APPENDIX I
BIOLOGICAL RESOURCES STUDIES

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HELIX
Environmental Planning

Seville Solar Project

Jurisdictional Delineation Report

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I. INTRODUCTION

This report presents the results of a focused jurisdictional delineation of the Seville Solar project (proposed project) located in unincorporated Imperial County (County), California. The delineation was conducted to identify and map existing areas under U.S. Army Corps of Engineers (USACE) jurisdiction pursuant to Section 404 of the Clean Water Act (CWA) (33 USC 1344) and wetland and streambed habitats under California Department of Fish and Wildlife (CDFW) jurisdiction pursuant to Section 1600 of the California Fish and Game Code. This information is necessary to evaluate jurisdictional impacts and permit requirements associated with the proposed project. This report presents HELIX Environmental Planning, Inc.'s (HELIX's) best efforts to quantify the extent of Waters of the U.S. (WUS) and Waters of the State (WS) associated with the proposed project using the current regulations, written policies, and guidance from regulatory agencies. The jurisdictional boundaries provided here are subject to verification by the USACE and CDFW.

The proposed project is an approximately 135-megawatt solar generation facility that is located roughly 8 miles west of Highway 86, immediately south of Highway 78 (Figure 1). The proposed project would disturb approximately 1,238 acres of mostly fallow, private, agricultural lands on part of the approximately 2,440-acre Allegretti Farms property in portions of Sections 15, 22, 23, 25, 26, and 27, Township 12 South, Range 9 East, San Bernardino Baseline and Meridian (Figure 2). The existing access road to the agricultural lands is located on public lands managed by the U.S. Bureau of Land Management (BLM) in Section 14 (Figure 2).

The existing access road and the adjacent existing Imperial Irrigation District (IID) distribution line from Highway 78 to the proposed solar site (Figure 2) would be left alone, although the existing road would be used by emergency responders and project personnel in emergencies as secondary access if the new primary access road to the facility is blocked. The existing access road would also continue to be used by Allegretti Farms for its parcels of land outside of the proposed project.

As part of the proposed project, there would be disturbance outside the proposed solar site associated with a new primary access road and a new 92 kV transmission line (Figure 2). The new primary access road to the proposed solar site is expected to be 24 feet wide with approximately 12-foot wide shoulders.

An electrical interconnection with the IID electrical transmission system would be necessary and would require the construction of a new, 92 kV transmission line to be built outside the proposed solar site and partly co-located on the path of the existing IID distribution line from the Anza Substation. The newly built 92 kV transmission line would be constructed within an approximately 20-foot wide right-of-way (Figure 2).

Where the electrical interconnection would be on the path of the existing IID distribution line, it would be overbuilt on the alignment of the existing distribution line poles (Figure 2). This means: 1) the existing IID poles would be bent over; 2) new, taller poles would be installed in the same right-of-way alignment; 3) new conductors (wires) would be built on the top of the taller poles; and 4) the existing IID distribution line would be hung on the new poles below the

new conductors. There would be no additional ground disturbance other than use of the right-of-way by vehicles for this overbuild construction.

II. METHODS

Prior to beginning fieldwork, aerial photographs (1"=200' scale), and topographic maps (1"=200' scale) were reviewed, and a vegetation map was prepared to assist in determining the location of potential jurisdictional areas that may be affected by the proposed project. Data were collected in areas that were suspected to be jurisdictional habitats on February 13, 2013. HELIX Principal Biologist W. Larry Sward conducted the field work and was assisted by HELIX Biologist Ben Rosenbaum. The survey area for the jurisdictional delineation covered the proposed solar site; the existing transmission line right-of-way along Highway 78 (where a new 92 kV transmission line would be overbuilt); the new primary access road; and the north-south proposed secondary, emergency access road (Figure 2).

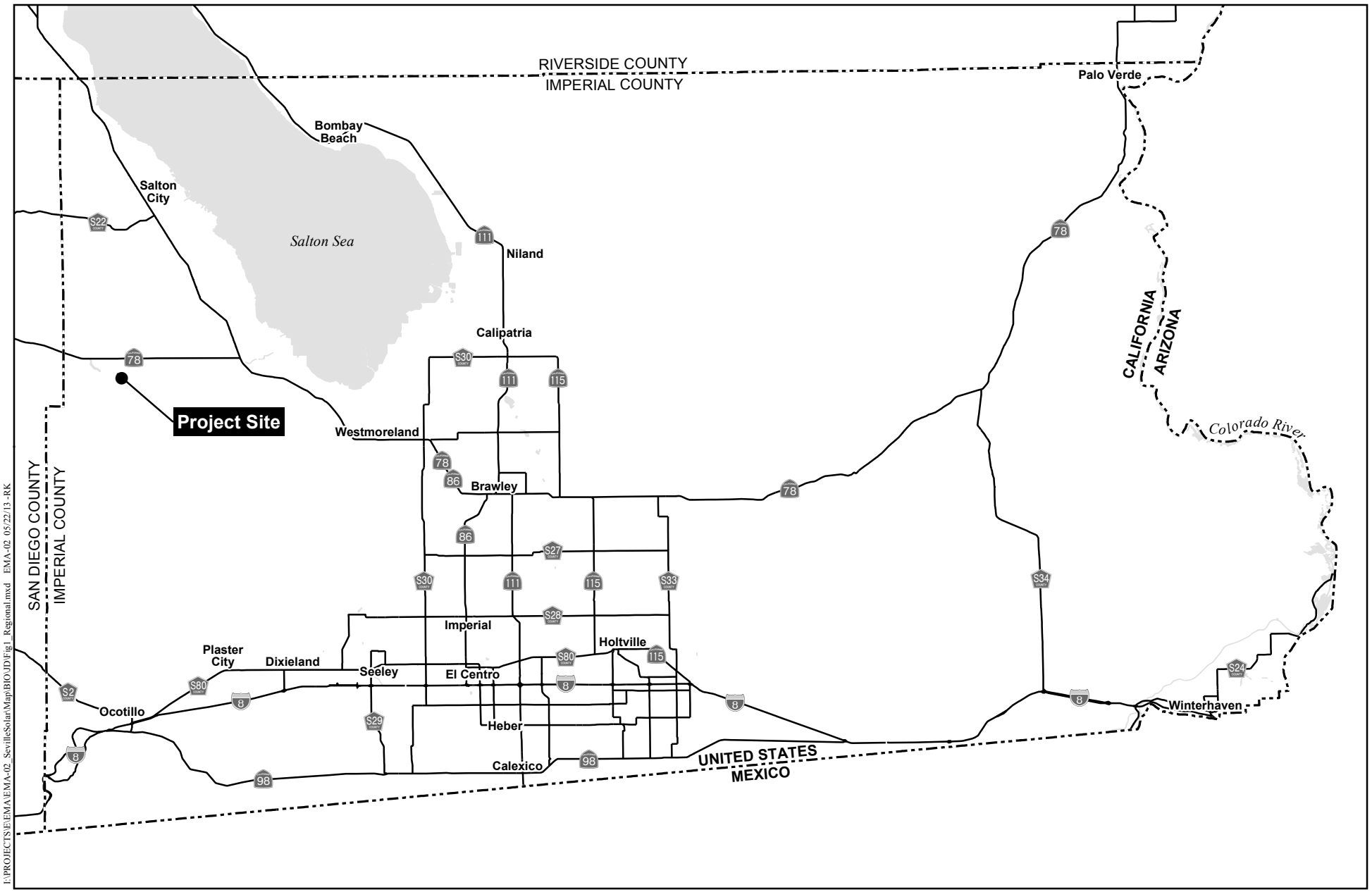
USACE wetland boundaries were determined using the three criteria (vegetation, hydrology, and soils) established for wetland delineations, as described within the Wetlands Delineation Manual (Environmental Laboratory 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008).

The results presented here are also discussed in light of court decisions (i.e., Rapanos v. United States, Carabell v. United States, and Solid Waste Agency of Northern Cook County [SWANCC] v. USACE), as outlined and applied by the USACE (USACE 2007; Grumbles and Woodley 2007), USACE and Environmental Protection Agency (EPA; 2007), and EPA and USACE (2007). These publications explain that the EPA and USACE will assert jurisdiction over traditional navigable waters (TNW) and tributaries to TNWs that are relatively permanent water bodies (RPWs), which have year-round or continuous seasonal flow. For water bodies that are not RPWs, a significant nexus evaluation must be conducted to determine whether the non-RPW is jurisdictional. An overview of USACE wetlands and jurisdictional WUS definitions is presented in Appendix A.

Plants were identified according to Baldwin et al. (2012), and Calflora (2013) was used to augment common names. Wetland affiliations of plant species follow the National Wetland Plant List (Lichvar 2012). Vegetation was mapped using a floristic system (Sawyer, Keeler-Wolf, and Evens (2009), consistent with the National Vegetation Classification System.

Soils information was taken from the U.S. Department of Agriculture (USDA) Natural Resource Conservation Services' Web Soil Survey (2012). Soil samples were evaluated for hydric soil indicators (e.g., hydrogen sulfide [A4], sandy redox [S5], depleted matrix [F3], redox dark surface [F6], and depleted dark surface [F7]). Soil chromas were identified according to Munsell's Soil Color Charts (Kollmorgen 1994).

Sample points were inspected for primary wetland hydrology indicators (e.g., surface water [A1], saturation [A3], water marks [non-riverine, B1], sediment deposits [non-riverine, B2], drift deposits [non-riverine, B3], surface soil cracks [B6], inundation visible on aerial imagery [B7],



Regional Location Map

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N 0 10 Miles

Figure 1

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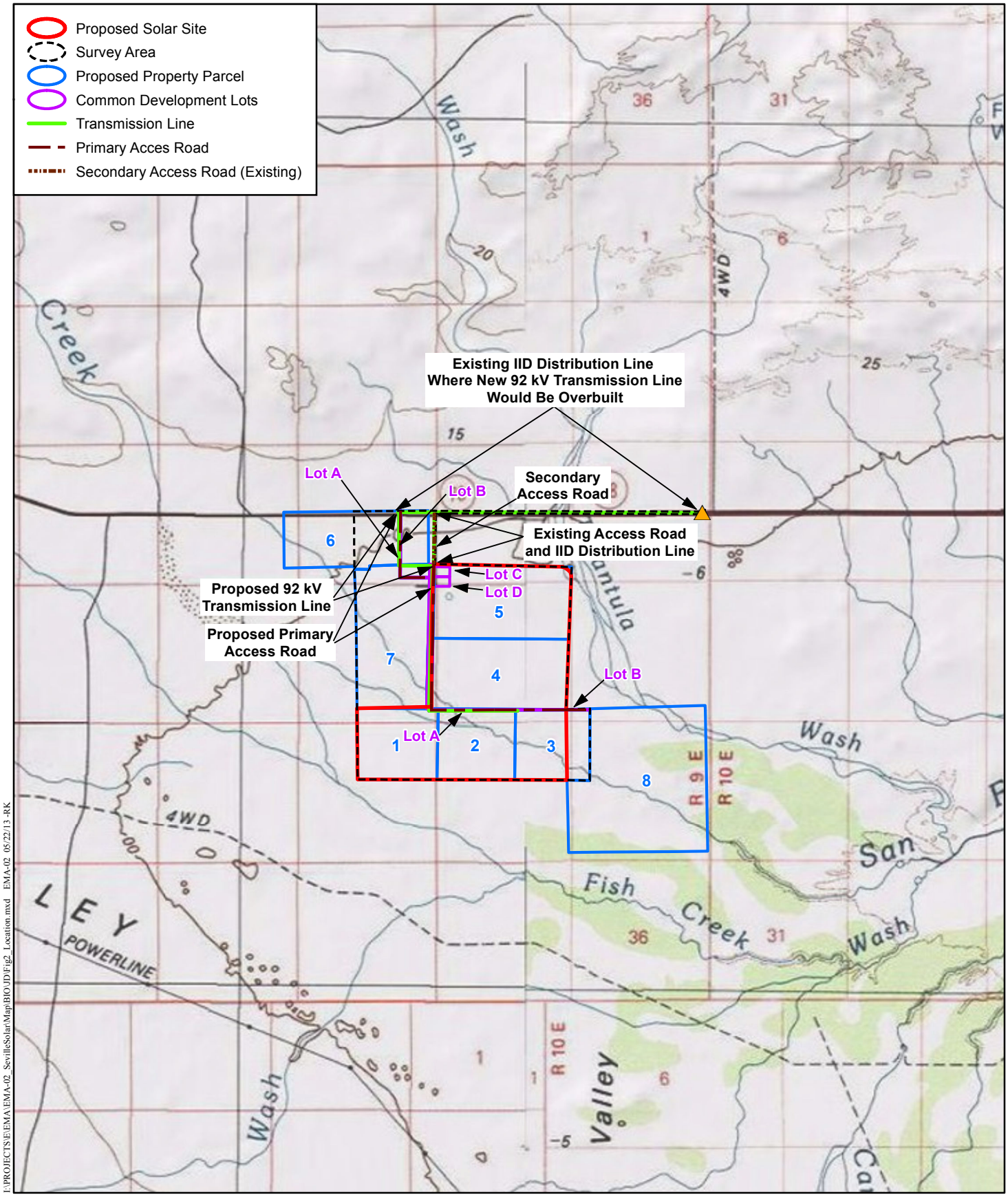

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Project Location Map

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N 0 6,000 Feet

Figure 2

salt crust [B11], aquatic invertebrates [B13], hydrogen sulfide odor [C1], and oxidized rhizospheres along living roots [C3]) and secondary wetland hydrology indicators (e.g., water marks [riverine, B1], sediment deposits [riverine, B2], drift deposits [riverine, B3], drainage patterns in wetlands [B10], shallow aquitard [D3], and positive FAC neutral test [D5]).

Areas were determined to be non-wetland WUS if there was evidence of regular surface flow (e.g., bed and bank) but neither the vegetation nor soils criterion was met, and the feature was connected to a WUS. Jurisdictional limits for these areas were defined by the ordinary high water mark (OHWM), which is defined in 33 CFR Section 329.11 as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of the soil; destruction of terrestrial vegetation; the presence of litter or debris; or other appropriate means that consider the characteristics of the surrounding areas." The USACE has issued further guidance on the OHWM (Riley 2005; Lichvar and McColley 2008), which also has been used for this delineation. The OHWM widths were measured to the nearest foot at various locations along mapped drainages.

The CDFW jurisdictional boundaries were determined based on the presence of riparian vegetation or regular surface flow. Streambeds within CDFW jurisdiction were delineated based on the definition of streambed as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supporting fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports riparian vegetation" (Title 14, Section 1.72). This definition for CDFW jurisdictional habitat allows for a wide variety of habitat types to be jurisdictional, including some that do not include wetland species (e.g., oak woodland and alluvial fan sage scrub). Definitions of CDFW jurisdictional areas are presented in Appendix B. Streambed widths were measured to the nearest foot at various locations along the channel. The CDFW publication on dryland watersheds (Vyverberg 2010) was also used as an aid to map streambeds.

Jurisdictional determinations also took into account the source of any wetland hydrology. Both natural and artificial hydrology exists on site. The artificial hydrology is related to the past farming operations.

Two sample points were studied (Figure 3); standard data forms were completed for each sample point in the field and are included in Appendix C. A sample point is a place where vegetation, soils, and hydrology are evaluated for wetland indicators, as described in the Arid West Supplement (USACE 2008). These sample points were chosen because they exemplified areas within the survey area that supported wetland vegetation and were potentially WUS or WS. Photographs were taken of the sample points and are included in Appendix D.

III. RESULTS

A. SITE DESCRIPTION

Elevations in the survey area range from 45 feet below mean sea level to 20 feet above mean sea level. The dry bed of San Felipe Creek currently runs south along the southwestern edge of the survey area (Figure 3). Tarantula Wash crosses the existing 92 kV transmission line along Highway 78 and trends south past the northeast corner of the proposed solar site.

The surrounding lands are generally undeveloped desert; however, Highway 78 and the existing IID distribution line occur just north of the proposed solar site (Figure 2). The proposed solar site is surrounded by private properties and land administered by the BLM. To the north of Highway 78 is the Ocotillo Wells State Vehicular Recreation Area, which is managed by the State of California for the use of off-highway recreational vehicles. The lands surrounding the proposed project, and particularly along the existing IID right-of-way adjacent to Highway 78 and along the western boundary of the survey area, have been subjected to off-road vehicle use.

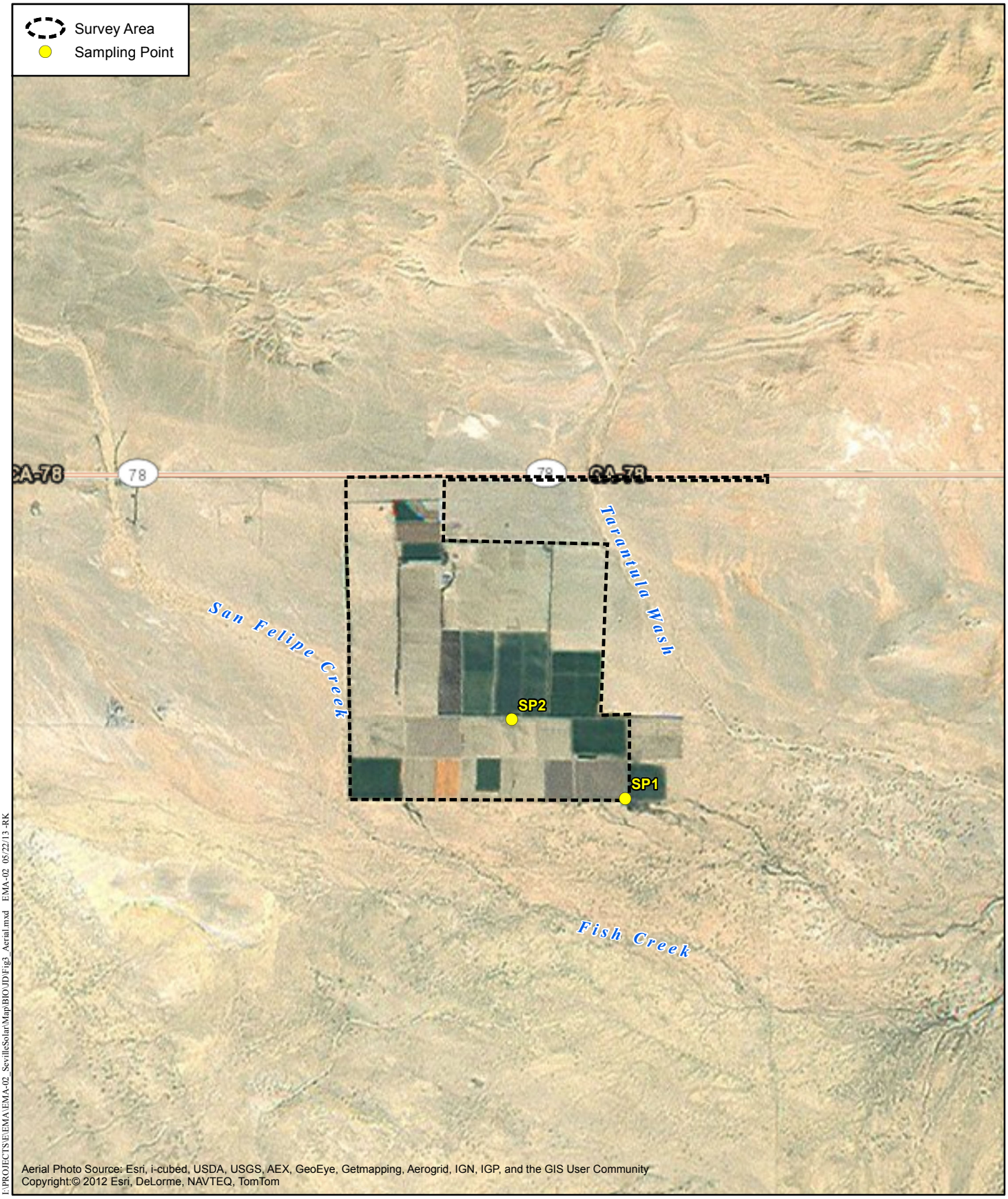
The National Wetland Inventory (USFWS 2012) indicates that a wetland (i.e., riverine/ intermittent/unconsolidated shore/intermittently flooded; part of San Felipe Creek) occurs immediately west of the survey area (Figures 4 and 5). This feature is separated from the proposed solar site by a berm and is at a slightly lower elevation. San Felipe Creek (a wetland classified as palustrine/scrub-shrub/temporarily flooded according to the NWI) also occurs southeast of the survey area. This creek once flowed through the survey area prior to the agricultural operations. Additionally, Tarantula Wash trends approximately south-north just east of the proposed solar site, and crosses the proposed transmission line. A small area of palustrine/unconsolidated bottom/semipermanently flooded/excavated exists on site along the existing entrance road. This may have been an artificially maintained feature associated with the agricultural operations that was not in use at the time of this delineation. A review of historical aerial photos does not support the NWI mapping.

Nearly all of the survey area supported groundwater-irrigated farming in the past. The portions of the survey area that have not been farmed include approximately 50 acres west of the existing access road along Highway 78 and the transmission corridor.

Agriculture has had a profound effect on the distribution, abundance, and type of potentially jurisdictional habitats. Farming began at this site in the early 1950s, reached a peak in 1978 when approximately 1,600 acres were farmed, and was last farmed in 2011 (Environmental Management Associates [EMA] 2013).

Ted Jacobs began development of the Allegretti property (then known as "Ranch Oasis" or "Jacobs Ranch") in the early 1950s. Two groundwater wells were initially drilled to provide the water necessary for farming: the San Felipe Well and the Jacobs Domestic Well (EMA 2013). Seven more water wells were drilled for agricultural uses between 1965 and 1982.

A 1995 investigation (Krieger 1995) states, "For the period from 1954 to 1973, about 320 acres of ground had been cleared and leveled for farming by Allegretti Farms, and about half,



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Aerial Photograph

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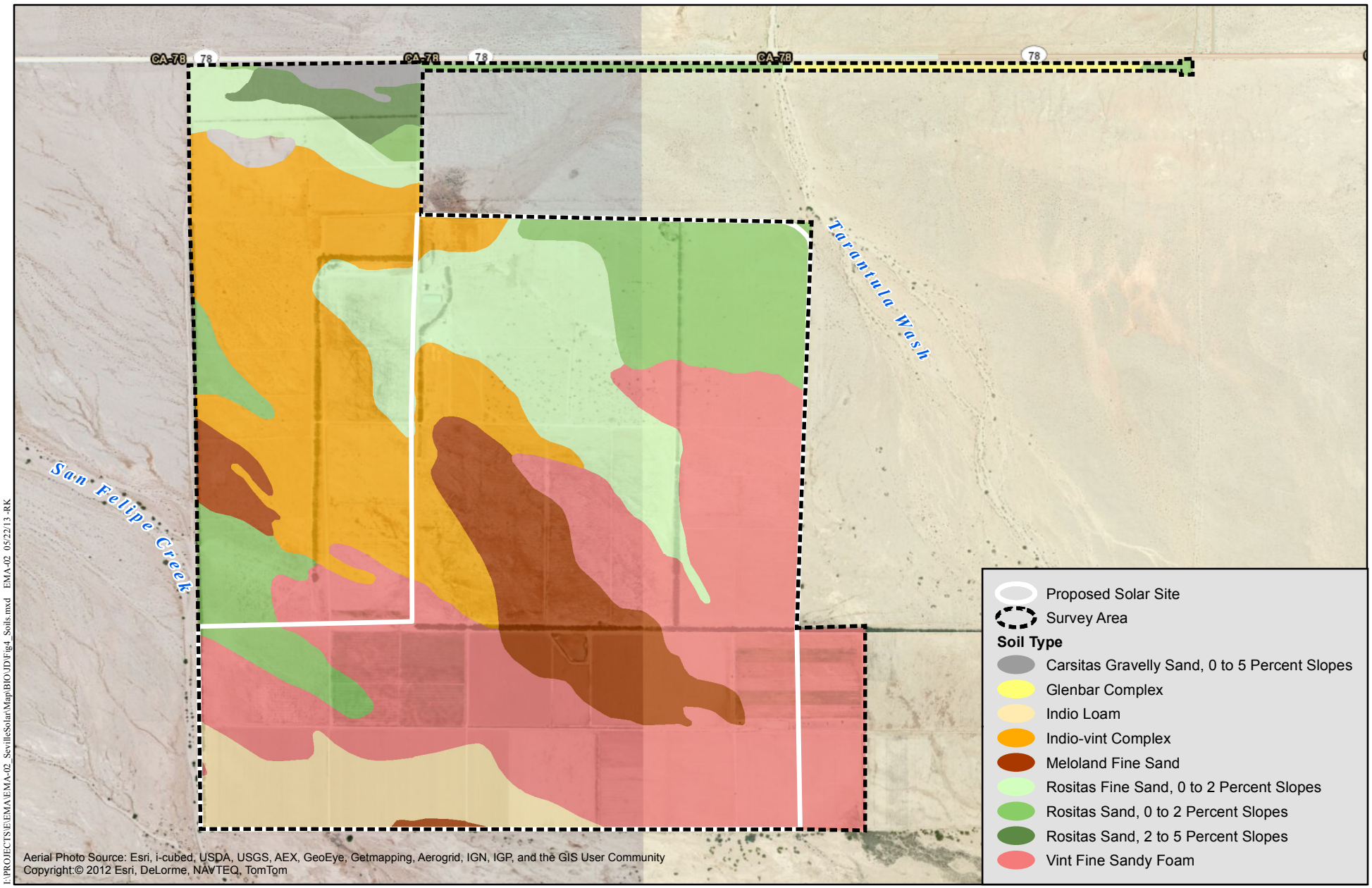
N 0 6,000 Feet

Figure 3



Soils Map

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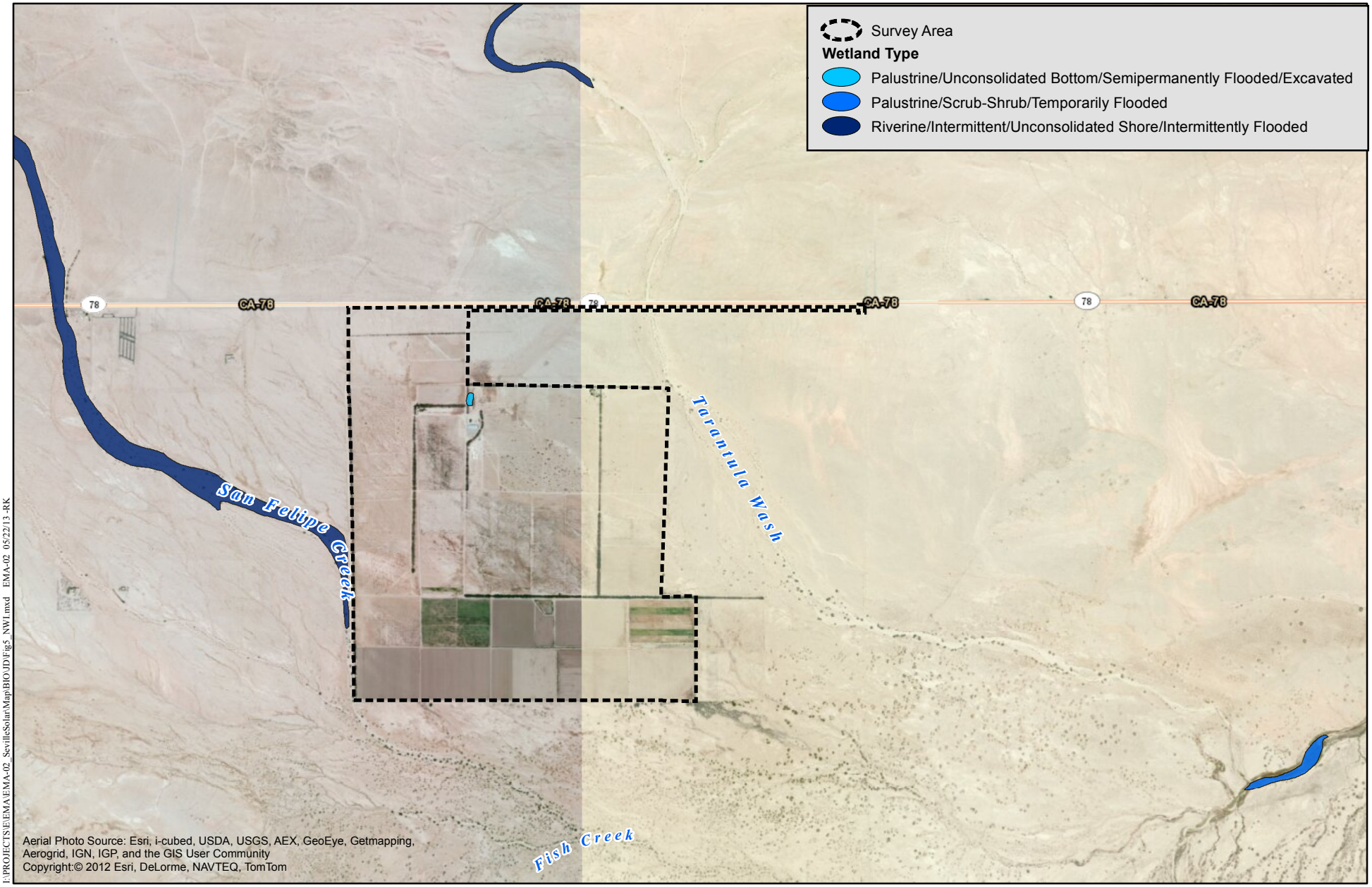
N 0 1,800 Feet

Figure 4



National Wetland Inventory

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N 0 3,500 Feet

Figure 5

180 acres, were being farmed in 1973." An aerial photograph from 1973 shows farming activity on approximately 320 acres, located north of the San Felipe Creek channel in the east half of Section 22 and the west half of Section 23. In addition, a north-south vegetation windbreak had been constructed a quarter mile to the west in the center of Section 22 (EMA 2013). A 1978 aerial photograph shows the entire site in active agricultural use (EMA 2013).

Aerial photographs also document that between 1973 and 1978, a north-south running berm was constructed on the western edge of the Allegretti property in the center of Section 22 and the north half of Section 27 (EMA 2013). This berm protected farm lands in the southeastern quarter of Section 22 and the north half of Section 26 from storm water flowing down washes and arroyos from the northwest, including San Felipe Creek, by diverting these waters to the south into Fish Creek Wash, located immediately south of the site in Section 27, T12S, R9E, SBBM (see Figures 6 and 7). Fish Creek Wash then runs east-southeast approximately 5 miles before joining the San Felipe Creek channel in Section 32, T12S, R10E.

Aerial photographs from 1984, 1987, and 1992 also substantiate the fact that the Allegretti property was being farmed during this time period (EMA 2013). The site was leased for farming from 1993 to 2010. Crops grown at that time included melons, onions, alfalfa, wheat, safflower, arugula, asparagus, milo, and carrots. From 1993 through 2009, the average area actively farmed was approximately 500 acres, although in some years it was as much as 1,000 acres. In 2010 and 2011, approximately 80 acres were farmed.

The agricultural operations at Allegretti Farms resulted in an infrastructure of wells, buried irrigation pipes, reservoirs, concrete-lined irrigation ditches, and unlined drainage ditches (Figure 6 and Appendix D). The irrigation pipes were buried and were sized between 10-inch and 15-inch diameter pipes. These distributed well water throughout the farm. Three reservoirs occur on the farm. These were used to capture and reuse irrigation water that drained off of the farmed areas. One straight irrigation ditch occurs on site. It runs east-west just north of the largest reservoir. The drainage ditches range in size from less than 3 feet to approximately 15 feet wide and run throughout the farm.

The majority of the soils in the survey area are Vint fine sandy loam (USDA 2012; Figure 4). Other soils in the survey area include Indio-Vint complex, Rositas sand (0-2 percent slopes), Rositas fine sand (0-2 percent slopes), Meloland fine sand, Indio loam, Glenbar complex, Rositas sand (2-5 percent slopes), Carsitas gravelly sand (0-5 percent slopes), and Glenbar clay loam. All of these soils, except the Rositas series, are derived from or formed in alluvium and are typically situated in floodplains, alluvial fans, or basins. The Rositas series is derived from eolian material and is situated in sand dunes and sand sheets.

Generalized climate for the site, as derived from the soil descriptions, consists of low rainfall (less than 4 inches) with cool winters (average January temperature is 50 degrees to 52 degrees Fahrenheit [F].), hot summer temperatures (average July temperature is about 90 degrees F.), and the average annual temperature 70 to 75 degrees F. The frost-free period is 250 to 350 days.

The survey area supports 19 vegetation communities/land cover types (Figure 7). While some of the major components of certain vegetation communities are present, and those areas have been

classified accordingly, all of the communities in the survey area are very simple in composition with low biological diversity and, in most cases, have relatively low biomass. The native soil crust has been lost, and the surface topography has been graded flat or is furrowed due to agricultural operations.

Four of the vegetation types and one of the land cover types is potentially jurisdictional. The potentially jurisdictional vegetation types are dominated by wetland vegetation, and include bulrush marsh, quailbush scrub, tamarisk thickets, and tamarisk windbreaks. The potentially jurisdictional non-vegetated habitat type is streambed. None of the potentially jurisdictional wetland habitats on the Allegretti Farms property were found to be jurisdictional. This conclusion is based on the artificial hydrology source responsible for these habitats (see Part 328, USACE 1986) and isolation from other jurisdictional areas.

These are briefly described below.

Bulrush Marsh

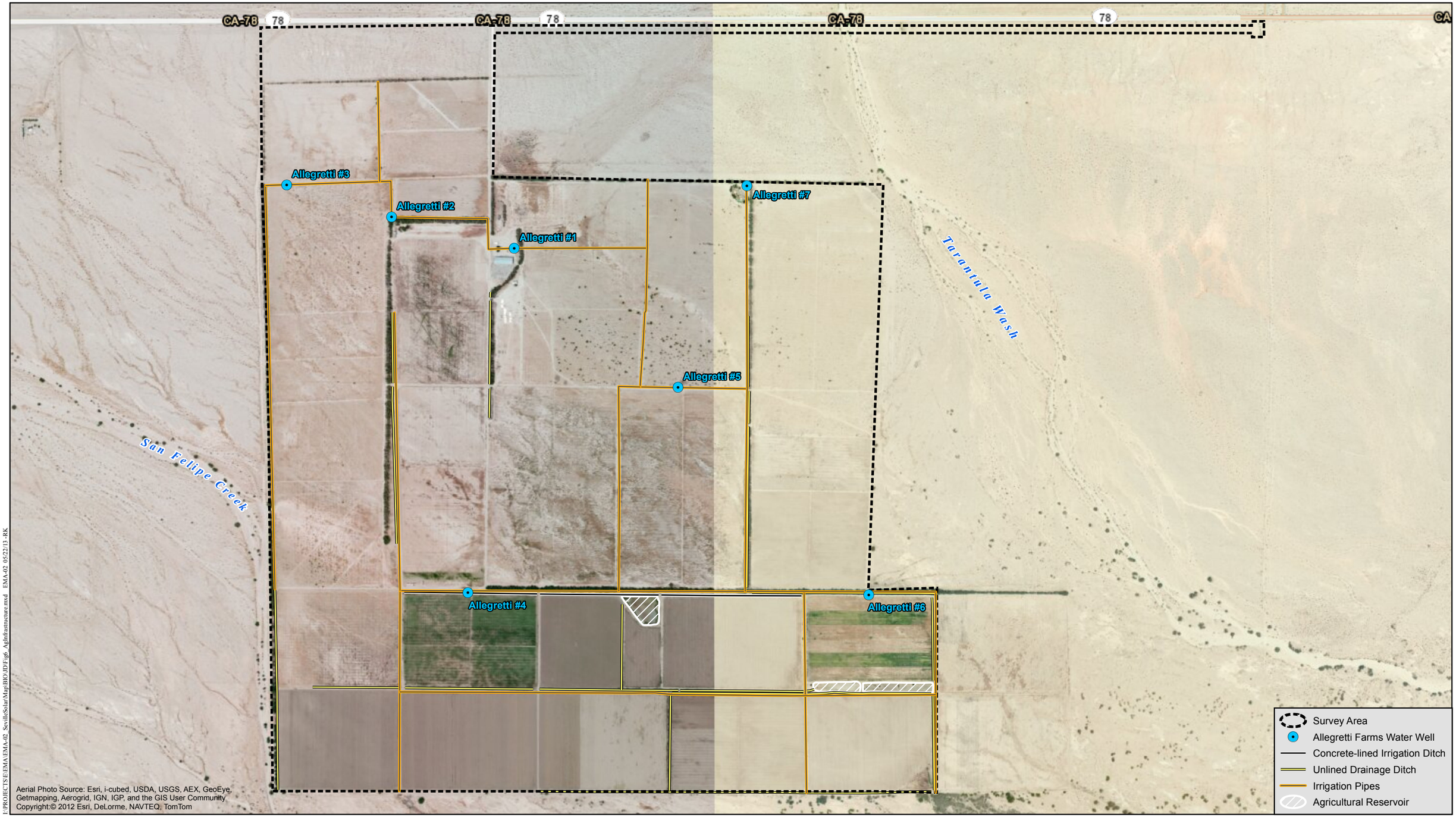
Alkali bulrush (*Bolboschoenus maritimus* ssp. *paludosus*), an obligate wetland species, is the dominant plant in this community that occurs in the reservoir in the southeastern portion of the proposed solar site. During the delineation field work, the reservoir was dry and over 90 percent of the bulrushes appeared to be dead or dormant. Vigorous growth of this vegetation in the survey area is dependent upon artificial hydrology, which is no longer present because agricultural operations have been suspended and the reservoir remains dry except for natural rainfall and drainage into the reservoir from a concrete lined ditch. Because this habitat is dependent upon artificial hydrology it is not regarded as jurisdictional. Furthermore, this habitat occurs in an excavated reservoir and is isolated from WUS and WS.

Quailbush Scrub

Quail saltbush (*Atriplex lentiformis*) is the dominant species in this community. Quail saltbush is a facultative species. This community occurs along the upper slopes of a drainage ditch and adjacent areas, along the southern edge of the survey area. The drainage ditch shows no sign of an OHWM, likely due to the extended period of time since this section was farmed. The landscape position of this community is primarily upland. This habitat is not jurisdictional because it occurs in uplands. Furthermore, this habitat is isolated from WUS and WS.

Tamarisk Thickets

Tamarisk thicket is a monotypic stand of saltcedar (*Tamarix ramosissima*), an invasive, non-native tree species that is known to invade desert wetland and riparian habitats. Saltcedar is a facultative species. Most of this habitat in the survey area was established by well water associated with irrigation runoff. As a phreatophyte, once established, it is capable of persisting in the absence of any surface hydrology. It exists primarily in reservoirs constructed for the agricultural operations. The soil cracks in these reservoirs appear to be recent. Flow to these areas is a relic of the "plumbing" installed for the farm. That is, when it rains, water flows into these areas via a series of concrete lined ditches and or pipes. It is our opinion that the contrived



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Agricultural Infrastructure

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0 1,200 Feet

Figure 6