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Aaron Allen, PhD., North Coast Branch Chief
U.S. Army Corps of Engineers
2151 Alessandro Drive, Suite 110
Ventura, CA 93001

Re: RE Barren Ridge 1 Photovoltaic Electrical Generation Facilities Jurisdictional Delineation Letter Report and Request for an Approved Jurisdictional Determination

Dear Mr. Israel:

Introduction

This jurisdictional delineation letter report (JDLR) discusses the type and amount of potentially regulated aquatic resources occurring within the approximate 588-acre project survey area (the project survey area is also synonymous with the delineation survey area and the limits of the proposed development and construction) for the RE Barren Ridge 1 Photovoltaic Solar Electrical Generation Facilities project (project), which is proposed by Recurrent Energy, LLC.

As part of the environmental review process, this JDLR summarizes the latest federal and state guidance and methodologies employed in conducting a formal delineation for jurisdictional waters of the U.S. and State of California (state); the results of the fieldwork; and the amount, type, and location of the formally delineated potential jurisdictional waters occurring within the project area.

Summary

Based on the results of the formal field delineation within the project survey area it has been determined that there are 0.0^{1,2} acres of potential jurisdictional waters of the U.S.^{3,4} and

¹ All acreages are rounded to the nearest hundredth (which may account for minor rounding error).

² Final acreages of jurisdictional waters of the U.S. are based on the jurisdictional determination (JD) process per the March 30, 2007, *The U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook*; the June 5, 2007, Approved JD Form; the June 5, 2007, Joint Guidance Memorandum; the December 2, 2008, Guidance Memorandum; and Regulatory Guidance Letter (RGL) 08-02 (if RGL 08-02 is deemed applicable and appropriate [i.e., the permit applicant or other "affected party" can decline to request and obtain an Approved JD and elect to use a Preliminary JD instead] for a jurisdictional determination of this formal jurisdictional delineation).

³ Final acreages of jurisdictional waters of the U.S. are based on the JD process per the March 30, 2007, *The U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook*; the June 5, 2007, Approved JD Form; the June 5, 2007, Joint Guidance Memorandum; the December 2, 2008, Guidance Memorandum; and RGL 08-02 (if RGL 08-02 is deemed applicable and appropriate [i.e., the permit applicant or other "affected party" can decline to request and obtain an Approved JD and elect to use a Preliminary JD instead] for nonbinding written indication that there may be waters of the U.S., including wetlands, on a parcel or indications of the approximate location[s] of waters of the U.S. or wetlands on a parcel). Jurisdictional waters of the U.S. are relevant to the U.S. Army Corps of Engineers (USACE), the Regional Water Quality Control Boards (RWQCBs), and the California Department of Fish and Game (CDFG) regulatory permitting, if applicable.

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approximately 6.62 acres of potential jurisdictional waters of the state, exclusively.^{5,6} Of these approximately 6.62 acres of potential jurisdictional waters of the state occurring within the survey area, approximately 0.65 acre is composed of alluvial fan scrub, approximately 3.21 acres are composed of unvegetated ephemeral dry wash, and approximately 2.76 acres are composed of unvegetated swale.

Purpose of Formal Jurisdictional Delineation

The purpose of performing a formal jurisdictional delineation is to identify the absence or presence (with their types, location, boundaries, and acreages) of potential jurisdictional waters of the U.S. and state (including wetlands) occurring within the project area. Once the presence or absence of potential jurisdictional waters is identified through this formal delineation, the results of this JDLR will be verified by the requisite federal and state agencies (e.g., the U.S. Army Corps of Engineers [USACE], the California Department of Fish and Game [CDFG], and the Regional Water Quality Control Board [RWQCB]) of which these resource agencies will assert their regulatory administration over.⁷ This JDR is intended to support and provide agency documentation in the process of obtaining the following:

- Jurisdictional determination (JD) of “Geographic Isolation” (e.g., nonjurisdictional waters of the U.S.) or, if required, authorization under Section 404 of the Clean Water Act (CWA) (as regulated by USACE and the U.S. Environmental Protection Agency [USEPA]) (as applicable).⁸
- Certification of compliance under Section 401 of the CWA, (as regulated by the RWQCB [as applicable]).⁹

⁴ Jurisdictional waters of the U.S. are under the purview of USACE, with oversight by the U.S. Environmental Protection Agency (USEPA), and the RWQCB (Lahontan Region 6). Jurisdictional waters of the U.S. include jurisdictional waters of the state. Federal and state jurisdictions do overlap but would remain distinct for regulatory administration and permitting purposes.

⁵ Relevant to CDFG and RWQCB permitting only.

⁶ Jurisdictional waters of the state are under the purview of CDFG, and the RWQCB. State jurisdictions often exceed, in lateral extent and area, federal jurisdiction. Therefore, jurisdictional waters of the state include jurisdictional waters of the U.S. (as applicable). Although federal and state jurisdictions do overlap, they would remain distinct for regulatory administration and permitting purposes.

⁷ Verification of the presence or absence of federal waters by USACE will be based on the findings outlined and presented in this JDLR and the Approved JD process (see below).

⁸ 40 Code of Federal Regulations (CFR) Part 230 (provided USACE determines that some or all of these delineated aquatic features occurring within the survey area present a significant nexus with the Pacific Ocean and are thus under federal jurisdiction as administered by USACE [which is anticipated not to be the case]).

⁹ Maintaining water quality standards under the Clean Water Act (CWA) Section 401 would only apply to this project if it has been determined by USACE that some or all of these delineated waters occurring within the survey area are jurisdictional waters of the U.S. and that a discharge of waste would occur to or within jurisdictional waters of the U.S. If the USACE/USEPA determines that there are no jurisdictional waters of the U.S. occurring within the project area, then California Water Code Section 13000 et seq. (Porter-Cologne Water Quality Control Act) would apply to any “discharge of waste” into state waters (see Discussion Section, below).

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- Issuance of Waste Discharge Requirements (WDRs) or waiver under Article 4 of the 1969 Porter-Cologne Water Quality Act (Porter-Cologne) (as regulated by the RWQCB [as applicable]).¹⁰
- California Fish and Game Code (CFG) Chapter 6 Section 1600 et seq. (as regulated by the CDFG [as applicable¹¹]).

Project Location

The RE Barren Ridge 1 project site is located within the southeastern portion of Kern County, California, approximately 7 miles northwest of California City, California (Figures 1 and 2; all figures addressed herein are located in Attachment A). The southeastern portion of the project site is bisected by State Route 14 (SR-14), a transmission corridor easement that extends through the northwest corner of the site. Multiple service roads and trails, including Phillips Road (which is a compacted dirt service road), traverse throughout the project area (Figure 3).

Project Environmental Setting

The project site is located in Antelope Valley. The climate in this region is characterized by an arid environment with low humidity and rainfall, strong fluctuations in daily temperatures, hot summers and cold winters, and generally clear skies. Wind is also a strong feature of this climatic regime, with dry winds in excess of 25 miles per hour in the late winter and early spring. The climatological station closest to the Barren Ridge project site that monitors temperature and precipitation is the Mojave Station (COOP ID: 045756)¹² The mean annual temperatures at the Mojave Station range from a minimum of 49.9 degrees Fahrenheit (°F) to a maximum of 75.8°F. Mean annual rainfall at the Mojave Station is approximately 5.93 inches (WRCC 2011).

The dominant floristic association within the project survey area corresponds to Mojave creosote bush scrub (Holland Code 34100 [Holland 1986]) or the creosote bush-white burr sage scrub Shrubland Alliance (Sawyer and Keeler-Wolf 2008). Small restricted stands of southern alluvial fan scrub¹³ (Holland Code 63330 [Holland 1986]) or the scale broom scrub Shrubland Alliance (Sawyer and Keeler-Wolf 2008) occur within the small ephemeral washes located at the westernmost portion and southeasternmost portion of the project survey area (Figure 4).

The two soil series occurring within the project survey area (Arizo Gravelly Loamy Sand and Cajon Loamy Sand) are within the entisol soil order (Figure 5). Entisols are geologically young soils primarily originating from sediments and alluvium that show little alteration of the

¹⁰ If it is determined by USACE that no federal waters occur within the survey area or if no impact (discharge of dredge or fill) would occur to jurisdictional waters of the U.S. as a result of the proposed project.

¹¹ California Code of Regulations (CCR) Title 14, Division 1.

¹² The Mojave Station is located approximately 11.5 miles south of the project area located at 35.04917/-118.16194 (Decimal Degrees) (WRCC 2011).

¹³ The southern alluvial fan scrub occurring within the project survey area also closely corresponds to Mojave desert wash scrub (Holland Code 63700 [Holland 1986]).

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parent material from which they were derived, and that exhibit little pedogenesis (soil formation process) (Brady 1990). Since entisols are primarily associated with fluvial processes and deposition (and to a lesser extent aeolian deposition), they are by nature dynamic and do not have the ability to develop buried soil horizons, which in turn contribute to in situ development of redoximorphic features when conditions are hydric over the appropriate temporal frame (NRCS 2011a; NRCS 2011b; USDA 1970).

The project area is located within the central-northern portion of the approximately 3,366-square-mile Antelope-Fremont Valleys Watershed (Hydrologic Unit Code: 18090206) and is located within the RWQCB Lahontan Region South Basin (RWQCB Region 6), the approximately 909-square-mile Fremont Hydrologic Unit (625.00) and the approximately 719-square-mile Koehn Hydrologic Area (625.40). There is no hydrologic subarea (Figure 6). There are no water bodies occurring within the project area that are listed on the CWA 303(d) List (impaired water bodies) (RWQCB 2011b).¹⁴

Elevation at the project survey area ranges between approximately 2,700 feet above sea level (asl) along the western portion to approximately 2,400 feet asl along the eastern portion. Topography is generally moderately sloping (ranging between 2% to 15% slopes) and undulating, with an eastern aspect. Based upon nearby elevation changes, located at the southeast extent of the Piute Mountains, an approximately 4,200-foot-high mountain feature called "Barren Ridge" creates an acute topographical divide. Through seasonal rainfall inputs this divide supports semideveloped limited ephemeral dry washes and swale features, which traverse the project survey area.

Specifically, within the project survey area, ephemeral washes are located within the central-west and southeastern portions. The central-west ephemeral wash flows from west to east prior to transforming into swale features. These swales cross under SR-14 via culverts and eventually form a confluence, through unnamed ephemeral tributaries, with the Pine Tree Creek dry wash (which is also an ephemeral wash tributary to Koehn Dry Lake [see below]) (USGS 2011a, 2011b). The southeast wash also forms a confluence with the Pine Tree Creek dry wash. The swales and swale complexes primarily occupy the western portion of the project survey area and flow from west to east and primarily abate into the landscape within the project survey area.¹⁵

Project Description

The proposed project consists of the development of a photovoltaic (PV) solar electrical generation facility. The facility would include PV panels mounted on steel and aluminum

¹⁴ Section 303 of the CWA requires states (and tribes) to adopt water quality standards for all surface waters of the U.S. Additionally, Section 303 of the CWA requires states to identify and make a list of surface water bodies that are polluted (impaired). This list is referred to as the "303(d) List of Water Quality Limited Segments" (SWRCB 2011).

¹⁵ The confluence of the swales with Pine Tree Creek Wash and the abatement of swales into the landscape were confirmed by field delineation and groundtruthing efforts and conforms to the National Hydrography Dataset (NHD) (USGS 2011a) and USGS mapping Survey (USGS) Mojave NE Quadrangle (1973) (USGS 2011b).

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structures; solar substations; equipment pads; and associated infrastructure such as access roads, fencing, and tie-ins to adjacent power lines.

Regulatory Framework

Aquatic environments/habitats occurring within California are regulated under the following federal and state laws:

Federal Regulations

USACE

Pursuant to Section 404 of the CWA, USACE is authorized to regulate any activity that would result in the discharge of dredged or fill material into jurisdictional waters of the U.S., which include those waters listed in 33 Code of Federal Regulations (CFR) Part 328 (Definitions). USACE, with oversight by USEPA, has the principal authority to issue CWA Section 404 Permits.

Pursuant to Section 401 of the CWA, the RWQCB certifies that any discharge into jurisdictional waters of the U.S. will comply with state water quality standards. The RWQCB, as delegated by USEPA, has the principal authority to issue a CWA Section 401 water quality certification or waiver.

State Regulations

CDFG

Pursuant to CFGC Section 1600 et seq. of the CDFG regulates activities of an applicant's project that would *substantially* alter the flow, bed, channel, or bank of streams or lakes unless certain conditions outlined by CDFG are met by the applicant. The limits of CDFG jurisdiction are defined in CFGC Section 1600 et seq. as the "bed, channel, or bank of any river, stream,¹⁶ or lake designated by the department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit."¹⁷ However, in practice, CDFG usually extends its jurisdictional limit and assertion to the top of a bank of a stream, the bank of a lake, or outer edge of the riparian vegetation, whichever is wider.

For desert aquatic features, CDFG provides specific guidance concerning their regulatory administration in California Code of Regulations Title 14 Section 720 (Designation of Waters of Department Interest), which states:

¹⁶ The California Code of Regulations (Title 14 CCR 1.72) defines a stream as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation."

¹⁷ This also includes the habitat upon which they depend on for continued viability (California Fish and Game Code Division 5, Chapter 1, Section 45, and Division 2, Chapter 1, Section 711.2[a], respectively).

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For the purpose of implementing Sections 1601 and 1603 of the Fish and Game Code which requires submission to the department of general plans sufficient to indicate the nature of a project for construction by or on behalf of any person, governmental agency, state or local, and any public utility, of any project which will divert, obstruct or change the natural flow or bed of any river, stream or lake designated by the department, or will use material from the streambeds designated by the department, all rivers, streams, lakes, and streambeds in the State of California, including all rivers, streams and streambeds *which may have intermittent flows of water*, are hereby designated for such purpose (italics added).

RWQCB

Pursuant to Section 13000 et seq. of the California Water Code (CWC) (the 1969 Porter-Cologne), the RWQCB is authorized to regulate any activity that would result in discharges of waste and fill material into waters of the state, including “isolated” waters and wetlands. Waters of the state include any surface or groundwater within the boundaries of the state (CWC Section 13050[e]). Porter-Cologne authorizes the State Water Resources Control Board (SWRCB) to adopt, review, and revise policies for all waters of the state and directs the RWQCB to develop regional Basin Plans. CWC Section 13170 also authorizes the SWRCB to adopt water quality control plans on its own initiative. The Water Quality Control Plan for the Lahontan Region (North and South Basins (RWQCB Region 6) (1995, as amended RWQCB 2011a) is designed to preserve and enhance the quality of water resources. The purpose of the plan is to designate beneficial uses of the surface and ground waters, designate water quality objectives for the reasonable protection of those uses, and establish an implementation plan to achieve the objectives within RWQCB Region 6.

Jurisdictional Delineation Methodology

Presurvey Investigations

Prior to conducting the field delineation for potential jurisdictional waters of the U.S. and state (including wetlands), AECOM ecologist Joshua Zinn reviewed recent biological reports, historical land use of the project area, local and regional climactic data, and areas with topographical configurations and vegetative signatures occurring within the project area that may suggest the potential or presence of jurisdictional waters of the U.S. and state at the time of the field survey. This information was evaluated by consulting the following available sources:

- Biological Resource Assessment RE Kern County Desert Solar (Rincon 2011)
- 7.5-minute U.S. Geological Survey (USGS) Mojave NE Quadrangle (1973)
- 2010 Aerial Maps of the project area (U.S. Department of Agriculture [USDA] National Agriculture Imagery Program [NAIP]) (USDA 2010)
- National Wetlands Inventory (NWI) Interactive Wetlands Mapper (USFWS 2011)

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- California Environmental Resources Evaluation System, California Wetlands Information System Wetland Databases and Inventories (CERES 2011)
- Information Center for the Environment (ICE) (U.C. Davis 2011a)
- NRCS Soils Website (NRCS 2011a)
- Natural Resource Conservation Service Web Soil Survey (NRCS 2011b)
- California Soil Resource Lab (U.C. Davis 2011b)
- Soil Survey of the Antelope Valley Area, California, (USDA 1970)
- California Watershed Portal (Cal/EPA 2011)
- California Watershed Network (CWN 2011)
- Office of Water Programs, Water Quality Planning Tool (CSUS 2011)
- Digital Watershed (USEPA 2011)
- Western Regional Climate Center (WRCC 2011)
- National Weather Service Climate Office (NOAA 2011)

Field Survey for Waters of the U.S.

On April 8, 2011, AECOM ecologist Joshua Zinn conducted a field survey and formal jurisdictional delineation of potentially regulated waters (including wetlands) within the project area.

All acquired field data were obtained by recording the presence (including extents, types, and boundaries) of potential jurisdictional waters using a Trimble XH subfoot accuracy handheld Global Positioning System (GPS) unit. All acquired field data were submitted to AECOM San Diego's geographic information systems (GIS) specialists for post-field processing. Post-field analysis, utilizing Trimble GPS Analyst (Version 2.1) GIS software, to code, define, designate, and edit all acquired GPS field data representing potential jurisdictional waters occurring within the project area, was conducted in tandem by an AECOM GIS specialist and the ecologist who performed the fieldwork.

The formal jurisdictional delineation and assessment of potentially regulated waters (including wetlands) were conducted within the project area and delineated pursuant to the guidance and criteria outlined in and in accordance with the following:

- 33 CFR 328 (Definition of Waters of the United States)
- Regulatory Guidance Letters (RGL) 88-06 and RGL 05-05
- *The Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987)

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- The *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0) (2008 Regional Supplement) (Environmental Laboratory 2008)¹⁸
- *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual* (OHWM Manual) (USACE 2008)¹⁹
- *Distribution of Ordinary High Water Mark (OHWM) Indicators and Their Reliability in Identifying the Limits of "Waters of the United States" in Arid Southwestern Channels* (USACE 2006)
- *Review and Synopsis of Natural and Human Controls on Fluvial Channel Processes in the Arid West* (USACE 2007a)

It was determined through a pre-field survey, field reconnaissance, the formal delineation efforts, and post-field assessment, that the project area does not support hydrophytic vegetation or wetland hydrology. Therefore, the project survey area presents the potential for the presence of, at a minimum, one type of potentially federally regulated water, warranting the formal field delineation/assessment effort utilizing all relevant guidance and procedural documents (see above) for field indicators of all potential nonwetland waters of the U.S. (e.g., drainage features) and to define and identify the jurisdictional lateral extent of the ordinary high water mark (OHWM).²⁰

OHWM indicators were used to delineate the lateral jurisdictional extent of potential nonwetland waters of the U.S. Lateral jurisdictional limits were established for all drainage features/channels occurring within the project survey area in conjunction with field verification for a determination of the OHWM, which provides an acceptable estimate for the lateral jurisdictional limits. The OHWM of the drainage features/channels was identified on the basis of the following:

- Water marks within their respective channel banks established by the fluctuations of water and indicated by physical characteristics such as clear, natural lines impressed on the banks;
- Scour and shelving, local deposition, distinct and indistinct terraces, and changes in the character of soil;
- The presence of developed longitudinal bars within channel margins;

¹⁸ It should be noted that the OHWM Manual and 2008 Regional Supplement are guidance documents for delineating waters in the form of wetlands only. The portion of the delineated project area containing aquatic features utilized 2008 Supplement Data Forms to document the presence/absence of wetland but not the presence of *jurisdictional waters* in the form of wetland and/or ordinary high water mark (OHWM) or "other waters" of the U.S.

¹⁹ Datasheets from this field delineation manual were used as guidance documents for this delineation and are not included in this Jurisdictional Delineation Report.

²⁰ 33 CFR 328.3(e); RGL 88-06; RGL 05-05; and USACE OHWM field manuals (USACE 2006; 2007a; 2008).

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- Type, abundance, and relative age of vegetation and/or destruction of terrestrial vegetation, and the presence and absence of litter and debris within the ephemeral channels;
- Ephemeral channel configuration, estimated streamflow behavior, and other subtle geomorphic evidence indicative of regular flow levels;
- Consideration of precipitation patterns and lack of consistent flow;
- Geomorphic OHWM indicators (e.g., surface relief, cobblebars, benches, crested ripples, particle size distribution, mudcracks, gravel sheets, desert pavement, and dunes); and
- Pattern and location of relictual channels and discontinuous drainage features.

The criteria for frequency and duration of the OHWM have not been defined under the CWA or under any guidance from USACE for field delineators; therefore, identifiable field indicators and characteristics of OHWM, best professional judgment, interpretation of 33 CFR 328.3(e), and appropriate RGLs were applied to determine the potential jurisdictional extent of OHWM within the project survey area. Fluvial channels occurring within the arid western region of the U.S. have recently been described as “ordinary” when they typically correspond to a 5- to 8-year event and typically have an active floodplain with sparse vegetation cover, shifts in soil texture, and occasional alignment with distinctive bed and bank features (USACE 2007a). However, modeling has shown that slightly larger events (5- to 10-year recurrence) may be necessary to engage the active floodplain in arid systems (USACE 2006).

OHWM and the limits of jurisdiction are discussed in the preamble to the USACE November 13, 1986, Final Rule, Regulatory Programs of the Corps of Engineers, Federal Register Volume 51, No. 219, page 41217, which discusses the proper interpretation of 33 CFR Part 328.4 (c)(1) as follows:

Section 328.4: *Limits of Jurisdiction*. Section 328.4 (c)(1) defines the lateral limit of jurisdiction in nontidal waters as the OHWM provided that the jurisdiction is not extended by the presence of wetlands. Therefore, it should be concluded that in the absence of wetlands the upstream limit of Corps jurisdiction also stops when the OHWM is no longer perceptible.

In addition, RGL 88-06, issued June 27, 1988, discussed the OHWM as follows:

OHWM: The OHWM is the physical evidence (shelving, debris lines, etc.) established by normal fluctuations of water level. For rivers and streams, the OHWM is meant to mark the within-channel high flows, not the average annual flood elevation that generally extends beyond the channel.²¹

²¹ Following RGL 05-06 (Expired RGLs). Unless superseded by specific provisions of subsequently issued regulations or RGLs, the guidance provided in RGLs generally remains valid after the expiration date as discussed in the Federal Register (FR) notice on RGLs of March 22, 1999, FR Vol. 64, No. 54, page 13783.

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RGL 05-05, issued December 7, 2005, discusses the field practice and practicability of identifying, determining, and applying the OHWM for nontidal waters under Section 404 of the CWA (and under Sections 9 and 10 of the Rivers and Harbors Act of 1899), and states the following:

Where the physical characteristics are inconclusive, misleading, unreliable, or otherwise not evident, districts may determine OHWM by using other appropriate means that consider the characteristics of the surrounding areas, provided those other means are reliable.²² Such other reliable methods that may be indicative of the OHWM include, but are not limited to, lake and stream gage data, elevation data, spillway height, flood predictions, historic records of water flow, and statistical evidence.

Many stream channels in arid regions are dry for much of the year and, at times, may lack hydrology indicators entirely or exhibit relic OHWM features from exceptional hydrological events. RGL 05-05 further states the following:

When making OHWM determinations, districts should be careful to look at characteristics associated with ordinary high water events, which occur on a regular or frequent basis. Evidence resulting from extraordinary events, including major flooding and storm surges, is not indicative of OHWM. For instance, a litter or wrack line resulting from a 200-year flood event would in most cases not be considered evidence of an OHWM.

Jurisdictional Determination for Potential Waters of the U.S.

All waters delineated within the project area are considered as “Geographically Isolated” waters (e.g., potential nonjurisdictional waters of the U.S. [including final acreages and types]).²³ Prior to an Approved or Preliminary JD performed by USACE (with potential oversight by USEPA depending on the relationship of the delineated feature toward traditionally navigable waters [TNW]). The final JD may remove portions of delineated waters from being considered as jurisdictional and/or may include additional waters not initially considered as jurisdictional during the field delineation (and, thus, not included in this JDLR).

Determining whether the delineated nonwetland waters occurring within the project site are in fact nonjurisdictional and outside the regulatory administration of USACE, including the final acreages and types of jurisdictional waters occurring within the project area, is primarily based on the procedural changes and guidance outlined by the following:

²² In some cases, the physical characteristics may be misleading and would not be reliable for determining the OHWM. For example, water levels or flows may be manipulated by human intervention for power generation or water supply. For such cases, districts should consider using other appropriate means to determine the OHWM (RGL 05-05).

²³ 33 CFR 328.3(a)(3).

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- a. The June 5, 2007, USACE/USEPA Memorandum Re: Jurisdiction Following the U.S. Supreme Court Decision In *Rapanos v. United States* on the interpretation of the *Rapanos* Supreme Court case for making a Jurisdictional Determination (JD) for waters of the U.S. (including wetlands) (USEPA/USACE).^{24,25} This memorandum provides guidance to USEPA and USACE on implementing the *Rapanos* Supreme Court decision.
- b. The June 5, 2007, USEPA/USACE Memorandum for the Field: Coordination on JDs under the CWA in light of *SWANCC* and *Rapanos* Supreme Court decisions.²⁶ This memorandum outlined procedures that replace the coordination procedures contained in the January 2003 USEPA/USACE guidance implementing the *SWANCC* decision (but leaves the remainder of that guidance unaffected) and articulates new coordination procedures for JDs affected by *Rapanos* (USEPA/USACE).²⁷
- c. The May 5, 2007, *U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook* (USACE 2007b) and the Approved JD Form.
- d. The June 5, 2007, USACE RGL 07-01. Practices for Documenting Jurisdiction under CWA Section 404 (and Rivers and Harbors Act CWA Sections 9 & 10) This RGL provides coordination requirements for Approved JDs and outlines a consistent approach for making, documenting, and approving JDs in a timely manner by USACE. This RGL also outlines the differences between Approved JDs and Preliminary JDs.
- e. The January 28, 2008, Coordination Memorandum. This memorandum outlined the process for coordinating JDs with USEPA and USACE.
- f. The June 26, 2008, USACE RGL 08-02. This RGL primarily explains the goals of a Preliminary JD and differences between Approved JDs and Preliminary JDs. This RGL provides guidance on when an Approved JD is required and when a landowner, permit applicant, or other “affected party” can decline to request and obtain an Approved JD and elect to use a Preliminary JD instead.^{28,29} This RGL also outlines that it is the goal of USACE that every JD requested by an affected party should be completed within 60 calendar days of receiving the request.³⁰
- g. The December 2, 2008, USACE Guidance Memorandum Clean Water Act Jurisdiction Following the U.S. Supreme Court’s Decision in *Rapanos v. United*

²⁴ “Clean Water Act Jurisdiction Following the U.S. Supreme Court’s Decision in *Rapanos v. United States & Carabell v. United States*” (June 5, 2007).

²⁵ 126 S. Ct 2208 (2006). This case was consolidated with *Carabell v. United States*.

²⁶ “Memorandum for Director of Civil Works and US EPA Regional Administrators” (June 5, 2007).

²⁷ “Clean Water Act Jurisdiction Following the U.S. Supreme Court’s Decision in *Rapanos v. United States & Carabell v. United States*” (June 5, 2007).

²⁸ Generally, approved JDs should be used to support individual permit applications, but applicants should be made aware of their option to elect to use a Preliminary JD wherever applicants feel doing so is in their best interest (RGL 08-02 [paragraph 4(h)]).

²⁹ RGL 08-02 (paragraph 4) outlines that Preliminary JDs cannot be appealed.

³⁰ RGL 08-02 (paragraphs 4[a] and 5[a])

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States and Carabell v. United States. This guidance incorporates revisions to the USEPA/USACE Memorandum originally issued on June 6, 2007, after careful consideration of public comments received and based on the agencies' experience in implementing the *Rapanos* decision.

- h. The December 2, 2008, USACE Response to Comments "Clean Water Act Jurisdiction Following the Supreme Court's Decision in *Rapanos v. United States & Carabell v. United States* Guidance" issued June 5, 2007.
- i. The December 2, 2008, USACE Questions and Answers Regarding the Revised *Rapanos & Carabell* Guidance.

As of this writing, this jurisdictional delineation presents 0.0 acre of potential jurisdictional waters of the U.S. The final acreages of jurisdictional waters of the U.S., delineated within the project survey area will be based on the JD process per the USACE/USEPA Guidance and procedure for *Rapanos* (see above). For this particular jurisdictional delineation, the formal procedure for obtaining a JD (for a formal determination by the USACE/USEPA of nonjurisdictional waters [e.g., Geographically Isolated waters]) requires the submittal of a completed Approved JD, following federal guidance, as applicable, to the USACE (Los Angeles District, South Coast Branch) (Attachment B).³¹

Based on the results of the delineation and federal guidance outlined above, this JDLR was prepared to provide support to USACE in making a formal determination of all waters delineated within the project survey area that are determined to be isolated waters and thus not regulated by USACE for the following reasons:

1. All ephemeral washes delineated within the project survey area eventually form a confluence with the Pine Tree Creek dry wash, which is a tributary to Koehn Dry Lake. Koehn Dry Lake has been determined by USACE to be an isolated nonjurisdictional water of the U.S. (Attachment C).
2. Abatement into the landscape and the lack of hydrological connectivity of the ephemeral washes into a Relatively Permanent Waterway (RPW) and the lack of hydrological connectivity of the ephemeral washes into a RPW connected by storm drains or culverts.
3. The lack of hydrological connectivity (presenting a significant nexus [SNX] to any TNW) for washes occurring within the disturbance area.
4. The evaluation of the ephemeral washes not presenting an SNX to a TNW includes the volume, duration, and frequency of the flow of water to a TNW.
5. Examination of the flow characteristics and functions of ephemeral washes (which do not support adjacent wetlands) has been determined not to present a significant effect on the chemical, physical, and biological integrity of downstream TNWs.

³¹ The USACE district engineer retains the discretion to use an Approved JD in any other circumstance where he or she determines that it is appropriate given the facts of the particular case (RGL 08-02 [4][c]).

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6. Lack of an ecological connection to TNWs. The ephemeral washes present low to no potential or capacity to transfer nutrients and organic carbon (vital to support downstream foodwebs [e.g., macroinvertebrates] present in headwater streams or to convert carbon in leaf litter making it available to species downstream), nor do these ephemeral washes present habitat services such as providing spawning areas for recreationally or commercially important species in downstream waters.
7. Ephemeral washes delineated within the project survey area abate into the landscape and become both continuous and discontinuous swale features.
8. The swales and swale complexes occurring within the project survey area, while unvegetated, occur within the larger Mojave creosote bush scrub habitat. The swales are generally poorly defined surface aquatic features characterized by low volume, infrequent or short-duration flow and are usually shallow topographical features in the landscape that *may* convey water across upland areas during and following uncommon large storm events. Swales are generally not considered jurisdictional waters of the U.S. because they lack an identifiable OHWM, are not tributaries themselves, or they do not have a significant nexus to TNWs (e.g., the Pacific Ocean).³²

Field Survey for Waters of the State

Potential jurisdictional waters of the state were assessed and delineated within the project area pursuant to CFGC Section 1600 et seq. (and other relevant guidance and regulatory applicability [see above]). Boundaries for ephemeral wash and southern alluvial fan scrub (xeric riparian) waters of the state were determined (and recorded) by the presence of shelving and/or scour resulting in an established bank, bed, or channel of an ephemeral wash feature and its associated xeric riparian areas (where applicable). In specific areas within the small underdeveloped ephemeral wash channel, where evidence of shelving or scour was absent, subsurface investigations were undertaken to identify established channel banks. Although some portions of the ephemeral wash presented shelving with smooth-toe transitions, these features are composed of friable sand and are evidence of recent sand deposition (both from fluvial- and aeolian-related events) covering the bank features.

Based on the CFGC Section 1600 et seq. definition, relevant state regulations (see above), CDFG regulatory practice, and past CDFG field guidance; swale features (individual and complexes) occurring within the project area were also noted, delineated, and recorded as potential jurisdictional waters of the state.³³

For wetlands and other aquatic habitats occurring in California, CDFG relies on the U.S. Fish and Wildlife Service (USFWS) wetland definition and classification system, which is

³² Even when not considered a jurisdictional water of the U.S. or state, swales may still contribute to a surface hydrologic connection between an upland and aquatic features. However, such hydrological connections are dependent on large, uncommon storm events.

³³ Swales are microtopographic features that convey surface water in low volume and short duration (hours to days [usually in sheetflow]) and are commonly associated with riverine features (Hauer and Lamberti 2007).

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based on *Classification of Wetland and Deepwater Habitats of the United States* (Cowardin et al. 1979). Therefore, jurisdictional wetland delineations within the Barren Ridge site were conducted based on the one-parameter³⁴ method outlined in CDFG/USFWS guidance documents and classification manual(s) to define presence and state jurisdictional extent.³⁵ The Cowardin method requires diligence to avoid false positive conclusions (e.g., concluding that an area with no transitional relation to the aquatic system is a wetland based on presence of vegetation equally likely to be found in wetland or nonwetland circumstances).³⁶

Results

The findings for each potential jurisdictional water were recorded during the formal field delineation within the project survey area (Table 1).

Jurisdictional Waters of the U.S.

The extent and distribution of the collective area of potential jurisdictional waters of the U.S. occurring within the project area is 0.0 acre (Figure 7; see above and also Footnote 2 pertaining to the JD process). Jurisdictional waters of the U.S. are listed for each aquatic habitat in Table 1. Aquatic-related habitats have been classified according to both the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) and *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). Both classification systems incorporate a hierarchical structure of systems, subsystems, and classes to identify vegetation communities, wetland habitat types, and cover types. The vegetation occurring within the project area is typically associated with desert scrub ecosystems occurring within this vicinity of California.

Jurisdictional Waters of the State

The extent and distribution of the collective area of potential jurisdictional waters of the state occurring within the project area is approximately 6.62 acres (Figure 7). Jurisdictional waters of the state are also listed for each aquatic habitat in Table 1.

Photo locations and representative photos taken during the field delineation are included in Figures 8 through 13.

³⁴ For federal jurisdictional waters, a determination for the presence of wetland is based on the presence of three parameters occurring simultaneously at the area of investigation and study: (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Therefore, for state-defined wetlands, only one of these three wetland criteria is required to be present for the state to consider an aquatic feature a wetland.

³⁵ It should be noted that CDFG does not currently have a delineation manual for jurisdictional waters of the state (including wetlands).

³⁶ Although aquatic features can be delineated and defined as wetlands under the Cowardin Classification System, they are not necessarily *jurisdictional* waters of the U.S. or state.

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Table 1
Summary of Potential Jurisdictional Waters of the U.S. and State
Occurring within the Project Area^{a,b}

Type of Potential Jurisdictional Waters	Type of Habitat (Holland 1986)	Type of Habitat (Cowardin et al. 1979)	Acres	Linear Feet	Regulatory Authority
Potential Jurisdictional Waters of the U.S.					
N/A	N/A	N/A	N/A	N/A	N/A
<i>Subtotal Potential Waters of the U.S.</i>			<i>0.0</i>	<i>0.0</i>	
Potential Jurisdictional Waters of the State					
Xeric Riparian Extent	Southern Alluvial Fan Scrub Channel (Holland Code 63330)	Palustrine; Scrub/Shrub, Broad-Leaved, Evergreen, Intermittently Flooded/ Temporary, Well Drained/Fresh, Alkaline	0.65	155	CDFG and RWQCB
Unvegetated Ephemeral Dry Wash	Nonvegetated Floodplain or Channel (Holland Code 64200)	Riverine; Intermittent; Unconsolidated Bottom, Sand, Intermittently Flooded, Alkaline	3.21	1,008	CDFG and RWQCB
Unvegetated Swale	Mojave Creosote Bush Scrub (Holland Code 34100) ^c	Mojave Creosote Bush Scrub is not considered an aquatic habitat by Cowardin ^d	2.76	20,015	CDFG and RWQCB
<i>Subtotal Potential Waters of the State</i>			<i>6.62</i>	<i>21,178</i>	
Grand Total Jurisdictional Waters			6.62	21,178	

^a Based on the total area of jurisdictional waters delineated within the Barren Ridge site.
^b Acreage of all jurisdictional waters was determined by using the GIS program ArcGIS. All acreages are rounded to the nearest hundredth after summation, which may account for minor rounding error.
^c Although swales are unvegetated they are within the larger Mojave creosote bush scrub habitat.
^d Swales are microtopographic features that convey surface water in low volume and short duration (hours to days [usually in sheetflow]) and are commonly associated with riverine features (Hauer and Lamberti 2007).

Discussion

Avoidance and Minimization of Potential Impacts

If the proposed project will result in impacts to jurisdictional waters of the state then avoidance and minimization measures to jurisdictional waters of the state will require implementation through project design and will be employed during the construction process to avoid and minimize potential impacts to jurisdictional aquatic features to the greatest practicable extent feasible.

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Potential Impacts and Requisite Permitting

If it is determined that anticipated unavoidable impacts (permanent and temporary) will occur to jurisdictional waters of state as a result of this proposed project then issuance of the following state permits will be required.

Requisite Permitting

CFGC Section 1600 et seq. Permitting

By submitting a Notification for a Lake or Streambed Alteration Agreement (SAA) to the appropriate CFGC field office (South Coast Region), CFGC will ascertain which (or all) of the delineated aquatic features occurring within the project area will be under its regulatory administration. The SAA Notification process also allows CFGC to determine whether aquatic features will become “substantially adversely affected” under CFGC Section 1602(a), and to provide guidance on requisite and appropriate compensatory mitigation for any unavoidable impacts to these aquatic resources as a result of the proposed project.

As a requirement of the SAA, the development of a conceptual mitigation, maintenance, and monitoring plan would be required for creation, restoration, or enhancement mitigation, which is a requirement of the SAA. This plan should include details regarding site preparation (e.g., grading), planting specifications, and irrigation design, as well as maintenance and monitoring procedures. The plan should outline yearly success criteria and remedial measures should the mitigation effort fall short of the success criteria. Any appropriate mitigation that cannot be achieved through on-site creation-restoration and enhancement should be performed off-site, typically per agency guidance within the same hydrologic unit (watershed) where impacts occur. Alternatively, the mitigation obligations may also be satisfied by participating in a fee-based mitigation program through an approved mitigation bank. Any proposed mitigation is subject to the resource agencies’ review and discretion; thus, the mitigation obligations for the impacts to jurisdictional aquatic habitats may change from those recommended here.

Project compliance with state policy, i.e., California Wetlands Conservation Policy (EO W-59-93), provides for “no overall net loss” of wetlands and achieving a “long-term net gain in the quantity, quality, and permanence of wetlands acreage and values in California.” Therefore, a minimum 1:1 mitigation ratio would be applied toward any impacts to jurisdictional waters of the state. Project-specific mitigation ratios would be developed in consultation with CFGC.³⁷

CWC Section 13000 et seq. (Porter-Cologne) Waste Discharge Requirement (or Waiver)

The RWQCB regulates the “discharge of waste” to waters of the state.³⁸ The definition of the waters of the state is broader than that for waters of the U.S. in that all waters are

³⁷ Many desert aquatic resources, such as southern alluvial fan scrub, lack the characteristic features of a wetland but still perform wetland functions (USACE 2007).

³⁸ “Waters of the state” is defined in CWC Section 13050(e).

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considered to be a water of the state regardless of circumstances or condition. The term “discharge of waste” is also broadly defined in Porter-Cologne, such that discharges of waste include fill, any material resulting from human activity, or any other “discharge” that may directly or indirectly impact waters of the state. As conditional to this permit, best management practices (BMPs) will be required to ensure compliance with state water quality standards. BMPs can also be specified by the RWQCB, based on the report of waste discharge (ROWD) (filed with the appropriate RWQCB by the applicant), which is authorized to regulate discharges of waste and fill material to waters of the state (including “isolated” waters and wetlands), through the issuance of a WDR.³⁹ WDRs are commonly issued based on the threshold of allowable pollutants into waters of the state.

Under Porter-Cologne, all applicants proposing to discharge waste that could affect the quality of waters of the state, other than into a community sewer system, shall file with the appropriate RWQCB an ROWD containing such information and data as may be required by the RWQCB.⁴⁰ The RWQCB will then respond to the ROWD by issuing a WDR in a public hearing, or by waiving WDRs (with or without conditions) for that proposed discharge. The RWQCB has a statutory obligation to prescribe WDRs, except where the RWQCB finds that a waiver (with or without conditions) of WDRs for a specific type of discharge is in the public interest.⁴¹ Therefore, all parties proposing to discharge waste that could affect waters of the state, but do not affect federal waters (which requires authorization under CWA Section 404 and certification under CWA Section 401) must file an ROWD with the appropriate RWQCB prior to issuance of the WDR.⁴² The ROWD/WDR is also subject to the resource agencies’ review and discretion for BMPs and mitigation.

Sincerely,



Joshua Zinn
Ecologist and Regulatory Specialist

cc: Charity Wagner, Urban Planning Partners

Attachment A – Figures:

- Figure 1 – Regional Map
- Figure 2 – Project Vicinity
- Figure 3 – Survey Area
- Figure 4 – Vegetation Communities
- Figure 5 – Soils
- Figure 6 – Watersheds
- Figure 7 – Potential Jurisdictional Waters of the State
- Figure 8 – Photopoint Locations

³⁹ CWC Section 13263.

⁴⁰ CWC Section 13260(a).

⁴¹ CWC Section 13269.

⁴² CWC Section 13260.



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Figure 9 – Representative Photographs 1 and 2
Figure 10 – Representative Photographs 3 and 4
Figure 11 – Representative Photographs 5 and 6
Figure 12 – Representative Photographs 7 and 8
Figure 13 – Representative Photographs 9 and 10

Attachment B – Approved JD Form

Attachment C – Approved JD Letter for Beacon Solar, LLC

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