APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): June 24, 2011

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, Firebaugh Solar Energy, SPK-2010-00801

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: **California** County/parish/borough: **Fresno** City: **Firebaugh**
Center coordinates of site (lat/long in degree decimal format): Lat. **36.84268°**, Long. **-120.43897°**
Universal Transverse Mercator: **10 728359.91 4080483.03**
Name of nearest waterbody: **San Joaquin River**
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **San Joaquin River**
Name of watershed or Hydrologic Unit Code (HUC): **Middle San Joaquin-Lower Chowchilla. California., 18040001**
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form:

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☒ Office (Desk) Determination. Date: **June 22, 2011**
☒ Field Determination. Date(s): **June 21, 2011**

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** *"navigable waters of the U.S."* within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain:

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
      ☐ TNWs, including territorial seas
      ☒ Wetlands adjacent to TNWs
      ☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
      ☐ Non-RPWs that flow directly or indirectly into TNWs
      ☒ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
      ☐ Impoundments of jurisdictional waters
      ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
      Non-wetland waters: linear feet, wide, and/or acres.
      Wetlands: **2.412** acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual**
      Elevation of established OHWM (if known):

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
   Explain:

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: **San Joaquin River**

Summarize rationale supporting determination: **The San Joaquin River has been determined navigable from its mouth to River Mile 118**

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": **Historical aerial photographs from 1950 and 1967 and historical USGS topographic maps from 1923 and 1956 document a historic direct connection between the wetlands A, B, D, E, F and the San Joaquin River by means of a remnant oxbow. The wetlands are adjacent to the San Joaquin River. In addition, the wetlands occur within the 100-year floodplain and was classified by FEMA in 2006 as being 'zone AH,' which describes the site as being in an area of flood depths of 1-3 feet. At the time of the 1967 aerial photograph showing the San Joaquin River in flood stage, the part of the project site where the wetlands are located was under water. Geotechnical borings reveal the project site to have sandy soils with a high water table, indicating the potential for a subsurface hydrologic connection with the San Joaquin River. The riparian fringe along the San Joaquin River supports the same species of plants as do the adjacent wetlands. Species found in both locations include Salix sp., Schoenoplectus actus var. occidentalis, Heliotropium curassavicum, and Polypogon monspeliensis. These wetlands, along with a nearby (out-of-project-area) lake form a remnant riparian area for wildlife. The giant garter snake, listed as federally threatened, and western pond turtle, a state species of concern, both are known to occur in this area and could use this riparian corridor as habitat. Other species known to occur in this area include Swainson's hawk, the hoary bat, western red bat, and San Joaquin pocket mouse.**

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: **2,697 square miles**
Drainage area: **Pick List**
Average annual rainfall: **11** inches
Average annual snowfall: **0** inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☒ Tributary flows through **1** tributaries before entering TNW.

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

Project waters are **30 (or more)** river miles from TNW.
Project waters are **1 (or less)** river miles from RPW.
Project waters are **1 (or less)** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: **Project waters do not cross or serve as state boundaries.**

Identify flow route to TNW[5]: **The Main (Helm) Canal begins 5.8 river miles from the project sit where it receives water from the San Joaquin River near a feature known as the 'Mendota Pool.' 61 river miles past the project site is a water control structure that allows water from the canal to be released back into the San Joaquin River.**
Tributary stream order, if known:

(b) General Tributary Characteristics (check all that apply):
Tributary is: ☐ Natural
☒ Artificial (man-made). Explain: **It is not currently known when or by whom the canal was constructed, though it is featured in the 1923 USGS topgraphic map. The canal appears to have been constructed almost entirely in uplands, however it conveys water from the San Joaquin River and it returns water to the San Joaquin River. This canal appears to primarily provide water for agriculture. There are numerous irrigation ditches that receive water from this canal and convey it to agricultural fields.**
☐ Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):
Average width: **2-19** feet
Average depth: **2-4** feet
Average side slopes: **2:1.**

Primary tributary substrate composition (check all that apply):

☒ Silts	☒ Sands	☐ Concrete
☐ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain:		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **Because the tributary functions primarily as a canal for water conveyance purposes it is maintained in a stable condition.**
Presence of run/riffle/pool complexes. Explain: **No**
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Perennial**
Estimate average number of flow events in review area/year: **1**
Describe flow regime: **continuous.**
Other information on duration and volume:

Surface flow is: **Discrete and confined**. Characteristics: **The soil at the site is sandy and the channel clearly distinguished in the landscape.**

Subsurface flow: **Unknown**. Explain findings:
☐ Dye (or other) test performed:

Tributary has (check all that apply):
☒ Bed and banks
☒ OHWM[6] (check all indicators that apply):

☒ clear, natural line impressed on the bank	☐ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☒ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☒ water staining	☐ abrupt change in plant community
☐ other (list):	

☐ Discontinuous OHWM.[7] Explain:

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.
[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:
- ☐ oil or scum line along shore objects
- ☐ fine shell or debris deposits (foreshore)
- ☐ physical markings/characteristics
- ☐ tidal gauges
- ☐ other (list):

☐ Mean High Water Mark indicated by:
- ☐ survey to available datum;
- ☐ physical markings;
- ☐ vegetation lines/changes in vegetation types.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: **There is some turbidity in the water but it is nearly clear, the bottom of the canal may be seen from the banks.**

Identify specific pollutants, if known:

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width):

☒ Wetland fringe. Characteristics: **Mostly the channel sides and bank are cleared of all vegetation. However at the location of Wetland C the dominant vegetation growing was hydrophytic plant species such as Salix sp., Polypogon monspeliensis, Heliotropium curassavicum, among others.**

☒ Habitat for:
- ☐ Federally Listed species. Explain findings:
- ☐ Fish/spawn areas. Explain findings:
- ☒ Other environmentally-sensitive species. Explain findings: **Small fish and insects could be seen swimming in the canal at the time of the site visit.**
- ☐ Aquatic/wildlife diversity. Explain findings:

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size: **0.86 6** acres

Wetland type. Explain:

Wetland quality. Explain: **Wetland C was overgrown with willow trees and other hydrophytic plants, it had no standing water at the time of the site visit. Wetland C is abutting Main/Helm Canal which has a hydrologic connection to the San Joaquin River at its source and end.**

Project wetlands cross or serve as state boundaries. Explain: **The wetlands do not serve as or cross state boundaries.**

(b) General Flow Relationship with Non-TNW:

Flow is: **No Flow** . Explain: **The wetland abuts an unlined agricultural canal. There is no dedicated surface connection between the canal and the wetland.**

Surface flow is**: Discrete and confined**

Characteristics:

Subsurface flow: **Unknown**. Explain findings: **The canal is not lined with concrete and there is no other source of water for the wetland; a subsurface connection is highly likely. The Initial Environmental Study written for the housing development abutting the project site states that there is a stormwater treatment bay nearby, adjacent to the San Joaquin River, where the stormwater pumped to the site is allowed to percolate into the ground water table through the natural filter of the sandy soils. The soils that underlie the area where the stormwater is pumped are the same classification as the soils that underlie the wetlands on the project site. The geotechnical boring taken for this project site found groundwater to occur generally between 3 1/2 to 10 feet below site grade, adjacent to the wetland groundwater was encoutered at depths of 1 1/3 to 1 3/4 feet below site grade (p. 10, Geotechnical Engineering Investigation, Moore Twining Associates, Inc. May 31, 2011). The existence of such a high water table in conjunction with the porosity of sandy soils, as well as the abundance of hydrophytic plants in an area without a substantial overland watershed, indicates a subsurface hydrologic connection.**

☐ Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:

☒ Directly abutting

☐ Not directly abutting
- ☐ Discrete wetland hydrologic connection. Explain:
- ☐ Ecological connection. Explain:

[7]Ibid.

☐ Separated by berm/barrier. Explain: **.**

(d) Proximity (Relationship) to TNW
Project wetlands are **30 (or more)** river miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from TNW.
Flow is from: **Navigable waters to wetland.**
Estimate approximate location of wetland as within the **50 - 100-year** floodplain.

(ii) Chemical Characteristics:
Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: **There was no standing water at Wetland C.**
Identify specific pollutants, if known:

(iii) Biological Characteristics. Wetland supports (check all that apply):
☐ Riparian buffer. Characteristics (type, average width):
☒ Vegetation type/percent cover. Explain: **Hydrophytic vegetation such as Schoenoplectus actus var. occidentalis, Heliotropium curassavicum, and Polypogon monspeliensis occur in the understory. Wetland C had 100% coverage in the overstory by Salix sp.**
☐ Habitat for:
☐ Federally Listed species. Explain findings:
☐ Fish/spawn areas. Explain findings:
☐ Other environmentally-sensitive species. Explain findings:
☒ Aquatic/wildlife diversity. Explain findings: **The wetlands and the vegetation that they support provide good habitat for birds, amphibians, insects, and others which may also use the canal or travel to the San Joaquin River. Species known to occur in this area include Swainson's hawk, the hoary bat, western red bat, and San Joaquin pocket mouse.**

3. Characteristics of all wetlands adjacent to the tributary (if any)
All wetland(s) being considered in the cumulative analysis: **6**
Approximately **2.016** acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)
Wetland A (N)	**0.77**	**Wetland B (N)**	**0.006**
Wetland C (Y)	**0.86**	**Wetland D (N)**	**0.06**
Wetland E (N)	**0.18**	**Wetland F (N)**	**1.00**

Summarize overall biological, chemical and physical functions being performed: **the wetlands provide riparian vegetation and habitat. They also help to filter the water that percolates into the soil.**

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   - ☐ TNWs: linear feet, wide, Or acres.
   - ☒ Wetlands adjacent to TNWs: **2.016** acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   - ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:
   - ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

   Provide estimates for jurisdictional waters in the review area (check all that apply):
   - ☐ Tributary waters: linear feet wide.
   - ☐ Other non-wetland waters: acres.
     Identify type(s) of waters:

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
   - ☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   - ☐ Tributary waters: linear feet, wide.
   - ☐ Other non-wetland waters: acres.
     Identify type(s) of waters:

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
   - ☒ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
     - ☒ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **Wetland C is directly abutting Main/Helm Canal. Main/Helm Canal takes water from the San Joaquin River right below the feature known as the 'Mendota Pool.' Irrigation ditches take water from the canal all along the canal's length. Four miles from where the canal ends abruptly in agricultural fields there is a water structure that diverts canal water back to the San Joaquin River. Even though the canal was constructed entirely in uplands and feeds irrigation ditches it does return water to the San Joaquin River, making it a tributary of said river.**
     - ☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

   Provide acreage estimates for jurisdictional wetlands in the review area: **0.86** acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
   - ☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

[8]See Footnote # 3.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.

☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. Impoundments of jurisdictional waters.[9]

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]

☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain:
☐ Other factors. Explain:

Identify water body and summarize rationale supporting determination:

Provide estimates for jurisdictional waters in the review area (check all that apply):

☐ Tributary waters: linear feet, wide.
☐ Other non-wetland waters: acres.
Identify type(s) of waters:
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain:
☐ Other: (explain, if not covered above):

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

☐ Non-wetland waters (i.e., rivers, streams): linear feet, wide.
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource:
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

☐ Non-wetland waters (i.e., rivers, streams): linear feet, wide.
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource:
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

- ☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
- ☐ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☐ Office concurs with data sheets/delineation report.
  - ☒ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps:
- ☐ Corps navigable waters' study:
- ☐ U.S. Geological Survey Hydrologic Atlas:
  - ☐ USGS NHD data.
  - ☐ USGS 8 and 12 digit HUC maps.
- ☒ U.S. Geological Survey map(s). Cite scale & quad name: **1:24K; CA-FIREBAUGH**
- ☒ USDA Natural Resources Conservation Service Soil Survey. Citation:
- ☒ National wetlands inventory map(s). Cite name:
- ☐ State/Local wetland inventory map(s):
- ☐ FEMA/FIRM maps:
- ☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- ☒ Photographs: ☒ Aerial (Name & Date): **GoogleEarth February 24, 2006; June 9, 2009, AB1-1HH-116, AB1-18G-50**
  or ☐ Other (Name & Date):
- ☐ Previous determination(s). File no. and date of response letter:
- ☐ Applicable/supporting case law:
- ☐ Applicable/supporting scientific literature:
- ☐ Other information (please specify):

B. ADDITIONAL COMMENTS TO SUPPORT JD:

There is a 5.93 acre Stormwater Basin on the project site that was recently constructed entirely in uplands and is currently being used for its intended purpose. An examination of historical aerial photos from 2005 and 2006 as well as historic topographical maps from 1923 and 1956 show that there were no wetlands present in the location where the stormwater basin was constructed. This basin is fed with stormwater runoff from the adjacent housing development. There are control structures in place to direct the flow of water into the basin only with no apparent outlet. (See photos at the end of this document).

The soil at the site is sandy. The consultants who performed the delineation speculated that there was potential for subsurface flow but did not investigate whether subsurface flow actually occurred. The wetlands on site clearly meet the three parameters for a wetland. During the geotechnical borings (April 22 & 23, 2011) standing water was noted in the existing storm water basin, and all five wetlands which are adjacent to the San Joaquin River. In addition, groundwater was encountered at depths of 1 1/3 to 1 3/4 ft below site grade in the dry areas within the storm water basin or adjacent to the wetlands. In other areas higher in elevation to the south, east and northeast of the storm water basin, groundwater was encountered at depths of 3 1/2 to 10 ft below site grade. High moisture contents were also encountered in soil samples collected directly above the groundwater level. (p. 17, Geotechnical Engineering Investigation, Moore Twining Associates, Inc. May 31, 2011). During the June 21, 2011 delineation verification site visit it was noted that that Lake Joallan, which abuts the project site, had a water level equal to that of the San Joaquin River, which it is also adjacent to, and that the water level of Wetland A appeared to be the same level as the San Joaquin River and Lake Joallan, indicating a subsurface hydrologic connection.

Wetlands D, E, and F occupy channels that were part of a remnant oxbow which connected the wetlands to the TNW, the San Joaquin River prior to land development. The water flowed from south to north along 'blue line streams' showed on USGS topographic maps from 1923 and 1956. Surface flow is currently interrupted by the existence of man-made berms, a water treatment facility and associated sprayfields. The soils in this area consist mostly of Bisgani-Elnido association soils. These are sandy soils that allow for sub-surface flow to the river. Geotechnical borings taken at the site reveal the substrate to be dominated by fine, wet sands. Clay layers were found at individual boring sites but were not consistent across the site.

The wetlands A, B, D, E, and F do have the capacity to carry pollutants to the San Joaquin River when surface flows are high enough during normal years. They also have the potential to reduce the amount of pollutants that reach the TNW by means of subsurface flow. The fine to coarse sandy soils act as a filter to trap particulate matter as the water percolates though. The tributaries and their adjacent wetlands may provide habitat or lifestyle support functions for fish and other species. Species known to occur in this area include Swainson's hawk, the hoary bat, western red bat, and San Joaquin pocket mouse, however a biological survey was not conducted at the same time as the wetland delineation so it is not known if these species occur on the project site.

The Initial Environmental Study written for the housing development abutting the project site states that there is a stormwater treatment bay nearby, adjacent to the San Joaquin River, where the stormwater pumped to the site is allowed to percolate into the ground water table through the natural filter of the sandy soils. The soils that underlie the area where the stormwater is pumped are the same classification as the soils that underlie the wetlands and ephemeral channels on the project site. The geotechnical boring taken for this project site found groundwater to occur generally between 3 1/2 to 10 feet below site grade, adjacent to the wetland groundwater was encoutered at depths of 1 1/3 to 1 3/4 feet below site grade (p. 10, Geotechnical Engineering Investigation, Moore Twining Associates, Inc. May 31, 2011). A geotechnical boring taken at site B-13, which occurs quite close to Wetland D, found that groundwater occurred at a depth of 2.5 ft and also found that the substrate was a fine to medium grained sandy, silty soil which was wet. The nature of the soils at this site is conducive to sub-surface flow. The geotechnical boring taken at site B-9, adjacent to

Wetland E, found a greater depth to groundwater, 3.5ft, and a fine to coarse grained wet sand. There was clay layers in the boring taken at B-9 but the clay layers were not found to be consistant across the project site. Due to the changes in surface water flow that resulted from the construction of the wastewater treatment plant, the sprayfields and the berms put in place around Lake Joallan, wetlands A and B no longer have an obvious surface connection with the TNW. But based on the permeability of the soils and proximity to the San Joaquin River there is a likely direct hydrological connection between the wetlands and the San Jaoquin River. Wetland A had standing water at the time of the site visit. The water was brownish, but there was no discernable odor coming from the wetland. Tule reeds covered 80% of the area of the wetland. Wetlands B, D, E, and F were dry at the time of the site visit, though they did have signs of previous hydrology and there was lush hydrophytic vegetation growing within the boundaries of each wetland. Species known to occur in this area include Swainson's hawk, the hoary bat, western red bat, and San Joaquin pocket mouse, however without a biological survey it cannot be known whether these species exist on the project site.

Wetland C is adjacent to the Main/Helm Canal which connects to the San Joaquin River five miles upstream from the project site and sixty miles downstream of the project site.