APPENDIX B

DELINEATION OF WATERS

OF THE UNITED STATES

County Road 200 Bridge over Branch Salt Creek Replacement Project

Delineation of Waters of the United States

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On behalf of:
Glenn County
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Project No 2272004901

March 13, 2018

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Executive Summary

On behalf of the Glenn County Public Works Agency (County), North State Resources, Inc., now Stantec (Stantec) conducted a delineation of waters of the United States occurring in the 5.40-acre County Road 200 Bridge over Branch Salt Creek Replacement Project study area in Glenn County, California. The delineation was conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (U.S. Army Corps of Engineers 2008). The field delineation was conducted on November 29, 2017. A total of 0.366 acre of potential waters of the United States were mapped within the study area and include ephemeral stream (0.023 acre, 335 linear feet) and intermittent stream (0.343 acre, 360 linear feet).

The purpose of this delineation of waters of the United States is to document and describe waters of the United States to support a Preliminary Jurisdictional Determination from the United States Army Corps of Engineers (Corps). This delineation is subject to verification by the Corps, Sacramento District. Stantec, advises all parties to treat the information contained herein as preliminary until the Corps provides written verification of the boundaries of its jurisdiction.

If the Corps wishes to conduct a field verification, the County requests that the Corps contact Sam Lee, Engineering Technician, Glenn County Public Works Agency by telephone at (530) 934-6530 or by email at engineer@countyofglenn.net to schedule a date and time to access the study area.

Abbreviations

County	Glenn County Public Works
Corps	United States Army Corps of Engineers
GCID	Glenn-Colusa Irrigation District
GPS	Global Positioning System
NWI	National Wetlands Inventory
OHWM	Ordinary High Water Mark
Stantec	North State Resources, Inc. now Stantec
TNW	Traditional Navigable Water
USGS	United States Geological Survey

1.0 PROJECT LOCATION

The study area is in a rural area west of the city of Orland in Glenn County, California and it consists of a 1,352-foot alignment along County Road 200. This location can be found on the *Newville, California* 7.5-minute U.S. Geological Survey (USGS) quadrangle in Township 22N, Range 6W, Sections 3 and 4. The approximate center of the study area is located at latitude 39.793471°, longitude -122.533576° (North American Datum 83). The study area location is shown in Figure 1.

To access the study area, from Interstate 5, travel 21.8 miles west on County Road 200/Newville Road to the study area where the County Road 200 Bridge crosses over Salt Creek (Figure 1).

2.0 ENVIRONMENTAL SETTING

2.1 CURRENT/RECENT LAND USE

The study area is bounded by annual grassland which is grazed by cattle. There are two rural residences in the vicinity along County Road 200, one located approximately 0.3 mile south of the study area and one located approximately 0.5 mile east of the study area.

2.2 SITE TOPOGRAPHY AND ELEVATION

The topography of the study area immediately adjacent to Salt Creek ranges from nearly level terraces to steep slopes. All adjacent land drains into Salt Creek. The study area generally runs perpendicular to Salt Creek and occurs at elevations between 613 and 640 feet.

2.3 CLIMATE

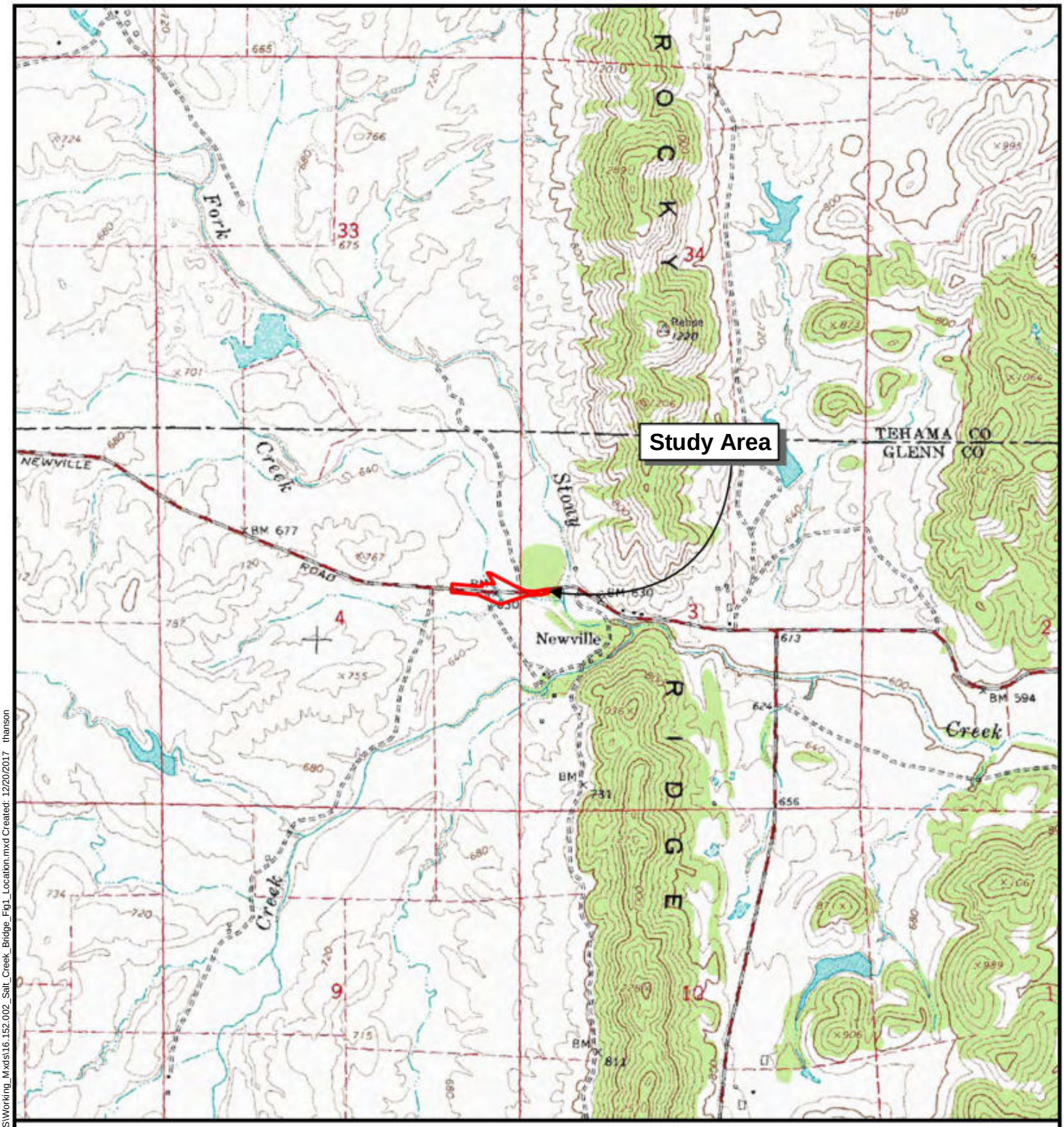
Historical data used to describe the climate are collected at Stony Gorge Reservoir, California approximately 17 miles south of the study area (Western Regional Climate Center 2016). The climate data are described below:

Type: The climate of the area is characterized as Mediterranean with moderate winters and hot, dry summers.

Precipitation: Precipitation in the study area primarily occurs as rain. The average annual rainfall is approximately 20 inches.

Air Temperature: Air temperatures in the study area range between an average January high of 55 degrees Fahrenheit (°F), and an average July high of 97°F. The annual average high is approximately 75°F.

Growing Season: The growing season (i.e., 50% probability of air temperature 28 °F or higher) in the study area is approximately 280 days and occurs between March and November.



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North State Resources, Inc.
now
Stantec

County Road 200 Bridge over Salt Creek Replacement Project

Figure 1
Study Area Location

2.4 HYDROLOGY/HYDROLOGIC FEATURES

The hydrologic features in the study area include ephemeral stream and intermittent stream (Salt Creek). Hydrology for these features is generally provided by sheet flow, snow melt, springs, and groundwater originating in the mountains to the west of the study area. Drainage in the study area is primarily from west to east. Salt Creek flows to North Fork Stony Creek approximately 800 feet downstream of the study area. North Fork Stony Creek flows approximately 8.25 river miles to Black Butte Lake which flows into Stony Creek. Stony Creek flows approximately 26 river miles to the Sacramento River, a traditional navigable water (TNW).

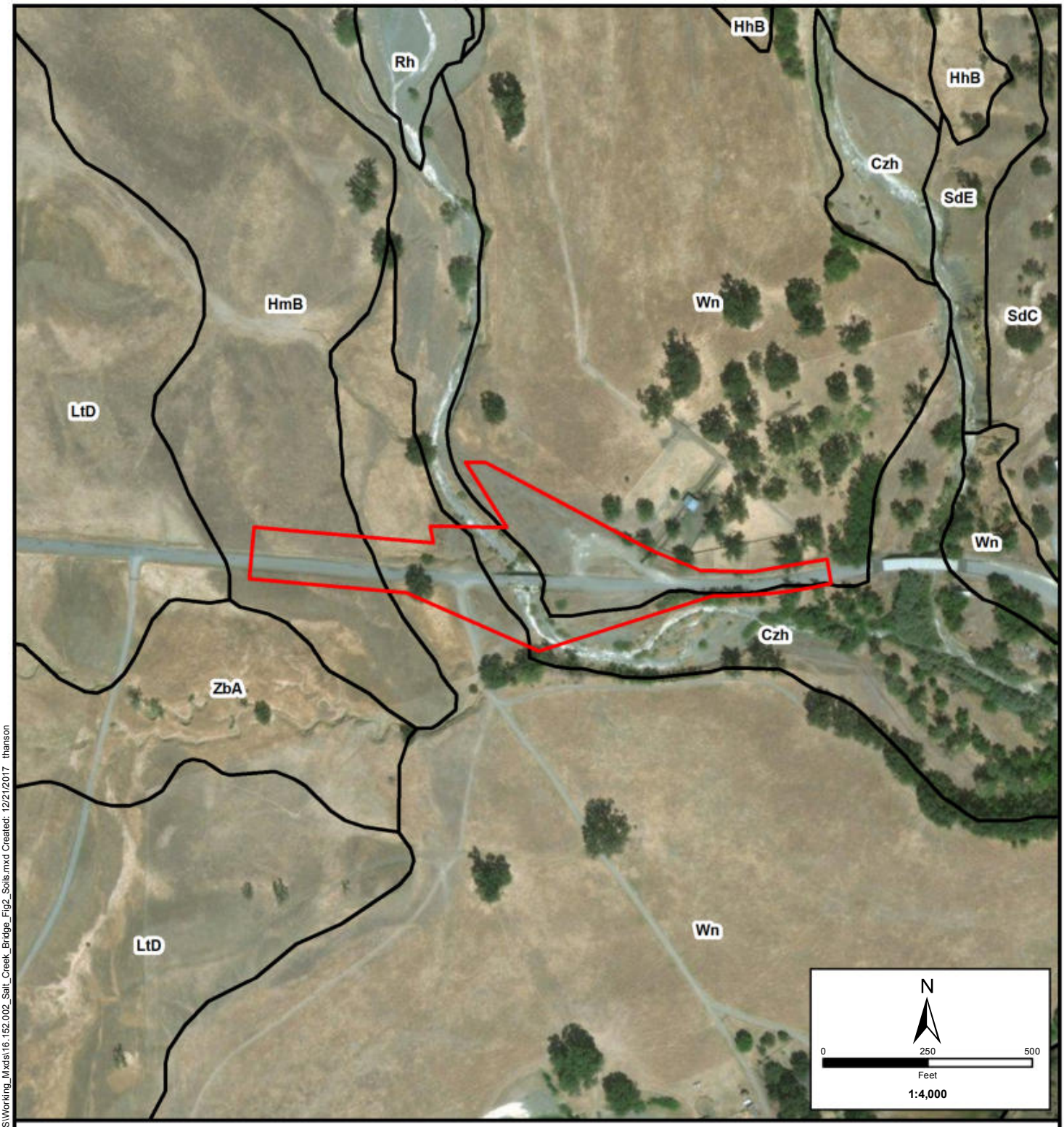
2.5 SOIL MAP UNITS

Soil map units in and around the study area are shown in Figure 2. Three soil map units occur within the study area and are described below:

- **Cortina coarse sandy loam, MRLA 17 (Czh**). This is a non-hydric, somewhat excessively drained soil with negligible to low runoff and rapid permeability. Cortina soils were formed in alluvium. The depth to a restrictive layer is 60 inches.

- **Hillgate gravelly loam, 2 to 8 percent slopes (HmB).** This is a non-hydric, well to moderately well drained soil with negligible to very high runoff and very slow permeability. Hillgate soils were formed in alluvium. The depth to a restrictive layer is 73 inches.

- **Wyo silt loam (Wn).** This is a non-hydric, well-drained soil formed in alluvium. The depth to a restrictive layer is 60 inches.



Study Area (5.41 acres)

Soil Map Units

Czh - Cortina coarse sandy loam, MLRA 17
HhB - Hillgate loam, moderately deep, 0 to 10 percent slopes
HmB - Hillgate gravelly loam, 2 to 8 percent slopes
LtD - Lodo-Tehama-Gullied land complex, 10 to 30 percent slopes
Rh - Riverwash
SdC - Sehorn-Millsholm association, 8 to 15 percent slopes
SdE - Sehorn-Millsholm association, 30 to 65 percent slopes
Wn - Wyo silt loam
ZbA - Zamora silty clay loam, 0 to 2 percent slopes

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Figure 2
Soil Map Units

2.6 VEGETATION COMMUNITIES

Vegetation communities are based on descriptions provided in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer 1988). Three vegetation communities or other habitats occur in the study area: annual grassland, riverine, and barren/ruderal.

Annual Grassland. Annual grassland habitat is located throughout the study area. Annual grassland habitat is characterized by a dense herbaceous layer and is dominated by introduced annual grasses and forbs, including wild oat (*Avena fatua*), ripgut brome (*Bromus diandrus*), soft chess (*B. hordeaceus*), rose clover (*Trifolium hirtum*), and yellow star-thistle (*Centaurea solstitialis*).

Riverine. Riverine habitat in the BSA consists of Salt Creek. Salt Creek flows south easterly through the study area and is comprised of run and riffle habitats and is dominated by cobble, gravel, and bedrock substrates. Vegetation within the stream channel is sparse, with scattered black willow (*Salix gooddingii*) and cottonwood (*Populus fremontii*) to the north of the bridge and invasive tamarisk (*Tamarix parviflora*) to the south of the bridge.

Barren/Ruderal. Barren/ruderal habitat occurs as dirt and paved roads and their associated road shoulders. Vegetation is usually not present, although sparse opportunistic grasses and forbs or weedy species may occur.

3.0 METHODS

Stantec conducted an on-site routine delineation of wetlands and "other waters" of the United States based on field observations of positive indicators for wetland vegetation, hydrology, and soils; and indicators of an ordinary high water mark (OHWM). This methodology is consistent with the approach outlined in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (U.S. Army Corps of Engineers 2008). Plant taxonomy follows *The Jepson Manual: Vascular Plants of California* (Baldwin et al. 2012). Wetland indicator status for plant species was confirmed using *The National Wetland Plant List* (Lichvar et al. 2016), and the "50/20 Rule" or "Prevalence Index" was applied to determine plant dominance (U.S. Army Corps of Engineers 2008). Presence of primary and secondary wetland hydrology indicators were documented for each wetland feature.

Soil pits were dug in representative wetland features to a depth sufficient to document the presence or confirm the absence of hydric soil or wetland hydrology indicators. Soils were examined to assess field indicators of hydric soils. Positive indicators of hydric soils were observed in the field following the criteria outlined in *Field Indicators of Hydric Soils in the United States* (Vasilas et al. 2017). Soil colors were determined using a Munsell® soil color chart. The hydric status of each soil map unit occurring in the study area was reviewed using the *Web Soil Survey* (Natural Resources Conservation Service 1998). At least one set of data points was

selected to best represent the wetland feature type and the adjacent uplands. Data points were also placed in suspect areas to confirm wetland or upland status.

Other waters are defined as traditional navigable waters and their tributaries (33 CFR 329). Delineation of other waters was based on presence of an OHWM as defined in Corps regulations (33 CFR 328.3 and 33 CFR 328.4) and whether the feature qualified as tributary to waters of the United States. Physical characteristics of an OHWM include, but are not limited to the following conditions: a natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, presence of litter and debris, leaf litter disturbed or washed away, scour, deposition, presence of bed and bank, and water staining. At least one data point was selected to best represent the OHWM of other waters for each other waters type.

Prior to conducting the on-site routine delineation, the U.S. Fish and Wildlife Service's, National Wetlands Inventory (NWI) Wetlands Mapper (U.S. Fish and Wildlife Service 2017) was reviewed to determine if any wetlands or deepwater habitats as described by Cowardin et al. (1979) were previously mapped in the study area and general vicinity. Features delineated during the on-site routine delineation were classified using Cowardin (1979) based on existing NWI mapping, or assigned a Cowardin type if not previously mapped.

Three data points were used to characterize and document each other water feature type, and the adjacent upland. Field observations were conducted on November 30, 2017.

The boundaries of delineated features and the associated data points were mapped using a Trimble Mapping Grade Global Positioning System (GPS) capable of sub-foot accuracy. Where the use of the GPS was not practicable or satellites were not available, the features were delineated by hand onto ortho-rectified color aerial photographs. The GPS and hand-drawn location data were overlaid onto an aerial photograph of the study area to develop the delineation map.

4.0 RESULTS AND DISCUSSION

Potential waters of the United States occur in the study area as other waters and include ephemeral stream and intermittent stream.

The boundaries and area of potential waters of the United States occurring in the study area are illustrated in Figure 3. A total of 0.366 acre of waters of the United States was delineated. A summary of the delineated features is presented in Table 1. Routine wetland determination data forms are presented in Appendix A. Representative photographs of the delineated features and data point locations are presented in Appendix B.

Table 1. Waters of the United States Summary

Waters of the United States	Total Acreage	Total Linear Feet	Cowardin Type[1]
Other Waters			
Ephemeral Stream	0.023	335	R4SB3C
Intermittent Stream	0.343	360	R4SB3C
Total Waters of the United States	**0.366**	**695**	

4.1 CHARACTERIZATION OF DELINEATED FEATURES

4.1.1 Ephemeral Stream

Ephemeral streams exhibit indicators of scour and deposition, minor drift lines, and sediment deposits, but lack indication of a ground water component. Hydrology is provided by sheet flow during precipitation events. The poorly defined hydrology indicators, close proximity to the headwaters, and the small size of the ephemeral streams indicate short duration flow and the lack of a groundwater component. Two ephemeral streams (ES-1 and ES-2) occur in the study area. ES-1 is located to the north of County Road 200. It ranges from 1 to 2 feet wide, is deeply incised, and devoid of vegetation in the streambed. Gravel and cobble dominate the substrate, with patches of broken asphalt and old tires present. ES-2 is located to the south of County Road 200. It ranges from 3 to 4 feet wide, is deeply incised, and devoid of vegetation in the streambed. Gravel and cobble dominate the substrate. Both ephemeral streams in the study area flow into the intermittent stream (IS-1) which conveys water ultimately to the Sacramento River.

4.1.2 Intermittent Stream (Salt Creek)

Intermittent streams flow seasonally, but are fed by a groundwater component in addition to precipitation and sheet flow from adjacent slopes. One intermittent stream (Salt Creek; IS-1) occurs in the study area and is characterized as a bed and bank feature that exhibits indicators of scour, deposition, watermarks, and drift lines. The intermittent stream ranges from 30 to 60 feet wide. Cobble, gravel, sand, and bedrock dominate the stream substrate. Salt Creek flows into North Fork Stony Creek which conveys water ultimately to the Sacramento River.

[1] Cowardin et al. 1979

Coordinate System: NAD 1983 UTM Zone 10N
Projection: Transverse Mercator
Datum: North American 1983

Potential Waters of the United States

Other Waters

Label	Type	Area (ac)	Length (ft)	Latitude	Longitude
ES-1	Ephemeral Stream	0.019	300	39.793610	-122.534348
ES-2	Ephemeral Stream	0.004	35	39.793030	-122.533462
IS-1	Intermittent Stream	0.343	360	39.793400	-122.533605
Total Other Waters		**0.366**	**695**		
Total Waters of the U.S.		**0.366**	**695**		

39.793800,
-122.535884

County Road 200

1

ES-1

2

IS-1

3

ES-2

Salt Creek

39.793450,
-122.530971

Study Area (5.40 acres)
3-Parameter Data Point
Ordinary High Water Mark
1-Foot Contours

Potential Waters of the U.S.

Other Waters

Ephemeral Stream
Intermittent Stream

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Prepared for:
Glenn County Public Works Agency
777 No. Colusa Street
Willows, CA 95988

Notes:
Delineator: Chariss Femino
Delineation Dates: November 29, 2017
Orthophotography provided by ArcGIS Online.

This delineation of waters of the United States is subject to verification by the U.S. Army Corps of Engineers (Corps). NSR advises all parties that the delineation is preliminary until the Corps provides a written verification.

N
1 inch = 150 feet
0 75 150
Feet

County Road 200 Bridge over Branch Salt Creek Replacement Project

Figure 3
Potential Waters of the United States

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5.0 CONCLUSION

Potential waters of the United States delineated within the study area occupy a total of 0.366 acre (695 linear feet) and occur as ephemeral stream and intermittent stream.

Determinations of waters of the United States, including wetlands, are based on current conditions, (i.e., normal circumstances) and made in accordance with relevant U.S. Environmental Protection Agency and Corps guidance. Determinations are subject to verification by the Corps. Stantec advises all interested parties to treat the information contained herein as preliminary pending written verification of jurisdictional boundaries by the Corps.

6.0 REFERENCES

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APPENDIX A
ROUTINE WETLAND DETERMINATION DATA FORMS

North State Resources, Inc. now Stantec

Data Point DP 1
Feature Type Ephemeral

Wetland Determination Data Form–Arid West Region

Project/Site: Co. Rd. 200 / Salt Creek City/County: Glenn Co. Date: 11/29/17
Applicant/Owner: Glenn County Planning & Public Works State: CA
Investigator(s): Chariss Femino Section, Township, Range 3&4, T22N, R6W
Landform (hillslope, terrace, etc.) Terrace Local relief (concave, convex, none) Concave Slope % 5
Subregion (LRR): C Lat: 39.793605 Long: -122.534839 Datum: NAD 83
Soil Map Unit Name: Wyo silt loam NWI Classification: 0
Are climatic/hydrologic conditions on the site typical for this time of year? Y / (N) *(If no, explain in Remarks.)*
Are vegetation Y / (N) soil Y / (N) or hydrology Y / (N) significantly disturbed? Are normal circumstances present? (Y) / N
Are vegetation Y / (N) soil Y / (N) or hydrology Y / (N) naturally problematic? *(If needed, explain in Remarks.)*

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)
Hydrophytic vegetation? Y (N) Hydric soil? Y / (N) Wetland hydrology? (Y) / N Is sampled area a wetland? Y / (N) Other waters? (Y) / N

Evaluation of features designated "Other Waters of the United States"
Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____ Stream Width 12" - 24"
Feature Designation: Perennial ____ Intermittent ____ Ephemeral X Blue-line on USGS Quad ____ Substrate cobbles / sandy soil
Natural Drainage X Artificial Drainage ____ Navigable Water ____

Remarks Road side ditch that drains into salt creek. heavily incised. filled w/asphalt & old tires. Rainfall has been much lower than average so far in fall/winter 2017.

Vegetation (Use Scientific Names)

Tree Stratum (Plot Size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50%=____ 20%=____ Total Cover:			
Sapling/Shrub Stratum (Plot:____)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%=____ 20%=____ Total Cover:			
Herb Stratum (Plot Size:____)	**% Cover**	**Species?**	**Status**
1. Avena fatua	5	Y	UPL
2. Hordeum sp.	5	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
50%=____ 20%=____ Total Cover: 10			
Woody/Vine Stratum (Plot:____)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%=____ 20%=____ Total Cover:			

% Bare Ground in Herb Stratum ____ **% Cover of Biotic Crust** ____

Dominance Test Worksheet
Number of dominant species that are OBL, FACW, or FAC: 1 (A)
Total number of dominant species across all strata: 2 (B)
Percent of dominant species that are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by	
OBL Species	____	x 1 =	____
FACW Species	____	x 2 =	____
FAC Species	5	x 3 =	15
FACU Species	____	x 4 =	____
UPL Species	5	x 5 =	25
Column Totals	10 (A)		40 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators
____ Dominance Test is >50%
____ Prevalence Index is ≤ 3.0[1]
____ Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)
[1]*Indicators of hydric soil and wetland hydrology must be present.*

Hydrophytic Vegetation? Y / (N)

Remarks
Mostly upland vegetation lining banks of channel. Some upland veg. @ bottom of channel within otherwise also.

Data Point 1

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5Y 3/2	95	7.5YR 5/8	5	C	PL	Loam	

[1]Types: C = Concentration D = Depletion RM = Reduced Matrix [2]Location: PL = Pore Lining M = Matrix

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF21)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present): Type: _____ Depth (Inches) _____ Hydric Soil? Y / (N)

Remarks
Some minor redox features present. Not strong enough to indicate hydric soil @ this location.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient.)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1) (Nonriverine)
- ____ Sediment Deposits (B2) (Nonriverine)
- ____ Drift Deposits (B3) (Nonriverine)
- ____ Surface Soil Cracks (B6)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Salt Crust (B11)
- ____ Biotic Crust (B12)
- ____ Aquatic Invertebrates (B13)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Plowed Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) _____ Wetland Hydrology? Y / (N)

Water Table Present? Yes ____ No X Depth (inches) _____

Saturation Present? Yes ____ No X Depth (inches) _____ *(includes capillary fringe)*

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

Remarks Only 1 secondary indicator present. Point taken @ edge of feature where starts to have defined bed + bank. Drains road + adjacent uplands to Salt Creek.

North State Resources, Inc. now Stantec

Data Point DP-7
Feature Type Upland

Wetland Determination Data Form–Arid West Region

Project/Site: Co. Rd. 200/Salt Creek City/County: Glenn Co. Date: 11/29/17
Applicant/Owner: Glenn County Planning + Public Works State: CA
Investigator(s): Chariss Femino J Section, Township, Range S3+4, T22N, R6W
Landform (hillslope, terrace, etc.) hillslope Local relief (concave, convex, none) Convex Slope % <5
Subregion (LRR): C Lat: 39.793603 Long: -122.533839 Datum: NAD 83
Soil Map Unit Name: Cortina coarse sandy loam NWI Classification:
Are climatic/hydrologic conditions on the site typical for this time of year? Y / (N) *(If no, explain in Remarks.)*
Are vegetation Y / (N) soil Y / (N) or hydrology Y / (N) significantly disturbed? Are normal circumstances present? (Y) / N
Are vegetation Y / (N) soil Y / (N) or hydrology Y / (N) naturally problematic? *(If needed, explain in Remarks.)*

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)
Hydrophytic vegetation? Y / (N) Hydric soil? Y / (N) Wetland hydrology? (Y) / N Is sampled area a wetland? Y / (N) Other waters? Y / (N)

Evaluation of features designated "Other Waters of the United States"
Indicators: Defined bed and bank ____ Scour ____ Ordinary High Water Mark Mapped ____ Stream Width ____
Feature Designation: Perennial ____ Intermittent ____ Ephemeral ____ Blue-line on USGS Quad ____ Substrate ____
Natural Drainage ____ Artificial Drainage ____ Navigable Water ____

Remarks
DP taken @ edge of otwm. Drift deposits present on nearby trees
DP taken close to where ES-1 drains into creek
Rainfall has been much lower than average so far this fall/winter 2017.

Vegetation (Use Scientific Names)

Tree Stratum (Plot Size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50%=____ 20%=____ Total Cover:			
Sapling/Shrub Stratum (Plot:____)	**% Cover**	**Species?**	**Status**
1.			
2.			
3.			
4.			
50%=____ 20%=____ Total Cover:			
Herb Stratum (Plot Size: ____)	**% Cover**	**Species?**	**Status**
1. Avena fatua	25	Y	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
50%=____ 20%=____ Total Cover:	25		
Woody/Vine Stratum (Plot:____)	**% Cover**	**Species?**	**Status**
1.			
2.			
50%=____ 20%=____ Total Cover:			

% Bare Ground in Herb Stratum 75 **%** **Cover of Biotic Crust** ____

Dominance Test Worksheet
Number of dominant species that are OBL, FACW, or FAC: ____ (A)
Total number of dominant species across all strata: ____ (B)
Percent of dominant species that are OBL, FACW, or FAC: ____ (AB)

Prevalence Index Worksheet

Total % Cover of:		Multiply by	
OBL Species	____	x 1 =	____
FACW Species	____	x 2 =	____
FAC Species	____	x 3 =	____
FACU Species	____	x 4 =	____
UPL Species	____	x 5 =	____
Column Totals	____ (A)		____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators
____ Dominance Test is >50%
____ Prevalence Index is ≤ 3.0[1]
____ Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)
[1]*Indicators of hydric soil and wetland hydrology must be present.*

Hydrophytic Vegetation? Y / (N)

Remarks

Data Point DP2

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	5YR 3/1	100					Loamy Sand	

[1]Types: C = Concentration D = Depletion RM = Reduced Matrix [2]Location: PL = Pore Lining M = Matrix

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF21)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present): Type: Rock Shale Depth (Inches) 4 Hydric Soil? Y / (N)

Remarks

Bedrock present 4" down at DP location

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient.)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1) (Nonriverine)
- ____ Sediment Deposits (B2) (Nonriverine)
- ____ Drift Deposits (B3) (Nonriverine)
- ____ Surface Soil Cracks (B6)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Salt Crust (B11)
- ____ Biotic Crust (B12)
- ____ Aquatic Invertebrates (B13)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Plowed Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) ____ Wetland Hydrology? Y / (N)

Water Table Present? Yes ____ No X Depth (inches) ____

Saturation Present? Yes ____ No X Depth (inches) ____ *(includes capillary fringe)*

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

Remarks

Upland point taken just outside of ohwm of Salt Creek.

North State Resources, Inc. now Stantec

Data Point OP 3
Feature Type Intermittent

Wetland Determination Data Form–Arid West Region

Project/Site: CR 200 / Salt Creek City/County: Glenn Co. Date: 11/29/17
Applicant/Owner: Glenn County Planning + Public Works State: CA
Investigator(s): Chariss Feminou Section, Township, Range S3+4, T22N, R6W
Landform (hillslope, terrace, etc.) streambed Local relief (concave, convex, none) concave Slope % <5
Subregion (LRR): C Lat: 39.793082 Long: -122.532444 Datum: NAD 83
Soil Map Unit Name: Cortina coarse sandy loam NWI Classification: R4SBC
Are climatic/hydrologic conditions on the site typical for this time of year? Y (N) *(If no, explain in Remarks.)*
Are vegetation Y / (N) soil Y / (N) or hydrology Y / (N) significantly disturbed? Are normal circumstances present? (Y) / N
Are vegetation Y / (N) soil Y / (N) or hydrology Y / (N) naturally problematic? *(If needed, explain in Remarks.)*

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)
Hydrophytic vegetation? Y / (N) Hydric soil? Y / (N) Wetland hydrology? (Y) / N Is sampled area a wetland? Y / (N) Other waters? (Y) / N

Evaluation of features designated "Other Waters of the United States"
Indicators: Defined bed and bank V Scour ____ Ordinary High Water Mark Mapped ____ Stream Width 35 - 40
Feature Designation: Perennial ____ Intermittent X Ephemeral ____ Blue-line on USGS Quad X Substrate bedrock / cobble / gravel
Natural Drainage X Artificial Drainage ____ Navigable Water ____

Remarks OP taken @ edge of alluvium near where ES-2 flows into creek. Biotic crust present on rocks in creekbed nearby. Rainfall has been much lower than average this fall/winter 2017.

Vegetation (Use Scientific Names)

Tree Stratum (Plot Size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50%= ____ 20%= ____ Total Cover:			

Sapling/Shrub Stratum (Plot: ____)	% Cover	Species?	Status
1.			
2.			
3.			
4.			
50%= ____ 20%= ____ Total Cover:			

Herb Stratum (Plot Size: ____)	% Cover	Species?	Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
50%= ____ 20%= ____ Total Cover:			

Woody/Vine Stratum (Plot: ____)	% Cover	Species?	Status
1.			
2.			
50%= ____ 20%= ____ Total Cover:			

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust ____

Dominance Test Worksheet
Number of dominant species that are OBL, FACW, or FAC: ____ (A)
Total number of dominant species across all strata: ____ (B)
Percent of dominant species that are OBL, FACW, or FAC: ____ (AB)

Prevalence Index Worksheet

Total % Cover of:		Multiply by
OBL Species	____ x 1 =	____
FACW Species	____ x 2 =	____
FAC Species	____ x 3 =	____
FACU Species	____ x 4 =	____
UPL Species	____ x 5 =	____
Column Totals	____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators
____ Dominance Test is >50%
____ Prevalence Index is ≤ 3.0[1]
____ Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation? Y / (N)

Remarks
Only bare ground present at OP location. No hydrophytic vegetation present.

Data Point 3

Soils

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	7.5YR 2.5/1	90	5YR 4/6	10	C	M	Sand	

[1]Types: C = Concentration D = Depletion RM = Reduced Matrix [2]Location: PL = Pore Lining M = Matrix

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF21)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present): Type: Bedrock Depth (Inches) 3 Hydric Soil? Y (N)

Remarks Shallow bedrock - only 3" down. No hydric present @ this DP location.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient.)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1) (Nonriverine)
- ____ Sediment Deposits (B2) (Nonriverine)
- ____ Drift Deposits (B3) (Nonriverine)
- ____ Surface Soil Cracks (B6)
- X Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- X Salt Crust (B11)
- X Biotic Crust (B12)
- ____ Aquatic Invertebrates (B13)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Plowed Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No X Depth (inches) ____ Wetland Hydrology? (Y) / N

Water Table Present? Yes ____ No X Depth (inches) ____

Saturation Present? Yes ____ No X Depth (inches) ____ *(includes capillary fringe)*

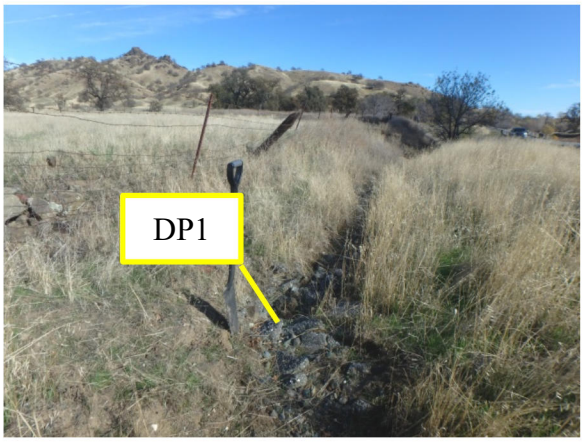
Describe Recorded Data (stream gauge, monitoring well, aerial photos, and previous inspections), if available:

Remarks Very strong hydrological indicators present.

APPENDIX B
REPRESENTATIVE PHOTOGRAPHS

County Road 200 over Branch Salt Creek
Bridge Replacement Project
Delineation of Waters of the United States

Photographs Taken November 29, 2017



Photograph 1. Ephemeral Stream (ES)-1. Data point (DP) 1 documents the OHWM of the feature. Orientation: east.

Photograph 3. Connection between ES-1 and Intermittent Stream (IS)-1. DP2 documents the uplands adjacent to IS-1. Orientation: northwest.

Photograph 2. IS-1. DP3 documents the OHWM of the feature. Orientation: southeast.

Photograph 4. ES-2 looking upstream from near IS-1. Orientation: west.