# Wister Solar Project
# Waters/Wetlands Delineation Report

Preliminary Jurisdictional
Waters/Wetlands Delineation Report

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Prepared for:

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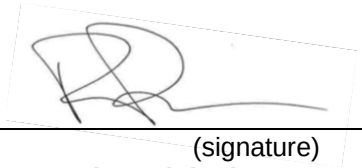
Prepared by 
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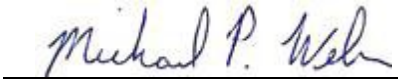
Reviewed by 
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# Abbreviations

| | |
|---|---|
| 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 20-Megawatt (MW) photovoltaic solar farm on approximately 100 acres within the 640-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**<br>OBL = obligate - occurs almost always in wetlands under natural conditions<br>FAC = facultative - equally likely to occur in wetlands or non-wetlands<br>FACU = facultative upland - usually occurs in non-wetlands, but often found in wetlands<br>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.

# 6.0 REFERENCES

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# Appendix A ACREAGE SUMMARY OF JURISDICTIONAL WATERS WITHIN THE SURVEY AREA

# Appendix B OHWM DATA SHEETS

# Appendix C PHOTOGRAPHIC LOG

# Appendix D HISTORIC SOILS INFORMATION

# Appendix E ARID WEST INDICATOR TABLES

# Appendix F REGULATORY BACKGROUND INFORMATION

# Appendix G FIGURES