

PRELIMINARY DELINEATION OF WATERS OF THE UNITED STATES,
INCLUDING WETLANDS, FOR THE

PG&E WINTERS GAS OPERATIONS TECHNICAL TRAINING CENTER (GOTTC)

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Acronyms and Abbreviations

°F	degrees Fahrenheit
CFR	Code of Federal Regulations
CWA	Clean Water Act
EPA	Environmental Protection Agency
FAC	facultative
FACU	facultative upland
FACW	facultative wetland
GANDA	Garcia and Associates
GIS	geographic information system
GOTTC	gas operations technical training center
GPS	global positioning system
I-	Interstate
NRCS	National Resources Conservation Service
NWI	National Wetlands Inventory
OBL	obligate
OHWM	Ordinary High Water Mark
PG&E	Pacific Gas and Electric Company
project	Winters GOTTC Project
redox	redoximorphic
REM	riverine emergent wetland
Rr	riverine artificial construction
RSS	riverine shrub–scrub
RUB	riverine unconsolidated bottom
SR	State Route
UPL	upland
U.S.	United States
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
USACE	U.S. Army Corps of Engineers

Winters Gas Operations Technical Training Center (GOTTC) Project Preliminary Delineation of Waters of the United States, Including Wetlands

Summary

Pacific Gas and Electric Company (PG&E) is proposing the construction and operation of the Winters Gas Operations Technical Training Center (GOTTC) Project (project) in the City of Winters. The facility would be constructed at the southwest corner of Interstate 505 (I-505) and State Route (SR) 128 (Grant Avenue) in Yolo County, California. This facility would be a vocational training center for students (City of Winters 2014). The proposed project includes construction and operation of a Training Center (totaling 106,500 square feet) and associated infrastructure (City of Winters 2014).

A Delineation Area (approximately 69.1 acres) has been developed that encompasses the construction footprint and associated access, staging, and other potentially disturbed areas for the project. The purpose of this report is to document the location and extent of waters of the United States, including wetlands, within the Delineation Area, and to make a preliminary determination of whether these wetland and water features meet the definition of waters of the United States as defined by the Clean Water Act (CWA), pursuant to which the United States (U.S.) Army Corps of Engineers (USACE) may exert jurisdiction. The information in this report can be used to assist PG&E with planning efforts, including assessing potential impacts to waters, and identifying potential USACE jurisdiction pursuant to the CWA.

Existing information indicated that the Delineation Area encompasses a portion of a perennial stream named Putah Creek (U.S. Fish and Wildlife Service [USFWS] 2015; U.S. Geological Survey [USGS] 1978). Based on the field delineation, this riverine feature, including open water and associated emergent vegetation and shrub–scrub wetlands, was mapped within the Delineation Area.

The wetlands and water features in the Delineation Area are a part of, or have direct connectivity with, Putah Creek. Based on criteria described in 33 Code of Federal Regulations (CFR) 328.3, the creek and adjacent and connected wetlands and water features are likely waters of the United States subject to USACE jurisdiction. The ordinary high water mark (OHWM) of Putah Creek, in combination with the extent of adjacent wetlands, was used to establish the lateral extent of USACE jurisdiction of this riverine feature. This limit was recorded in the field based on observations of physical indicators such as changes in vegetation cover, shelving, and scour. The features potentially subject to USACE jurisdiction have total area of 0.565 acre and length of 1,234 linear feet (Table 1).

Table 1. Summary of Jurisdictional Features in the Delineation Area

Feature	USACE Jurisdictional Area
Wetland Features	0.114 acre
Water Features	0.451 acre and 1,234 linear feet
TOTALS	0.451 acre and 1,234 linear feet

Twenty segments of constructed stormwater ditches, including a lined concrete channel, were also present in the Delineation Area. These non-jurisdictional elements were examined and mapped during the field survey, and encompass 0.651 acre and 6,564 feet. Eighteen of the constructed stormwater ditch segments conduct water into Putah Creek; however, these ditches appear to run for only short periods during large precipitation events and presumably from historical irrigation drainage associated with localized agricultural fields, and therefore fit into the category of “non-tidal drainage and irrigation ditches excavated on dry land.” Based on guidance provided by the USACE and U.S. Environmental Protection Agency (EPA), “*the agencies will generally not assert jurisdiction over the following features...Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water*” (U.S. EPA and Department of the Army 2008). Under 33 CFR 328.3 (a), the USACE generally does not consider “non-tidal drainage and irrigation ditches excavated on dry land” to be waters of the United States (Federal Register 1986). The remaining two of the non-wetland constructed stormwater ditches are isolated (do not have connectivity with Putah Creek). These features also are constructed in dry ground/uplands, flow for only short periods (less than three continuous months), and are likely not waters of the United States.

The constructed ditches are likely not waters of the United States that fall under USACE jurisdiction. The jurisdiction of the features and elements discussed in this report should be verified by the USACE.

Introduction

Pacific Gas and Electric Company (PG&E) proposes the construction and operation of the Winters Gas Operations Technical Training Center (GOTTC) Project (project) in the City of Winters. The facility would be constructed at the southwest corner of Interstate 505 (I-505) and State Route (SR) 128 (Grant Avenue) on eight parcels with total area of approximately 55.2 acres in Yolo County, California. This facility would be a vocational training center where students would be trained to construct, operate, and maintain natural gas pipelines; measure and control the natural gas network; detect leaks; locate and mark underground infrastructure; maintain natural gas storage facilities; and perform other similar natural gas transmission and distribution related functions.

Construction of the following facilities is currently proposed (City of Winters 2014):

1. Training Center Facilities (total 106,500 square feet) – planned facilities include a Learning Center and parking lot; Transmission and Distribution Construction Area; Gas Transmission Training Area; Crane Certification Area; Equipment Parking Areas; Equipment and Excavation Training Area; Commercial Driver Training Area; Utility Village; Equipment Fueling Area; Cathodic Protection Area; and Future Expansion Area.

2. Infrastructure – planned infrastructure improvements include a stormwater diversion channel; water quality detention pond; Putah Creek Parkway enhancements, including restoration of the Putah Creek area and recreational trail construction; public roadway Improvements, including sidewalks, curb ramps, and a bike path; public utility improvements of an sewer main and storm drain pipes; and other utility services.

This report documents the location and extent of waters of the United States, including wetlands, in areas that have potential to experience project impacts. A preliminary determination is made of whether these wetland and water features meet the definition of waters of the United States as defined by Section 404 of the CWA. The information in this report can be used to assist PG&E with planning efforts, and to identify potential USACE jurisdiction pursuant to the CWA. This report does not assess potential impacts to waters, including wetlands.

Contact Information

The project applicant is PG&E, represented by Ryan Brown. The delineation was prepared by Garcia and Associates (GANDA). The contact information for the project applicant and preparer follows:

Project Applicant

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Site Description and Location

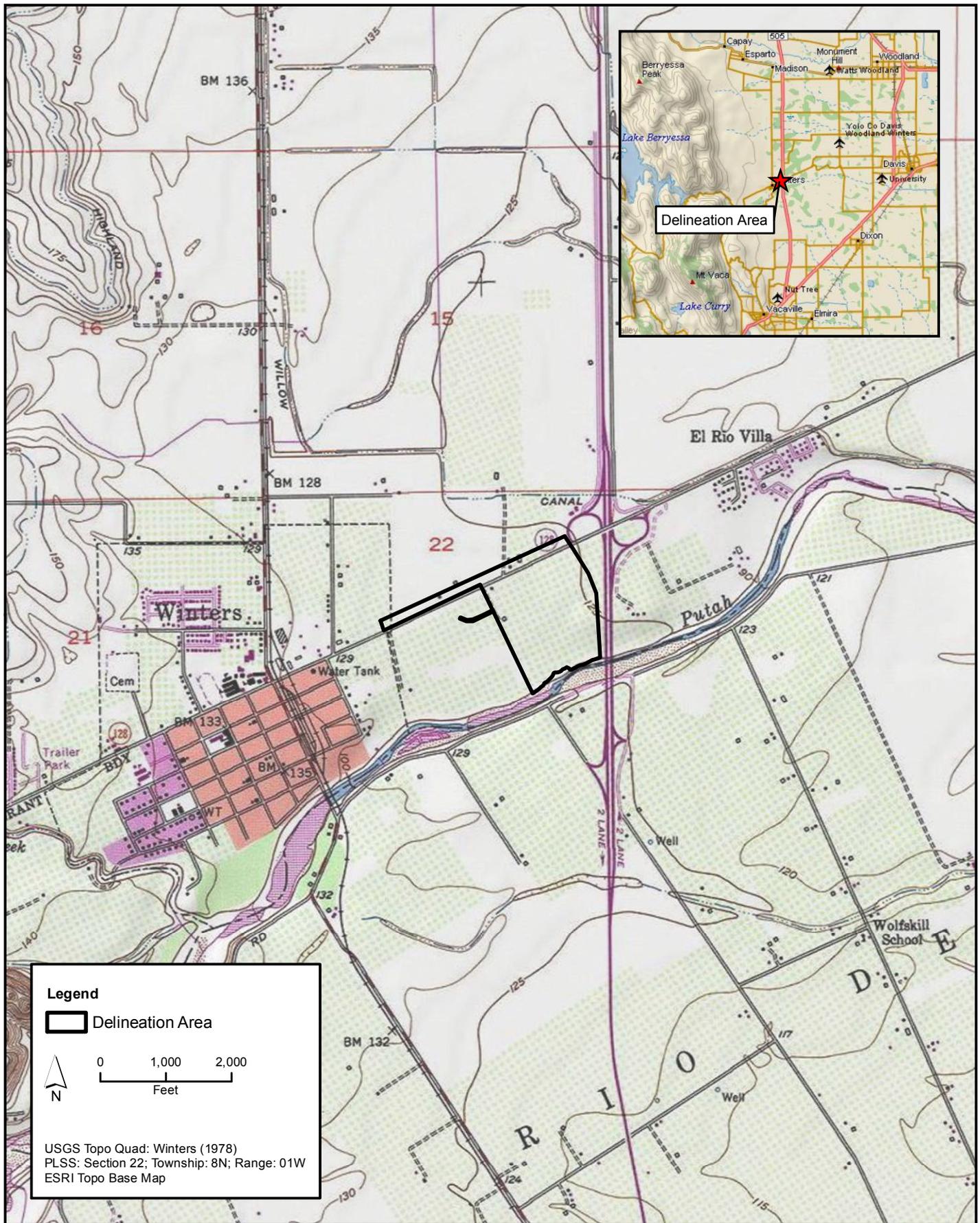
The proposed GOTTC is located in the City of Winters, California, in southern Yolo County (Figure 1), in the *Winters, California* USGS 7.5-minute topographic quadrangle (quad; USGS 1978) at approximately 125 feet elevation. PG&E proposes to build the project on parcels at the southwestern corner of the intersection of I-505 and SR 128.

The Delineation Area for the project consists of approximately 69.1 acres, including proposed training facilities and infrastructure, and associated access and staging areas (Figure 1, Appendix A). The Delineation Area primarily consists of an active farm field; it also includes some unoccupied frontage of I-505, a farm house and associated yard and outbuildings, a proposed sidewalk, a section of Putah Creek (approximately 1,180 linear feet), and a portion of SR 128 (East Grant Avenue, approximately 3,110 linear feet).

Driving Directions

The Delineation Area is located at the southwest corner of the intersection of I-505 and SR 128. The north side of the Delineation Area follows SR 128 (East Grant Avenue). From the City of Winters, travel east on SR 128; the Delineation Area is located along SR 128 and to the south (right) before reaching I-505.

Distance from Sacramento to the Delineation Area is approximately 30 miles. Travel west on I-80 for approximately 10 miles, then take Exit 70 north (right) towards Woodland onto SR 113 (Vic Fazio Highway) for approximately 2.8 miles. At Exit 29 for Road 31/Covell Boulevard turn west



(left) onto West Covell Boulevard. Travel on this road for approximately 7.0 miles (it will change from West Covell Boulevard, to County Road 31). Take a left (south) at the fork to continue onto County Road 93A, and travel approximately 4.1 miles (the road will change to Russell Boulevard then to SR 128/East Grant Avenue). After crossing I-505, the Delineation Area is located primarily to the south (left).

Precipitation and Growing Season

The elevation of the Delineation Area is approximately 125 feet. The average yearly temperature in the City of Winters is 62.5 degrees Fahrenheit (°F); the highest average maximum temperatures occur in July (95.8 °F), and the lowest average minimums occur in January (37.0 °F) (National Resource Conservation Service [NRCS] 2014). The average yearly precipitation is approximately 22.8 inches, with an average of 95 percent of the precipitation falling between October and April (NRCS 2014). Essentially all of the precipitation at this elevation falls as rainfall; snowfall averages only 0.2 inches per year (NRCS 2014). Further climate details are provided in the WETS¹ tables provided in Appendix B.

To be considered a wetland, an area within a particular climate must have a 50 percent probability (i.e., averaging 5 years in every 10) of being flooded or ponded, or have a water table at 12 inches or less below the surface, for 14 or more consecutive days during the growing season. The length of the growing season is approximated by the median dates with 50 percent probability (i.e., averaging 5 years in every 10) of 28 °F or greater air temperatures in spring and fall (USACE 2008). In the Delineation Area, these dates are approximately January 4 to December 26 (NRCS 2014, Appendix B), corresponding to a growing season of approximately 355 days.

Vegetation

The upland vegetation within the Delineation Area consists of annual grassland, ruderal (“weedy”) roadside vegetation and fallow agricultural fields, and upland riparian vegetation. Wetlands are documented in the Delineation Area in the National Wetlands Inventory (NWI, USFWS 2015). Paved and unpaved roads are also present. A more complete description of vegetation types follows. Scientific names used are consistent with Lichvar et al., 2014, and if not listed in that reference, then Baldwin et al. 2012. Wetland ratings of plants observed in the Delineation Area are found in Appendix C.

Ruderal Vegetation and Fallow Agricultural Fields

Within the Delineation Area, the majority of the vegetation was dominated by non-native and “weedy” native herbaceous species along the roadsides and in a fallow agricultural field. Density of the plant cover in these areas ranged from sparse (e.g., 5 to 10 percent cover) along the roadsides, where the vegetation is likely managed for fuel reduction, to very dense (e.g., 80 to 100 percent) farther from the roads. Common species in the ruderal vegetation included velvetleaf (*Abutilon theophrasti*), perennial wormwood (*Artemisia biennis*), wild oat (*Avena fatua*), rape/yellow mustard (*Brassica rapa*), yellow star-thistle (*Centaurea solstitialis*), doveweed (*Croton setigerus*), Bermuda grass (*Cynodon dactylon*), smooth crab grass (*Digitaria ischaemum*), stinkwort (*Dittrichia graveolens*), medusa head (*Elymus caput-medusae* =

¹ “WETS” is the official name of these tables, and is not an acronym.

Taeniatherum caput-medusae), fringed willowherb (*Epilobium ciliatum*), Canadian horseweed (*Erigeron canadensis*), dove's foot geranium (*Geranium molle*), [wall] barley (*Hordeum [murinum]²*), prickly lettuce (*Lactuca serriola*), golden crown grass (*Paspalum dilatatum*), prickly Russian-thistle (*Salsola tragus*), Johnson grass (*Sorghum halepense*), and rough cocklebur (*Xanthium strumarium*).

Common plant species in the agricultural field included Mexican-tea (*Dysphania ambrosioides*), prickly lettuce, bull mallow (*Malva nicaeensis*), cheeseweed (*M. parviflora*), and Harding grass (*Phalaris aquatica*).

Some of the ruderal vegetation was interspersed with a few trees and/or landscaping shrubs and perennials. Near homes and businesses, oleander (*Nerium oleander*), white mulberry (*Morus alba*), and [blackwood] acacia (*Acacia [melanoxylo]*), were common. Italian arum (*Arum italicum*) plants were observed. Occasional valley oak (*Quercus lobata*) and blue oak (*Quercus douglasii*) trees were also present near the roadside ditches. A stand of tree-of-heaven (*Ailanthus altissima*) was present in the ruderal vegetation between the fallow field and the I-505 southbound onramp.

Annual Grassland

Within the Delineation Area, lots adjacent to SR 128, including the proposed sidewalk location, were vegetated with annual grassland. Common herbaceous species included [common] fiddleneck (*Amsinckia [intermedia]*), yellow star-thistle, red-stemmed filaree (*Erodium cicutarium*), white-stemmed filaree (*E. moschatum*), smooth cat's ear (*Hypochaeris glabra*), medusa head, and [purple] vetch (*Vicia [benghalensis]*).

Upland Riparian Vegetation

Between the ordinary high water mark (OHWM) and the top of bank of Putah Creek, the uplands supported riparian vegetation; this varied from dense, almost impenetrable shrub–scrub areas, to open forest with well-spaced trees. Overstory trees included tree-of-heaven, river red gum (*Eucalyptus camaldulensis*), Oregon ash (*Fraxinus latifolia*), black walnut (*Juglans hindsii*), Fremont's cottonwood (*Populus fremontii*), valley oak, black elderberry (*Sambucus nigra*), and Chinese tallow tree (*Triadica sebifera*). Understory shrubs and perennials included Douglas' wormwood (*Artemisia douglasiana*), giant-reed (*Arundo donax*), Himalayan blackberry (*Rubus armeniacus*), and Pacific poison oak (*Toxicodendron diversilobum*). Common understory herbs included wild oat, smooth crab grass, dove's foot geranium, English plantain (*Plantago lanceolata*), and Johnson grass.

Residence

One farmhouse residence with associated outbuildings (29711 and 29719 East Grant Avenue), fenced yards, and associated landscaping is present within the Delineation Area. This residence appeared to be occupied during the field survey.

Roads

Existing native surface and gravel roads, which are approximately 10 to 12 feet wide, are present in the Delineation Area, where they provide access to the existing farm field, house, and

² [] species names in brackets are likely identifications from field material in January.

associated outbuildings. Near the northern border of the Delineation Area, SR 128 and associated city streets are paved.

NWI Wetlands

The NWI indicates that vegetated wetlands occur near the southern boundary of the Delineation Area, bordering Putah Creek (USFWS 2015). These wetlands are classified as “palustrine, shrub–scrub, seasonally flooded” and “palustrine, emergent vegetation, seasonally flooded” (USFWS 2015). The NWI background data indicate that these wetlands were digitized from aerial photographs from 1984 and 1985 (USFWS 2015).

Hydrology

The main hydrological feature in the Delineation Area is Putah Creek, a perennial stream which carries flows from Lake Berryessa (upstream to the west) to the Yolo Bypass (downstream to the east). This creek, which is the boundary between Yolo and Solano counties, is also the southern boundary of the Delineation Area.

Much of the local drainage, from run-off and/or constructed stormwater ditches, appears to be directed towards Putah Creek. However, these ditches were constructed wholly in uplands, drain only uplands, and do not carry a relatively permanent flow of water. These ditches do not appear to have continuous flow for a duration of three months. Instead, they appear to flow only for short durations typically after heavy precipitation events and historically, they may have flowed with agricultural irrigation drainage during the growing season, which would be associated with a large hay field on Grant Avenue. Agricultural irrigation supply is from a groundwater well north of Grant Avenue on private property; no surface waters are diverted for irrigation waters that occur in the ditches associated with this study.

While the configuration of ditches indicates that they would carry periodic irrigation releases, the present landowner indicated that no irrigation has taken place in the field for the past two years (N. Newkom, personal communication). In prior periods, it is believed by the landowner, irrigation drainage water was not released into the roadside ditches, and the ditches only flowed during large rain events (N. Newkom, personal communication) as a result of localized storm runoff largely from the adjacent roadway (SR-128).

Soils

Five soil mapping units underlie the Delineation Area (NRCS 2015a, Appendix D, Figure 2): “Brentwood silty clay loam, 0 to 2 percent slopes,” “Rincon silty clay loam,” “Riverwash,” “Water,” and “Yolo silt loam” (Appendix D). The NRCS did not provide a hydric description for the “Water” mapping unit, but this mapping unit appears to be limited to approximately the footprint of Putah Creek (Figure 2), and is assumed to apply to areas that are flooded for a very long time during the growing season. Of the remaining four mapping units, all are formed from alluvium and fill from sedimentary sources. Two of the four have hydric status: “Riverwash,” which is associated with streams and is frequently flooded for long or very long duration during the growing season; and “Yolo Silt Loam,” whose inclusions of “Sycamore” soils found on alluvial fans are also hydric (NRCS 2015b).

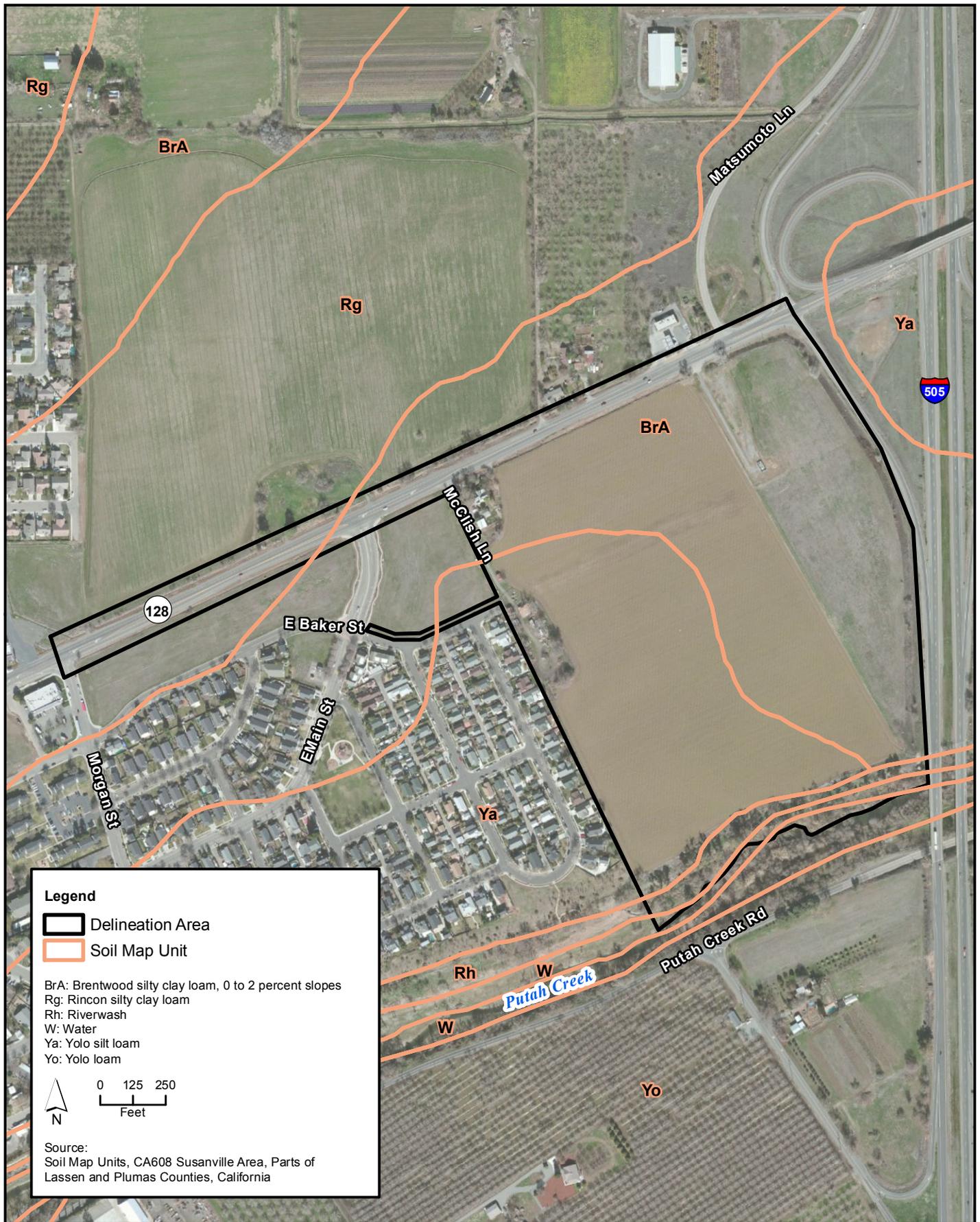


Figure 2
Soils in the Delineation Area

Delineation Methods

This investigation followed the methods described in the *Army Corps of Engineers Wetlands Delineation Manual* (USACE 1987), supplemented with guidance as directed by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (USACE 2008). After the preliminary review of existing information (results described in previous sections), the methods consisted of onsite field inspections of the Delineation Area to characterize the vegetation, soils, and hydrology of wetlands, identify OHWMs, and map wetlands and other water features. Data forms are provided in Appendix E. In addition, the top of bank, which also corresponded with the edge of riparian vegetation was identified and mapped. The following discussion describes how these methods were applied to the onsite features.

GANDA botanists conducted the field investigation on January 8 and 22, 2015. The Delineation Area (approximately 69.1 acres) is illustrated in Figures 1 and 2, and Appendix A.

Wetlands were identified based on the presence of hydrophytic vegetation and indicators of hydric soils and wetland hydrology. Other water features were identified based on the presence of water and/or an OHWM. Top of bank was identified based on a distinct break in the bank slope which corresponded to a change in riparian vegetation. Data point locations, OHWM, and top of bank were mapped in the field with a Trimble GeoXT global positioning system (GPS) survey unit capable of submeter accuracy. Data points were assessed at 11 locations. Computerized geographic information system (GIS) software was used to produce maps of the information collected in the field (Appendix A).

Each wetland and other water feature was assigned a unique code designation on the map in Appendix A. The first part consists of an abbreviation based on the categories of system and class from the Cowardin Classification (Cowardin et al. 1979). The prefixes “R,” “P,” and “D” refer to riverine, palustrine, and ditch systems respectively; the suffix “EM” refers to emergent wetland, “SS” refers to shrub–scrub wetland, “UB” refers to unconsolidated bottom, and “r” refers to artificial construction. The second part is a unique identification number assigned to each feature.

Vegetation

Wetland vegetation was identified in the field based on species composition and corresponding wetland indicator status. Plot sizes for evaluating vegetation ranged from 40 to 400 square feet around each data point and is documented in data forms (Appendix E). These plot sizes were used as a representation of the vegetation types encountered in the Delineation Area. The field investigator visually estimated the percent cover of each plant species encountered within the chosen sized plot.

Dominant species of each stratum were the most abundant plant species (when ranked in descending order of percent cover and cumulatively totaled) that immediately exceeded 50 percent of the total cover for the stratum, plus any additional species providing 20 percent or more of total cover for the stratum. The indicator status of each species was determined based on *The National Wetland Plant List: 2014 Update of Wetland Ratings* (Lichvar et al. 2014), utilizing the rating of the species for “Arid West Region.” Plants were identified with *Selected Plants of Northern California* (Janeway 2013) and *The Jepson Manual, Vascular Plants of California, 2nd Edition* (Baldwin et al. 2012). The wetland vegetation criterion was met in plots

where greater than 50 percent of the dominant plant species were assigned wetland indicator categories: Facultative (FAC), Facultative Wetland (FACW), or Obligate (OBL). Upland indicator categories include facultative upland (FACU) and upland (UPL); species with no listing were assumed to belong to the UPL category. Plant species which were encountered within the areas characterized by wetland or upland data points, and their assigned wetland indicator status categories, are presented in Appendix C.

Hydrology

Hydrology was characterized in the field using the methods provided in the *Arid West Supplement* (USACE 2008). While approximately three previous years (2012 through 2014) had abnormally low precipitation, at the time of survey, significant rains had occurred within the previous month. Therefore this investigation relied both on direct and indirect indicators of wetland hydrology. Direct indicators observed during this investigation included standing or flowing surface water and/or saturated soils (see data forms DP-5 and DP-7). Indirect indicators of wetland hydrology were more frequently used, and those that were present included sediment deposits, drift deposits, drainage patterns, and surface soil cracks (data forms DP-1, DP-3, DP-4, DP-6, DP-10, and DP-11).

Soils

Soils were characterized in the field using the methods provided in the *Arid West Supplement* (USACE 2008). Typically, at each sample point, a soil pit was excavated. The determination of presence of hydric soils was based on hydric soil indicators, which are a function of soil texture, matrix color, and/or the presence of other hydric soil indicators such as redoximorphic (redox) features. Soil colors were classified according to the *Munsell Soil Color Charts* (Munsell 2000).

Upland points evaluated in the Delineation Area all had matrices of 10YR 4/3, 10YR 3/4, or 10YR 4/2, with no visible redox features. Three of the evaluated wetland data points had the hydric soil indicator of “redox depressions” (DP-3, DP-5, and DP-10). All had more than 5 percent of prominent or distinct concentrations in a layer greater than 2 inches thick within the upper 6 inches of soil. This indicator signals that the ditches in which the points are located are closed depressions subject to ponding (USACE 2008).

Only one of the evaluated wetland points had problematic hydric soils (DP-6); in this location, the soils at the surface were newly deposited fine sand and gravel. This riverine shrub–scrub area appeared to fall under “vegetated sand and gravel bars within floodplains” as described in the *Arid West Supplement* (page 97, paragraph #3, USACE 2008). With the corresponding hydrophytic vegetation and wetland hydrology indicators at this data points, the soils were determined to be hydric.

Soils in the unvegetated main channel of Putah Creek were not excavated, but were assumed to be hydric because of presence of long-term standing water (DP-7).

Mapping Other Waters

Other waters were mapped in accordance with USACE policy which states the following:

The lateral limits of USACE jurisdiction for non-tidal watercourses (without adjacent wetland areas) is defined in 33 CFR 329.11 (a)(1) as the OHWM. The OHWM is defined as “...the line on

the (bank) established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in litter and debris; or other appropriate means that consider the characteristics of the surrounding areas.” The bank-to-bank extent of the channel that contains the water-flow during a normal rainfall year generally serves as a good first approximation of the lateral limit of USACE jurisdiction. The upstream limit of “waters” is defined as the point where the OHWM is no longer perceptible.

The limit of the OHWM of Putah Creek was recorded in the field based on observations of changes in vegetation and break in bank slope. Upstream of the Delineation Area (west), the level of Putah Creek is regulated at Lake Berryessa Dam. Therefore, under normal circumstances, the level of Putah Creek only fluctuates within a given range. The limit of this fluctuation is typically marked by a sharp break in the bank slope, with a corresponding change in vegetation and/or scour; this level was typically mapped as the OHWM. In a few areas where this line was less clear, the OHWM was mapped at the upslope edge of clear sediment and drift deposits.

A submeter GPS unit was used to map OHWMs in the field. These GPS readings, photographs, and notes were then used in the office to identify the OHWM on high resolution, geo-rectified aerial photography

Mapping Top of Bank

The top of bank of Putah Creek within the Delineation Area was mapped. The top of bank was identified in the field based on a distinct break in the channel bank slope, and corresponding change in vegetation from riparian forest to ruderal vegetation and fallow fields. The riparian vegetation around Putah Creek did not extend beyond this bank slope. The submeter GPS unit was used to map the top of bank in the field. These GPS readings were then used in the office to identify the top of bank on high resolution, geo-rectified aerial photography. While USACE jurisdiction is not defined by top of bank, the location of the top of bank provides additional general information on the stream setting, and was included in the mapping.

Mapping Ditches

Some of the stormwater ditches had physical indicators of hydrology such as sediment and/or drift deposits, drainage patterns, or surface soil cracks, indicating that they may carry water briefly during large storm events and/or agricultural irrigation releases. These ditch features were mapped as lines with a submeter GPS unit, and a corresponding width was recorded that was measured with tape measure to the nearest 0.5 foot. The width of the ditch was measured as the lateral extent of physical indicators of hydrology listed above.

Results

The primary focus of this jurisdictional delineation is to identify potential waters of the United States that may fall under USACE jurisdiction. These features are described below, along with other non-jurisdictional elements that were also noted during the field study.

USACE Jurisdictional Features

A total of three potential non-tidal waters of the United States, with combined area of 0.565 acres and 1,234 linear feet, were mapped within the Delineation Area (Table 2 and Appendix A). All of these features are contiguous with, comprised of, or adjacent to Putah Creek, which is a tributary to the Yolo Bypass, which flows into the Sacramento River; therefore, these features are potentially waters of the United States subject to USACE jurisdiction. A detailed description of these features follows.

Wetlands

A total of two potentially jurisdictional wetland features, with combined area of 0.114 acre, were mapped within the Delineation Area.

Riverine Shrub–Scrub Wetlands

One riverine shrub–scrub wetland feature (RSS-1) was mapped within the Delineation Area. It had an area of 0.098 acre (Table 2). This feature was located on a low terrace within the OHWM of Putah Creek on the north bank. While “riparian forest” and “riparian scrub” was widely present along the creek channel, only this single location was observed and mapped where the shrub–scrub vegetation also had indicators of wetland hydrology and hydric soils.

The woody shrub–scrub vegetation was dominated by box elder (*Acer negundo*, FACW), Fremont’s cottonwood (UPL), Himalayan blackberry (FACU), and sandbar willow (*Salix exigua*, FACW). Sparse herbs present included Douglas’ wormwood (FAC), smooth crab grass (FACU), fringed willowherb (FACW), Canadian horseweed (FACU), and hard-stem bulrush (*Schoenoplectus acutus*, OBL).

Table 2. Jurisdictional Features in the Delineation Area

Feature	USACE Jurisdictional Area (acres / linear feet)
Riverine shrub–scrub wetland (RSS-1)	0.098
Riverine emergent wetland (REM-1)	0.016
TOTAL WETLAND FEATURES (2 features)	0.114
Riverine unconsolidated bottom – open water (RUB-1)	0.451 / 1,234
TOTAL WATER FEATURES (1 feature)	0.451 / 1,234
TOTALS (3 features)	0.565 / 1,234

Riverine Emergent Wetland

One riverine emergent wetland feature (REM-1) was mapped within the Delineation Area. It had an area of 0.016 acre (Table 2). This feature was located on a low terrace within the OHWM of Putah Creek on the north bank where it appeared to be periodically inundated.

This feature had patchy shade from box elder (FACW) and river red gum (FAC). The herbaceous layer contained torrent sedge (*Carex nudata*, FACW), tall flat-sedge (*Cyperus eragrostis*, FACW), perennial rye grass (*Lolium perenne*, FAC), cut-leaf rice grass (*Leersia oryzoides*, OBL), and curly dock (*Rumex crispus*, FAC).

Other Waters

A single other water feature, with an area of 0.451 acre and combined length of 1,234 feet, was mapped in the Delineation Area. This feature is further described below.

Riverine Unconsolidated Bottom – Open Water

One open water feature, a portion of Putah Creek (RUB-1), was present in the Delineation Area, with an area of 0.451 acre and 1,234 feet (Table 2). The channel of this stream is largely unvegetated. At the time of field survey, it appeared to be running up to approximately 4 feet deep, and a few feet of elevation below the OHWM.

Non-Jurisdictional Elements

Stormwater Ditches

Twenty segments of constructed stormwater ditch, including a lined concrete channel, were also present in the Delineation Area. These elements encompass 0.651 acre and 6,564 feet (Table 3).

Table 3. Non-jurisdictional Elements in the Delineation Area

Element	Non-jurisdictional Area (acres / linear feet)
Ditch emergent wetland (DEM-1, DEM-2)	0.166 / 1,272
TOTAL NON-JURISDICTIONAL WETLAND ELEMENTS (2 elements)	0.166 / 1,272
Ditch unconsolidated bottom (DUB-1 to DUB-17)	0.472 / 5,221
Ditch artificial construction (Dr-1)	0.013 / 71
TOTAL NON-JURISDICTIONAL WATER ELEMENTS (18 elements)	0.485 / 5,292
TOTALS (20 elements)	0.651 / 6,564

Eighteen segments of the stormwater ditch conduct water into Putah Creek. However, these ditches appear to flow for only short periods (less than three months) during large precipitation events, and fit into the category of “non-tidal drainage and irrigation ditches excavated on dry land.” Based on guidance provided by the USACE and U.S. Environmental Protection Agency (EPA), “*the agencies will generally not assert jurisdiction over the following features...Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water*” (U.S. EPA and Department of the Army 2008). Under 33 CFR 328.3 (a), the USACE generally does not consider “non-tidal drainage and irrigation ditches excavated on dry land” to be waters of the United States (Federal Register 1986). Therefore the constructed ditches are likely not waters of the United States that fall under USACE jurisdiction.

The remaining two segments of non-wetland constructed stormwater ditch are isolated (DUB-16 and DUB-17); they do not have connectivity with Putah Creek or other water features. These ditch features also appear to run only for short periods during large precipitation events, and are

likely non-jurisdictional elements. Types of non-jurisdictional elements are further described below.

Ditch Unconsolidated Bottom

Seventeen segments of stormwater ditch with unconsolidated bottoms, with combined area of 0.472 acre and length 5,221 feet, were mapped within the Delineation Area. These ditches were dry at time of survey. However, they had indications of wetland hydrology such as sediment deposits, surface soil cracks, and drainage patterns, and most (15 of 17 ditch segments) appear to have drainage connectivity (either via surface flow or stand pipes and culverts) with Putah Creek; the remaining two stormwater ditches are isolated and did not appear to have connectivity to Putah Creek or any water features (Appendix A, Sheet 1 of 3, DUB-16 and DUB-17).

The stormwater ditches appear to carry short-term flows during periodic storm events and historically, drainage from agricultural irrigation releases. These ditches are vegetated with upland ruderal vegetation, and where investigated, did not have hydric soil indicators (see DP-1, DP-4, and DP-11). Sixteen of the seventeen ditch segments are “roadside ditches” with ruderal vegetation. The last, a 2-foot-wide ditch, with an area of 0.002 acre and length of 46 feet (DUB-15), carries flows through a short distance that is vegetated with upland riparian forest and shrub–scrub vegetation.

All seventeen segments of the unconsolidated bottom stormwater ditch appear to fit into the category of “non-tidal drainage and irrigation ditches” and are likely not waters of the United States.

Ditch Emergent Wetland

Two ditch segments contain areas with wetland indicators (DEM-1 and DEM-2), have a total area of 0.166 acre and were mapped as constructed stormwater ditches in the Delineation Area. These ditches have total length of approximately 1,272 linear feet. One ditch with wetland indicators (DEM-1) is located on the north side of SR 128, in a constructed stormwater ditch that appears to have poor drainage. The second ditch with wetland indicators (DEM-2) is located in another constructed stormwater ditch in an area with poor drainage. DEM-2 is located approximately 100 feet downstream of a pair of culverts (see Appendix A, Sheet 2 of 3, south end of feature DUB-14) which drain stormwater runoff from the I-5 southbound onramp and associated traffic island from the east into the ditch.

The emergent wetlands in the ditches were dominated in areas by hydrophytic herbaceous vegetation. Common species present included perennial wormwood (FACW), wild oat (UPL), Johnson grass (FACU), tall flat-sedge (FACW), smooth crab grass (FACU), large barnyard grass (*Echinochloa crus-galli*, FACW), dove’s foot geranium (UPL), ox-eye daisy (*Leucanthemum vulgare*, UPL), perennial rye grass (FAC), great plantain (*Plantago major*, FAC), and curly dock (FAC).

While wetland indicators are present, these elements are stormwater ditches fitting into the category of “non-tidal drainage and irrigation ditches,” flowing discontinuously for short periods (less than three months) during and immediately after large precipitation events, and are likely not waters of the United States.

Artificial Construction

An 8-foot-wide constructed concrete trapezoidal “channel” (Dr-1) collects water from other stormwater ditches throughout the Delineation Area, and acts as a spillway for short term flows downwards from the top of bank, into the Putah Creek riparian area. This concrete “channel”, which was dry at time of survey, has an area of 0.013 acre and length of 71 feet. This “channel” also appears to fit into the category of “non-tidal drainage and irrigation ditches” and is likely not a waters of the United States.

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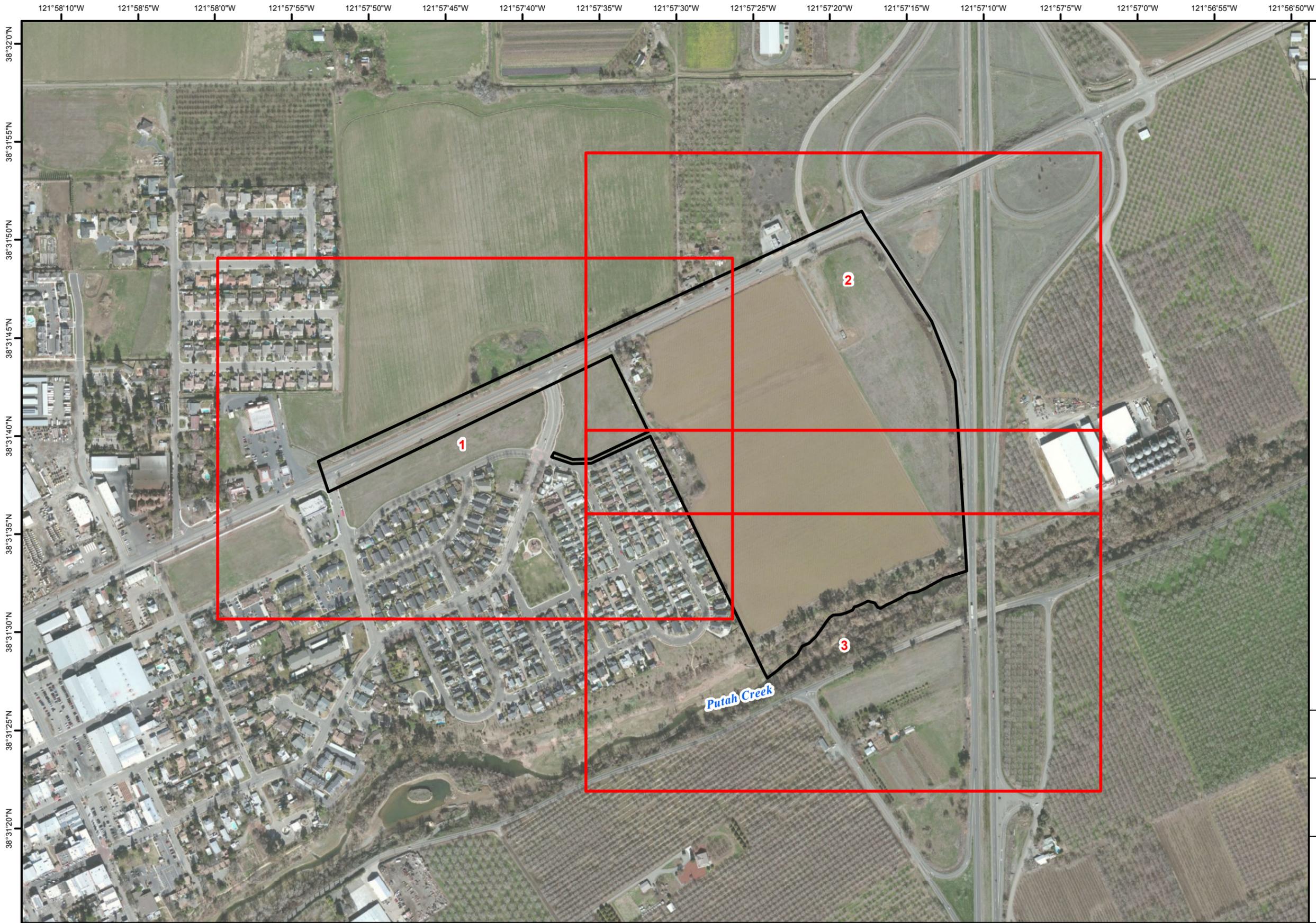
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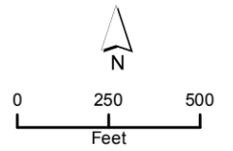
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Appendix A Delineation Map



**PG&E Winters GOTTC
February 2015
Key Map**

- Legend**
-  Delineation Area
 -  Map Sheet Index



Notes:
 1. Acreage shown for each class refers to the entire delineation area.
 2. Feature label key provided below.

Imagery Source: ESRI World Imagery (2010)
 USGS Topo Quad: Winters (1978)
 PLSS: Section 22; Township: 8N; Range: 01W

PG&E Contact: Ryan Brown
 Prepared by: Garcia and Associates/530-588-3515
 Delineated by: Samantha Hillaire and Susan Dewar
 Delineation Survey Date: 01-08-2015, 01-22-2015
 Drawn By: Karen Klinger

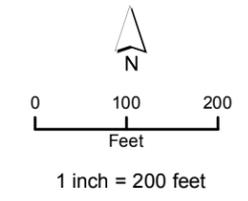
121°58'0"W 121°57'55"W 121°57'50"W 121°57'45"W 121°57'40"W 121°57'35"W 121°57'30"W

38°31'45"N
38°31'40"N
38°31'35"N

PG&E Winters GOTTC
February 2015
Sheet 1 of 3

Legend

- Culvert
- Data Point
- ▲ Storm drain
- + Stand pipe
- Delineation Area (69.070 ac)
- ⇒ Direction of flow
- Non-tidal waters (0.565 acre)**
- Wetlands (0.114 acre)**
- Riverine (0.114 acre)
- Other Waters (0.451 acre)**
- Riverine (0.451 acre)
- Ordinary High Water Mark
- Top of Bank
- Non-jurisdictional elements (0.651 acre)**
- Stormwater ditches (0.651 acre)**
- Ditch nonwetland (0.485 acre)
- Ditch wetland (0.166 acre)



Notes:
1. Acreage shown for each class refers to the entire delineation area.
2. Feature label key provided below.

Imagery Source: ESRI World Imagery (2010)
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Delineation Survey Date: 01-08-2015, 01-22-2015
Drawn By: Karen Klinger



*System: P = Palustrine, R = Riverine, D = Nonjurisdictional Ditch, *Class: UB= Unconsolidated Bottom, EM = Emergent Vegetation, SS = Scrub-Shrub, r = Artificial



121°57'35"W 121°57'30"W 121°57'25"W 121°57'20"W 121°57'15"W 121°57'10"W 121°57'5"W

38°31'50"N
38°31'45"N
38°31'40"N



PG&E Winters GOTTC
February 2015
Sheet 2 of 3

Legend

- Culvert
- Data Point
- ▲ Storm drain
- + Stand pipe
- Delineation Area (69.070 ac)
- ⇒ Direction of flow

Non-tidal waters (0.565 acre)

Wetlands (0.114 acre)

■ Riverine (0.114 acre)

Other Waters (0.451 acre)

■ Riverine (0.451 acre)

● Ordinary High Water Mark

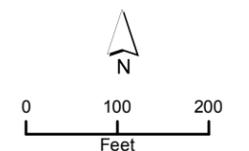
— Top of Bank

Non-jurisdictional elements (0.651 acre)

Stormwater ditches (0.651 acre)

— Ditch nonwetland (0.485 acre)

— Ditch wetland (0.166 acre)



1 inch = 200 feet

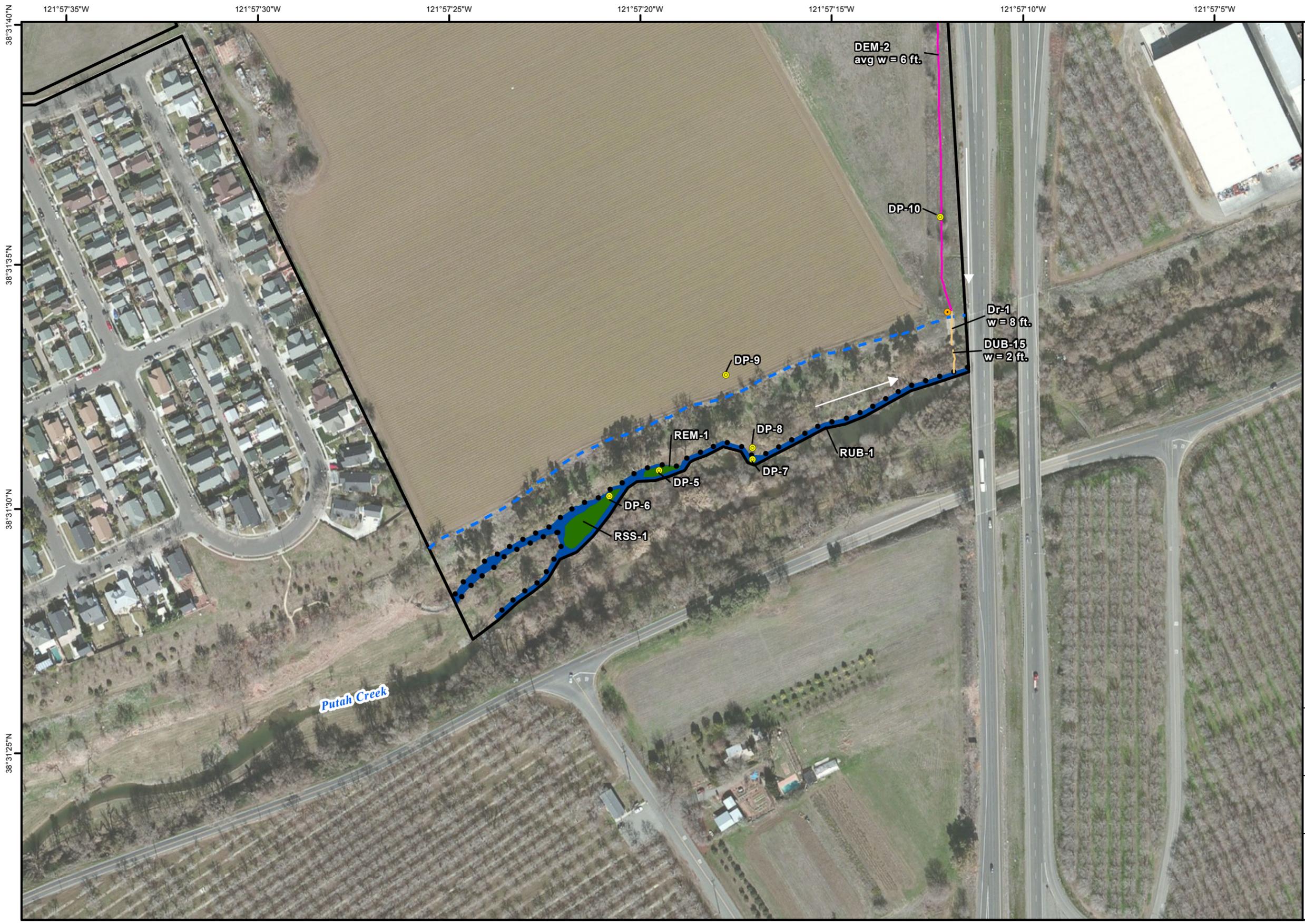
Notes:

1. Acreage shown for each class refers to the entire delineation area.
2. Feature label key provided below.

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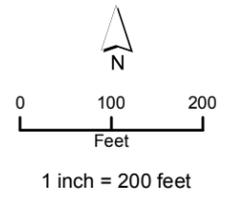
*System: P = Palustrine, R = Riverine, D = Nonjurisdictional Ditch, *Class: UB= Unconsolidated Bottom, EM = Emergent Vegetation, SS = Scrub-Shrub, r = Artificial



PG&E Winters GOTTC
February 2015
Sheet 3 of 3

Legend

- Culvert
- Data Point
- ▲ Storm drain
- + Stand pipe
- Delineation Area (69.070 ac)
- ⇒ Direction of flow
- Non-tidal waters (0.565 acre)**
- Wetlands (0.114 acre)**
- Riverine (0.114 acre)
- Other Waters (0.451 acre)**
- Riverine (0.451 acre)
- Ordinary High Water Mark
- - - Top of Bank
- Non-jurisdictional elements (0.651 acre)**
- Stormwater ditches (0.651 acre)**
- Ditch nonwetland (0.485 acre)
- Ditch wetland (0.166 acre)



Notes:
 1. Acreage shown for each class refers to the entire delineation area.
 2. Feature label key provided below.

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*System: P = Palustrine, R = Riverine, D = Nonjurisdictional Ditch, *Class: UB= Unconsolidated Bottom, EM = Emergent Vegetation, SS = Scrub-Shrub, r = Artificial

Appendix B

WETS Tables

WETS Station : WINTERS, CA202
 Latitude: 3832 Longitude: 12159
 State FIPS/County(FIPS): 06113
 Start yr. - 1971 End yr. - 2000

Creation Date: 12/10/2014
 Elevation: 00135
 County Name: Yolo

Month	Temperature (Degrees F.)			Precipitation (Inches)				
	avg daily max	avg daily min	avg	avg	30% chance will have		avg # of days w/.1 or more	avg total snow fall
					less than	more than		
January	54.8	37.6	46.2	5.10	1.88	6.16	7	0.1
February	61.3	41.1	51.2	4.67	1.48	5.56	7	0.0
March	66.6	44.2	55.4	3.60	1.29	4.34	6	0.0
April	74.4	47.9	61.2	1.03	0.33	1.24	3	0.0
May	82.9	53.4	68.2	0.64	0.05	0.71	2	0.0
June	90.9	58.2	74.6	0.12	0.00	0.13	1	0.0
July	95.8	60.0	77.9	0.03	NA	NA	0	0.0
August	94.3	59.1	76.7	0.05	0.00	0.00	0	0.0
September	89.8	56.8	73.3	0.26	0.00	0.25	1	0.0
October	80.3	50.7	65.5	1.00	0.28	1.20	2	0.0
November	65.0	42.6	53.8	2.87	0.75	3.35	5	0.0
December	55.6	37.0	46.3	3.45	1.47	4.25	5	0.0
Annual	-----	-----	-----	-----	16.60	26.87	--	-----
Average	76.0	49.1	62.5	-----	-----	-----	--	-----
Average	-----	-----	-----	22.82	-----	-----	38	0.2

GROWING SEASON DATES

Probability	Temperature		
	24 F or higher	28 F or higher	32 F or higher
	Beginning and Ending Dates Growing Season Length		
50 percent *		1/ 4 to 12/26 355 days	2/ 5 to 12/ 6 304 days
70 percent *		> 365 days > 365 days	1/29 to 12/13 318 days

* Percent chance of the growing season occurring between the Beginning and Ending dates.

Tables from NRCS 2014.

Appendix C

Plant Species Observed in the Delineation Area

Appendix C. Wetland Indicator Status for Plant Species Observed in the Delineation Area

Scientific Name	Common Name	Wetland Indicator Status ^a
<i>Abutilon theophrasti</i>	Velvetleaf	UPL
<i>Acacia [melanoxydon]</i>	[Blackwood] acacia	UPL
<i>Acer negundo</i>	Box elder	FACW
<i>Achillea millefolium</i>	Common yarrow	FACU
<i>Ailanthus altissima</i>	Tree-of-heaven	FACU
<i>Amsinckia [intermedia]</i>	[Common] fiddleneck	UPL
<i>Artemisia biennis</i>	Perennial wormwood	FACW
<i>Artemisia douglasiana</i>	Douglas' wormwood	FAC
<i>Arum italicum</i>	Italian arum	UPL
<i>Arundo donax</i>	Giant-reed	FACW
<i>Avena fatua</i>	Wild oat	UPL
<i>Brassica rapa</i>	Rape / yellow mustard	FACU
<i>Carex nudata</i>	Torrent sedge	FACW
<i>Centaurea solstitialis</i>	Yellow star-thistle	UPL
<i>Centromadia fitchii</i>	Fitch's false tarplant	FACU
<i>Croton setigerus</i>	Doveweed	UPL
<i>Cynodon dactylon</i>	Bermuda grass	FACU
<i>Cyperus eragrostis</i>	Tall flat-sedge	FACW
<i>Digitaria ischaemum</i>	Smooth crab grass	FACU
<i>Dittrichia graveolens</i>	Stinkwort	UPL
<i>[Dysphania ambrosioides]</i>	[Mexican-tea]	FAC
<i>Echinochloa crus-galli</i>	Large barnyard grass	FACW
<i>Elymus caput-medusae</i> = <i>Taeniatherum caput-medusae</i>	Medusa head	UPL
<i>Epilobium ciliatum</i>	Fringed willowherb	FACW
<i>Equisetum hyemale</i>	Tall scouring-rush	FACW
<i>Erigeron canadensis</i>	Canadian horseweed	FACU
<i>Erodium cicutarium</i>	Red-stemmed filaree	UPL
<i>Erodium moschatum</i>	White-stemmed filaree	UPL
<i>Eucalyptus camaldulensis</i>	River red gum	FAC
<i>Fraxinus latifolia</i>	Oregon ash	FACW
<i>Geranium molle</i>	Dove's foot geranium	UPL
<i>Hordeum murinum</i>	Wall barley	FACU
<i>Hypochaeris glabra</i>	Smooth cat's ear	UPL
<i>Juglans hindsii</i>	Black walnut	FAC
<i>Kickxia elatine</i>	Sharp-leaf cancerwort	UPL
<i>Lactuca serriola</i>	Prickly lettuce	FACU

Scientific Name	Common Name	Wetland Indicator Status ^a
<i>[Leersia oryzoides]</i>	Cut-leaf rice grass	OBL
<i>Lepidium latifolium</i>	Broad-leaf pepperwort	FAC
<i>Leucanthemum vulgare</i>	Ox-eye daisy	UPL
<i>Lolium perenne</i>	Perennial rye grass	FAC
<i>Malva nicaeensis</i>	Bull mallow	UPL
<i>Malva parviflora</i>	Cheeseweed	UPL
<i>Morus alba</i>	White mulberry	FACU
<i>Nerium oleander</i>	Oleander	UPL
<i>Paspalum dilatatum</i>	Golden crown grass	FAC
<i>Phalaris aquatica</i>	Harding grass	FACU
<i>Plantago lanceolata</i>	English plantain	FAC
<i>Plantago major</i>	Great plantain	FAC
<i>Populus fremontii</i>	Fremont's cottonwood	UPL
<i>Quercus douglasii</i>	Blue oak	UPL
<i>Quercus lobata</i>	Valley oak	FACU
<i>Rubus armeniacus</i>	Himalayan blackberry	FACU
<i>Rumex crispus</i>	Curly dock	FAC
<i>Salix exigua</i>	Sandbar willow	FACW
<i>Salsola tragus</i>	Prickly Russian-thistle	FACU
<i>Sambucus nigra</i>	Black elderberry	FAC
<i>Schoenoplectus acutus</i>	Hard-stem bulrush	OBL
<i>Sorghum halepense</i>	Johnson grass	FACU
<i>Toxicodendron diversilobum</i>	Pacific poison-oak	FACU
<i>Triadica sebifera</i>	Chinese tallowtree	UPL
<i>Vicia [bengalensis]</i>	[Purple] vetch	UPL
<i>Xanthium strumarium</i>	Rough cocklebur	FAC

Sources: USACE 1987; Lichvar et al. 2014; Baldwin et al. 2012.

[] species in brackets are likely identifications from field samples in January.

^a Indicator Status Definitions for Arid West Region:

- OBL = Obligate, almost always occurs in wetlands (>99% probability of occurrence)
- FACW = Facultative wetland, usually occurs in wetlands (66%–99% probability)
- FAC = Facultative, equally likely to occur in wetlands or nonwetlands (34%–66% probability)
- FACU = Facultative upland, usually occurs in nonwetlands but occasionally in wetlands (1%–33% probability)
- UPL = Obligate upland, almost never occurs in wetlands (<1% probability)
- NI = No indicator (insufficient information to assign an indicator status)

Appendix D

Soil Survey and Hydric Soils Information

Soil Map Units in the Delineation Area

Map Unit	Inclusions	Hydric Status	Hydric Criteria
Brentwood Silty Clay Loam, 0 to 2 percent slopes	None listed	None	None
Rincon Silty Clay Loam	None listed	None	None
Riverwash	None listed (streams)	Yes	4
Water	None listed	Yes	4*
Yolo Silt Loam	Sycamore (alluvial fans)	Yes	2

Source: NRCS 2015a, 2015b

* The “water” soil map unit was not listed for Yolo or Solano counties in NRCS 2015b, and was assumed to be an oversight. Map units called “water” are assumed to be flooded for very long duration during the growing season.

Hydric Criteria are as follows (2015b):

1. All Histels except Folistels and Histosols except Folists; or
2. Map unit components in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, or Andic, Cumulic, Pachic, or Vitrandic subgroups that:
 - a. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
 - b. Show evidence that the soil meets the definition of a hydric soil;
3. Map unit components that are frequently ponded for long duration or very long duration during the growing season that:
 - a. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
 - b. Show evidence that the soil meets the definition of a hydric soil; or
4. Map unit components that are frequently flooded for long duration or very long duration during the growing season that:
 - a. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
 - b. Show evidence that the soils meet the definition of a hydric soil.

Appendix E

Wetland Delineation Data Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Winters GOTTC City/County: Winters / Yolo Sampling Date: 8 January 2015
 Applicant/Owner: Pacific Gas and Electric Company (PG&E) State: CA Sampling Point: DP-1
 Investigator(s): Samantha Hillaire and Susan Dewar Section, Township, Range: Section 22, R1W, T8N
 Landform (hillslope, terrace, etc.): roadside ditch Local relief (concave, convex, none): concave Slope (%): 0-2%
 Subregion (LRR): LRR-C Lat: 38.52863 degrees Long: -121.960325 degrees Datum: NAD 83
 Soil Map Unit Name: Brentwood silty clay loam, 0 to 2 percent slopes NWI classification: R-UB

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Point evaluated in roadside ditch, 3.5 feet wide, south side of SR 128 (East Grant Avenue). Ditch has evidence of flow; appears to flow west toward stand pipe at this location but does not have hydrophytic vegetation. Likely flows for brief periods during storm events or agricultural releases.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	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)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Prevalence Index worksheet:				
Sapling/Shrub Stratum (Plot size: _____)		Total % Cover of: _____ Multiply by: _____		
1. _____	_____	_____	_____	OBL species <u>0</u> x 1 = <u>0</u>
2. _____	_____	_____	_____	FACW species <u>0</u> x 2 = <u>0</u>
3. _____	_____	_____	_____	FAC species <u>0</u> x 3 = <u>0</u>
4. _____	_____	_____	_____	FACU species <u>14</u> x 4 = <u>56</u>
5. _____	_____	_____	_____	UPL species <u>40</u> x 5 = <u>200</u>
_____ = Total Cover				Column Totals: <u>54</u> (A) <u>256</u> (B)
				Prevalence Index = B/A = <u>4.7</u>
Hydrophytic Vegetation Indicators:				
<input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				
Herb Stratum (Plot size: <u>3.5 x 20 feet</u>) 1. <u>Croton setigerus</u> 40 YES NI/UPL 2. <u>Brassica rapa</u> 10 NO FACU 3. <u>Asteraceae (unknown, dry skeletons)</u> 6 NO UNKN 4. <u>Lactuca serriola</u> 3 NO FACU 5. <u>Centromadia fitchii</u> 1 NO FACU 6. _____ 7. _____ 8. _____ _____ = Total Cover Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover % Bare Ground in Herb Stratum <u>10%*</u> % Cover of Biotic Crust _____				

Remarks:
 Hydrophytic vegetation is not present.
 *Remaining 30% on ground is leaf litter.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Winters GOTTC City/County: Winters / Yolo Sampling Date: 8 January 2015
 Applicant/Owner: Pacific Gas and Electric Company (PG&E) State: CA Sampling Point: DP-2
 Investigator(s): Samantha Hillaire and Susan Dewar Section, Township, Range: Section 22, R1W, T8N
 Landform (hillslope, terrace, etc.): valley Local relief (concave, convex, none): none Slope (%): 0%
 Subregion (LRR): LRR-C Lat: 38.528615 degrees Long: -121.960314 degrees Datum: NAD 83
 Soil Map Unit Name: Brentwood silty clay loam, 0 to 2 percent slopes NWI classification: Not applicable
 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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Non-native grassland upland point, paired to DP-1.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	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>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species <u>80</u> x 5 = <u>400</u> Column Totals: <u>80</u> (A) <u>400</u> (B) Prevalence Index = B/A = <u>5</u>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>10 x 10 feet</u>)				
1. <u>(Avena fatua)</u>	<u>40</u>	<u>yes</u>	<u>NI/UPL</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Erodium cicutarium</u>	<u>20</u>	<u>yes</u>	<u>NI/UPL</u>	
3. <u>Centaurea solstitialis</u>	<u>10</u>	<u>no</u>	<u>NI/UPL</u>	
4. <u>Hypochaeris glabra</u>	<u>7</u>	<u>no</u>	<u>NI/UPL</u>	
5. <u>Amsinckia (intermedia)</u>	<u>3</u>	<u>no</u>	<u>NI/UPL</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>20</u> % Cover of Biotic Crust _____				

Remarks:
 Hydrophytic vegetation not present.
 Species in parentheses are likely identifications during this January (non-flowering season) survey.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Winters GOTTC City/County: Winters / Yolo Sampling Date: 8 January 2015
 Applicant/Owner: Pacific Gas and Electric Company (PG&E) State: CA Sampling Point: DP-3
 Investigator(s): Samantha Hillaire and Susan Dewar Section, Township, Range: Section 22, R1W, T8N
 Landform (hillslope, terrace, etc.): Ditch Local relief (concave, convex, none): concave Slope (%): 0-2%
 Subregion (LRR): LRR-C Lat: 38.530681 degrees Long: -121.955517 degrees Datum: NAD 83
 Soil Map Unit Name: Brentwood silty clay loam, 0 to 2 percent slopes NWI classification: R-UB

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Wetland area in a 5-feet-wide stormwater ditch with poor flow (see Photo 1); flow is supposed to go east and south under SR 128. Surrounding uplands are landscaped in front of AM-PM/Burger King.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	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>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5 x 10 feet</u>)				
1. <u>Lolium perenne</u>	<u>80</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Digitaria ischeamum</u>	<u>10</u>	<u>no</u>	<u>FACU</u>	
3. <u>Avena fatua</u>	<u>3</u>	<u>no</u>	<u>NI/UPL</u>	
4. <u>Plantago major</u>	<u>3</u>	<u>no</u>	<u>FAC</u>	
5. <u>Echinochloa crus-galli</u>	<u>2</u>	<u>no</u>	<u>FACW</u>	
6. <u>Rumex crispus</u>	<u>1</u>	<u>no</u>	<u>FAC</u>	
7. <u>Leucanthemum vulgare</u>	<u>1</u>	<u>no</u>	<u>UPL</u>	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust _____				

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks:
 Hydrophytic herbaceous vegetation present in ditch.

SOIL

Sampling Point: DP-3

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		
0-1	10YR 3/1	100					silty clay	
1-6	10YR 4/3	94	10YR 3/1	6	C	M	silty clay	

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.)

- 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)

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)

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

Restrictive Layer (if present):

Type: man-made, concrete

Depth (inches): at surface to not present

Hydric Soil Present? Yes No

Remarks:

Soil has more than 5 percent of distinct concentrations in a layer more than 2 inches thick within the upper 6 inches of soil. Hydric soil indicator present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- 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)

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)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes No

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

Remarks:

Obvious sediment deposits in ditch. Wetland hydrology indicator present.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Winters GOTTC City/County: Winters / Yolo Sampling Date: 8 January 2015
 Applicant/Owner: Pacific Gas and Electric Company (PG&E) State: CA Sampling Point: DP-4
 Investigator(s): Samantha Hillaire and Susan Dewar Section, Township, Range: Section 22, R1W, T8N
 Landform (hillslope, terrace, etc.): Ditch Local relief (concave, convex, none): concave Slope (%): 0-2%
 Subregion (LRR): LRR-C Lat: 38.52948 Long: -121.958678 Datum: NAD 83
 Soil Map Unit Name: Brentwood silty clay loam, 0 to 2 percent slopes NWI classification: R-UB

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Stormwater ditch, approximately 4 feet wide, on the north side of SR 128 (East Grant Avenue). Feature appears to carry water briefly during storm events or agricultural releases, but is not a wetland (Photo 2). At this location, flow would go east to a culvert then turn south under SR 128.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	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)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species <u>100</u> x 4 = <u>400</u> UPL species _____ x 5 = _____ Column Totals: <u>100</u> (A) <u>400</u> (B) Prevalence Index = B/A = <u>4</u>
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>4 x 10 feet</u>)				
1. <u>Sorghum halepense</u>	<u>100</u>	<u>yes</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>100</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust _____		

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks:
 Entire ditch is filled with Johnson grass (Sorghum halepense) = FACU. Hydrophytic vegetation not present.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Winters GOTTC City/County: Winters / Yolo Sampling Date: 8 January 2015
 Applicant/Owner: Pacific Gas and Electric Company (PG&E) State: CA Sampling Point: DP-5
 Investigator(s): Samantha Hillaire and Susan Dewar Section, Township, Range: Section 22, R1W, T8N
 Landform (hillslope, terrace, etc.): flat terrace of Putah Creek Local relief (concave, convex, none): concave Slope (%): <5%
 Subregion (LRR): LRR-C Lat: 38.525178 degrees Long: -121.955487 degrees Datum: NAD 83
 Soil Map Unit Name: Water NWI classification: R-2-EM

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Flat vegetated terrace under the OHWM of Putah Creek. Photo 3.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>10 x 10 feet</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Eucalyptus camaldulensis</u>	45	Yes	FAC	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>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. <u>Acer negundo</u>	5	No	FACW	
3. _____				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
4. _____				
_____ = Total Cover	50			
<u>Sapling/Shrub Stratum</u> (Plot size: _____)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>10 x 10 feet</u>)				
1. <u>Cyperus eragrostis</u>	50	Yes	FACW	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Carex nudata</u>	10	No	FACW	
3. <u>(Leersia oryzoides)</u>	8	No	OBL	
4. <u>Festuca perennis</u>	1	No	FAC	
5. <u>Rumex crispus</u>	1	No	FAC	
6. _____				
7. _____				
8. _____				
_____ = Total Cover	70			
<u>Woody Vine Stratum</u> (Plot size: _____)				
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>30</u> % Cover of Biotic Crust _____				

Remarks:
 Hydrophytic riparian vegetation present.
 (Species in parenthesis indicate those with likely identifications).

SOIL

Sampling Point: DP-5

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	10YR 4/2	100					clay	
2-8	10YR 5/6	70	10YR 4/3	25	C	M	silty	
			10YR 6/1	5	D	M	clay	

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 Soils ³ :		
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)			
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)				
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)				
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Depressions (F8)				
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)				
<input type="checkbox"/> Sandy Gleyed Matrix (S4)					

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

Restrictive Layer (if present): Type: <u>None noted</u> Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	---

Remarks:
 Area subject to ponding adjacent the currently running stream channel. More than 5% distinct/prominent redox concentrations are present. This point was evaluated on the edge of what is currently inundated. The water level may come slightly over this area up to the mapped OHWM.

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)	
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0-8 inches</u> Water Table Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks:
 Area subject to ponding adjacent the currently running stream channel. Adjacent the stream, areas are inundated up to 8 inches, but near the outer OHWM, surface is dry with sediment and drift deposits.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Winters GOTTC City/County: Winters / Yolo Sampling Date: 8 January 2015
 Applicant/Owner: Pacific Gas and Electric Company (PG&E) State: CA Sampling Point: DP-6
 Investigator(s): Samantha Hillaire and Susan Dewar Section, Township, Range: Section 22, R1W, T8N
 Landform (hillslope, terrace, etc.): low terrace by stream Local relief (concave, convex, none): none to concave Slope (%): 0-5%
 Subregion (LRR): LRR-C Lat: 38.525033 Long: -121955846 Datum: NAD 83
 Soil Map Unit Name: Riverwash NWI classification: R-2-US-6 (RSS)

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: A shrub-scrub vegetated area in a low-lying area by Putah Creek. Lies within the OHWM. Area has problematic soils, with lots of newly deposited fine sand and small gravel.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>10 x 10 feet</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Acer negundo</u>	<u>6</u>	<u>yes</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
2. <u>Populus fremontii</u>	<u>5</u>	<u>yes</u>	<u>NI/UPL</u>	
3. _____				
4. _____				
<u>10</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>2</u> x 1 = <u>2</u> FACW species <u>32</u> x 2 = <u>64</u> FAC species <u>1</u> x 3 = <u>3</u> FACU species <u>36</u> x 4 = <u>134</u> UPL species <u>5</u> x 5 = <u>25</u> Column Totals: <u>76</u> (A) <u>228</u> (B) Prevalence Index = B/A = <u>3.0</u>
<u>25</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>10 x 10 feet</u>)				
1. <u>Salix exigua</u>	<u>25</u>	<u>yes</u>	<u>FACW</u>	
2. _____				
3. _____				
4. _____				
5. _____				
<u>25</u> = Total Cover				
Herb Stratum (Plot size: <u>10 x 10 feet</u>)				
1. <u>Digitaria ischaemum</u>	<u>5</u>	<u>yes</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Artemisia douglasiana</u>	<u>1</u>	<u>no</u>	<u>FAC</u>	
3. <u>Erigeron (canadensis)</u>	<u>1</u>	<u>no</u>	<u>FACU</u>	
4. <u>Epilobium ciliatum</u>	<u>1</u>	<u>no</u>	<u>FACW</u>	
5. <u>Schoenoplectus acutus</u>	<u>2</u>	<u>yes</u>	<u>OBL</u>	
6. _____				
7. _____				
8. _____				
<u>10</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>10 x 10 feet</u>)				
1. <u>Rubus armeniacus</u>	<u>30</u>	<u>yes</u>	<u>FACU</u>	
2. _____				
<u>30</u> = Total Cover				
% Bare Ground in Herb Stratum <u>20%*</u>		% Cover of Biotic Crust <u>0</u>		Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Plant names in parentheses are likely identifications. *The remainder of the ground was covered with duff and blackberry. Wetland vegetation is prevalent (but not dominant) in the area.				

SOIL

Sampling Point: DP-6

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		
Fine sand	and small gravel	on	top 6 inches.					New deposits.

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 Soils ³ :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)
	<input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input checked="" type="checkbox"/> Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: <u>None noted</u> Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____
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Remarks:
 Soil is problematic at this location. The area is covered with new deposits of fine sand and gravel. This falls under the "vegetated sand and gravel bars within floodplains" problematic hydric soils (Arid West, page 97, #3). Area has hydrophytic vegetation and wetland hydrology (under the OHWM of creek).

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine) <input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine) <input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Wetland hydrology present.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Winters GOTTC City/County: Winters / Yolo Sampling Date: 8 January 2015
 Applicant/Owner: Pacific Gas and Electric Company (PG&E) State: CA Sampling Point: DP-7
 Investigator(s): Samantha Hillaire and Susan Dewar Section, Township, Range: Section 22, R1W, T8N
 Landform (hillslope, terrace, etc.): creek channel Local relief (concave, convex, none): concave Slope (%): ~3%
 Subregion (LRR): LRR-C Lat: 38.525234 Long: -121.954808 Datum: NAD 83
 Soil Map Unit Name: Water NWI classification: R-2-UB-3 (RUB)

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 <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Point assessed in main channel of Putah Creek. Area is an unvegetated water of the United States that is approximately 20 or 25 feet wide.	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>10 x 10 feet</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: _____ (B)	
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)	
4. _____	_____	_____	_____	Prevalence Index worksheet:	
_____ = Total Cover					_____ Total % Cover of: _____ Multiply by: _____
<u>Sapling/Shrub Stratum</u> (Plot size: <u>10 x 10 feet</u>)				OBL species _____ x 1 = _____	
1. _____	_____	_____	_____	FACW species _____ x 2 = _____	
2. _____	_____	_____	_____	FAC species _____ x 3 = _____	
3. _____	_____	_____	_____	FACU species _____ x 4 = _____	
4. _____	_____	_____	_____	UPL species _____ x 5 = _____	
5. _____	_____	_____	_____	Column Totals: _____ (A) _____ (B)	
_____ = Total Cover				Prevalence Index = B/A = _____	
<u>Herb Stratum</u> (Plot size: <u>10 x 10 feet</u>)				Hydrophytic Vegetation Indicators:	
1. _____	_____	_____	_____		___ Dominance Test is >50%
2. _____	_____	_____	_____		___ Prevalence Index is ≤3.0 ¹
3. _____	_____	_____	_____		___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. _____	_____	_____	_____		___ Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
_____ = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
<u>Woody Vine Stratum</u> (Plot size: <u>10 x 10 feet</u>)				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
_____ = Total Cover					
% Bare Ground in Herb Stratum <u>100</u> % Cover of Biotic Crust _____					

Remarks:
 Area is unvegetated flowing creek channel of Putah Creek.
 (Very edge of stream has *Rubus armeniacus*, *Populus fremontii*, *Arundo donax*, *Eucalyptus camaldulensis*, *Carex nudata*, *Equisetum* sp.)

SOIL

Sampling Point: DP-7

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		
Did not	excavate.							Area assumed hydric because of long term inundation of main Putah Creek channel.

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 Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Vernal Pools (F9)	

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 <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:
Area assumed to have hydric soils because of long term inundation of Putah Creek.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Water Marks (B1) (Riverine)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Riverine)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Riverine)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>1 to ~72 in.</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Remarks:
Long term flowing channel of Putah Creek. Wetland hydrology present.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Winters GOTTC City/County: Winters / Yolo Sampling Date: 8 January 2015
 Applicant/Owner: Pacific Gas and Electric Company (PG&E) State: CA Sampling Point: DP-8
 Investigator(s): Samantha Hillaire and Susan Dewar Section, Township, Range: Section 22, R1W, T8N
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): ~0%
 Subregion (LRR): LRR-C Lat: 38.525298 Long: -121.954805 Datum: NAD 83
 Soil Map Unit Name: Water NWI classification: Not applicable

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: This is upland riparian forest/scrub on a terrace above the OHWM of Putah Creek. Area may flood occasionally, but doesn't appear to be regularly inundated. Putah Creek levels are highly regulated at Lake Berryessa Dam upstream.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>20 x 20 feet</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Eucalyptus camaldulensis</u>	5	Yes	FAC	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>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>17%</u> (A/B)
2. <u>(Triadica sebifera)</u>	5	Yes	NI/UPL	
3. _____				
4. _____				
<u>10</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>5</u> x 2 = <u>10</u> FAC species <u>6</u> x 3 = <u>18</u> FACU species <u>50</u> x 4 = <u>200</u> UPL species <u>16</u> x 5 = <u>80</u> Column Totals: <u>77</u> (A) <u>308</u> (B) Prevalence Index = B/A = <u>4</u>
Sapling/Shrub Stratum (Plot size: <u>20 x 20 feet</u>)				
1. <u>Toxicodendron diversilobum</u>	5	Yes	FACU	
2. _____				
3. _____				
4. _____				
5. _____				
<u>5</u> = Total Cover				
Herb Stratum (Plot size: <u>20 x 20 feet</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Sorghum halepense</u>	20	Yes	FACU	
2. <u>Digitaria ischaemum</u>	15	Yes	FACU	
3. <u>Avena fatua</u>	10	No	NI/UPL	
4. <u>Arundo donax</u>	5	No	FACW	
5. <u>Geranium molle</u>	1	No	NI/UPL	
6. <u>Plantago lanceolata</u>	1	No	FAC	
7. _____				
8. _____				
<u>62</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>20 x 20 feet</u>)				Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
1. <u>Rubus armeniacus</u>	10	Yes	FACU	
2. _____				
<u>10</u> = Total Cover				
% Bare Ground in Herb Stratum <u>20%*</u>		% Cover of Biotic Crust _____		

Remarks:
 Species in parenthesis are likely identifications. *Remainder of ground is duff/leaf litter.
 Some long-lived and deep-rooted plant species with wetland indicator status are present. These species are likely capable of getting water from the creek, although this area is outside of the OHWM and does not appear to be regularly inundated. Hydrophytic vegetation not present.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Winters GOTTC City/County: Winters / Yolo Sampling Date: 8 January 2015
 Applicant/Owner: Pacific Gas and Electric Company (PG&E) State: CA Sampling Point: DP-9
 Investigator(s): Samantha Hillaire and Susan Dewar Section, Township, Range: Section 22, R1W, T8N
 Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR): LRR-C Lat: 38.525718 Long: -121.954992 Datum: NAD 83
 Soil Map Unit Name: Yolo silt loam NWI classification: Not applicable

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Point was evaluated in a plowed field, that represents much of the upland habitat within the Delineation Area.	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: _____)				
1. _____	_____	_____	_____	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>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>20 x 20 feet</u>)				
1. <u>(Dysphania ambrosioides)</u>	<u>40</u>	<u>Yes</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Malva nicaeensis</u>	<u>5</u>	<u>No</u>	<u>NI/UPL</u>	
3. <u>Lactuca serriola</u>	<u>4</u>	<u>No</u>	<u>FACU</u>	
4. <u>Phalaris aquatica</u>	<u>1</u>	<u>No</u>	<u>FACU</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>50%</u> % Cover of Biotic Crust <u>0</u>				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks:
 Hydrophytic vegetation present because of widespread presence of a FAC species. Plant species names in parentheses represent likely identifications.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Winters GOTTC City/County: Winters / Yolo Sampling Date: 8 January 2015
 Applicant/Owner: Pacific Gas and Electric Company (PG&E) State: CA Sampling Point: DP-10
 Investigator(s): Samantha Hillaire and Susan Dewar Section, Township, Range: Section 22, R1W, T8N
 Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): concave Slope (%): 3%
 Subregion (LRR): LRR-C Lat: 38.526602 Long: -121.953423 Datum: NAD 83
 Soil Map Unit Name: Brentwood silty clay loam, 0 to 2 percent slopes NWI classification: P-EM-1 (PEM)

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: This point was evaluated in a man-made ditch, downstream of inputs from a pair of 30-inch concrete culverts. Vegetation from previous years' growth indicates dominance of a FACW species (<i>Cyperus eragrostis</i>) that is not as prevalent in current years growth.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	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>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>6 x 10 feet</u>)				
1. <u>Lolium perenne = Festuca perennis</u>	<u>66</u>	<u>Yes</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Cyperus eragrostis</u>	<u>25</u>	<u>Yes</u>	<u>FACW</u>	
3. <u>Rumex crispus</u>	<u>5</u>	<u>No</u>	<u>FAC</u>	
4. <u>Artemisia biennis</u>	<u>3</u>	<u>No</u>	<u>FACW</u>	
5. <u>Geranium molle</u>	<u>1</u>	<u>No</u>	<u>NI/UPL</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. <u>utilizing old and new material</u>	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u>				
Remarks: Hydrophytic vegetation present. Vegetation was assessed based on both standing remnants and undecayed vegetation.				

Remarks:
 Hydrophytic vegetation present. Vegetation was assessed based on both standing remnants and undecayed vegetation.

SOIL

Sampling Point: DP-10

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		
0-1	7.5YR 4/1	100					silty clay	
1-10	10YR 4/3	100	10YR 4/1	30	C	M	silty clay	

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.)

- 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)

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)

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

Restrictive Layer (if present):

Type: none noted
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

Hydric soil indicators present. More than 5 percent distinct redox concentrations in a layer more than 2 inches thick within the upper 6 inches of soil.

HYDROLOGY

Wetland Hydrology Indicators:

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

- 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)

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)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

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

Remarks:

Sediment deposits present. Wetland hydrology indicators present.
 Wetland hydrology indicators not strong, likely due to approximately 3 previous years of drought.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Winters GOTTC City/County: Winters / Yolo Sampling Date: 8 January 2015
 Applicant/Owner: Pacific Gas and Electric Company (PG&E) State: CA Sampling Point: DP-11
 Investigator(s): Samantha Hillaire and Susan Dewar Section, Township, Range: Section 22, R1W, T8N
 Landform (hillslope, terrace, etc.): Ditch Local relief (concave, convex, none): concave Slope (%): ~1%
 Subregion (LRR): LRR-C Lat: 38.529928 Long: -121.956686 Datum: NAD 83
 Soil Map Unit Name: Brentwood silty clay loam, 0 to 2 percent slopes NWI classification: Not applicable

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Area is a ~4-foot-wide ditch with sediment deposits and surface soil cracks. Likely runs for short periods of time during rain events and/or agricultural releases but is not a wetland.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	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)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>13</u> x 3 = <u>39</u> FACU species <u>52</u> x 4 = <u>208</u> UPL species <u>2</u> x 5 = <u>10</u> Column Totals: <u>67</u> (A) <u>257</u> (B) Prevalence Index = B/A = <u>3.8</u>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>4 x 10 feet</u>)				
1. <u>Sorghum halepense</u>	<u>50</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>(Lepidium latifolium)</u>	<u>10</u>	<u>No</u>	<u>FAC</u>	
3. <u>Xanthium strumarium</u>	<u>2</u>	<u>No</u>	<u>FAC</u>	
4. <u>Latuca serriola</u>	<u>2</u>	<u>No</u>	<u>FACU</u>	
5. <u>Rumex crispus</u>	<u>1</u>	<u>No</u>	<u>FAC</u>	
6. <u>Geranium molle</u>	<u>1</u>	<u>No</u>	<u>NI/UPL</u>	
7. <u>Elymus caput-medusae</u>	<u>1</u>	<u>No</u>	<u>NI/UPL</u>	
8. _____	_____	_____	_____	
<u>67</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>10%*</u> % Cover of Biotic Crust _____				

Remarks:
 Hydrophytic vegetation not present. Plant species in parenthesis are likely identifications. *Remainder of ground cover is duff/leaf litter.

Appendix F

Representative Photographs

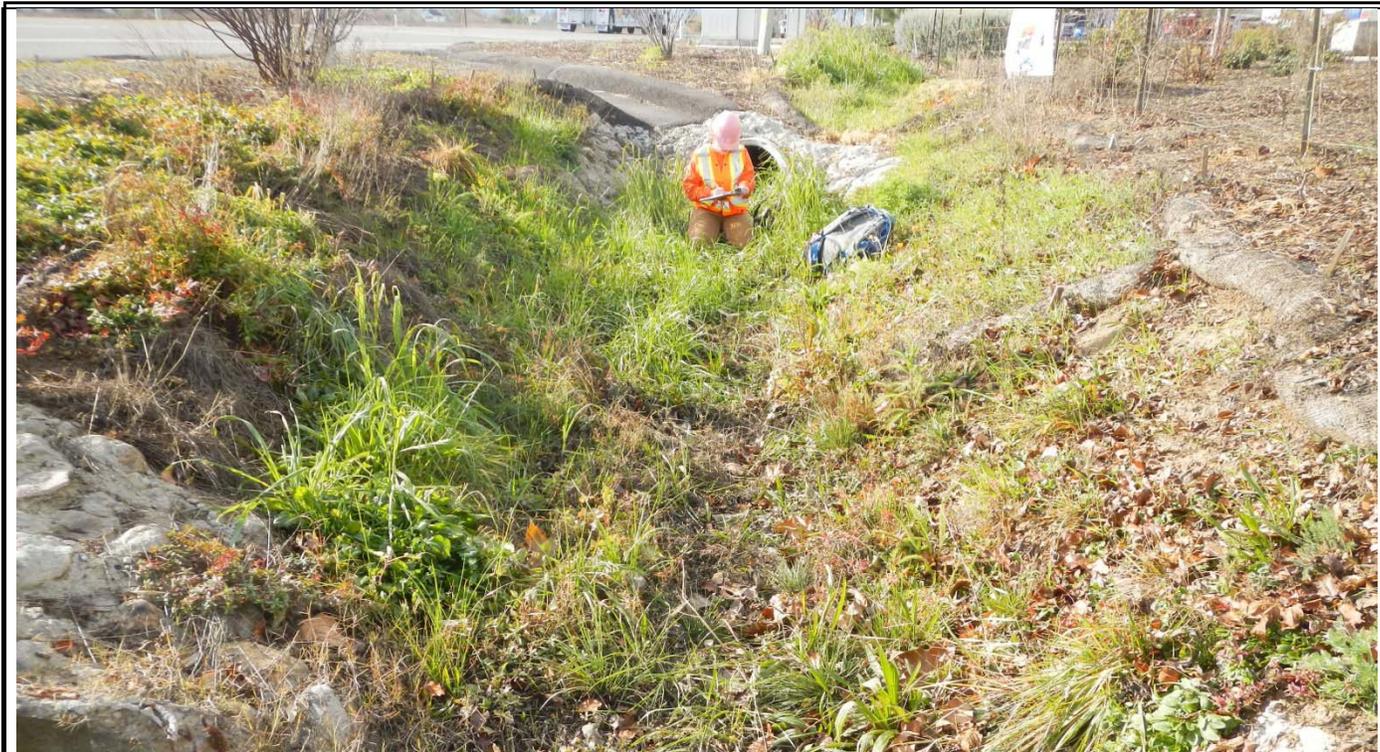


Photo 1. Palustrine emergent wetland feature (PEM-1) at location of DP-3. North side of SR 128, facing west, January 8, 2015.



Photo 2. Stormwater ditch feature (riverine unconsolidated bottom, RUB-3) at location of DP-4. North side of SR 128, facing west, January 8, 2015.

XXXX-XX



Photo 3. Riverine emergent wetland feature (REM-1) at location of DP-5. North side of Putah Creek (seen in background), facing east, January 8, 2015.



Photo 4. Open water of Putah Creek (RUB-15) on left, next to riverine shrub-scrub wetland (RSS-1) on right. North side of Putah Creek, facing west, January 8, 2015.

XXXX-XX



Photo 5. Man-made concrete channel in left foreground (Rr-1) leads downhill to small forested channel in right background (RUS-1). North side of Putah Creek (seen in background), facing southeast, January 8, 2015.



Photo 6. Upland riparian forest below top of bank of Putah Creek (left). Ruderal vegetation and fallow fields above top of bank (right). Facing west, January 8, 2015.

XXXX-XX