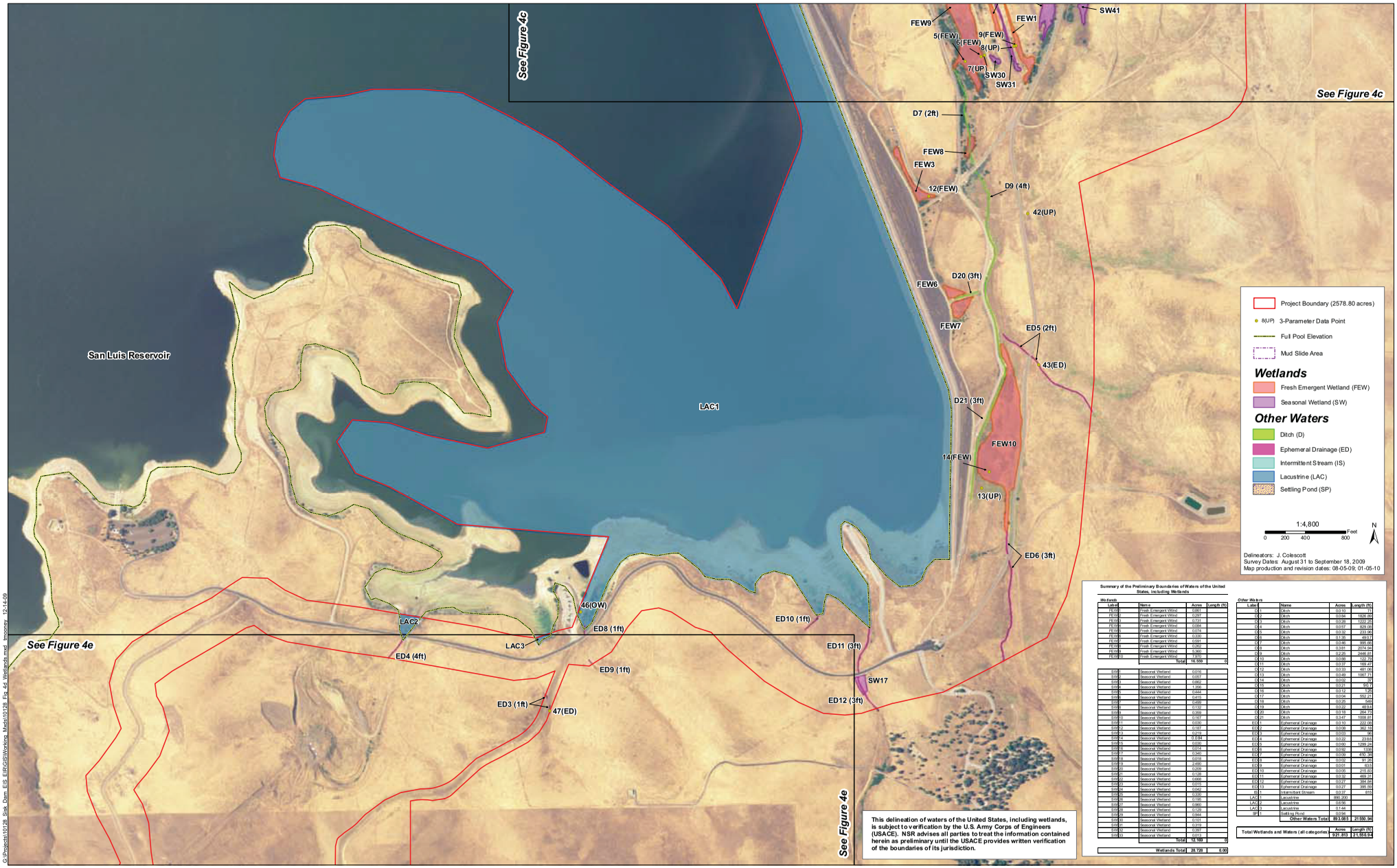
Figure 4c
Preliminary Boundaries of Waters of the United States, including Wetlands



Summary of the Preliminary Boundaries of Waters of the United States, including Wetlands

Wetlands

Label	Name	Acres	Length (ft)
FEW1	Fresh Emergent Wetland	0.881	
FEW2	Fresh Emergent Wetland	0.297	
FEW3	Fresh Emergent Wetland	0.731	
FEW4	Fresh Emergent Wetland	0.094	
FEW5	Fresh Emergent Wetland	0.074	
FEW6	Fresh Emergent Wetland	0.331	
FEW7	Fresh Emergent Wetland	0.691	
FEW8	Fresh Emergent Wetland	0.262	
FEW9	Fresh Emergent Wetland	0.360	
FEW10	Fresh Emergent Wetland	7.970	
	Total:	16.109	0
SW1	Seasonal Wetland	0.018	
SW2	Seasonal Wetland	0.057	
SW3	Seasonal Wetland	0.662	
SW4	Seasonal Wetland	1.368	
SW5	Seasonal Wetland	0.444	
SW6	Seasonal Wetland	0.415	
SW7	Seasonal Wetland	0.499	
SW8	Seasonal Wetland	0.132	
SW9	Seasonal Wetland	0.359	
SW10	Seasonal Wetland	0.107	
SW11	Seasonal Wetland	0.030	
SW12	Seasonal Wetland	0.107	
SW13	Seasonal Wetland	0.219	
SW14	Seasonal Wetland	0.084	
SW15	Seasonal Wetland	0.039	
SW16	Seasonal Wetland	0.014	
SW17	Seasonal Wetland	0.340	
SW18	Seasonal Wetland	0.018	
SW19	Seasonal Wetland	2.460	
SW20	Seasonal Wetland	0.009	
SW21	Seasonal Wetland	0.138	
SW22	Seasonal Wetland	0.668	
SW23	Seasonal Wetland	0.078	
SW24	Seasonal Wetland	0.042	
SW25	Seasonal Wetland	0.330	
SW26	Seasonal Wetland	0.195	
SW27	Seasonal Wetland	0.960	
SW28	Seasonal Wetland	0.129	
SW29	Seasonal Wetland	0.944	
SW30	Seasonal Wetland	0.101	
SW31	Seasonal Wetland	0.219	
SW32	Seasonal Wetland	0.297	
SW33	Seasonal Wetland	0.013	
	Total:	12.189	0
	Wetlands Total:	28.728	0.00

Other Waters

Label	Name	Acres	Length (ft)
D1	Ditch	0.010	73
D2	Ditch	0.044	1826.89
D3	Ditch	0.028	1222.29
D4	Ditch	0.017	829.09
D5	Ditch	0.032	233.96
D6	Ditch	0.135	460.7
D7	Ditch	0.048	598.86
D8	Ditch	0.391	2074.94
D9	Ditch	0.225	2446.81
D10	Ditch	0.008	122.79
D11	Ditch	0.037	169.47
D12	Ditch	0.033	481.06
D13	Ditch	0.049	1067.71
D14	Ditch	0.012	27
D15	Ditch	0.021	80.7
D16	Ditch	0.012	7.25
D17	Ditch	0.034	552.21
D18	Ditch	0.025	549
D19	Ditch	0.022	481.6
D20	Ditch	0.019	264.73
D21	Ditch	0.347	1008.81
ED1	Ephemeral Drainage	0.010	222.09
ED2	Ephemeral Drainage	0.018	362.19
ED3	Ephemeral Drainage	0.003	96
ED4	Ephemeral Drainage	0.022	219.6
ED5	Ephemeral Drainage	0.060	1299.25
ED6	Ephemeral Drainage	0.002	1339
ED7	Ephemeral Drainage	0.019	470.34
ED8	Ephemeral Drainage	0.002	91.26
ED9	Ephemeral Drainage	0.001	63.5
ED10	Ephemeral Drainage	0.005	215.83
ED11	Ephemeral Drainage	0.032	469.31
ED12	Ephemeral Drainage	0.027	584.84
ED13	Ephemeral Drainage	0.027	599.59
IS1	Intermittent Stream	0.037	870
LAC1	Lacustrine	890.200	
LAC2	Lacustrine	0.656	
LAC3	Lacustrine	0.144	
SP1	Settling Pond	0.094	
	Other Waters Total:	893.085	21,550.34

Total Wetlands and Waters (all categories)	Acres	Length (ft)
	921.813	21,550.34

This delineation of waters of the United States, including wetlands, is subject to verification by the U.S. Army Corps of Engineers (USACE). NSR advises all parties to treat the information contained herein as preliminary until the USACE provides written verification of the boundaries of its jurisdiction.

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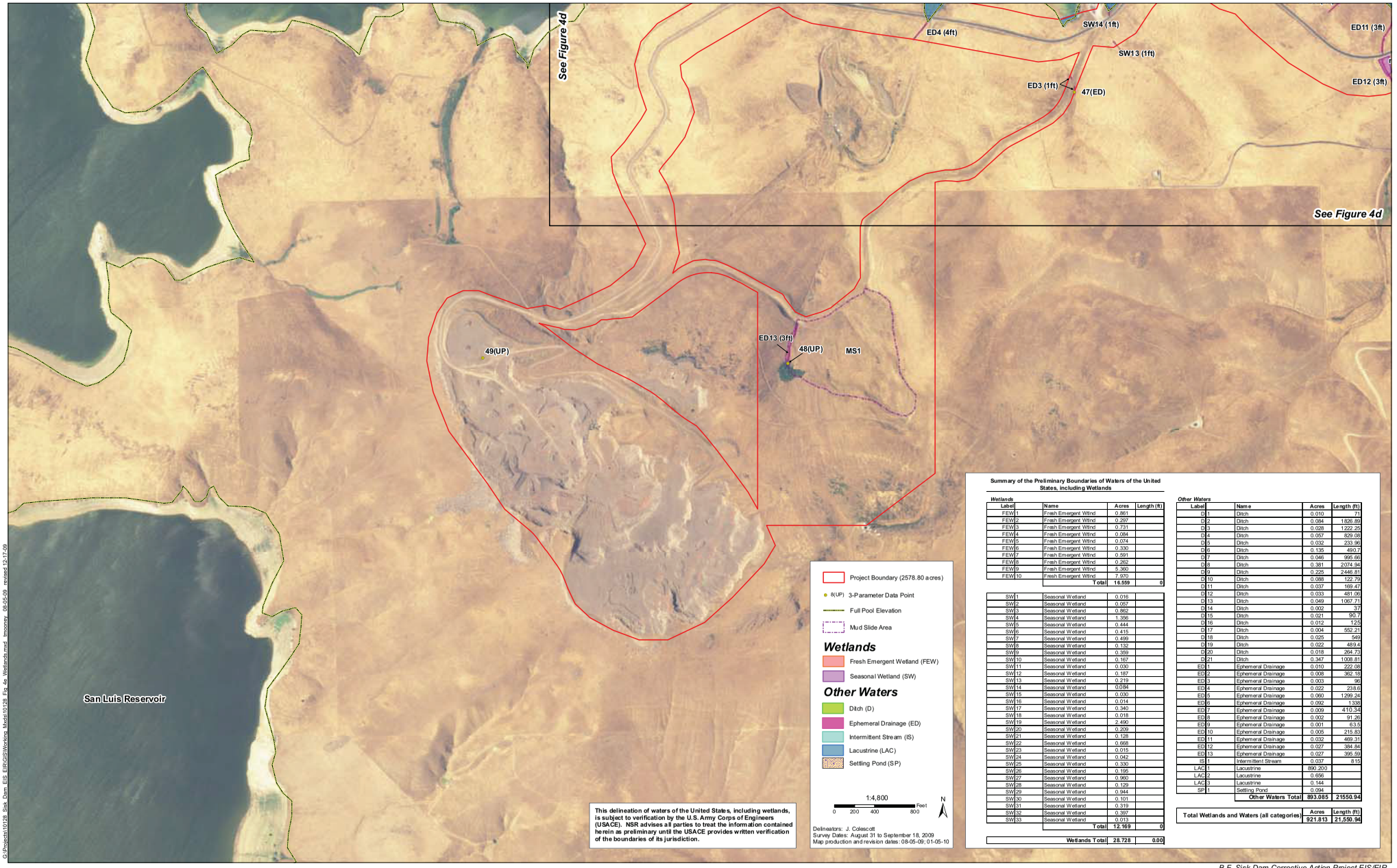
Figure 4d
Preliminary Boundaries of Waters of the United States, including Wetlands



Summary of the Preliminary Boundaries of Waters of the United States, including Wetlands

Wetlands

Label		Name	Acres	Length (ft)
FEW	1	Fresh Emergent Wtlnd	0.861	
FEW	2	Fresh Emergent Wtlnd	0.297	
FEW	3	Fresh Emergent Wtlnd	0.731	
FEW	4	Fresh Emergent Wtlnd	0.084	
FEW	5	Fresh Emergent Wtlnd	0.074	
FEW	6	Fresh Emergent Wtlnd	0.330	
FEW	7	Fresh Emergent Wtlnd	0.591	
FEW	8	Fresh Emergent Wtlnd	0.262	
FEW	9	Fresh Emergent Wtlnd	5.360	
FEW	10	Fresh Emergent Wtlnd	7.970	
		Total	**16.559**	**0**
SW	1	Seasonal Wetland	0.016	
SW	2	Seasonal Wetland	0.057	
SW	3	Seasonal Wetland	0.862	
SW	4	Seasonal Wetland	1.356	
SW	5	Seasonal Wetland	0.444	
SW	6	Seasonal Wetland	0.415	
SW	7	Seasonal Wetland	0.499	
SW	8	Seasonal Wetland	0.132	
SW	9	Seasonal Wetland	0.359	
SW	10	Seasonal Wetland	0.167	
SW	11	Seasonal Wetland	0.030	
SW	12	Seasonal Wetland	0.187	
SW	13	Seasonal Wetland	0.219	
SW	14	Seasonal Wetland	0.084	
SW	15	Seasonal Wetland	0.030	
SW	16	Seasonal Wetland	0.014	
SW	17	Seasonal Wetland	0.340	
SW	18	Seasonal Wetland	0.018	
SW	19	Seasonal Wetland	2.490	
SW	20	Seasonal Wetland	0.209	
SW	21	Seasonal Wetland	0.128	
SW	22	Seasonal Wetland	0.668	
SW	23	Seasonal Wetland	0.015	
SW	24	Seasonal Wetland	0.042	
SW	25	Seasonal Wetland	0.330	
SW	26	Seasonal Wetland	0.195	
SW	27	Seasonal Wetland	0.960	
SW	28	Seasonal Wetland	0.129	
SW	29	Seasonal Wetland	0.944	
SW	30	Seasonal Wetland	0.101	
SW	31	Seasonal Wetland	0.319	
SW	32	Seasonal Wetland	0.397	
SW	33	Seasonal Wetland	0.013	
		Total	**12.169**	**0**
		Wetlands Total	**28.728**	**0.00**

Other Waters

Label		Name	Acres	Length (ft)
D	1	Ditch	0.010	71
D	2	Ditch	0.084	1826.89
D	3	Ditch	0.028	1222.25
D	4	Ditch	0.057	829.08
D	5	Ditch	0.032	233.96
D	6	Ditch	0.135	490.7
D	7	Ditch	0.046	995.66
D	8	Ditch	0.381	2074.94
D	9	Ditch	0.225	2446.81
D	10	Ditch	0.088	122.79
D	11	Ditch	0.037	169.47
D	12	Ditch	0.033	481.06
D	13	Ditch	0.049	1067.71
D	14	Ditch	0.002	37
D	15	Ditch	0.021	90.7
D	16	Ditch	0.012	125
D	17	Ditch	0.004	552.21
D	18	Ditch	0.025	549
D	19	Ditch	0.022	489.4
D	20	Ditch	0.018	264.73
D	21	Ditch	0.347	1008.81
ED	1	Ephemeral Drainage	0.010	222.08
ED	2	Ephemeral Drainage	0.008	362.18
ED	3	Ephemeral Drainage	0.003	96
ED	4	Ephemeral Drainage	0.022	238.6
ED	5	Ephemeral Drainage	0.060	1299.24
ED	6	Ephemeral Drainage	0.062	1.38
ED	7	Ephemeral Drainage	0.009	410.34
ED	8	Ephemeral Drainage	0.002	91.26
ED	9	Ephemeral Drainage	0.001	63.5
ED	10	Ephemeral Drainage	0.005	215.83
ED	11	Ephemeral Drainage	0.032	469.31
ED	12	Ephemeral Drainage	0.027	384.84
ED	13	Ephemeral Drainage	0.027	395.59
IS	1	Intermittent Stream	0.037	815
LAC	1	Lacustrine	890.200	
LAC	2	Lacustrine	0.656	
LAC	3	Lacustrine	0.144	
SP	1	Settling Pond	0.094	
		Other Waters Total	**893.085**	**21550.94**

Total Wetlands and Waters (all categories)	Acres	Length (ft)
	921.813	**21,550.94**

Figure 4e
Preliminary Boundaries of Waters of the United States, including Wetlands