

Appendix 3.4-3

**Aquatic Resources Delineation Report Addendum for
the Las Camas Solar Development Project**

Memorandum

To:	Patrick Cousineau, EDP Renewables North America LLC
From:	Sean O'Brien, Biologist, ICF
Date:	June 6, 2023
Re:	Aquatic Resources Delineation Report Addendum for the Las Camas Solar Development Project

On November 10, 2022, ICF conducted an aquatic resource delineation of potential non-wetland waters and wetlands aquatic resources on the Pacific Gas & Electric (PG&E) substation modification area for the Las Camas Solar Development project (Project). This addendum addresses the new delineation area that was added since the original Aquatics Resources Delineation Report (ARDR) was prepared in September 2022 by ICF. The new delineation area is comprised of the approximately 23-acre PG&E substation modification area west of the delineation area in the original ARDR and proposed gen tie route from the solar development to the PG&E substation.

The purpose of this delineation is to identify the extent of potentially jurisdictional federal and state aquatic resources within and adjacent to the project site to support federal and state regulatory permitting processes pursuant to Sections 401 and 404 of the Clean Water Act (CWA) (33 United States Code (U.S.C.) §1251 et seq. [1972]), as well as Section 13260 of the Porter-Cologne Act, and Section 1600 et seq. of the CFG Code.

The information and results presented herein document the investigation, best professional judgment, and conclusions of ICF aquatic resource delineators. It is correct and complete to the best of our knowledge. However, all jurisdictional delineations (JD) should be considered preliminary until reviewed and approved by the regulatory agencies.

Project Location

The substation modification area is located in the city of Gustine, Merced County, California (see Figure 1, Regional Map). It is approximately 600 feet west of the northwest corner of the original delineation area described in the original Las Camas Solar Development Aquatic Resources Delineation Report (ICF 2022). A proposed gen tie would connect the substation modification area to the solar facility (see Figure 2, Vicinity Map). The substation modification area occurs on the San

Luis Dam U.S. Geological Survey (USGS) 7.5-minute quadrangle (Figure 2) in Township 10 South, Range 9 East, in Section 19.

The approximately 23-acre substation delineation area is bordered by San Luis Drive to the east, the Los Banos Substation to the north and west, and open space to the south.

Project Description

The Project proponent, EDPR CA Solar Park III LLC (Proponent), a wholly owned subsidiary of EDPR CA Solar Park III LLC, North America LLC., is proposing to develop the approximately 1,740-acre Las Camas Solar Development Project site for the purposes of solar energy development. As part of the solar development project, a gen tie and modifications to the existing PG&E substation that would connect the solar facility to the electrical grid, is required.

Methods

Sources of Information

Prior to the field delineation, the following resources were reviewed to identify potential aquatic resources in the delineation area.

- Aerial imagery (Google Earth 2022) (Figure 2)
- USGS 7.5-minute San Luis Dam topographic quadrangle map (USGS 2021) (Figure 1)
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) (USFWS 2022) data for the delineation area (Appendix E, Figure 1)
- Watershed maps available from National Hydrography Dataset (NHD) (USGS 2022) (Appendix E, Figure 2)
- Federal Emergency Management Agency (FEMA) 100-year floodplain maps (FEMA 2022)
- U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) database (USDA/NRCS 2022) for the delineation area (Appendix G)
- Biological data on the substation modification area collected on April 21, 2022, during a general biological survey.

The above resources were used to identify approximate locations of potential aquatic resources subject to regulation by the USACE, SWRCB/RWQCB, and the CDFW within the delineation area.

In addition to the regionally available data (e.g., NWI, NHD, and FEMA) the approximate location and extent of potential aquatic resources were identified on field maps based on changes in vegetation type and cover, topographic changes, and visible drainage patterns.

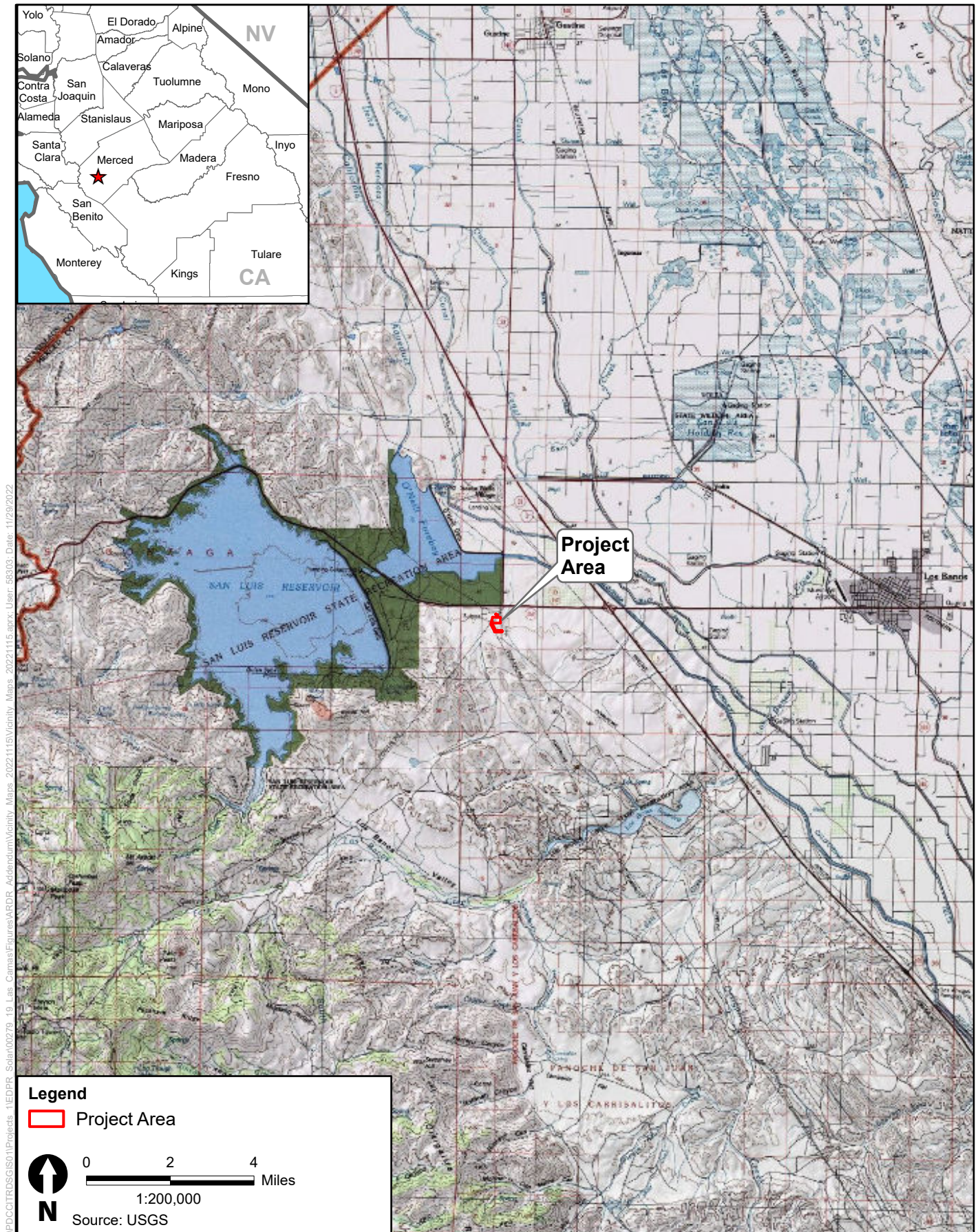


Figure 1
Regional Map

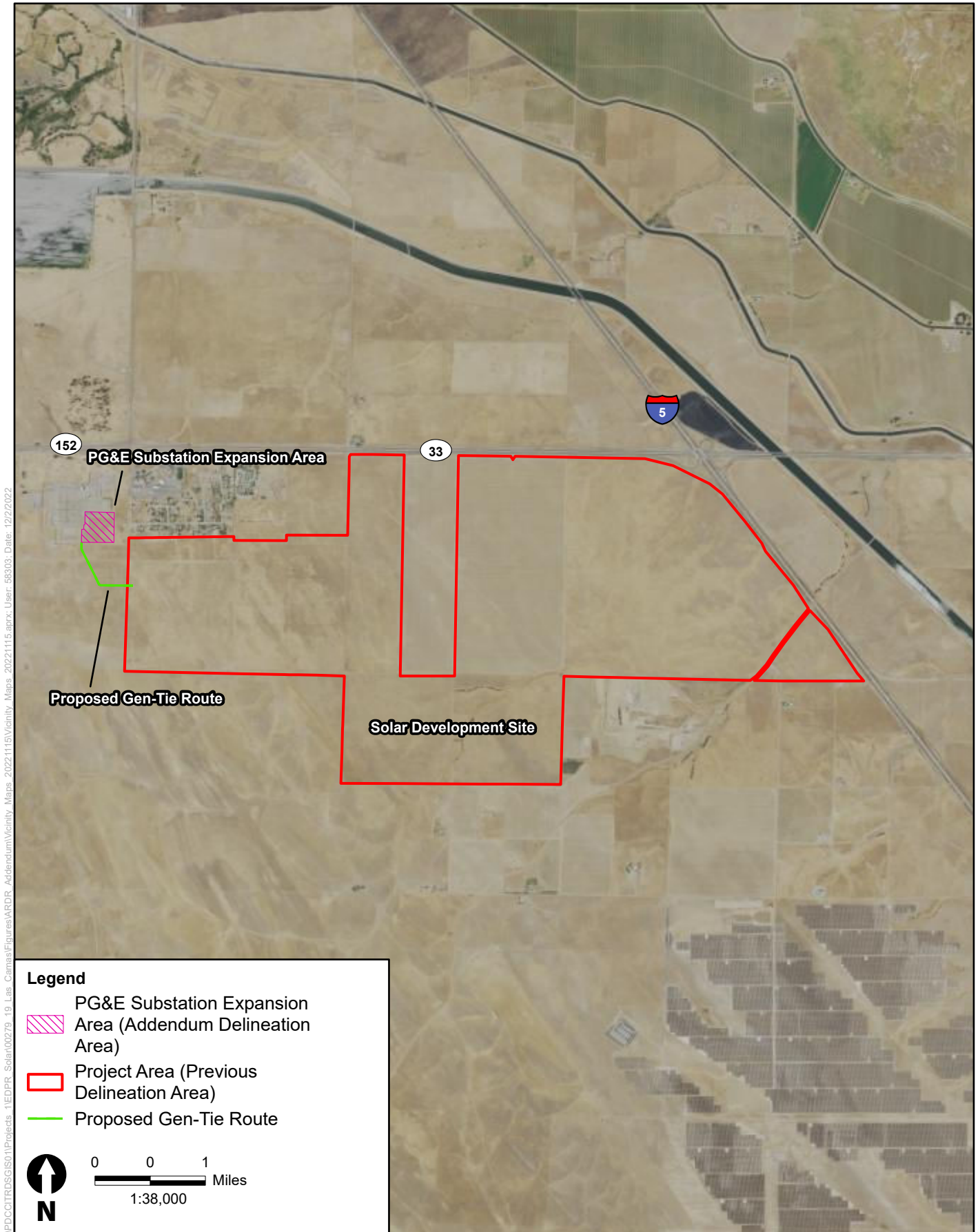


Figure 2A
Vicinity Map

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Figure 2B
Vicinity Map

Field Delineation and Mapping

On November 10, 2022, ICF biologist Sean O'Brien conducted an aquatic resource delineation within the new delineation area located at the substation modification area and gen tie location. A 100-foot buffer was used on each side of the gen tie center line when conducting the delineation and mapping.

The maps in this report were generated from field measurements, aerial photography, and existing geospatial datasets (Appendix E). Locations within the survey area were identified using an iPad and Trimble R1 external antenna with locational accuracy typically less than 2 horizontal meters. Wetland and OHWM determination data forms are included in this report to document the aquatic resources identified during the survey (Appendix C). A list of plant species observed within the survey area was compiled, and the scientific name and wetland indicator status of each species, as identified using *The Jepson Manual: Vascular Plants of California* (Baldwin et al. 2012; Jepson Flora Project 2022) and the *National Wetland Plant List* (USACE 2020), are provided in Appendix F.

Representative photographs were taken of all potential wetland and non-wetland waters at each location within the survey area (Appendix B). Supporting Information (National Wetland Inventory Map and Custom Soil Resource Report from the original ARDR (ICF 2022)) is provided in Appendix E and G.

The below subsections provide the aquatic resource delineation methods used per applicable regulatory agency guidance.

U.S. Army Corps of Engineers

The regulation defining the extent of WOTUS has changed a number of times since the enactment of the CWA. On January 18, 2023, the EPA and the USACE published the final rule with a revised definition of WOTUS in the Federal Register (FR doc. 2022-28595), became effective March 20, 2023. This Rule replaces the pre-2015 definition of WOTUS, which was recently in effect starting on September 2, 2021. The 2023 WOTUS Rule establishes the scope of USACE and EPA authority under the CWA, and includes five categories of jurisdictional WOTUS in paragraph (a) and eight categories of exclusions or non-jurisdictional aquatic features in paragraph (b).

Paragraph a of the 2023 WOTUS Rule defines WOTUS for the purposes of the CWA as:

- (1) Traditional navigable waters, the territorial seas, and interstate waters;
- (2) Impoundments of waters of the United States;
- (3) Tributaries of traditional navigable waters, the territorial seas, interstate waters, or paragraph (a)(2) impoundments when the tributaries meet either the relatively permanent standard or the significant nexus standard;
- (4) Jurisdictional adjacent wetlands – (1) wetlands adjacent to traditional navigable waters, the territorial seas, or interstate waters; (2) wetlands adjacent to and with a continuous surface connection to relatively permanent paragraph (a)(2) impoundments or jurisdictional tributaries when the jurisdictional tributaries meet the relatively permanent standard; or (3) wetlands adjacent to paragraph (a)(2) impoundments or jurisdictional tributaries when the wetlands meet the significant nexus standard. And

- (5) Intrastate lakes and ponds, streams, or wetlands not identified in “paragraphs (a)(1) through (4)” above that meet either the relatively permanent standard or the significant nexus standard.

The categories of exclusions, or non-jurisdictional aquatic features are listed in paragraph (b) of the new rule. Under this rule, where a feature satisfies the terms of an exclusion, it is excluded from jurisdiction even where the feature would otherwise be jurisdictional under paragraphs (a)(2) through (5) of this rule. Paragraph (a)(1) waters are not subject to the exclusions. The exclusions, or non-jurisdictional waters include:

- (1) Waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the Clean Water Act;
- (2) Prior converted cropland designated by the Secretary of Agriculture. The exclusion would cease upon a change of use, which means that the area is no longer available for the production of agricultural commodities. Notwithstanding the determination of an area’s status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA;
- (3) Ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water;
- (4) Artificially irrigated areas that would revert to dry land if the irrigation ceased;
- (5) Artificial lakes or ponds created by excavating or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing;
- (6) Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating or diking dry land to retain water for primarily aesthetic reasons;
- (7) Waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of WOTUS; and
 - Swales and erosional features (e.g., gullies, small washes) characterized by low volume, infrequent, or short duration flow.

On May 25, 2023, the Supreme Court issued its decision in *Sackett v. EPA*, adopting a new definition of WOTUS. The Court’s holding is summarized as follows:

- “Waters” encompasses only those relatively permanent, standing or continuously flowing bodies of water forming geographical features that are described in ordinary parlance as streams, oceans, rivers, and lakes.
- To qualify as WOTUS, waters must also be connected to traditional navigable waters.
- The CWA extends only to those wetlands that are as a practical matter indistinguishable from WOTUS, meaning that the wetland has a continuous surface connection with that water, making it difficult to determine where the water ends and the wetland begins.
- The significant nexus test is no longer applicable.

Consistent with the Court's decision in *Sackett*, this report focuses on whether aquatic features at the project site are relatively permanent and sufficiently connected to traditional navigable waters.

Non-wetland Waters Delineation Methods

If no adjacent wetlands are present, the lateral extent of federal jurisdiction over non-tidal waters of the U.S. is defined by the ordinary high water mark (OHWM). The OHWM is defined in the pre-2015 regulations as "...the line on the [watercourse banks] 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 soil; destruction of terrestrial vegetation; the presence of litter and debris; or other appropriate means that consider the characteristics of the surrounding areas" (former 33 C.F.R. 328). The lateral limits of non-wetland waters of the U.S. were mapped using guidance provided in A Field Guide to the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States: A Determination Manual (USACE 2008), Ordinary High Water Flows and the Stage-Discharge Relationship in the Arid West Region (USACE 2011), and Regulatory Guidance Letter 05-05. OHWM Datasheets for representative non-wetland water features located within the survey area were completed and are provided in Appendix C and the location of each OHWM sample point is depicted in Appendix A. The OHWM Datasheet was completed following guidance provided in the Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (USACE 2010). Common indicators of OHWM include changes in average sediment texture, break in slope, changes in vegetation species, and/or changes in vegetation cover.

Where ephemeral and intermittent non-wetland waters were encountered, the active floodplain was identified as the lateral limit of the watercourse.

Wetland Delineation Methods

Section 404 Wetland WOTUS consist of areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

The delineation was conducted according to the routine onsite determination methods described in the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987), the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). The Field Indicators of Hydric Soils in the United States, Version 8.2. (U.S. Department of Agriculture and National Resources Conservation Service 2018) was used to identify hydric soil, vascular plants were identified using The Jepson eFlora (Jepson Flora Project 2022), and nomenclature and associated wetland ratings follow The National Wetland Plant List (USACE 2020). Wetland determination data forms for representative wetland features located within the survey area were completed and are provided in Appendix D and the location of each wetland sample point is depicted in Appendix A.

State Water Resources Control Board / Regional Water Quality Control Board

Non-wetland Waters Delineation Methods

In California, the State Water Regional Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs) regulate activities within state and federal waters under Section 401 of the CWA and the Porter-Cologne Water Quality Act (Porter-Cologne Act). The SWRCB defines waters of the State (WoS) broadly to include “any surface water or groundwater, including saline waters, within the boundaries of the state.” The SWRCB and RWQCBs do not have regulations or guidance defining the extent of non-wetland WoS. The lateral limits of potential non-wetland WoS were mapped using the same methods for determining OHWM as described above in Section 2.2.1 because the Central Valley RWQCB has accepted this method for delineating WoS.

Wetland Delineation

On April 2, 2019, the SWRCB adopted the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to waters of the State (Procedures; SWRCB 2019). The Procedures became effective on May 28, 2020 and define “wetland” as follows:

An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area’s vegetation is dominated by hydrophytes or the area lacks vegetation.

The Procedures provide that natural wetlands, wetlands created by modification of surface WoS, and certain artificial wetlands are considered WoS. The Procedures provide that RWQCBs shall rely on a wetland delineation from a final ARDR verified by the USACE to determine the extent of wetland WoS where USACE has verified such a delineation. If any potential wetland areas have not been delineated in a final ARDR verified by the USACE, the limits of such potential wetland WoS shall be identified using the same wetland delineation methods per the USACE as described in Section 2.2.1, except that a lack of vegetation (i.e., less than 5 percent areal coverage of plants during the peak of the growing season) does not preclude an area from meeting the definition of a wetland when hydric soils and wetland hydrology are present (SWRCB 2019).

California Department of Fish and Wildlife

Pursuant to Sections 1600 et. al. of the California Fish and Game Code, California Department of Fish and Wildlife (CDFW) regulates any activity that would substantially divert or obstruct the natural flow—or substantially change or use any material from the bed, channel, or bank—of any river, stream, or lake. CDFW jurisdiction relies on the presence of a lake and/or streambed and associated riparian habitat. CDFW regulation under California Fish and Game Code Section 1602 requires that all lakes and streams on a project site are identified in order to assess the proposed activity’s potential impacts on these aquatic resources.

Lake, Streambed, and Associated Riparian Habitat Delineation

CDFW defines lakes as “natural lakes or man-made reservoirs” (14 California Code of Regulations [CCR] § 1.56). The historic hydrologic regime is defined as circa 1800 to the present. In addition, streams include “watercourses having a surface or subsurface flow that supports riparian a stream vegetation” (14 CCR § 1.72). Riparian habitat refers to vegetation and habitat associated with a stream. CDFW-jurisdictional habitat includes all riparian shrub or tree canopy that may extend

beyond the banks of a stream. Isolated riparian habitat (i.e., where riparian vegetation does not appear associated with channel) is not considered CDFW-jurisdictional.

Historical court cases have further extended CDFW jurisdiction to include watercourses that seemingly disappear but re-emerge elsewhere. Under the CDFW definition, a watercourse need not exhibit evidence of an OHWM to be claimed as jurisdictional. Water features such as vernal pools and other seasonal swales—where the defined bed and bank are absent and the feature is not contiguous or closely adjacent to other jurisdictional features—are generally not asserted to fall within CDFW jurisdiction under Section 1600. CDFW generally does not assert jurisdiction over human-made water bodies unless they are located where such natural features were previously located or where they are contiguous with existing or prior natural jurisdictional areas.

Based on the above, potential CDFW-jurisdictional aquatic resources included lakes and/or streambeds and their associated riparian habitats. The lateral extent of potential CDFW jurisdiction is interpreted to be “bank to bank” for a streambed or to the “dripline” of riparian habitat and/or wetland boundary if present.

Environmental Setting

Climate and Precipitation

This region in which the substation modification project is located in generally reflects a Mediterranean climate with cool, wet winters and warm, dry summers. It occurs along the boundary of warm temperate (Csa, eastern portions) and temperate semiarid (BSk, western portion according to the updated Koppen-Geiger Climate Classification Map) (Kottek et al. 2006). This indicates potential evaporation and precipitation may be near equal (Bailey 2014). The arid conditions of the region are due in part to rain shadow effect where moist air coming from the Pacific Ocean rises once it reaches the mountains of the California coast range where the water vapor condenses and falls as precipitation and results in arid conditions, or a rain shadow, on the leeward side of the mountains.

The closest weather station to the Project with sufficient data is in a Remote Automatic Weather Station (RAWS) in Los Banos, California. The RAWS is located just under 1.8 miles west of the Project area at an elevation of approximately 350 feet above mean sea level (amsl) (WRCC 2022). A summary of the analysis of 15- years of the RAWS data (from 2008 to 2022) is provided. The annual mean high temperature is 75.1 degrees Fahrenheit (°F), with average daily highs ranging from 57.1 °F in January to 93.5 °F in July. The annual mean low temperature is 54.2 °F, with average daily lows ranging from 43.2 °F in December to 66.0 °F in July and August. The 15-year average annual precipitation is 7.93 inches, mostly falling during October through April with December and January having the most significant precipitation.

As of October 31, 2022, precipitation for the Project vicinity is recorded at 5.43 inches for the past 12 months; below the 15-year average of 8.25 inches (WRCC 2022). Ongoing extreme drought conditions are present in the Project region (National Drought Mitigation Center 2022), with the

2021 and 2022 water-years also having below average precipitation at 4.92 and 7.22 inches, respectively (WRCC 2022).

The timing of fieldwork was conducive to accurately delineating WOTUS/WoS at the Project. Precipitation was below average. However, wetland hydrology indicators were still apparent and discernable where present.

Table 1. 2008-2022 Monthly Total Precipitation for the Los Banos, CA Weather Station

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2022	0	0	0.75	0.53	0.03	0	0	0.02	0.02	0	-	-	1.35
2021	3.61	0.14	0.49	0	0	0	0	0	0.01	0.79	0.31	2.98	8.33
2020	0.37	0	1.13	0.76	0.14	0	0	0	0	0	0.12	0.55	3.07
2019	1.45	3.31	1.19	0.04	1.09	0	0	0	0	0	0.76	4.06	11.9
2018	2.25	0.17	1.76	0.63	0	0	0	0	0	0	1.49	1.04	7.34
2017	5.55	3.63	1.16	0.85	0.08	0	0	0	0.09	0.05	0.47	0.1	11.98
2016	3.89	0.16	2.06	1.52	1.02	0	0	0	0	2.06	0.45	1.15	12.31
2015	0.03	1.06	0.12	0.32	0.42	0.01	0	0.02	0	0.19	2.6	0.9	5.67
2014	0.45	1.84	1.2	0.86	0	0	0	0	0.07	0.86	0.44	5.32	11.04
2013	0.74	0.15	0.27	0.1	0	0	0	0	0	0	0.34	0.01	1.61
2012	0.84	0.09	1.56	0.87	0	0.18	0	0	0.01	0.07	1.06	2.92	7.6
2011	1.83	1.8	1.2	0.04	0.36	0.37	0	0	0	0.66	1.25	0.14	7.65
2010	2.61	1.64	0.47	1.93	0.25	0	0	0	0	0.77	1.19	2.9	11.76
2009	1.8	1.77	0.37	0.06	0.33	0.11	0	0	0	1.72	0.08	1.55	7.79
2008	3.65	1.74	0.01	0.01	0.08	0	0	0	0	0.22	0.3	1.5	7.51
Ave	1.94	1.17	0.92	0.57	0.25	0.04	0.00	0.00	0.01	0.49	0.78	1.79	8.25

Western Regional Climate Center (WRCC). 2022. RAWS USA Climate Archive. Los Banos, CA Weather Station. Available at: <https://raws.dri.edu/index.html>

Topography

The 23-acre substation modification delineation area is situated within the low rolling hills off the eastern edge of the Diablo Range. Elevation is approximately 310 above mean sea level.

Hydrology

The majority of the substation modification delineation area occurs in the San Luis Holding Reservoir subwatershed (hydrologic unit code 12 [HUC] 180400011901), which is located in the Lower Los Banos Creek watershed (HUC10: 1804000119). The western portion of the delineation area occurs in the O'Neill Forebay-San Luis Creek subwatershed (HUC 12:180400011203) and in the San Luis Creek watershed (HUC10:1804000112). The entire delineation area is within the Middle San Joaquin-Lower Chowchilla watershed (HUC8: 18040001) (Databasin 2022).

The substation modification delineation area occurs in the following Cal watersheds: Delta-Mendota Canal hydrologic unit (HU) and the Los Banos hydrologic area (HA) (541.20) (CVRWQCB 2019)

The sources of hydrology in the delineation area are direct precipitation and surface runoff from the substation facility. WW-1 also receives artificial hydrologic inputs from a leaky pipe. The drainages flow south and east, outside of the substation into the low southeastern area where it sheet flows and dissipates. These features do not connect with any other off-site feature; thus, do not have connectivity to waters of the U.S.

The delineation area is within flood Zone D, Area of Undetermined Flood Hazard (FEMA 2020).

Soils

Soil map units in the survey area are listed in Table 2, below. The major soil map units within the delineation area are all well drained and non are considered hydric in Merced County (NRCS 2022). Additional information on the soils, including a soil map, is provided in Appendix G.

Table 2, Soil Map Units in Survey Area

Soil Map Unit	Map Symbol	Major Component (M) or Inclusion (I)	Landform	Drainage Class	Hydric Criteria	Percent of Survey Area
Ballvar loam, 2 to 8 percent slopes	131	Ballvar (M) Oneill, 8 to 15% slopes (I) Unnamed (I)	Alluvial Fans	Well drained	No	97.7%
Damluis clay loam, 2 to 8 percent slopes	162	Damluis (M) Herito (I) Stanislaus (I) Oneill (I) Damluis, 0 to 2% slopes (I)	Terraces	Well drained	No	2.3%

Vegetation

The substation modification area occurs within the Great Valley region and the San Joaquin geographic subdivision of the California Floristic Province (Baldwin et al. 2012) and within the USACE Arid West region. Wetland indicator status for each plant species reflects the Arid West National Wetlands Plant List and uses the abbreviations provided in Table 2 (USACE 2020).

The substation modification area and gen tie route consisted primarily of upland, non-native annual grassland habitat. This habitat was dominated by upland, non-native annual grasses including brome grass (*Bromus diandrus*) (UPL), red brome (*Bromus rubens*) (UPL), slender oat (*Avena barbata*) (UPL). Subdominants were mostly non-native, upland, herbs, including wild mustard (*Hirschfeldia incana*) (UPL), tumbleweed (*Salsola tragus*) (FACU), and Maltese star thistle (*Centaurea melitensis*) (UPL). This habitat lacked both hydric soil and wetland hydrology indicators.

Vegetation within features assessed for jurisdiction (i.e., wetland, non-wetland, and depressional area) are further discussed under Section 4.0 Results.

4.0 Results

The substation modification delineation area contains two features (WW-1 and NWW-1) (please see Appendix A, Figures 1 and 2). A description of these features are provided below and representative site photographs are provided in Appendix B. An additional area identified during pre-field investigations as a potential wetland was assessed and found to be lacking wetland indicators. This area is further discussed below but was not delineated or mapped as it did not meet wetland criteria or exhibit an OHWM.

The gen tie route and associated buffer lacked aquatic features and consisted entirely of upland, non-native annual grassland habitat.

Jurisdictional Features

Wetland Waters 1 (WW-1) is a drainage that occurs adjacent to the eastern boundary of the existing substation and is subject to jurisdiction of the RWQCB and CDFW. The northern part of WW-1 has wetland properties including hydric soils (see Appendix A, Figure 1, soil pits 1 and 2), hydrophytic vegetation, and evident hydrology. This feature receives hydrologic inputs from direct precipitation, surface runoff from the substation facility, and a leaky pipe located towards the feature's northern end. Vegetation in this area was dominated by Bermuda grass (*Cynodon dactylon*) (FACU), broadleaf cattail (*Typha latifolia*) (OBL), and Great Valley gumweed (*Grindelia camporum*) (FACW) with subdominant species including of Canada horseweed (*Erigeron canadensis*) (FACU), tall annual willowherb (*Epilobium brachycarpum*) (FAC), and narrow leaved plantain (*Plantago lanceolata*) (FAC). Occasional shrubs and trees also occurred within this habitat such as arroyo willow (*Salix lasiolepis*) (FACW), mule fat (*Baccharis salicifolia*) (FAC), and coyote brush (*Baccharis pilularis*) (UPL).

Non-wetland Waters 1 (NWW-1) is a non-wetland drainage originating from runoff from the existing PG&E substation in the western portion of the delineation area. NWW-1 converges with WW-1 near photo point 9 (Appendix A, Figure 1). Soils taken from soil pits 3 and 4 did not exhibit hydric soil indicators. This area was largely unvegetated (i.e., bare) with sparsely occurring herbaceous species such as bermudagrass, Great Valley gumweed, and Canada horseweed. The western terminus was unvegetated and contained nothing but 6–12-inch rock riprap. This feature receives hydrologic inputs from direct precipitation and surface runoff from the substation facility.

Sediment texture, vegetation species, and vegetative cover differed above and below the OHWM and there was an approximately 45° break in slope at the OHWM. The feature displayed the presence of a bed and bank, mud cracks, ripples, drift, and debris. Portions of the feature were saturated to the surface and other portions contained 0-2 inches of ponded, possibly slowing flowing, surface water. The OHWM width ranged from 5 to 25 feet and height ranged from 6 inches to 3 feet. The top of bank width ranged from 20 to 50 feet and height ranged from 3 to 15 feet.

Non-Jurisdictional Features

The depressional area observed in the southeastern portion of the substation delineation area does not have hydric soils and does not have hydrophytic vegetation. The habitat is likely artificially formed and receives some hydrologic inputs from WW-1 and NWW-1. The depressional area displayed wetland hydrology indicators (e.g., surface soil cracks and drainage patterns) and portions of the habitat were saturated. However, soil pits 5 and 6 did not show any hydric soil indicators. The habitat was dominated by non-hydrophytic vegetation, including Bermuda grass (*Cynodon dactylon*) (FACU), whitetop (*Lepidium draba*) (UPL), and tumbleweed (*Salsola tragus*) (FACU). Occasional coyote brush (*Baccharis pilularis*) (UPL) shrubs, common rush (*Juncus effusus*) (FACW) and Great Valley gumweed (*Grindelia camporum*) (FACW) were observed.

Conclusion

Based on the investigation and analysis documented in this report, there are no potential CWA Section 404 and 401 USACE/RWQCB jurisdictional resources documented within the survey area.

WW-1 and NWW-1 both converge into one drainage where it conveys water into the southeastern low depressional area and sheet flows then dissipates. The low depressional area does not have hydric soils and does not have hydrophytic vegetation. Neither WW-1 nor NWW-1 are an a CWA paragraph 1-4 water. They do not have relatively permanent flow, or connection to any other off-site feature. Both of these features are approximately 4 miles from the closest potential paragraph a(3) water, and 23 miles from the closest a(1) water downstream; thus, they are and are therefore not considered a waters of the U.S. for purposes of jurisdiction under the CWA. Due to their distance from and lack of connection WOTUS, these features would not be considered jurisdictional even under the broader significant nexus test. However, WW-1 and NWW-1 are likely jurisdictional under the Porter-Cologne Act and CDFW 1600 LSAA program.

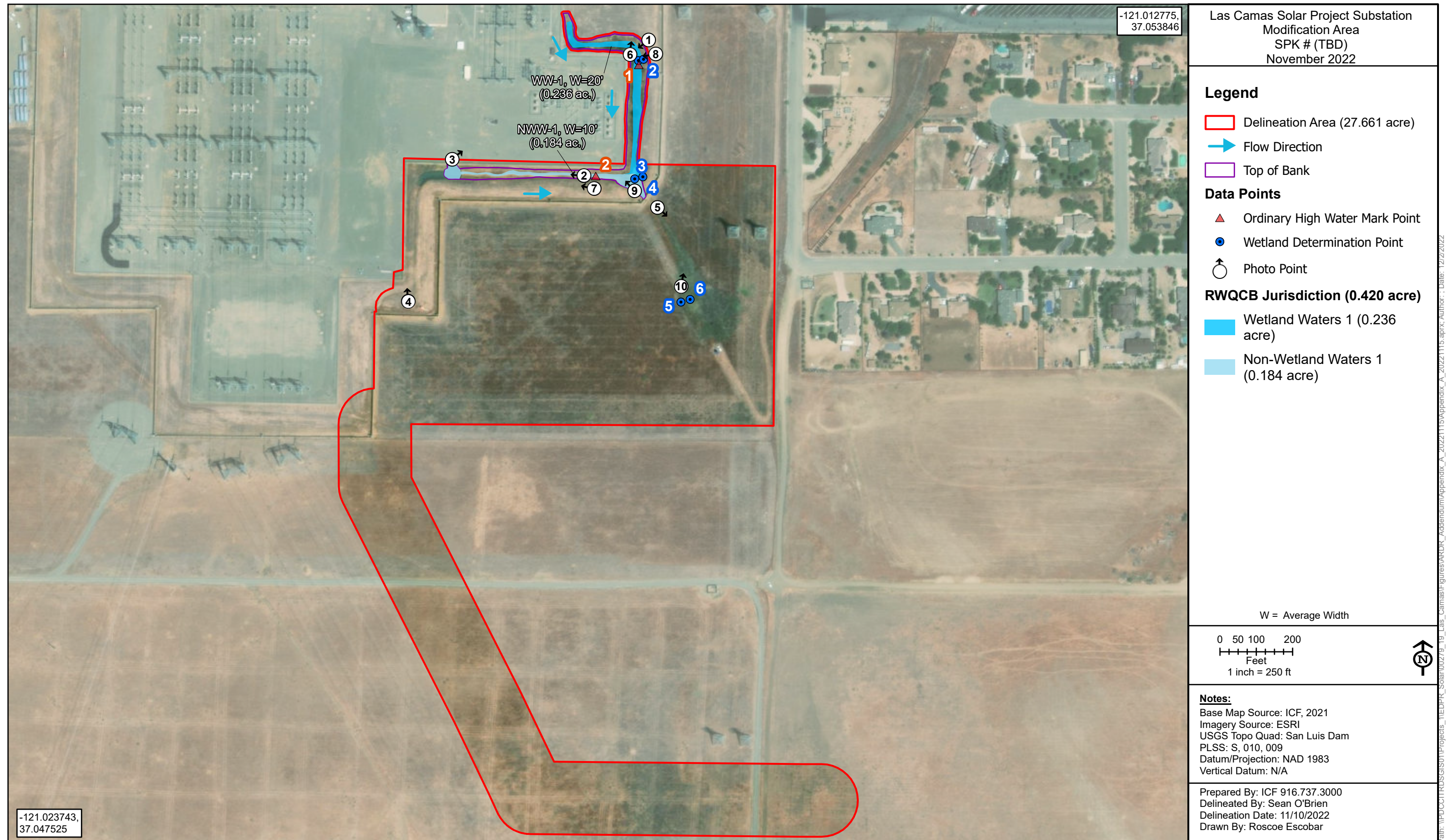
The gen tie route and associated buffer lacked aquatic features and consisted entirely of upland, non-native annual grassland habitat.

REFERENCES

- 33 United States Code (U.S.C.) §1251 et seq. [1972]
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APPENDIX A: RWQCB AND CDFW JURISDICTION





APPENDIX B: PHOTO LOG

Appendix B. Photo Log



Photograph 1

Date: November 18, 2022

Feature ID: Feature 1

Direction: Facing southwest

Comments: Representative view of wetland area of Feature 1.



Photograph 2.

Date: November 18, 2022

Feature ID: Feature 1

Direction: Facing west

Comments: Representative view of the non-wetland area of Feature 1.



Photograph 3

Date: November 18, 2022

Feature ID: Feature 1

Direction: Facing east

Comments: Representative view of western terminus of the non-wetland area of Feature 1.



Photograph 4

Date: November 18, 2022

Feature ID: Feature 1

Direction: Facing north

Comments: Representative view of a depressional area lacking bed a bed bank, OHWM, wetland vegetation and hydrology. Area considered annual grassland habitat.



Photograph 5

Date: November 18, 2022

Feature ID: Feature 1

Direction: Facing southeast

Comments: Representative view of a depressional area evaluated but did not pass the 3-paratometer wetland test. There was no hydrophytic vegetation and no hydric soils.



Photograph 6
Feature ID: Feature 1
Direction: Facing north
Comments: View associated with OHWM Data Form 1.



Photograph 7
Feature ID: Feature 1
Direction: Facing west
Comments: View associated with OHWM Data Form 2.



Photograph 8
Feature ID: Feature 1
Direction: Facing west
Comments: View associated with Wetland Determination Data Forms 1 and 2.



Photograph 9

Feature ID: Feature 1

Direction: Facing northwest

Comments: View associated with Wetland Determination Data Forms 3 and 4 (facing northwest).



Photograph 10

Feature ID: Feature 1

Direction: Facing northwest

Comments: View associated with Wetland Determination Data Forms 5 and 6.

APPENDIX C: OHWM DATA SHEETS

Project: Las Camas - PGE SubstationDate: 11/10/2022Location: Los Banos SubstationInvestigator(s): Sean O'Brien**Project Description:**

Substation expansion associated with Las Camas Solar Project

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

- Ditch is artificial, likely formed from substation construction
- PGE staff member indicated ditch receives artificial hydrologic inputs from a leaky pipe (> 15 years old)

Off-site Information

Remotely sensed image(s) acquired? ☐ Yes ☒ No [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

Hydrologic/hydraulic information acquired? ☐ Yes ☒ No [If yes, attach information to datasheet(s) and describe below.] Description:

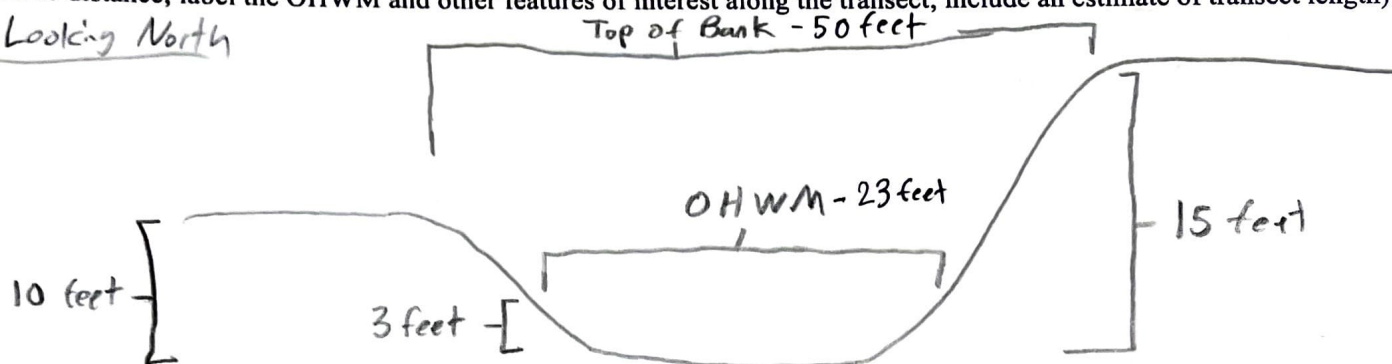
List and describe any other supporting information received/acquired:

- Google Earth
- PGE mapped wetland data

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)

Looking North



Break in Slope at OHWM: ☐ Sharp ($> 60^\circ$) | ☒ Moderate ($30-60^\circ$) | ☐ Gentle ($< 30^\circ$) | ☐ None

Notes/Description:

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	95	4	1			Y
Below OHWM	50	20	10	10	10	Y

Notes/Description:

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM			98	2
Below OHWM	5	5	85	5

Notes/Description:

Above OHWM | *Hirschfeldia incana*, *Bromus diandrus*, *Bromus rubens*

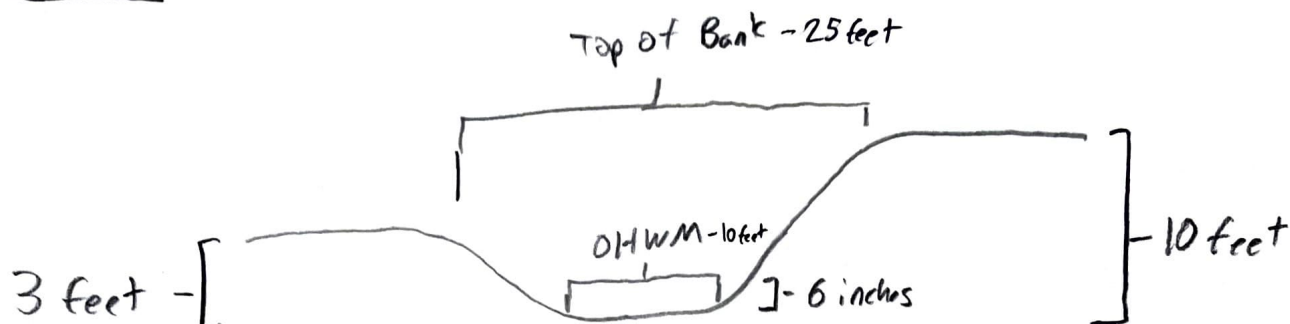
Below OHWM | *Typha latifolia*, *Cynodon dactylon*, *Gnaphalium camporum*

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

- Mudcracks, Ripples, Drift and debris, presence of bed and bank
- Portions of feature saturated to surface and 0-2 inches of ponded surface water

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)

Looking west



Break in Slope at OHWM: ☐ Sharp ($> 60^\circ$) | ☒ Moderate ($30-60^\circ$) | ☐ Gentle ($< 30^\circ$) | ☐ None
 Notes/Description:

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	95	4	1			N
Below OHWM	50	20	10	10	10	N

Notes/Description:

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM			95	5
Below OHWM			5	75

Notes/Description:

Above OHWM | *Hirschfeldia incana*, *Azorella bracteata*, *Salsola dracopis*
 Below OHWM | Mostly Bare, *Cynodon dactylon*

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

- Mudcracks, ripples, drift and debris, presence of bed and bank
- Portions of feature saturated to surface and 0-2 inches of ponded surface water

APPENDIX D: WETLAND DATA FORMS

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Las Camas - PGE Substation City/County: Santa Nella / Merced Sampling Date: 11/10/2022
 Applicant/Owner: EDPR / PGE State: CA Sampling Point: 1
 Investigator(s): Sean O'Brien Section, Township, Range: S19 T10S R9E
 Landform (hillslope, terrace, etc.): Foothill toeslope Local relief (concave, convex, none): Concave Slope (%): 2
 Subregion (LRR): C-Mediterranean California Lat: -121.017913 Long: 37.053424 Datum: WGS84
 Soil Map Unit Name: 131 - Bull var loam, 2 to 8% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Hydric Soil Present?	Yes ☒ No ☐	
Wetland Hydrology Present?	Yes ☒ No ☐	

Remarks:

- Sampling Point 2 is approx 10 feet higher in elevation
- PGE Staff indicated feature may receive artificial water inputs from a pipe leak

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.7</u> (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>25</u> x 1 = <u>25</u> FACW species <u>20</u> x 2 = <u>40</u> FAC species <u>15</u> x 3 = <u>45</u> FACU species <u>35</u> x 4 = <u>140</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>95</u> (A) <u>250</u> (B) Prevalence Index = B/A = <u>2.63</u>
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				
Herb Stratum (Plot size: <u>5x5 ft</u>)				
1. <u>Typha latifolia</u>	<u>25</u>	<u>Y</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: ☒ Dominance Test is >50% ☒ Prevalence Index is ≤3.0 ¹ ☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Cyperus dactylon</u>	<u>35</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Grindelia camporum</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	
4. <u>Epilobium brachycarpum</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	
5. <u>Plantago lanceolata</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
_____ = Total Cover				Hydrophytic Vegetation Present? Yes ☒ No ☐
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____				Hydrophytic Vegetation Present? Yes ☒ No ☐
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				Hydrophytic Vegetation Present? Yes ☒ No ☐
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>5</u> % Cover of Biotic Crust _____				

Remarks:

Sampling Point:

1

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☒ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

☐ 1 cm Muck (A9) (LRR C)
☐ 2 cm Muck (A10) (LRR B)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches):

Hydric Soil Present? Yes ✓ No

Remarks:

Cableles present throughout soil

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) **(Nonriverine)**
- ☐ Sediment Deposits (B2) **(Nonriverine)**
- ☐ Drift Deposits (B3) **(Nonriverine)**
- ☒ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)

- ☐ Salt Crust (B11)
- ☒ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☒ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? Yes _____ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Although sampling point lacked surface water, water table, and saturation, other portions of the feature displayed saturation to surface and surface water (0-2 inches in depth).

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Las Canoas - PGE Substation City/County: Santa Nella / Merced Sampling Date: 11/10/2022
 Applicant/Owner: EDPR / PGE State: CA Sampling Point: 2
 Investigator(s): Sean O'Brien Section, Township, Range: S19 T10S R9E
 Landform (hillslope, terrace, etc.): Foothill toeslope Local relief (concave, convex, none): convex Slope (%): 45
 Subregion (LRR): C-Mediterranean California Lat: -121.017861 Long: 37.053434 Datum: _____
 Soil Map Unit Name: 131-Ballvaer loam, 2-8% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No ☒	Is the Sampled Area within a Wetland? Yes _____ No ☒
Hydric Soil Present? Yes _____ No ☒	
Wetland Hydrology Present? Yes _____ No ☒	
Remarks: <u>Sampling Point 2 is approx 10 feet lower in elevation</u>	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>4</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
4. _____				
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:
1. _____				Total % Cover of: _____ Multiply by: _____
2. _____				OBL species _____ x 1 = _____
3. _____				FACW species _____ x 2 = _____
4. _____				FAC species _____ x 3 = _____
5. _____				FACU species <u>8</u> x 4 = <u>32</u>
_____ = Total Cover				UPL species <u>90</u> x 5 = <u>450</u>
Herb Stratum (Plot size: <u>5x5 ft.</u>)				Column Totals: <u>98</u> (A) <u>482</u> (B)
1. <u>Hieracium incanum</u>	<u>20</u>	<u>Y</u>	<u>UPL</u>	Prevalence Index = B/A = <u>4.92</u>
2. <u>Salsola arbuscula</u>	<u>8</u>	<u>N</u>	<u>FACW</u>	
3. <u>Centauria melitensis</u>	<u>10</u>	<u>N</u>	<u>UPL</u>	
4. <u>Bromus rubens</u>	<u>20</u>	<u>Y</u>	<u>UPL</u>	
5. <u>Bromus diandrus</u>	<u>20</u>	<u>Y</u>	<u>UPL</u>	
6. <u>Avena barbata</u>	<u>20</u>	<u>Y</u>	<u>UPL</u>	
7. _____				
8. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:
1. _____				___ Dominance Test is >50%
2. _____				___ Prevalence Index is ≤3.0 ¹
_____ = Total Cover				___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
				___ Problematic Hydrophytic Vegetation ¹ (Explain)
% Bare Ground in Herb Stratum <u>2</u> % Cover of Biotic Crust _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Remarks:				Hydrophytic Vegetation Present? Yes _____ No ☒

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	5Y 5/3	100					clay loam	
2-16	5Y 6/3	100					clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

- ☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5) (LRR C)
☐ 1 cm Muck (A9) (LRR D)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Vernal Pools (F9)

- ☐ 1 cm Muck (A9) (LRR C)
☐ 2 cm Muck (A10) (LRR B)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

- ☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1) (Nonriverine)
☐ Sediment Deposits (B2) (Nonriverine)
☐ Drift Deposits (B3) (Nonriverine)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
☐ Biotic Crust (B12)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Thin Muck Surface (C7)
☐ Other (Explain in Remarks)
- ☐ Water Marks (B1) (Riverine)
☐ Sediment Deposits (B2) (Riverine)
☐ Drift Deposits (B3) (Riverine)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ☒ Depth (inches): _____Water Table Present? Yes _____ No ☒ Depth (inches): _____Saturation Present? Yes _____ No ☒ Depth (inches): _____
(includes capillary fringe)Wetland Hydrology Present? Yes _____ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Las Canoas - PGE Substation City/County: Santa Nella / Merced Sampling Date: 11/10/2022
 Applicant/Owner: EDPR / PGE State: CA Sampling Point: 3
 Investigator(s): Sean O'Brien Section, Township, Range: S19 T10S R9E
 Landform (hillslope, terrace, etc.): Foothill toeslope Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR): C-Mediterranean California Lat: -121.0179385 Long: 37.0525239 Datum: WGS84
 Soil Map Unit Name: 131-Bellvue loam 2-8% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐ No ☒	Is the Sampled Area within a Wetland?	Yes ☐ No ☒
Hydric Soil Present?	Yes ☐ No ☒		
Wetland Hydrology Present?	Yes ☒ No ☐		
Remarks: - Sampling Point 4 is approx 2 feet higher in elevation - PGE staff indicated feature may receive artificial water inputs from pipe leaks			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species <u>20</u> x 2 = <u>40</u> FAC species _____ x 3 = _____ FACU species <u>60</u> x 4 = <u>240</u> UPL species _____ x 5 = _____ Column Totals: <u>80</u> (A) _____ (B) Prevalence Index = B/A = <u>3.5</u>
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: <u>5x5 ft.</u>) 1. <u>Cynodon dactylon</u> <u>50</u> <u>Y</u> <u>FACU</u> 2. <u>Grindelia camporum</u> <u>20</u> <u>Y</u> <u>FACW</u> 3. <u>Erigeron canadensis</u> <u>10</u> <u>N</u> <u>FACU</u> 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum <u>20</u> % Cover of Biotic Crust _____				

Remarks:

Sampling Point: 3

[illegible]

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Hydric Soil Present? Yes _____ No ✓

cobbles present throughout soil

___ FAC-Neutral Test (D5)

Wetland Hydrology Present? Yes ✓ No

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Las Camas - PGE Substation City/County: San Joaquin/Merced Sampling Date: 11/10/2022
 Applicant/Owner: EDPR/PGE State: CA Sampling Point: 4
 Investigator(s): Sean O'Brien Section, Township, Range: S19 T10S R9E
 Landform (hillslope, terrace, etc.): Foothill toeslope Local relief (concave, convex, none): convex Slope (%): 3
 Subregion (LRR): C-Med-Terranean California Lat: -121.0178614 Long: 37.0525426 Datum: WGS84
 Soil Map Unit Name: 131-Bullseye loam, 2-8% slopes NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☐ No ☒	
Remarks: <u>- Sampling Point 3 is approx 2 feet lower in elevation</u>		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
_____ = Total Cover				Hydrophytic Vegetation Present? Yes ☐ No ☒
Herb Stratum (Plot size: <u>5x5ft.</u>)				
1. <u>Avena barbata</u>	<u>90</u>	<u>N</u>	<u>UPL</u>	Remarks:
2. <u>Bromus rubens</u>	<u>5</u>	<u>Y</u>	<u>UPL</u>	
_____ = Total Cover				Woody Vine Stratum (Plot size: _____)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	Remarks:
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>5</u> % Cover of Biotic Crust _____				Remarks:
Remarks:				

Sampling Point: 4

[illegible]

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR C)
☐ 2 cm Muck (A10) (LRR B)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ Other (Explain in Remarks)

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No ☒

Remarks:

Wetland Hydrology Indicators:

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Las Camas - PGE Substation City/County: Santa Nella / Merced Sampling Date: 11/10/2022
 Applicant/Owner: EDPR / PGE State: CA Sampling Point: 5
 Investigator(s): Sean O'Brien Section, Township, Range: S14 T10S R9E
 Landform (hillslope, terrace, etc.): Foot hill toeslope Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR): C - Mediterranean California Lat: -121.0174090 Long: 37.0516165 Datum: NAD83
 Soil Map Unit Name: 131 - Bullseye loam, 2-8% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐ No ☒	Is the Sampled Area within a Wetland?	Yes ☐ No ☒
Hydric Soil Present?	Yes ☐ No ☒		
Wetland Hydrology Present?	Yes ☒ No ☐		
Remarks:			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>30</u> x 2 = <u>60</u> FAC species <u>3</u> x 3 = <u>9</u> FACU species <u>32</u> x 4 = <u>128</u> UPL species <u>20</u> x 5 = <u>100</u> Column Totals: <u>85</u> (A) <u>297</u> (B) Prevalence Index = B/A = <u>3.49</u>
Sapling/Shrub Stratum (Plot size: _____)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: <u>5x5 ft.</u>)				Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Juncus effusus</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
2. <u>Grindelia camporum</u>	<u>25</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Cynodon dactylon</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>	
4. <u>Lepidium draba</u>	<u>20</u>	<u>Y</u>	<u>UPL</u>	
5. <u>Rumex crispus</u>	<u>3</u>	<u>N</u>	<u>FAC</u>	
6. <u>Salsola tragus</u>	<u>2</u>	<u>N</u>	<u>UPL</u>	
7. _____				
8. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes ☐ No ☒
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>15</u>	% Cover of Biotic Crust _____			
Remarks:				

Sampling Point:

5

[illegible]

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)

- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

☐ 1 cm Muck (A9) (LRR C)
☐ 2 cm Muck (A10) (LRR B)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

Wetland Hydrology Indicators:

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) **(Nonriverine)**
- ☐ Sediment Deposits (B2) **(Nonriverine)**
- ☐ Drift Deposits (B3) **(Nonriverine)**
- ☒ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)

- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Although no saturation observed at data point, portions of the feature were saturated to the surface.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Las Camas-PGE Substation City/County: Santa Nella/Mered Sampling Date: 11/10/2022
 Applicant/Owner: EDPR/PG&E State: CA Sampling Point: 6
 Investigator(s): Sean O'Brien Section, Township, Range: S19 T10S R9E
 Landform (hillslope, terrace, etc.): Foot Hill toeslope Local relief (concave, convex, none): Conver Slope (%): 2
 Subregion (LRR): C-Mediterranean California Lat: -121.0174975 Long: 37.0515967 Datum: NAD83
 Soil Map Unit Name: 131-Ball clay loam, 2-8% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☐ No ☒	
Remarks:		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>0</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>0</u> (A/B)
4. _____	_____	_____	_____		
_____ = Total Cover					
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____	_____	_____	_____	Total % Cover of:	Multiply by:
2. _____	_____	_____	_____	OBL species _____	x 1 = _____
3. _____	_____	_____	_____	FACW species _____	x 2 = _____
4. _____	_____	_____	_____	FAC species _____	x 3 = _____
5. _____	_____	_____	_____	FACU species <u>45</u>	x 4 = <u>180</u>
_____ = Total Cover				UPL species <u>54</u>	x 5 = <u>270</u>
Herb Stratum (Plot size: <u>5x5 ft</u>)				Column Totals: <u>99</u> (A)	<u>450</u> (B)
1. <u>Cynodon dactylon</u>	<u>50</u>	<u>Y</u>	<u>FACU</u>	Prevalence Index = B/A = <u>4.55</u>	
2. <u>Bromus diandrus</u>	<u>45</u>	<u>Y</u>	<u>UPL</u>		
3. <u>Avena barbata</u>	<u>4</u>	<u>N</u>	<u>UPL</u>		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
_____ = Total Cover					
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:	
1. _____	_____	_____	_____	___ Dominance Test is >50%	
2. _____	_____	_____	_____	___ Prevalence Index is ≤3.0 ¹	
_____ = Total Cover				___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
				___ Problematic Hydrophytic Vegetation ¹ (Explain)	
% Bare Ground in Herb Stratum <u>1</u> % Cover of Biotic Crust _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes ☐ No ☒	
Remarks:					

Sampling Point: 6

HYDROLOGY

Arid West – Version 2.0

APPENDIX E: RESOURCES MAPS

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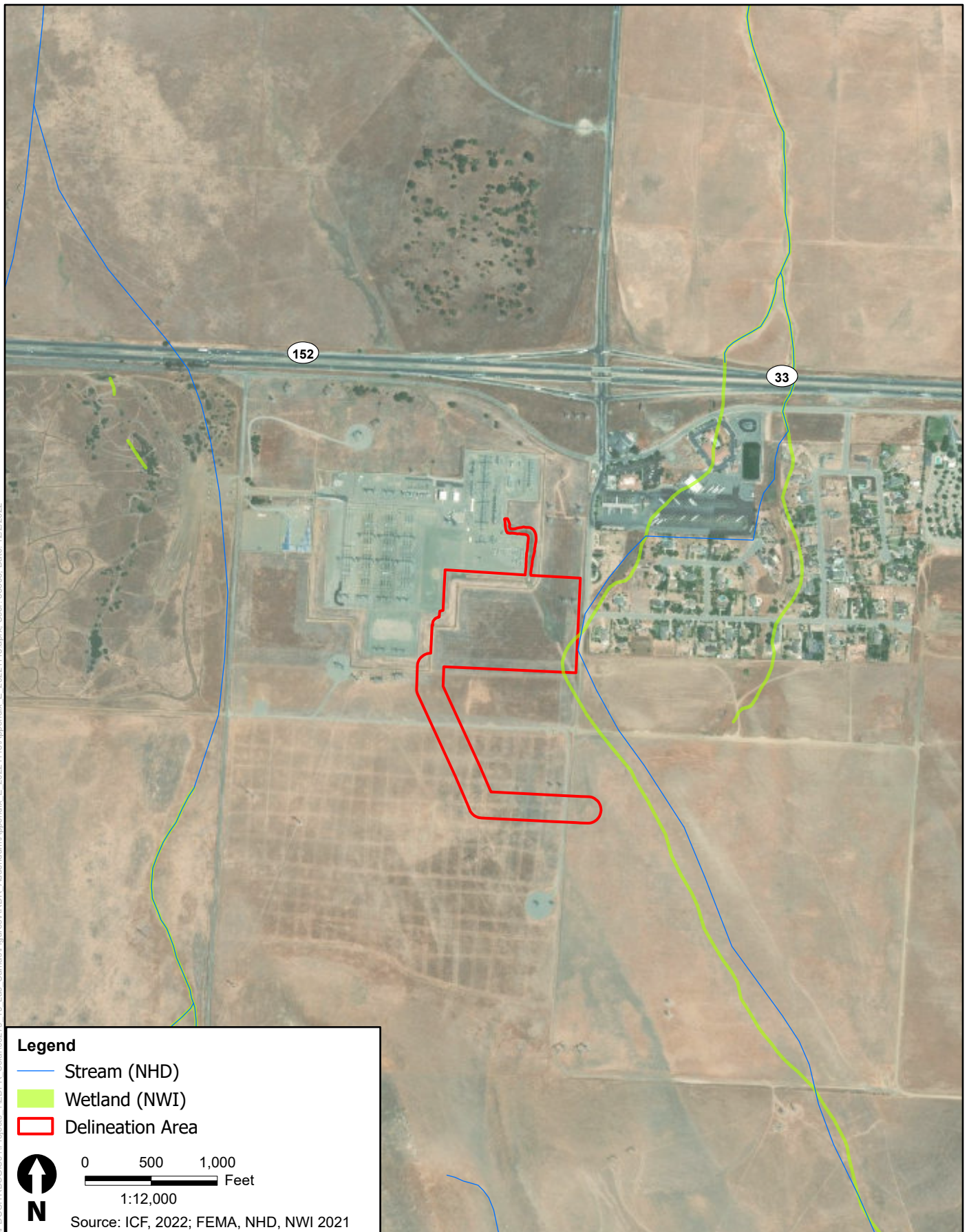


Figure 1
National Wetlands Inventory and National Hydrography Dataset Map

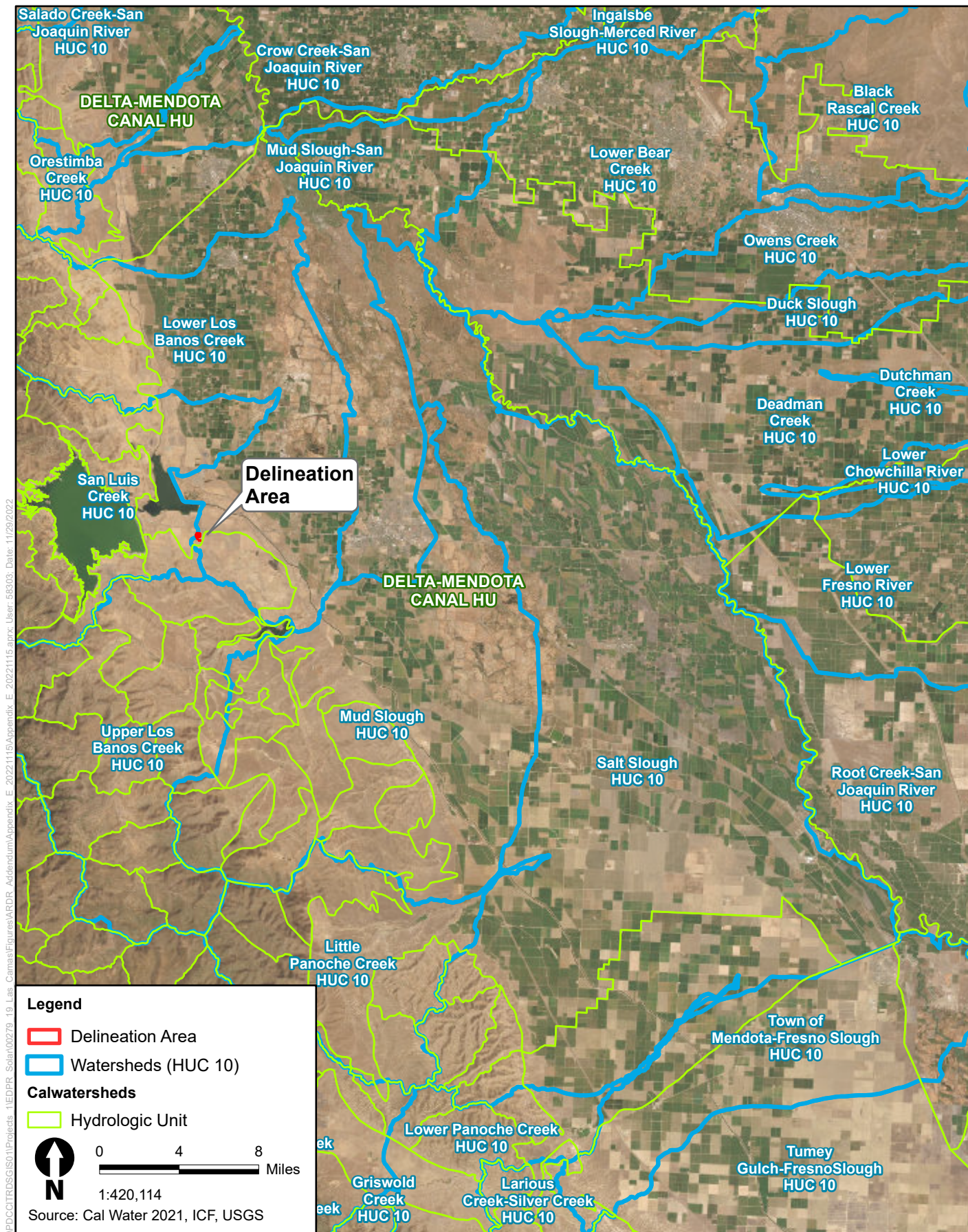


Figure 2
Watershed Map

APPENDIX F: PLANT LIST

Plant List

SCIENTIFIC NAME	COMMON NAME	WETLAND INDICATOR STATUS	ORIGIN	SPECIAL STATUS
TREES				
<i>Ficus carica</i>	Common fig	FACU	Introduced	None
<i>Prunus</i> sp.	Prune	UPL	Unknown	None
<i>Washingtonia robusta</i>	Mexican fan palm	FACW	Introduced	None
SHRUBS				
<i>Baccharis pilularis</i>	Coyote brush	UPL	Native	None
<i>Baccharis salicifolia</i>	Mule fat	FACE	Native	None
<i>Salix lasiolepis</i>	Arroyo willow	FACW	Native	None
HERBS				
<i>Asclepias fascicularis</i>	Narrow leaf milkweed	FAC	Native	None
<i>Centaurea melitensis</i>	Maltese star thistle (Tocalote)	Not an indicator	Introduced	None
<i>Centaurea solstitialis</i>	Yellow star thistle	Not an indicator	Introduced	None
<i>Croton setiger</i>	Turkey-mullein	Not an indicator	Native	None
<i>Dittrichia graveolens</i>	Stinkwort	Not an indicator	Introduced	None
<i>Epilobium brachycarpum</i>	Tall annual willowherb	FAC	Native	None
<i>Erigeron canadensis</i>	Canada horseweed	FACU	Native	None
<i>Grindelia camporum</i>	Great Valley gumweed	FACW	Native	None
<i>Heliotropium curassavicum</i> var. <i>oculatum</i>	Seaside heliotrope	FACU	Native	None
<i>Hirschfeldia incana</i>	Mustard	Not an indicator	Introduced	None
<i>Isocoma acradenia</i>	Alkali goldenbush	FACU	Native	None
<i>Lactuca serriola</i>	Prickly lettuce	FACU	Introduced	None
<i>Lepidium draba</i>	Whitetop	Not an indicator	Introduced	None
<i>Plantago lanceolata</i>	Narrow leaved plantain	FAC	Introduced	None
<i>Rumex crispus</i>	Curly dock	FAC	Introduced	None
<i>Salsola tragus</i>	Tumbleweed	FACU	Introduced	None
<i>Trichostema lanceolatum</i>	Vinegarweed	FACU	Native	None
<i>Typha latifolia</i>	Broadleaf cattail	OBL	Native	None
GRASSES				
<i>Avena barbata</i>	Slender Oat	Not an indicator	Introduced	None
<i>Bromus diandrus</i>	Ripgut brome	Not an indicator	Introduced	None

<i>Bromus rubens</i>	Red brome	Not an indicator	Introduced	None
<i>Bromus tectorum</i>	Cheatgrass	Not an indicator	Introduced	None
<i>Cynodon dactylon</i>	Bermuda grass	FACU	Introduced	None
<i>Distichlis spicata</i>	Salt grass	FAC	Native	None
<i>Festuca perennis</i>	Italian rye grass	FAC	Introduced	None
<i>Hordeum marinum</i>	Seaside barley	FAC	Introduced	None
<i>Hordeum murinum</i>	Foxtail barley	FACU	Introduced	None
<i>Juncus effusus</i>	Common rush	FACW	Native	None

APPENDIX G: SOIL MAP

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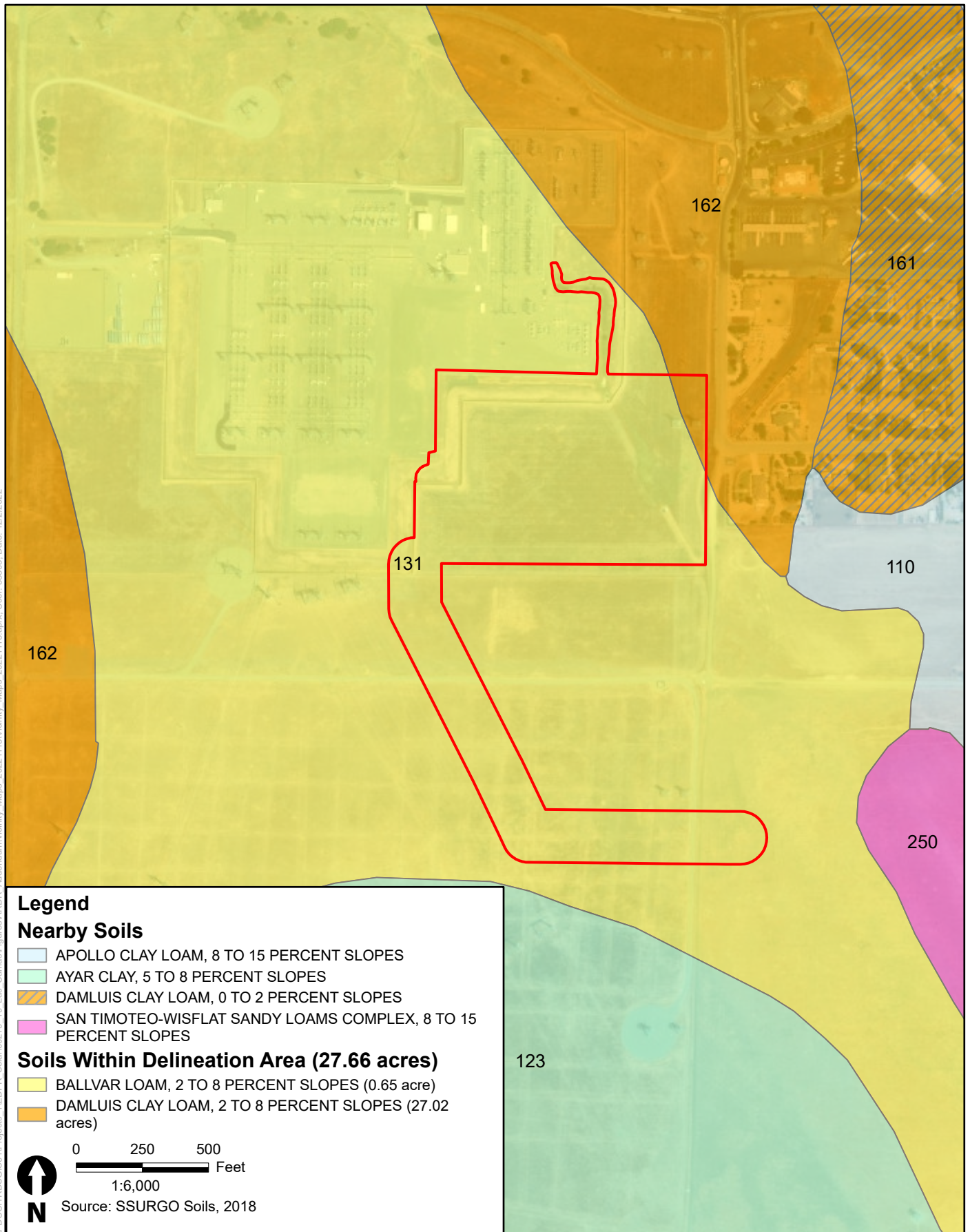


Figure 1
National Resources Conservation Service Soils Map