Attachment D: Jurisdictional Waters and Wetlands Delineation Report

Jurisdictional Waters and Wetland Delineation

Granite Esparto Property

October 2007

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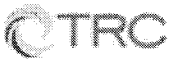

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1.0 INTRODUCTION

Granite Construction Company (Granite) contracted TRC to conduct a jurisdictional waters and wetland delineation of the Esparto property along Cache Creek near the town of Esparto in Yolo County, California. This document was created to identify the presence and boundaries of jurisdictional waters and wetlands regulated by the U.S. Army Corps of Engineers and Regional Water Quality Control Board pursuant to Section 404 and 401 of the Clean Water Act, and California Department of Fish and Game pursuant to Section 1600 of the California Fish and Game Code.

1.1 SETTING

The Granite Esparto property (property) is located in the Central Valley of California, west of the Sacramento River, in an area rich in agricultural production consisting of orchards, row crops, and grain crops. The property is situated in western Yolo County, approximately 1.5 miles north of the town of Esparto along the west side of County Road (CR) 87 near Cache Creek. Elevation on the property ranges from approximately 180 to 186 feet. The climate in the area can be characterized as mild, with average temperatures ranging from 33 to 55 degrees Fahrenheit in the winter and 57 to 96 degrees Fahrenheit in the summer. Average annual precipitation in the area is about 19 inches. A vicinity map is provided as Figure 1 in Attachment A.

1.2 JURISDICTION OVERVIEW

The purpose of this overview is to outline the different agencies with jurisdiction over waters and wetlands, and to define the extent of their jurisdiction. This basis is applied to the methodology for delineation work described in Section 2.

U.S. Army Corps of Engineers (Corps) "Waters of the United States"

The Corps administers and enforces Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act (CWA). Under Section 10, a Corps permit is required for work or structures in, over, or under navigable "waters of the United States". Under Section 404 of the CWA, a Corps permit is required for the discharge of dredged and/or fill material into "waters of the United States".

The term "waters of the United States" is defined at 33 CFR part 328 to include: (i) all navigable waters (including all waters subject to the ebb and flow of the tide), (ii) all interstate waters and wetlands, (iii) all other waters such as interstate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce, (iv) all impoundments of waters mentioned above, (v) all tributaries to waters mentioned above, (vi) the territorial seas, and (vii) all wetlands adjacent to waters mentioned above. Section 404 permits are required for discharges of dredged and/or fill material placed in these waters. Navigable waters of the United States are defined as waters that have been used in the past, are now used, or are susceptible to use as a means to transport interstate or foreign

commerce up to the head of navigation. Section 10 and/or Section 404 permits are required for construction activities in these waters.

The definition of "waters of the U.S." was altered by the January 2001 U.S. Supreme Court Decision, *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers et al (SWANCC)*. In the SWANCC decision, the Supreme Court held that the Corps exceeded its authority by asserting CWA jurisdiction over an abandoned sand and gravel pit, solely because it provided habitat for migratory birds. The SWANCC rule is limited to waters that are non-navigable, isolated and intrastate and clarified that the Corps staff should no longer rely on the use of waters by migratory birds as the sole basis for asserting jurisdiction.

In June 2007, the Supreme Court's decision in the consolidated cases Rapanos v. United States and Carabell v. United States, 126 S. Ct. 2208 (2006) (herein referred to as "Rapanos") was implemented, which addresses the jurisdiction over waters of the United States under the Clean Water Act. On June 5, 2007 the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers issued a memorandum summarizing Rapanos as follows:

The agencies will assert jurisdiction over the following waters:

- Traditional navigable waters
- Wetlands adjacent to traditional navigable waters
- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months)
- Wetlands that directly abut such tributaries

The agencies will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with traditional navigable water:

- Non-navigable tributaries that are not relatively permanent
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent
- Wetlands adjacent to, but that do not directly abut, a relatively permanent non-navigable tributary

The agencies generally will not assert jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow)
- Ditches (including roadside ditches) excavated wholly in uplands and draining only uplands, and that do not carry a relatively permanent flow of water

The agencies will apply the significant nexus standard as follows:

- A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of downstream traditional navigable waters

- Significant nexus includes consideration of hydrologic and ecologic factors

In the absence of wetlands, the limits of Corps jurisdiction in non-tidal waters, such as intermittent and ephemeral streams, extends to the ordinary high water mark (OHWM), which is defined at 33 CFR 328.3(e) as:

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

Non-wetland waters are classified as either ephemeral, intermittent, or perennial waters as defined in the January 15, 2002 Federal Register notice:

Ephemeral Stream – An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral streambeds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Intermittent Stream – An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Perennial Stream – A perennial stream has flowing water year-round during a typical year. The water table is located above the streambed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

Wetlands are defined at 33 CFR 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support...a prevalence of vegetation typically adapted for life in saturated soil conditions." Wetlands generally include swamps, marshes, bogs, and similar areas; and where they occur adjacent to tributary waters, the Corps extends jurisdiction to the outer edges of those wetlands. The methodology set forth in the 1987 Wetland Manual generally requires that in order to be considered a wetland, the vegetation, soils, and hydrology of an area must exhibit at least minimal hydric characteristics. While the manual provides great detail in methodology and allows for varying special conditions, a wetland should normally meet each of the following three criteria:

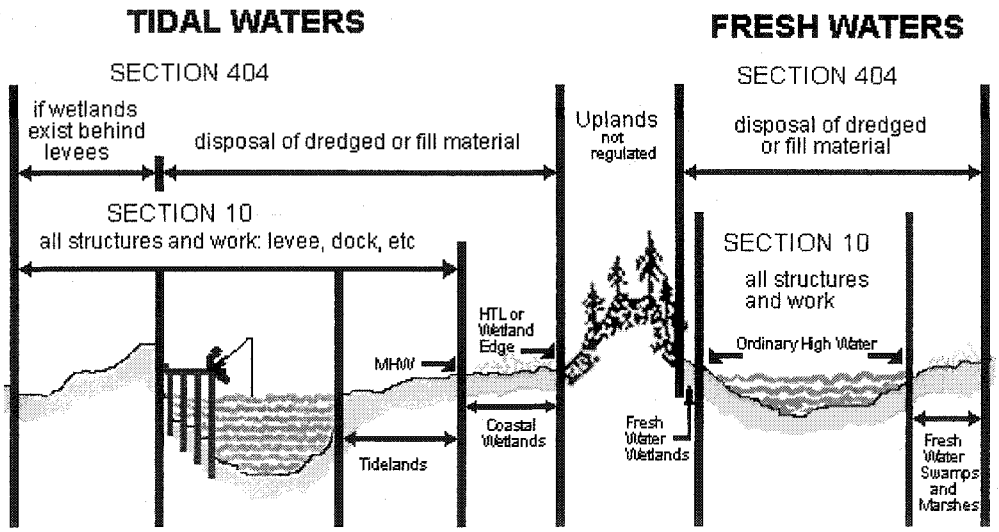
1. ***Hydrophytic Vegetation:*** More than fifty percent of the dominant plant species at the site must be typical of wetlands (i.e. rated as facultative or wetter in Region 10-California in the U.S. Fish and Wildlife Service 1988 *National List of Plant Species that Occur in Wetlands*);

2. ***Hydric Soils***: Soils must exhibit physical and or chemical characteristics indicative of permanent or periodic saturation (for example, a gleyed color, or mottles with a matrix of

low chroma indicating a relatively consistent fluctuation between aerobic and anaerobic conditions); and

3. ***Hydrology***: Hydrologic characteristics must indicate that the ground is saturated to within 12 inches of the surface for at least 5 percent of the growing season during a normal rainfall year. For the Sacramento Valley, 5 percent of the growing season is equivalent to 18 days.

The following depicts the boundaries of the Corps jurisdiction:



Typical activities requiring Section 10 permits are:

- Construction of piers, wharves, bulkheads, dolphins, marinas, ramps, floats intake structures, and cable or pipeline crossings over or under navigable or tidal waters.
- Dredging and excavation within navigable or tidal waters.

Typical activities requiring Section 404 permits are:

- Addition of fill material in "waters of the U.S." or adjacent wetlands for residential, commercial, or recreational developments.
- Construction of bridges, culverts, revetments, groins, breakwaters, levees, dams, dikes, and weirs in "waters of the U.S." or adjacent wetlands.

Corps Permit Mechanisms

Two distinct permit categories exist under the Section 404 process, the Nationwide Permit (NWP) and the Individual Permit (IP). NWPs are general permits for specific categories of

activities that require minimal impacts on aquatic resources and meet certain conditions. In order to qualify for a NWP, the project applicant must demonstrate compliance with the general and/or regional conditions set forth by the Corps NWP program. A list of NWPs can be found starting on Page 2078 at: http://www.usace.army.mil/civilworks/cecwo/reg/2002nwps.pdf. An IP is required for all projects that do no qualify for a Nationwide Permit, generally including impacts to greater than 0.50 acre of jurisdictional "waters of the U.S." by a proposed project, or if over 300 linear feet of intermittent, perennial, wetland, and in some cases even ephemeral (since March 2007), waters will be impacted.

IP applications are much more complex than NWPs; therefore the processing time is generally longer. In accordance with Section 404(b)(1) of the CWA, projects subject to an IP must overcome the presumption that a less environmentally damaging, practicable alternative is available through a detailed on-site and off-site alternatives analysis. Pursuant to the Corps Section 404 permitting process, an applicant must first avoid and minimize impacts to jurisdictional "waters of the U.S." to the largest extent practicable. Once those actions have been accomplished, mitigation may be proposed to offset impacts to jurisdictional areas and ensure no net-loss of "waters of the U.S."

When processing a Section 404 or Section 10 Permit, the Corps must ensure that a project complies with the following requirements:

- Section 106 of the National Historic Preservation Act (NHPA);
- Section 7 of the federal Endangered Species Act (ESA); and
- Section 401 of the Clean Water Act.

Compliance with Section 106 of the National Historic Preservation Act: A project must comply with Section 106 of the NHPA when obtaining a federal permit. An updated historic and archaeological records and literature search of the area is usually required to assess potential impacts to cultural resources. If existing documentation is available and acceptable to the Corps, a new records and literature search may not be necessary. If no archaeological sites within the proposed project area are identified in the records and literature search, the Corps can determine that Section 106 requirements have been met. If there is potential for impacts to cultural resources, additional surveys may be required to develop mitigation options in order to comply with Section 106 requirements.

Compliance with Section 7 of the Endangered Species Act (ESA): Under Section 7 of the ESA, the U.S. Fish and Wildlife Service (USFWS) reviews activities that may affect federally protected species and critical habitat for actions requiring federal permits. An initial biological resources review is usually required to assess potential for impacts to sensitive species and/or habitats. If the initial biological resource review finds potential for impact to federally protected species or critical habitat, additional review may be required including a report to be submitted

for review by USFWS in order to comply with Section 7 of the ESA. If federally protected species or habitat is present in a project area, the USFWS will normally place conditions on a project to avoid or mitigate for potential impacts during formal or informal Section 7 consultation. For anadromous fish species and marine mammals, NOAA Fisheries is the lead agency for Section 7 review. Formal Section 7 consultation, if required, can take six months or more to complete.

Compliance with Section 401 of the Clean Water Act: Section 401 of the Clean Water Act (CWA) addresses the impact of a project on water quality. A project must comply with Section 401 of the CWA before the Corps can issue a Section 404 Permit. The State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Board (RWQCB) coordinate issuance of Section 401 Water Quality Certifications or Waivers of Certification, depending upon the extent of impacts to "waters of the U.S.".

Regional Water Quality Control Board (RWQCB)

Pursuant to Section 401 of the CWA, the RWQCB regulates "waters of the U.S." with similar jurisdiction as the Corps. The RWQCB focuses on the effects of a project on downstream water quality conditions and beneficial uses. In contrast to the Corps, the RWQCB may assess jurisdiction over isolated features pursuant to the Porter-Cologne Water Quality Act. To obtain a Section 401 Water Quality Certification, the project must be in compliance with the California Environmental Quality Act (CEQA).

California Department of Fish and Game (CDFG)

The State of California regulates water resources under Sections 1600-1616 of the California Fish and Game Code. Section 1602 applies to state or local government /public utility projects and private projects. Pursuant to Division 2, Chapter 6, Section 1602 of the California Fish and Game Code, CDFG regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake ("waters of the State"), which supports fish or wildlife. Section 1602 states the following:

> ...an entity may not substantially divert or obstruct the natural flow, or substantially change, or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit, or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into a river, stream, or lake, unless...the department receives written notification regarding the activity in the manner prescribed by the department.

CDFG considers most drainages to be "streambeds" unless it can be demonstrated otherwise. A stream (which includes creeks and rivers) is defined as "a body of water that flows at least periodically or intermittently through a bed or channel having banks, and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation." Additionally, CDFG defines "lake" to include "natural lakes or man-made reservoirs." CDFG jurisdiction includes ephemeral, intermittent, and perennial

watercourses and extends bank to bank or, if present, to the limit of riparian habitat located contiguous to the water resource that functions as part of the watercourse system. The California Fish and Game Code defines "riparian habitat" as "... lands which contain habitat which grows close to, and which depends on, soil moisture from a nearby freshwater source." CDFG may also assert jurisdiction over isolated drainages pursuant to the Fish and Game Code of California.

If impacts are proposed to "waters of the State', the CDFG must issue a Section 1602 Streambed Alteration Agreement (SAA) which may contain conditions related to mitigation of impacts to habitat within their jurisdiction. For an SAA to be issued, the project must comply with CEQA as documented by the submittal of a certified CEQA document, a Notice of Determination (NOD), and proof of NOD filing fees. In addition, if the project impacts any state-protected species or habitat, the CDFG will also require a Section 2081 Memorandum of Agreement for the project. If a federal incidental take statement pursuant to a federal Section 7 consultation or a federal Section 10(a) incidental take permit have been obtained, a Consistency Determination may be requested pursuant to Section 2080.1.

1.3 CACHE CREEK AREA PLAN

Yolo County has adopted the Cache Creek Area Plan which includes the Cache Creek Resource Management Plan (CCRMP) and the Off-channel Mining Plan (OCMP). The CCRMP governs activities within the banks and the 100-year flood plain of Cache Creek, and the OCMP governs mining operation and reclamation activities outside of the channel. Adoption of the CCRMP discontinued commercial mining within the active creek channel. The Yolo County Cache Creek Improvement Plan includes implementation of Test 3 Line as part of the CCRMP. This includes construction of engineered channel embankments at key locations, including the portion of creek within the property boundaries, to improve channel stability and minimize flood damage. Yolo County holds a general permit that covers minor bank and channel stabilization, habitat management, and floodway management projects within the 100-year floodplain that are consistent with the CCRMP. A Flood Hazard Development Permit may be applied for directly from the County to conduct these types of activities within the CCRMP area (County of Yolo, 2007). Conditions of approval under this permit include compliance with all applicable requirements of CDFG Streambed Alteration Agreement R2-2002-251 (issued August 30, 2002), Corps General Permit #58 (issued May 1, 2004), RWQCB 401 Certification dated August 28, 2002, and the USFWS September 19, 1996 Programmatic Formal Consultation pursuant to the draft and final Supplemental Environmental Impact Report (EIR) dated April 2002 and July 2002 respectively. The Flood Hazard Development Permit also requires compliance with existing approved spill prevention and emergency plan (or equivalent procedures), and a requirement to return the disturbed low flow creek channel to the original alignment and conditions upon completion of the Project.

Granite's submittal includes a net benefit proposal with implementation of a segment of the Test 3 Line for Cache Creek, which has already been analyzed under separate environmental documents and will require the approval of a Flood Hazard Development Permit for Yolo County. The Test 3 Line implementation is not a part of Granite's proposed project and is therefore not considered in this report.

2.0 METHODS

2.1 JURISDICTIONAL DELINEATION

Prior to beginning the field delineation, TRC examined an aerial photograph of the property to determine the potential locations of Corps, RWQCB, and CDFG jurisdiction, and the U.S. Geological Survey map (Figure 1 of Attachment A) to determine the presence of any historical blueline drainages. The USFWS National Wetlands Inventory (NWI) and available soil mapping data for the property were also reviewed.

Fieldwork for the delineation was conducted May 22, 2007 by TRC biologists Ceri Williams-Dodd and Ryan Villanueva. The delineation involved walking the extent of all drainages/features on the property and physically identifying hydrologic, vegetative, and geomorphic characteristics within the property, in order to delineate jurisdictional waters and wetlands pursuant to the guidelines outlined in Section 1.2. Wetlands were identified by the "three-factor" approach, in which criteria for wetland hydrology, hydrophytic vegetation, and hydric soils must all be met to conclude that an area is wetland, as described in the 1987 Corps Wetland Delineation Manual and summarized below.

Vegetation: Plant species were identified in the field and the indicator status of dominant plants was determined using The National List of Plant Species that Occur in Wetlands: Region 10–California (U.S. Fish and Wildlife Service 1988 and Draft Version from 1996). Plant species were classified as obligate wetland (OBL) with greater than 99% probability of occurring in wetlands; facultative wetland (FACW) with 67% to 99% probability of occurring in wetlands; facultative (FAC) with 33% to 67% probability of occurring in wetlands; facultative upland (FACU) with 1% to 33% probability of occurring in wetlands; or upland (UPL) with less than 1% probability of occurring in wetlands. Positive (+) and negative (-) modifiers subdivide the three facultative categories. The positive sign indicates that the species is more frequently found in wetlands, and a negative sign indicates that the species is less frequently found in wetlands.

Hydrology: The presence of primary wetland hydrology indicators was determined by observing inundation, saturation, water marks, sediment deposits, drainage patterns, and/or drift lines. Soil pits were dug to a depth of 14 inches, or until refusal, using a sharpshooter shovel, and allowed to stand undisturbed for at least 10 minutes. Observations were then recorded as to depth of free water in the pit, and depth of saturated soil.

Soil: Soil profiles were examined for color and texture. Soil color was determined using a Munsell Soil Color Chart and hydric soil characteristics were identified (i.e., sulfidic odor, low chroma colors, mottling, etc.).

The results were recorded on Wetland Delineation Forms (Attachment B), and the boundaries of Corps/RWQCB and CDFG jurisdiction were delineated using a Trimble Geo XT Global Positioning System (GPS). The GPS receiver and data collector were operated following manufacturer's recommendations for obtaining sub-meter accuracy. Post-processing of the data

was carried out using Pathfinder Office software and electronic Geographic Information Systems (GIS) shape files were created. GIS data was geo-referenced to aerial photography to produce figures with visible boundary lines of jurisdictional waters. Location of sampling sites and delineated boundaries of jurisdictional waters and wetlands are presented in Figure 2 (Attachment A).

2.2 SENSITIVE SPECIES

A habitat assessment was conducted by TRC in May of 2007 to assess the potential for presence on the property of state or federally listed endangered, threatened, or otherwise sensitive species known to occur on, or in the vicinity of, the property according to available sources, including USFWS, CDFG's California Natural Diversity Database (CNDDB), and California Native Plant Society (CNPS) species-status species lists. A list of species known to occur near the property was developed as part of that assessment, and the results are presented in a separate TRC report titled *Biological Assessment, Granite Esparto Property* (October 2007).

3.0 RESULTS

3.1 SOILS

The general soil data is labeled as Yolo-Brentwood-Sycamore (CA490). According to the United States Department of Agriculture Natural Resources Conservation Service web soil survey (available at http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx) three soils are mapped on the delineation property, Soboba gravelly sandy loam (Sn), Riverwash (Rh), and Loamy alluvial land (Lm). Soboba gravelly sand loam is characterized as being excessively drained and partially hydric. Riverwash is characterized as being excessively drained and partially hydric. Loamy alluvial land is characterized as being well drained and partially hydric (UC Davis 2007).

3.2 JURISDICTIONAL WATERS

Cache Creek

Cache Creek is identified on the USGS as a blueline drainage and is also mapped by the NWI. According to the *Biological Assessment, Granite Esparto Property* (TRC, October 2007), habitat within Cache Creek is classified as riverine, with great valley willow scrub and a few cottonwood (*Populus* sp.) stands along the margins of the creek (Figure 2 in Attachment A). The riverine habitat on the property consists predominantly of gravel bars and open water, with patches of riparian vegetation consisting of mule's fat (*Baccharis salicifolia*) and willow (*Salix* sp.) species near persistent water sources. A majority of the great valley willow scrub on the property along Cache Creek has sparse stands of cottonwood with an open understory dominated by willows, including arroyo willow (*Salix lasiolepis*), black willow (*Salix gooddingii*), and red willow (*Salix laevigata*), and other low shrubs and grasses including ripgut brome (*Bromus diandrus*), Mexican tea (*Chenopodium amnrosioides*), and hedge mustard (*Sisymbrium officinale*).

Cache Creek has a defined bed and bank, and displays jurisdictional indicators, including flowing water and debris racks, and would therefore be considered Corps/RWQCB jurisdictional "waters of the U.S." and CDFG jurisdictional "waters of the State". Based on field observations of jurisdictional indicators, the Corps/RWQCB limit of jurisdiction within Cache Creek extends across the creek bed from toe of slope to toe of slope. This encompasses the entire riverine area totaling 43.3 acres, as shown on Figure 2 in Attachment A. The CDFG limit of jurisdiction within Cache Creek extends across the creek bed from top of bank to top of bank to the limit of riparian vegetation (great valley willow scrub), where present. This encompasses the entire riverine area (43.3 acres), and the great valley willow scrub along the creek edge, including three cottonwood stands (3.7 acres), totaling 47 acres (Figure 2 in Attachment A).

Other Jurisdictional Waters

The area north of Cache Creek up to the Granite gravel facility access road is mapped as predominantly non-native grassland with a small area of ruderal/ornamental to the east, according to the *Biological Assessment, Granite Esparto Property* (TRC, October 2007). This area is divided by several man-made berms extending in an approximately northeast to southwest direction from the road to the creek. Within the area a small depressional swale, a few stands of mule fat, and a cottonwood stand were observed. These areas were assessed for jurisdictional waters and wetlands indicators, and Data Points were assessed in these areas (Data Points 1, 2 and 3). A map of the data points is provided as Figure 2 in Attachment A, and the delineation forms are provided in Attachment B. Representative photos are provided as Attachment C. A summary of the results is provided below.

Data Point 1 was taken in a representative area within a small swale feature adjacent to the eastern property boundary. The swale appeared to have been created by irrigation run-off draining from orchards to the north via a pipe underneath the gravel facility access road. The swale displayed minimal signs of hydrology identified by some disturbance of upland vegetation (less than 0.5 feet in width) in a few areas closest to the access road from periodic irrigation run-off. The swale lacked a defined bed and bank and OHWM, and the disturbance of vegetation was only evident closer to the access road, and not towards the creek. No other signs of hydrology were observed. The swale did not have wetland (hydric) soils, or support hydrophytic vegetation, being dominated by Wild oat (*Avena fatua*) (UPL), *Lolium sp* (FAC*) and *Rumex crispus* (FACW), and was therefore not considered a wetland. In addition, the feature was not considered Corps/RWQCB or CDFG jurisdictional due to the absence of a defined bed and bank and OHWM, connection to the creek, and the artificial, temporary nature of the water source.

Data Point 2 was taken within a representative stand of mule fat (FACW) with an understory consisting of an unknown grass. The area showed diffuse signs of water flow originating from periodic irrigation run-off draining from orchards to the north via a pipe underneath the gravel facility access road. The area lacked wetland (hydric) soils and a defined bed and bank or OHWM, and was therefore not considered Corps/RWQCB and CDFG jurisdictional waters or wetlands.

Data Point 3 was taken within a man-made ditch created in an upland area along the base of the gravel facility access road and connecting to the creek along a created berm. The ditch was determined not to have wetland (hydric) soils and hydrological signs were not defined. Only a few areas of cracked soils were observed and some shelving that could represent an OHWM. The ditch also appeared to have been originally lined with gravel. The source of water to this ditch originates from a plastic sheet piping system that appears to be used to drain water from the agricultural operations to the north on an as-needed basis. The ditch was vegetated with mule fat (FACW), arroyo willow (Salix lasiolepis) (FACW) and black willow (*Salix gooddingii*) (OBL); the canopy was approximately 15 feet wide across the approximate 3 feet wide ditch. The ditch was not considered a wetland. Based on the new Rapanos guidelines, the Corps should not exert jurisdiction over this ditch.

Data Point 4 was taken within an isolated cottonwood stand along the west side of a created berm, and appeared to be supported by run-off from the agricultural operations. The area was dominated by Fremont's cottonwood (*Populus fremontii*) (FACW) and a few mule fat (FACW) and red willow (*Salix laevigata*) (FACW+), but was determined not to have wetland (hydric) soils or wetland hydrology. The area lacked a defined bed and bank and an OHWM, and was therefore not considered jurisdictional waters or wetlands.

Other water features observed on the property included active agricultural irrigation ditches consisting of small unvegetated channels created in the soil. None of these features were considered jurisdictional waters or wetlands based on the absence of field indicators.

3.3 WETLANDS

Potential wetland areas were visible adjacent to the flowing portion of Cache Creek where seasonal water flow becomes ponded. None of these wetlands are within the project area proposed for impacts. At the time of the assessment, the flow in Cache Creek was low, covering only a small portion of the creek bed nearest the north bank. Data Points were assessed in these areas in order to determine wetland characteristics (Figure 2, Attachment A). Delineation forms are available in Attachment B, and representative photos in Attachment C.

Data Point 5 is located in between two dry channel beds. The area was determined to have hydrophytic vegetation, including mule fat (FACW), red willow, *Cyperus* sp. (FACW), black willow (OBL), *Epilobium* sp. (unknown), *Typha* sp. (OBL) and *Scirpus* sp. (OBL), and displayed signs of hydrology, but no wetland (hydric) soils. The vegetation was all young growth, indicating the area had been recently created and may therefore not have been inundated long enough to develop hydric soils. This area, therefore, does not meet all three wetland parameters.

Data Point 6 is located adjacent to a bridge footing and was determined to be a Corps wetland by passing all three tests (Vegetation, Hydrology, Soils). Dominant vegetation included mule fat (FACW), *Cyperus* sp. (FACW), *Lolium* sp. (FAC*), rabbitsfoot grass (*Polypogon monspeliensis)* (FACW+), *Epilobium* sp. (unknown), *Typha* sp. (OBL), and *Rumex crispus* (FACW$^-$). The 0.03 acre wetland appears to have been created by water ponding in a depressional area created as a result of scour around the bridge's concrete footing.

Data Point 7 is located immediately west of Data Point 6, and was determined to be a Corps wetland by passing all three tests (Vegetation, Hydrology, Soils). Dominant vegetation included mule fat (a FACW species), *Cyperus* sp. (FACW), rabbitsfoot grass (*Polypogon monspeliensis)* (FACW+) and *Typha* sp. (OBL). The 0.01 acre wetland appears to have been created by water ponding in a depressional area created as a result of scour associated with the bridge.

Data Point 8 was determined to be a Corps wetland by passing all three tests (Vegetation, Hydrology, Soils). Dominant vegetation included mule fat (FACW), *Cyperus* sp. (FACW) and *Typha* sp. (OBL). The 0.05 acre wetland appears to have been created by water ponding in a depressional area as a result of creek scour.

Data Point 9 is located adjacent to a bridge footing and was determined to be a Corps wetland by passing all three tests (Vegetation, Hydrology, Soils). Dominant vegetation included mule fat (FACW) and *Typha* sp. (OBL). The 0.01 acre wetland appears to have been created by water ponding in a depressional area created as a result of scour around the bridge's concrete footing.

Corps/RWQCB "waters of the U.S." total 43.3 acres within Cache Creek, as outlined in Section 3.2. Of this, a total of 0.1 acres consists of the Corps jurisdictional wetlands outlined above. The remaining 43.2 acres would be considered Corps jurisdictional non-wetland waters. The wetlands appear to have developed in depressional areas within the creek bed created as a result of scour and subsequent ponding of water. Since the flow path of the creek is dynamic, the locations and frequency of these wetlands are likely seasonal. A summary of jurisdictional waters and wetlands on the property is provided in Table 1.

Table 1: Summary of Jurisdictional Waters and Wetlands on the Granite Esparto Property

Location	Habitat or Data Point	Waters of the State (Acres)	Waters of the U.S. – Non-Wetland (Acres)	Wetlands (Acres)
Cache Creek	Riverine	43.3	43.2	0.0
	Willow Scrub	3.7	0.0	0.0
	Data Point 5	0.0	0.0	0.0
	Data Point 6	0.0	0.0	0.03
	Data Point 7	0.0	0.0	0.01
	Data Point 8	0.0	0.0	0.05
	Data Point 9	0.0	0.0	0.01
Total		***47.0***	***43.2***	***0.1***

4.0 REFERENCES

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Google Earth Pro. 2007. Image © 2007 TerraMetrics and ©2007 Europa Technologies.

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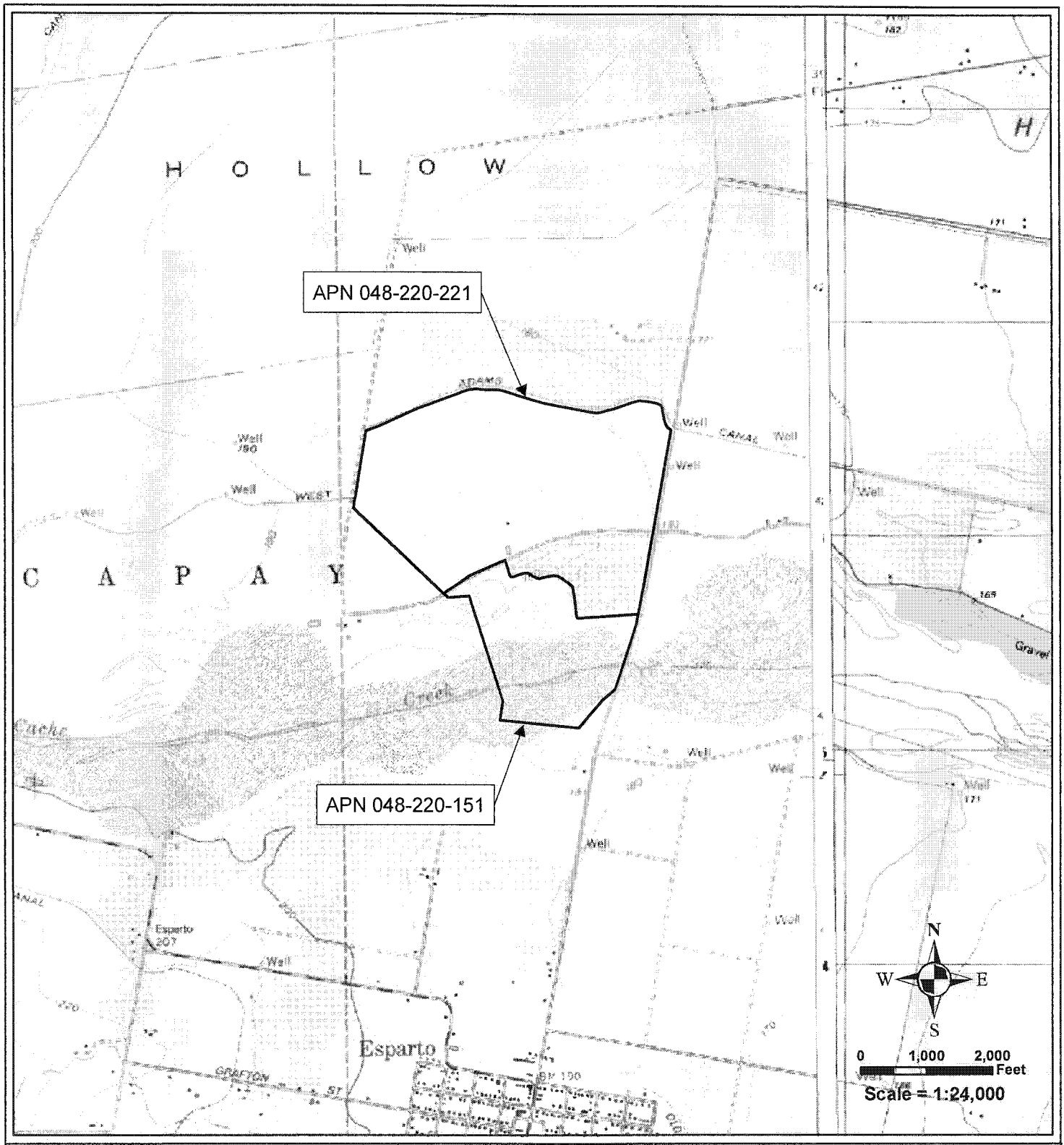
Attachment A: Vicinity and Wetland Delineation Maps



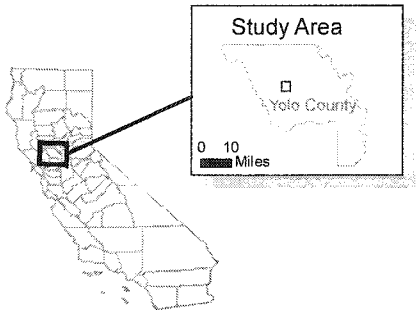
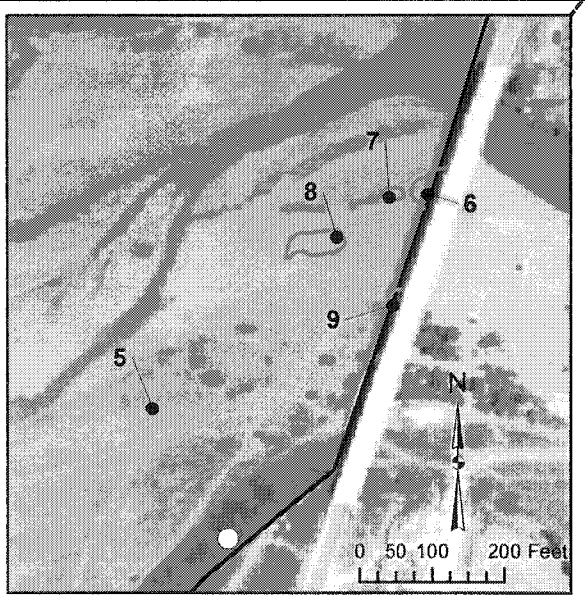


Figure 1
Property Location Map

August 21, 2007

TRC



- Soil pit
- Cottonwood stand
- Wetland boundary
- Study site

Vegetation Communities

- Great Valley Willow Scrub
- Riverine

Data Sources: 2007, TRC; 2005 USDA National Agriculture Inventory Project

Granite Esparto Property

Figure 2. Wetland Delineation

Map date June 15, 2007

TRC

Attachment B: Wetland Delineation Forms

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Granite Esparto Applicant/Owner: Investigator:	Date: 5/22/07 County: Yolo State: CA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: 1

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Avena	herb	UPL	9.		
2. Lolium	herb	FAC*	10.		
3. Rumex crispus	herb	FACW	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: originates from culvert (Ag land)

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	7/12	(in.)
Depth to Free Water in Pit:	none	(in.)
Depth to Saturated Soil:	7/12	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ✓ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12	A	7.5YR 3/2	none	none	Sandy clay

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks: width = 0.5 - 1.0 feet

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Granite Esparto Applicant/Owner: Investigator:	Date: 5/22/07 County: Yolo State: CA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: 2

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. mule fat	shrub	FACW	9.		
2. grass	herb		10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: unknown grass

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ✓ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: diffused flow from culvert to the north

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12	A	10YR 4/2	none	none	silty clay

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks: potential floodplain - 50 - 100 year

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Granite esparto Applicant/Owner: Investigator:	Date: 5/22/07 County: State:
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: 3

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. black willow	tree	OBL	9.		
2. Arroyo willow	tree	FACW	10.		
3. mule fat	shrub	FACW	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____(in.)

Depth to Free Water in Pit: _____(in.)

Depth to Saturated Soil: _____(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: 15 feet COFG Cracked soils
3 feet core

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Field Observations
Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12	A	7.5YR 4/4	none	none	silty clay

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks: man made drainage, top layer is gravel (0-2 inches). Culvert from the Ag fields

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Granite esparto Applicant/Owner: _____ Investigator: _____	Date: 5/22/07 County: Yolo State: CA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: 4

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. red willow	tree	FACW+	9.		
2. mule fat	tree	FACW	10.		
3. cottonwood	tree	FACW	11.		
4. cow slip	herb		12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). _____

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: cracked soils in a few small areas - not consistent or widespread

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12	A	7.5YR 3/2	none	none	clay sand

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No (Circle)	(Circle)
Wetland Hydrology Present?	Yes	(No)	
Hydric Soils Present?	Yes	(No)	Is this Sampling Point Within a Wetland? Yes (No)

Remarks: collection of runoff

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Granite espark Applicant/Owner: Investigator:	Date: 5/22/07 County: Yolo State: CA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: S

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Typha	Shrub	OBL	9.		
2. Scirpus	shrub	OBL	10.		
3. Umbrella Sedge - Cyperus herb		FACW	11.		
4. black willow - Salix goodingii	tree	OBL	12.		
5. mule fat - baccharis salicifolia	shrub	FACW	13.		
6. Epilobium -			14.		
7. Red willow	tree	FACW+	15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: 20 (in.)

Depth to Saturated Soil: 20 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ✓ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Field Observations
Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-20	A				Sandy

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks: none of the sandy soil indicators were present

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks: young growth vegetation. In between main channels. May move with high storms

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Granite Esparto Applicant/Owner: Investigator:	Date: 5/22/07 County: Yolo State: CA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: 6

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Epilobium			9.		
2. Typha	shrub	OBL	10.		
3. Rabbitfoot grass	herb	FACW+	11.		
4. Mulefat	shrub	FACW	12.		
5. Cyperus	herb	FACW	13.		
6. Rumex Crispus	herb	FACW	14.		
7. Lolium	herb	FAC*	15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	none	(in.)
Depth to Free Water in Pit:	6	(in.)
Depth to Saturated Soil:	2	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ✓ Inundated
- ✓ Saturated in Upper 12 Inches
- ___ Water Marks
- ✓ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2	B				Clay sand
2-	A				sandy

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: 0-2 inches = organic layer
hydric soil indicator for sandy soils

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Circle) (Yes) No

Remarks: An area were water collects by the bridge.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Granite Esparto Applicant/Owner: _____ Investigator: _____	Date: 5/22/07 County: Yolo State: CA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: 7

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. mule fat	shrub	FACW	9.		
2. rabbits foot grass	herb	FACW+	10.		
3. Typha	herb	OBL	11.		
4. Cyperus	herb	OBL	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). _____

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	none	(in.)
Depth to Free Water in Pit:	12	(in.)
Depth to Saturated Soil:	none	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- X Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2	O				sandy clay
2-	A				sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: passes for sandy soils

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No (Circle)	(Circle)
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	(Yes) No	Is this Sampling Point Within a Wetland? (Yes) No

Remarks: low spot, pooling water

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Granite Esparto Applicant/Owner: Investigator:	Date: 5/22/07 County: Yolo State: CA
Do Normal Circumstances exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: 8

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. muletat	Shrub	FACW	9.		
2. Typha	herb	OBL	10.		
3. Cyperus	herb	FACW	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 6 (in.)
Depth to Free Water in Pit: 12 (in.)
Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
✓ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Field Observations
Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2	O				Sandy Clay
2-	A				sand

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks: passed for sandy soils

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No (Circle)	(Circle)	
Wetland Hydrology Present?	(Yes)	No		
Hydric Soils Present?	(Yes)	No	Is this Sampling Point Within a Wetland?	(Yes) No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Granite Esparto Applicant/Owner: _____ Investigator: _____	Date: 5/22/07 County: Yolo State: CA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: 9

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Typha	herb	OBL	9.		
2. Muletat	shrub	FACW	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). _____

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: 6 (in.)

Depth to Saturated Soil: 2 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ✓ Inundated
- ✓ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2	O				Clay sand
2-	A				Sandy

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: hydric soils passed for sandy soils

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

(Circle)
Is this Sampling Point Within a Wetland? (Yes) No

Remarks: An area where water collects by the bridge.

Approved by HQUSACE 3/92

Attachment C: Photo Exhibit

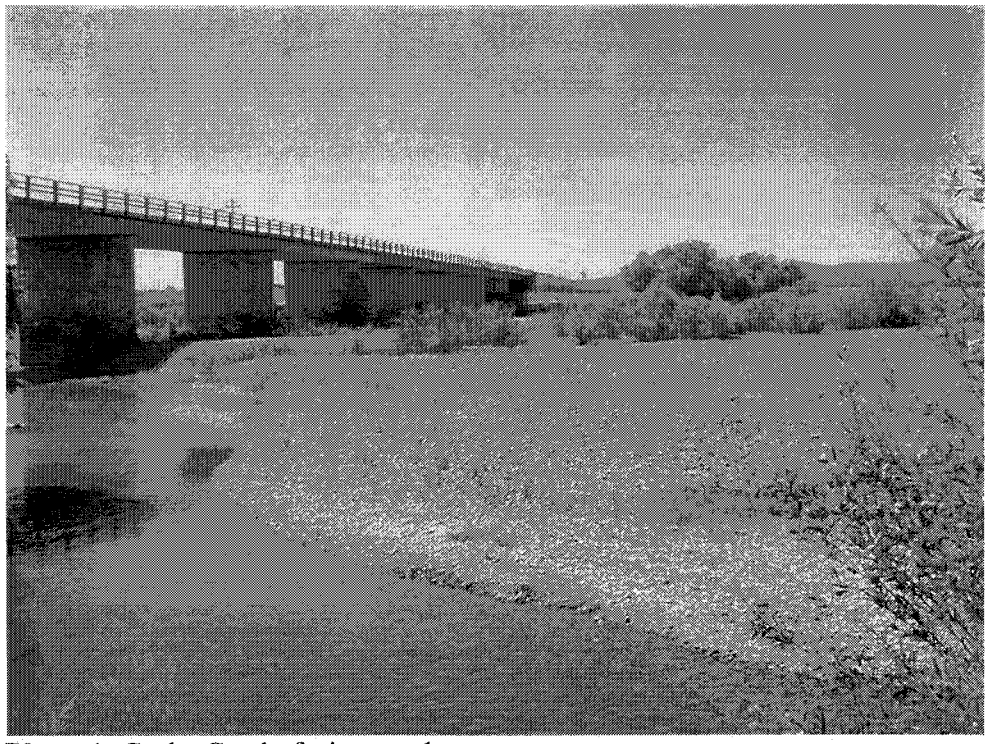


Photo 1: Cache Creek, facing southeast.

Photo 2: Cache Creek, facing southwest.

Photo 3: Area around soil pit 1, facing north.

Photo 4: Soil pit 1, facing south.

Photo 5: Area around soil pit 2, facing east.

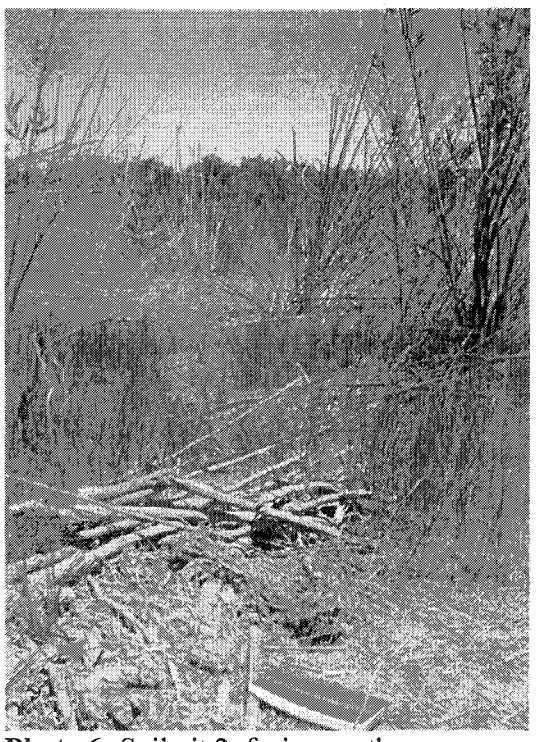


Photo 6: Soil pit 2, facing north.

Photo 7: Site overview, facing east, showing non-native grassland area and Cache Creek in the background.

Photo 8: Site overview, facing northeast, within non-native grassland area.

Photo 9: Northern bank of Cache Creek, facing southwest.

Photo 10: Site overview, facing northwest, of non-native grassland area with the ditch in the background.

Photo 11: Area around soil pit 3 (ditch), facing east.

Photo 12: Area around soil pit 3 (ditch), facing southwest.

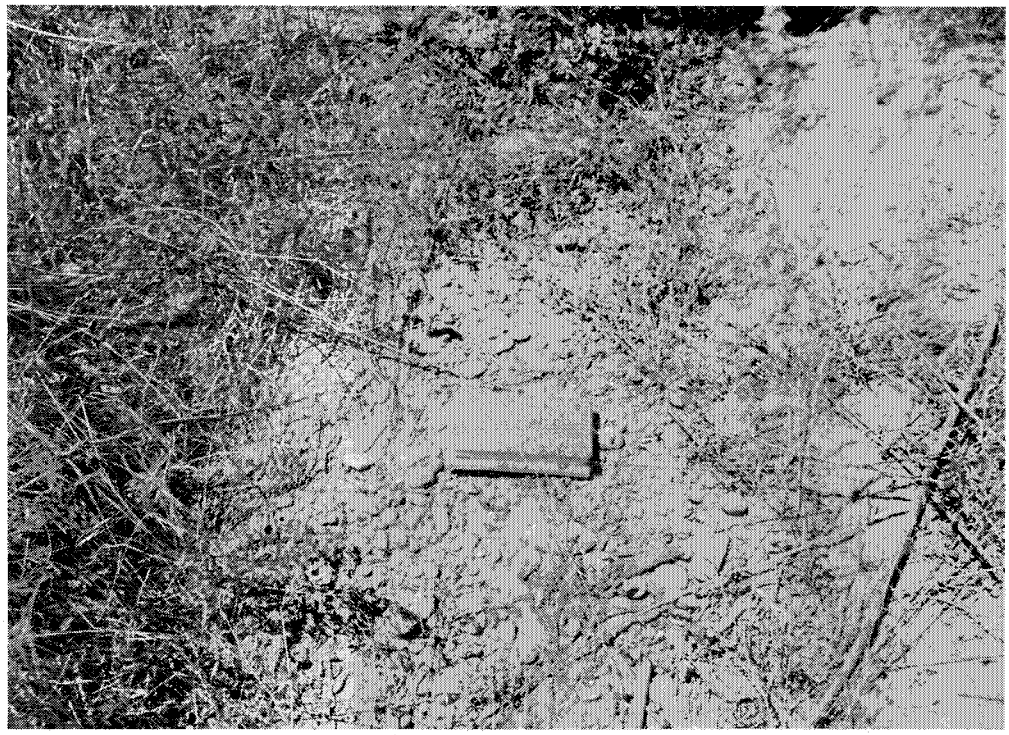


Photo 13: Ditch bottom near Soil pit 3.

Photo 14: Area around soil pit 4, facing southeast, showing cottonwood stand.

Photo 15: Soil pit 4.

Photo 16: Cache Creek, facing south.

Photo 17: Northern bank of Cache Creek, facing east.

Photo 18: Area around soil pit 5, facing east.

Photo 19: Soil pit 5.

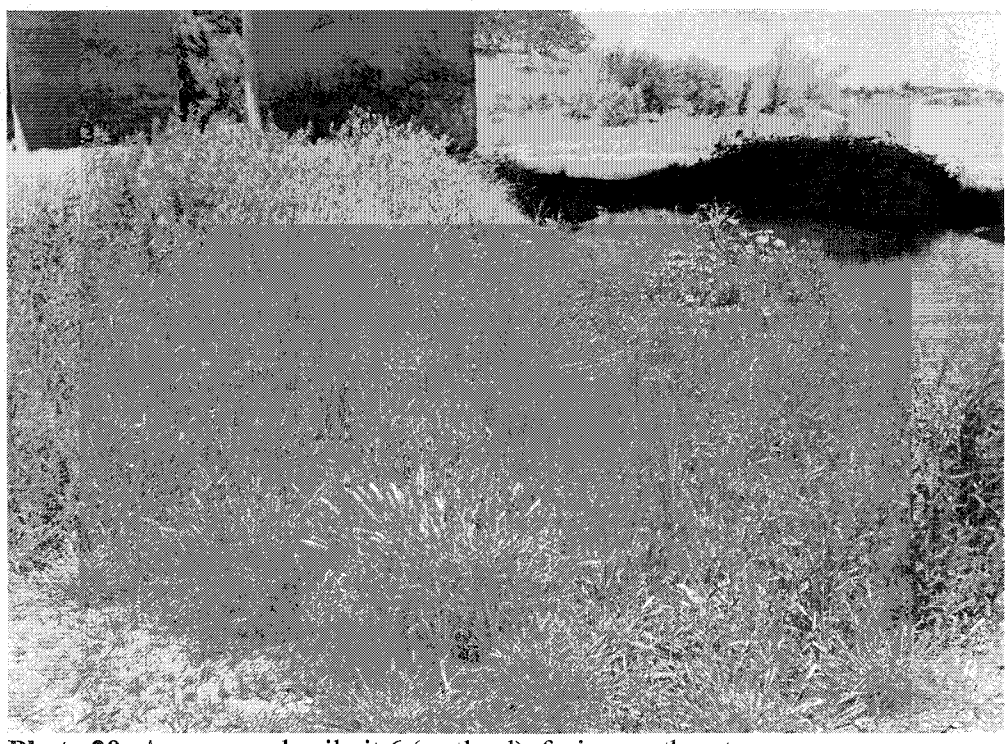


Photo 20: Area around soil pit 6 (wetland), facing northeast.

Photo 21: Soil pit 6 (wetland).

Photo 22: Area around soil pit 7 (wetland), facing west.

Attachment E: List of Species Observed

List of Plant Species Observed
May 22, 2007

Common Name	Scientific Name
Trees	
eucalyptus	*Eucalyptus globulus*
English walnut	*Juglans regia*
California black walnut	*Juglans californica*
juniper	*Juniperus californica*
pine	*Pinus* sp.
sycamore	*Platanus racemosa*
Fremont cottonwood	*Populus fremontii*
almond	*Prunus dulcis*
valley oak	*Quercus lobata*
sandbar willow	*Salix exigua*
Shrubs	
mulefat	*Baccharis salicifolia*
toyon	*Heteromeles arbutifolia*
oleander	*Nerium oleander*
Herbs	
dandelion	*Agoseris* sp.
ripgut brome	*Bromus diandrus*
Mexican tea	*Chenopodium amnrosioides*
rush	*Juncus* sp.
ryegrass	*Lolium* sp.
tule	*Schoenoplectus acutus* var. *occidentali*
hedge mustard	*Sisymbrium officinale*
cattail	*Typha* sp.

List of Wildlife Species Observed
May 22, 2007

Common Name	Scientific Name
Fish	
Carp	*Cyprinus* sp.
Reptiles	
gopher snake	*Pituophis catenifer*
western fence lizard	*Sceloporus occidentalis*
Birds	
red-winged blackbird	*Agelaius phoeniceus*
mallard	*Anas platyrhynchos*
turkey vulture	*Cathartes aura*
Swainson's hawk	*Buteo swainsoni*
California quail	*Callipepla californica*
goldfinch	*Carduelis* sp.
house finch	*Carpodacus mexicanus*
belted kingfisher	*Ceryle alcyon*
killdeer	*Charadrius vociferous*
lark sparrow	*Chondestes grammacus*
northern harrier	*Circus cyaneus*
Brewer's blackbird	*Euphagus cyanocephalus*
cliff swallow	*Hirundo pyrrhonota*
western kingbird	*Tyrannus verticalis*
mourning dove	*Zenaida macroura*
Mammals	
blacktail jackrabbit	*Lepus californicus*

Heidi Tschudin

From: Adamo, Ben [Ben.Adamo@gcinc.com]

Sent: Thursday, September 17, 2009 8:10 AM

To: Darcy Kremin; Saber, Yasha

Cc: Heidi Tschudin (htschudin@sbcglobal.net); Kent Reeves; Chelsea Ayala; Jennifer Grady; Duane Paul; Brenda Peters

Subject: RE: Crop info for proposed Granite site

Darcy,
Please consider the following in your calculations:

1. Rowcrop – the tenant farmers calculate approximately 154 ac. Of tilled ground in the various fields. Tomatoes were grown in 2003, 2005, 2006. Sunflowers in 2004 and wheat in 2008. 2007 was a mix of seed onions (25 ac.), sunflowers (95 ac.), corn (19 ac.).
2. Orchard – 97 total ac. - 46 ac. Almonds, 51 ac. Walnuts.
3. Approximately 30 ac. Is fallow land (old aggregate plant site).

Ben Adamo
Plant Operations and Permitting Coordinator
Sacramento Valley Branch
Granite Construction Company
Office: (916) 855-8890
Cell: (916) 257-8967

From: Darcy Kremin [mailto:DKremin@entrix.com]
Sent: Tuesday, September 15, 2009 2:51 PM
To: Adamo, Ben; Saber, Yasha
Cc: Heidi Tschudin (htschudin@sbcglobal.net); Kent Reeves; Chelsea Ayala; Jennifer Grady; Duane Paul; Brenda Peters
Subject: Crop info for proposed Granite site

Ben and Yasha,

For us to quantify the current site's greenhouse gas emissions, we need 3-5 years of data from the current landowners regarding their crops. For instance, how many acres were used to grow X crops in year Y. This will give us a baseline so that the Granite Esparto project will only need to offset new carbon dioxide (CO2) equivalents. We can estimate this number but the more information we have for the agricultural use on the site the better.

I will be out of the office until Thursday, but in the meantime call my cell (415-299-9233) if you have any questions.

Thanks.

Darcy G. Kremin, AICP
ENTRIX
Senior Project Environmental Planner

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EMAIL: dkremin@entrix.com • WEBSITE: www.entrix.com

Project Boundary
Gravel Extraction Boundary
Bank Stabilization Area
Fallow/Annual Grassland
Row Crops
Orchard

Esparto Mining and Reclamation Project
Vegetation/Land Use Map

Aerial Source:
Google 9-24-09

0 1,000 2,000 Feet

GRANITE

March 2010
Danielle Petersen - GIS Analyst