Appendix C4

Delineation of Potential Waters of the U.S. and State -Lassen Facility



Delineation of Potential Waters of the U.S. and State

Lassen Facility in Nubieber Forest Resiliency Project

Nubieber, Lassen County, California





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List of Acronyms

CFR	Code of Federal Regulations
Corps	U.S. Army Corps of Engineers
CSRL	California Soil Resource Lab
CWA	Clean Water Act
EPA	Federal Environmental Protection Agency
FAC	Facultative Plant
FACU	Facultative Upland Plant
FACW	Facultative Wetland Plant
HUC	Hydrologic Unit Code
NL	Not Listed
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
NWPL	National Wetland Plant List
OBL	Obligate Wetland Plant
ОНШМ	Ordinary High Water Mark
RWQCB	Regional Water Quality Control Board
SWRCB	California State Water Resources Control Board
TNW	Traditional Navigable Waters
UPL	Upland Plant
USGS	U.S. Geological Survey
WOTUS	Waters of the United States
WRA	WRA, Inc.



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1.0 INTRODUCTION

This report presents the results of a delineation of potential waters of the U.S. as defined by the Clean Water Act (CWA) and waters of the state as defined by the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (State Wetland Policy, SWRCB 2019). The Study Area for this delineation includes the proposed site of the Forest Resiliency Program – Lassen Facility (a new wood pallet processing facility) in Nubieber, Lassen County, California (Study Area; Appendix A – Figure 1). The Study Area consists of the southern 167-acre portion of the Dahle property (APN 001-270-26-11).

On April 29-30, 2024, WRA, Inc. (WRA) conducted a delineation within the Study Area to identify wetlands and non-wetland waters potentially subject to jurisdiction by the U.S. Army Corps of Engineers (Corps) under Section 404 of the CWA as well as the California State Water Resources Control Board (SWRCB) and Regional Water Quality Control Board (RWQCB) as defined in the State Wetland Policy (SWRCB 2019). The following sections describe the regulatory background and methods used to guide the delineation and provide a summary of wetlands and non-wetland waters within the Study Area. This delineation is considered "potential" subject to the approval of the Corps and, where appropriate, RWQCB.¹

¹ Per the State Wetland Policy (SWRCB 2019), the SWRCB or local RWQCB "shall rely on any wetland area delineation from a final aquatic resource report verified by the Corps for the purposes of determining the extent of wetland waters of the U.S. A delineation of any wetland areas potentially impacted by the project that are not delineated in a final aquatic resource report verified by the Corps shall be performed using the methods described in the ... "1987 Manual and Supplements" to determine whether the area meets the state definition of a wetland."



2.0 REGULATORY BACKGROUND

2.1 Section 404 of the Clean Water Act

The objective of the CWA is to maintain and restore the chemical, physical, and biological integrity of the waters of the U.S. (33 CFR Part 328 Section 328.4). Waters of the U.S. is the encompassing term for areas that qualify for federal regulation under Section 404 of the CWA. Section 404 of the CWA gives the U.S. Environmental Protection Agency (EPA) and the Corps regulatory and permitting authority regarding discharge of dredged or fill material into "navigable" waters of the U.S. Section 502(7) of the CWA defines navigable waters as "waters of the United States, including territorial seas." Section 328 of Chapter 33 in the Code of Federal Regulations (CFR) defines the term "waters of the United States" as it applies to the jurisdictional limits of the authority of the Corps under the CWA. A summary of this definition of "waters of the United States" in 33 CFG 328.3(a) includes:

(1) waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; the territorial seas; or interstate waters;

(2) impoundments of waters otherwise defined as waters of the United States under this definition, other than impoundments of waters identified under paragraph (5) of this section;

(3) tributaries of waters identified in paragraph (1) or (2) of this section that are relatively permanent, standing or continuously flowing bodies of water;

(4) wetlands adjacent to the following waters: waters identified in paragraph (1) of this section; or relatively permanent, standing or continuously flowing bodies of water identified in paragraph (2) or (3) of this section and with a continuous surface connection to those waters;

(5) intrastate lakes and ponds not identified in paragraphs (1) through (4) of this section that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in paragraph (1) or (3) of this section.

The definitions of wetlands and non-wetland waters, as well as areas exempt from jurisdiction, are discussed in more detail below.

2.1.1 Wetlands

Wetlands are defined in 33 CFR 328.3(c) as:

... those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

The basis for determining whether a given area is a wetland for the purposes of Section 404 of the CWA is outlined in the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Corps Manual; Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Delineation Manual* for the respective region (Arid West or Western Mountains, Valleys, and Coast



for California). As defined in 33 CFR 328.4(c), the extent of federal jurisdiction within wetlands is defined as extending to the limit of the wetland as determined using the methods outlined in the manuals.

2.1.2 Non-Wetland Waters

The limit of federal jurisdiction in non-tidal non-wetland waters extends to the ordinary high water mark (OHWM) which is defined in 33 CFR 328.3(c) as:

... that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the characteristics of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

2.1.3 Areas Exempt from Section 404 Jurisdiction

Some areas that meet the technical criteria for wetlands or waters may not be jurisdictional under the CWA per Section 404 regulations and the Corps Manual. As defined in 33 CFR 328.3(b), the following features are exempt from Section 404 Jurisdiction:

(1) Waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the Clean Water Act;

(2) Prior converted cropland designated by the Secretary of Agriculture. The exclusion would cease upon a change of use, which means that the area is no longer available for the production of agricultural commodities. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA;

(3) Ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water;

(4) Artificially irrigated areas that would revert to dry land if the irrigation ceased;

(5) Artificial lakes or ponds created by excavating or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing;

(6) Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating or diking dry land to retain water for primarily aesthetic reasons;

(7) Waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body water meets the definition of waters of the United States; and

(8) Swales and erosional features (e.g., gullies, small washes) characterized by low volume, infrequent, or short duration flow.



2.2 Waters of the State

The Porter-Cologne Water Quality Control Act gives the SWRCB authority to regulate discharge of dredged or fill material that may affect the quality of "waters of the state." "Waters of the state" are defined broadly as (SWRCB 2019):

... any surface water or groundwater, including saline waters, within the boundaries of the state.

In April 2019, the SWRCB adopted the State Wetland Policy, which provides a state wetland definition, procedures, and requirements for regulation of the discharge of dredge or fill material to wetlands and non-wetland waters of the state. The State Wetland Policy also includes exemptions from regulation of dredge and fill discharges for certain types of wetland and non-wetland waters features, as well as for certain classes of activities, such as activities covered by an existing RWQCB or SWRCB Order. The state wetland definition (SWRCB 2019), is similar to, but slightly different from that used by the Corps:

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

The State Wetland Policy utilizes existing Corps delineation procedures (Environmental Laboratory 1987; Corps 2008, 2010). According to the State Wetland Policy, the SWRCB and RWQCBs generally rely on the Corps for verification of wetland and non-wetland waters as part of an aquatic resource report. Any potential wetland area not identified in a report verified by the Corps is required to be delineated using Corps methods for consideration as a state wetland and verification by SWRCB or RWQCB staff. This report includes wetlands and non-wetland waters meeting both the Corps and state wetland definitions. Some features mapped as non-wetland waters under the Corps wetland definition may be considered wetlands under the state definition.

This report identifies wetlands and non-wetland waters according to the Corps definitions and criteria, consistent with the State Wetland Policy's reliance of these criteria. This report also recognizes that some non-wetland waters features may meet the wetland definition of the State Wetland Policy. The State Wetland Policy regulates wetlands and non-wetland waters equivalently; therefore, the classification of an unvegetated feature as a wetland or non-wetland water does not affect the scope of State regulation of that feature. In contrast, feature classification for purposes of Corps jurisdiction can affect some regulatory permitting decisions, such as determining the applicability of Nationwide Permit Program thresholds; therefore, the Corps definitions are relied upon for feature classifications in this report. In some cases, features mapped and classified as non-wetland waters may meet the State Wetland Policy definition of a wetland, where those features contain anaerobic substrates. Regardless of how they are defined, wetlands and non-wetland waters deemed jurisdictional may be regulated by the RWQCB and/or SWRCB under the State Wetland Policy.



3.0 STUDY AREA DESCRIPTION

The approximately 167-acre Study Area is located in Nubieber, Lassen County, California (Appendix A – Figure 1). The Study Area can be reached from San Francisco by way of I-80 East, I-505 North, and then I-5 North to Exit 680 for CA-299/Lake Boulevard, then following CA-299 East for approximately 85 miles to Babcock Road/Kramer Road. The Study Area is bounded by a railyard, railway lines, and the community of Nubieber to the north; a railway line and slough complex to the east; and undeveloped open space to the west and south. Land uses within the Study Area include undeveloped open space.

Habitat conditions within the Study Area are generally undisturbed, apart from large piles of ash along the south border. A layer of black ash is also present on the soil surface throughout much of the Study Area, particularly along the western border and southeast corner. Aerial photography of the Study Area shows the aerial signature of deposited ash within and adjacent to the Study Area (Appendix C).

3.1 Vegetation

Vegetation communities within the Study Area consist of common sagebrush (*Artemesia tridentata*) shrubland, perennial grasslands, seasonal wetlands, and seasonal wetland swales. Vegetation within sagebrush shrubland is composed of a sparse cover of common sagebrush (10–25% absolute cover) in the shrub layer, with an herbaceous understory dominated by slender-fruited lomatium (*Lomatium bicolor var. leptocarpum*, FACU), Medusa head (*Elymus caput-medusae*, NL) and bulbous bluegrass (*Poa bulbosa*, FACU). The perennial grasslands are dominated by native and non-native grasses and forbs, including slender-fruited lomatium, Medusa head, pine bluegrass (*Poa secunda*, FACU), bulbous bluegrass, and meadow foxtail (*Alopecurus pratensis*, FACW).

Dominant vegetation within seasonal wetlands included small camas (*Camassia quamash*, FACW), spike rush (*Eleocharis macrostachya*, OBL), and Mexican rush (*Juncus mexicanus*, FACW), with some western buttercup (*Ranunculus occidentalis*, FAC) and hairy whitetop (*Lepidium appelianum*, UPL). Two linear seasonal wetland swales are present in the southern parcel. These are dominated by slender phlox (*Microsteris gracilis*, FACU) and little mousetail (*Myosurus minimus*, OBL).

3.2 Soils

Web Soil Survey (USDA 2024a) and SoilWeb (CSRL 2024) list three (3) soil mapping units within the Study Area: *Bieber-Modoc complex, 0 to 5 percent slopes; Cupvar silty clay, 0 to 2 percent slopes; and Pit silty clay, drained, 0 to 2 percent slopes.* Descriptions of the soil series that comprise the soil mapping units are provided below. The distribution of these soil mapping units within the Study Area is depicted in Appendix A – Figure 2.

Bieber Series: Soils in the Bieber series consist of very shallow, well drained or moderately drained soils formed in alluvium derived from volcanic rocks. These soils occur on stream terraces and fan remnants, have very high runoff, and very low permeability. The Bieber-Modoc complex, 0 to 2 percent slopes soil mapping unit is not considered hydric (USDA 2024b).



Bieber series soils have a grayish brown (10YR 5/2) gravelly loam surface horizon with common very fine roots and 15 percent gravel from 0 to 6 inches below the soil surface, underlain by a very dark grayish brown (10YR 4/2) gravelly clay loam subsurface horizon with no redoximorphic features from 6 to 13 cm inches below the soil surface.

Modoc Series: Soils in the Modoc series consist of moderately deep, well-drained soils formed in volcanic ash over lacustrine deposits or alluvium. These soils occur on lake terraces and fan remnants, have medium runoff, and very low permeability. The Bieber-Modoc complex, 0 to 2 percent slopes soil mapping unit is not considered hydric (USDA 2024b).

Modoc series soils have a grayish brown (10YR 5/2) ashy loam surface horizon without redoximorphic features or gravel from 0 to 12 inches below the soil surface. This is underlain by a light brownish gray (10YR 6/2) loam without redoximorphic features or gravel.

Cupvar Series: Soils in the Cupvar series consist of moderately deep, moderately well drained soils formed in alluvium from extrusive igneous rock. These soils occur in basins, have medium runoff, and very low permeability. The Cupvar silty clay, 0 to 2 percent slopes soil mapping unit is not considered hydric (USDA 2024b).

Cupvar series soils have a surface horizon 0 to 3 inches below the soil surface consisting of dark grayish brown (10YR 4/2) silty clay without redoximorphic features, underlain by dark grayish brown (10YR 4/2) silty clay to 21 inches, then light yellowish brown (10YR 6/4) strongly cemented duripan to 25 inches. Cracks range from 0.5-1.5 inches wide.

Pit Series: Soils in the Pit series consist of very deep, poorly drained soils that formed in fine-textured alluvium weathered from extrusive and basic igneous rocks. These soils occur on flood plains and in basins, have medium runoff, and moderately low to moderately high permeability. The Pit silty clay, drained, 0 to 2 percent slopes soil mapping unit is considered hydric (USDA 2024b).

Pit series soils have a dark gray (10YR 4/1) silty clay surface horizon with cracks 1.5 inches wide between 0 to 4 inches from the soil surface, underlain with dark gray (10YR 4/2) clay to 40 inches and light brownish clay (10YR 6/2) to 45 inches with lime in seams and soft masses.

3.3 Hydrology

The Study Area is located in the Widow Valley Creek-Pit River region, within the Upper Pit Hydrologic Unit Code (HUC)-8 watershed (NRCS 2024). Annual rainfall within this watershed averages 17.5 inches, with most rain falling between November and May (PRISM 2024). Other hydrological sources for the Study Area include surface flow from the Big Valley Mountains to the east and high water from the slough complex to the west.

The natural hydrology of the site is relatively intact. A roadside ditch is located just outside the eastern border of the Study Area, adjacent to Babcock Road. This ditch is connected hydrologically by a series of culverts under Babcock Road and under the railway line that flow to Bull Run Slough to the east of the Study Area (Appendix A – Figure 3).

The Bieber U.S. Geological Survey (USGS) quadrangle (USGS 2021) shows perennial and intermittent tributaries of Bull Run Slough flowing adjacent to the eastern Study Area boundary.



The Bull Run Slough flows to the Pit River, which eventually flows into Shasta Lake. Shasta Lake is classified as a Traditional Navigable Water (TNW) by the Sacramento District (Corps 2024).

4.0 METHODS

WRA biologists performed a delineation of aquatic resources within the Study Area on April 29-30, 2024. Prior to conducting the evaluation, WRA reviewed a range of background materials including the Web Soil Survey (USDA 2024a), SoilWeb (CSRL 2024), the National Wetlands Inventory (NWI; USFWS 2024), the California Aquatic Resource Inventory (SFEI 2023), and the USGS Bieber 7.5-minute quadrangle map (USGS 2021). WRA also reviewed current and historic aerial imagery (Google Earth 2024, NETR 2024). In addition, the previous wetland delineation on of the northern Lassen Parcel was reviewed to plan the site visit and as a reference during the site visit.

4.1 Wetlands

WRA followed the Routine Method to evaluate the Study Area for the presence or absence of indicators of the three wetland parameters described in the Corps Manual (Environmental Laboratory 1987) and Arid West Supplement (Corps 2008). Data on vegetation, hydrology, and soils were collected at sample points within potential wetland communities and adjacent upland areas. Sample points that contained positive indicators for hydrophytic vegetation, hydric soils, and wetland hydrology were considered to be wetland. Except in cases of atypical or problematic wetland situations (i.e., difficult wetland situations, as described below), sample points that lacked one or more indicators were considered to be upland. Sample point data were reported on Arid West Supplement data forms. Sample point locations were recorded using a handheld GPS unit with mapping grade accuracy.

4.1.1 Vegetation

Plant species observed in the Study Area were identified using the Jepson eFlora (Jepson Flora Project 2024). Plants were assigned a wetland indicator status according to the National Wetland Plant List (NWPL; Corps 2022a). Wetland indicator statuses listed in the NWPL are based on the expected frequency of occurrence in wetlands, as follows in Table 1:

CLASSIFICATION (ABBREVIATION)	DEFINITION	HYDROPHYTIC SPECIES? (Y/N)
Obligate (OBL)	Almost always is a hydrophyte, rarely in uplands	Y
Facultative Wetland (FACW)	Usually is a hydrophyte but occasionally found in uplands	Υ
Facultative (FAC)	Commonly occurs as either a hydrophyte or non- hydrophyte	Y
Facultative Upland (FACU)	Occasionally is a hydrophyte but usually occurs in uplands	Ν
Upland / Not Listed (UPL / NL)	Rarely is a hydrophyte, almost always in uplands	Ν



The presence of hydrophytic vegetation was then determined based on indicator tests described in the Arid West Supplement. The Arid West Supplement requires that a three-step process be conducted to determine if hydrophytic vegetation is present. The procedure first requires the delineator to apply the "50/20 rule" (Indicator 1; Dominance Test) described in the manual. To apply the "50/20 rule," dominant species are chosen independently from each stratum of the community. Dominant species are determined for each vegetation stratum from a sampling plot of an appropriate size surrounding the sample point. Dominants are the most abundant species that individually or collectively account for more than 50 percent of the total vegetative cover in the stratum, plus any other species that, by itself, accounts for at least 20 percent of the total vegetative cover. If more than 50 percent of the dominant species has an OBL, FACW, or FAC status, the sample point meets the hydrophytic vegetation criterion.

If the sample point fails Indicator 1 and both hydric soils and wetland hydrology are not present, then the sample point does not meet the hydrophytic vegetation criterion, unless the site is a problematic wetland situation; however, if the sample point fails Indicator 1 but hydric soils and wetland hydrology are both present, the delineator must apply Indicator 2.

Indicator 2 is known as the Prevalence Index. The Prevalence Index is a weighted average of the wetland indicator status for all plant species within the sampling plot. Each indicator status is given a numeric code (OBL = 1, FACW = 2, FAC = 3, FACU = 4, and UPL = 5). Indicator 2 requires the delineator to estimate the percent cover of each species in every stratum of the community and sum the cover estimates for any species that is present in more than one stratum. The delineator must then organize all species into groups according to their wetland indicator status and calculate the Prevalence Index using the following formula, where A equals total percent cover:

$$PI = \frac{A_{OBL} + 2A_{FACW} + 3A_{FAC} + 4A_{FACU} + 5A_{UPL}}{A_{OBL} + A_{FACW} + A_{FAC} + A_{FACU} + A_{UPL}}$$

The Prevalence Index will yield a number between 1 and 5. If the Prevalence Index is equal to or less than 3, the sample point meets the hydrophytic vegetation criterion; however, if the community fails Indicator 2, the delineator must proceed to Indicator 3.

Indicator 3 is known as Morphological Adaptations. If more than 50 percent of the individuals of a FACU species have morphological adaptations for life in wetlands, that species is considered a hydrophyte and its indicator status should be reassigned to FAC. If such observations are made, the delineator must recalculate Indicators 1 and 2 using a FAC indicator status for this species. The sample point meets the hydrophytic vegetation criterion if either test is satisfied.

4.1.2 Soils

The Natural Resource Conservation Service (NRCS) defines a hydric soil as follows:

A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part.

> Federal Register July 13, 1994, U.S. Department of Agriculture, NRCS



Soils formed over long periods of time under wetland (anaerobic) conditions often possess characteristics that indicate they meet the definition of hydric soils. Hydric soils can have a hydrogen sulfide (rotten egg) odor, low chroma matrix color, designation of 0, 1, or 2 (used to identify them as hydric), presence of redox concentrations, gleyed or depleted matrix, or high organic matter content.

Specific indicators used to determine whether a soil is hydric for the purposes of wetland delineation are provided in the NRCS *Field Indicators of Hydric Soils in the U.S.* (USDA 2018). Soil samples were collected and described according to the methodology provided in the Arid West Supplement. Soil chroma and values were determined by utilizing a standard Munsell soil color chart (Munsell Color 2009).

Hydric soils were determined to be present if any of the soil samples met one or more of the hydric soil indicators described in *Field Indicators of Hydric Soils in the U.S.* (USDA 2018) that occur in the Arid West region.

4.1.3 Hydrology

The Corps jurisdictional wetland hydrology criterion is satisfied if an area is inundated or saturated for a period sufficient to create anoxic soil conditions during the growing season (a minimum of 14 consecutive days in the Arid West region). Evidence of wetland hydrology can include primary indicators, such as visible inundation or saturation, drift deposits, oxidized root channels, and salt crusts, or secondary indicators such as the FAC-Neutral Test, presence of a shallow aquitard, or crayfish burrows. The Arid West Supplement contains primary and secondary hydrology indicators. Only one primary indicator is required to meet the wetland hydrology criterion; however, if secondary indicators are used, at least two secondary indicators must be present to conclude that an area has wetland hydrology.

The presence or absence of the primary or secondary indicators described in the Arid West Supplement was utilized to determine if sample points within the Study Area met the wetland hydrology criterion.

A hydrologic analysis using the Antecedent Precipitation Tool (Deters 2023) was conducted to determine whether precipitation levels during the 3 months prior to the site visits were above, below, or within the 30-year average for the region, as well as to determine if the region was experiencing long-term drought conditions. Long-term precipitation data were obtained from weather stations in the vicinity of the Study Area. Drought condition data were obtained from monthly Palmer Drought Severity Index dataset published by the National Ocean and Atmospheric Administration (NOAA 2024).

During the 3-month period prior to the site visit, precipitation was above normal, and at the time of the site visit, the region was experiencing incipient wetness. The full results of the Antecedent Precipitation Tool analysis are provided as Appendix E.

4.1.4 Boundary Determinations

Wetland boundaries were identified using a combination of indicators observed on the ground, most often corresponding to changes in topography and dominant vegetation, in addition to other indicators. Where wetland boundaries were difficult to determine, wetland signatures visible in recent and historical aerial imagery from Google Earth March 2020 and July 2014 were



used to determine wetland boundaries. Based on a hydrologic analysis, WRA determined that the aerial photographs represent periods with normal to below-normal precipitation levels. Using imagery from normal periods allowed WRA to identify the normal extent of wetland conditions across the site. Using imagery from drier-than-normal periods allowed WRA to visualize trends in vegetation and soil conditions more easily due to the strong comparison of wet and dry areas.

4.1.5 5.Difficult Wetland Situations

The Arid West Supplement (Corps 2008) includes recommended procedures for completing wetland delineations in areas of "difficult wetland situations" in which wetlands may lack one or more indicators due to natural or anthropogenic factors; these are discussed as atypical or problematic wetland conditions in the Corps Manual (Environmental Laboratory 1987). Although the Corps Manual and Arid West Supplement (Corps 2008) were utilized in the wetland determination, they do not provide exhaustive lists of the difficult situations and problem areas that can arise during delineations in the Arid West. In these situations, the Corps Manual and Regional Supplements stress the importance of using best professional judgment and knowledge of the ecology of the wetlands in the region during the collection and interpretation of data in difficult sites.

Naturally problematic soils are present within the Study Area. The soil series description for the Cupvar Series, which is the soil series mapped within the eastern portion of the Study Area (Appendix A – Figure 2), includes cracks ranging from 0.5-1.5 inches wide. These cracks were confirmed at sample points taken within upland and wetland areas within the Study Area (See Photo 9, Appendix C).

Additionally, there were no redoximorphic (redox) features observed in any of the soils within the Study Area. The volcanic parent material of the soils may lack iron and/or manganese, which are necessary for the chemical reactions producing redox features. The lack of redox features was confirmed at delineation point SP-05, which displayed strongly hydrophytic emergent vegetation and hydrology indicators including surface water (A1) (Appendix A – Figure 3). The extent of hydrophytic vegetation and hydrology indicators were primarily used to determine the wetland boundaries.

Finally, as mentioned in Section 3.0, a layer of ash covered the soil surface to a depth of 0.5–1.5 inches throughout much of the Study Area. Aerial photography shows that the ash was deposited prior to 2017, with another deposit prior to 2023 (Appendix C).

4.2 Non-Wetland Waters

This study also evaluated the presence of non-wetland waters using Corps manuals and guidance for the identification of OHWM indicators (Corps 2005, Lichvar and McColley 2008). Examples of non-wetland waters include lakes, rivers, and streams. Non-wetland water types potentially subject to both Corps and RWQCB/SWRCB jurisdiction were investigated and identified in the field and as part of this report.

5.0 RESULTS

A map showing the location and extent of potential jurisdictional waters mapped within the Study Area is provided in **Appendix A – Figure 3**. As discussed above, the features are classified according to definitions relied upon by the Corps, which in some cases may differ from



classification under the State Wetland Policy. A summary of acreages of potential Corps jurisdiction under Section 404 of the CWA and potential state jurisdiction under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act is provided in Table 2. Wetland Determination Data Forms are provided as Appendix B. Photographs of the Study Area are provided as Appendix C. A list of all plant species observed during the delineation site visits is included as Appendix D. The results of a precipitation and hydrological analysis are included as Appendix E.

	CLASSIFICATION ¹	POTENTIAL WATERS OF THE U.S.		POTENTIAL WATERS OF THE STATE	
FEATORE ITPE		ACRES	LINEAR FEET	ACRES	LINEAR FEET
Wetlands					
Seasonal Wetlands	PEM2	2.50	-	2.69	-
Seasonal Wetland Swales	PEM2	-	-	0.17	-
Wetland Ditches	R4SB7	-	-	0.22	2,032
	TOTAL:	2.50	-	3.08	2,032

Table 2. Summary of Wetlands and Non-Wetland Waters Mapped within the Study Area

¹FGDC 2013

5.1 Wetland Types

5.1.1 Seasonal Wetlands

A total of 2.69 acres of seasonal wetlands were mapped within the Study Area. Seasonal wetlands are closed depressions which retain water and remain inundated or saturated for a portion of the year before drying completely for the remainder of the year. Seasonal wetlands are differentiated from seasonal wetland swales because they are closed depressions rather than linear features.

Seasonal wetlands within the Study Area (SW-01 through SW-10) were dominated by hydrophytic vegetation, including small camas (FACW), spike rush (OBL), Mexican rush (FACW), bulbous bluegrass (FACU), and immature dock (*Rumex* sp., FAC). Additional common species included western buttercup (FAC), hairy whitetop (UPL), and meadow foxtail (FACW). A distinct vegetation shift marked the boundary with the adjacent uplands, which were dominated by common sagebrush in the shrub layer and Medusa head (NL) in the herbaceous layer.

Soils within seasonal wetlands were composed of a surface layer of deposited black ash (7.5YR 2.1/1), underlain by dark brown (7.5YR 3/2-3/3) clay with no redox features or mottling. The surface layer of black ash ranged from 1 to 3 inches. As with all other soils on the site, there were no hydric soil indicators observed, therefore, the extent of seasonal wetlands was determined based on the extent of hydrophytic vegetation and hydrology indicators. Hydrology indicators included saturation (A3), and high water table (A2), as indicated in Sample Points SP-07 and SP-09.



The seasonal wetlands were classified as PEM2: Palustrine (P), emergent (EM), and non-persistent (2).

5.1.2 Seasonal Wetland Swales

Two seasonal wetland swales were delineated in the Study Area, totaling 0.17 acre. Seasonal wetland swales are linear depressions which have a limited amount of hydrological flow which transitions into surface flow. Unlike streams and drainages, seasonal wetland swales do not have a defined bed-and-bank topography, which would require a stronger or more sustained flow of water. Seasonal wetland swales differ from the seasonal wetlands described above because they are linear features rather than closed depressions.

Seasonal wetland swales (SWS-01 and SWS-02) were dominated by hydrophytic vegetation, including slender phlox (FACU) and little mousetail (OBL). Additional species included spike rush (OBL), and pine bluegrass (*Poa secunda*, FACU). The vegetation passed the prevalence index test, as demonstrated by delineation point SP-01. A distinct vegetation transition was observed between seasonal wetland swales and the surrounding uplands. Adjacent uplands were dominated by pine bluegrass (FACU) and bulbous bluegrass (FACU), with Chinese houses (*Collinsia heterophylla*, NL), whitlow grass (*Draba verna*, NL), and Great Basin violet (*Viola beckwithii*, NL) also common in adjacent uplands.

Soils within seasonal wetland swales were composed of a thin (0.5-inch) surface layer of black (10YR 2/1) deposited ash with abundant fine roots, underlain with dark brown (7.5YR 3/3) clay loam (to 6 inches) and dark brown (7.5YR 3/3) sand (to 12 inches). As with all other soils on the site, there were no hydric soil indicators observed. Adjacent upland soils were composed of very dark brown (7.5YR 2.1/2) clay loam without redox features, and without an ash deposit layer on the surface. The original ash deposit was placed west of the seasonal wetland swales, and the hydrological flow of the swales distributed ash within the swales but not in the adjacent uplands. Hydrology indicators within seasonal wetland swales included saturation (A3) at a depth of 3 inches, as displayed in sample point SP-01. Algal matting was also present.

The seasonal wetland swales were classified as PEM2: Palustrine (P), emergent (EM), and non-persistent (2).

5.1.3 Wetland Ditches

A total of 0.22 acre (2,032 linear feet) of wetland ditches were delineated within the western portion of the Study Area. Ditches are anthropogenic (man-made) linear features which convey flows from one area to another. Ditches differ from seasonal wetland swales because they are anthropogenic and highly linear. Wetland ditches contained over 5% absolute cover of emergent vegetation. Wetland ditches within the Study Area are located along the western border and appear to accept high flows from the adjacent parcel.

Sample point SP-05 is located within a representative wetland ditch immediately outside of the Study Area boundary. This sample point was investigated to confirm that hydric soil indicators were absent despite clear indicators of hydrophytic vegetation and wetland hydrology. As discussed in Section 4.1.4, there were no redox or other hydric soil indicators observed, despite the presence of obligate wetland vegetation and multiple indicators of hydrology.



Wetland ditches supported wetland vegetation dominated by spike rush (OBL). Other common species included immature dock (FAC), coyote thistle (*Eryngium* sp., FACW), little mousetail (OBL), Beckwith's clover (*Trifolium beckwithii*, FAC), and small camas (FACW).

Soils within wetland ditches were composed of a thin (0.5-inch) surface layer of black (10YR 2/1) deposited ash, underlain by dark brown (10YR 3/2) clay without redox features, as displayed in delineation point SP-05. Hydrology indicators included surface water (A1) and aquatic invertebrates (B13).

Wetland ditches are classified as R4SB7: riverine (R), intermittent (4), stream bed (SB), and vegetated (7).

6.0 CONCLUSION AND JURISDICTIONAL ANALYSIS

The results of this delineation of aquatic resources were based on conditions observed during the time of the assessment and background information provided to WRA by Kimley-Horn. The delineation uses the federal methodology to determine the potential boundaries of wetlands and non-wetland features and is consistent with the approach used by the RWQCB to determine wetlands subject to the State Wetland Policy.

Below we discuss which features are subject to Section 404 jurisdiction pursuant to the "Amended 2023 Rule" based on the revised definition for "waters of the United States" (WOTUS), which was originally published in the Federal Register on January 18, to reflect the U.S. Supreme Court in *Sackett v. US*. Pursuant to the Amended 2023 Rule, aquatic features that appear to have a continuous surface connection to a relatively permanent tributary that flows to Shasta Lake would potentially be subject to Section 404 jurisdiction, while aquatic features that lack a continuous surface connection to a WOTUS would not be subject to Section 404 jurisdiction (see Section 2.1.3). Shasta Lake has been classified as a "traditional navigable water" (TNW) by the Sacramento District (Corps 2024).

6.1 Potential Waters of the U.S. and State

Based on the findings of the delineation, the Study Area contains approximately 2.5 acres of seasonal wetlands that would be subject to Corps/federal jurisdiction and RWQCB/State jurisdiction pursuant to Sections 404 and 401 of the CWA, respectively. These features have a continuous hydrological surface connection via Bull Run Slough and the Pit River to Shasta Lake.

Off-site ditches along Babcock Road and the railway lines flow to Bull Run Slough via culverts under Babcock Road and the railway line. These off-site ditches provide a hydrological connection for seasonal wetlands SW-01, SW-02, SW-04, and SW-09 (Appendix A – Figure 3).

6.2 Potential Waters of the State (Excluded from Federal Jurisdiction)

Based on the findings of the delineation, the Study Area contains approximately 0.18 acre of seasonal wetlands, 0.17 acre of seasonal wetland swales, and 0.22 acre (2,032 linear feet) of wetland ditches that would likely be subject to State jurisdiction under the Porter-Cologne Act; however, these features would likely be excluded from federal jurisdiction as they lack a continuous surface connection to TNW or WOTUS.



Seasonal wetland swales SWS-01 and SWS-02 do not have a continuous surface connection to a TNW, as they transition to surface flow at their eastern limits. Ditches D-01 and D-02, along the Study Area's western border, collect surface flow from the adjacent western property and do not have a continuous surface connection to other aquatic features. Seasonal wetlands SW-03, SW-05, SW-06, SW-07, SW-08, and SW-10 also lack a continuous surface connection to TNW and would be excluded from federal jurisdiction as well.

All wetlands and non-wetland waters within the Study Area would be waters of the State since they satisfy the definition of a wetland per the State Wetland Policy (SWRCB 2019) and would be subject to regulation pursuant to the Porter-Cologne Water Quality Control Act.



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APPENDIX A. FIGURES





Sources: National Geographic, WRA | Prepared By: rochelle, 5/14/2024

Figure 1. Study Area Regional Location Map

Wrd Environmental Consultants

Lassen Facilities Lassen County, California

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Sources: USDA NAIP Imagery 2022, USDA NRCS SSURGO, WRA | Prepared By: rochelle, 5/14/2024

Figure 2. Soil Types within the Study Area

Lassen Facilities Lassen County, California

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Sources: Google Earth Oct 2019 Aerial, WRA | Prepared By: rochelle, 5/16/2024

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76,562	n/a
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151	n/a
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Figure 3. Draft Aquatics Delineation (Overview)

Lassen Facilities Lassen County, California

Study Area - 165.18 ac.

Sheet Grid

Contours - 1' interval

- Culverts
- Sample Points

Potential Waters of the U.S.



Seasonal Wetland (SW) - 2.50 ac.

Potential Waters of the State

Seasonal Wetland (SW) - 2.69 ac.



Seasonal Wetland Swale (SWS) - 0.17 ac.

Wetland Ditch (D) - 0.22 ac. 2,032 LF







Sources: NRCS NAIP 2022 Aerial, WRA | Prepared By: rochelle, 5/13/2024

Figure 3-1. Draft Aquatics Delineation (Sheet 1)

Lassen Facilities Lassen County, California

Study Area - 165.18 ac.

- Contours 1' interval
- -- Control Points
- Culverts
- Sample Points

Potential Waters of the U.S.



Seasonal Wetland (SW) - 2.50 ac.

Potential Waters of the State

Seasonal Wetland (SW) - 2.69 ac.



Seasonal Wetland Swale (SWS) - 0.17 ac.

Wetland Ditch (D) - 0.22 ac.\2,032 LF





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Feet





Sources: NRCS NAIP 2022 Aerial, WRA | Prepared By: rochelle, 5/13/2024

Figure 3-2. **Draft Aquatics Delineation** (Sheet 2)

Lassen Facilities Lassen County, California

Study Area - 165.18 ac.

- Contours 1' interval
- ------**Control Points**
- Culverts
- Sample Points \odot

Potential Waters of the U.S.



Seasonal Wetland (SW) - 2.50 ac.

Potential Waters of the State

Seasonal Wetland (SW) - 2.69 ac.



Seasonal Wetland Swale (SWS) - 0.17 ac.

Wetland Ditch (D) - 0.22 ac. 2,032 LF







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Figure 3-3. **Draft Aquatics Delineation** (Sheet 3)

Lassen Facilities Lassen County, California

Study Area - 165.18 ac.

- Contours 1' interval
- **Control Points**
- Culverts
- Sample Points \odot

Potential Waters of the U.S.



Seasonal Wetland (SW) - 2.50 ac.

Potential Waters of the State

Seasonal Wetland (SW) - 2.69 ac.



- Seasonal Wetland Swale (SWS) - 0.17 ac.
- Wetland Ditch (D) 0.22 ac. 2,032 LF











Sources: NRCS NAIP 2022 Aerial, WRA | Prepared By: rochelle, 5/13/2024

Figure 3-4. Draft Aquatics Delineation (Sheet 4)

Lassen Facilities Lassen County, California

Study Area - 165.18 ac.

Contours - 1' interval

- --- Control Points
- Culverts
- Sample Points

Potential Waters of the U.S.



Seasonal Wetland (SW) - 2.50 ac.

Potential Waters of the State

Seasonal Wetland (SW) - 2.69 ac.



Seasonal Wetland Swale (SWS) - 0.17 ac.

Wetland Ditch (D) - 0.22 ac.2,032 LF





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APPENDIX B. WETLAND DETERMINATION DATA FORMS



WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site:		Lassen Co	Facility	(City/County:		Nubieber, La	assen County		Sa	ampling Date:	4/29/2024
Applicant/Ow	/ner:		Golden Sta	ate Naf	tural Resourc	ces		State:	CA	Sa	mpling Point:	SP-01
Investigator(s	s): Rhiai	non Korhumm	nel, Rachel M	liller	ξ	Section, Towr	nship, Range:			M, 37N 07E, 4	4	
Landform (hil	llslope, terraci terrace		terrace		Local relief	(concave, cor	nvex, none):		none		Slope (%):	0-2
Subregion (L	RR):	С		Lat:	41.07	79496	Long:	-121.180	0839	Datum:	WG	S84
Soil Map Uni	t Name:		Bieber-Mo	doc co	mplex, 0 to 5	percent slop	es		NWI	classification:		
Are climate /	hydrologic conditions	on the site typ	pical for this ti	ime of	year?		Yes	Х	No)	(If no, ex	kplain in
Are Vegetation	on	, So	pil		, or Hyd	drology		significantly dis	sturbed?		Rema	arks.)
Are Vegetation	on	, So	pil X		, or Hyd	drology		naturally proble	ematic?			
Are "Normal	Circumstances prese	nt?	Yes X		No		(if neede	ed, explain any a	inswers in I	Remarks.)		
SUMMARY (OF FINDINGS - Atta	h site map sl	howing sam	pling p	point location	ns, transects	s, important	features, etc.				
Hydrophytic	: Vegetation Present?			Yes_	Х	No		_	Is the	e Samped Are	a within a We	etland?
Hydric Soil	Present?			Yes_		No	Х	-	Yes	<u> </u>	No	
Wetland Hy	drology Present?			Yes	<u> </u>	No		_				
Remarks:												
Topographic	swale with obvious v	egetation shift	to Myosurus	minim	us dominance	e; very sinuou	us swale featu	ure.				
VEGETATIO	N - Use scientific na	ames of plant	s.									
T			,		Absolute %	Dominant	Indicator	Dominance 1	Fest works	heet:		
Tree Stratum	i (Plot s	size:)		Cover	Species?	Status					
1.								Number of D	ominant Sp	pecies That		
2.								Are OBL, FA	CW, or FA	C:	1	(A)
3.								Total Numbe	r of Domin	ant Species		
4.								Across All St	trata:		2	(B)
						= Total Cove	r	Percent of De	ominant Sp	ecies That		
Sapling/Shru	<u>b Stratum</u> (Plot	size:)					Are OBL, FA	CW, or FA	C:	50%	(A/B)
1.								Prevalence In	ndex work	sheet:		
2.								Total % Cove	r of:		Multip	oly by:
3.								OBL species		19	x1	19
4.								FACW specie	s	0	x2	0
5.								FAC species		0	x3	0
						= Total Cove	er	FACU species	s	20	x4	80
Herb Stratum	<u>n</u> (Plot s	ize: 5' radius	s)	-				UPL species			x5	0
1	Microsteris gracilis			Γ	18	Yes	FACU	Column Total	S:	39		99
2	Mvosurus minimus				18	Yes	OBL	1	-	(A)		(B)
3.	Poa secunda				2	No	FACU	Prevaler	nce Index =	= B/A =	2.5	54
4.	Eleocharis macrosta	chya			1	No	OBL	1				
5.		,				-		Hydrophytic	Vegetatio	n Indicators:		
6.								D	ominance	Test is >50%		
7.								x P	revalence	Index is ≤3.0		
8.								N	Iorphologic	al Adaptations	* (Provide sup	oporting data
					39	= Total Cove	r I	in	n Remarks)			
Woody Vine	Stratum (Plot	size:)	L				P	roblematic	Hydrophytic V	egetation* (Ex	xplain)
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SOIL

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	YDROLOG /etland Hyu rimary Indic X X eld Observ urface Wate ater Table aturation Pr icludes cap escribe Rec emarks:	drology Indicators: cators (minimum of one requi Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriveri Sediment Deposits (B2) (No Drift Deposits (B3) (Nonriver Surface Soil Cracks (B6) Inundation Visible on Aerial Water Stained Leaves (B9) vations: er Present? Yes Present? Yes resent? Yes pillary fringe) corded Data (stream gauge,	red; check all ine) nriverine) (B7) (B7) X monitoring we	that apply) Salt Crust (X Biotic Crust Aquatic Inve Hydrogen S Oxidized Rh Presence o Recent Iron Thin Muck S Other (Expl No X No X No II, aerial photos, previo	B11) (B12) ertebrates (B Sulflide Odor (nizospheres a f Reduced Irco Reduction in Surface (C7) ain in Remarl L U U us inspection N/A	13) (C1) along Living R on (C4) (Tilled Soils ((<s) Depth (inches) Depth (inches) Depth (inches) (s), if available</s) 		Secondary Indicators (2 Water Mar Sediment I Drift Depose Drainage F Dry-Seaso Crayfish B Saturation Shallow Ac FAC-Neutr Wetland Hydrology P Yes X	2 or more required) rks (B1) (Riverine) Deposits (B2) (Riverine) sits (B3) (Riverine) Patterns (B10) on Water Table (C2) urrows (C8) Visible on Aerial (C9 quitard (D3) ral Test (D5) Present? No
	YDROLOG /etland Hyu rimary Indic X X eld Observ urface Wate ater Table ater Table ater Table ater Table ater Table ater Table ater Table ater Table ater Table	drology Indicators: cators (minimum of one requi Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriveri Sediment Deposits (B2) (No Drift Deposits (B3) (Nonriveri Surface Soil Cracks (B6) Inundation Visible on Aerial Water Stained Leaves (B9) vations: er Present? Yes Present? Yes resent? Yes pillary fringe) corded Data (stream gauge,	red; check all ine) nriverine) rine) (B7) X monitoring we	that apply) Salt Crust (X Biotic Crust Aquatic Inve Hydrogen S Oxidized Rt Presence o Recent Iron Thin Muck S Other (Expl No X No II, aerial photos, previo	B11) (B12) ertebrates (B Sulflide Odor (hizospheres a f Reduced Irco Reduction in Surface (C7) ain in Remarl	13) C1) Ilong Living R on (C4) Tilled Soils ((ks) Depth (inches) Depth (inches) Depth (inches) s), if available		Secondary Indicators (2 Water Mar Sediment I Drift Depos Drainage F Dry-Seaso Crayfish B Saturation Shallow Ad FAC-Neutr Wetland Hydrology P Yes X	2 or more required) *ks (B1) (Riverine) Deposits (B2) (Riverine) sits (B3) (Riverine) Patterns (B10) on Water Table (C2) urrows (C8) Visible on Aerial (C9) quitard (D3) ral Test (D5) Present?
	YDROLOG /etland Hyu rimary Indic X eld Observ urface Wate aturation Pr icludes cap escribe Rec emarks:	drology Indicators: cators (minimum of one requi Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriveri Sediment Deposits (B2) (No Drift Deposits (B3) (Nonriver Surface Soil Cracks (B6) Inundation Visible on Aerial Water Stained Leaves (B9) vations: er Present? Yes Present? Yes resent? Yes pillary fringe) corded Data (stream gauge,	red; check all ine) nriverine) (B7) (B7) X	that apply) Salt Crust (X Biotic Crust Aquatic Inve Hydrogen S Oxidized Rf Presence o Recent Iron Thin Muck S Other (Expl No X No X No II, aerial photos, previo	B11) (B12) ertebrates (B Sulflide Odor (nizospheres a f Reduced Irco Reduction in Surface (C7) ain in Remarl L C L L C L L C L L L L L L L L L L L L	13) (C1) (In C4) (C4) (Tilled Soils (((s) (C4) (In Ches) (In Che		Secondary Indicators (2 Water Mar Sediment I Drift Depose Drainage F Dry-Seaso Crayfish B Saturation Shallow Ac FAC-Neutr Wetland Hydrology P Yes X	2 or more required) rks (B1) (Riverine) Deposits (B2) (Riverine) Patterns (B10) on Water Table (C2) urrows (C8) Visible on Aerial (C2) quitard (D3) ral Test (D5) Present?
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WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site:	Lassen Co Facility	City/County:		Nubieber, La	assen County		Sampling Date:	4/29/2024
Applicant/Owner:	Golden State	e Natural Resourc	ces		State:	CA	Sampling Point:	SP-02
Investigator(s): Rhi	annon Korhummel, Rachel Mille	er S	Section, Town	ship, Range:		M, 37N 07E	Ξ, 4	
Landform (hillslope, terrace, etc.): terrace	Local relief	(concave, cor	ivex, none):		convex	Slope (%):	2-3
Subregion (LRR):	C 1	_at: 41.07	9468	Long:	-121.1808	44 Datur	m: WG	3S84
Soil Map Unit Name:	Bieber-Mode	oc complex, 0 to 5	5 percent slop	es		NWI classificatio	<i>i</i> n:	
Are climate / hydrologic condition	ns on the site typical for this tim	e of year?		Yes	<u>X</u>	No	(If no, e	xplain in
Are Vegetation	, Soil	, or Hy	drology		significantly distu	irbed?	Rem	arks.)
Are Vegetation	, Soil X	, or Hy	drology		naturally problem	natic?		
Are "Normal Circumstances pres	sent? Yes X	No		(If neede	ed, explain any an	swers in Remarks.)		
SUMMARY OF FINDINGS - Att	ach site map snowing sampli	ing point locatio	ns, transects	s, important	teatures, etc.	la tha Campad (lation d 2
Hydrophylic Vegetation Presen	l?)	res	INO No	X X	-	is the Samped A	trea within a w	etiand?
Mydric Soll Present?		res	INO No	X 	-	tes	NO	λ
welland Hydrology Present?		res	INO	λ	_			
Remarks:								
Upland delineation point paired v	with SP-01.							
	nomen of plants							
VEGETATION - Use scientific	names of plants.	Absolute 0/	Deminent	Indicator	1			
Tree Stratum (Plo	t size:)	Absolute %	Dominant Species?	Status	Dominance Te	st worksheet:		
1	,	00101	000000	Oldido	Number of Der	minant Spacias That		
2						W or FAC:	٥	(A)
3					Total Number	of Dominant Species	0	_(^)
۵. ۸					Across All Stra	ata.	2	(B)
т.			= Total Cove	r	Percent of Dor	ninant Species That	L	_(D)
Sanling/Shrub Stratum (Plo	t size:				Are OBL, FAC	W. or FAC:	0%	(A/R)
1	, (incontraction of the second				Drovelence Inc			_(,,,,,,)
ו. ס					Total % Cover	of	Multi	nly hy:
3					OBL species	<u></u> 0	v1	<u>piy by.</u> 0
J.					FACW species	0		0
5					FAC species	0	- ^2	0
			= Total Cove	r	FACU species	35		140
Herb Stratum (Plot	size: 5' radius)				UPL species	0		0
1 Dec cocurdo) <u> </u>	15	Vee	EACU	Column Totolo:			140
Poa secultua		15	Vee			(^)	—	(P)
2. r od bubbosa	lla	5	No	FACU	Prevalenc	$(n) = B/\Delta = B/\Delta = 0$	Λ	00
Oolinisia neterophy 1		5	No	NI	i levalene			.00
5 Elvmus elvmoides		t	No	NI	Hydrophytic V	egetation Indicator	 S'	
6 Epilobium sp.		t	No	NL	Do	minance Test is >50°	%	
7. Holosteum umbella	atum ssp. umbellatum	t	No	NL	Pre	evalence Index is ≤3.	0	
8 Viola beckwithii		t	No	NL	Мо	rphological Adaptatic	ons* (Provide su	pporting data
		40	= Total Cove	r	in F	Remarks)	,	
Woody Vine Stratum (Plo	ot size:				Pro	blematic Hvdrophvti	c Vegetation* (E	xplain)
	, , , , , , , , , , , , , , , , , , , ,				*Deguiree indige	toro of hudric coil on:		
1. 0						lors of figuric soll and		ogy.
Ζ.			- Total Original	-		eyetation Present?		
0/ Para Cround in User Chestree	CO 0/		- Total Cove	0	res		10 <u>X</u>	-
Date Ground III Held Stratum	00 %		JIUSI	U				
I Inland vegetation present above	a distinct venetation boundary	Dead Artomicia tr	identata woor	ly debrie in u	nlands			
opiana vogetation present above	s distinct vegetation boundary. I			iy ucons in u	planas.			

SP-02

Profile Des	cription: (Describe to the	depth neede	d to document the indica	ator or confi	rm the abse	nce of indica	tors.)	
Depth	Matrix		F	Redox Featur	es			
(inches)	Color (moist)	%	Color (moist)	%	Туре	Loc	Texture	Remarks
0-12	7.5YR 2.5/2	100					Clay Loam	no redox features
						1		
Type: C=Co	ncentration D=Depletion I	M=Reduced	Matrix CS=Covered or C	l Dated Sand (raine	Location: Pl	=Pore Lining M=Matrix	
Hydric Soil	Indicators: (Applicable to		place otherwise noted)		Jamo.	Indicators	ior Problematic Hydric S	oile*:
	Histosol (A1)	Jan Livivs, ui	Sandy Pedo	v (95)		mulcators	1 cm Muck (A0) (LPP C)	0115 .
	Histic Eninodon (A2)		Stringed Mai	$r_{\rm (00)}$			2 om Muck (A3) (LINC)))
				uix (30) u Minerel (Er	I)		Z CITI MUCK (ATU) (LRR D	<i>)</i>)
	Black Histic (A3)			(y iviinerai (F	1) \		Reduced Verlic (FTO)	2)
	Hydrogen Suifide (A4)		Loamy Gleye	ed Matrix (F2)			<u>z)</u>
	Stratified Layers (A5) (LR	RC)	Depleted Ma	atrix (F3)			Other (Explain in Remark	(S)
	1 cm Muck (A9) (LRR D)		Redox Dark	Surface (F6)				
	Depleted Below Dark Sur	ace (A11)	Depleted Da	rk Surface (F	1)	*Indicators of	of hydrophytic vegetation a	and wetland
	Thick Dark Surface (A12)		Redox Depre	essions (F8)		hydrology m	iust be present, unless dis	trubed or
	Sandy Mucky Mineral (S1)	Vernal Pools	s (F9)		problematic		
	Sandy Gleyed Matrix (S4)							
Restrictive	Layer (if present):							
	Туре:				Hydric So	oil Present?	Yes	No X
D	epth (inches):							
Remarks:								
HYDROLOO	GY							
Wetland Hy	drology Indicators:							
Primary Indi	cators (minimum of one rec	quired; check	all that apply)			_	Secondary Indicators (2	or more required)
	Surface Water (A1)		Salt Crust (E	311)			Water Mark	s (B1) (Riverine)
	High Water Table (A2)		Biotic Crust	(B12)			Sediment D	eposits (B2) (Riverine)
	Saturation (A3)		Aquatic Inve	rtebrates (B1	3)		Drift Depos	its (B3) (Riverine)
	Water Marks (B1) (Nonriv	erine)	Hydrogen Su	ulflide Odor (C1)		Drainage P	atterns (B10)
	Sediment Deposits (B2) (Nonriverine)	Oxidized Rh	izospheres a	ong Living R	oots (C3)	Dry-Seasor	n Water Table (C2)
	Drift Deposits (B3) (Nonri	verine)	Presence of	Reduced Iro	n (C4)		Crayfish Bu	rrows (C8)
	Surface Soil Cracks (B6)		Recent Iron	Reduction in	Tilled Soils (C6)	Saturation	/isible on Aerial (C9)
	Inundation Visible on Aeri	al (B7)	Thin Muck S	urface (C7)			Shallow Aq	uitard (D3)
	Water Stained Leaves (B	9)	Other (Expla	in in Remark	s)		FAC-Neutra	al Test (D5)
Field Obser	rvations:							
Surface Wat	ter Present? Yes		No X	D	epth (inches)	:	Wetland Hydrology Pr	resent?
Water Table	Present? Yes		No X	D	epth (inches)	:	,	
Saturation F	Present? Yes		No X	- D	epth (inches)	:	Yes	No X
(includes ca	pillary fringe)			-)		1	
Describe Re	ecorded Data (stream daud	e, monitorina	well, aerial photos. previou	us inspection	s), if available	9:	•	
				N/A	<i>,</i>			
Remarks:								
No hydrolog	y indicators observed.							

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site:	La	ssen Co Facili	ty	City/County:	N	ubieber, La	assen County		San	npling Date:	4/29/2024
Applicant/Owner:		Gol	den State Na	tural Resources			State:	CA	Sam	pling Point:	SP-03
Investigator(s):	Rhiannon K	orhummel, Ra	achel Miller	Sectio	on, Townsh	ip, Range:		Ν	A, 38N 07E, 33		
Landform (hillslope, terrace	e, etc.):	terra	ace	Local relief (cond	ave, conve	ex, none):		none	S	Slope (%):	0-1
Subregion (LRR):	Ċ	;	Lat:	41.082519)	Long:	-121.1	77709	Datum:	WG	S84
Soil Map Unit Name:			Cupvar silty of	clay, 0 to 2 percent	t slopes			NWI	classification:		
Are climate / hydrologic co	nditions on the	e site typical fo	or this time of	year?		Yes	Х	No		(If no, ex	kplain in
Are Vegetation		, Soil		, or Hydrolog	ду		significantly d	isturbed?		Rema	arks.)
Are Vegetation		, Soil	Х	, or Hydrolog	ду		naturally prob	lematic?			
Are "Normal Circumstance	s present?	Yes	Х	No		(if neede	d, explain any	answers in F	Remarks.)		
SUMMARY OF FINDINGS	6 - Attach site	map showin	g sampling p	point locations, t	ransects, i	mportant f	features, etc.				
Hydrophytic Vegetation P	resent?		Yes		No	Х		Is the	Samped Area	within a We	etland?
Hydric Soil Present?			Yes		No	Х		Yes		No	Х
Wetland Hydrology Prese	ent?		Yes	Х	No		_				

Remarks:

Investigation delineation point in perennial grassland. Plant hummocks prevalent, especially around perennial species. Soil cracks prominent, but vegetation is not hydrophytic and no other hydrology indicators are present. Soil cracks indicative of Cupvar series soils and do not correlate with hydrology indicators.

VEGETATIO	ON - Use scientific names	of plants.								
Tree Stratun	n (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test works	heet:		
1.							Number of Dominant Sp	pecies That		
2.							Are OBL, FACW, or FA	C:	0	_(A)
3.							Total Number of Domina	ant Species		_
4.							Across All Strata:	_	1	(B)
					= Total Cove	r	Percent of Dominant Sp	ecies That		
Sapling/Shru	ub Stratum (Plot size:)				Are OBL, FACW, or FA	C: _	0%	_(A/B)
1.							Prevalence Index work	sheet:		
2.							Total % Cover of:		<u>Mult</u>	iply by:
3.							OBL species	0	x1	0
4.							FACW species	0	x2	0
5.							FAC species	5	x3	15
					= Total Cove	r	FACU species	52	x4	208
Herb Stratur	n (Plot size:	5' radius)				UPL species	1	x5	5
1.	Lomatium bicolor var. lept	tocarpum		50	Yes	FACU	Column Totals:	58		228
2.	Trifolium beckwithii			5	No	FAC		(A)		(B)
3.	Poa bulbosa			1	No	FACU	Prevalence Index =	= B/A =	3	.93
4.	Microsteris gracilis			1	No	FACU		_		
5.	Epilobium sp.			1	No	-	Hydrophytic Vegetation	n Indicators:		
6.							Dominance	Test is >50%		
7.							Prevalence	Index is ≤3.0		
8.							Morphologic	al Adaptations*	(Provide su	upporting data
				60	= Total Cove	r	in Remarks)			
Woody Vine	Stratum (Plot size:)		•		Problematic	Hydrophytic Ve	egetation* (E	Explain)
1.			-				*Requires indicators of hy	dric soil and we	etland hydro	logy.
2.							Hydrophytic Vegetation	n Present?		
	-				= Total Cove	r	Yes	No	Х	
% Bare Grou	und in Herb Stratum	40	% C	over of Biotic	Crust	0				-
Remarks:										

Aster sp. present but too immature to ID (2% absolute cover).

SP-03

Color (moist) % Color (moist) % Type Loc 0-12 SYR 3/2 100 Image: Color (moist) % Type Loc 0-12 SYR 3/2 100 Image: Color (moist) % Type Loc 0-12 SYR 3/2 100 Image: Color (moist) % Type Loc 0 Image: Color (moist) Mark 1 Image: Color (moist) Mark 1 Image: Color (moist) Mark 1 1 Image: Color (moist) Mark 1 Image: Color (moist) Mark 1 Image: Color (moist) Mark 1 1 Image: Color (moist) Mark 1 Image: Color (moist) Mark 1 Image: Color (moist) Mark 1 1 Image: Color (moist) Mark 1 Image: Color (moist) Imark1 <th>······</th> <th></th> <th></th> <th></th> <th>F</th> <th>Redox Featu</th> <th>res</th> <th></th> <th></th> <th></th> <th></th> <th></th>	······				F	Redox Featu	res					
D-12 SYR 3/2 100 1 <th1< th=""> 1 <th1< th=""> 1 <th1< th=""> <th1<< th=""><th>I</th><th>%</th><th></th><th>Color (m</th><th>oist)</th><th>%</th><th>Type</th><th>Loc</th><th>Tex</th><th>ture</th><th>Remar</th><th>rks</th></th1<<></th1<></th1<></th1<>	I	%		Color (m	oist)	%	Type	Loc	Tex	ture	Remar	rks
Description Description Description Description price Concentration, DeDepleton, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. Location: PL=Pore Li price Concentration, DeDepleton (A2) Stripped Matrix, (S6) 1 or Multipidicators: rdric Soil Indicators: Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Indicators for Problematic Histosca (A1) Sandy Redox (S5) 1 or Multipidicators: Indicators for Problematic Hydrogen Sulfide (A3) Loarny Mucky Mineral (F1) Reduce Matrix (F2) Red Paral Stratified Layers (A5) (LRR C) Depleted Matrix (F2) Red Paral Stratified Layers (A5) (LRR C) Depleted Dark Sufrace (F7) Indicators of hydrogin must be problematic. Stratified Layers (A5) (LRR C) Depleted Dark Sufrace (F7) Indicators of hydrogin must be problematic. Indicators of hydrogin must be problematic. Sandy Gleyed Matrix (S4) Sandy Gleyed Matrix (S4) SatCrout (B12) SatCrout (B12) Sufface Water (A1) SatCrout (B12) SatCrout (B13) Mater Marks (B1) (Noniverine) Sufface Water (A1) SatCrout (B12) SatCrout (B13) Matrix (B1)		100				,.	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		C	av	no redox fe	eature
Dec. C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Location: PL=Pore Li dric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Proble Histosol (A1) Sandy Redox (S5) 1 cm Mi Black Histic (A3) Loarny Mucky Mineral (F1) Redox Dark Surface (F6) Hydrogen Sufface (A4) Loarny Gleyed Matrix (F2) Red Pai Hydrogen Sufface (A1) Depleted Matrix (F3) Other (E Thick Dark Surface (A1) Depleted Matrix (F3) Other (E Stratified Layers (A5) (LRR C) Depleted Matrix (F3) Other (E Stratified Layers (A5) (LRR D) Redox Dark Surface (F6) Thick Dark Surface (A1) Depleted Matrix (F3) Stratified Layers (A5) (LRR D) Redox Depressions (F8) hydrology must be pr problematic. Sandy Gleyed Matrix (S4) Vernal Pools (F9) problematic. matrix: Deplet (Increase): Mydrology Indicators: matrix: Mydrology Indicators: Second Surface Water (A1) Salt Crust (B11) Salt Crust (B11) Salt Crust (B12) Matrix: Surface Water (A1) Salt Crust (B11) Salt Crust (B12) Matrix: Matrix: Surf										- ,		
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Inundation Visible on Aerial (B7) Thin Muck Surface (C7) Water Stained Leaves (B9) Other (Explain in Remarks) Id Observations: Frace Water Present? rface Water Present? Yes No x Depth (inches): Wetland ther Table Present? Yes No x turation Present? Yes No x Depth (inches): Depth (inches): cludes capillary fringe) Scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	(B6)	,		R	ecent Iron	Reduction in	Tilled Soils ((C6)		Saturation Vis	ible on Aerial ((C9)
Water Stained Leaves (B9) Other (Explain in Remarks) Id Observations: Ves No x Depth (inches): Wetland face Water Present? Yes No x Depth (inches): Wetland iter Table Present? Yes No x Depth (inches): Wetland iter Table Present? Yes No x Depth (inches): Wetland iter Table Present? Yes No x Depth (inches): Wetland iter Table Present? Yes No x Depth (inches): Wetland iter Table Present? Yes No x Depth (inches): Wetland iter Table Present? Yes No x Depth (inches): Wetland iter Table Present? Yes No x Depth (inches): Wetland iter Table Present? Yes No x Depth (inches): Wetland iter Table Present? Yes No x Depth (inches): Wetland iter Table Present? Yes No x Depth (inches): Wetland	ر Aeria ^r	rial (B7)		Tł	hin Muck S	urface (C7))		Shallow Aquita	ard (D3)	()
Id Observations: No x Depth (inches): Wetlan ater Table Present? Yes No x Depth (inches): Wetlan ater Table Present? Yes No x Depth (inches): Wetlan ater Table Present? Yes No x Depth (inches): Wetlan turation Present? Yes No x Depth (inches): Wetlan cludes capillary fringe) scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Ves	es (B9)	39)		0'	ther (Expla	in in Remark	(s)			FAC-Neutral T	Test (D5)	
Ves No x Depth (inches): Wetland Iter Table Present? Yes No x Depth (inches): Wetland Iter Table Present? Yes No x Depth (inches): Wetland Iter Table Present? Yes No x Depth (inches): Wetland Iter Table Present? Yes No x Depth (inches): Wetland Iter Table Present? Yes No x Depth (inches): Wetland Scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Ves Ves Ves		,					,				()	
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scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Yes Yes					-		,	1		···•_	
	Yes Yes				os, previou	is inspection	s) if availabl	e:	<u>I</u>			
	Yes Yes gauge	je, monitorii	ing well. a	eriai phot								
emarks:	Yes Yes gauge,	ge, monitorii	ing well, a	eriai phot			oj, il avallabi					

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site:	La	assen Co Faci	llity	City/County:		Nubieber, La	assen County		Sam	pling Date:	4/29/2024
Applicant/Owner:		Go	olden State Na	tural Resourc	es		State:	CA	Sam	pling Point:	SP-04
Investigator(s):	Rhiannon	Korhummel, R	Rachel Miller	0	Section, Town	ship, Range:		M,	38N 07E, 33		
Landform (hillslope, terrace, e	etc.):	terr	race	Local relief	(concave, cor	ivex, none):		none	S	lope (%):	0-2
Subregion (LRR):		С	Lat:	41.08	32406	Long:	-121.174	946	Datum:	WG	S84
Soil Map Unit Name:			Cupvar silty of	clay, 0 to 2 pe	rcent slopes			NWI cla	assification:		
Are climate / hydrologic cond	litions on th	ne site typical	for this time of	year?		Yes	Х	No		(If no, e>	xplain in
Are Vegetation		, Soil		, or Hy	drology		significantly dis	turbed?		Rema	arks.)
Are Vegetation		, Soil	Х	, or Hy	drology		naturally proble	matic?			
Are "Normal Circumstances	present?	Yes	Х	No		(if neede	d, explain any a	nswers in Re	marks.)		
SUMMARY OF FINDINGS -	Attach sit	e map showi	ng sampling	point locatio	ns, transects	, important	features, etc.				
Hydrophytic Vegetation Pres	sent?		Yes		No	Х	_	Is the S	amped Area	within a We	etland?
Hydric Soil Present?			Yes		No	Х		Yes		No	Х
Wetland Hydrology Present	?		Yes	Х	No					-	
Remarks:							- 1				
Investigative pt w/i ARTDOV	stand. Les	s hammockin	g present than	in RK01.							
		·	01								
VEGETATION - Use scienti	fic names	of plants.									<u> </u>
				Absolute %	Dominant	Indicator	Dominance T	est workshe	et.		
Tree Stratum (Plot size:)	Cover	Species?	Status	Dominance	Cot Workond			
1.							Number of Do	ominant Spec	cies That		
2.							Are OBL, FA	CW, or FAC:		0	(A)
3.							Total Number	r of Dominan	t Species		. ,
4.							Across All St	rata:		2	(B)
					= Total Cove	ſ	Percent of Do	ominant Spec	ies That		. ,
Sapling/Shrub Stratum ((Plot size:	10' radius)				Are OBL, FA	CW, or FAC:			(A/B)
1 Artemisia triden	ntata		•	5		No	Prevalence Ir	dex worksh	eet:		<u> </u>
2				0		110	Total % Cover	of [.]		Multin	olv bv [.]
3							OBL species		0	x1	<u>., ., .</u> 0
4							FACW specie	s <u> </u>	0	x2	0
5							FAC species		1	x3	3
				5	= Total Cove	r	FACU species	. –	20	x4	80
Herh Stratum (I	Plot size:	5' radius)	Ū			UPL species	,	6	x5	30
1 Lomotium bical			/	20	Vaa	FACU	Column Totol	_	07	-	112
1. Lomatium bicol	or var. lept	ocarpum		20	Yes	FACU	Column Totals		Z1 (A)	-	(D)
2. Elymus caput-n	neousae			10 F	Yes	INL	Drevelar	aa laday – D	(A)	4 -	(B) 10
3. Poa bulbosa	.:			5	INO N.	-	Prevaler	ice index = B	/A =	4.	19
4. Callinaia betara	/ILIIII			2	INO Na	INL	L hudu a ra hudi a '	Vocatotion I			
5. Collinsia netero	priylla			2	INO No	Ne	пуагорпуцс	vegetation i	nuicators:		
o. Artemisia trideri Z Failabium on	แลเล			1	INO Na	INO			$\frac{5115}{50\%}$		
7. Epilobium sp.				1	INO	-	FI		Adaptations*	(Drovido our	anarting data
8. Elymus inticolo	es			1	INO Tatal Oscil	FAC	ivi in	Romarks)	Auaptations	(FIONICE Sup	porting uata
)	50	= I otal Cove			ablemette L	drank + V	nototion* /F	valois)
Woody Vine Stratum	(Plot size:)				PI	roblematic Hy	aropnytic ve	jetation" (Ex	(piain)
1.							*Requires indic	ators of hydri	c soil and wet	land hydrolc	ogy.
2.							Hydrophytic	Vegetation F	Present?		
					= Total Cove	r	Yes		No	X	
% Bare Ground in Herb Strat	um	50	% Co	over of Biotic	Crust						
Remarks:											
Aster sp. (too immature to ide	entify - bas	al leaves only) 5%								

Asteraceae sp. NIF 2%

Holocarpha sp. NIF 1%

Depth	Matrix			Redox Fe	atures			
(inches)	Color (moist)	%	Color (mo	oist) %	Туре	Loc	Texture	Remarks
0-12	10YR 3/2	100	,				Clay	no redox feat
		1 1						
		+ +						
		+						
pe: C=Cor	ncentration, D=Depletion,	RM=Reduced M	atrix, CS=Cove	ered or Coated Sa	nd Grains.	Location: PL	=Pore Lining, M=Matrix	
dric Soil	Indicators: (Applicable I	to all LRRs, unle	ess otherwise	noted.)		Indicators f	or Problematic Hydric	Soils*:
	Histosol (A1)	_	Sa	ndy Redox (S5)			1 cm Muck (A9) (LRR	C)
	Histic Epipedon (A2)		Str	ripped Matrix (S6)			2 cm Muck (A10) (LRR	t Β)
	Black Histic (A3)	_	Loa	amy Mucky Minera	al (F1)		Reduced Vertic (F18)	
	Hydrogen Sulfide (A4)		Loa	amy Gleyed Matrix	: (F2)		Red Parent Material (T	F2)
	Stratified Layers (A5) (LF	RR C)	De	pleted Matrix (F3)			Other (Explain in Rema	arks)
	1 cm Muck (A9) (LRR D)		Re	dox Dark Surface	(F6)		-	
	Depleted Below Dark Su	rface (A11)	De	pleted Dark Surfa	ce (F7)	*Indicators of	f hydrophytic vegetation	and wetland
	Thick Dark Surface (A12) ` '	Re	dox Depressions	F8)	hydroloav m	ust be present. unless of	listrubed or
	Sandy Mucky Mineral (S	/ 1)	Ve	rnal Pools (F9))	problematic.	,	
	Sandy Gleved Matrix (SA	·/						
		r)						
estrictive l	Layer (if present):							
	Type:	N/A			Hydric So	oil Present?	Yes	No
De	epth (inches):							
emarks: oots in top	6".							
emarks: bots in top	6".							
emarks: bots in top	6". SY							
emarks: bots in top YDROLOG etland Hyd	6". SY drology Indicators:							
emarks: bots in top YDROLOG etland Hyd imary Indic	6". SY drology Indicators: cators (minimum of one re	quired; check all	that apply)				Secondary Indicators (2 or more required)
emarks: oots in top YDROLOG fetland Hyd imary Indic	6". SY drology Indicators: cators (minimum of one re Surface Water (A1)	equired; check all	that apply)	lt Crust (B11)		_	Secondary Indicators (2 or more required) arks (B1) (Riverine)
emarks: bots in top /DROLOG etland Hyd imary Indic	6". Y drology Indicators: cators (minimum of one re Surface Water (A1) High Water Table (A2)	quired; check all	that apply) Sa	It Crust (B11) otic Crust (B12)		_	Secondary Indicators (Water Ma	2 or more required) arks (B1) (Riverine) : Deposits (B2) (Riveri
emarks: oots in top YDROLOG /etland Hyd rimary Indic	6". GY drology Indicators: cators (minimum of one re Surface Water (A1) High Water Table (A2) Saturation (A3)	equired; check all	that apply) Sa Bic Aq	It Crust (B11) otic Crust (B12) uatic Invertebrate:	(B13)	_	Secondary Indicators (Water Ma Sediment	2 or more required) arks (B1) (Riverine) Deposits (B2) (Riveri psits (B3) (Riverine)
emarks: bots in top YDROLOG tetland Hyd imary Indic	6". SY drology Indicators: cators (minimum of one re Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonri	equired; check all	that apply) Sa Bic Aq Hy	It Crust (B11) otic Crust (B12) uatic Invertebrate: drogen Sulflide Od	s (B13) lor (C1)	_	Secondary Indicators (Water Ma Sediment Drift Depo Drainage	2 or more required) arks (B1) (Riverine) Deposits (B2) (Riveri psits (B3) (Riverine) Patterns (B10)
emarks: bots in top YDROLOG /etland Hyd imary Indic	6". SY drology Indicators: cators (minimum of one re Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonri Sediment Deposits (B2)	vquired; check all verine) (Nonriverine)	that apply) Sa Bic Aq Hy Ox	It Crust (B11) otic Crust (B12) uatic Invertebrate: drogen Sulflide Od	s (B13) lor (C1) es along Living R	 oots (C3)	Secondary Indicators (Water Ma Sediment Drift Depo Drainage Dry-Seas	2 or more required) arks (B1) (Riverine) Deposits (B2) (Riveri posits (B3) (Riverine) Patterns (B10) on Water Table (C2)
emarks: bots in top YDROLOG etland Hyd imary Indic	6". GY drology Indicators: cators (minimum of one re Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonri Sediment Deposits (B2) Drift Deposits (B3) (Nonri	equired; check all verine) (Nonriverine)	that apply) Sa Bic Aq Hy Ox Pre	It Crust (B11) otic Crust (B12) uatic Invertebrate: drogen Sulflide Od idized Rhizospher esence of Reduce	s (B13) lor (C1) es along Living F d Iron (C4)	- oots (C3)	Secondary Indicators (Water Ma Sediment Drift Depo Drainage Dry-Seas Crayfish I	2 or more required) arks (B1) (Riverine) Deposits (B2) (Riveri Dosits (B3) (Riverine) Patterns (B10) on Water Table (C2) Burrows (C8)
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emarks: bots in top YDROLOG etland Hyd imary Indic	6". SY drology Indicators: cators (minimum of one re Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonri Sediment Deposits (B2) Drift Deposits (B3) (Nonr Surface Soil Cracks (B6) Inundation Visible on Aer	verine) (Nonriverine) iverine)	that apply) Sa Bic Aq Hy Ox Pre Re Th	It Crust (B11) otic Crust (B12) uatic Invertebrate: drogen Sulflide Oc idized Rhizospher esence of Reduce ecent Iron Reductio in Muck Surface ()	s (B13) lor (C1) es along Living F d Iron (C4) n in Tilled Soils (C7)	 oots (C3) C6)	Secondary Indicators (Water Ma Sediment Drift Depo Drainage Dry-Seas Crayfish I Saturation Shallow A	2 or more required) arks (B1) (Riverine) Deposits (B2) (Riverine) Patterns (B10) on Water Table (C2) Burrows (C8) n Visible on Aerial (CS
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WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site:	La	ssen Co Facili	ty	City/County:	1	Nubieber, La	issen County		San	npling Date:	4/29/24
Applicant/Owner:		Gol	den State Na	atural Resource	S		State:	CA	Sam	pling Point:	SP-05
Investigator(s):	Rhiannon k	Korhummel, Ra	chel Miller	Se	ection, Towns	hip, Range:		M,	38N 07E, 33	-	
Landform (hillslope, terrace	e, etc.):	terra	се	Local relief (o	concave, conv	ex, none):		concave	S	Slope (%):	0-2
Subregion (LRR):	()	Lat:	41.084	467	Long:	-121.1	74695	Datum:	WG	S84
Soil Map Unit Name:			Cupvar silty	clay, 0 to 2 per	cent slopes			NWI cl	assification:		
Are climate / hydrologic cor	nditions on th	e site typical fo	r this time of	year?		Yes	Х	No		(If no, ex	plain in
Are Vegetation		, Soil		, or Hydi	rology		significantly d	listurbed?		Rema	arks.)
Are Vegetation		, Soil	Х	, or Hydi	rology		naturally prob	ematic?			
Are "Normal Circumstance	s present?	Yes	Х	No		(if needeo	d, explain any	answers in Re	emarks.)		
SUMMARY OF FINDINGS	- Attach site	e map showin	g sampling	point location	s, transects,	important f	features, etc.				
Hydrophytic Vegetation P	resent?		Yes	Х	No			Is the S	Samped Area	within a We	etland?
Hydric Soil Present?			Yes		No	Х		Yes	Х	No	
Wetland Hydrology Prese	nt?		Yes	Х	No					-	

Remarks:

Investigative delineation point within obvious wetland ditch. Hydrologically connected to Bull Run Slough to east. No hydric soil indicators observed despite emergent hydrophytic vegetation and surface water presence.

VEGETATIC	N - Use scientific names	of plants.								
Tree Stratum	<u>n</u> (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test works	sheet:		
1. 2.							Number of Dominant S Are OBL, FACW, or FA	pecies That C:	1	(A)
3.							Total Number of Domin	ant Species		_ ()
4.					T 1 1 0		Across All Strata:		1	_(B)
<u>Sapling/Shru</u>	<u>ıb Stratum</u> (Plot size:)		= Total Cove	r	Are OBL, FACW, or FA	Decies That C:	100%	_(A/B)
1.							Prevalence Index work	sheet:		
2.							Total % Cover of:		Mult	tiply by:
3.							OBL species	21	x1	21
4.							FACW species	0	x2	0
5.							FAC species	0	x3	0
					= Total Cove	r	FACU species	0	x4	0
Herb Stratun	n (Plot size:	5' radius)				UPL species	4	x5	20
1.	Eleocharis macrostachya			20	Yes	OBL	Column Totals:	25		41
2.	Rumex sp.			2	No	-		(A)		(B)
3.	Eryngium sp.			2	No	-	Prevalence Index =	= B/A =		1.64
4.	Myosurus minimus			1	No	OBL				
5.	Camassia quamash ssp. I	breviflora		t	No	FACW	Hydrophytic Vegetatio	n Indicators:		
6.	Trifolium beckwithii			t	No	FAC	X Dominance	Test is >50%		
7.							X Prevalence	Index is ≤3.0		
8.							Morphologic	al Adaptations	* (Provide s	upporting data
				50	= Total Cove	r	in Remarks)			
Woody Vine	Stratum (Plot size:)		-		Problematic	Hydrophytic V	egetation* (Explain)
1.							*Requires indicators of hy	dric soil and w	etland hydro	ology.
2.							Hydrophytic Vegetatio	n Present?		
					= Total Cove	r	Yes X	No		
% Bare Grou	und in Herb Stratum	50	% C	over of Biotic	Crust					
Remarks:										

Many young shoots too small to ID (20%) and Rumex sp. NIF (5%).

SOIL

SP-05

Depth Owner (mist) % Class Type Cor Texture Remarks 0.0.5 100R 21 100 100 Inclustors (%) Type Cor Clay block surface (ky) 0.6.6 100R 32 100 Inclustors (%) Clay no redox feature 0.6.6 100R 32 100 Inclustors (%) Clay no redox feature 0.6.6 100R 32 100 Inclustors (%) I	Depth							,	
Color (most) Si Type Loc Texture Remarks 0.5.6 197R 21 100 Image: color (most) Si Type Loc Clay Back suffice lay 0.5.6 197R 32 100 Image: color (most) Si Clay Image: color (most) Si Clay Image: color (most) Si Clay Image: color (most) Si	Doptin	Matrix			Redox Featu	res			
0.6.5 10/R 2/1 100 Image: Casy indicators: field in the second of	(inches)	Color (moist)	%	Color (moist)	%	Туре	Loc	Texture	Remarks
0.6-6 10/R 3/2 100 Image: Comparison of the second o	0-0.5	10YR 2/1	100					Clay	black surface la
Image: Second	0.5-6	10YR 3/2	100					Clay	no redox featu
Image: Section of the sectio									
Image: Section of the sectio									
Image: Concentration, D-Depleton, RM-Reduced Matrix, CS-Coveral or Coated Sand Grains. Locator: PL-Pare Lining, M-Matrix. be: Co-Concentration, D-Depleton, RM-Reduced Matrix, CS-Coveral or Coated Sand Grains. Locator: PL-Pare Lining, M-Matrix. dric SOI Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Solies': 1 cm Muck (A9) (LRR 0) Biskic Hosk (A9) Stripped Matrix (S6) 2 cm Muck (A9) (LRR 0) Biskic Hosk (A9) Cammy Glogd Matrix (C3) Commy Glogd Matrix (C3) 1 cm Muck (A9) (LRR 0) Readox Dark Surface (F6) Other (Explain in Remarks) 1 cm Muck (A9) (LRR 0) Readox Dark Surface (F6) Indicators dirpotypic vegatation and wetland hydrology musk to present: Depleted Below Dark Surface (A11) Depleted Dark Surface (F6) Indicators dirpotypic vegatation and wetland hydrology indicators: Sandy Mucky Mineral (S1) Varial Poals (F9) Indicators of hydrophytic vegatation and wetland hydrology fice vegatation and surface (F9) Depleted Below Dark Surface (A11) Depleted Matrix (C3) Indicators: Mediators (2 or more neglined) 3 striptice Hydropoly Indicators: Type: No X No X Depleted Below Dark Sufface (A12) Salt Clust (B11) Salt Clust (B1) Salt						1			
be: C=Consentration. D=Depletion. RM=Reduced Matrix. CS=Covered of Coaled Sand Grains. Location. PL=Pore Lining, M=Matrix. dris Soll Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Solls': = Heats (24) Sandy Radox (SS) Black Histic (A3) Learny Usey Matrix (SD) Black Histic (A3) Learny Usey Matrix (SD) Black Histic (A3) Learny Usey Matrix (F2) Bratter (Layres (A) (LRR D) Depleted Matrix (F3) Depleted Betw Dark Surface (F1) Depleted Matrix (F3) Depleted Betw Dark Surface (F1) Depleted Matrix (F3) Bratter (Layres (A) (LRR D) Redox Dark Surface (F6) Depleted Betw Dark Surface (F1) Depleted Dark Surface (F7) Trick Tark Surface (F12) Redox Dark Surface (F7) Bandy Mudy Minerel (S1) Vernal Pools (F9) Tripper (Inches): mode (Se) Tripper (Inches): No matrix Secondary Indicators (2 or more neguring) Tripper (Inches): Secondary Indicators (2 or more nequing) Tripper (Inches): <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>									
bp: C-Concentration D-Depleton, RM-Reduced Matrix, CS-Covered or Coals Sand Grains. Location: PL-Pore Linnig, M-Matrix. drice Soil Indicators (Applicable to all LRRs, unless otherwise noted) Indicators for Problematic Hydric Soils*: 1 orn Mark (A) (U.RR 0) Hatice Spipedin (A2) Stripped Matrix (S5) 2 orn Mark (A10) (U.RR 0) Black Hatic (A3) Loamy Mudey Mineral (F1) Red Parent Material (T2) Depleted Matrix (F3) Depleted Matrix (F3) Other (Explain Nearks) Time Mark (A2) Redox Dark Surface (F6) "Indicators of hydrophytic vegetation and wetland hydrology must (F3) Sandy Gleved Matrix (F3) Depleted Matrix (F3) "Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distributed or problematic. Sandy Gleved Matrix (F3) Vernal Pools (F9) "Indicators of hydrophytic vegetation and hydrology must be present, unless distributed or problematic. Sandy Gleved Matrix (F3) Vernal Pools (F9) "Indicators (not inclust or inc									
difk Soll Indicators: (Applicable to all LRR, unless otherwise noted.) Indicators for Problematic Mydric Solls: Histo: (A) Ssndy Redx (S5) Black Histic (A) Sondy Redx (S5) Black Histic (A) Loarry Mudry Minral (F1) Synaffied Layers (A) Doarry Gleyed Matrix (F2) Synaffied Layers (A) Doarry Gleyed Matrix (F2) Tor Muck (A) (LRR C) Depleted Matrix (F3) Depleted Balow Dark Surface (A1) Depleted Dark Surface (F7) Thick Dark Surface (A12) Rodox Dark Surface (F7) Sendy Mudry Mineral (S1) Vernal Pools (F9) Sendy Mudry Mineral (S1) Vernal Pools (F9) Sendy Gleyed Matrix (S4) Water Matrix (S4) Metric Soil Present? Yes	/pe: C=Co	ncentration, D=Depletion,	RM=Reduced	Matrix, CS=Covered or	Coated Sand (Grains.	Location: Pl	L=Pore Lining, M=Matrix.	
Hatiste (A1) Sandy Redux (S5) 1 cm Muck (A1) (LRR C) Hatiste (A3) Leamy Mucky Mineral (F1) Reduced Vetric (F18) Hydragen Suifice (A4) Leamy Mucky Mineral (F2) Red Parent Material (TF2) Statified Layers (A5) (LRR C) Depleted Matrix (F3) Other (Explain in Remarks) 1 on Muck (A9) (LRR D) Redox Dark Surface (F6) 'Indicators of hydrophytic vegetation and watand hydrology musk be present, unless distrubed or problematic. Sandy Glayed Matrix (F3) Uthat Surface (F7) 'Indicators of hydrophytic vegetation and hydrology musk be present, unless distrubed or problematic. Sandy Glayed Matrix (F3) Vernal Pools (F9) problematic. Typic NA No x Auditor to the surface (F1) Sand Coust (S1) Water Matrix (S1) Sandy Glayed Matrix (F3) Sand Coust (S1) Water Matrix (S1) (Reverine) Typic NA Sand Coust (S1) Water Matrix (S1) (Reverine) Typic NA Sand Coust (S1) Water Matrix (S1) (Reverine) Sandrocoust (F2) Sand Coust (S1) Water Matrix (S1) (Reverine) Sandrocoust (F2) Sandrocoust (S2) Deptice Matrix (S1) (Reverine) Sandrocoust (F1) Sandrocoust (S1) Sandroco	ydric Soil	Indicators: (Applicable	to all LRRs, u	nless otherwise noted.			Indicators	for Problematic Hydric S	oils*:
Heitch Experient (A2) Stripped Matrix (St) 2 cm Muck (A0) (LRR B) Heitch Experient (A2) Loamy Mucky (Mmrarl (F1) Red Parent Material (TF2) Stratified Layers (A5) (LRR C) Depleted Matrix (F2) Other (Explain in Remarks) 1 cm Muck (A9) (LRR D) Redot Dark Surface (F6) Other (Explain in Remarks) Depleted Below Dark Surface (A1) Depleted Matrix (F2) "Indicators of Hydrophytic explain and wetland hydrology must be present, unless distrubed or problematic." Sandy Gloged Matrix (C4) Stripped (Tripped (TF)) Hydric Soil Present? Yes No x Biold (Tripped (Tripped (TF)) NA Vermal Pools (F8) Problematic. x marks: existence layer of deposited black ash dumped on site. No redox features or other hydric soil indicators, despte obvious hydrophytic vegetation and hydrology icators. Secondary Indicators (2 or more required) X High Water Table (A2) Satifica Coust (B11) Secondary Indicators (2 or more required) X High Water Table (A2) Satifica Coust (B11) Secondary Indicators (2 or more required) X High Water Table (A2) Satifica Coust (B12) Secondary Indicators (2 or more required) Satifica Soil Cracks (B2) Onther Explains in Remarks) Drift Deposits (B2) (Nevinient)		Histosol (A1)		Sandy Rec	lox (S5)			1 cm Muck (A9) (LRR C)	
Black Hatic (A3)		Histic Epipedon (A2)		Stripped N	latrix (S6)			2 cm Muck (A10) (LRR E	3)
Hydrogen Sulfide (AA)		Black Histic (A3)		Loamy Mu	cky Mineral (F	1)		Reduced Vertic (F18)	
Brainfed Layers (A6) (LRR C) Depleted Matrix (F3)		Hydrogen Sulfide (A4)		Loamy Gle	yed Matrix (F2	2)		Red Parent Material (TF	2)
Image: Second Status Image: Second Status <td< td=""><td></td><td>Stratified Layers (A5) (L</td><td>RR C)</td><td>Depleted N</td><td>/latrix (F3)</td><td></td><td></td><td>Other (Explain in Remark</td><td>ks)</td></td<>		Stratified Layers (A5) (L	RR C)	Depleted N	/latrix (F3)			Other (Explain in Remark	ks)
Thick Dark Surface (A1) Pelefeld Dark Surface (F7) Thick Dark Surface (A12) Pedcox Depressions (F8) Yermal Pools (F9) Yermal Pools (F2) Yermal Pools Yer		1 cm Muck (A9) (LRR D		Redox Dai	k Surface (F6				
Thick Dark Surface (A12) Pedox Depressions (F8) hydrology must be present, unless distrubed or problematic. Sandy Mudxy Mineral (S1) Vernal Pools (F9) problematic. strictive Layer (if present): Type: N/A Type: N/A N/A Depth (inches): marks: text are layer of deposited black ash dumped on site. No redox features or other hydric soil indicators, despite obvious hydrophytic vegetation and hydrology icators: marks: icators: DROLOGY Secondary Indicators: mary Indicators: Secondary Indicators: mary Indicators: Secondary Indicators: mary Indicators: Secondary Indicators: X Surface Water (A1) Salt Crust (B12) X Saturation (A3) X X Saturation (A1) Salt Crust (B12) X Saturation (A3) X X Saturation (A3) X Water Marks (B1) (Nomiverine) Hydrology Indicators: Depth (Inches): 0 Drift Deposits (B3) (Nomiverine) Oxidized Ritizepheres along Living Roots (C3) Dry Season Water Table (C2) 1 Marker Present? Yes X No<		Depleted Below Dark Su	rface (A11)	Depleted [Oark Surface (I	-7)	*Indicators	of hydrophytic vegetation a	and wetland
Sandy Mucky Mineral (S1) Vernal Pools (F9) problematic. Sandy Gleyed Matrix (S4) Type:		Thick Dark Surface (A12	2)	Redox Dep	pressions (F8)		hydrology n	nust be present, unless dis	trubed or
Sandy Gleyed Matrix (S4) strictive Layer (if present): Type: No Depth (inches): marks: cks unlace layer of deposited black ash dumped on site. No redox features or other hydric soil indicators, despite obvious hydrophytic vegetation and hydrology icators. DROLOGY X Surface Water (A1) X Saturation (A3) X Aquatic Invertex (B12) X Saturation (A3) X Aquatic Invertex (B13) Water Marks (B1) (Norriverine) Oxidized Rhizospheres along Living Roots (G3) Drif Deposits (B2) (Norriverine) Oxidized Rhizospheres along Living Roots (G3) Drif Deposits (B2) (Norriverine) Oxidized Rhizospheres along Living Roots (G3) Drif Deposits (B2) (Norriverine) Presence of Reduced Iron (C4) Surface Vater Present? Yes Vets No Depth (inches): 0 Diff Deposits (B2) (Norriverine) Oxidized Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2) Shallow Aquitard (D3) Trine Water Present? Yes Vets No Depth (inches): 0 Water St		Sandy Mucky Mineral (S	1)	Vernal Poo	ols (F9)		problematic		
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WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site:	Lass	en Co Facility	City/County:		Nubieber, La	assen County		Sam	pling Date:	4/28/2024
Applicant/Owner:		Golden State N	Natural Resourc	ces		State:	CA	Sam	pling Point:	SP-06
Investigator(s):	Rhianr	non Korhummel	ę	Section, Towr	ship, Range:		M, 38	N 07E, 33		
Landform (hillslope, terrace,	, etc.):		Local relief	(concave, cor	ivex, none):			S	lope (%):	
Subregion (LRR):	С	Lať	t: 41.08	3307	Long:	121.179	437	Datum:	WG	S84
Soil Map Unit Name:		Bieber-Modoc	complex, 0 to 5	5 percent slop	es		NWI class	ification:		
Are climate / hydrologic con	ditions on the s	site typical for this time	of year?		Yes	Х	No	_	(If no, ex	cplain in
Are Vegetation		, Soil	, or Hy	drology		significantly dis	turbed?		Rema	arks.)
Are Vegetation		, Soil	, or Hy	drology		naturally proble	matic?			
Are "Normal Circumstances	present?	Yes	No	No (if neede		d, explain any answers in Remarks.)				
SUMMARY OF FINDINGS	- Attach site n	nap showing sampling	point locations, transects, important			features, etc.				
Hydrophytic Vegetation Pre	esent?	Ye	s No			_	Is the Samped Area		within a We	atland?
Hydric Soil Present?		Ye	s	No			Yes		No	Х
Wetland Hydrology Presen	ıt?	Ye	s X	No					_	
Remarks:										
Area where grass hummock	s present. Sm	ooth sediment on surfac	ce of soil. Bare/	low vegetatio	n present bet	ween grass hum	imocks.			
VEGETATION - Use scient	tific names of	plants.								
Tree Stratum	(Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance T	est worksheet:			
1.						Number of D	ominant Species	That		
2.						Are OBL, FA	CW, or FAC:		0	(A)
3.						Total Numbe	r of Dominant Sp	becies —		()
4.						Across All St	rata:		2	(B)
				= Total Cove	r	Percent of Do	ominant Species	That		()
Sapling/Shrub Stratum	(Plot size:)				Are OBL, FA	CW, or FAC:		0%	(A/B)
1.						Prevalence Ir	ndex worksheet			
2.						Total % Cove	<u>r of:</u>		<u>Multip</u>	ly by:
3.						OBL species		0	x1 _	0
4.						FACW specie	s	0	x2	0
5.						FAC species		0	x3 _	0
				= Total Cove	r	FACU species	s	35	x4	140
<u>Herb Stratum</u>	(Plot size: 5')				UPL species		2	x5	10
1. Poa bulbosa			25	Yes	FACU	Column Totals	3:	37		150
2.								(A)	-	(B)
3. Microsteris gra	acilis		10	Yes	FACU	Prevaler	nce Index = B/A :	=	4.()5
4. Collinsia heter	ophylla		1	No	-			_		
5. Draba verna			1	No	-	Hydrophytic	Vegetation Indi	cators:		
6.			1	No		D	ominance Test is	s >50%		
7.						P	revalence Index	is ≤3.0		
8.						M	lorphological Ada	aptations*	(Provide sup	porting data
			38	= Total Cove	r	in	Remarks)			
Woody Vine Stratum	(Plot size:)				P	roblematic Hydro	ophytic Ve	getation* (Ex	(plain)
1.						*Requires indic	ators of hydric s	oil and wet	land hydrolo	ogy.
2.						Hydrophytic	Vegetation Pres	sent?		
				= Total Cove	r	Yes		No	X	
% Bare Ground in Herb Stra	atum	% (Cover of Biotic	Crust						
Remarks:										

D ''	K.4. (.)							
Depth	Matrix			Redox Featu	res _	<u> </u>		
(inches)	Color (moist)	%	Color (moist)	%	Туре	Loc	lexture	Remarks
0-8	10YR 3/2	100					Silty Clay	no redox featu
12-Aug	7.5YR 3/3	100					Clay	no redox featu
ype: C=Cor	ncentration, D=Depletion,		atrix, CS=Covered or C	oated Sand (Grains.	Location: PL	-=Pore Lining, M=Matrix.	cilc*:
	Histosol (A1)	o all Livits, ulli	Sandy Redc	ox (S5)		mulcators	1 cm Muck (A9) (I RR C)	
	Histic Epipedon (A2)		Stripped Ma	trix (S6)			2 cm Muck (A10) (LRR F	, 3)
	Black Histic (A3)		Loamy Much	kv Mineral (F	1)		Reduced Vertic (F18)	-)
	Hydrogen Sulfide (A4)	-	Loamy Glev	ed Matrix (F2	· / 2)		Red Parent Material (TF	2)
	Stratified Lavers (A5) (LR	(R C)	Depleted Ma	atrix (F3)	-)		Other (Explain in Remar	∠, ks)
	1 cm Muck (A9) (I RR D)		Bedox Dark	Surface (F6))			(0)
	Depleted Below Dark Sur	face (A11)	Depleted Da	ark Surface (, =7)	*Indicators of	of hydrophytic vegetation	and wetland
	Thick Dark Surface (A12)		Redox Depr	essions (F8)	/	hydroloav m	ust be present. unless dis	strubed or
	Sandy Mucky Mineral (S1) —	Vernal Pools	s (F9)		problematic.	·····	
	Sandy Gleyed Matrix (S4)						
estrictive I	_ayer (if present):							
	Type:	NA			Hydric So	il Present?	Yes	No
De	oth (inches):							_
emarks: o hydric soi	l indicators observed.							
emarks: o hydric soi YDROLOG	l indicators observed.							
emarks: o hydric soi YDROLOG /etland Hyd	l indicators observed. Y drology Indicators:							
emarks: o hydric sol YDROLOG /etland Hyd rimary Indic	l indicators observed. Y drology Indicators: ators (minimum of one re	quired; check all	that apply)				Secondary Indicators (2	or more required)
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WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site:	Las	sen Co Facili	ity	City/County:	1	Nubieber, La	ssen County		San	npling Date:	4/1/2924
Applicant/Owner:		Gol	den State Na	atural Resourc	es		State:	CA	Sam	pling Point:	SP-07
Investigator(s):		Rachel Miller		S	Section, Towns	hip, Range:	-	N	I, 37N 07E, 4	-	
Landform (hillslope, terrace	, etc.):	terra	ace	Local relief (concave, conv	ex, none):		none	S	lope (%):	0-2
Subregion (LRR):	C		Lat:	41.07	9396	Long:	-121.1	69964	Datum:	WG	S84
Soil Map Unit Name:			Cupvar silty	clay, 0 to 2 pe	rcent slopes			NWI cl	assification:		
Are climate / hydrologic con	ditions on the	site typical fo	or this time of	year?		Yes	Х	No		(If no, ex	plain in
Are Vegetation		, Soil		, or Hyd	lrology		significantly d	listurbed?		Rema	arks.)
Are Vegetation		, Soil	Х	, or Hyd	lrology	l	naturally prob	ematic?			
Are "Normal Circumstances	present?	Yes	Х	No		(if needeo	d, explain any	answers in Re	emarks.)		
SUMMARY OF FINDINGS	- Attach site	map showin	g sampling	point location	ns, transects,	important for	eatures, etc.				
Hydrophytic Vegetation Pr	esent?		Yes	Х	No			Is the S	Samped Area	within a We	etland?
Hydric Soil Present?			Yes		No	Х		Yes	Х	No	
Wetland Hydrology Preser	nt?		Yes	Х	No			_		-	

Remarks:

Wetland delineation point, taken within slight depression dominated by facultative hydrophytic vegetation. Naturally problematic soils are present within seasonal wetland, as on the remainder of the site. See report section 4.1.5.

VEGETATIO	N - Use scientific names	of plants.								
Tree Stratum	(Plot size:)		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test work	sheet:		
1. 2.							Number of Dominant S Are OBL, FACW, or FA	Species That	2	(A)
3. 4.							Total Number of Domir Across All Strata:	nant Species	4	(B)
Sapling/Shru	<u>b Stratum</u> (Plot size:	10')			= Total Cove	r	Percent of Dominant S Are OBL, FACW, or FA	pecies That	50%	(A/B)
1.	Artemisia tridentata			4	Yes	NL	Prevalence Index wor	ksheet:		
2.							Total % Cover of:		Mul	tiply by:
3.							OBL species	0	x1	0
4.							FACW species	7	x2	14
5.							FAC species	13	x3	39
				4	= Total Cove	r	FACU species	17	x4	68
Herb Stratum	n (Plot size:	5')					UPL species	3	x5	15
1.	Rumex crispus			10	Yes	FAC	Column Totals:	40		136
2.	Poa bulbosa			10	Yes	FACU	1	(A)		(B)
3.	Alopecurus pratensis			7	Yes	FACW	Prevalence Index	= B/A =		3.40
4.	Lepidium appelianum			3	No	UPL				
5.	Lomatium bicolor var. lept	tocarpum		3	No	FACU	Hydrophytic Vegetation	on Indicators:		
6.	Ranunculus occidentalis			3	No	FAC	Dominance	e Test is >50%		
7.	Microsteris gracilis			2	No	FACU	Prevalence	Index is ≤3.0		
8.	Lactuca serriola			2	No	FACU	Morphologi	cal Adaptations	* (Provide s	supporting data
				40	= Total Cove	r	in Remarks	;)		
Woody Vine	Stratum (Plot size:	10' radius)					X Problematio	c Hydrophytic V	egetation* (Explain)
1.							*Requires indicators of h	ydric soil and w	etland hydro	ology.
2.							Hydrophytic Vegetatic	on Present?		
					= Total Cove	r	Yes X	No		
% Bare Grou	ind in Herb Stratum		% C	over of Biotic	Crust			_		

Remarks:

Marginal FAC vegetation dominated by immature and small Rumex (likely R. crispus) within slight depression in otherwise flat terrace. As early-season vegetation matures, the Rumex cover is expected to increase.

(inches) 0-1				Redox Featur	es			
0-1	Color (moist)	%	Color (moist)	%	Туре	Loc	Texture	Remarks
	7.5YR 2.1/1	100	()		71		Clav	deposited ash
1-12	7.5YR 3/2	100					Clav	no redox feature
	ontration D-Doplation		atrix CS=Covorad a	r Coated Sand (Proinc	Location: Pl	-Poro Lining M-Matrix	
dric Soil In	dicators: (Applicable		allix, CS-Covered o			Indicators f	or Problematic Hydric	Soile*:
une oon m	listosol (A1)	to an Lixixs, une	Sandy P	edox (85)		mulcators	1 cm Muck (AQ) (I PP (
ייי ע	listosul (A1)		Salidy N	Motrix (S6)			2 om Muck (A3) (LINN	<i>בן</i>
n	listic Epipedon (AZ)	-	Supped	iviali ix (50) Avelu (Minerel (5	4)		2 CIII MUCK (ATU) (LRR	D)
В		_		iucky Mineral (F	1)		Reduced Vertic (F18)	
H	lydrogen Sulfide (A4)		Loamy G	eved Matrix (F2	2)		Red Parent Material (1	F2)
S	Stratified Layers (A5) (L	.RR C)	Depleted	Matrix (F3)			Other (Explain in Rema	irks)
1	cm Muck (A9) (LRR D	"	Redox D	ark Surtace (F6)				
D	Pepleted Below Dark Su	urtace (A11)	Depleted	Dark Surface (F	-7)	*Indicators o	f hydrophytic vegetation	and wetland
T	hick Dark Surface (A12	2)	Redox D	epressions (F8)		hydrology m	ust be present, unless d	istrubed or
S	Sandy Mucky Mineral (S	51)	Vernal P	ools (F9)		problematic.		
S	andy Gleyed Matrix (S	(4)						
estrictive La	yer (if present):							
	Type:	N/A			Hydric So	il Present?	Yes	No X
Depf	th (inches):							
YDROLOGY								
YDROLOGY etland Hydr	ology Indicators:							
YDROLOGY etland Hydr	ology Indicators: tors (minimum of one r	equired; check all	that apply)				Secondary Indicators ()	2 or more required)
YDROLOGY etland Hydr imary Indicat S	ology Indicators: tors (minimum of one r surface Water (A1)	equired; check all	that apply) Salt Crus	st (B11)			Secondary Indicators (2 or more required) rks (B1) (Riverine)
YDROLOGY etland Hydro imary Indicat S H	ology Indicators: tors (minimum of one r Surface Water (A1) tioh Water Table (A2)	equired; check all	that apply) Salt Crus Biotic Cru	st (B11) ust (B12)		-	Secondary Indicators (2 Water Ma Sediment	2 or more required) rks (B1) (Riverine) Deposits (B2) (Riverine
YDROLOGY retland Hydr rimary Indicat S H X	tology Indicators: tors (minimum of one r Surface Water (A1) ligh Water Table (A2)	equired; check all	that apply) Salt Crus Biotic Cru	st (B11) ust (B12) nvertebrates (B2	(3)		Secondary Indicators (Water Ma Sediment	2 or more required) rks (B1) (Riverine) Deposits (B2) (Riverine) psits (B3) (Riverine)
YDROLOGY /etland Hydro rimary Indicat S H X S	ology Indicators: tors (minimum of one r Surface Water (A1) ligh Water Table (A2) Saturation (A3)	required; check all	that apply) Salt Crus Biotic Cru Aquatic I	st (B11) ust (B12) nvertebrates (B* n Sulflide Odor ((3)		Secondary Indicators (Water Ma Sediment Drift Depo	2 or more required) rks (B1) (Riverine) Deposits (B2) (Riverine) osits (B3) (Riverine) Patterns (B10)
YDROLOGY fetland Hydr imary Indicat S H X S V S	tors (minimum of one r Surface Water (A1) High Water Table (A2) Saturation (A3) Vater Marks (B1) (Nonr Sediment Deposits (B2)	riverine)	that apply) Salt Crus Biotic Cru Aquatic I Hydroger	st (B11) ust (B12) nvertebrates (B ⁷ n Sulflide Odor (Rhizospheres a	13) C1)	-	Secondary Indicators (Water Ma Sediment Drift Depo Drainage Drv-Seas	2 or more required) rks (B1) (Riverine) Deposits (B2) (Riverine) psits (B3) (Riverine) Patterns (B10) on Water Table (C2)
YDROLOGY etland Hydr imary Indicat S H X S S	ology Indicators: tors (minimum of one r Surface Water (A1) ligh Water Table (A2) Saturation (A3) Vater Marks (B1) (Nonr Sediment Deposits (B2)	required; check all	that apply) Salt Crus Biotic Cru Aquatic I Hydrogel Oxidized	st (B11) ust (B12) nvertebrates (B ⁷ n Sulflide Odor (Rhizospheres a	I3) C1) long Living R	- oots (C3)	Secondary Indicators (Water Ma Sediment Drift Depo Drainage Dry-Sease Cravfish F	2 or more required) rks (B1) (Riverine) Deposits (B2) (Riverine) osits (B3) (Riverine) Patterns (B10) on Water Table (C2)
YDROLOGY /etland Hydr rimary Indicat S H X S S D S	rology Indicators: tors (minimum of one r Surface Water (A1) ligh Water Table (A2) Saturation (A3) Vater Marks (B1) (Nonr Sediment Deposits (B2) Drift Deposits (B3) (Non	riverine)	that apply) Salt Crus Biotic Cru Aquatic I Hydroger Oxidized Presence	st (B11) ust (B12) nvertebrates (B ⁷ n Sulflide Odor (Rhizospheres a e of Reduced Iro	I3) C1) Iong Living R n (C4) Tilled Soils (- oots (C3)	Secondary Indicators (Water Ma Sediment Drift Depo Drainage Dry-Sease Crayfish E	2 or more required) rks (B1) (Riverine) Deposits (B2) (Riverine) sits (B3) (Riverine) Patterns (B10) on Water Table (C2) Burrows (C8)
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WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site:	Lassen Co Facility	City/County:		Nubieber, La	assen County		Sa	mpling Date:	4/29/2024
Applicant/Owner:	Golden Sta	te Natural Resourc	es		State:	CA	Sar	mpling Point:	SP-08
Investigator(s):	Rachel Miller		Section, Towr	nship, Range:		М	, 37N 07E, 4	ł	
Landform (hillslope, terrace, etc.):	terrace	Local relief	(concave, cor	nvex, none):		convex		Slope (%):	0-2
Subregion (LRR):	С	Lat: 41.07	8331	Long:	-121.169	9967	Datum:	WG	S84
Soil Map Unit Name:	Cupvar	silty clay, 0 to 2 pe	rcent slopes			NWI cla	assification:		
Are climate / hydrologic conditions of	on the site typical for this tir	me of year?		Yes	Х	No_		(If no, e	xplain in
Are Vegetation	, Soil	, or Hyd	drology		significantly dis	sturbed?		Rema	arks.)
Are Vegetation	, Soil X	, or Hyd	drology		naturally proble	ematic?			
Are "Normal Circumstances presen	t? Yes X	No		(if neede	d, explain any a	inswers in Re	marks.)		
SUMMARY OF FINDINGS - Attack	n site map showing samp	oling point locatio	ns, transects	s, important	features, etc.				
Hydrophytic Vegetation Present?		Yes	No	Х	-	Is the S	amped Are	a within a Wo	etland?
Hydric Soil Present?		Yes	No	Х	-	Yes_		No	X
Wetland Hydrology Present?		Yes	No	Х	-				
Remarks:									
Ash deposit as top layer of soil. Upl	and species (Artemisia trid	entata, Elymus cap	out-medusae)	more prevale	ent than in adjac	ent wetland.			
VEGETATION - Use scientific nar	nes of plants.								
		Absolute %	Dominant	Indicator	Dominance 1	lest workshi	at.		
<u>Tree Stratum</u> (Plot siz	ze:)	Cover	Species?	Status	Dominance	Cot Workone			
1.					Number of D	ominant Spec	cies That		
2.					Are OBL, FA	CW, or FAC:		0	(A)
3.					Total Numbe	r of Dominan	t Species		
4.					Across All St	rata:		2	(B)
			= Total Cove	r	Percent of De	ominant Spec	ies That		
Sapling/Shrub Stratum (Plot si	ze: 10' radius)				Are OBL, FA	CW, or FAC:		0%	(A/B)
1 Artemisia tridentata		20	Yes	NI	Prevalence lu	ndex worksh	eet:		
2					Total % Cove	r of:		Multir	olv bv:
3.					OBL species		0	x1	0
4					FACW specie	-s	0	x2	0
5.					FAC species	-	3	x3	9
		20	= Total Cove	r	FACU species	s —	5	x4	20
Herb Stratum (Plot siz	ze: 5' radius)				UPL species	_	2	x5	10
1 Elymus caput moduse	, <u>, , , , , , , , , , , , , , , , , , </u>	40	Voo	NI	Column Total		10	-	30
2 Poa bulbosa			No	FACU		J	(A)		(B)
2. I oa buibosa		2	No		Provalor	nce Index = R	(n) 2/A =	3	۵ <u>۵</u>
J. Trifolium beckwithii		2	No	FAC					30
5 Rumey sp		1	No	FAC	Hydronhytic	Vegetation I	ndicators		
6 Acmispon sp		+	No	170		ominance Te	et is >50%		
7		ι	NO		P	revalence Inc	4ex is <3.0		
2 2						Iornhological	Adaptations	* (Provide su	nnorting data
0.		50	- Total Cava		in in	Remarks)	Λααριατίοπο		sporting data
Maadu Vina Stratum (Dlat a	ize.	50		1		roblematic H	vdronhytic V	egotation* (F	volain)
<u>vvoody vine Stratum</u> (Plot s	ize:)				Г 	TODIemalic H		eyelalion (E	xpiairi)
1.					*Requires indic	ators of hydri	c soil and w	etland hydrolo	ogy.
2.					Hydrophytic	Vegetation F	'resent?		
			= Total Cove	r	Yes		No	X	.
% Bare Ground in Herb Stratum	30	% Cover of Biotic (Crust	0					
Remarks:									
Donso thatch buildup of Elymus oar	aut modusoo Rumov en a	nd Acmisnon on to	o immaturo t	a identify to a	nacios				

se thatch buildup of Elymus caput-medusae. Rumex sp. and Acmispon sp. too immature to identify to species.

Profile Desc	cription: (Describe to the	depth neede	d to document the indica	ator or conf	irm the abse	nce of indica	tors.)		
Depth	Matrix		F	Redox Featu	res				
(inches)	Color (moist)	%	Color (moist)	%	Туре	Loc	Texture	Remarks	s
0-2	7.5YR 2.1/1	100	(Silty Clay	ash debri	is
2-6	7.5YR 2.1/1	50					Silty Clay	ash debri	is
	7.5YR 3/2	50					Clay	no redox fea	itures
6-14	7.5YR 3/2	100					Clay	no redox fea	tures
							,		
Type: C=Cor	ncentration D=Depletion I	RM=Reduced	Matrix CS=Covered or Co	ated Sand (Grains	Location: PL	Pore Lining M=Matrix	1	
Hydric Soil	Indicators: (Applicable to	all I RRs ur	less otherwise noted)			Indicators f	or Problematic Hydric S	oils*:	
	Histosol (A1)	o un Errito, un	Sandy Redo	x (S5)		indicatoro	1 cm Muck (A9) (I RR C)		
	Histic Eninedon (A2)	-	Stripped Mat	r(00)			2 cm Muck (A10) (LRR B)	
	Black Histic (A3)	-	Loamy Muck	v Mineral (F	1)		Reduced Vertic (F18)	/	
	Hydrogen Sulfide (A4)	-	Loamy Gleve	ed Matrix (F:))		Red Parent Material (TF)	2)	
	Stratified Lavers (Δ5) /LR	R C)	Denleted Ma	(F3)	-,		Other (Explain in Remark	-, (S)	
			Reday Dark	Surface (FA)				
	Depleted Relow Dark Qur	face (Δ11)	Denleted Da	rk Surface (I	, =7)	*Indicators	of hydrophytic year tation -	nd wotland	
	Thick Dark Surface (A12)		Reday Depre	assione (FR)	•)	hydrology m	ust be present unless dis	inu wellanu Irubed or	
	Sandy Mucky Mineral (S1)		(F9)		problematic.			
	Sandy Gleved Matrix (SA			, (10)					
Restrictive I	Layer (if present):								
	Type:	N/A			Hydric So	il Present?	Yes	No	X
HYDROLOG	3Y								
Wetland Hy	drology Indicators:								
Primary Indic	cators (minimum of one red	quired; check a	all that apply)			_	Secondary Indicators (2	or more required)	
	Surface Water (A1)		Salt Crust (E	811)			Water Mark	s (B1) (Riverine)	
	High Water Table (A2)		Biotic Crust	(B12)			Sediment D	eposits (B2) (River	rine)
	Saturation (A3)		Aquatic Inve	rtebrates (B	13)		Drift Deposi	ts (B3) (Riverine)	
	Water Marks (B1) (Nonriv	erine)	Hydrogen Su	ulflide Odor (C1)		Drainage Pa	atterns (B10)	
	Sediment Deposits (B2) (Nonriverine)	Oxidized Rh	izospheres a	long Living Ro	oots (C3)	Dry-Season	Water Table (C2)	1
	Drift Deposits (B3) (Nonri	verine)	Presence of	Reduced Irc	on (C4)		Crayfish Bu	rrows (C8)	
	Surface Soil Cracks (B6)		Recent Iron	Reduction in	Tilled Soils (0	C6)	Saturation \	/isible on Aerial (C	;9)
	Inundation Visible on Aeri	al (B7)	Thin Muck S	urface (C7)			Shallow Aqu	uitard (D3)	
	Water Stained Leaves (B	9)	Other (Expla	in in Remarl	ks)		FAC-Neutra	ll Test (D5)	
Field Obser	vations:	•							
Surface Wat	er Present? Yes		No X	0	epth (inches)	:	Wetland Hydrology Pr	esent?	
Water Table	Present? Yes		No X	C) epth (inches)	:	1		
Saturation P	resent? Yes		No X) epth (inches)	:	Yes	No	Х
(includes car	pillary fringe)			-	,		· · · · · · · · · · · · · · · · · · ·		
Describe Re	corded Data (stream gaug	e, monitoring v	well, aerial photos, previou	is inspection N/A	s), if available):			
Remarks:									
No saturation	n present.								

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site:	La	issen Co Fac	ility	City/County:		Nubieber, La	assen County		Sa	ampling Date:	4/29/2024
Applicant/Owner:		G	olden State Na	atural Resourc	ces		State:	CA	Sa	mpling Point:	SP-09
Investigator(s):		Rachel Mille	r	5	Section, Towr	ship, Range:			M, 37N 07E,	4	
Landform (hillslope, terrace, et	tc.):	ter	race	Local relief	(concave, cor	nvex, none):		none		Slope (%):	0-2
Subregion (LRR):	(3	Lat:	41.07	8258	Long:	-121.16	9887	Datum:	WG	S84
Soil Map Unit Name:			Cupvar silty	clay, 0 to 2 pe	ercent slopes			NWI	classification:		
Are climate / hydrologic condit	tions on th	e site typical	for this time of	year?		Yes	Х	No		(If no, e	xplain in
Are Vegetation		, Soil		, or Hyd	drology		significantly dis	sturbed?		Rema	arks.)
Are Vegetation		, Soil	Х	, or Hyd	drology		naturally proble	aturally problematic?			
Are "Normal Circumstances pr	resent?	Yes	X	No (if neede		d, explain any answers in Remarks.)					
SUMMARY OF FINDINGS - A	Attach site	e map showi	ing sampling	point locatio	ns, transects	s, important	features, etc.				
Hydrophytic Vegetation Prese	ent?		Yes	Х	No		_	Is the	Samped Are	ea within a Wo	etland?
Hydric Soil Present?			Yes		No	Х	_	Yes	Х	No	
Wetland Hydrology Present?	I.		Yes	Х	No		_				
Remarks:											
Facultative hydrophytic vegeta	ation domi	nated by Jun	cus mexicanus	s, within slight	depression.						
VEGETATION - Use scientifi	ic names	of plants.									
T 01 1 (D				Absolute %	Dominant	Indicator	Dominance 1	Test worksl	neet:		
Tree Stratum (P	'lot size:)	Cover	Species?	Status					
1.							Number of D	ominant Sp	ecies That		
2.							Are OBL, FA	CW, or FAC):	1	(A)
3.							Total Numbe	er of Domina	nt Species		
4.							Across All St	trata:		1	(B)
					= Total Cove	r	Percent of D	ominant Sp	ecies That		
Sapling/Shrub Stratum (F	Plot size:	10' radius)				Are OBL, FA	CW, or FAC):	100%	(A/B)
1. Artemisia tridenta	ata		- [3	No	NL	Prevalence I	ndex works	heet:		
2.							Total % Cove	er of:		Multip	oly by:
3.							OBL species		0	x1	0
4.							FACW specie	es	31	x2	62
5.							FAC species		0	x3	0
				3	= Total Cove	r	FACU specie	s	3	x4	12
Herb Stratum (P	'lot size:	5' radius)				UPL species		1	x5	5
1 Juncus mexicani	us		- [30	Yes	FACW	Column Total	s.	35	-	79
2 Poa bulbosa				2	No	FACU		0.	(A)	-	(B)
3 Rumex sp.				1	No	-	Prevaler	nce Index =	B/A =	2	26
4 Lomatium bicolo	r var. lepto	ocarpum		1	No	FACU					
5 Alopecurus prate	ensis			1	No	FACW	Hydrophytic	Vegetation	Indicators:		
6.				•			D)ominance T	est is >50%		
7.							X P	revalence li	ndex is ≤3.0		
8							N	Iorphologica	Adaptations	s* (Provide sur	oporting data
				35	= Total Cove	r	ir	n Remarks)			
Woody Vine Stratum (F	Plot size:		L)	00			P	roblematic l	-lvdrophytic \	/egetation* (E	xolain)
	100 0120.		_/				*De avviane in dia				· · · · · · · · · · · · · · · · · · ·
1.							"Requires indic	cators of nyc	Iric soil and w	etiand hydroid	ogy.
2.					.		Hydrophytic	Vegetation	Present?		
		~~			= I otal Cove	r	Yes_	X	No		
% Bare Ground in Herb Stratu	im	30	% Co	over of Biotic (Crust						
Remarks:		(=0)		000/ 61							
very young Poaceae sp. shoo	ts present	. (5% cover),	thatch covers	30% of bare g	ground						

(inches) 0-3 3-4 4-14 4-14 ype: C=Concentu ype: C=Concentu Iydric Soil Indic Histo Black Histo Black Hydr Strat 1 cm Deplo	Color (moist) S 7.5YR 2.1/1 1 7.5YR 2.1/1 5 7.5YR 3/2 5 7.5YR 3/2 1 7.5YR 3/2 1 ation, D=Depletion, RM=Real 1 ation (A1) 1 c = pipedon (A2) 1 <t< th=""><th>% Color 00 </th><th>Covered or Covered or</th><th>%</th><th>Type</th><th>Loc</th><th>Texture Silty Clay Silty Clay Clay Clay</th><th>Remark ash debris de ash debris de no redox fea</th></t<>	% Color 00	Covered or	%	Type	Loc	Texture Silty Clay Silty Clay Clay Clay	Remark ash debris de ash debris de no redox fea
0-3 3-4 4-14 4-14 ype: C=Concent ydric Soil Indic Histic Histic Black Hydr Strat 1 cm Deple Thick	7.5YR 2.1/1 1 7.5YR 2.1/1 5 7.5YR 3/2 5 7.5YR 3/2 1 ation, D=Depletion, RM=Rest atiors: (Applicable to all LF sol (A1) Epipedon (A2) Histic (A3) ogen Sulfide (A4) fied Layers (A5) (LRR C) Muck (A9) (LRR D)	00 00 00 00 00 00 00 00 00 00 00 00 00	Covered or Co wise noted.) Sandy Redo: Stripped Mat	pated Sand (Grains.	Location: PL	Silty Clay Silty Clay Clay Clay	ash debris di ash debris di no redox fea no redox fea
3-4 4-14 4-14 ype: C=Concentre ydric Soil Indic: Histor Histor Black Hydr Strat 1 cm Deple Thick	7.5YR 2.1/1 5 7.5YR 3/2 5 7.5YR 3/2 1 ation, D=Depletion, RM=Re ators: (Applicable to all Lf sol (A1) : Epipedon (A2) : Histic (A3) ogen Sulfide (A4) fied Layers (A5) (LRR C) Muck (A9) (LRR D)	i0 i0 i0 i0 i0 iduced Matrix, CS= RRs, unless other	Covered or Co vise noted .) Sandy Redo: Stripped Mat	pated Sand (Grains.	Location: PL	Silty Clay Clay Clay	ash debris d no redox fea no redox fea
4-14 4-14 4-14 4-14 4-14 4-14 4-14 4-14	7.5YR 3/2 7.5YR 3/2 1 ation, D=Depletion, RM=Re ators: (Applicable to all LF sol (A1) Epipedon (A2) Histic (A3) ogen Sulfide (A4) fied Layers (A5) (LRR C) Muck (A9) (LRR D)	educed Matrix, CS=	Covered or Co vise noted.) Sandy Redo: Stripped Mat	pated Sand (Grains.	Location: PL	Clay Clay	no redox fea no redox fea
4-14 pe: C=Concent pe: C=Concent processed processed processed processed processed processed processed processed processed processed processed processed processed processed processed	7.5YR 3/2 1 ation, D=Depletion, RM=Re ators: (Applicable to all LF sol (A1) Epipedon (A2) Histic (A3) ogen Sulfide (A4) fied Layers (A5) (LRR C) Muck (A9) (LRR D)	educed Matrix, CS=	Covered or Co wise noted.) Sandy Redo: Stripped Mat	pated Sand (Grains.	Location: PL	Clay	no redox fea
rpe: C=Concenti /dric Soil Indic; Histo Histo Blacl Hydr Strat 1 cm Deple Thick	ation, D=Depletion, RM=Re ators: (Applicable to all Lf sol (A1) : Epipedon (A2) : Histic (A3) ogen Sulfide (A4) fied Layers (A5) (LRR C) Muck (A9) (LRR D)	educed Matrix, CS=	Covered or Co vise noted.) _Sandy Redo: Stripped Mat	pated Sand (Grains.	Location: PL		
pe: C=Concent dric Soil Indic Histo Blacl Blacl Hydr Strat 1 cm Deple Thick	ation, D=Depletion, RM=Re ators: (Applicable to all LF sol (A1) Epipedon (A2) Histic (A3) ogen Sulfide (A4) fied Layers (A5) (LRR C) Muck (A9) (LRR D)	educed Matrix, CS=	Covered or Co wise noted.) Sandy Redo: Stripped Mat	pated Sand (Grains.	Location: PL		
dric Soil Indic Histo Histo Blacl Hydr Strat 1 cm Deplo Thick	ation, D=Depletion, RM=Re ators: (Applicable to all Lf sol (A1) Epipedon (A2) Histic (A3) Ogen Sulfide (A4) fied Layers (A5) (LRR C) Muck (A9) (LRR D)	RRs, unless other	vise noted.) Sandy Redo: Stripped Mat	v (S5)	Jrains.	Location: PL		
dric Soil Indic Histo Histo Blacl Hydr Strat Strat 1 cm Deplo Thick	ators: (Applicable to all Li sol (A1) : Epipedon (A2) : Histic (A3) ogen Sulfide (A4) fied Layers (A5) (LRR C) Muck (A9) (LRR D)	RRs, unless other	Sandy Redox Stripped Mat	v (95)		1.1.1.1.1.1	.=Pore Lining, M=Matrix.	
Histo Histi Blacl Hydr Strat Cm Deplo Thick	sol (A1) : Epipedon (A2) : Histic (A3) ogen Sulfide (A4) fied Layers (A5) (LRR C) Muck (A9) (LRR D)		Sandy Redo	V / Sh		indicators f	or Problematic Hydric So	DIIS":
Histi Blaci Hydr Strat 1 cm Deple Thick	: Epipedon (A2) : Histic (A3) ogen Sulfide (A4) fied Layers (A5) (LRR C) Muck (A9) (LRR D)		Stripped Mat	x (00)			1 cm Muck (A9) (LRR C)	,
Blac Hydr Strat 1 cm Deplo Thicł	: Histic (A3) ogen Sulfide (A4) fied Layers (A5) (LRR C) Muck (A9) (LRR D)			rix (S6)	0		2 cm Muck (A10) (LRR B)
Hydr Strat 1 cm Deple Thick	ogen Sulfide (A4) fied Layers (A5) (LRR C) Muck (A9) (LRR D)		Loamy Muck	y Mineral (F	1)		Reduced Vertic (F18)	
Strat 1 cm Depl Thick	fied Layers (A5) (LRR C) Muck (A9) (LRR D)		Loamy Gleye	ed Matrix (F2	2)		Red Parent Material (TF2	<u>'</u>)
1 cm Depl Thick	Muck (A9) (LRR D)		Depleted Ma	trix (F3)			Other (Explain in Remark	.s)
Depl Thick			Redox Dark	Surface (F6))			
Thick	eted Below Dark Surface (A	.11)	Depleted Da	rk Surface (I	=7)	*Indicators c	of hydrophytic vegetation a	nd wetland
	Dark Surface (A12)		Redox Depre	essions (F8)		hydrology m	ust be present, unless dist	rubed or
Sanc	y Mucky Mineral (S1)		Vernal Pools	(F9)		problematic.		
Sanc	y Gleyed Matrix (S4)		_					
estrictive Layer	(if present):							
-	Type: N	/A			Hydric Sc	oil Present?	Yes	No
Depth (i	nches):		-					- —
DROLOGY								
etland Hydrolo	gy Indicators:							
imary Indicators	(minimum of one required;	check all that apply	()			_	Secondary Indicators (2 c	or more required)
Surfa	ce Water (A1)		Salt Crust (B	(11)		_	Water Marks	s (B1) (Riverine)
X High	Water Table (A2)		Biotic Crust ((B12)			Sediment D	eposits (B2) (Rive
X Satu	ation (A3)		Aquatic Inve	rtebrates (B ⁻	13)		Drift Deposi	ts (B3) (Riverine)
Wate	r Marks (B1) (Nonriverine)		Hydrogen Su	ulflide Odor (C1)		Drainage Pa	atterns (B10)
Sedi	nent Deposits (B2) (Nonrive	erine)	Oxidized Rhi	zospheres a	long Living R	oots (C3)	Dry-Season	Water Table (C2)
Drift	Deposits (B3) (Nonriverine)		Presence of	Reduced Iro	on (C4)		Crayfish Bur	rrows (C8)
Surfa	ce Soil Cracks (B6)		Recent Iron I	Reduction in	Tilled Soils (C6)	Saturation V	/isible on Aerial (C
Inun	lation Visible on Aerial (B7)		 Thin Muck S	urface (C7)	,	,	Shallow Aqu	uitard (D3)
Wate	r Stained Leaves (B9)		Other (Expla	in in Remark	(s)		FAC-Neutra	l Test (D5)
eld Observatio	ne:							
urface Water Pro	isent? Yes	N	X	D	enth (inches)	r.	Wetland Hydrology Pr	esent?
ator Table Pres	ant? Yes)enth (inches)	. 1/		
aturation Procon	2 Voc)enth (inches)	. 1 1		No
	fringe)		,			. 12		
iciudes capillary	illinge) d Data (atroom gougo, mon	itoring well, earial r	hotoo proviou	in increation				
ocoribo Docordo	a Dala (Sileani yauye, mon	itoring well, aerial p	notos, previou	N/A	5), ii avaliabit	j.		
escribe Recorde				11/7				
escribe Recorde								
escribe Recorde emarks: bvious high wate	r table and saturation prese	ent.						

APPENDIX C. STUDY AREA PHOTOGRAPHS





Photo 1. Overview of the Study Area, showing flat topography and perennial grassland. Facing southeast; photo taken on April 29, 2024.



Photo 2. Black ash deposited along the Study Area western border. A thin surface layer of deposited ash is present throughout much of the Study Area. Facing northwest; photo taken April 29, 2024.





Photo 4. Historical aerial imagery showing black ash deposited within and immediately north of Study Area. Google Earth Aerial Imagery; photo taken August 12, 2023.



Photo 4. Historical aerial imagery showing black ash deposited in southeastern portion of the Study Area and aerial signature of seasonal wetland SW-01 in northern Study Area. Google Earth Aerial Imagery; photo taken July 3, 2014.





Photo 5. Hydrophytic vegetation within seasonal wetland swale SWS-01, at delineation point SP-01, dominated by little mousetail and slender phlox. Photo taken April 29, 2024.



Photo 6. Representative soils within seasonal wetland swale, at delineation point SP-01, showing thin surface layer of black deposited ash underlain by dark brown clay with no redox features. Photo taken April 29, 2024.





Photo 7. Delineation point SP-01, within seasonal wetland swale SWS-01, showing linear depression and vegetation boundary. Backpacks on adjacent uplands. Facing east; photo taken April 29, 2024.



Photo 8. Upland delineation point SP-03. Representative upland perennial grassland dominated by slender-fruited lomatium (FACU) with Great Basin violet (NL). Facing south; photo taken April 29, 2024.





Photo 9. Surface soil cracks within uplands in the *Cupvar series* soil mapping unit. Upland vegetation is present within dry soils, including common sagebrush (NL) and slender-fruited lomatium (NL). Photo taken April 29, 2024.



Photo 10. Delineation point SP-09 within seasonal wetland (SW-07) dominated by Mexican rush within slight depression. Uplands in background with common sagebrush. Facing west; photo taken April 29, 2024.





Photo 11. High water table present in seasonal wetland (SW-07) at delineation point SP-09. Photo taken April 29, 2024.



Photo 12. Delineation point SP-05, within representative wetland ditch dominated by spike rush, with coyote thistle, little mousetail, and small camas. Facing south; photo taken April 29, 2024.





Photo 13. High water table present in wetland ditch at delineation point SP-05. Despite obvious hydrophytic vegetation and hydrology indicators, no hydric soil indicators were observed. Photo taken April 29, 2024.



Photo 14. View from Babcock Road, showing off-site ditch and culvert under railway line, providing hydrological connection to Bull Run Slough, and beyond, to the Pit River and Shasta Lake. Facing east; photo taken April 30, 2024.



APPENDIX D.

PLANT SPECIES OBSERVED WITHIN THE STUDY AREA



Appendix D. Plant Species Observed within the Study Area During the Delineation Survey on April 29-30, 2024

SCIENTIFIC NAME	COMMON NAME	ORIGIN	FORM	RARITY STATUS ¹	CAL-IPC STATUS ²	WETLAND STATUS ³
Acmispon sp.	-	-	-	-	-	-
Alopecurus pratensis	Meadow foxtail	non-native	perennial grass	-	Watch	FACW
Artemisia tridentata	Common sagebrush	native	shrub	-	-	-
Balsamorhiza sp.	-	-	-	-	-	-
Camassia quamash ssp. breviflora	Small camas	native	perennial herb	-	-	FACW
Collinsia heterophylla	Chinese houses	native	annual herb	-	-	-
Draba verna	Whitlow grass	native	annual herb	-	-	-
Eleocharis macrostachya	Spike rush	native	perennial grasslike herb	-	-	OBL
Elymus caput-medusae	Medusa head	non-native (invasive)	annual grass	-	High	-
Elymus elymoides	Squirrel tail grass	native	perennial grass	-	-	FACU
Elymus triticoides	Beardless wild rye	native	perennial grass	-	-	FAC
Epilobium sp.	-	-	-	-	-	-
Eryngium sp.	-	-	-	-	-	-
Holocarpha sp.	-	-	-	-	-	-
Holosteum umbellatum ssp. umbellatum	Jagged chickweed	non-native	annual herb	-	-	-
Juncus mexicanus	Mexican rush	native	perennial grasslike herb	-	-	FACW
Lactuca serriola	Prickly lettuce	non-native	annual herb	-	-	FACU
Lepidium appelianum	Hairy whitetop	non-native (invasive)	perennial herb	-	Limited	UPL
Lomatium bicolor var. Ieptocarpum	Slender fruited lomatium	native	perennial herb	-	-	FACU
Microsteris gracilis	Slender phlox	native	annual herb	-	-	FACU
Montia linearis	Narrow leaved water chickweed	native	annual herb	-	-	FAC
Myosurus minimus	Little mousetail	native	annual herb	-	-	OBL
Poa bulbosa	Bulbous blue grass	non-native	perennial grass	-	-	FACU
Poa secunda	Pine bluegrass	native	perennial grass	-	-	FACU
Ranunculus occidentalis	Western buttercup	native	perennial herb	-	-	FAC
Rumex crispus	Curly dock	non-native (invasive)	perennial herb	-	Limited	FAC
Trifolium beckwithii	Beckwith's clover	native	perennial herb	-	-	FAC
Trifolium macrocephalum	Big headed clover	native	perennial herb	-	-	FACU
Viola beckwithii	Great Basin violet	native	perennial herb	-	-	-



Appendix D. Plant Species Observed within the Study Area During the Delineation Survey on April 29-30, 2024

Note: All species identified using the *Jepson eFlora* [Jepson Flora Project (eds.) 2024]; nomenclature follows *Jepson eFlora* [Jepson Flora Project (eds.) 2024] or Rare Plant Inventory (CNPS 2024). Sp.: "species," intended to indicate that the observer was confident in the identity of the genus but uncertain which species.

¹ California Native Plant Society. 2024. Rare Plant Inventory (online edition, v9.5). Sacramento, California. Online at: http://rareplants.cnps.org/; most recently accessed: May 2024.

Federal Endangered
Federal Threatened
State Endangered
State Threatened
State Rare
Plants presumed extinct in California
Plants rare, threatened, or endangered in California and elsewhere
Plants rare, threatened, or endangered in California, but more common elsewhere
Plants about which we need more information – a review list
Plants of limited distribution – a watch list

² California Invasive Plant Council. 2024. California Invasive Plant Inventory Database. California Invasive Plant Council, Berkeley, CA. Online at: http://www.calipc.org/paf/; most recently accessed: April 2024.

High:	Severe ecological impacts; high rates of dispersal and establishment; most are widely distributed ecologically.
Moderate:	Substantial and apparent ecological impacts; moderate-high rates of dispersal, establishment dependent on disturbance; limited
	moderate distribution ecologically
Limited:	Minor or not well documented ecological impacts; low-moderate rate of invasiveness; limited distribution ecologically
Assessed:	Assessed by Cal-IPC and determined to not be an existing current threat

³ U.S. Army Corps of Engineers. 2022. National Wetland Plant List, version 3.6. Online at: http://wetland-plants.sec.usace.army.mil/

- OBL: Almost always found in wetlands
- FACW: Usually found in wetlands
- FAC: Equally found in wetlands and uplands
- FACU: Usually not found in wetlands
- UPL: Almost never found in wetlands
- NL: Not listed, assumed almost never found in wetlands
- NI: No information; not factored during wetland delineation



APPENDIX E. ANTECEDENT PRECIPITATION TOOL ANALYSIS





Coordinates	41.085811, -121.173417
Observation Date	2024-04-20
Elevation (ft)	4116.296
Drought Index (PDSI)	Incipient wetness (2024-03)
WebWIMP H ₂ O Balance	Wet Season

30 Days Ending	30 th %ile (in)	70 th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-04-20	0.90315	1.886221	3.169291	Wet	3	3	9
2024-03-21	1.137008	2.118504	1.858268	Normal	2	2	4
2024-02-20	1.01811	2.295276	2.07874	Normal	2	1	2
Result							Wetter than Normal - 15



ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
ADIN RS	41.1933, -120.9444	4202.1	14.042	85.804	7.524	11240	76
CANBY 3 SW	41.4219, -120.9017	4310.04	15.949	107.94	8.899	46	0
Adin Mtn	41.24, -120.79	6189.961	8.649	1987.861	21.085	66	14

- Daily Total
- ----- 30-Day Rolling Total
 - 30-Year Normal Range

Jun 2024	Jul 2024	Aug 2024