Wister Solar Project
Waters/Wetlands Delineation Report

Preliminary Jurisdictional
Waters/Wetlands Delineation Report

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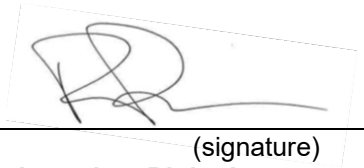
Prepared by 
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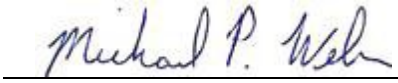
Reviewed by 
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Abbreviations

CDFW	California Department of Fish and Wildlife
CWA	Clean Water Act
IID	Imperial Irrigation District
GIS	Global Information Systems
GPS	Global Positioning System
JD	Jurisdictional Delineation
MSL	Mean Sea Level
NRCS	Natural Resources Conservation Service
RWQCB	Regional Water Quality Control Board
Project	Wister Solar Project
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geographical Survey

1.0 INTRODUCTION

1.1 PURPOSE OF THE REPORT

This preliminary Jurisdictional Waters/Wetlands Delineation (JD) Report serves as guidance in establishing baseline conditions for resources under the jurisdiction of the U.S. Army Corps of Engineers (USACE), the California Department of Fish and Wildlife (CDFW), and the Colorado River Basin Regional Water Quality Control Board (RWQCB) for the Wister Solar Project (Project). Specifically, the purpose of the JD was to determine the location and extent of waters and/or wetlands subject to potential jurisdictional authority within Project site, which measures approximately 123 acres; the entire Project site, along with a 100-ft buffer, was surveyed in support of this JD report and is hereafter referred to as the Survey Area.

1.2 PROJECT LOCATION

The Survey Area is located in northern Imperial County, California, approximately two miles northeast of the community of Niland, approximately five miles east of the Salton Sea and 0.5 mile southwest of the Coachella Canal (Appendix G, Figure 1). It is situated in Township 10 South, Range 14 East of the U.S. Geographical Survey (USGS) Wister 7.5-minute topographic quadrangle. The Survey Area consists of a relatively undeveloped, square parcel of land with its southwest corner near the intersection of Weist and Wilkins Roads (Appendix G, Figure 2). The unpaved Gas Line Road runs north/south, relatively parallel inside the eastern Project boundary. The majority of the Survey Area is undisturbed with exception of the aforementioned Gas Line Road and an approximately five-acre area of previously graded land in the northwest portion of the site, adjacent to the western Project boundary. There is a transmission line extending from outside the northern boundary to outside the eastern Project boundary with an associated unpaved access road.

1.3 PROJECT DESCRIPTION

Orni 33 LLC. (Client) is proposing to construct, operate, and maintain a 40-Megawatt (MW) photovoltaic solar farm on approximately 115 acres within the 123-acre Project site.

1.4 LEAD AGENCY NAME AND ADDRESS

County of Imperial
Planning & Development Services Department
940 West Main Street
El Centro, California 92243

1.5 CONTACT PERSON AND PHONE NUMBER

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2.0 EXISTING CONDITIONS

2.1 TOPOGRAPHY AND SURROUNDING AND USES

The Survey Area is located in the Colorado Desert and generally slopes gradually from northeast to southwest, with elevations ranging from approximately 20 feet above mean sea level (MSL) along the northern Project boundary to -30 feet below MSL at its southwest corner. The site is bordered by agricultural land to the northwest and undeveloped land to the north, east, south, and southwest, though the land abutting the parcel to the south has been disked.

Lands within the Survey Area are zoned as Recreation/Open Space (Imperial County, 2007). Surrounding lands are zoned as a mix of Agriculture, Recreation/Open Space, and Government/Special Public. It is bordered largely by open space to the north, east, and south, with agricultural lands (orchards) occurring to the west and northwest. An existing solar generating facility occurs approximately 0.5 miles south and a County landfill is located to the east of the Survey Area. While it is largely undeveloped, the unpaved Gas Line Road passes roughly parallel to the eastern boundary of the Survey Area and a transmission line and associated unpaved access road run from outside the eastern boundary from north to south. The East Highline Canal, an Imperial Irrigation District (IID) water delivery conveyance passes through the extreme southwestern corner of the Survey Area.

2.2 VEGETATION

Generally, description of plant communities follows the MCV II classification system described in the second edition of *A Manual of California Vegetation* (Sawyer et al., 2009). Species scientific and common names correspond to those described in the second edition of *The Jepson Manual* (Baldwin et al., 2012).

The Survey Area supports three land cover types: creosote bush – white bursage scrub, blue palo verde – ironwood woodland, and arrow weed thickets. Descriptions of these land cover types are provided below and depicted on Figure 3 (Appendix G).

Creosote Bush – White Bursage Scrub

This is the primary land cover type occurring throughout most of the Survey Area. Creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*) are the co-dominant species, though vegetative cover throughout the Survey Area. Other shrub species present within this community include a number of saltbush species (*Atriplex* spp.) and desert thorn (*Lyceum brevipes*). The sparse understory consists of native and non-native herbaceous species such as desert dandelion (*Malacothrix glabrata*) and desert plantain (Plantago ovata) and non-native grasses, primarily bromes (*Bromus* spp.*)* and Mediterranean grass (*Schismus barbatus*). Approximately 175.34 acres of creosote bush – white bursage scrub occurs within the Survey Area.

Blue Palo Verde – Ironwood Woodland

This vegetation community occurs along the margins of some of the larger drainage features within the Survey Area, particularly in the southeast portion of the site. In the Survey Area, this community is dominated by desert ironwood (*Olneya tesota*) trees, though a few blue palo verde (*Parkinsonia florida*) and honey mesquite (*Prosopis glandulosa*) trees are sparsely interspersed throughout the community. Understory consists of white bursage, creosote bush, and brome grasses. Approximately 2.71 acres of blue palo verde – ironwood woodland occurs within the Survey Area.

Arrow Weed Thickets

This is the dominant vegetation along the small section of the East Highline Canal in the southwestern corner of the BSA. Arrow weed thickets within the BSA are dominated by arrow weed (*Pluchea sericea*). Other species such as cattails (*Typha* spp.), common reed (*Phragmites australis*), and saltcedar (*Tamarix ramosissima*) are also present, but much less common. Arrow weed thickets are recognized by CDFW as a sensitive vegetation type. Approximately 0.03 acres of arrow weed thickets occurs within the Survey Area.

2.3 CLIMATE

The region experiences a desert climate characterized by hot, dry summers and warm winters. Average annual temperatures range from 42 degrees Fahrenheit in December to 107 degrees Fahrenheit in July, and average annual precipitation measures 2.87 inches (US Climate Data, 2018).

2.4 HYDROLOGY AND GEOMORPHOLOGY

The Survey Area is underlain by the Colorado River Basin and is within the Imperial Hydrologic Unit and Brawley Hydrologic Area (SWRCB, 2006). The Colorado River Basin Region covers approximately 13 million acres (20,000 square miles) in the southeastern portion of California. It includes all of Imperial County and portions of San Bernardino, Riverside, and San Diego counties. It is bounded for 40 miles on the northeast by the State of Nevada, on the north by the New York, Providence, Granite, Old Dad, Bristol, Rodman, and Ord mountain ranges, on the west by the San Bernardino, San Jacinto, and Laguna mountain ranges, on the south by the Republic of Mexico, and on the east by the Colorado River and State of Arizona. Geographically, the region represents only a small portion of the total Colorado River

drainage area, which includes portions of Arizona, Nevada, Utah, Wyoming, Colorado, New Mexico, and Mexico (SWRCB, 2006).

A significant geographical feature of the region is the Salton Trough, which contains the Salton Sea and the Coachella and Imperial valleys. The two valleys are separated by the Salton Sea, which covers the lowest area of the depression. The trough is a structural extension of the Gulf of California. In prehistoric times, it contained the ancient Lake Cahuilla (not to be confused with the present Lake Cahuilla which is located at the terminus of the Coachella Branch of the All- American Canal) (SWRCB, 2006).

Regional drainage waters resulting from Colorado River diversions and use, and which do not return to the Colorado River, drain into the Salton Sea. The portion of the region that does not drain into the Colorado River is referred to as the Colorado River Basin (West), or West Basin. Much of the northern portion of the West Basin drains to several individual internal sinks or playas, while the southern portion generally drains to the Salton Sea. The Imperial and Coachella Valleys contain numerous drains that transport irrigation return flows and stormwater, as well as canals for importation and distribution of Colorado River water. The Salton Sea, which is replenished principally by irrigation drainage and stormwater, is the largest body of water in the West Basin.

The Salton Sea serves as a reservoir to receive and store agricultural drainage and seepage waters, but also provides important wildlife habitat and is used for recreational purposes, which include boating and fishing. Several smaller constructed recreational lakes are located in the Imperial Valley. In addition, Lake Cahuilla in Coachella Valley is used to store Colorado River water for irrigation and recreational purposes (SWRCB, 2006).

Within the East Colorado Basin Plan, the proposed Project is located in the Imperial Valley Planning Area. This planning area comprises 2,500 square miles in the southern portion of the region, almost all of it in Imperial County. The eastern and western boundaries are contiguous with the western and eastern boundaries of the East Colorado River Basin and the Anza-Borrego Planning Area, respectively. Its northern boundary is along the Salton Sea and the Coachella Valley Planning Area, and its southern boundary follows the international boundary with Mexico. The Planning Area's central feature is the flat, fertile Imperial Valley. The principal communities are El Centro, Brawley, Imperial, Holtville, and Calexico. Within the Imperial Valley Planning Area, surface waters drain primarily toward the Salton Sea (SWRCB, 2006).

2.5 SOILS

Soil data from the Natural Resources Conservation Service (NRCS), obtained through the Web Soil Survey, was used to determine potential soil types, including where hydric soils have historically occurred; however, soils within the Survey Area have not been mapped. As such, soils from immediately adjacent areas were considered to be representative of soils that may occur on the Survey Area (Appendix G, Figure 4). Soils predicted to be within the Survey Area are dominated by gravelly sand and silty clay, some of which are considered to be hydric soils. Characteristics of soils predicted to be present on the site are summarized in Appendix D. Table 1 below summarizes the soils predicted to occur within the Survey Area.

Table 1 Soil Units Potentially Occurring within the Survey Area

Map Unit Name	Description	Hydric Soil?
Niland gravelly sand	A moderately well-drained soil that occurs on basin floors at elevations between -230 to 300 feet; parent material consists of alluvium derived from mixed sources; gravelly sand (0-23”), silty clay (23-60”)	Yes
Niland-Imperial complex, wet	A moderately well-drained soil that occurs on basin floors at elevations between -230 to 300 feet; parent material consists of alluvium derived from mixed sources; low runoff; gravelly sand (0-23”), silty clay (23-60”)	No

3.0 REGULATORY BACKGROUND

Jurisdictional waters, wetlands, and riparian habitat are regulated by the USACE, RWQCB, and CDFW. The USACE Regulatory Program regulates activities pursuant to Section 404 of the federal Clean Water Act (CWA); the CDFW regulates activities under California Fish and Game Code Sections 1600-1617; the RWQCB regulates activities under Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act. Refer to Appendix F for additional details on regulatory authorities and background.

4.0 WATERS/WETLAND DELINEATION

4.1 DELINEATION METHODOLOGY

This section describes the methods employed by Stantec during the survey conducted to determine the extent of potentially jurisdictional wetlands and/or waters that occur within the Survey Area. Prior to conducting the field assessment, Stantec reviewed current and historic aerial photographs, detailed topographic maps, soil maps of the proposed Survey Area (NRCS, 2020), and local and state hydric soil lists to evaluate the potential active channels and wetland features that occur within the Survey Area. During the field assessment, hydrology data was collected using an Apple iPad with ArcGIS Collector app and Bad Elf global positioning system (GPS) receiver. Field data was used to map drainages in the office using Global Information System (GIS) and total jurisdictional area for each jurisdictional feature was calculated.

When a large number of drainage features are present on a site, especially in the arid west, traditional methods of walking and mapping the centerline of each feature can be cumbersome and, at times, infeasible. Therefore, employing a transect methodology, which prescribes collecting data at specified intervals and is based on methodology in the USACE *Wetland Delineation Manual* (1987) and the *Arid West Supplement* (2011) allows for detailed mapping of drainage features when used in conjunction with high resolution aerial photography. The Survey Area was surveyed along pre-determined transects

oriented northwest to southwest (i.e., perpendicular to flow); refer to Appendix G, Figure 5 for the location of the transects.

4.1.1 Federal Wetlands/Waters

Jurisdictional non-wetland "waters of the U.S." are delineated based on the limits of the ordinary high water mark (OHWM) as determined by changes in physical and biological features, such as bank erosion, deposited vegetation or debris, and vegetative characteristics. Jurisdictional wetlands are delineated using a routine determination in accordance with the methods outlined in the USACE *Wetland Delineation Manual* (1987) and the *Arid West Supplement* (2011) based on three wetland parameters: dominant hydrophytic vegetation, wetland hydrology, and hydric soils. Tables 1 and 2 in Appendix E (Potential Geomorphic and Vegetative Indicators of Ordinary High Water Marks for the Arid West) provide a list of key physical features for determining the OHWM identified by the arid west manual.

4.1.2 CDFW Jurisdictional Waters

CDFW jurisdiction is delineated to the top of the banks of the channel and/or to the edge of the associated riparian canopy/riparian habitat, whichever is wider. Within the Survey Area, the CDFW jurisdictional boundary of the ephemeral drainages is generally wider than the OHWM. Therefore, the total acreage of CDFW jurisdictional waters is greater than the combined acreage of federal jurisdictional waters.

4.1.3 Wetland Vegetation

Vegetation percent cover is estimated for plant species in each of the four strata (tree, sapling/shrub, herb, and woody vine) and plant species in each stratum are ranked based on canopy dominance (USACE, 2008). Species that contribute to a cumulative coverage total of at least 50 percent and any species that comprised at least 20 percent of the total coverage for each stratum are recorded on the Field Data Sheets (50/20 rule). Wetland indicator status is assigned to each dominant species using the *Region 0 List of Plant Species that Occur in Wetlands: 1996 National Summary* (USFWS, 1997), *Wetland Plants of Specialized Habitats in the Arid West* (USACE, 2007), and the *Arid West Region of The National Wetland Plant List* (USACE, 2012). If greater than 50 percent of the dominant species from all strata are Obligate, Facultative-wetland, or Facultative species, the criteria for wetland vegetation is considered to be met (refer to Appendix E, Table 3).

4.1.4 Wetland Hydrology

The presence of wetland hydrology is assessed by evaluating the presence of primary and secondary hydrology indicators (refer to Appendix E, Tables 4 and 5). These indicators are designed to determine whether an area has a high probability of being inundated or saturated (flooded, ponded, or tidally influenced) long enough during the growing season to develop anaerobic conditions in the surface soil environment, especially in the root zone (USACE, 1987 and 2008b). The *Arid West Supplement* includes two additional indicator groups that can be utilized during dry conditions or in areas where surface water/saturated soils are not present; these are Group B (evidence of recent inundation) and Group C (evidence of recent soil saturation) (USACE, 2008). The indicators are divided into two categories

(primary and secondary indicators) and presence of one primary indicator from any of the groups is considered evidence of wetland hydrology. If only secondary indicators are present, two or more must be observed to conclude presence of wetland hydrology. Indicators are intended to be one-time observations of site conditions representing evidence of wetland hydrology when hydrophytic vegetation and hydric soils are present (USACE, 2008).

4.1.5 Wetland Soils

Soils data from the NRCS is referenced to determine if hydric soils have been previously documented and/or historically occurred in or near the Project Area. Based on this review hydric soils were potentially expected to occur within the Project Area. The Niland gravelly sand is considered a hydric soil. Appendix E, Tables 6 and 7, includes a complete list of hydric soils indicators.

4.2 RESULTS

Two types of jurisdictional features were documented within the Survey Area: USACE non-wetland waters and CDFW State Waters. The site is bisected from northeast to southwest by numerous ephemeral drainage channels, which contain surface water only during storm events, draining the mountains to the northeast. These drainages ultimately flow into the Salton Sea, which is considered a Traditionally Navigable Water. As such, these drainage features would likely be considered federally and state jurisdictional. Representative photographs are provided in Appendix C.

Appendix A summarizes the jurisdictional features present within the Survey Area and their acreages, and Figure 5 in Appendix G depicts their location within the Survey Area. Appendix B contains the OHWM Data Forms completed during the assessment. According to the *NRCS Hydric Soils List* (NRCS, 2020) there are likely two mapped hydric soils within the Survey Area. Table 2 lists the plant species observed onsite and lists their wetland indicator status, if applicable.

Table 2 Plant Species Observed Within the Survey Area and Wetland Indicator Status

Scientific Name	Common Name	Wetland Indicator Status
Ambrosia dumosa	white bursage	UPL
Astragalus sp.	astragalus	-
Atriplex canescens	fourwing saltbush	FACU
Cholla sp.	cholla	-
Chorizanthe sp.	chorizanthe	-
Datura wrightii	jimsonweed	UPL
Eriogonum sp.	buckwheat	-
Larrea tridentate	creosote bush	UPL
Lycium brevipes	desert thorn	-
Olneya tesota	desert ironwood	-
Parkinsonia florida	blue palo verde	-
Prosopis glandulosa	honey mesquite	FACU/UPL

Scientific Name	Common Name	Wetland Indicator Status
Suaeda nigra	bush seepweed	OBL
Tamarix ramosissima	tamarisk	FAC
Wetland Indicator Status Definitions OBL = obligate - occurs almost always in wetlands under natural conditions FAC = facultative - equally likely to occur in wetlands or non-wetlands FACU = facultative upland - usually occurs in non-wetlands, but often found in wetlands UPL = obligate upland - Occurs almost always in non-wetlands under natural conditions		

Federal Wetlands

Based on Stantec's professional opinion following an assessment of hydrology, vegetation, and soils, no jurisdictional federal wetlands were documented within the Survey Area. Ephemeral drainages present throughout the site do, however, meet the requirements for jurisdictional waters (see below).

Federal Non-Wetland Waters

Based on Stantec's professional opinion following an assessment of hydrology, vegetation, and soils, approximately 11.31 acres of the Survey Area meet the definition of "waters of the United States" as outlined in 33 CFR Part 328. This assessment is based on Stantec's professional opinion following an assessment of hydrology and the limits of the OHWM. The proposed project would potentially result in permanent impacts to 6.00 acres and temporary impacts to 0.07 acres of federal non-wetland waters within the Project site.

CDFW Waters

Based on Stantec's professional opinion following an assessment of hydrology, presence of bed and bank, and extent of riparian vegetation, approximately 15.36 acres within the Survey Area meet the definition of CDFW jurisdictional waters as outlined in Sections 1600-1617of the CDFW Code. The proposed project would potentially result in permanent impacts to 8.20 acres and temporary impacts to 0.10 acres of CDFW waters within the Project site.

Table 3 Acreage of Potential Jurisdictional Waters and Wetlands within the Survey Area and Summary of Project Impacts

Wetland Waters of the U.S. (acres)			Non-Wetland Waters of the U.S. (acres)			CDFW Jurisdictional Waters (acres)		
Survey Area	**Project Temporary Impact Area**	**Project Permanent Impact Area**	**Survey Area**	**Project Temporary Impact Area**	**Project Permanent Impact Area**	**Survey Area**	**Project Temporary Impact Area**	**Project Permanent Impact Area**
0	0	0	11.31	0.07	6.00	15.36	0.10	8.20

*Survey area is approximately 190 acres.

5.0 SUMMARY AND CONCLUSIONS

The Survey Area supports CDFW jurisdictional waters and USACE non-wetland waters. The braided drainage channels throughout the site exhibited evidence of hydrology and a discernible OHWM and were mapped as jurisdictional non-wetland "waters of the United States" (11.31 acres); the proposed Project would result in approximately 0.07 acres of temporary and 6.00 acres of permanent impacts. Proposed impact to jurisdictional non-wetland "waters of the United States." Using a combination of bed/bank delineation and field observations, 15.36 acres of CDFW jurisdictional waters were identified within the Survey Area; the proposed Project would result in approximately 0.10 acres of temporary and 8.20 acres of permanent impacts to CDFW jurisdictional waters.

The conclusions presented above represent Stantec's professional opinion based on our knowledge and experience with the USACE and CDFW, including their regulatory guidance documents and manuals. However, the USACE and CDFW have final authority in determining the status and presence of jurisdictional wetlands/waters and the extent of their boundaries.

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Appendix A ACREAGE SUMMARY OF JURISDICTIONAL WATERS WITHIN THE SURVEY AREA

Feature ID	Drainage Type	USACE Non-Wetland "Waters of the U.S. (Acres)	CDFW Jurisdictional Waters (Acres)
1	Ephemeral Desert Wash	1.8908	2.3689
1F	Ephemeral Desert Wash	0.1320	0.1743
1G	Ephemeral Desert Wash	0.0284	0.0624
1H	Ephemeral Desert Wash	0.0333	0.0442
1H.1	Ephemeral Desert Wash	0.0068	0.0169
1I	Ephemeral Desert Wash	0.1050	0.1349
1J	Ephemeral Desert Wash	0.0044	0.0131
1K	Ephemeral Desert Wash	0.4171	0.4901
1K.1	Ephemeral Desert Wash	0.0147	0.0219
1K.2	Ephemeral Desert Wash	0.0281	0.0449
1K.3	Ephemeral Desert Wash	0.0094	0.0141
1L	Ephemeral Desert Wash	0.0058	0.0110
1M	Ephemeral Desert Wash	0.2259	0.2928
1M.1	Ephemeral Desert Wash	0.0404	0.0466
1N	Ephemeral Desert Wash	0.0049	0.0100
1O	Ephemeral Desert Wash	0.0162	0.0217
1O.1	Ephemeral Desert Wash	0.0042	0.0064
1O.2	Ephemeral Desert Wash	0.0086	0.0207
1O.2.a	Ephemeral Desert Wash	0.0021	0.0042
1O.3	Ephemeral Desert Wash	0.0041	0.0052
1O.4	Ephemeral Desert Wash	0.0002	0.0004

Feature ID	Drainage Type	USACE Non-Wetland "Waters of the U.S. (Acres)	CDFW Jurisdictional Waters (Acres)
1O.5	Ephemeral Desert Wash	0.0052	0.0065
1P	Ephemeral Desert Wash	0.0791	0.1150
1P.1	Ephemeral Desert Wash	0.0087	0.0172
1Q	Ephemeral Desert Wash	0.0063	0.0127
2	Ephemeral Desert Wash	1.2984	1.7093
2D	Ephemeral Desert Wash	0.0229	0.0376
2E	Ephemeral Desert Wash	0.0715	0.0973
2F	Ephemeral Desert Wash	0.1604	0.1886
2G	Ephemeral Desert Wash	0.0548	0.0659
2I	Ephemeral Desert Wash	0.0234	0.0471
5A	Ephemeral Desert Wash	0.0308	0.0331
9	Ephemeral Desert Wash	0.5247	0.5658
10	Ephemeral Desert Wash	0.1512	0.3496
10A	Ephemeral Desert Wash	0.0620	0.1369
10A.1	Ephemeral Desert Wash	0.0119	0.0178
10B	Ephemeral Desert Wash	0.0160	0.0315
10C	Ephemeral Desert Wash	0.0132	0.0323
10D	Ephemeral Desert Wash	0.0116	0.0282
10E	Ephemeral Desert Wash	0.0257	0.0561
10E.1	Ephemeral Desert Wash	0.0199	0.0397
10E.2	Ephemeral Desert Wash	0.0133	0.0265
10F	Ephemeral Desert Wash	0.0071	0.0157

Feature ID	Drainage Type	USACE Non-Wetland "Waters of the U.S. (Acres)	CDFW Jurisdictional Waters (Acres)
11	Ephemeral Desert Wash	0.3330	0.6006
12	Ephemeral Desert Wash	0.1551	0.3257
12A	Ephemeral Desert Wash	0.0043	0.0104
12B	Ephemeral Desert Wash	0.0166	0.0313
12C	Ephemeral Desert Wash	0.0032	0.0077
12D	Ephemeral Desert Wash	0.0064	0.0150
12F	Ephemeral Desert Wash	0.0040	0.0070
14A	Ephemeral Desert Wash	0.0031	0.0047
14A.2	Ephemeral Desert Wash	0.0530	0.0680
15	Ephemeral Desert Wash	0.5567	1.4031
15A	Ephemeral Desert Wash	0.0239	0.0401
15A.2	Ephemeral Desert Wash	0.0030	0.0071
15B	Ephemeral Desert Wash	0.0015	0.0027
15C	Ephemeral Desert Wash	0.0082	0.0205
15D	Ephemeral Desert Wash	0.0152	0.0305
15D.1	Ephemeral Desert Wash	0.0069	0.0140
15D.2	Ephemeral Desert Wash	0.0101	0.0207
16	Ephemeral Desert Wash	1.0955	1.3051
16B	Ephemeral Desert Wash	0.0121	0.0160
17	Ephemeral Desert Wash	0.1094	0.1464
19	Ephemeral Desert Wash	0.1106	0.1475
19B	Ephemeral Desert Wash	0.0136	0.0211

Feature ID	Drainage Type	USACE Non-Wetland "Waters of the U.S. (Acres)	CDFW Jurisdictional Waters (Acres)
19C	Ephemeral Desert Wash	0.0507	0.0752
19C.1	Ephemeral Desert Wash	0.0231	0.0343
20	Ephemeral Desert Wash	0.1435	0.2110
22	Ephemeral Desert Wash	0.0314	0.0470
23	Ephemeral Desert Wash	0.0167	0.0278
23D	Ephemeral Desert Wash	0.0237	0.0355
24	Ephemeral Desert Wash	0.0355	0.0497
24A	Ephemeral Desert Wash	0.0108	0.0187
26	Ephemeral Desert Wash	0.3974	0.4508
27	Ephemeral Desert Wash	0.9222	0.9359
27A	Ephemeral Desert Wash	0.0480	0.0530
28	Ephemeral Desert Wash	0.3417	0.3997
28A	Ephemeral Desert Wash	0.2525	0.2648
28A.1	Ephemeral Desert Wash	0.0347	0.0430
28A.2	Ephemeral Desert Wash	0.0164	0.0182
28B	Ephemeral Desert Wash	0.1931	0.2253
28C	Ephemeral Desert Wash	0.0043	0.0066
29	Ephemeral Desert Wash	0.2535	0.2800
29H	Ephemeral Desert Wash	0.0010	0.0019
39B	Ephemeral Desert Wash	0.0053	0.0146
41	Ephemeral Desert Wash	0.0510	0.0840
41A	Ephemeral Desert Wash	0.0141	0.0212

Feature ID	Drainage Type	USACE Non-Wetland "Waters of the U.S. (Acres)	CDFW Jurisdictional Waters (Acres)
41A.1	Ephemeral Desert Wash	0.0054	0.0081
41B	Ephemeral Desert Wash	0.0358	0.0358
41C	Ephemeral Desert Wash	0.0564	0.0838
42	Ephemeral Desert Wash	0.0213	0.0429
42A	Ephemeral Desert Wash	0.0047	0.0092
43	Ephemeral Desert Wash	0.0352	0.0442
44	Ephemeral Desert Wash	0.0186	0.0233
44A	Ephemeral Desert Wash	0.0141	0.0180
44B	Ephemeral Desert Wash	0.0178	0.0226
45	Ephemeral Desert Wash	0.0543	0.0676
Pond 1	Dry Ephemeral Depression	0.0292	0.0292

Appendix B OHWM DATA SHEETS

T3-1/1

Project: Wister Solar
Project Number:
Stream: T3-1
Investigator(s): RB, JV

Date: 4/11/18
Town:
Photo begin file# 1

Time: 0955
State: CA
Photo end file# 2

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☒ Is the site significantly disturbed?

Location Details: Refer to aquatic resources table
Projection: **Datum:**
Coordinates:

Notes:

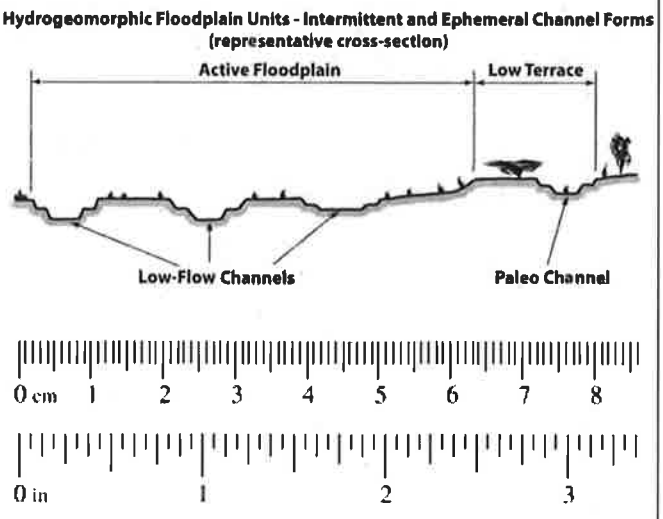
Brief site description:
Ephemeral desert wash, sparsely vegetated

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
  Scale:
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ Clinometer / level
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each zone of a channel cross-section is recorded in the average sediment texture field under the characteristics section for the zone of interest.

Millimeters (mm)		Inches (in)		Wentworth size class	
10.08		256		Boulder	
2.56		64		Cobble	Gravel
0.157		4		Pebble	
				Granule	
0.079		2.00		Very coarse sand	
0.039		1.00		Coarse sand	
0.020		0.50		Medium sand	Sand
1/2	0.0098	0.25		Fine sand	
1/4	0.005	0.125		Very fine sand	
1/8	0.0025	0.0625		Coarse silt	
1/16	0.0012	0.031		Medium silt	
1/32	0.00061	0.0156		Fine silt	Silt
1/64	0.00031	0.0078		Very fine silt	
1/128	0.00015	0.0039		Clay	Mud



☒ **Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**

☒ **Locate the low-flow channel (lowest part of the channel). Record observations.**

Characteristics of the low-flow channel:

Average sediment texture: sand - small cobble

Total veg cover: 1 % Tree: ____% Shrub: 1 % Herb: ____%

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: White bursage

Other:
- ☒ Creosote bush
- ☐
- ☐
- ☐

☒ **Walk away from the low-flow channel along cross-section. Record characteristics of the low-flow/active floodplain boundary.**

Characteristics used to delineate the low-flow/active floodplain boundary:

- ☒ Change in total veg cover ☐ Tree ☒ Shrub ☐ Herb
- ☒ Change in overall vegetation maturity
- ☐ Change in dominant species present
- ☒ Other
  - ☒ Presence of bed and bank
  - ☐ Drift and/or debris
  - ☐ Other: _____
  - ☐ Other: _____

☒ NA **Continue walking the channel cross-section. Record observations below.**

Characteristics of the low-flow channel:

Average sediment texture: _____

Total veg cover: ____% Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: _____

Other:
- ☐
- ☐
- ☐
- ☐

☐ NA **Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.**

Characteristics used to delineate the active floodplain/ low terrace boundary:

☐ Change in average sediment texture
☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb
☐ Change in overall vegetation maturity
☐ Change in dominant species present
☐ Other ☐ Presence of bed and bank
☐ Drift and/or debris
☐ Other: _____
☐ Other: _____

☐ NA **Walk the active floodplain/low terrace boundary both upstream and downstream of the cross-section to verify that the indicators used to identify the transition are consistently associated the transition in both directions.**

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

Y ☐ N ☐ Change in average sediment texture
Y ☐ N ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb
Y ☐ N ☐ Change in overall vegetation maturity
Y ☐ N ☐ Change in dominant species present
Y ☐ N ☐ Other: Y ☐ N ☐ Presence of bed and bank
Y ☐ N ☐ Drift and/or debris
Y ☐ N ☐ Other: _____
Y ☐ N ☐ Other: _____

☐ **If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**

☐ NA **Continue walking the channel cross-section. Record characteristics of the low terrace.**

Characteristics of the low terrace:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)
☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: _____

_____

_____

Other: ☐ _____
☐ _____
☐ _____
☐ _____

☒ ~~NA~~ **If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.**

Active floodplain/low terrace boundary acquired via:

☐ Mapping on aerial photograph ☒ GPS
☒ Digitized on computer ☐ Other: _____

☒ **Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**

☐ **Locate the low-flow channel (lowest part of the channel). Record observations.**

Characteristics of the low-flow channel:

Average sediment texture: silt-sand w/some large gravel

Total veg cover: 0 % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

☒ NA ☐ Mid (herbaceous, shrubs, saplings)

☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: _____

_____

_____

Other: ☐ _____

☐ _____

☐ _____

☐ _____

☐ NA **Walk away from the low-flow channel along cross-section. Record characteristics of the low-flow/active floodplain boundary.**

Characteristics used to delineate the low-flow/active floodplain boundary:

☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb

☐ Change in overall vegetation maturity

☐ Change in dominant species present

☐ Other ☐ Presence of bed and bank

☐ Drift and/or debris

☐ Other: _____

☐ Other: _____

☐ NA **Continue walking the channel cross-section. Record observations below.**

Characteristics of the low-flow channel:

Average sediment texture: _____

Total veg cover: ____% Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: _____

_____

_____

Other: ☐ _____

☐ _____

☐ _____

☐ _____

T3-2/1

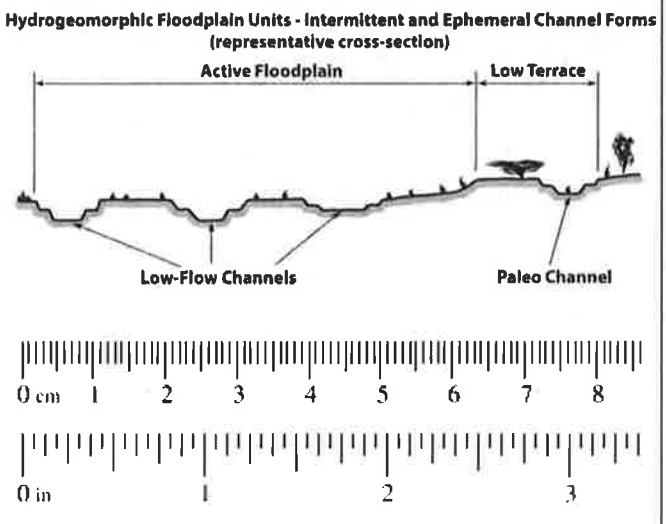
Project: Wister Solar **Project Number:** **Stream:** T3-2 **Investigator(s):** RB, JV	**Date:** 4/11/18 **Town:** **Photo begin file#** 3	**Time:** 0907 **State:** **Photo end file#** 4
Y ☒ / N ☐ Do normal circumstances exist on the site? Y ☐ / N ☒ Is the site significantly disturbed?	**Location Details:** Refer to aquatic resources table **Projection:** **Datum:** **Coordinates:**	
Notes:		
Brief site description: Ephemeral wash, no vegetation		

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
  Scale:
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ Clinometer / level
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each zone of a channel cross-section is recorded in the average sediment texture field under the characteristics section for the zone of interest.

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



☐ NA

Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.

Characteristics used to delineate the active floodplain/ low terrace boundary:

☐ Change in average sediment texture
☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb
☐ Change in overall vegetation maturity
☐ Change in dominant species present
☐ Other ☐ Presence of bed and bank
☐ Drift and/or debris
☐ Other: _____
☐ Other: _____

☐ NA

Walk the active floodplain/low terrace boundary both upstream and downstream of the cross-section to verify that the indicators used to identify the transition are consistently associated the transition in both directions.

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

Y ☐ N ☐ Change in average sediment texture
Y ☐ N ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb
Y ☐ N ☐ Change in overall vegetation maturity
Y ☐ N ☐ Change in dominant species present
Y ☐ N ☐ Other: Y ☐ N ☐ Presence of bed and bank
Y ☐ N ☐ Drift and/or debris
Y ☐ N ☐ Other: _____
Y ☐ N ☐ Other: _____

☐

If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.

☐ NA

Continue walking the channel cross-section. Record characteristics of the low terrace.

Characteristics of the low terrace:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

☐ NA
☐ Early (herbaceous & seedlings)
☐ Mid (herbaceous, shrubs, saplings)
☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: _____

_____

_____

Other: ☐ _____
☐ _____
☐ _____
☐ _____

☒ ~~NA~~

If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.

Active floodplain/low terrace boundary acquired via:

☐ Mapping on aerial photograph ☒ GPS
☒ Digitized on computer ☐ Other: _____

T3-4/1

Project: Winter Solar
Project Number:
Stream: T3-4
Investigator(s): RB, JV

Date: 4/11/18
Town:
Photo begin file# 7

Time: 0928
State: CA
Photo end file# 8

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details:
Refer to aquatic resources table
Projection: **Datum:**
Coordinates:

Notes:
Veg in channel laid over w/ sediment deposits

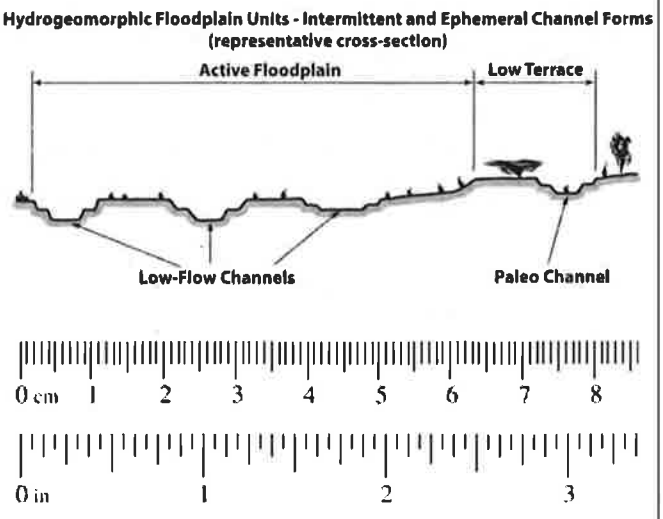
Brief site description:
Ephemeral desert wash, sparsely vegetated

Checklist of resources (if available):

- [X] Aerial photography
  Dates:
- [ ] Topographic maps
  Scale:
- [ ] Geologic maps
- [ ] Vegetation maps
- [X] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [X] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] Clinometer / level
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each zone of a channel cross-section is recorded in the average sediment texture field under the characteristics section for the zone of interest.

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



T3-4/2

☒ **Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**

☐ **Locate the low-flow channel (lowest part of the channel). Record observations.**

Characteristics of the low-flow channel:

Average sediment texture: silt-sand w/ pebbles

Total veg cover: 1 % Tree: ____% Shrub: 1 % Herb: ____%

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☒ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: white bursage

Other: ☐ ☐ ☐ ☐

☒ **Walk away from the low-flow channel along cross-section. Record characteristics of the low-flow/active floodplain boundary.**

Characteristics used to delineate the low-flow/active floodplain boundary:

☒ Change in total veg cover ☐ Tree ☒ Shrub ☐ Herb

☒ Change in overall vegetation maturity

☐ Change in dominant species present

☒ Other ☒ Presence of bed and bank

☒ Drift and/or debris

☐ Other: ____

☐ Other: ____

☒ **Continue walking the channel cross-section. Record observations below.**

Characteristics of the low-flow channel:

Average sediment texture: silt-sand w/ pebbles

Total veg cover: 3 % Tree: ____% Shrub: 3 % Herb: ____%

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☒ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: white bursage, creosote bush

Other: ☒ ☐ ☐ ☐

☐ NA **Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.**

Characteristics used to delineate the active floodplain/ low terrace boundary:

☐ Change in average sediment texture
☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb
☐ Change in overall vegetation maturity
☐ Change in dominant species present
☐ Other ☐ Presence of bed and bank
☐ Drift and/or debris
☐ Other: _____
☐ Other: _____

☒ **Walk the active floodplain/low terrace boundary both upstream and downstream of the cross-section to verify that the indicators used to identify the transition are consistently associated the transition in both directions.**

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

Y ☒ N ☐ Change in average sediment texture
Y ☒ N ☐ Change in total veg cover ☐ Tree ☒ Shrub ☐ Herb
Y ☒ N ☐ Change in overall vegetation maturity
Y ☐ N ☐ Change in dominant species present
Y ☐ N ☐ Other: Y ☐ N ☐ Presence of bed and bank
Y ☐ N ☐ Drift and/or debris
Y ☐ N ☐ Other: _____
Y ☐ N ☐ Other: _____

☐ **If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**

☐ **Continue walking the channel cross-section. Record characteristics of the low terrace.**

Characteristics of the low terrace:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)
☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: _____

_____

_____

Other: ☐ _____
☐ _____
☐ _____
☐ _____

☒ **If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.**

Active floodplain/low terrace boundary acquired via:

☒ Mapping on aerial photograph ☒ GPS
☒ Digitized on computer ☐ Other: _____

T3-5/1

Project: Wister Solar	**Date:** 4/11/14	**Time:** 0940
Project Number:	**Town:**	**State:**
Stream: T3-5	**Photo begin file#** 9	**Photo end file#** 10
Investigator(s): RB, JV		

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details: Refer to aquatic resources table

Projection: **Datum:**

Coordinates:

Notes:

Brief site description:

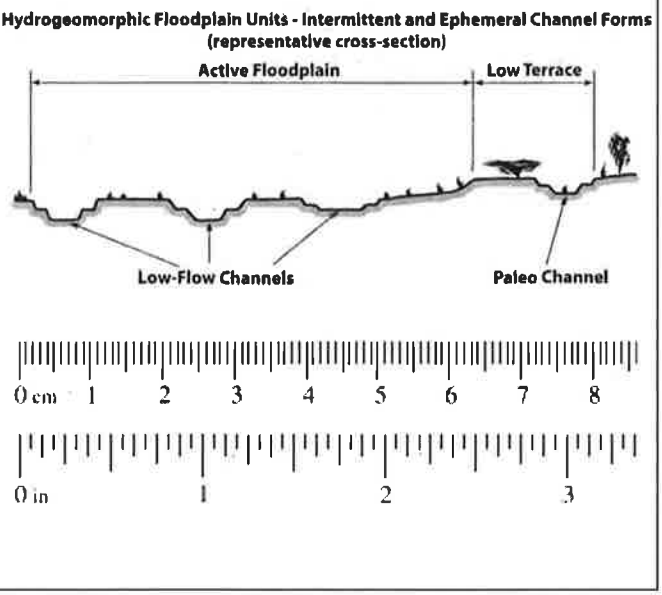
Ephemeral desert wash, sparsely vegetated

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
  Scale:
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ Clinometer / level
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each zone of a channel cross-section is recorded in the average sediment texture field under the characteristics section for the zone of interest.

Millimeters (mm)		Inches (in)	Wentworth size class	
10.08		256	Boulder	
2.56		64	Cobble	Gravel
0.157		4	Pebble	
0.079		2.00	Granule	
0.039		1.00	Very coarse sand	
0.020		0.50	Coarse sand	
1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	
1/8	0.0025	0.0625	Very fine sand	
1/16	0.0012	0.031	Coarse silt	
1/32	0.00061	0.0156	Medium silt	Silt
1/64	0.00031	0.0078	Fine silt	
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud



T3-5/2

☒ **Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**

☒ **Locate the low-flow channel (lowest part of the channel). Record observations.**

Characteristics of the low-flow channel:

Average sediment texture: silt-sand w/gravel

Total veg cover: 5 % Tree: <1 % Shrub: 5 % Herb: ____ %

Community successional stage:

☐ NA ☒ Mid (herbaceous, shrubs, saplings)

☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Tamarisk sp.

Other: ☐ ☐ ☐ ☐

☒ **Walk away from the low-flow channel along cross-section. Record characteristics of the low-flow/active floodplain boundary.**

Characteristics used to delineate the low-flow/active floodplain boundary:

☒ Change in total veg cover ☐ Tree ☒ Shrub ☐ Herb

☒ Change in overall vegetation maturity

☒ Change in dominant species present

☒ Other ☒ Presence of bed and bank

☒ Drift and/or debris

☐ Other: _____

☐ Other: _____

☒ **Continue walking the channel cross-section. Record observations below.**

Characteristics of the low-flow channel:

Average sediment texture: _____

Total veg cover: 5 % Tree: ____ % Shrub: 5 % Herb: ____ %

Community successional stage:

☐ NA ☒ Mid (herbaceous, shrubs, saplings)

☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Same

Other: ☐ ☐ ☐ ☐

☐ NA **Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.**

Characteristics used to delineate the active floodplain/ low terrace boundary:

☐ Change in average sediment texture
☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb
☐ Change in overall vegetation maturity
☐ Change in dominant species present
☐ Other ☐ Presence of bed and bank
☐ Drift and/or debris
☐ Other: _____
☐ Other: _____

☐ NA **Walk the active floodplain/low terrace boundary both upstream and downstream of the cross-section to verify that the indicators used to identify the transition are consistently associated the transition in both directions.**

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

Y ☐ N ☐ Change in average sediment texture
Y ☐ N ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb
Y ☐ N ☐ Change in overall vegetation maturity
Y ☐ N ☐ Change in dominant species present
Y ☐ N ☐ Other: Y ☐ N ☐ Presence of bed and bank
Y ☐ N ☐ Drift and/or debris
Y ☐ N ☐ Other: _____
Y ☐ N ☐ Other: _____

☐ **If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**

☐ NA **Continue walking the channel cross-section. Record characteristics of the low terrace.**

Characteristics of the low terrace:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)
☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: _____

_____

_____

Other: ☐ _____
☐ _____
☐ _____
☐ _____

☒ **If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.**

Active floodplain/low terrace boundary acquired via:

☐ Mapping on aerial photograph ☒ GPS
☒ Digitized on computer ☐ Other: _____

T3-6,7&1

Project: Wister Solar
Project Number:
Stream: T3-6 & T3-7
Investigator(s): BB, JV

Date: 4/11/18 **Time:** 0954
Town: **State:** CA
Photo begin file# 11 **Photo end file#** 14

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details: Refer to aquatic resources table
Projection: **Datum:**
Coordinates:

Notes:
2 channels converge just downstream of sample point

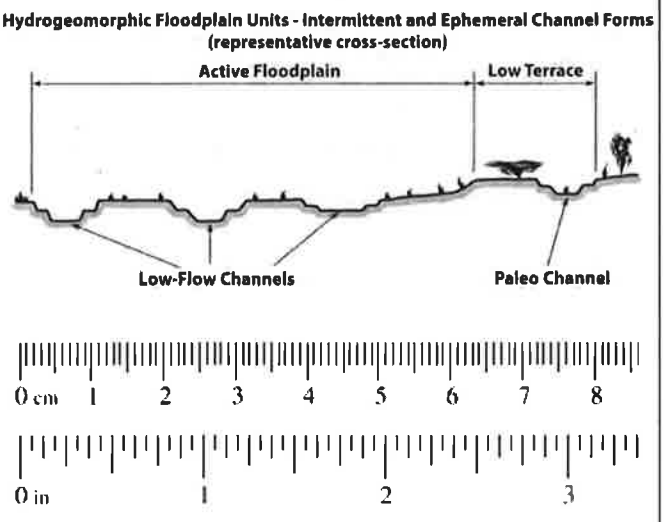
Brief site description:
Ephemeral desert wash, sparsely vegetated

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
  Scale:
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ Clinometer / level
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each zone of a channel cross-section is recorded in the average sediment texture field under the characteristics section for the zone of interest.

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00	Very coarse sand	
0.039	1.00		
		Coarse sand	
0.020	0.50		
		Medium sand	Sand
1/2 0.0098	0.25		
		Fine sand	
1/4 0.005	0.125		
		Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031		
		Medium silt	
1/32 0.00061	0.0156		Silt
		Fine silt	
1/64 0.00031	0.0078		
		Very fine silt	
1/128 0.00015	0.0039		
		Clay	Mud



T3-6,7/2

☒ **Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**

☒ **Locate the low-flow channel (lowest part of the channel). Record observations.**

Characteristics of the low-flow channel:

Average sediment texture: sand w/gravel

Total veg cover: 4 % Tree: ____% Shrub: 1 % Herb: 3 %

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☒ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: white bursage

Other: ☐ ☐ ☐ ☐

☐ NA **Walk away from the low-flow channel along cross-section. Record characteristics of the low-flow/active floodplain boundary.**

Characteristics used to delineate the low-flow/active floodplain boundary:

☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb

☐ Change in overall vegetation maturity

☐ Change in dominant species present

☐ Other ☐ Presence of bed and bank

☐ Drift and/or debris

☐ Other: _____

☐ Other: _____

☐ NA **Continue walking the channel cross-section. Record observations below.**

Characteristics of the low-flow channel:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: _____

Other: ☐ ☐ ☐ ☐

T3-6/7/3

☐ NA **Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.**

Characteristics used to delineate the active floodplain/ low terrace boundary:

- ☐ Change in average sediment texture
- ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb
- ☐ Change in overall vegetation maturity
- ☐ Change in dominant species present
- ☐ Other ☐ Presence of bed and bank
  - ☐ Drift and/or debris
  - ☐ Other: _____
  - ☐ Other: _____

☐ NA **Walk the active floodplain/low terrace boundary both upstream and downstream of the cross-section to verify that the indicators used to identify the transition are consistently associated the transition in both directions.**

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

- Y ☐ N ☐ Change in average sediment texture
- Y ☐ N ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb
- Y ☐ N ☐ Change in overall vegetation maturity
- Y ☐ N ☐ Change in dominant species present
- Y ☐ N ☐ Other: Y ☐ N ☐ Presence of bed and bank
  - Y ☐ N ☐ Drift and/or debris
  - Y ☐ N ☐ Other: _____
  - Y ☐ N ☐ Other: _____

☐ **If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**

☐ NA **Continue walking the channel cross-section. Record characteristics of the low terrace.**

Characteristics of the low terrace:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: _____

_____

_____

Other: ☐ _____

☐ _____

☐ _____

☐ _____

☒ **If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.**

Active floodplain/low terrace boundary acquired via:

- ☐ Mapping on aerial photograph
- ☒ Digitized on computer
- ☒ GPS
- ☐ Other: _____

T3-8, 9, 10, 11, 12

Project: Wister Solar
Project Number:
Stream: T3-8, T3-9, T3-10, T3-11, T3-12
Investigator(s): RB, JV

Date: 4/11/18 **Time:** 1003
Town: **State:** CA
Photo begin file# 15 **Photo end file#** 24
↳ 2 per low flow channel

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details:
Refer to aquatic resources table
Projection: **Datum:**
Coordinates:

Notes:
Wide active floodplain w/multiple low flow channels

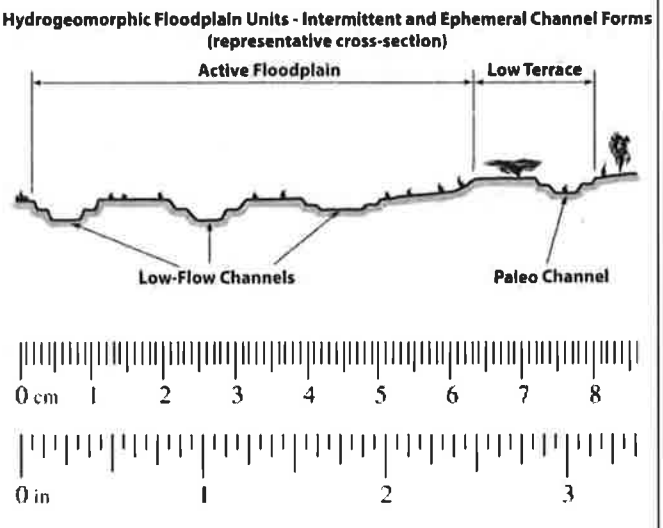
Brief site description:
Ephemeral desert wash, sparsely vegetated

Checklist of resources (if available):

- [X] Aerial photography
  Dates:
- [ ] Topographic maps
  Scale:
- [ ] Geologic maps
- [ ] Vegetation maps
- [X] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [X] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] Clinometer / level
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each zone of a channel cross-section is recorded in the average sediment texture field under the characteristics section for the zone of interest.

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



T3-8,9,10,12
11,12

☒ **Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**

☒ **Locate the low-flow channel (lowest part of the channel). Record observations.**

Characteristics of the low-flow channel:

Average sediment texture: sand

Total veg cover: 10 % Tree: ____ % Shrub: ____ % Herb: 10 %

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☒ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Unk. herbaceous species (dead) w/ white bursage at channel edges

Other: ☐ ☐ ☐ ☐

☒ **Walk away from the low-flow channel along cross-section. Record characteristics of the low-flow/active floodplain boundary.**

Characteristics used to delineate the low-flow/active floodplain boundary:

☒ Change in total veg cover ☐ Tree ☒ Shrub ☐ Herb

☒ Change in overall vegetation maturity

☒ Change in dominant species present

☒ Other ☒ Presence of bed and bank

☐ Drift and/or debris

☐ Other: ____

☐ Other: ____

☐ **Continue walking the channel cross-section. Record observations below.**

Characteristics of the low-flow channel:

Average sediment texture: Sand

Total veg cover: 5 % Tree: ____ % Shrub: ____ % Herb: 5 %

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☒ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Unk. herbs (dead) w/ white bursage at edges

Other: ☐ ☐ ☐ ☐

T3-8,9,10/3
11,12

☐ NA **Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.**

Characteristics used to delineate the active floodplain/ low terrace boundary:

☐ Change in average sediment texture
☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb
☐ Change in overall vegetation maturity
☐ Change in dominant species present
☐ Other ☐ Presence of bed and bank
☐ Drift and/or debris
☐ Other: _____
☐ Other: _____

☐ NA **Walk the active floodplain/low terrace boundary both upstream and downstream of the cross-section to verify that the indicators used to identify the transition are consistently associated the transition in both directions.**

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

Y ☐ N ☐ Change in average sediment texture
Y ☐ N ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb
Y ☐ N ☐ Change in overall vegetation maturity
Y ☐ N ☐ Change in dominant species present
Y ☐ N ☐ Other: Y ☐ N ☐ Presence of bed and bank
Y ☐ N ☐ Drift and/or debris
Y ☐ N ☐ Other: _____
Y ☐ N ☐ Other: _____

☐ **If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**

☐ NA **Continue walking the channel cross-section. Record characteristics of the low terrace.**

Characteristics of the low terrace:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)
☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: _____

_____

_____

Other: ☐ _____
☐ _____
☐ _____
☐ _____

☒ **If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.**

Active floodplain/low terrace boundary acquired via:

☐ Mapping on aerial photograph ☒ GPS
☒ Digitized on computer ☐ Other: _____

T3-13/1

Project: Mister Solar
Project Number:
Stream: T3-13, T3-14, T3-15
Investigator(s): RB, JV

Date: 4/11/14
Town:
Photo begin file# 25 Lo 2/ feature

Time: 1021
State: CA
Photo end file# ~~28~~ 30

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details:
Refer to aquatic resources table
Projection: **Datum:**
Coordinates:

Notes:

T3-14 is a paleo channel that diverges from T3-13, which spreads out after crossing the Gas Line Rd., to the NE.
T3-15 →

Brief site description:

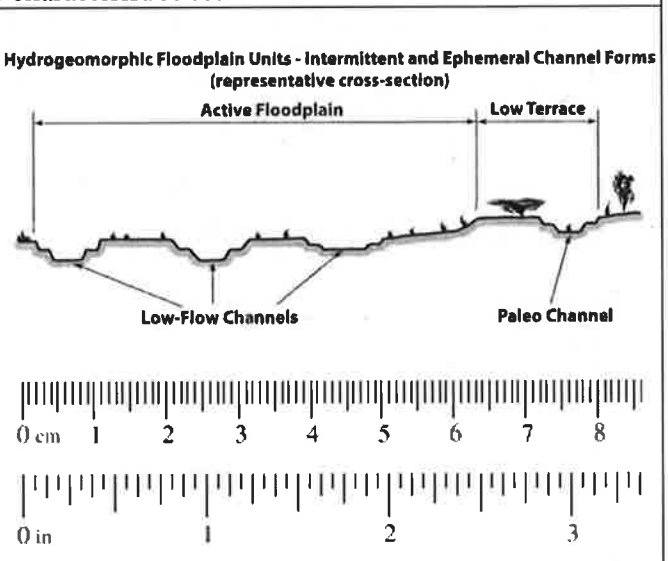
Ephemeral desert wash, sparsely vegetated

Checklist of resources (if available):

- [X] Aerial photography
  Dates:
- [ ] Topographic maps
  Scale:
- [ ] Geologic maps
- [ ] Vegetation maps
- [X] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [X] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] Clinometer / level
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each zone of a channel cross-section is recorded in the average sediment texture field under the characteristics section for the zone of interest.

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



☒ **Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**

☒ **Locate the low-flow channel (lowest part of the channel). Record observations.**

Characteristics of the low-flow channel:

Average sediment texture: silt-sand interspersed w/gravel up to small cobble

Total veg cover: 0 % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: NA

Other:

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

☒ **Walk away from the low-flow channel along cross-section. Record characteristics of the low-flow/active floodplain boundary.**

Characteristics used to delineate the low-flow/active floodplain boundary:

- ☒ Change in total veg cover ☒ Tree ☒ Shrub ☐ Herb
- ☒ Change in overall vegetation maturity
- ☒ Change in dominant species present
- ☒ Other
  - ☒ Presence of bed and bank
  - ☒ Drift and/or debris
  - ☐ Other: _____
  - ☐ Other: _____

☒ **Continue walking the channel cross-section. Record observations below.**

Characteristics of the low-flow channel:

Average sediment texture: cobble

Total veg cover: 0 % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: NA

Other:

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

T3-13/3

☒ **Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.**

Characteristics used to delineate the active floodplain/ low terrace boundary:

- ☒ Change in average sediment texture
- ☒ Change in total veg cover ☒ Tree ☒ Shrub ☐ Herb
- ☒ Change in overall vegetation maturity
- ☐ Change in dominant species present
- ☒ Other ☒ Presence of bed and bank
  - ☒ Drift and/or debris
  - ☒ Other: flow patters
  - ☐ Other: _____

☒ **Walk the active floodplain/low terrace boundary both upstream and downstream of the cross-section to verify that the indicators used to identify the transition are consistently associated the transition in both directions.**

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

- Y ☒ N ☐ Change in average sediment texture
- Y ☒ N ☐ Change in total veg cover ☒ Tree ☒ Shrub ☐ Herb
- Y ☒ N ☐ Change in overall vegetation maturity
- Y ☐ N ☐ Change in dominant species present
- Y ☒ N ☐ Other: Y ☒ N ☐ Presence of bed and bank
  - Y ☒ N ☐ Drift and/or debris
  - Y ☒ N ☐ Other: flow patters
  - Y ☐ N ☐ Other: _____

☐ **If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**

☒ **Continue walking the channel cross-section. Record characteristics of the low terrace.**

Characteristics of the low terrace:

Average sediment texture: Lg cobble

Total veg cover: 10 % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: white burseage, desert ironwood

Other: ☐ _____ ☐ _____ ☐ _____ ☐ _____

☒ **If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.**

Active floodplain/low terrace boundary acquired via:

- ☐ Mapping on aerial photograph
- ☒ Digitized on computer
- ☒ GPS
- ☐ Other: _____

T3-16/1

Project: Wister Solar **Project Number:** **Stream:** T3-16, T3-17 → main channel **Investigator(s):** RB, JV	**Date:** 4/11/18 **Town:** **Photo begin file#** 31	**Time:** 1042 **State:** CA **Photo end file#** 34
Y ☒ / N ☐ Do normal circumstances exist on the site? Y ☐ / N ☒ Is the site significantly disturbed?	**Location Details:** Refer to aquatic resources table **Projection:** **Datum:** **Coordinates:**	

Notes:

T3-16 is a side channel to T3-17 (main channel) – enters into T3-17 immediately downstream of sampling point

Brief site description:

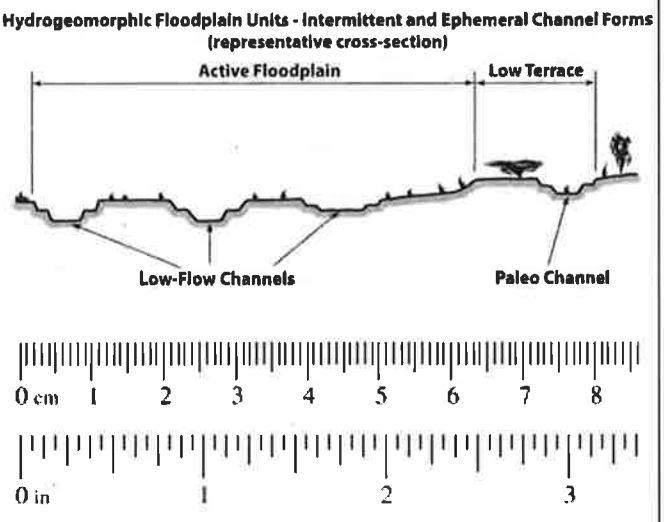
Ephemeral desert wash, sparsely vegetated

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
  Scale:
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ Clinometer / level
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each zone of a channel cross-section is recorded in the average sediment texture field under the characteristics section for the zone of interest.

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Notes indicative of T3-11

☒ **Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**

☒ **Locate the low-flow channel (lowest part of the channel). Record observations.**

Characteristics of the low-flow channel:

Average sediment texture: sand w/ pebbles interspersed

Total veg cover: 0 % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: NA

Other: ☐ ☐ ☐ ☐

☒ **Walk away from the low-flow channel along cross-section. Record characteristics of the low-flow/active floodplain boundary.**

Characteristics used to delineate the low-flow/active floodplain boundary:

- ☒ Change in total veg cover ☐ Tree ☐ Shrub ☒ Herb
- ☐ Change in overall vegetation maturity
- ☐ Change in dominant species present
- ☐ Other
  - ☐ Presence of bed and bank
  - ☐ Drift and/or debris
  - ☒ Other: Flow patterns
  - ☐ Other: ____

☐ NA **Continue walking the channel cross-section. Record observations below.**

Characteristics of the low-flow channel:

Average sediment texture: ____

Total veg cover: ____% Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: ____

Other: ☐ ☐ ☐ ☐

~~FF~~
TB-16/3

☐ **Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.**

Characteristics used to delineate the active floodplain/ low terrace boundary:

- ☒ Change in average sediment texture
- ☒ Change in total veg cover ☒ Tree ☒ Shrub ☒ Herb
- ☒ Change in overall vegetation maturity
- ☒ Change in dominant species present
- ☒ Other ☒ Presence of bed and bank
  - ☐ Drift and/or debris
  - ☒ Other: Flow patterns
  - ☐ Other: _____

☒ **Walk the active floodplain/low terrace boundary both upstream and downstream of the cross-section to verify that the indicators used to identify the transition are consistently associated the transition in both directions.**

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

- Y ☒ N ☐ Change in average sediment texture
- Y ☒ N ☐ Change in total veg cover ☒ Tree ☒ Shrub ☒ Herb
- Y ☒ N ☐ Change in overall vegetation maturity
- Y ☒ N ☐ Change in dominant species present
- Y ☒ N ☐ Other: Y ☒ N ☐ Presence of bed and bank
  - Y ☐ N ☐ Drift and/or debris
  - Y ☒ N ☐ Other: Flow patterns
  - Y ☐ N ☐ Other: _____

☐ **If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**

☒ **Continue walking the channel cross-section. Record characteristics of the low terrace.**

Characteristics of the low terrace:

Average sediment texture: Lg. cobble

Total veg cover: 15 % Tree: 7 % Shrub: 5 % Herb: 3 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Dominant species present: Desert ironwood, creosote bush, white bursage

Other:

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

☒ **If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.**

Active floodplain/low terrace boundary acquired via:

- ☐ Mapping on aerial photograph
- ☒ Digitized on computer
- ☒ GPS
- ☐ Other: _____

T3-18/1

Project: Wister Solar
Project Number:
Stream: T3-18, T3-19 → paleo channel
Investigator(s): RB, JV

Date: 4/11/18
Town:
Photo begin file# 35-

Time: 1059
State: CA
Photo end file# 38

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details:
Refer to aquatic resources table
Projection: **Datum:**
Coordinates:

Notes:
T3-19 enters T3-18 immediately N of sampling point

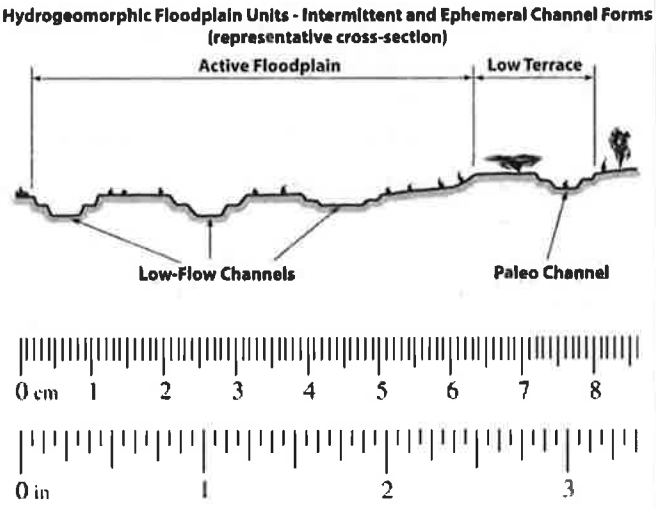
Brief site description:
Ephemeral desert wash, sparsely vegetated

Checklist of resources (if available):

- [X] Aerial photography
  Dates:
- [ ] Topographic maps
  Scale:
- [ ] Geologic maps
- [ ] Vegetation maps
- [X] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [X] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] Clinometer / level
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each zone of a channel cross-section is recorded in the average sediment texture field under the characteristics section for the zone of interest.

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



T3-18/2

☒ **Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**

☒ **Locate the low-flow channel (lowest part of the channel). Record observations.**

Characteristics of the low-flow channel:

Average sediment texture: sand w/ gravel

Total veg cover: <1 % Tree: ____% Shrub: ____% Herb: <1 %

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☒ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Unk. herb

Other: ☐ ☐ ☐ ☐

☒ NA **Walk away from the low-flow channel along cross-section. Record characteristics of the low-flow/active floodplain boundary.**

Characteristics used to delineate the low-flow/active floodplain boundary:

☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb

☐ Change in overall vegetation maturity

☐ Change in dominant species present

☐ Other ☐ Presence of bed and bank

☐ Drift and/or debris

☐ Other: ____

☐ Other: ____

☐ NA **Continue walking the channel cross-section. Record observations below.**

Characteristics of the low-flow channel:

Average sediment texture: ____

Total veg cover: ____% Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: ____

Other: ☐ ☐ ☐ ☐

T3-18/3

☒ **Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.**

Characteristics used to delineate the active floodplain/ low terrace boundary:

- ☒ Change in average sediment texture
- ☒ Change in total veg cover ☒ Tree ☒ Shrub ☐ Herb
- ☒ Change in overall vegetation maturity
- ☒ Change in dominant species present
- ☒ Other ☒ Presence of bed and bank
  - ☐ Drift and/or debris
  - ☒ Other: Flow patterns
  - ☐ Other: _____

☐ **Walk the active floodplain/low terrace boundary both upstream and downstream of the cross-section to verify that the indicators used to identify the transition are consistently associated the transition in both directions.**

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

- Y ☒ N ☐ Change in average sediment texture
- Y ☒ N ☐ Change in total veg cover ☒ Tree ☒ Shrub ☐ Herb
- Y ☒ N ☐ Change in overall vegetation maturity
- Y ☒ N ☐ Change in dominant species present
- Y ☒ N ☐ Other:
  - Y ☒ N ☐ Presence of bed and bank
  - Y ☐ N ☐ Drift and/or debris
  - Y ☒ N ☐ Other: Flow patterns
  - Y ☐ N ☐ Other: _____

☐ **If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**

☒ **Continue walking the channel cross-section. Record characteristics of the low terrace.**

Characteristics of the low terrace:

Average sediment texture: Small gravel

Total veg cover: 10 % Tree: 1 % Shrub: 3 % Herb: 6 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Dominant species present: Desert ironwood, creosote bush, herbs

Other:

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

☒ **If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.**

Active floodplain/low terrace boundary acquired via:

- ☐ Mapping on aerial photograph
- ☒ Digitized on computer
- ☒ GPS
- ☐ Other: _____

T3-20/1

Project: Wister Solar
Project Number:
Stream: ~~T3-20~~ → T3-27
Investigator(s): PB, JV

Date: 4/11/18
Time: 1108
Town:
State:
Photo begin file# 39
Photo end file# ~~46~~ 54
↳ 2/Feature

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: Refer to aquatic resources table
Projection: **Datum:**
Coordinates:

Notes:
Multiple features recorded on this data sheet → similar characteristics.

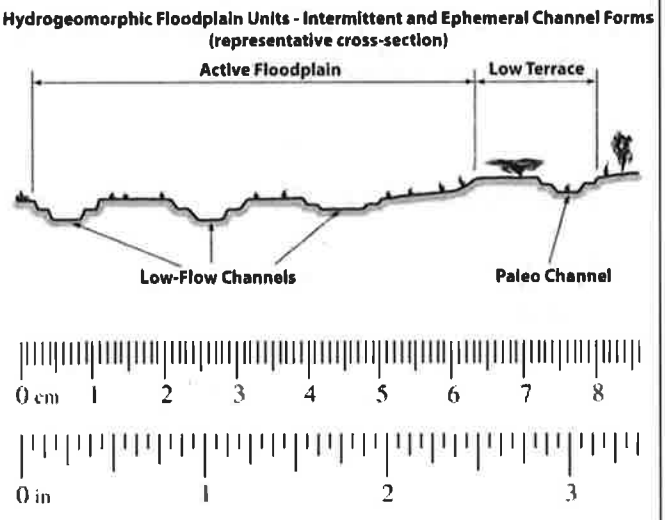
Brief site description:
Ephemeral desert wash, sparsely vegetated

Checklist of resources (if available):

- [X] Aerial photography
  Dates:
- [ ] Topographic maps
  Scale:
- [ ] Geologic maps
- [ ] Vegetation maps
- [X] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [X] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] Clinometer / level
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each zone of a channel cross-section is recorded in the average sediment texture field under the characteristics section for the zone of interest.

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



T3-20/2

☒ **Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**

☒ **Locate the low-flow channel (lowest part of the channel). Record observations.**

Characteristics of the low-flow channel:

Average sediment texture: silt - sand

Total veg cover: 1 % Tree: ____% Shrub: ____% Herb: 1 %

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☒ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Unk. herb

Other: ☐ ☐ ☐ ☐

☒ **Walk away from the low-flow channel along cross-section. Record characteristics of the low-flow/active floodplain boundary.**

Characteristics used to delineate the low-flow/active floodplain boundary:

☒ Change in total veg cover ☐ Tree ☒ Shrub ☐ Herb

☒ Change in overall vegetation maturity

☒ Change in dominant species present

☒ Other ☒ Presence of bed and bank

☐ Drift and/or debris

☒ Other: Flow patterns

☐ Other: ____

☐ **Continue walking the channel cross-section. Record observations below.**

Characteristics of the low-flow channel:

Average sediment texture: ____

Total veg cover: 1 % Tree: ____% Shrub: ____% Herb: 1 %

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☒ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Unk. herb

Other: ☐ ☐ ☐ ☐

T3-20/3

☒ **Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.**

Characteristics used to delineate the active floodplain/ low terrace boundary:

- ☒ Change in average sediment texture
- ☒ Change in total veg cover ☒ Tree ☒ Shrub ☒ Herb
- ☒ Change in overall vegetation maturity
- ☒ Change in dominant species present
- ☒ Other ☒ Presence of bed and bank
  - ☐ Drift and/or debris
  - ☒ Other: Flow patterns
  - ☐ Other: _____

☒ **Walk the active floodplain/low terrace boundary both upstream and downstream of the cross-section to verify that the indicators used to identify the transition are consistently associated the transition in both directions.**

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

- Y ☒ N ☐ Change in average sediment texture
- Y ☒ N ☐ Change in total veg cover ☒ Tree ☒ Shrub ☒ Herb
- Y ☒ N ☐ Change in overall vegetation maturity
- Y ☒ N ☐ Change in dominant species present
- Y ☒ N ☐ Other: Y ☒ N ☐ Presence of bed and bank
  - Y ☐ N ☐ Drift and/or debris
  - Y ☒ N ☐ Other: flow patterns
  - Y ☐ N ☐ Other: _____

☐ **If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**

☒ **Continue walking the channel cross-section. Record characteristics of the low terrace.**

Characteristics of the low terrace:

Average sediment texture: Gravel → small – med. cobble

Total veg cover: 10 % Tree: 1 % Shrub: 4 % Herb: 5 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Dominant species present: Desert ironwood, creosote bush, white bursage

Other: ☐ _____

☐ _____

☐ _____

☐ _____

☒ **If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.**

Active floodplain/low terrace boundary acquired via:

- ☐ Mapping on aerial photograph
- ☒ Digitized on computer
- ☒ GPS
- ☐ Other: _____

T3-28/1

Project: Wister Solar **Project Number:** **Stream:** T3-28 **Investigator(s):** RB, JV	**Date:** 4/11/18 **Time:** 1137 **Town:** **State:** CA **Photo begin file#** 55 **Photo end file#** 56
Y ☒ / N ☐ Do normal circumstances exist on the site? Y ☐ / N ☒ Is the site significantly disturbed?	**Location Details:** Refer to aquatic resources table **Projection:** **Datum:** **Coordinates:**

Notes:

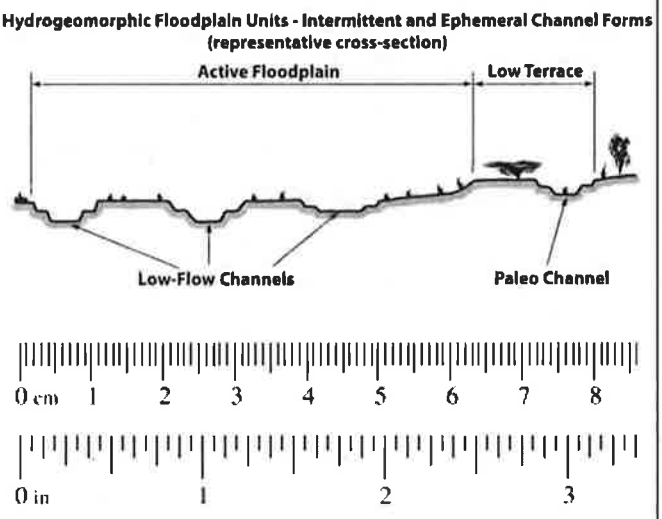
Brief site description:
Ephemeral desert wash, sparsely vegetated.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
  Scale:
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ Clinometer / level
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each zone of a channel cross-section is recorded in the average sediment texture field under the characteristics section for the zone of interest.

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
		Coarse sand	
0.020	0.50		
1/2 0.0098	0.25	Medium sand	Sand
		Fine sand	
1/4 0.005	0.125		
1/8 0.0025	0.0625	Very fine sand	
		Coarse silt	
1/16 0.0012	0.031		
		Medium silt	
1/32 0.00061	0.0156		Silt
		Fine silt	
1/64 0.00031	0.0078		
		Very fine silt	
1/128 0.00015	0.0039		
		Clay	Mud



T3-28-2

☒ **Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**

☒ **Locate the low-flow channel (lowest part of the channel). Record observations.**

Characteristics of the low-flow channel:

Average sediment texture: silt-sand interspersed w/small gravel

Total veg cover: 0 % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: NA

Other: ☐ ☐ ☐ ☐

☒ **Walk away from the low-flow channel along cross-section. Record characteristics of the low-flow/active floodplain boundary.**

Characteristics used to delineate the low-flow/active floodplain boundary:

- ☒ Change in total veg cover ☐ Tree ☒ Shrub ☒ Herb
- ☒ Change in overall vegetation maturity
- ☒ Change in dominant species present
- ☒ Other
  - ☒ Presence of bed and bank
  - ☐ Drift and/or debris
  - ☒ Other: flow patterns
  - ☐ Other: ____

☐ NA **Continue walking the channel cross-section. Record observations below.**

Characteristics of the low-flow channel:

Average sediment texture: ____

Total veg cover: ____% Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: ____

Other: ☐ ☐ ☐ ☐

T3-28/3

☒ **Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.**

Characteristics used to delineate the active floodplain/ low terrace boundary:

- ☒ Change in average sediment texture
- ☒ Change in total veg cover ☐ Tree ☒ Shrub ☒ Herb
- ☒ Change in overall vegetation maturity
- ☒ Change in dominant species present
- ☒ Other
  - ☒ Presence of bed and bank
  - ☐ Drift and/or debris
  - ☒ Other: Flow patters
  - ☐ Other: _____

☐ **Walk the active floodplain/low terrace boundary both upstream and downstream of the cross-section to verify that the indicators used to identify the transition are consistently associated the transition in both directions.**

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

- Y ☒ N ☐ Change in average sediment texture
- Y ☒ N ☐ Change in total veg cover ☐ Tree ☒ Shrub ☒ Herb
- Y ☒ N ☐ Change in overall vegetation maturity
- Y ☒ N ☐ Change in dominant species present
- Y ☒ N ☐ Other:
  - Y ☒ N ☐ Presence of bed and bank
  - Y ☐ N ☐ Drift and/or debris
  - Y ☒ N ☐ Other: Flow patterns
  - Y ☐ N ☐ Other: _____

☐ **If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**

☒ **Continue walking the channel cross-section. Record characteristics of the low terrace.**

Characteristics of the low terrace:

Average sediment texture: Pebble

Total veg cover: 5-10 % Tree: ____ % Shrub: 1-2 % Herb: 7-10 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Dominant species present: Creosote bush, unk. herbs

Other:

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

☒ **If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.**

Active floodplain/low terrace boundary acquired via:

- ☐ Mapping on aerial photograph
- ☒ Digitized on computer
- ☒ GPS
- ☐ Other: _____

T3-32/1

Project: Winter Solar
Project Number:
Stream: ~~T32~~ T3-32 → also T3-29, -30, & -31
Investigator(s): RB, JV

Date: 4/11/18 **Time:** 1148
Town: **State:** CA
Photo begin file# 57 **Photo end file#** 64

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: Refer to aquatic resources table
Projection: **Datum:**
Coordinates:

Notes:

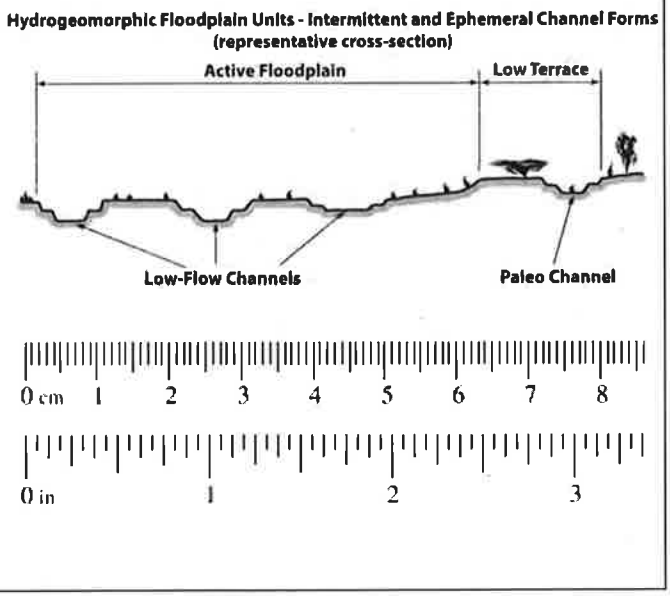
Brief site description:
Ephemeral desert wash, sparsely vegetated

Checklist of resources (if available):

- [X] Aerial photography
  Dates:
- [ ] Topographic maps
  Scale:
- [ ] Geologic maps
- [ ] Vegetation maps
- [X] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [X] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] Clinometer / level
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each zone of a channel cross-section is recorded in the average sediment texture field under the characteristics section for the zone of interest.

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
		Coarse sand	
0.020	0.50		
0.0098 (1/2)	0.25	Medium sand	Sand
		Fine sand	
0.005 (1/4)	0.125		
		Very fine sand	
0.0025 (1/8)	0.0625		
0.0012 (1/16)	0.031	Coarse silt	
		Medium silt	
0.00061 (1/32)	0.0156		Silt
		Fine silt	
0.00031 (1/64)	0.0078		
		Very fine silt	
0.00015 (1/128)	0.0039		
		Clay	Mud



☒ **Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**

☒ **Locate the low-flow channel (lowest part of the channel). Record observations.**

Characteristics of the low-flow channel:

Average sediment texture: Silt-sand

Total veg cover: <1 % Tree: ____ % Shrub: <1 % Herb: ____ %

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: white bursage

Other:
- ☐
- ☐
- ☐
- ☐

☒ **Walk away from the low-flow channel along cross-section. Record characteristics of the low-flow/active floodplain boundary.**

Characteristics used to delineate the low-flow/active floodplain boundary:

- ☒ Change in total veg cover ☒ Tree ☒ Shrub ☒ Herb
- ☒ Change in overall vegetation maturity
- ☒ Change in dominant species present
- ☒ Other
  - ☒ Presence of bed and bank
  - ☐ Drift and/or debris
  - ☒ Other: flow patterns
  - ☐ Other: ____

☒ **Continue walking the channel cross-section. Record observations below.**

Characteristics of the low-flow channel: Paleo channels

Average sediment texture: lg sand

Total veg cover: 0 % Tree: ____ % Shrub: ____ % Herb: ____ %

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: NA

Other:
- ☐
- ☐
- ☐
- ☐

☒ **Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.**

Characteristics used to delineate the active floodplain/ low terrace boundary:

- ☒ Change in average sediment texture
- ☒ Change in total veg cover ☒ Tree ☒ Shrub ☒ Herb
- ☒ Change in overall vegetation maturity
- ☒ Change in dominant species present
- ☒ Other ☒ Presence of bed and bank
  - ☐ Drift and/or debris
  - ☒ Other: Flow patterns
  - ☐ Other: _____

☒ **Walk the active floodplain/low terrace boundary both upstream and downstream of the cross-section to verify that the indicators used to identify the transition are consistently associated the transition in both directions.**

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

- Y ☒ N ☐ Change in average sediment texture
- Y ☒ N ☐ Change in total veg cover ☒ Tree ☒ Shrub ☒ Herb
- Y ☒ N ☐ Change in overall vegetation maturity
- Y ☒ N ☐ Change in dominant species present
- Y ☒ N ☐ Other: Y ☒ N ☐ Presence of bed and bank
  - Y ☐ N ☐ Drift and/or debris
  - Y ☒ N ☐ Other: Flow patterns
  - Y ☐ N ☐ Other: _____

☐ **If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**

☒ **Continue walking the channel cross-section. Record characteristics of the low terrace.**

Characteristics of the low terrace:

Average sediment texture: Pebbles

Total veg cover: 5-10 % Tree: 0-1 % Shrub: 3-7 % Herb: 3-5 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Dominant species present: white bursage, desert ironwood, ink. herbs

Other: ☐ _____ ☐ _____ ☐ _____ ☐ _____

☒ **If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.**

Active floodplain/low terrace boundary acquired via:

- ☐ Mapping on aerial photograph
- ☒ Digitized on computer
- ☒ GPS
- ☐ Other: _____

T3-33/1

Project: Wister Solar
Project Number:
Stream: T3-33 & T3-34
Investigator(s): RB, JV

Date: 4/11/18 **Time:** 11 55
Town: **State:** CA
Photo begin file# 65 **Photo end file#** 68

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details: Refer to aquatic resources table
Projection: **Datum:**
Coordinates:

Notes:

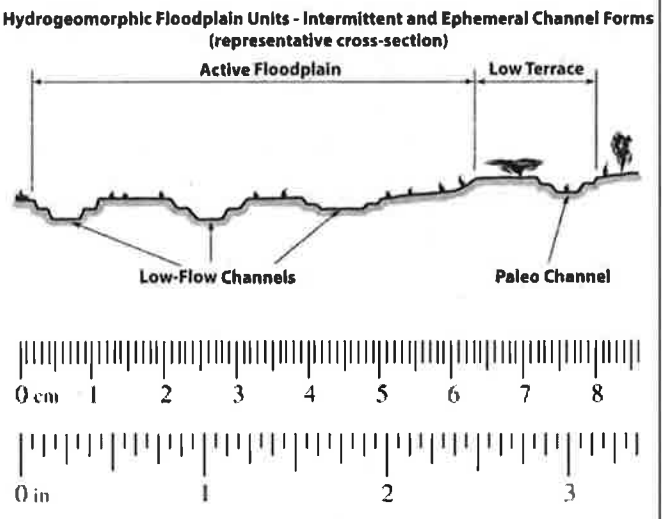
Brief site description:
Ephemeral desert wash, sparsely vegetated

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
  Scale:
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ Clinometer / level
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each zone of a channel cross-section is recorded in the average sediment texture field under the characteristics section for the zone of interest.

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



T3-33/2

☐ **Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**

☒ **Locate the low-flow channel (lowest part of the channel). Record observations.**

Characteristics of the low-flow channel:

Average sediment texture: coarse sand

Total veg cover: 5 % Tree: ____ % Shrub: ____ % Herb: 5 %

Community successional stage:

☐ NA ☒ Mid (herbaceous, shrubs, saplings)

☒ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Unk. herbs, white bursage

Other: ☐ ☐ ☐ ☐

☒ **Walk away from the low-flow channel along cross-section. Record characteristics of the low-flow/active floodplain boundary.**

Characteristics used to delineate the low-flow/active floodplain boundary:

☒ Change in total veg cover ☐ Tree ☒ Shrub ☒ Herb

☒ Change in overall vegetation maturity

☒ Change in dominant species present

☒ Other ☒ Presence of bed and bank

☐ Drift and/or debris

☒ Other: Flow patterns

☐ Other:

☐ **Continue walking the channel cross-section. Record observations below.**

Characteristics of the low-flow channel:

Average sediment texture: coarse sand

Total veg cover: 5 % Tree: ____ % Shrub: ____ % Herb: 5 %

Community successional stage:

☐ NA ☒ Mid (herbaceous, shrubs, saplings)

☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Unk. white bursage

Other: ☐ ☐ ☐ ☐

T3-33/3

☒ **Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.**

Characteristics used to delineate the active floodplain/ low terrace boundary:

- ☒ Change in average sediment texture
- ☒ Change in total veg cover ☐ Tree ☒ Shrub ☒ Herb
- ☒ Change in overall vegetation maturity
- ☒ Change in dominant species present
- ☒ Other ☒ Presence of bed and bank
  - ☐ Drift and/or debris
  - ☒ Other: Flow patterns
  - ☐ Other: _____

☒ **Walk the active floodplain/low terrace boundary both upstream and downstream of the cross-section to verify that the indicators used to identify the transition are consistently associated the transition in both directions.**

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

- Y ☒ N ☐ Change in average sediment texture
- Y ☒ N ☐ Change in total veg cover ☐ Tree ☒ Shrub ☒ Herb
- Y ☒ N ☐ Change in overall vegetation maturity
- Y ☒ N ☐ Change in dominant species present
- Y ☒ N ☐ Other: Y ☒ N ☐ Presence of bed and bank
  - Y ☐ N ☐ Drift and/or debris
  - Y ☒ N ☐ Other: Flow patterns
  - Y ☐ N ☐ Other: _____

☐ **If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**

☒ **Continue walking the channel cross-section. Record characteristics of the low terrace.**

Characteristics of the low terrace:

Average sediment texture: Pebbles

Total veg cover: 5-10 % Tree: ____ % Shrub: 1 % Herb: 5-10 %

Community successional stage:

- ☐ NA
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Early (herbaceous & seedlings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Unk. ~~shrub~~ herbs, creosote bush, white bursage

Other: ☐ _____ ☐ _____ ☐ _____ ☐ _____

☒ **If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.**

Active floodplain/low terrace boundary acquired via:

- ☐ Mapping on aerial photograph
- ☒ GPS
- ☒ Digitized on computer
- ☐ Other: _____

T3-35/1

Project: Wister Solar **Project Number:** **Stream:** T3-35 **Investigator(s):** RB, JV	**Date:** 4/11/18 **Town:** **Photo begin file#** 69	**Time:** 1205 **State:** CA **Photo end file#** 70
Y ☒ / N ☐ Do normal circumstances exist on the site? Y ☐ / N ☒ Is the site significantly disturbed?	**Location Details:** Refer to aquatic resources table **Projection:** **Datum:** **Coordinates:**	

Notes:

Brief site description:

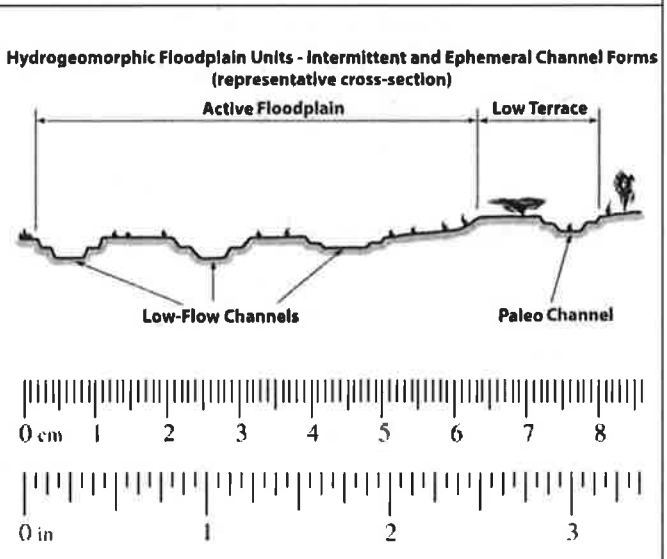
Ephemeral desert wash, sparsely vegetated

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
  Scale:
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ Clinometer / level
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each zone of a channel cross-section is recorded in the average sediment texture field under the characteristics section for the zone of interest.

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
0.0098	0.25	Medium sand	Sand
0.005	0.125	Fine sand	
0.0025	0.0625	Very fine sand	
0.0012	0.031	Coarse silt	
0.00061	0.0156	Medium silt	Silt
0.00031	0.0078	Fine silt	
0.00015	0.0039	Very fine silt	
		Clay	Mud
1/2			
1/4			
1/8			
1/16			
1/32			
1/64			
1/128			



T3-35/2

☒ **Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**

☒ **Locate the low-flow channel (lowest part of the channel). Record observations.**

Characteristics of the low-flow channel:

Average sediment texture: silt - sand

Total veg cover: 5 % Tree: ____% Shrub: ____% Herb: 5 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Unk. forbs

Other: ☐ ☐ ☐ ☐

☐ NA **Walk away from the low-flow channel along cross-section. Record characteristics of the low-flow/active floodplain boundary.**

Characteristics used to delineate the low-flow/active floodplain boundary:

- ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb
- ☐ Change in overall vegetation maturity
- ☐ Change in dominant species present
- ☐ Other
  - ☐ Presence of bed and bank
  - ☐ Drift and/or debris
  - ☐ Other: _____
  - ☐ Other: _____

☐ NA **Continue walking the channel cross-section. Record observations below.**

Characteristics of the low-flow channel:

Average sediment texture: _____

Total veg cover: ____ % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: _____

Other: ☐ ☐ ☐ ☐

T3-35/3

☒ **Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.**

Characteristics used to delineate the active floodplain/ low terrace boundary:

- ☒ Change in average sediment texture
- ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb
- ☒ Change in overall vegetation maturity
- ☒ Change in dominant species present
- ☒ Other ☒ Presence of bed and bank
  - ☐ Drift and/or debris
  - ☒ Other: Flow patterns
  - ☐ Other: _____

☐ **Walk the active floodplain/low terrace boundary both upstream and downstream of the cross-section to verify that the indicators used to identify the transition are consistently associated the transition in both directions.**

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

- Y ☒ N ☐ Change in average sediment texture
- Y ☐ N ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb
- Y ☒ N ☐ Change in overall vegetation maturity
- Y ☒ N ☐ Change in dominant species present
- Y ☒ N ☐ Other: Y ☒ N ☐ Presence of bed and bank
  - Y ☐ N ☐ Drift and/or debris
  - Y ☒ N ☐ Other: Flow patterns
  - Y ☐ N ☐ Other: _____

☐ **If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**

☒ **Continue walking the channel cross-section. Record characteristics of the low terrace.**

Characteristics of the low terrace:

Average sediment texture: lg. pebbles w/ exposed bedrock

Total veg cover: 5 % Tree: ____ % Shrub: 1-2 % Herb: 1-3 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: White bursage, unk. forbs

Other: ☐ _____ ☐ _____ ☐ _____ ☐ _____

☒ **If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.**

Active floodplain/low terrace boundary acquired via:

- ☐ Mapping on aerial photograph
- ☒ GPS
- ☒ Digitized on computer
- ☐ Other: _____

T3-36/1

Project: Wister Solar
Project Number:
Stream: T3-36
Investigator(s): RB, DV

Date: 4/11/14
Town:
Photo begin file# 71

Time: 12 10
State: CA
Photo end file# 72

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: Refer to aquatic resources table
Projection: **Datum:**
Coordinates:

Notes:

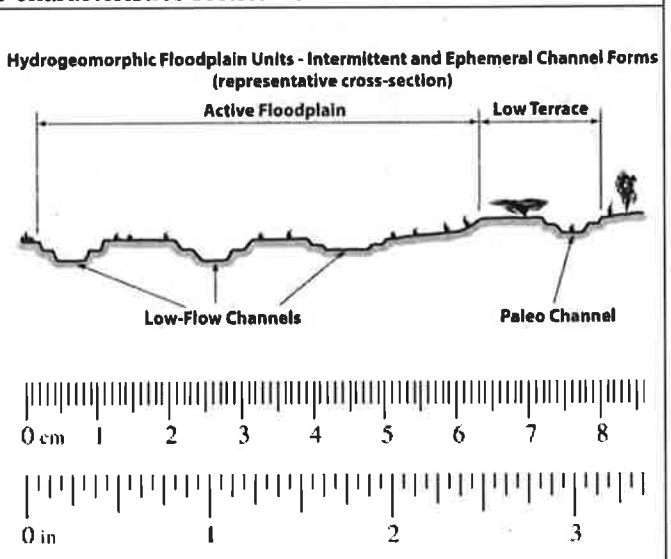
Brief site description:
Ephemeral desert wash, sparsely vegetated

Checklist of resources (if available):

- [X] Aerial photography
  Dates:
- [ ] Topographic maps
  Scale:
- [ ] Geologic maps
- [ ] Vegetation maps
- [X] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [X] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] Clinometer / level
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each zone of a channel cross-section is recorded in the average sediment texture field under the characteristics section for the zone of interest.

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
0.0098 (1/2)	0.25	Medium sand	Sand
0.005 (1/4)	0.125	Fine sand	
0.0025 (1/8)	0.0625	Very fine sand	
0.0012 (1/16)	0.031	Coarse silt	
0.00061 (1/32)	0.0156	Medium silt	Silt
0.00031 (1/64)	0.0078	Fine silt	
0.00015 (1/128)	0.0039	Very fine silt	
		Clay	Mud



T3-36/2

☐ **Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**

☒ **Locate the low-flow channel (lowest part of the channel). Record observations.**

Characteristics of the low-flow channel:

Average sediment texture: Silt-sand interspersed w/pebbles

Total veg cover: 0 % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: _____

Other: ☐ ☐ ☐ ☐

☒ **Walk away from the low-flow channel along cross-section. Record characteristics of the low-flow/active floodplain boundary.**

Characteristics used to delineate the low-flow/active floodplain boundary:

- ☒ Change in total veg cover
- ☒ Change in overall vegetation maturity
- ☒ Change in dominant species present
- ☐ Other
- ☐ Tree
- ☒ Shrub
- ☐ Herb
- ☐ Presence of bed and bank
- ☐ Drift and/or debris
- ☐ Other: _____
- ☐ Other: _____

☒ **Continue walking the channel cross-section. Record observations below.**

Characteristics of the low-flow channel:

Average sediment texture: Pebbles

Total veg cover: 15 % Tree: ____% Shrub: 15 % Herb: ____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: White bursage

Other: ☐ ☐ ☐ ☐

T3-36/3

☒ **Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.**

Characteristics used to delineate the active floodplain/ low terrace boundary:

- ☒ Change in average sediment texture
- ☒ Change in total veg cover ☐ Tree ☒ Shrub ☐ Herb
- ☐ Change in overall vegetation maturity
- ☐ Change in dominant species present
- ☒ Other ☒ Presence of bed and bank
  - ☐ Drift and/or debris
  - ☒ Other: Flow patterns
  - ☐ Other: _____

☒ **Walk the active floodplain/low terrace boundary both upstream and downstream of the cross-section to verify that the indicators used to identify the transition are consistently associated the transition in both directions.**

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

- Y ☒ N ☐ Change in average sediment texture
- Y ☒ N ☐ Change in total veg cover ☐ Tree ☒ Shrub ☐ Herb
- Y ☐ N ☐ Change in overall vegetation maturity
- Y ☐ N ☐ Change in dominant species present
- Y ☒ N ☐ Other: Y ☒ N ☐ Presence of bed and bank
  - Y ☐ N ☐ Drift and/or debris
  - Y ☒ N ☐ Other: Flow patterns
  - Y ☐ N ☐ Other: _____

☐ **If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**

☒ **Continue walking the channel cross-section. Record characteristics of the low terrace.**

Characteristics of the low terrace:

Average sediment texture: Pebbles - small cobbles

Total veg cover: 3 % Tree: ____% Shrub: ____% Herb: 3 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Unk. forbs

Other: ☐ _____ ☐ _____ ☐ _____ ☐ _____

☒ **If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.**

Active floodplain/low terrace boundary acquired via:

- ☐ Mapping on aerial photograph
- ☒ Digitized on computer
- ☒ GPS
- ☐ Other: _____

T3-37f1

Project: Wister Solar **Project Number:** **Stream:** T3-37 **Investigator(s):** RB, JV	**Date:** 4/11/18 **Town:** **Photo begin file#** 73	**Time:** 12 20 **State:** CA **Photo end file#** 74
Y ☒ / N ☐ Do normal circumstances exist on the site? Y ☐ / N ☒ Is the site significantly disturbed?	**Location Details:** Refer to aquatic resources table **Projection:** **Datum:** **Coordinates:**	

Notes:

Brief site description:

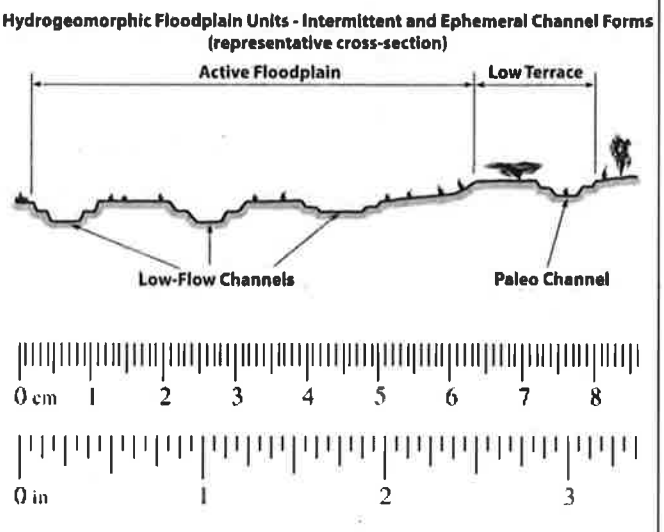
Ephemeral desert wash, sparsely vegetated

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
  Scale:
- ☐ Geologic maps
- ☒ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ Clinometer / level
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each zone of a channel cross-section is recorded in the average sediment texture field under the characteristics section for the zone of interest.

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



T3-37/2

☐ **Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**

☒ **Locate the low-flow channel (lowest part of the channel). Record observations.**

Characteristics of the low-flow channel:

Average sediment texture: silt-sand w/ lg. pebbles

Total veg cover: ~~5-10~~ % Tree: ____ % Shrub: ~~5-10~~ % Herb: ____ %

Community successional stage:

☐ NA ☒ Mid (herbaceous, shrubs, saplings)

☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: ~~white bursage~~ None

Other: ☐ ☐ ☐ ☐

☒ **Walk away from the low-flow channel along cross-section. Record characteristics of the low-flow/active floodplain boundary.**

Characteristics used to delineate the low-flow/active floodplain boundary:

☒ Change in total veg cover ☐ Tree ☒ Shrub ☐ Herb

☐ Change in overall vegetation maturity

☐ Change in dominant species present

☐ Other ☐ Presence of bed and bank

☐ Drift and/or debris

☐ Other: _____

☐ Other: _____

☒ **Continue walking the channel cross-section. Record observations below.**

Characteristics of the low-flow channel:

Average sediment texture: sand/silt

Total veg cover: 5-10 % Tree: ____ % Shrub: 5-10 % Herb: ____ %

Community successional stage:

☐ NA ☒ Mid (herbaceous, shrubs, saplings)

☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: white bursage

Other: ☐ ☐ ☐ ☐

☒ **Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.**

Characteristics used to delineate the active floodplain/ low terrace boundary:

- ☒ Change in average sediment texture
- ☒ Change in total veg cover ☐ Tree ☒ Shrub ☐ Herb
- ☒ Change in overall vegetation maturity
- ☒ Change in dominant species present
- ☒ Other ☒ Presence of bed and bank
  - ☐ Drift and/or debris
  - ☒ Other: Flow patterns
  - ☐ Other: _____

☒ **Walk the active floodplain/low terrace boundary both upstream and downstream of the cross-section to verify that the indicators used to identify the transition are consistently associated the transition in both directions.**

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

- Y ☒ N ☐ Change in average sediment texture
- Y ☒ N ☐ Change in total veg cover ☐ Tree ☒ Shrub ☐ Herb
- Y ☒ N ☐ Change in overall vegetation maturity
- Y ☒ N ☐ Change in dominant species present
- Y ☒ N ☐ Other:
  - Y ☒ N ☐ Presence of bed and bank
  - Y ☐ N ☐ Drift and/or debris
  - Y ☒ N ☐ Other: Flow patterns
  - Y ☐ N ☐ Other: _____

☐ **If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**

☒ **Continue walking the channel cross-section. Record characteristics of the low terrace.**

Characteristics of the low terrace:

Average sediment texture: Pebbles

Total veg cover: 0-5 % Tree: ____ % Shrub: 1 % Herb: 4 %

Community successional stage:

- ☐ NA
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Early (herbaceous & seedlings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Unk. forbs, creosote bush

Other:

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

☒ **If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.**

Active floodplain/low terrace boundary acquired via:

- ☐ Mapping on aerial photograph
- ☒ GPS
- ☒ Digitized on computer
- ☐ Other: _____

T3-40/1

Project: Wister Solar
Project Number:
Stream: T3-40
Investigator(s): RB, JV

Date: 4/11/18
Town:
Photo begin file# 79

Time: 1236
State: CA
Photo end file# 80

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: Refer to aquatic resources table
Projection: **Datum:**
Coordinates:

Notes:

Brief site description:

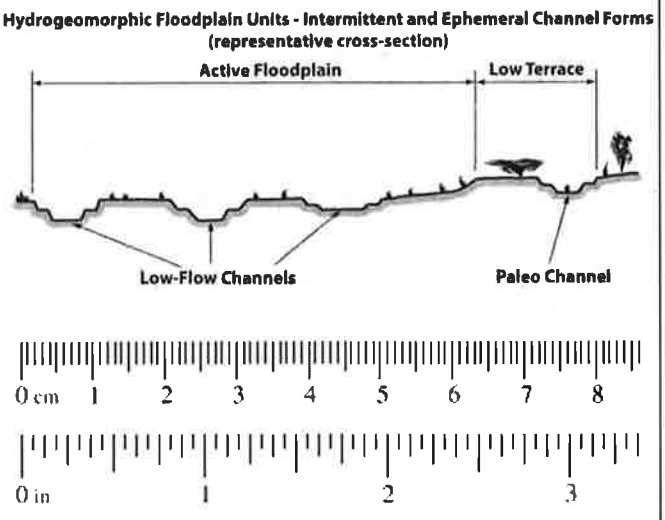
Ephemeral desert wash, sparsely vegetated

Checklist of resources (if available):

- [X] Aerial photography
  Dates:
- [ ] Topographic maps
  Scale:
- [ ] Geologic maps
- [ ] Vegetation maps
- [X] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [X] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] Clinometer / level
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each zone of a channel cross-section is recorded in the average sediment texture field under the characteristics section for the zone of interest.

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
0.0098 (1/2)	0.25	Medium sand	Sand
0.005 (1/4)	0.125	Fine sand	
0.0025 (1/8)	0.0625	Very fine sand	
0.0012 (1/16)	0.031	Coarse silt	
0.00061 (1/32)	0.0156	Medium silt	Silt
0.00031 (1/64)	0.0078	Fine silt	
0.00015 (1/128)	0.0039	Very fine silt	
		Clay	Mud



☐ **Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**

☒ **Locate the low-flow channel (lowest part of the channel). Record observations.**

Characteristics of the low-flow channel:

Average sediment texture: silt/sand

Total veg cover: 0 % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: NA

Other:

- ☐ ____
- ☐ ____
- ☐ ____
- ☐ ____

☒ **Walk away from the low-flow channel along cross-section. Record characteristics of the low-flow/active floodplain boundary.**

Characteristics used to delineate the low-flow/active floodplain boundary:

- ☒ Change in total veg cover ☐ Tree ☒ Shrub ☐ Herb
- ☒ Change in overall vegetation maturity
- ☒ Change in dominant species present
- ☐ Other
  - ☒ Presence of bed and bank
  - ☐ Drift and/or debris
  - ☒ Other: flow patterns
  - ☐ Other: ____

☒ **Continue walking the channel cross-section. Record observations below.**

Characteristics of the low-flow channel:

Average sediment texture: silt/sand

Total veg cover: 5-10 % Tree: ____% Shrub: 5-10 % Herb: ____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: white bursage, creosote bush

Other:

- ☐ ____
- ☐ ____
- ☐ ____
- ☐ ____

T3-40/3

☒ **Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.**

Characteristics used to delineate the active floodplain/ low terrace boundary:

- ☒ Change in average sediment texture
- ☒ Change in total veg cover ☐ Tree ☒ Shrub ☐ Herb
- ☒ Change in overall vegetation maturity
- ☒ Change in dominant species present
- ☒ Other ☒ Presence of bed and bank
  - ☐ Drift and/or debris
  - ☒ Other: Flow patterns
  - ☐ Other: _____

☒ **Walk the active floodplain/low terrace boundary both upstream and downstream of the cross-section to verify that the indicators used to identify the transition are consistently associated the transition in both directions.**

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

- Y ☒ N ☐ Change in average sediment texture
- Y ☒ N ☐ Change in total veg cover ☐ Tree ☒ Shrub ☐ Herb
- Y ☒ N ☐ Change in overall vegetation maturity
- Y ☒ N ☐ Change in dominant species present
- Y ☒ N ☐ Other: Y ☒ N ☐ Presence of bed and bank
  - Y ☐ N ☐ Drift and/or debris
  - Y ☒ N ☐ Other: Flow patterns
  - Y ☐ N ☐ Other: _____

☐ **If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**

☐ **Continue walking the channel cross-section. Record characteristics of the low terrace.**

Characteristics of the low terrace:

Average sediment texture: Lg. pebble - cobble

Total veg cover: <1 % Tree: ____ % Shrub: ____ % Herb: <1 %

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: sparse unk. forbs

Other: ☐ _____ ☐ _____ ☐ _____ ☐ _____

☒ **If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.**

Active floodplain/low terrace boundary acquired via:

- ☐ Mapping on aerial photograph
- ☒ Digitized on computer
- ☒ GPS
- ☐ Other: _____

T2-1/1

Project: Wister Solar
Project Number:
Stream: T2-1
Investigator(s): RB, JV

Date: 4/11/18 **Time:** 1309
Town: **State:** CA
Photo begin file# 97 **Photo end file#** 98

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details:
Refer to aquatic resources table
Projection: **Datum:**
Coordinates:

Notes:

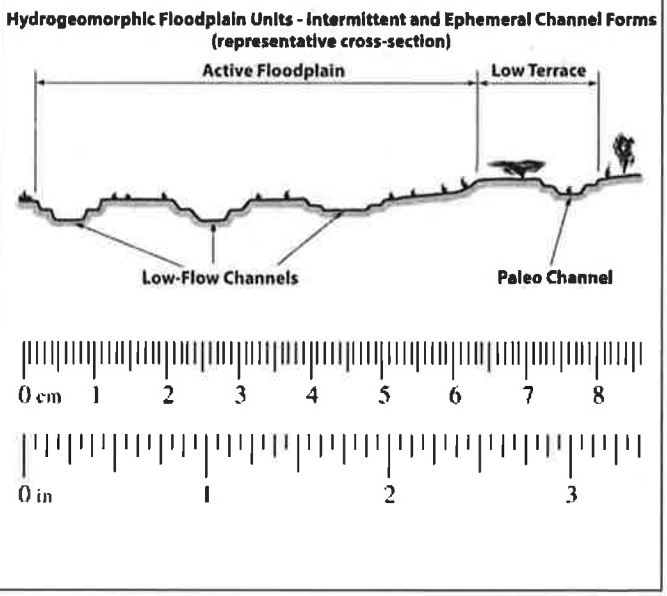
Brief site description:
Ephemeral desert wash, sparsely vegetated

Checklist of resources (if available):

- [X] Aerial photography
  Dates:
- [ ] Topographic maps
  Scale:
- [ ] Geologic maps
- [ ] Vegetation maps
- [X] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [X] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] Clinometer / level
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each zone of a channel cross-section is recorded in the average sediment texture field under the characteristics section for the zone of interest.

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



T2-1/2

☐ **Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**

☒ **Locate the low-flow channel (lowest part of the channel). Record observations.**

Characteristics of the low-flow channel:

Average sediment texture: silt/sand

Total veg cover: 0 % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)
☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: white bursage (at edges)

Other: ☐ ☐ ☐ ☐

☒ **Walk away from the low-flow channel along cross-section. Record characteristics of the low-flow/active floodplain boundary.**

Characteristics used to delineate the low-flow/active floodplain boundary:

☒ Change in total veg cover ☐ Tree ☒ Shrub ☐ Herb
☒ Change in overall vegetation maturity
☒ Change in dominant species present
☐ Other ☒ Presence of bed and bank
☐ Drift and/or debris
☒ Other: Flow patters
☐ Other:

☒ **Continue walking the channel cross-section. Record observations below.**

Characteristics of the low-flow channel:

Average sediment texture: ____

Total veg cover: ____ % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)
☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: ____

Other: ☐ ☐ ☐ ☐

☒ **Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.**

Characteristics used to delineate the active floodplain/ low terrace boundary:

- ☒ Change in average sediment texture
- ☒ Change in total veg cover ☐ Tree ☒ Shrub ☐ Herb
- ☐ Change in overall vegetation maturity
- ☐ Change in dominant species present
- ☒ Other ☒ Presence of bed and bank
  - ☐ Drift and/or debris
  - ☒ Other: Flow patterns
  - ☐ Other: _____

☒ **Walk the active floodplain/low terrace boundary both upstream and downstream of the cross-section to verify that the indicators used to identify the transition are consistently associated the transition in both directions.**

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

- Y ☒ N ☐ Change in average sediment texture
- Y ☒ N ☐ Change in total veg cover ☐ Tree ☒ Shrub ☐ Herb
- Y ☐ N ☐ Change in overall vegetation maturity
- Y ☐ N ☐ Change in dominant species present
- Y ☒ N ☐ Other: Y ☒ N ☐ Presence of bed and bank
  - Y ☐ N ☐ Drift and/or debris
  - Y ☒ N ☐ Other: Flow patterns
  - Y ☐ N ☐ Other: _____

☐ **If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**

☒ **Continue walking the channel cross-section. Record characteristics of the low terrace.**

Characteristics of the low terrace:

Average sediment texture: Pebbles

Total veg cover: 10 % Tree: ____ % Shrub: 3 % Herb: 7 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Unk. forbs, white bursage

Other:

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

☐ **If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.**

Active floodplain/low terrace boundary acquired via:

- ☐ Mapping on aerial photograph
- ☒ Digitized on computer
- ☒ GPS
- ☐ Other: _____

T4-1/1

Project: Wister Solar
Project Number:
Stream: T4-1
Investigator(s): RB, JV

Date: 4/12/14
Town:
Photo begin file# 231

Time: 10 29
State: CA
Photo end file# 232

Y ☐ / N ☒ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Notes:
Adjacent ag. land and constructed earthen berm along one side of drainage, roadway (unpaved) ~ 30-40' away from opposite bank

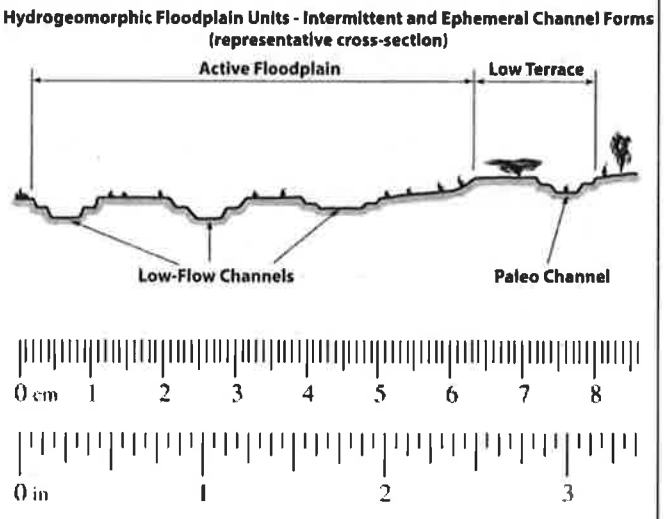
Brief site description:
Ephemeral desert wash, sparsely vegetated

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
  Scale:
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ Clinometer / level
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each zone of a channel cross-section is recorded in the average sediment texture field under the characteristics section for the zone of interest.

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



☒ **Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**

☒ **Locate the low-flow channel (lowest part of the channel). Record observations.**

Characteristics of the low-flow channel:

Average sediment texture: silt/sand

Total veg cover: <1 % Tree: <1 % Shrub: <1 % Herb: ____ %

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☐ Early (herbaceous & seedlings) ☒ Late (herbaceous, shrubs, mature trees)

Dominant species present: tamarisk, white bursage

Other: ☐ ☐ ☐ ☐

☒ **Walk away from the low-flow channel along cross-section. Record characteristics of the low-flow/active floodplain boundary.**

Characteristics used to delineate the low-flow/active floodplain boundary:

☒ Change in total veg cover ☒ Tree ☒ Shrub ☐ Herb

☐ Change in overall vegetation maturity

☐ Change in dominant species present

☒ Other ☒ Presence of bed and bank

☐ Drift and/or debris

☒ Other: flow patterns

☐ Other: ____

☐ **Continue walking the channel cross-section. Record observations below.**

NA

Characteristics of the low-flow channel:

Average sediment texture: silt/sand

Total veg cover: 3 % Tree: 1 % Shrub: 2 % Herb: ____ %

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☐ Early (herbaceous & seedlings) ☒ Late (herbaceous, shrubs, mature trees)

Dominant species present: tamarisk, white bursage

Other: ☐ ☐ ☐ ☐

☒ **Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.**

Characteristics used to delineate the active floodplain/ low terrace boundary:

- ☒ Change in average sediment texture
- ☒ Change in total veg cover ☒ Tree ☒ Shrub ☒ Herb
- ☐ Change in overall vegetation maturity
- ☒ Change in dominant species present
- ☒ Other ☒ Presence of bed and bank
  - ☐ Drift and/or debris
  - ☒ Other: Flow patterns
  - ☐ Other: _____

☒ **Walk the active floodplain/low terrace boundary both upstream and downstream of the cross-section to verify that the indicators used to identify the transition are consistently associated the transition in both directions.**

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

- Y ☒ N ☐ Change in average sediment texture
- Y ☒ N ☐ Change in total veg cover ☒ Tree ☒ Shrub ☒ Herb
- Y ☐ N ☐ Change in overall vegetation maturity
- Y ☒ N ☐ Change in dominant species present
- Y ☒ N ☐ Other: Y ☒ N ☐ Presence of bed and bank
  - Y ☐ N ☐ Drift and/or debris
  - Y ☒ N ☐ Other: Flow patterns
  - Y ☐ N ☐ Other: _____

☐ **If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**

☒ **Continue walking the channel cross-section. Record characteristics of the low terrace.**

Characteristics of the low terrace:

Average sediment texture: pebbles

Total veg cover: 5-10 % Tree: ____ % Shrub: 5-10 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: white bursage, creosote bush

Other: ☐ _____ ☐ _____ ☐ _____ ☐ _____

☒ **If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.**

Active floodplain/low terrace boundary acquired via:

- ☐ Mapping on aerial photograph
- ☒ Digitized on computer
- ☒ GPS
- ☐ Other: _____

T4-2/1

Project: Wister Solar
Project Number:
Stream: T4-2, -3
Investigator(s): RB, JV

Date: 4/12/18
Time: 1035
Town:
State: CA
Photo begin file# 233
Photo end file# 236

Y ☐ / N ☒ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details: Refer to aquatic inventory table
Projection: **Datum:**
Coordinates:

Notes:
Sheet flow forms channels, which are interrupted by unpaved roadway; sheet flows over road — no reformation of channel

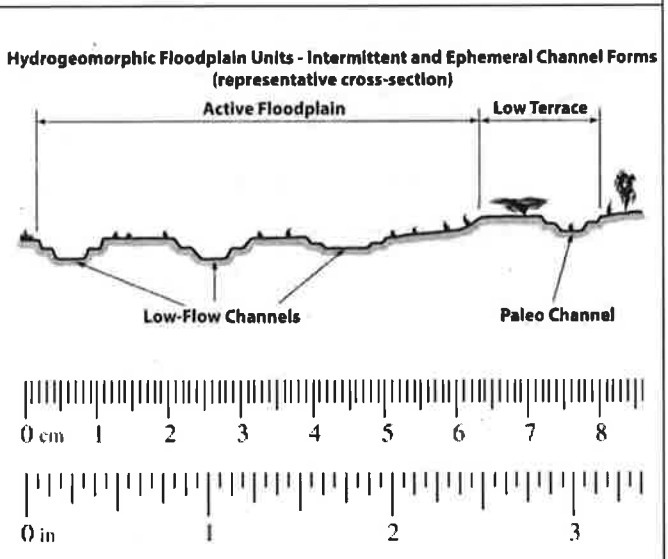
Brief site description:
Ephemeral desert wash, sparsely vegetated

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
  Scale:
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ Clinometer / level
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each zone of a channel cross-section is recorded in the average sediment texture field under the characteristics section for the zone of interest.

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



T4-2/2

☐ **Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**

☒ **Locate the low-flow channel (lowest part of the channel). Record observations.**

Characteristics of the low-flow channel:

Average sediment texture: sand w/small pebbles

Total veg cover: 5 % Tree: ____% Shrub: 5 % Herb: ____%

Community successional stage:

☐ NA
☒ Mid (herbaceous, shrubs, saplings)
☐ Early (herbaceous & seedlings)
☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: white sagebrush

Other: ☐ ☐ ☐ ☐

☐ NA **Walk away from the low-flow channel along cross-section. Record characteristics of the low-flow/active floodplain boundary.**

Characteristics used to delineate the low-flow/active floodplain boundary:

☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb
☐ Change in overall vegetation maturity
☐ Change in dominant species present
☐ Other ☐ Presence of bed and bank
☐ Drift and/or debris
☐ Other: _____
☐ Other: _____

☐ NA **Continue walking the channel cross-section. Record observations below.**

Characteristics of the low-flow channel:

Average sediment texture: _____

Total veg cover: ____% Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

☐ NA
☐ Mid (herbaceous, shrubs, saplings)
☐ Early (herbaceous & seedlings)
☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: _____

Other: ☐ ☐ ☐ ☐

☒ **Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.**

Characteristics used to delineate the active floodplain/ low terrace boundary:

- ☒ Change in average sediment texture
- ☒ Change in total veg cover ☐ Tree ☒ Shrub ☒ Herb
- ☐ Change in overall vegetation maturity
- ☐ Change in dominant species present
- ☒ Other ☒ Presence of bed and bank
  - ☐ Drift and/or debris
  - ☒ Other: Flow patterns
  - ☐ Other: _____

☒ **Walk the active floodplain/low terrace boundary both upstream and downstream of the cross-section to verify that the indicators used to identify the transition are consistently associated the transition in both directions.**

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

- Y ☒ N ☐ Change in average sediment texture
- Y ☒ N ☐ Change in total veg cover ☐ Tree ☒ Shrub ☒ Herb
- Y ☐ N ☐ Change in overall vegetation maturity
- Y ☐ N ☐ Change in dominant species present
- Y ☒ N ☐ Other: Y ☒ N ☐ Presence of bed and bank
  - Y ☐ N ☐ Drift and/or debris
  - Y ☒ N ☐ Other: Flow patterns
  - Y ☐ N ☐ Other: _____

☐ **If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**

☒ **Continue walking the channel cross-section. Record characteristics of the low terrace.**

Characteristics of the low terrace:

Average sediment texture: sand w/ pebbles

Total veg cover: 2 % Tree: ____ % Shrub: <1 % Herb: 2 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Unk. forbs, white bursage

Other: ☐ _____ ☐ _____ ☐ _____ ☐ _____

☒ **If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.**

Active floodplain/low terrace boundary acquired via:

- ☐ Mapping on aerial photograph
- ☒ Digitized on computer
- ☒ GPS
- ☐ Other: _____

T4-19/1

Project: Wister Solar
Project Number:
Stream: T4-19
Investigator(s): RB, JV

Date: 4/12/18
Town:
Photo begin file# 267

Time: 1115
State: CA
Photo end file# 268

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details: Refer to aquatic resources table
Projection: **Datum:**
Coordinates:

Notes:

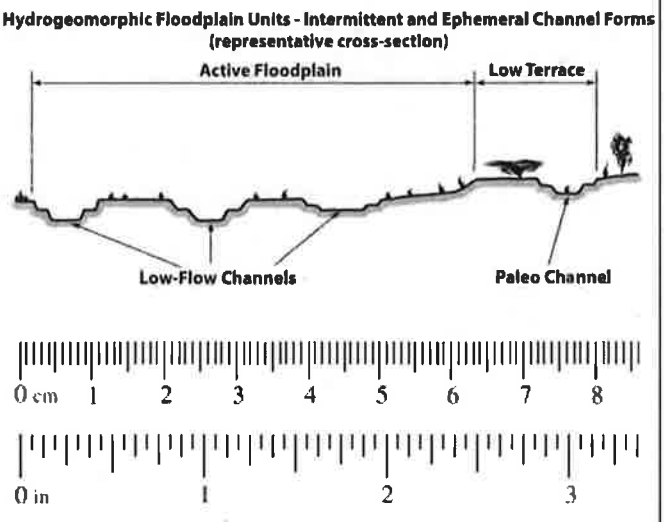
Brief site description:
Ephemeral desert wash, sparsely vegetated

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
  Scale:
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ Clinometer / level
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each zone of a channel cross-section is recorded in the average sediment texture field under the characteristics section for the zone of interest.

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
		Coarse sand	
0.020	0.50		
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
		Very fine sand	
1/8 0.0025	0.0625		
1/16 0.0012	0.031	Coarse silt	
		Medium silt	
1/32 0.00061	0.0156		Silt
1/64 0.00031	0.0078	Fine silt	
		Very fine silt	
1/128 0.00015	0.0039		
		Clay	Mud



T4-19/2

☐ **Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**

☒ **Locate the low-flow channel (lowest part of the channel). Record observations.**

Characteristics of the low-flow channel:

Average sediment texture: sand

Total veg cover: 0 % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

☒ NA ☐ Mid (herbaceous, shrubs, saplings)
☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: _____

Other: ☐ _____
☐ _____
☐ _____
☐ _____

☒ **Walk away from the low-flow channel along cross-section. Record characteristics of the low-flow/active floodplain boundary.**

Characteristics used to delineate the low-flow/active floodplain boundary:

☒ Change in total veg cover ☒ Tree ☒ Shrub ☒ Herb
☒ Change in overall vegetation maturity
☒ Change in dominant species present
☒ Other ☒ Presence of bed and bank
☐ Drift and/or debris
☒ Other: Flow patterns
☐ Other: _____

☒ **Continue walking the channel cross-section. Record observations below.**

Characteristics of the low-flow channel:

Average sediment texture: pebble

Total veg cover: 15 % Tree: 3 % Shrub: 7 % Herb: 5 %

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)
☐ Early (herbaceous & seedlings) ☒ Late (herbaceous, shrubs, mature trees)

Dominant species present: Desert ironwood, white bursage, unk. forbs

Other: ☐ _____
☐ _____
☐ _____
☐ _____

T4-19/3

☒ **Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.**

Characteristics used to delineate the active floodplain/ low terrace boundary:

- ☒ Change in average sediment texture
- ☒ Change in total veg cover ☒ Tree ☒ Shrub ☒ Herb
- ☐ Change in overall vegetation maturity
- ☒ Change in dominant species present
- ☒ Other ☒ Presence of bed and bank
  - ☐ Drift and/or debris
  - ☒ Other: Flow patterns
  - ☐ Other: _____

☒ **Walk the active floodplain/low terrace boundary both upstream and downstream of the cross-section to verify that the indicators used to identify the transition are consistently associated the transition in both directions.**

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

- Y ☒ N ☐ Change in average sediment texture
- Y ☒ N ☐ Change in total veg cover ☒ Tree ☒ Shrub ☒ Herb
- Y ☐ N ☐ Change in overall vegetation maturity
- Y ☒ N ☐ Change in dominant species present
- Y ☒ N ☐ Other: Y ☒ N ☐ Presence of bed and bank
  - Y ☐ N ☐ Drift and/or debris
  - Y ☒ N ☐ Other: Flow patterns
  - Y ☐ N ☐ Other: _____

☐ **If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**

☒ **Continue walking the channel cross-section. Record characteristics of the low terrace.**

Characteristics of the low terrace:

Average sediment texture: lg. pebble

Total veg cover: 5 % Tree: ____ % Shrub: 1 % Herb: 5 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Creosote bush

Other: ☐ _____

☐ _____

☐ _____

☐ _____

☒ **If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.**

Active floodplain/low terrace boundary acquired via:

- ☐ Mapping on aerial photograph
- ☒ Digitized on computer
- ☒ GPS
- ☐ Other: _____

T4-23/1

Project: Wister Solar **Project Number:** **Stream:** T4-23 **Investigator(s):** RB, JV	**Date:** 4/12/14 **Town:** **Photo begin file#** 275	**Time:** 1130 **State:** CA **Photo end file#** 276
Y ☒ / N ☐ Do normal circumstances exist on the site? Y ☐ / N ☒ Is the site significantly disturbed?	**Location Details:** Refer to aquatic resources table **Projection:** **Datum:** **Coordinates:**	

Notes:

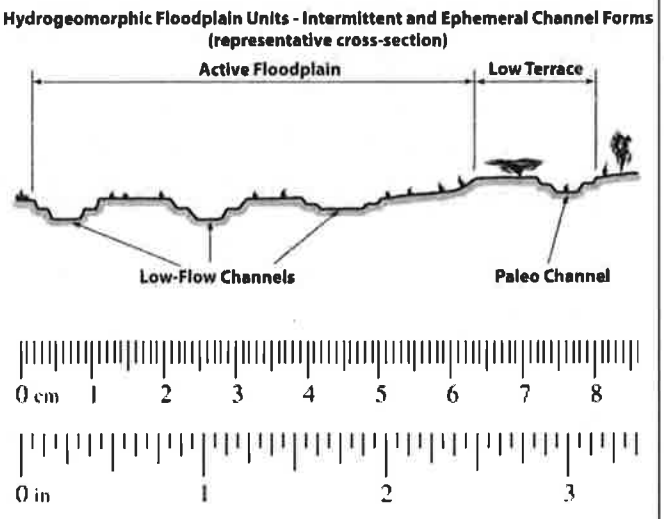
Brief site description:
Ephemeral desert wash, sparsely vegetated

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
  Scale:
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ Clinometer / level
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each zone of a channel cross-section is recorded in the average sediment texture field under the characteristics section for the zone of interest.

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



T4-23/2

☐ **Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**

☒ **Locate the low-flow channel (lowest part of the channel). Record observations.**

Characteristics of the low-flow channel:

Average sediment texture: sand

Total veg cover: 0 % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

☒ NA ☐ Mid (herbaceous, shrubs, saplings)
☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: _____

Other: ☐ _____ ☐ _____ ☐ _____ ☐ _____

☒ **Walk away from the low-flow channel along cross-section. Record characteristics of the low-flow/active floodplain boundary.**

Characteristics used to delineate the low-flow/active floodplain boundary:

☒ Change in total veg cover ☐ Tree ☒ Shrub ☐ Herb
☐ Change in overall vegetation maturity
☐ Change in dominant species present
☒ Other ☐ Presence of bed and bank
☐ Drift and/or debris
☒ Other: flow patterns
☐ Other: _____

☒ **Continue walking the channel cross-section. Record observations below.**

Characteristics of the low-flow channel:

Average sediment texture: sand/silt

Total veg cover: 30 % Tree: ____% Shrub: 30 % Herb: 1 %

Community successional stage:

☐ NA ☒ Mid (herbaceous, shrubs, saplings)
☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Creosote bush, boxthorn, mesquite

Other: ☐ _____ ☐ _____ ☐ _____ ☐ _____

T4-23/3

☐ **Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.**

Characteristics used to delineate the active floodplain/ low terrace boundary:

- ☒ Change in average sediment texture
- ☒ Change in total veg cover ☐ Tree ☒ Shrub ☒ Herb
- ☐ Change in overall vegetation maturity
- ☒ Change in dominant species present
- ☒ Other ☒ Presence of bed and bank
  - ☐ Drift and/or debris
  - ☒ Other: Flow patterns
  - ☐ Other: _____

☒ **Walk the active floodplain/low terrace boundary both upstream and downstream of the cross-section to verify that the indicators used to identify the transition are consistently associated the transition in both directions.**

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

- Y ☒ N ☐ Change in average sediment texture
- Y ☒ N ☐ Change in total veg cover ☐ Tree ☒ Shrub ☒ Herb
- Y ☐ N ☐ Change in overall vegetation maturity
- Y ☒ N ☐ Change in dominant species present
- Y ☒ N ☐ Other:
  - Y ☒ N ☐ Presence of bed and bank
  - Y ☐ N ☐ Drift and/or debris
  - Y ☒ N ☐ Other: Flow patterns
  - Y ☐ N ☐ Other: _____

☐ **If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**

☒ **Continue walking the channel cross-section. Record characteristics of the low terrace.**

Characteristics of the low terrace:

Average sediment texture: pebbles

Total veg cover: 2 % Tree: ____ % Shrub: <1 % Herb: 2 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Unk. forbs, creosote bush

Other:

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

☒ **If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.**

Active floodplain/low terrace boundary acquired via:

- ☐ Mapping on aerial photograph
- ☒ Digitized on computer
- ☒ GPS
- ☐ Other: _____

Project: Wister Solar
Project Number:
Stream: TS-1, -2, -3, -4, -5, -6, -7 → -17
Investigator(s): RB, JV

Date: 4/12/14 **Time:** 0902
Town: **State:** CA
Photo begin file# 179 → 2/feature **Photo end file#** ~~184~~ 200

Y ☐ / N ☒ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:
Refer to aquatic inventory table
Projection: **Datum:**
Coordinates:

Notes:
Adjacent land has been graded for agriculture; berm constructed, altering flow regime from subject property

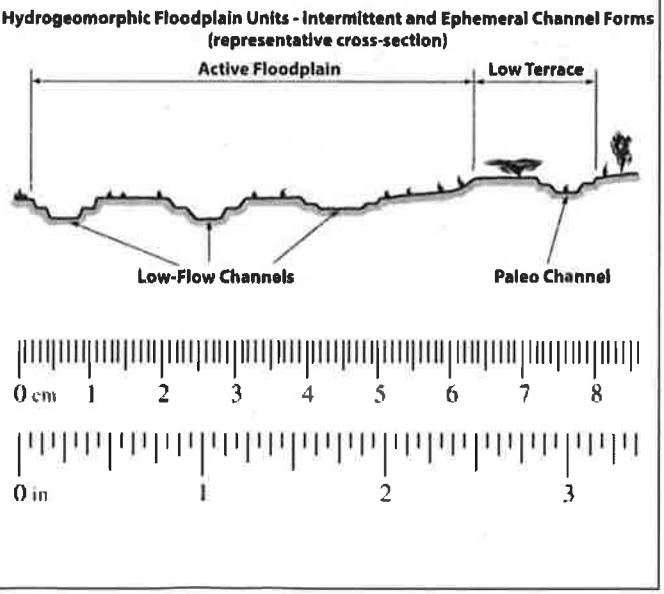
Brief site description:
Ephemeral desert wash, sparsely vegetated. Multiple channels functioning as one braided alluvial system.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
  Scale:
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ Clinometer / level
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each zone of a channel cross-section is recorded in the average sediment texture field under the characteristics section for the zone of interest.

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



☒ **Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**

☒ **Locate the low-flow channel (lowest part of the channel). Record observations.**

Characteristics of the low-flow channel:

Average sediment texture: Sand w/ cobbled

Total veg cover: 0 % Tree: ____ % Shrub: ____ % Herb: ____ %

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: NA

Other:

- ☐
- ☐
- ☐
- ☐

☒ **Walk away from the low-flow channel along cross-section. Record characteristics of the low-flow/active floodplain boundary.**

Characteristics used to delineate the low-flow/active floodplain boundary:

- ☒ Change in total veg cover ☐ Tree ☒ Shrub ☐ Herb
- ☒ Change in overall vegetation maturity
- ☒ Change in dominant species present
- ☒ Other
  - ☒ Presence of bed and bank
  - ☒ Drift and/or debris
  - ☒ Other: Flow patterns
  - ☐ Other: ____

☒ **Continue walking the channel cross-section. Record observations below.**

Characteristics of the low-flow channel:

Average sediment texture: Silt/sand

Total veg cover: 32 % Tree: ____ % Shrub: 30 % Herb: 2 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Fourwing saltbush, creosote bush, white bursage, desert ironwood

Other:

- ☐
- ☐
- ☐
- ☐

☒ **Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.**

Characteristics used to delineate the active floodplain/ low terrace boundary:

☒ Change in average sediment texture
☒ Change in total veg cover ☐ Tree ☒ Shrub ☐ Herb
☒ Change in overall vegetation maturity
☒ Change in dominant species present
☒ Other ☒ Presence of bed and bank
☒ Drift and/or debris
☒ Other: Flow patterns
☐ Other: _____

☒ **Walk the active floodplain/low terrace boundary both upstream and downstream of the cross-section to verify that the indicators used to identify the transition are consistently associated the transition in both directions.**

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

Y ☒ N ☐ Change in average sediment texture
Y ☒ N ☐ Change in total veg cover ☐ Tree ☒ Shrub ☐ Herb
Y ☒ N ☐ Change in overall vegetation maturity
Y ☒ N ☐ Change in dominant species present
Y ☒ N ☐ Other: Y ☒ N ☐ Presence of bed and bank
Y ☒ N ☐ Drift and/or debris
Y ☒ N ☐ Other: Flow patterns
Y ☐ N ☐ Other: _____

☐ **If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**

☒ **Continue walking the channel cross-section. Record characteristics of the low terrace.**

Characteristics of the low terrace:

Average sediment texture: sand w/ pebbles - boulders

Total veg cover: 5 % Tree: ____% Shrub: 5 % Herb: ____%

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)
☐ Early (herbaceous & seedlings) ☒ Late (herbaceous, shrubs, mature trees)

Dominant species present: Creosote bush, indigo bush (?), ~~desert ironwood~~

Other: ☐ _____
☐ _____
☐ _____
☐ _____

☒ **If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.**

Active floodplain/low terrace boundary acquired via:

☐ Mapping on aerial photograph ☒ GPS
☒ Digitized on computer ☐ Other: _____

Project: Wister Solar
Project Number:
Stream: T1-1, T1-2
Investigator(s): RB, JV

Date: 4/11/14 **Time:** 1509
Town: **State:**
Photo begin file# 161 **Photo end file#** 164

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details: Refer to aquatic inventory table
Projection: **Datum:**
Coordinates:

Notes:
Some off-highway vehicle use and refuse disposal.
T1-2 = trib. to T1-1; similar characteristics w/out veg.

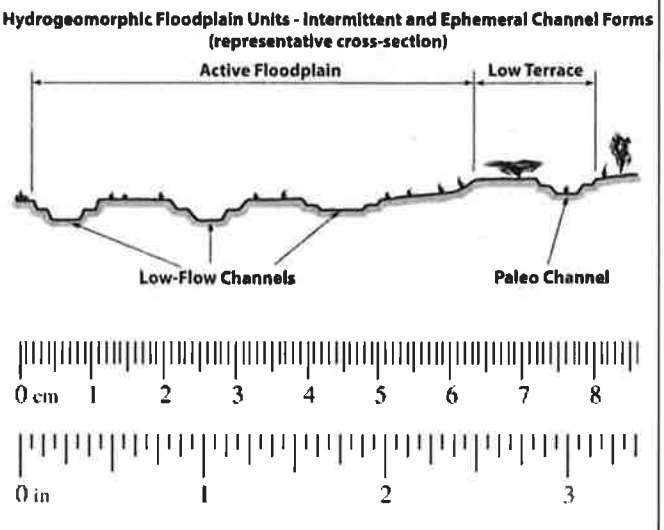
Brief site description:
Ephemeral desert wash, sparsely vegetated; some areas steeply incised

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
  Scale:
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ Clinometer / level
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each zone of a channel cross-section is recorded in the average sediment texture field under the characteristics section for the zone of interest.

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
		Coarse sand	
0.020	0.50		
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
		Coarse silt	
1/16 0.0012	0.031		
		Medium silt	
1/32 0.00061	0.0156		Silt
		Fine silt	
1/64 0.00031	0.0078		
		Very fine silt	
1/128 0.00015	0.0039		
		Clay	Mud



☒ **Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**

☒ **Locate the low-flow channel (lowest part of the channel). Record observations.**

Characteristics of the low-flow channel:

Average sediment texture: silt/sand w/gravel

Total veg cover: 5 % Tree: ____% Shrub: 5 % Herb: ____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: white bursage

Other: ☐ ☐ ☐ ☐

☒ **Walk away from the low-flow channel along cross-section. Record characteristics of the low-flow/active floodplain boundary.**

Characteristics used to delineate the low-flow/active floodplain boundary:

- ☒ Change in total veg cover ☐ Tree ☒ Shrub ☐ Herb
- ☒ Change in overall vegetation maturity
- ☐ Change in dominant species present
- ☒ Other
  - ☒ Presence of bed and bank
  - ☐ Drift and/or debris
  - ☒ Other: flow patterns
  - ☐ Other: ____

☒ **Continue walking the channel cross-section. Record observations below.**

Characteristics of the low-flow channel:

Average sediment texture: sand/silt

Total veg cover: 10 % Tree: ____% Shrub: 10 % Herb: ____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: white bursage

Other: ☐ ☐ ☐ ☐

☐ **Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.**

Characteristics used to delineate the active floodplain/ low terrace boundary:

- ☒ Change in average sediment texture
- ☒ Change in total veg cover ☐ Tree ☒ Shrub ☐ Herb
- ☐ Change in overall vegetation maturity
- ☐ Change in dominant species present
- ☒ Other ☒ Presence of bed and bank
  - ☐ Drift and/or debris
  - ☒ Other: Flow patterns
  - ☐ Other: _____

☐ **Walk the active floodplain/low terrace boundary both upstream and downstream of the cross-section to verify that the indicators used to identify the transition are consistently associated the transition in both directions.**

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

- Y ☒ N ☐ Change in average sediment texture
- Y ☒ N ☐ Change in total veg cover ☐ Tree ☒ Shrub ☐ Herb
- Y ☐ N ☐ Change in overall vegetation maturity
- Y ☐ N ☐ Change in dominant species present
- Y ☒ N ☐ Other: Y ☒ N ☐ Presence of bed and bank
  - Y ☐ N ☐ Drift and/or debris
  - Y ☒ N ☐ Other: Flow patterns
  - Y ☐ N ☐ Other: _____

☐ **If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**

☒ **Continue walking the channel cross-section. Record characteristics of the low terrace.**

Characteristics of the low terrace:

Average sediment texture: silt/sand w/small pebbles

Total veg cover: 0 % Tree: ____% Shrub: 0 % Herb: ____%

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: _____

Other: ☐ _____

☐ _____

☐ _____

☐ _____

☒ **If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.**

Active floodplain/low terrace boundary acquired via:

- ☐ Mapping on aerial photograph
- ☒ Digitized on computer
- ☒ GPS
- ☐ Other: _____

Project: Wister Solar | **Date:** 4/11/18 | **Time:** 1518
Project Number: | **Town:** | **State:** CA
Stream: T1-3, T1-4, T1-5, T1-6, T1-7, T1-8, T1-9 | **Photo begin file#** i65 (→ 2/feature) | **Photo end file#** i78
Investigator(s): RB, JV

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: Refer to aquatic inventory table
Projection: **Datum:**
Coordinates:

Notes:

Brief site description:

Small rivulets in area of softer substrate; headwaters of steeply incised wash

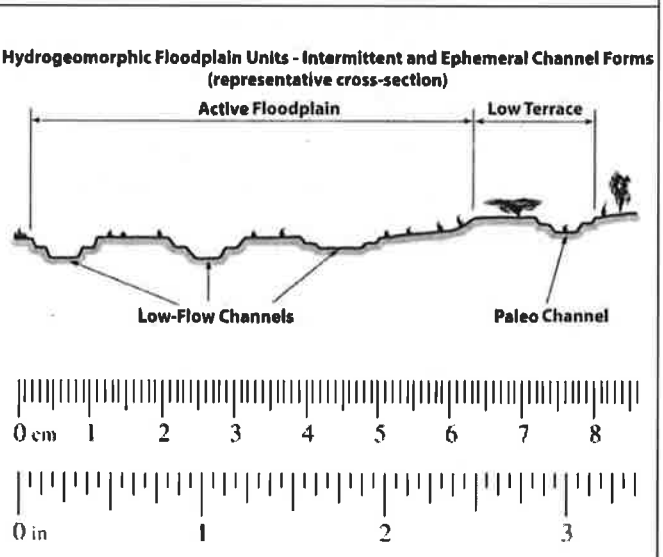
Checklist of resources (if available):

- [X] Aerial photography
  Dates:
- [ ] Topographic maps
  Scale:
- [ ] Geologic maps
- [ ] Vegetation maps
- [X] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [X] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] Clinometer / level
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each zone of a channel cross-section is recorded in the average sediment texture field under the characteristics section for the zone of interest.

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
0.0098	0.25	Medium sand	Sand
0.005	0.125	Fine sand	
0.0025	0.0625	Very fine sand	
0.0012	0.031	Coarse silt	
0.00061	0.0156	Medium silt	Silt
0.00031	0.0078	Fine silt	
0.00015	0.0039	Very fine silt	
		Clay	Mud

1/2	1/4	1/8	1/16	1/32	1/64	1/128



T1-3/2

☐ **Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**

☒ **Locate the low-flow channel (lowest part of the channel). Record observations.**

Characteristics of the low-flow channel:

Average sediment texture: silt/sand

Total veg cover: 0 % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

☒ NA ☐ Mid (herbaceous, shrubs, saplings)

☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: _____

_____

_____

Other: ☐ _____

☐ _____

☐ _____

☐ _____

☐ NA **Walk away from the low-flow channel along cross-section. Record characteristics of the low-flow/active floodplain boundary.**

Characteristics used to delineate the low-flow/active floodplain boundary:

☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb

☐ Change in overall vegetation maturity

☐ Change in dominant species present

☐ Other ☐ Presence of bed and bank

☐ Drift and/or debris

☐ Other: _____

☐ Other: _____

☐ NA **Continue walking the channel cross-section. Record observations below.**

Characteristics of the low-flow channel:

Average sediment texture: _____

Total veg cover: ____% Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: _____

_____

_____

Other: ☐ _____

☐ _____

☐ _____

☐ _____

☒ **Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.**

Characteristics used to delineate the active floodplain/ low terrace boundary:

- ☐ Change in average sediment texture
- ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb
- ☐ Change in overall vegetation maturity
- ☐ Change in dominant species present
- ☒ Other
  - ☒ Presence of bed and bank
  - ☐ Drift and/or debris
  - ☒ Other: Flow patterns
  - ☐ Other: _____

☐ **Walk the active floodplain/low terrace boundary both upstream and downstream of the cross-section to verify that the indicators used to identify the transition are consistently associated the transition in both directions.**

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

- Y ☐ N ☐ Change in average sediment texture
- Y ☐ N ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb
- Y ☐ N ☐ Change in overall vegetation maturity
- Y ☐ N ☐ Change in dominant species present
- Y ☒ N ☐ Other:
  - Y ☒ N ☐ Presence of bed and bank
  - Y ☐ N ☐ Drift and/or debris
  - Y ☒ N ☐ Other: Flow patterns
  - Y ☐ N ☐ Other: _____

☐ **If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**

☒ **Continue walking the channel cross-section. Record characteristics of the low terrace.**

Characteristics of the low terrace:

Average sediment texture: silt/sand w/eroded sandstone plates

Total veg cover: 0 % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: _____

Other:

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

☒ **If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.**

Active floodplain/low terrace boundary acquired via:

- ☐ Mapping on aerial photograph
- ☒ Digitized on computer
- ☒ GPS
- ☐ Other: _____

Appendix C PHOTOGRAPHIC LOG

STANTEC CONSULTING SERVICES INC.
PHOTOGRAPHIC RECORD

Client: Ormat Nevada	**Job Number:** 185804156
Site Name: Wister Solar Project	**Photographer:** J. Varonin

Photo 1: April 12, 2018

Transect 1, Feature 2: View from sampling point, looking upstream.

Photo 2: April 12, 2018

Transect 1, Feature 4: View from sampling point, looking downstream. Note: soil and vegetation characteristics differ in this area in the northeast portion of the Survey Area.

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC RECORD	
Client: Ormat Nevada	**Job Number:** 185804156
Site Name: Wister Solar Project	**Photographer:** J. Varonin

Photo 3: April 12, 2018

Transect 2, Feature 14A: View from sampling point, looking upstream.

Photo 4: April 12, 2018

Transect 2, Feature 2: View from sampling point, looking upstream. Note: evidence of off-highway vehicle activity.

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC RECORD	
Client: Ormat Nevada	**Job Number:** 185804156
Site Name: Wister Solar Project	**Photographer:** J. Varonin

Photo 5: April 12, 2018

Transect 2, Feature 27: View from sampling point, looking downstream.

Photo 6: April 11, 2018

Transect 3, Feature 16: View from sampling point, looking downstream.

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC RECORD	
Client: Ormat Nevada	**Job Number:** 185804156
Site Name: Wister Solar Project	**Photographer:** J. Varonin

Photo 7: April 11, 2018

Transect 3, Feature 1: View from sampling point, looking upstream.

Photo 8: April 11, 2018

Transect 3, Feature 27: View from sampling point, looking downstream.

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC RECORD	
Client: Ormat Nevada	**Job Number:** 185804156
Site Name: Wister Solar Project	**Photographer:** J. Varonin

Photo 9: April 11, 2018

Transect 3, Feature 28: View from sampling point, looking upstream.

Photo 10: April 12, 2018

Transect 4, Feature 27: View from sampling point, looking upstream.

STANTEC CONSULTING SERVICES INC.
PHOTOGRAPHIC RECORD

Client: Ormat Nevada	**Job Number:** 185804156
Site Name: Wister Solar Project	**Photographer:** J. Varonin

Photo 11: April 12, 2018

Transect 4, Feature 27: View from sampling point, looking upstream.

Photo 12: April 12, 2018

Transect 4, Feature 2: View from sampling point, looking downstream.

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC RECORD	
Client: Ormat Nevada	**Job Number:** 185804156
Site Name: Wister Solar Project	**Photographer:** J. Varonin

Photo 13: April 12, 2018

Transect 4, Feature 1: View from sampling point, looking upstream.

Photo 14: April 12, 2018

Transect 5, Feature 1: View from sampling point, looking downstream.

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC RECORD	
Client: Ormat Nevada	**Job Number:** 185804156
Site Name: Wister Solar Project	**Photographer:** J. Varonin

Photo 15: April 12, 2018

Transect 5, Feature 38: View from sampling point, looking upstream.

Photo 16: April 12, 2018

Transect 5, Feature 37: View from sampling point, looking downstream.

Appendix D HISTORIC SOILS INFORMATION

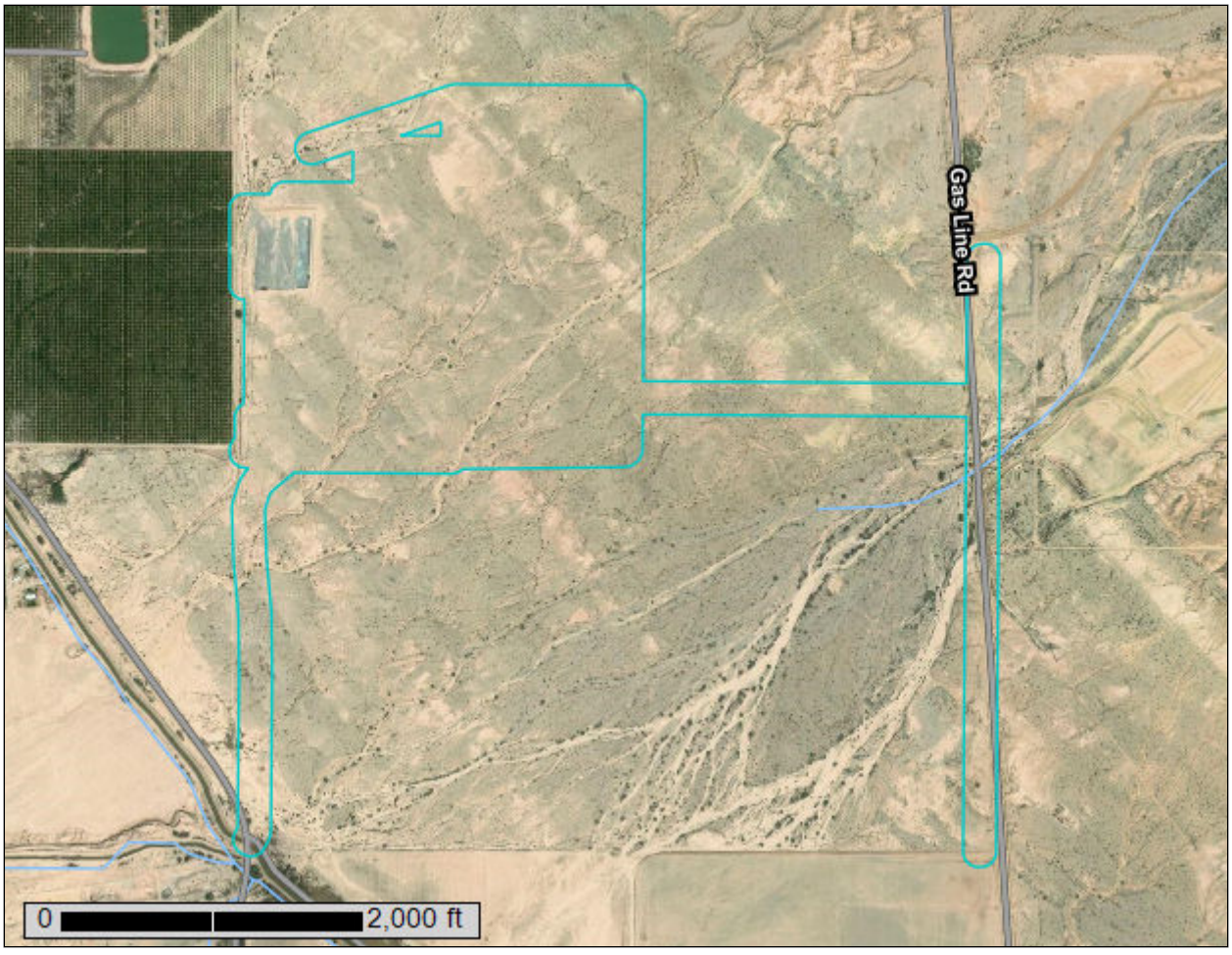
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Colorado Desert Area, California; and Imperial County, California, Imperial Valley Area



January 28, 2020

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

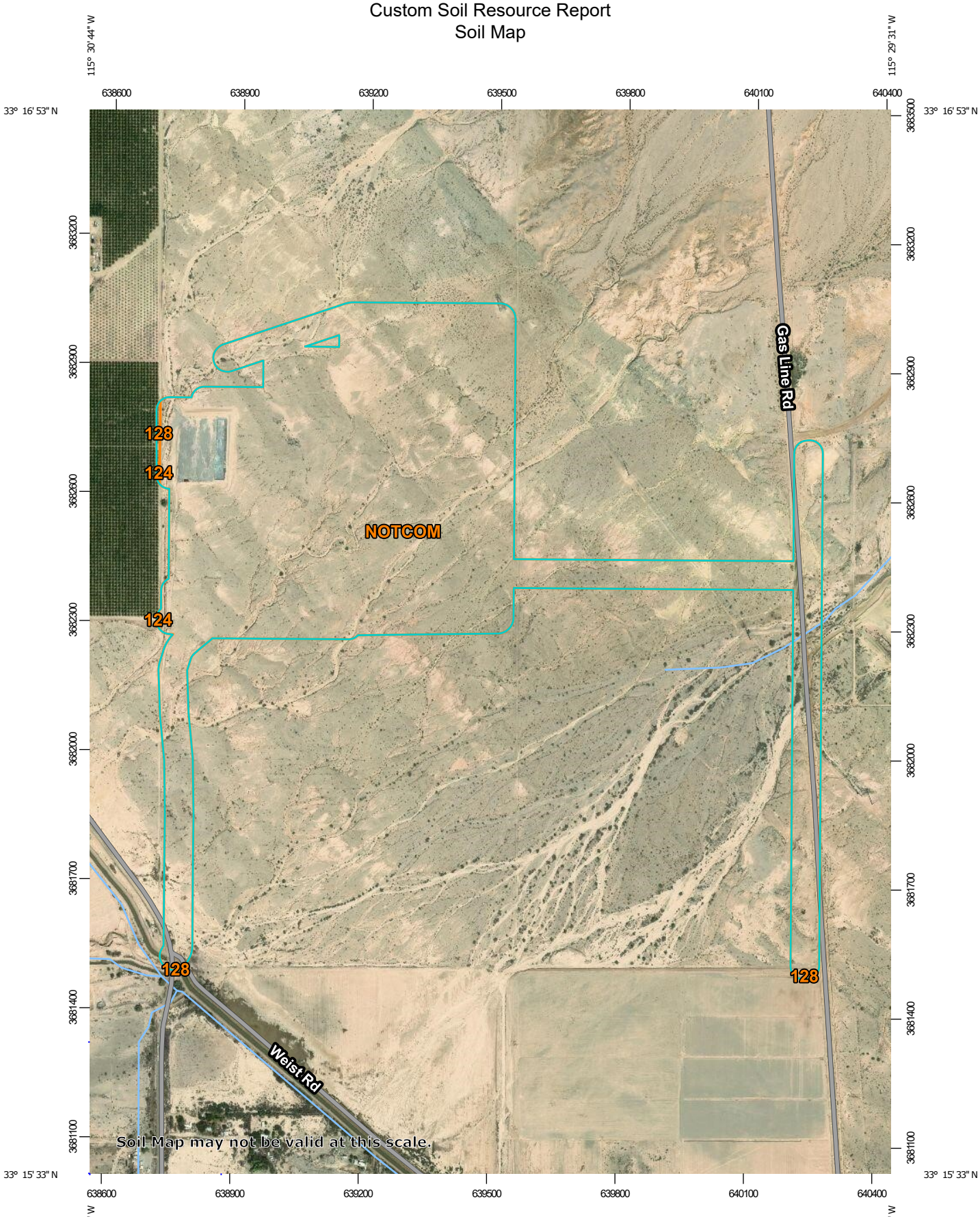
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:12,100 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 150 300 600 900

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Colorado Desert Area, California
Survey Area Data: Version 7, Sep 16, 2019

Soil Survey Area: Imperial County, California, Imperial Valley Area
Survey Area Data: Version 11, Sep 16, 2019

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

MAP LEGEND

MAP INFORMATION

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 15, 2016—Sep 20, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
NOTCOM	No Digital Data Available	190.0	99.7%
Subtotals for Soil Survey Area		**190.0**	**99.7%**
Totals for Area of Interest		**190.6**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
124	Niland gravelly sand	0.1	0.1%
128	Niland-Imperial complex, wet	0.5	0.2%
Subtotals for Soil Survey Area		**0.6**	**0.3%**
Totals for Area of Interest		**190.6**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it

was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Colorado Desert Area, California

NOTCOM—No Digital Data Available

Map Unit Composition

Notcom: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Notcom

Properties and qualities

Imperial County, California, Imperial Valley Area

124—Niland gravelly sand

Map Unit Setting

National map unit symbol: h8zz
Elevation: -230 to 300 feet
Mean annual precipitation: 0 to 3 inches
Mean annual air temperature: 72 to 75 degrees F
Frost-free period: 300 to 350 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Niland and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Niland

Setting

Landform: Basin floors
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed

Typical profile

H1 - 0 to 23 inches: gravelly sand
H2 - 23 to 60 inches: silty clay

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Very slightly saline to strongly saline (2.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Imperial

Percent of map unit: 3 percent
Hydric soil rating: No

Meloland
Percent of map unit: 3 percent
Hydric soil rating: No

Carsitas
Percent of map unit: 2 percent
Hydric soil rating: No

Indio
Percent of map unit: 2 percent
Hydric soil rating: No

Vint
Percent of map unit: 2 percent
Hydric soil rating: No

Rositas
Percent of map unit: 2 percent
Hydric soil rating: No

Aquents
Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

128—Niland-Imperial complex, wet

Map Unit Setting
National map unit symbol: h903
Elevation: -230 to 300 feet
Mean annual precipitation: 0 to 3 inches
Mean annual air temperature: 72 to 75 degrees F
Frost-free period: 300 to 350 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Niland, wet, and similar soils: 40 percent
Imperial, wet, and similar soils: 25 percent
Minor components: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Niland, Wet

Setting
Landform: Basin floors
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed

Typical profile
H1 - 0 to 23 inches: gravelly sand

H2 - 23 to 60 inches: silty clay

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Very slightly saline to strongly saline (2.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): 4w
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Imperial, Wet

Setting

Landform: Basin floors
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Lacustrine deposits derived from mixed

Typical profile

H1 - 0 to 12 inches: silty clay
H2 - 12 to 60 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 20.0
Available water storage in profile: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: C

Hydric soil rating: No

Minor Components

Carsitas

Percent of map unit: 10 percent
Hydric soil rating: No

Rositas

Percent of map unit: 10 percent
Hydric soil rating: No

Imperial, sandy surface

Percent of map unit: 5 percent
Hydric soil rating: No

Meloland, wet

Percent of map unit: 5 percent

Imperial, saline

Percent of map unit: 5 percent

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Appendix E ARID WEST INDICATOR TABLES

Table 1. Potential Geomorphic Indicators of Ordinary High Water Marks for the Arid West

(A) Below OHW	(B) At OHW	(C) Above OHW
1. In-stream dunes 2. Crested ripples 3. Flaser bedding 4. Harrow marks 5. Gravel sheets to rippled sands 6. Meander bars 7. Sand tongues 8. Muddy point bars 9. Long gravel bars 10. Cobble bars behind obstructions 11. Scour holes downstream of obstructions 12. Obstacle marks 13. Stepped-bed morphology in gravel 14. Narrow berms and levees 15. Streaming lineations 16. Desiccation/mud cracks 17. Armored mud balls 18. Knick Points	1. Valley flat 2. Active floodplain 3. Benches: low, mid, most prominent 4. Highest surface of channel bars 5. Top of point bars 6. Break in bank slope 7. Upper limit of sand-sized particles 8. Change in particle size distribution 9. Staining of rocks 10. Exposed root hairs below intact soil layer 11. Silt deposits 12. Litter (organic debris, small twigs and leaves) 13. Drift (organic debris, larger than twigs)	1. Desert pavement 2. Rock varnish 3. Clast weathering 4. Salt splitting 5. Carbonate etching 6. Depositional topography 7. Caliche rubble 8. Soil development 9. Surface color/tone 10. Drainage development 11. Surface relief 12. Surface rounding

Table 2. Potential Vegetation Indicators of Ordinary High Water Marks for the Arid West

	(D) Below OHW	(E) At OHW	(F) Above OHW
Hydroriparian indicators	1. Herbaceous marsh species 2. Pioneer tree seedlings 3. Sparse, low vegetation 4. Annual herbs, hydromesic ruderals 5. Perennial herbs, hydromesic clonals	1. Annual herbs, hydromesic ruderals 2. Perennial herbs, hydromesic clonals 3. Pioneer tree seedlings 4. Pioneer tree saplings	1. Annual herbs, xeric ruderals 2. Perennial herbs, non-clonal 3. Perennial herbs, clonal and non-clonal co-dominant 4. Mature pioneer trees, no young trees 5. Mature pioneer trees w/upland species 6. Late-successional species
Mesoriparian Indicators	6. Pioneer tree seedlings 7. Sparse, low vegetation 8. Pioneer tree saplings 9. Xeroriparian species	5. Sparse, low vegetation annual herbs, hydromesic 6. ruderals 7. Perennial herbs, hydromesic clonals 8. Pioneer tree seedlings 9. Pioneer tree saplings 10. Xeroriparian species 11. Annual herbs, xeric ruderals	7. Xeroriparian species 8. Annual herbs, xeric ruderals 9. Perennial herbs, non-clonal 10. Perennial herbs, clonal and non-clonal codominent 11. Mature pioneer trees, no young trees 12. Mature pioneer trees, xeric understory 13. Mature pioneer trees w/upland species 14. Late-successional species 15. Upland species
Xeroriparian indicators	10. Sparse, low vegetation 11. Xeroriparian species 12. Annual herbs, xeric ruderals	12. Sparse, low vegetation 13. Xeroriparian species 14. Annual herbs, xeric ruderals	16. Annual herbs, xeric ruderals 17. Mature pioneer trees w/upland species 18. Upland species

Table 3. Summary of Wetland Indicator Status

Category		Probability
Obligate Wetland	OBL	Almost always occur in wetlands (estimated probability >99%)
Facultative Wetland	FACW	Usually occur in wetlands (estimated probability of 67–99%)
Facultative	FAC	Equally likely to occur in wetlands/non-wetlands (estimated probability of 34–66%)
Facultative Upland	FACU	Usually occur in non-wetlands (estimated probability 67–99%)
Obligate Upland	UPL	Almost always occur in non-wetlands (estimated probability >99%)
Non-Indicator	NI	No indicator status has been assigned

Source: Reed, 1988; USFWS, 1997; USACE, 2012.

Table 4. Wetland Hydrology Indicators*

Primary Indicators	Secondary Indicators
Watermarks	Oxidized Rhizospheres Associated with Living Roots
Water-Borne Sediment Deposits	FAC-Neutral Test
Drift Lines	Water-Stained Leaves
Drainage Patterns Within Wetlands	Local Soil Survey Data

*Table adapted from 1987 USACE Manual and Related Guidance Documents.

Table 5. Wetland Hydrology Indicators for the Arid West*

	Primary Indicator (any one indicator is sufficient to make a determination that wetland hydrology is present)	Secondary Indicator (two or more indicators are required to make a determination that wetland hydrology is present)
Group A – Observation of Surface Water or Saturated Soils		
A1 – Surface Water	X	
A2 – High Water Table	X	
A3 – Saturation	X	
Group B – Evidence of Recent Inundation		
B1 – Water Marks	**X** (Non-riverine)	**X** (Riverine)
B2 – Sediment Deposits	**X** (Non-riverine)	**X** (Riverine)
B3 – Drift Deposits	**X** (Non-riverine)	**X** (Riverine)
B6 – Surface Soil Cracks	X	
B7 – Inundation Visible on Aerial Imagery	X	
B9 –Water-Stained Leaves	X	
B10 – Drainage	X	X
B11 – Salt Crust	X	
B12 – Biotic Crust	X	
B13 – Aquatic Invertebrates	X	

Table 5. Wetland Hydrology Indicators for the Arid West*		
	Primary Indicator (any one indicator is sufficient to make a determination that wetland hydrology is present)	**Secondary Indicator (two or more indicators are required to make a determination that wetland hydrology is present)**
Group C – Evidence of Current or Recent Soil Saturation		
C1 – Hydrogen Sulfide Odor	X	
C2 – Dry-Season Water Table		X
C3 – Oxidized Rhizospheres along Living Roots	X	

*Table adapted from Regional Supplement to the USACE of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0.

Table 6. Field Indicators of Hydric Soil Conditions*	
1. Indicators of Historical Hydric Soil Conditions	**2. Indicators of Current Hydric Soil Conditions**
a. Histosols b. Histic epipedons; c. Soil colors (e.g., gleyed or low-chroma colors, soils with bright mottles (Redoximorphic features) and/or depleted soil matrix d. High organic content in surface of sandy soils e. Organic streaking in sandy soils f. Iron and manganese concretions g. Soil listed on county hydric soils list	a. Aquic or peraquic moisture regime (inundation and/or soil saturation for *7 continuous days) b. Reducing soil conditions (inundation and/or soil saturation for *7 continuous days) c. Sulfidic material (rotten egg smell)

*Table adapted from 1987 USACE Manual and Related Guidance Documents.

Table 7. Hydric Soil Indicators for the Arid West*			
Hydric Soil Indicators	**Hydric Soil Indicators**	**Hydric Soil Indicators**	**Hydric Soil Indicators**
A1 – Histosol	S1 – Sandy Mucky Mineral	F1 – Loamy Mucky Mineral	A9 – 1 cm Muck
A2 – Histic Epipedon	S4 – Sandy Gleyed Matrix	F2 – Loamy Gleyed Matrix	A10 – 2 cm Muck
A3 – Black Histic	S5 – Sandy Redox	F3 – Depleted Matrix	F18 – Reduced Verti
A4 – Hydrogen Sulfide	S6 – Stripped Matrix	F6 – Redox Dark Surface	TF2 – Red Parent Material
A5 – Stratified Layers	—	F7 – Depleted Dark Surface	Other (See Section 5 of Regional Supplement, Version 2.0)
A9 – 1 cm Muck	—	F8 – Redox Depressions	—
A11 – Depleted Below Dark Surface	—	F9 – Vernal Pools	—
A12 – Thick Dark Surface	—	—	—

* Table adapted from Regional Supplement to the USACE of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0. ** Indicators of hydrophytic vegetation and wetland hydrology must be present

Appendix F REGULATORY BACKGROUND INFORMATION

Regulatory Background Information

Section 404 of the Clean Water Act (CWA)

Section 404 of the CWA regulates the discharge of dredged material, placement of fill material, or certain types of excavation within "waters of the U.S." (resulting in more than incidental fallback of material) and authorizes the Secretary of the Army, through the Chief of Engineers, to issue permits for such actions. Permits can be issued for individual projects (individual permits) or for general categories of projects (general permits). "Waters of the U.S." are defined by the CWA as "rivers, creeks, streams, and lakes extending to their headwaters and any associated wetlands." Wetlands are defined by the CWA as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions." The USACE has adopted several revisions to their regulations in order to more clearly define "waters of the U.S." Until the beginning of 2001, "waters of the U.S." included, among other things, isolated wetlands and lakes, intermittent streams, prairie potholes, and other waters that are not part of a tributary system to interstate waters or to navigable "waters of the U.S."

The jurisdictional extent of USACE regulation changed with the 2001 SWANCC (Solid Waste Agency of Northern Cook County) ruling. The U.S. Supreme Court held that the USACE could not apply Section 404 of the CWA to extend their jurisdiction over an isolated quarry pit. The Court ruled that the CWA does not extend Federal regulatory jurisdiction over non-navigable, isolated, intra-state waters. However, the Court made it clear that non-navigable wetlands adjacent to navigable waters are still subject to USACE jurisdiction.

Section 401 of the CWA

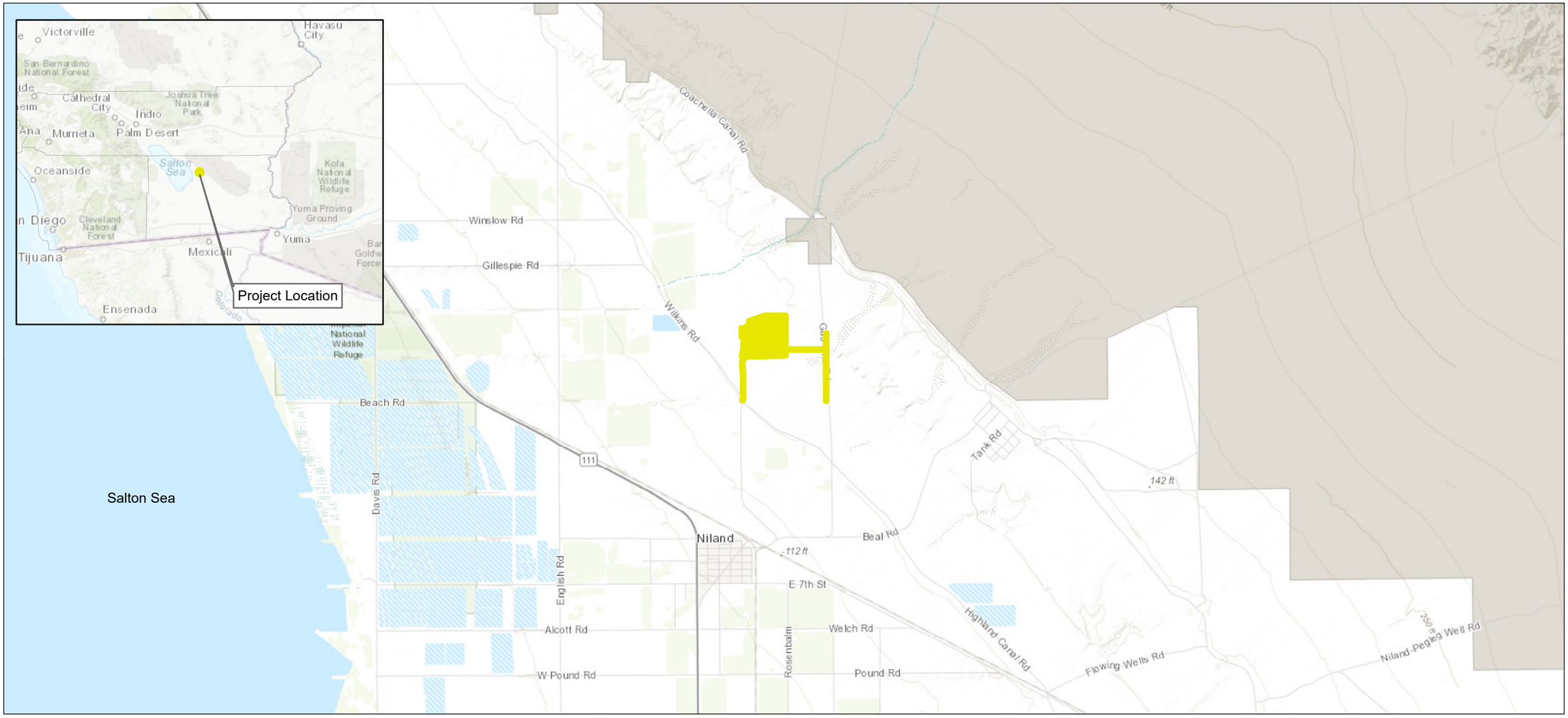
Section 401 of the CWA requires that any applicant for a Federal permit for activities that involve a discharge to 'waters of the State,' shall provide the Federal permitting agency a certification from the State in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the Federal Clean Water Act. Therefore, before the USACE will issue a Section 404 permit, applicants must apply for and receive a Section 401 Water Quality Certification from the RWQCB. Applications to the RWQCB must include a complete CEQA document (e.g., Initial Study/Mitigated Negative Declaration).

Section 1602 of the California Fish and Game Code

Section 1602 of the California Fish and Game Code requires any person, State or local governmental agency, or public utility which proposes a project that will substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake, or use materials from a streambed, or result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into any river, stream, or lake, to first notify the CDFW of the proposed project. Notification is generally required for any project that will take place in or in the vicinity of a river, stream, lake, or their tributaries. This includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish or other aquatic life and watercourses having a surface or subsurface flow that support or have supported riparian vegetation. Based on the notification materials

submitted, the CDFW will determine if the proposed project may impact fish or wildlife resources. If the CDFW determines that a proposed project may substantially adversely affect existing fish or wildlife resources, a Lake or Streambed Alteration Agreement (SAA) will be required. A completed CEQA document must be submitted to CDFW before a SAA will be issued.

Appendix G FIGURES



Project Location

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Stantec

Project Location
Imperial County, CA

Prepared by DL on 2020-01-13
TR by JV on 2020-01-13
IR Review by SR on 2020-01-13

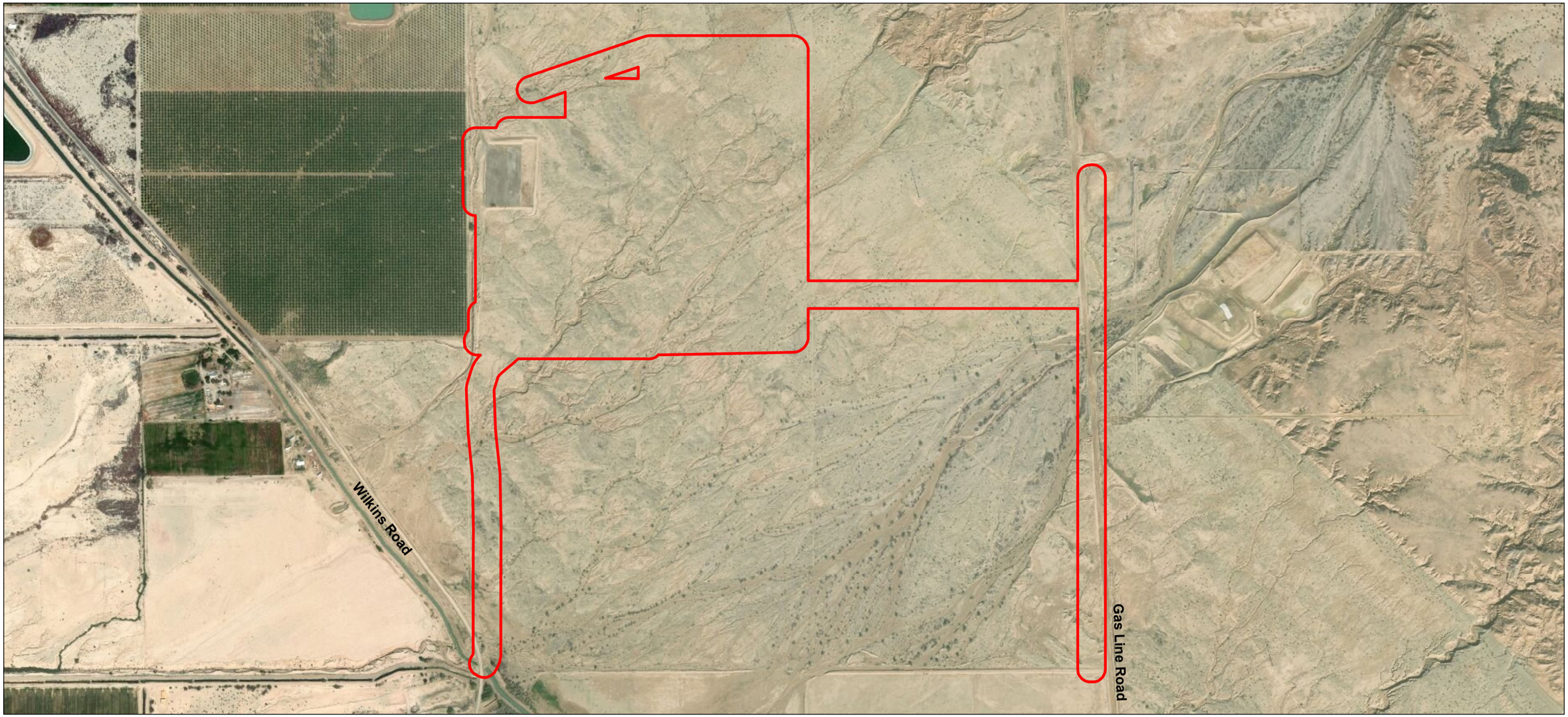
Client/Project
185804156

Ormat Wister Solar Project
Preliminary Jurisdictional Waters/Wetlands Delineation Report

Figure No.
1

Title
Project Location Map

Notes
1. Coordinate System: NAD 1983 CORS96 StatePlane California VI FIPS 0406 Ft US
2. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



Survey Area

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Project Location
Imperial County, CA

Prepared by DL on 2020-01-13
TR by JV on 2020-01-13
IR Review by SR on 2020-01-13

Client/Project 185804156

Ormat Wister Solar Project
Preliminary Jurisdictional Waters/Wetlands Delineation Report

Figure No.
2

Title
Survey Area Map

Notes
1. Coordinate System: NAD 1983 CORS96 StatePlane California VI FIPS 0406 Ft US
2. Background: Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Survey Area

Project Site

Laydown/ Temporary Office Location

Access Roads

Drainage Channel

Vegetation Communities & Land Cover Types

- Agriculture
- Arrow weed thickets
- Blue palo verde - ironwood woodland
- Creosote bush - white bursage scrub
- Disturbed/Developed

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Project Location
Imperial County, CA

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IR Review by SR on 2020-01-13

Client/Project
185804156

Ormat Wister Solar Project
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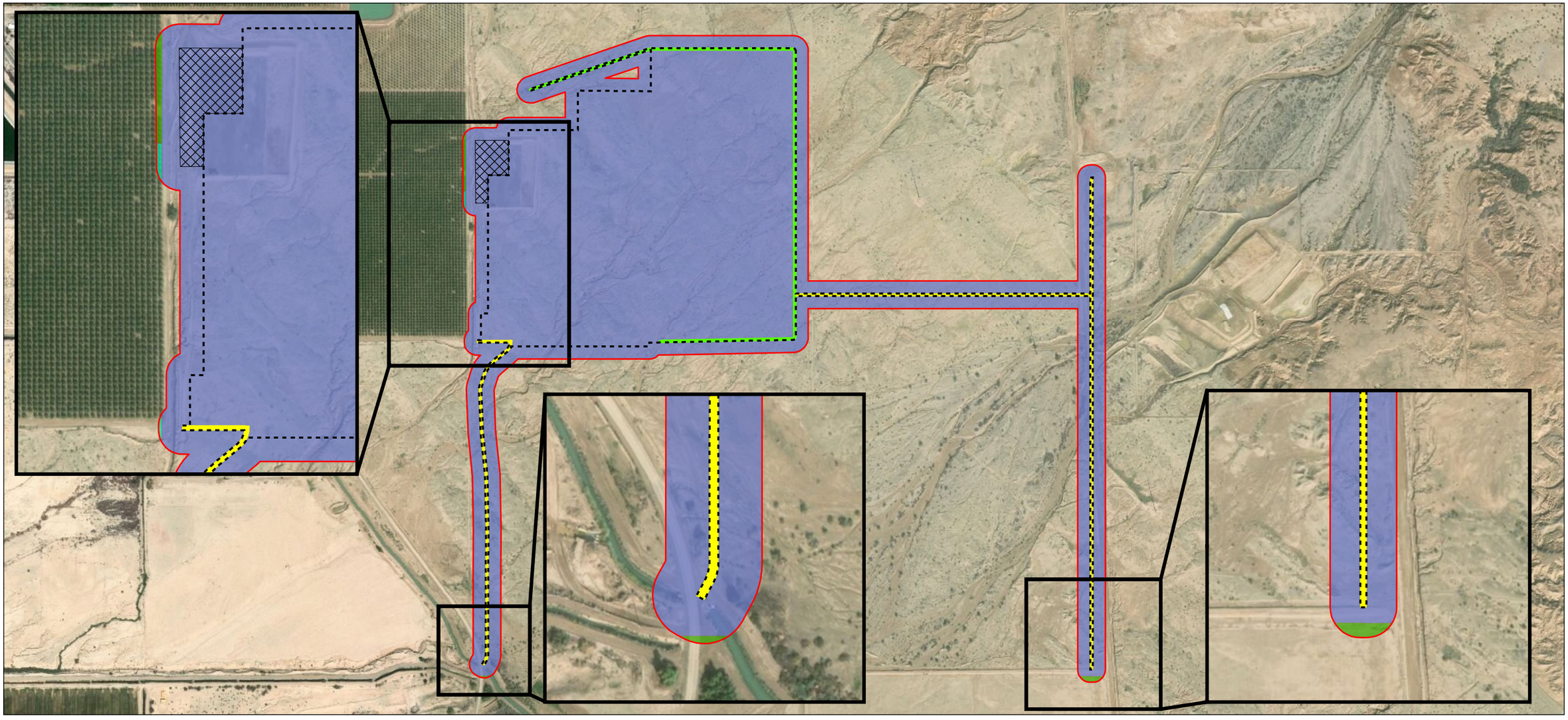
Figure No.
3

Title
Vegetation Communities and Land Cover Types

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Background: Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Survey Area
Project Site
Access Roads
Drainage Channel
Laydown/ Temporary Office Location

MUSYM

124, Niland gravelly sand
128, Niland_Imperial complex, wet
Not Mapped

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(At original document size of 11x17)
1:9,621

N

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Project Location
Imperial County, CA

Prepared by DL on 2020-01-13
TR by JV on 2020-01-13
IR Review by SR on 2020-01-13

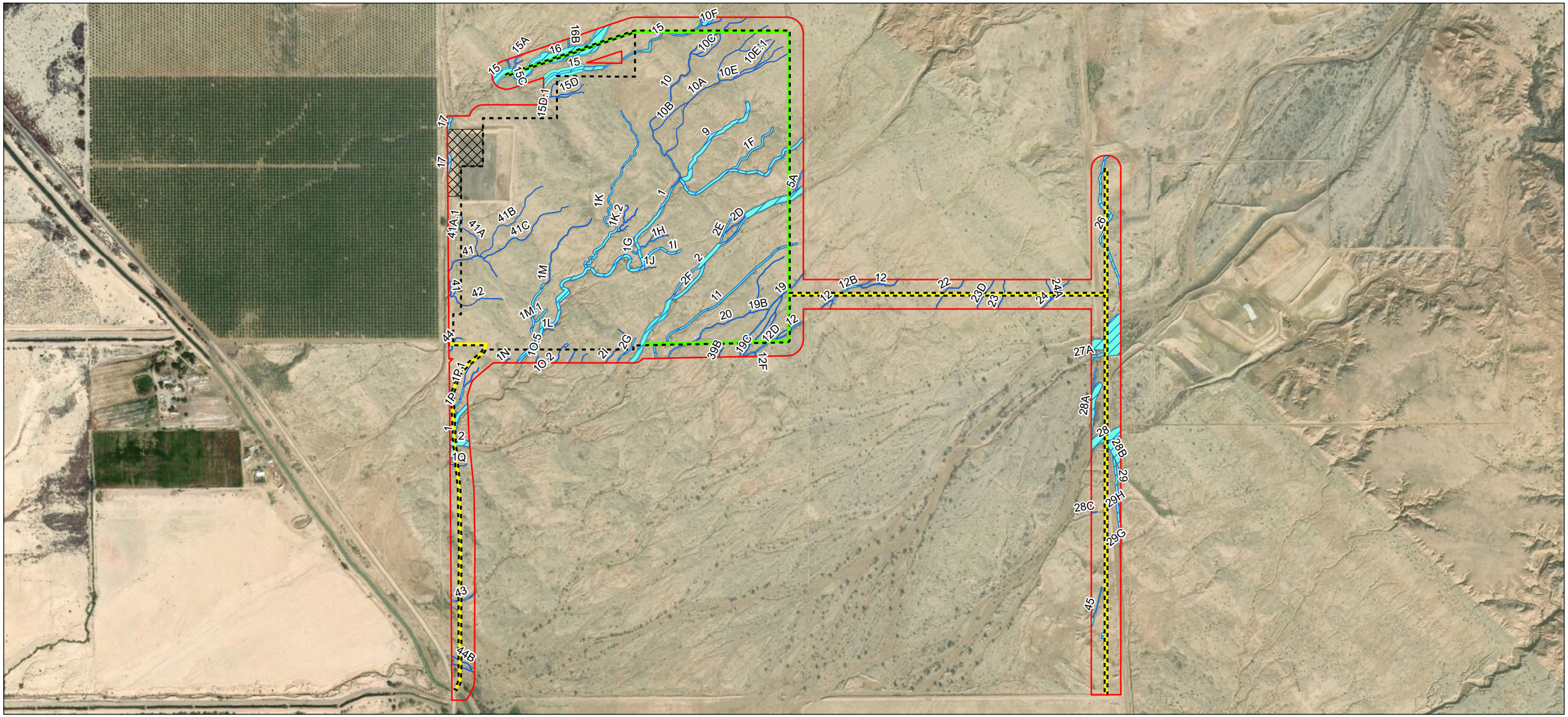
Client/Project
185804156

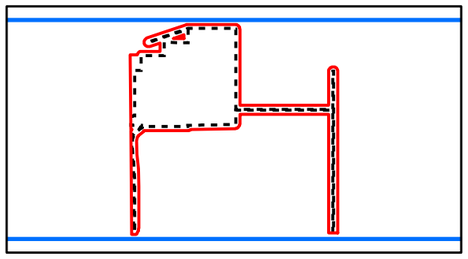
Ormat Wister Solar Project
Preliminary Jurisdictional Waters/Wetlands Delineation Report

Figure No.
4

Title
Historic Soils

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Background: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community





Survey Area

Project Site

Access Roads

Drainage Channel

Laydown/ Temporary Office Location

USACE Non-Wetland "Waters of the U.S."

CDFW Jurisdictional Waters

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(At original document size of 11x17)
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Project Location
Imperial County, CA

Prepared by DL on 2020-01-13
TR by JV on 2020-01-13
IR Review by SR on 2020-01-13

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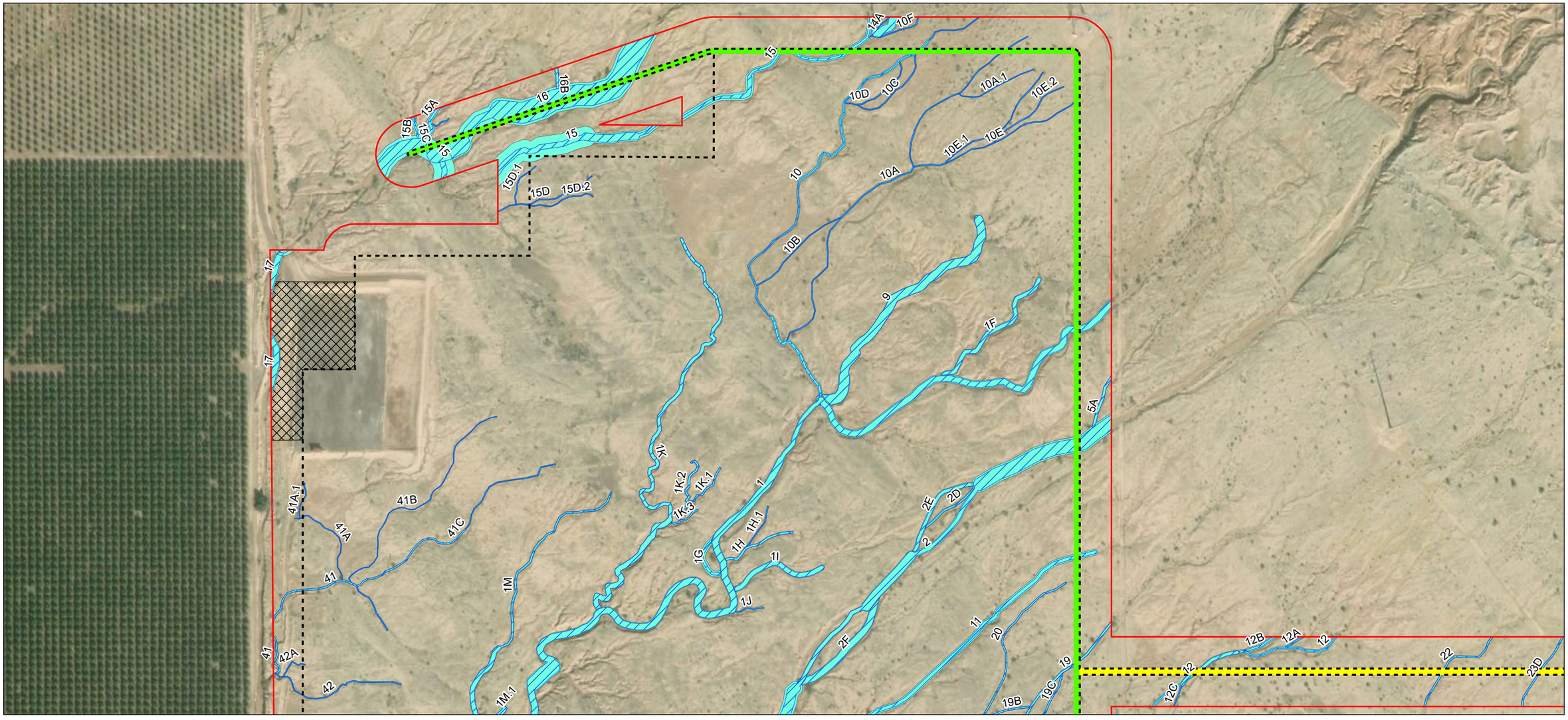
185804156

Ormat Wister Solar Project
Preliminary Jurisdictional Waters/Wetlands
Delineation Report

Figure No.
5

Title
Potentially Jurisdicitonal Waters

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Background: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Survey Area
Project Site
Access Roads
Drainage Channel
Laydown/ Temporary Office Location
USACE Non-Wetland "Waters of the U.S."
CDFW Jurisdictional Waters

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Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Background: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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Project Location
Imperial County, CA

Prepared by DL on 2020-01-13
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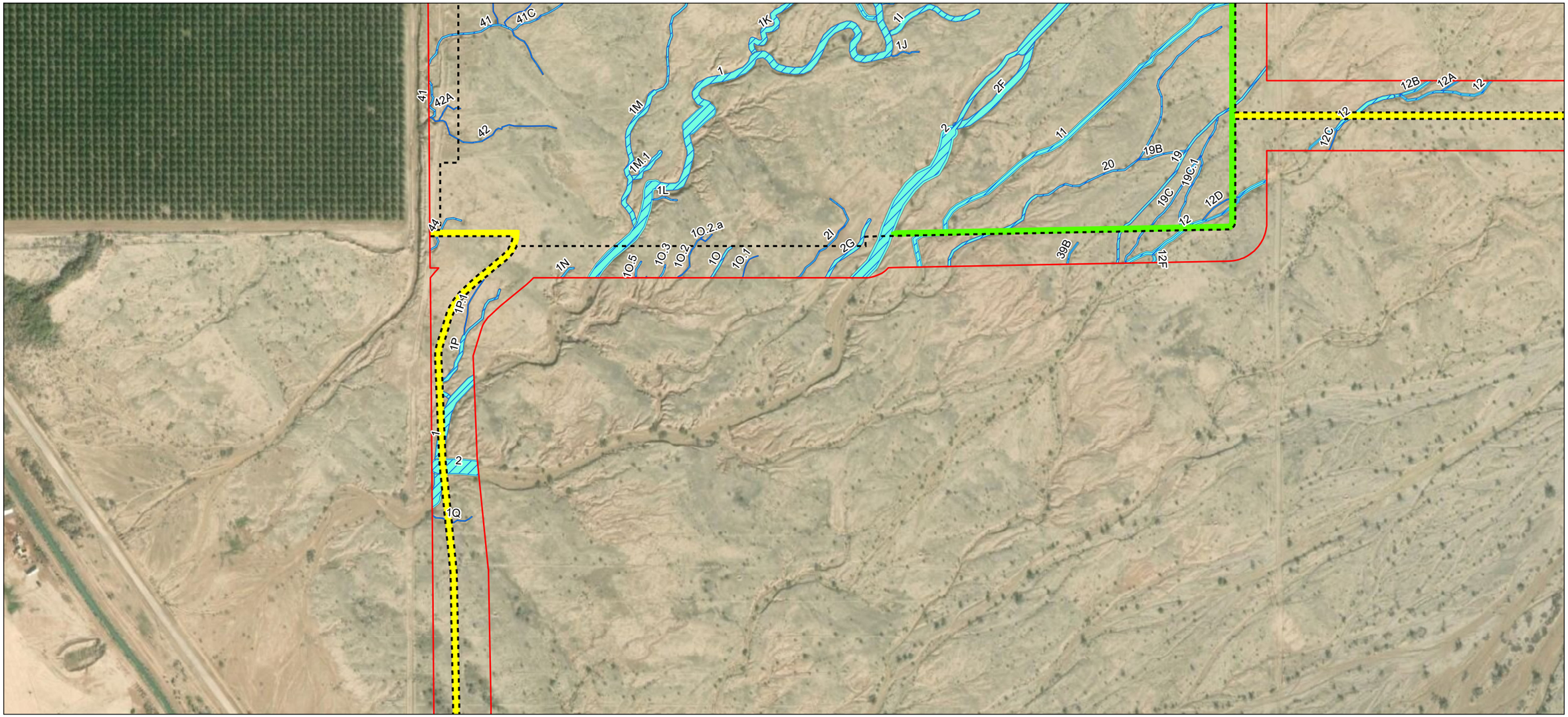
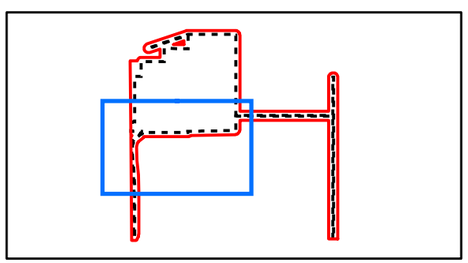
IR Review by SR on 2020-01-13

Client/Project 185804156
Ormat Wister Solar Project
Preliminary Jurisdictional Waters/Wetlands Delineation Report

Figure No.
5a

Title
Potentially Jurisdicitonal Waters





Survey Area

Project Site

Access Roads

Drainage Channel

USACE Non-Wetland "Waters of the U.S."

CDFW Jurisdictional Waters

0 250 500 Feet

(At original document size of 11x17)
1:3,810

N

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Project Location
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Ormat Wister Solar Project
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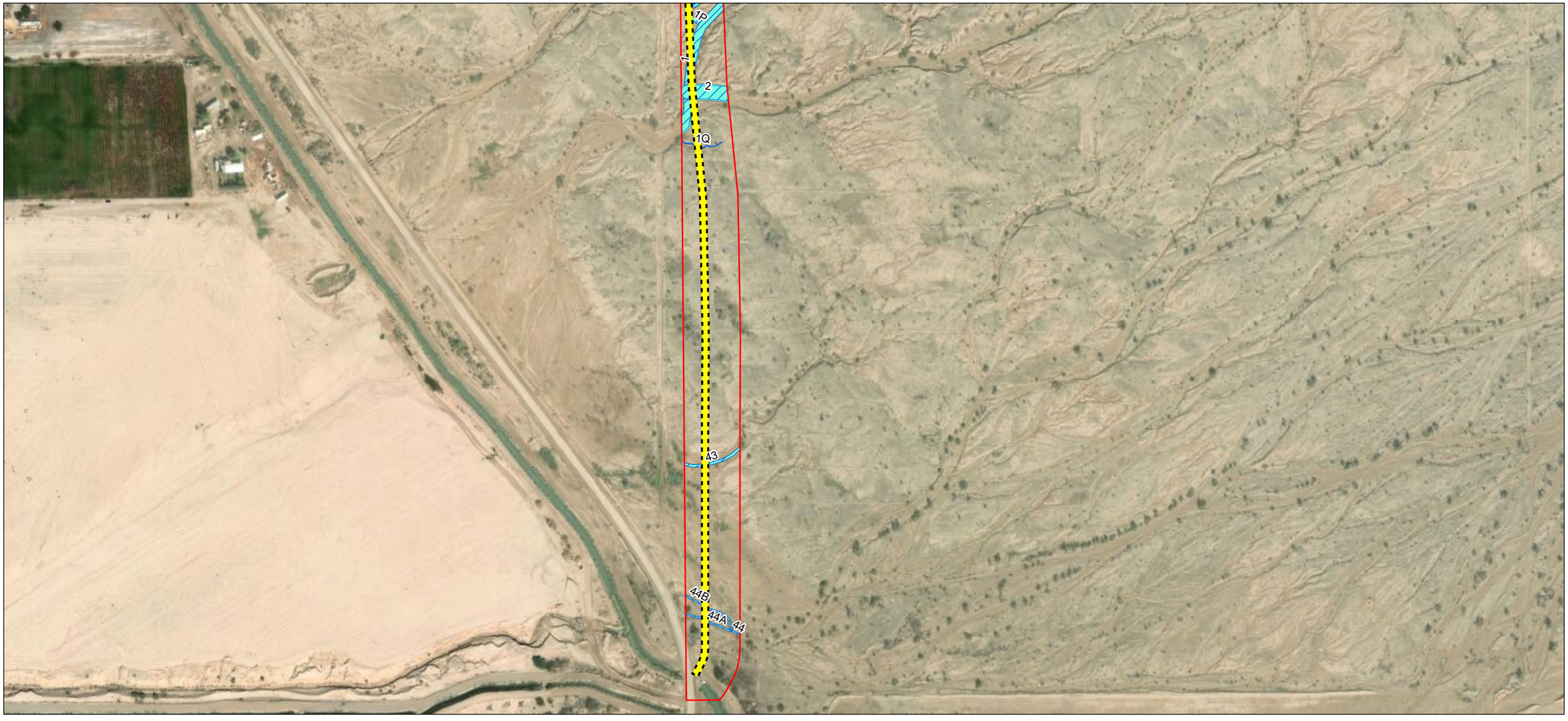
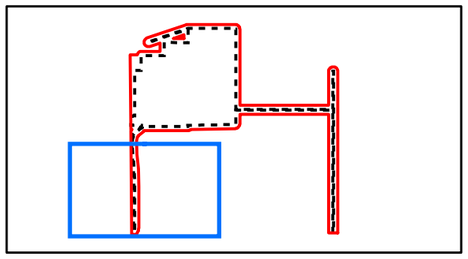
Figure No.
5b

Title
Potentially Jurisdicitonal Waters

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Background: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community





Survey Area

Project Site

Access Roads

USACE Non-Wetland "Waters of the U.S."

CDFW Jurisdictional Waters

0 250 500 Feet

(At original document size of 11x17)
1:3,810

N

Stantec

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Background: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Project Location
Imperial County, CA

Prepared by DL on 2020-01-13
TR by JV on 2020-01-13
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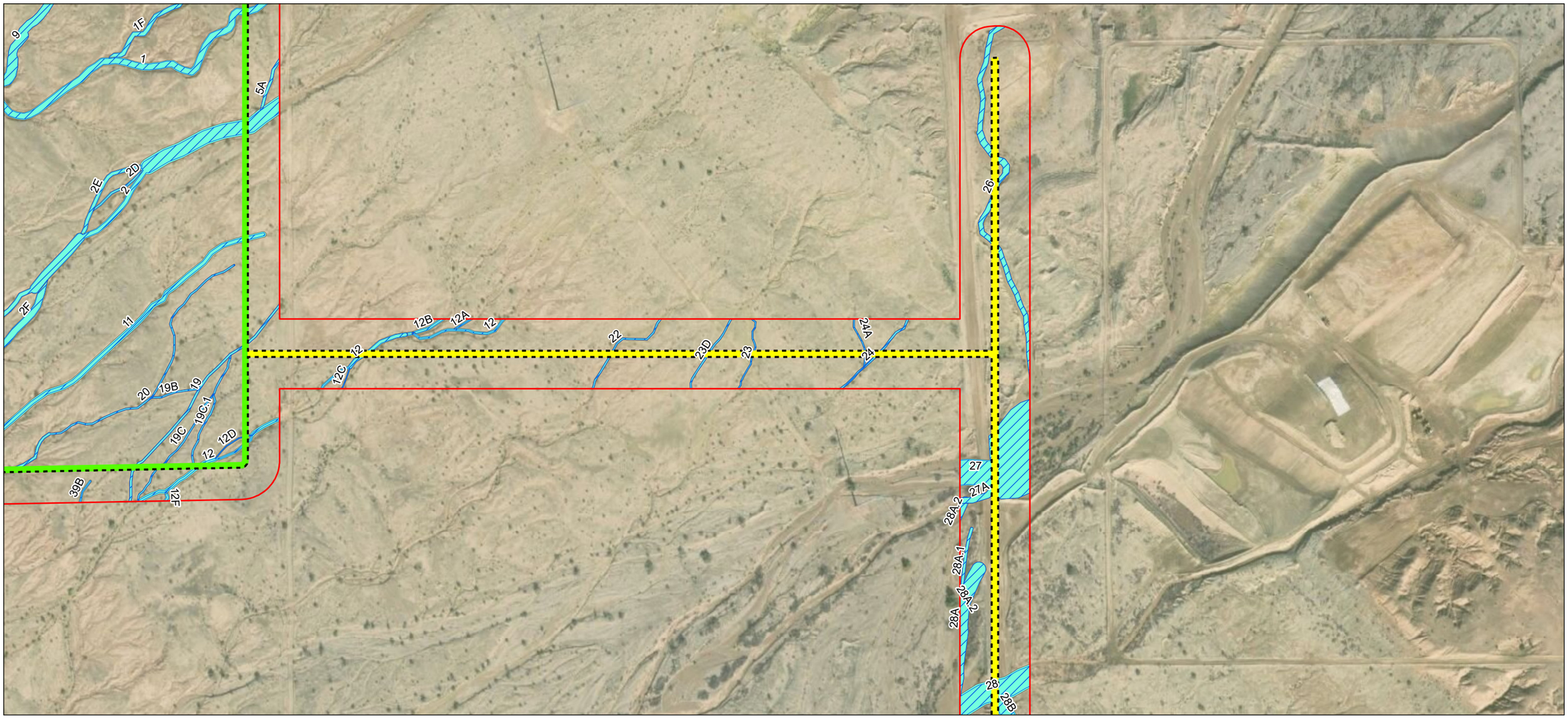
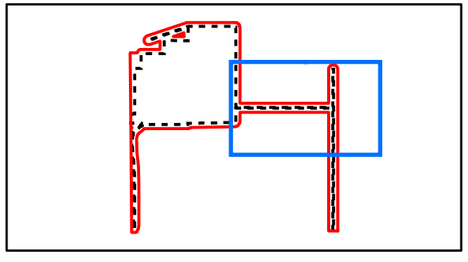
Client/Project
185804156

Ormat Wister Solar Project
Preliminary Jurisdictional Waters/Wetlands Delineation Report

Figure No.
5c

Title
Potentially Jurisdicitonal Waters





- Survey Area
- Project Site
- Access Roads
- Drainage Channel
- USACE Non-Wetland "Waters of the U.S."
- CDFW Jurisdictional Waters

0 250 500 Feet

(At original document size of 11x17)
1:3,810

N

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Project Location
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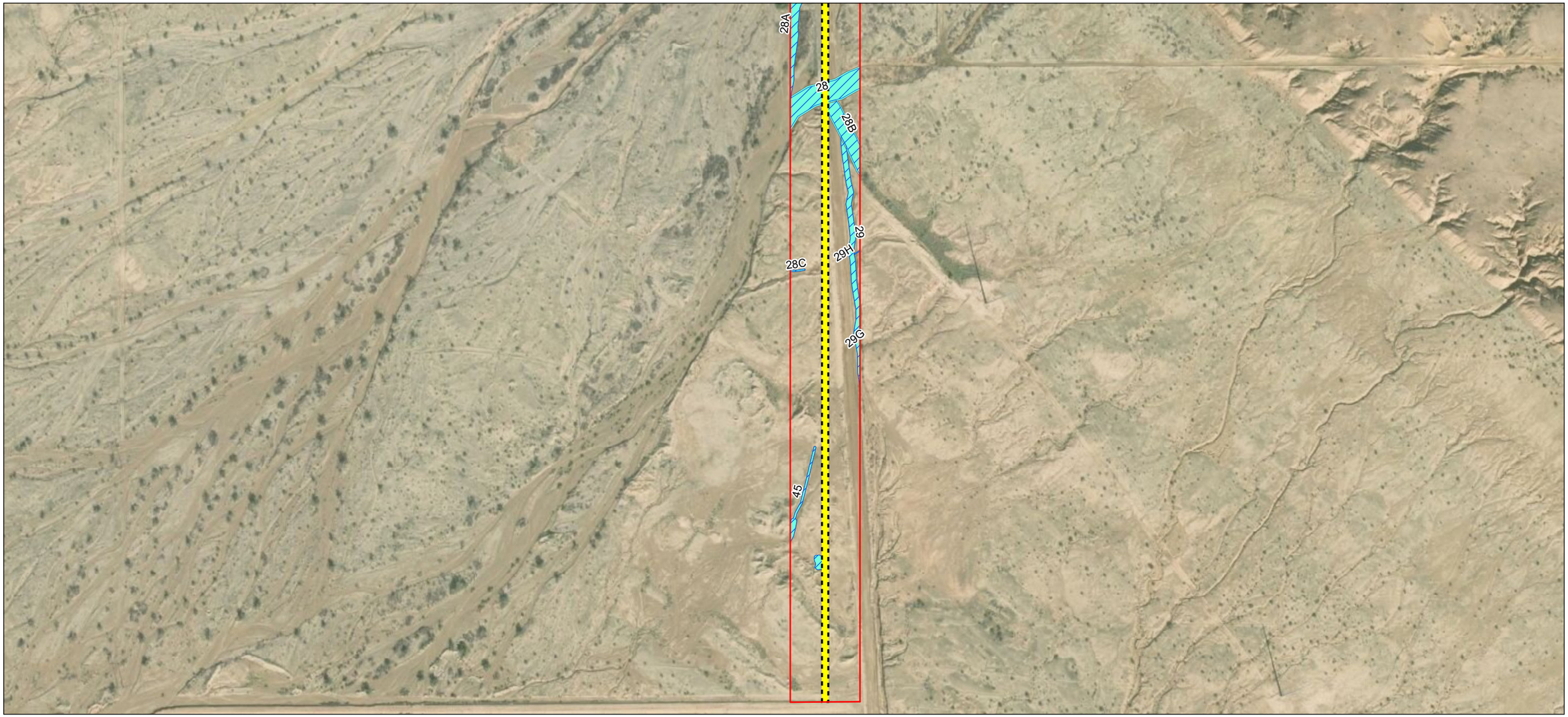
Client/Project 185804156

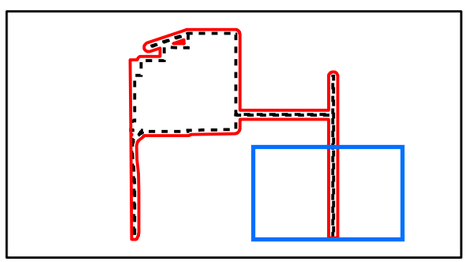
Ormat Wister Solar Project
Preliminary Jurisdictional Waters/Wetlands Delineation Report

Figure No.
5d

Title
Potentially Jurisdicitonal Waters

Notes
1. Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
2. Background: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community





Survey Area

Project Site

Access Roads

USACE Non-Wetland "Waters of the U.S."

CDFW Jurisdictional Waters

0 250 500 Feet

(At original document size of 11x17)
1:3,810

N

Stantec

Notes
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2. Background: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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Ormat Wister Solar Project
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Figure No.
5e

Title
Potentially Jurisdicitonal Waters