# Delineation of Potentially Jurisdictional Wetlands and Waters

for

# Brynildson Residence APN 046-031-033

Old Creek Road

San Luis Obispo County

Prepared for

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by

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*Cover Page: Access road view uphill towards drainage crossing that supports riparian habitat. April 2, 2019.*

## Definitions of Wetland Indicators

### Wetland Plant Indicator Status Ratings in Order of Wetland Affinity

| | | |
|---|---|---|
| **OBL** | Obligate | Hydrophyte, almost always occur in wetland.<br>Estimated probability >99 percent to occur in wetlands under natural conditions. |
| **FACW** | Facultative Wetland | Hydrophyte, usually occur in wetland, but may occur in non-wetland.<br>Estimated probability >67% to 99% to occur in wetlands under natural conditions. |
| **FAC** | Facultative | Equally likely to occur in wetland and non-wetland.<br>Estimated probability 33% to 67% to occur in wetlands under natural conditions. |
| **FACU** | Facultative Upland | Non-hydrophyte, usually occurs in non-wetland, but may occur in wetland.<br>Estimated probability 1% to <33% to occur in wetlands under natural conditions. |
| **UPL** | Upland | Almost never occur in wetland.<br>Estimated probability <1% to occur in wetlands under natural conditions. |
| **NL** | Not Listed | Species not included in federal list of wetland indicator plants.<br>Assumed upland for purposes of wetland analysis. |

# 1 INTRODUCTION

## 1.1 Purpose

This report provides a delineation of potentially jurisdictional aquatic features according to federal and state standards on the 12.91-acre site (Study Area) owned by Alison Brynildson, located in San Luis Obispo County, California. Its purpose is to describe potentially jurisdictional waters and/or wetlands according to the Clean Water Act (CWA) Section 404, the Porter-Cologne Water Quality Act (State Water Code), and Fish and Game Code Section 1600. This document presents a comprehensive inventory and mapping effort of wetland and non-wetland aquatic resources within the Study Area and provides information for owners, the United States Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), California Department of Fish and Wildlife (CDFW), and the Lead Agency in decisions regarding activities within the Study Area. Section 2.0 provides more detail on the regulatory framework and scope of this jurisdictional delineation.

## 1.2 Study Area Location and Extent

The Study Area is a 12.91-acre portion of an approximately 162-acre parcel (APN 046-031-033) located in western San Luis Obispo County, approximately 1.8 miles south of the intersection of Highway 46 and Old Creek Road. Approximate coordinates for the center of the Study Area are 35.508611, -120.847828 (WGS84) in the York Mountain United States Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 1). Elevation ranges from approximately 1415 to 1760 feet above mean sea level.

## 1.3 Current Conditions

The Study Area is an undeveloped parcel of land dominated by non-native grassland, mixed woodland, and oak woodland habitats (Figure 2). Entrance to the site is from an existing gate and dirt access road on the southwest side of Old Creek Road. The access road is approximately 20 feet wide and winds steeply uphill from east to west through the property. The road is used to access a neighboring property and vineyard to the west.

## 1.4 Hydrology

The USGS and United States Department of Agriculture (USDA)-Natural Resource Conservation Service (NRCS) developed nationally consistent watershed boundaries which range from a two digit code as the first level of classification (Hydrologic Unit Code [HUC] 2) to a 12 digit code for the most detailed watershed delineation (HUC12). The Study Area straddles the Coastal and Salinas watershed (HUC8) with water on the north half of the Study Area flowing north to Santa Rita Creek. Santa Rita Creek flows into Paso Robles Creek and then the Salinas River (Figure 3). A small ephemeral drainage occurs in the northern portion of the Study Area that supports riparian tree species such as California bay (*Umbellularia californica*) and big leaf maple (*Acer macrophyllum*). The drainage conveys water northeast out of the Study Area to a culvert under Old Creek Road, which then flows approximately 120 feet to its confluence with Santa Rita Creek, a riverine and forested shrub wetland, and tributary to the Salinas River (Figures 4 and 5).

The southern aspect of the Study Area drains into Whale Rock Reservoir's contributing tributaries. Figure 6 shows that the Study Area is dominated by an area of minimal flood hazard in the National Flood Hazard Layer (FEMA 2012).

### *1.4.1 Vegetation and Habitats*

A dirt road runs through the center of the Study Area. Three habitat types surround it: California bay forest, coast live oak woodland, and annual grassland. The steep north facing slope of the Study Area supports a dense mature forest dominated by California bay, with California buckeye *(Aesculus californicus*), big leaf maple, and coast live oak trees (*Quercus agrifolia*). Understory species include poison oak (*Toxicodendron diversilobum*), Italian thistle (*Carduus pycnocephalus*), and stinging nettle (*Urtica dioica*).

A dense woodland dominated by coast live oak occurs in the western portion of the Study Area along the top of the ridge and on the south facing slopes. The habitat includes large mature coast live oak trees and occasional shrub species such as madrone (*Arbutus menziesii*) and patches of poison oak. The understory is sparse and variable with species composition like the adjacent grassland habitat.

The herbaceous habitat in the Study Area is dominated by dense Italian thistle with occasional patches of coyote brush (*Baccharis pilularis*) shrubs. Other annual grasses and forbs scattered throughout in low abundance include doveweed (*Croton setigerus*), black mustard (*Brassica nigra*), Italian ryegrass (*Festuca perennis*), foxtail barley (*Hordeum murinum*), and ripgut brome (*Bromus diandrus*). The dirt road adjacent to the grassland habitat has occasional exposed rock outcrops due to the road cut.

### *1.4.2 Soils*

Two individual soil map units from the NRCS Soil Survey Geographic Database (SSURGO) overlap the Study Area: Los Osos-Lodo Complex, 30 to 75 percent slopes and Lompico-McMullin loams, 30 to 75 percent slopes (Soil Survey Staff 2017). These soil types are typical of mountainsides where residuum has formed from weathered sandstone and shale. A typical profile has loam, clay loam, or gravelly loam on the surface

A custom soil report for the Study Area can be found as Appendix A.

### *1.4.3 Climate*

The Climate Analysis for Wetlands Tables (WETS) for Morro Bay (Station ID 046730, 3 miles west of Study Area) indicates that average 30-year rainfall is 16.8 inches with maximum precipitation typically from January through March. Between November and March, average rainfall is 14.01 inches. Between November 2018 to March 2019, total rainfall was 16.18 inches. Precipitation was well above the WETs range in November and January (Chart 1). The site was visited in February and April.

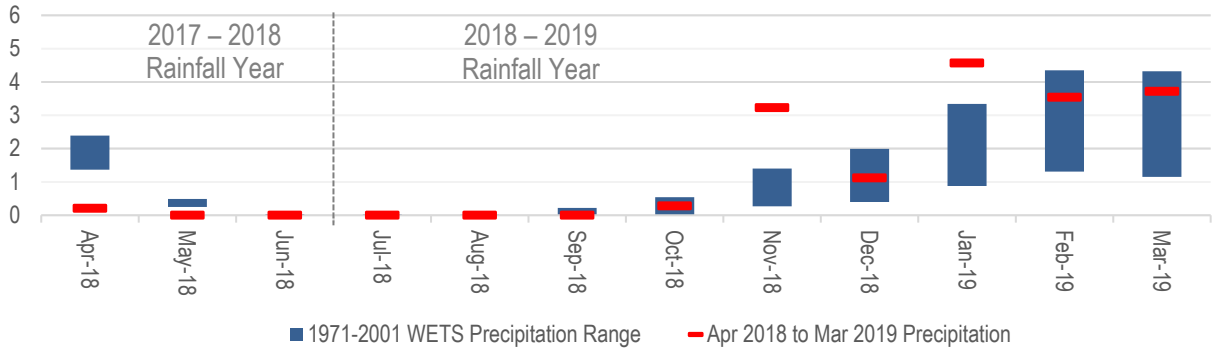



**CHART 1. WETS[1] PRECIPITATION RECENT RAINFALL (INCHES).**

WETS average range of precipitation from a probability analysis of 1971 to 2001 data compared to 2018 to 2019 precipitation. Data were retrieved from NOAA Regional Climate Centers in Morro Bay, CA (NOAA 2019).

[1] WETS tables display the average range of precipitation by month by providing a probability analysis.

# 2 REGULATORY FRAMEWORK

## 2.1 United States Army Corps of Engineers

Section 404 of the CWA authorizes the USACE to regulate activities that discharge dredged or fill material to wetlands and other waters of the United States. The term "waters of the United States" encompasses resources described by the Environmental Protection Agency (EPA) and the Corps regulations, 40 CFR (Code of Federal Regulations) § 230.3(s) and 33 CFR § 328.3(a). The geographic limits of relevant federal jurisdiction for non-tidal waters of the U.S. are defined at 33 CFR § 328.4(c).

The *Corps of Engineers Wetlands Delineation Manual* (hereafter "1987 Manual"; Environmental Laboratory 1987) defines wetlands (EPA regulations at 40 CFR § 230.3(t); USACE regulations at 33 CFR § 328.3(b)). Wetlands are considered "special aquatic sites" under the USACE definition. Special aquatic sites are afforded protection under the CWA (Sections 401 and 404). The 1987 Manual and various regional supplements describe the criteria that must be met to determine the presence of a wetland, the methods used to determine whether they are met, and the geographic extent of wetland areas identified in the field.

The USACE takes jurisdiction over wetlands that exhibit hydrology, hydric soil, and hydrophytic vegetation (three parameters) by the standard set forth in the Arid West Regional Supplement. These areas must also exhibit a significant nexus to a Traditionally Navigable Water (TNW). For non-wetland water features, USACE jurisdiction is limited to the Ordinary High Water Mark (OHWM).

## 2.2 Regional Water Quality Control Board

Recent March 2019 guidance from the RWQCB indicates that they have adopted the USACE policy of a "three-parameter wetland" but will also consider saturated, anaerobic features that lack vegetation, wetlands (SWRCB 2019). They will also take jurisdiction over a non-wetland water to the OHWM. In contrast to the USACE, however, the RWQCB will take jurisdiction over isolated wetland features that do not have significant nexus to a TNW.

## 2.3 California Department of Fish and Wildlife

CDFW found the United States Fish and Wildlife Service (USFWS) wetland definition and classification system based on the 1979 Cowardin definition to be the most biologically valid (Cowardin et al. 1979). In general, CDFW will take jurisdiction over drainage or lake features with a bed and bank and will limit their jurisdiction to the top of bank and may include adjacent wetland or riparian areas on a case by case basis.

# 3 DELINEATION METHODS

## 3.1 Overview of Sampling Methodology

Jurisdictional wetlands and other waters were identified using methods and guidelines described in the 1987 Manual, the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (hereafter "2008 Supplement"; USACE 2008b), and *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008a). Site visits were made in the winter and spring of 2019. Table 1 summarizes dates of field work and personnel attending each site visit.

**TABLE 1. FIELD WORK LOG**

Wetland delineation survey dates, action taken, and field personnel are provided.

| Survey Date | Activities | Personnel |
|---|---|---|
| February 25, 2019 | Investigation of drainages | Jason Dart<br>Jessica Boone<br>Jacqueline Tilligkeit |
| April 23, 2019 | Investigation of potential wetland seep | Kristen Andersen<br>Jacqueline Tilligkeit |

### *3.1.1 Wetlands*

Soil pits were dug by hand at two sampling sites based on the presence of hydrophytic vegetation, wetland hydrology, or low relief indicated potential wetland. For each wetland site an adjacent upland observational pit was dug to compare upland soil and vegetation features. Locations of the two sampling sites were recorded on the Jurisdictional Delineation Map (Figure 7) and USACE Arid West Region Wetland Determination Data Forms (Exhibit A; updated sheet from 2010).

#### 3.1.1.1 Wetland Hydrology

The presence or absence of wetland hydrology field indicators was assessed following methodology presented in the 1987 Manual and the 2008 Supplement. Wetland indicators included, but were not limited to, high water table, site topography, drift lines, drainage patterns, sediment deposits, inundation, observation of wet conditions during the growing season, and saturation of soils.

#### 3.1.1.2 Wetland Soils

Soils were examined according to methodology presented in the 2008 Arid West Supplement and 1987 Manual. Hydric soil indicators were recognized by soil characteristics from the USDA-NRCS publication, *Field Indicators of Hydric Soils in the United States* (version 7.0; USDA-NRCS 2010) and the National Technical Committee for Hydric Soils (NTCHS) definition of hydric soils.

#### 3.1.1.3 Wetland Vegetation

Vegetation in each stratum was identified to species and recorded. The indicator status of plants was confirmed by referring to the *National Wetland Plant List* (Lichvar *et al.* 2016). Species

dominance was noted for each stratum using the "50/20 Rule." Dominance test was calculated for all samples.

#### 3.1.1.4 Wetland Connectivity/Adjacency

Connectivity to Traditional Navigable Waters and their tributaries is established via field work where accessible, as well through analysis of aerial photographs, USGS topographic map, USGS National Hydrography Dataset, and site-specific topographic survey.

### *3.1.2 Non-Wetland Waters*

Drainages were identified onsite as features that display evidence of hydrology but do not contain vegetation suggestive of wetlands. Evidence of OHWM was used to determine extent of Corps jurisdiction over these non-wetland waters of the U.S. The OHWM Manual (USACE 2010) lists and describes indicators associated with areas that become flooded or ponded, but are not dominated by wetland vegetation and the duration of flooding, ponding, and/or near-surface soil saturation (less than or equal to 12 inches) is not sufficient to cause hydric soils to form or wetland hydrology conditions to occur. Ordinary High Water Mark was identified and noted according to guidance provided in the OHWM Manual. Arid West Ephemeral and Intermittent Streams OHWM Datasheets are included under Exhibit B.

#### 3.1.2.1 Cross Sections

Cross sections were completed along each jurisdictional drainage where there was a substantial change in either OHWM or TOB width. For each cross section, individual hydrogeomorphic floodplain units were described through vegetation cover, sediment texture, and hydrology indicators. OHWM was determined based on hydrology indicators described on the Arid West OHWM Datasheets and was defined as the division between the active floodplain and low terrace. Three photos were taken at each cross section: upstream, downstream, and substrate. Photos are in Section 4 and locations of cross sections are shown on Figure 7.

#### 3.1.2.2 Waters Connectivity/Adjacency

Connectivity to Traditional Navigable Waters and their tributaries is established via field work where accessible, as well through analysis of aerial photographs, United States Geographic Service (USGS) topographic map, USGS National Hydrography Dataset, and site-specific topographic survey. This connectivity determines whether the feature has "significant nexus" (i.e. it significantly affects the chemical, biological, or physical integrity of a Traditional Navigable Water).

## 3.2 Mapping Methodology

Mapping efforts utilized Samsung Galaxy Tab 4 tablets equipped with Garmin GLO GPS Receivers. Delineation boundaries were drawn using aerial photography, site-specific topography contours, and field notes. Existing datasets such as the National Hydrography Dataset and the USGS topographic maps were considered during mapping. Our results vary somewhat from these existing publications due to the finer scale and on-the-ground data collection techniques used in our work. GPS data, digitized notes, and photos were imported into Esri ArcGIS, a Geographic Information Systems software suite, and interpreted into maps. Maps were produced at a minimum

scale of 1 map inch to 400 feet on the ground using field data and presented over the site-specific topographic contours.

These delineation shapes are for planning purposes only. The aquatic feature boundaries should be marked in the field by an environmental scientist and surveyed by a professional land surveyor with submeter accuracy.

# 4 TECHNICAL FINDINGS

Drainage features in the Study Area meet Federal and State definitions. Our 2019 field work resulted in the delineation of 295 linear feet of non-wetland waters within the Study Area.

## 4.1 Jurisdictional Non-Wetland Waters

A portion of a potentially jurisdictional non-wetland water was delineated within the Study Area. This feature is located approximately 315 feet from the property entrance gate and bisects the access road. The water is routed under the road via an eight inch culvert, although during high flows it overtops and flows across the road. The owners cut a shallow ditch along the south side (upstream) of the road and then another crossing the road to avoid overtopping sheetflows. Approximately 295 feet of drainage is located within the Study Area.

Photo 1. View across road from downstream portion of drainage. Two pathways of water eroded into road base. February 25, 2019

Photo 2. Downstream eight inch culvert outlet. February 25, 2019.

### *4.1.1 Drainage A – Upstream of Road*

The portion of the drainage that is upstream of the road displayed OHWM indicators such as a change in litter and debris presence, bed and bank, change in sediment size, and change in vegetation cover. Roots from bay trees bisect the drainage, creating pools and drift deposition (Photo 3). A gravelly bottom is present in some areas where silt and clay have been washed further downstream (Photo 4). In pools, a thick layer of silt has deposited on top of exposed roots and rocks (Photo 5). The OHWM width is approximately two and a half feet wide and ten inches deep. In February 2019, the flowing water was flowing two feet wide and four inches deep (Chart 2).

Photo 3. View upstream from upstream cross-section. Riffles and pools created by roots growing across the drainage. Absence of litter is OHWM indicator. February 25, 2019.

Photo 4. View downstream from upstream cross-section. Channel is less defined but OHWM of change in sediment size is present. Drift and sediment deposits also present. February 25, 2019.

Photo 5. View of substrate where cross-section was completed. Incised channel present with an absence of leaf litter. February 25, 2019.

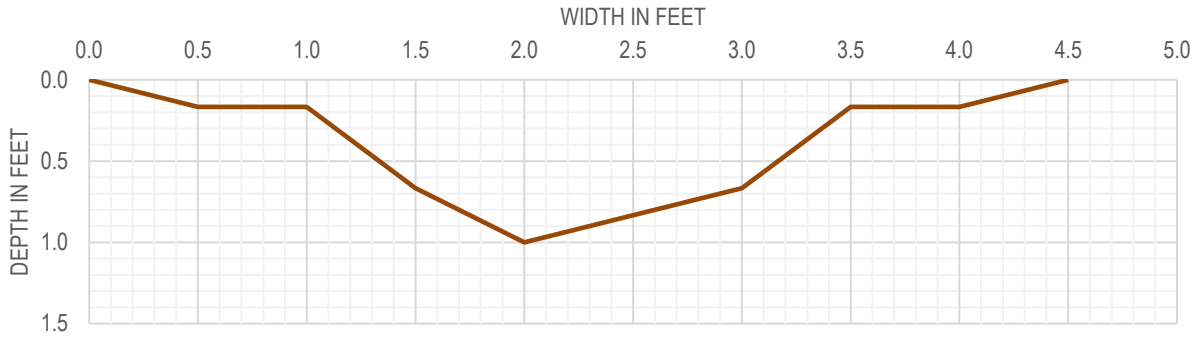



**CHART 2. CROSS-SECTION OF DRAINAGE A UPSTREAM OF ROAD.**

### *4.1.2 Drainage A – Downstream of Road*

Downstream of the road, the drainage is narrower than upstream but has similar OHWM indicators (Photo 6). A presence of bed and bank, change in litter and drift patterns, and a change in vegetation cover were used to determine the OHWM width. A few feet downstream of the cross-section, water slows and pools at the base of a California buckeye and sheet flows through thick California bay and poison oak (Photo 7). Water in the drainage was an inch deep and six inches wide during the February site visit (Photo 8). The OHWM is approximately a foot and a half wide and a foot deep (Chart 3).

Photo 6. View upstream from downstream cross-section. Channel is incised. OHWM indicators include change in vegetation cover and an absence of leaf litter. February 25, 2019.

Photo 7. View downstream of downstream cross-section. Channel is incised and then pools where channel becomes less defined. OHWM indicators include change in vegetation cover and absence of litter. February 25, 2019.

Photo 8. View of substrate at downstream cross-section. Channel is incised. OHWM indicators include change in vegetation cover and an absence of leaf litter. February 25, 2019.

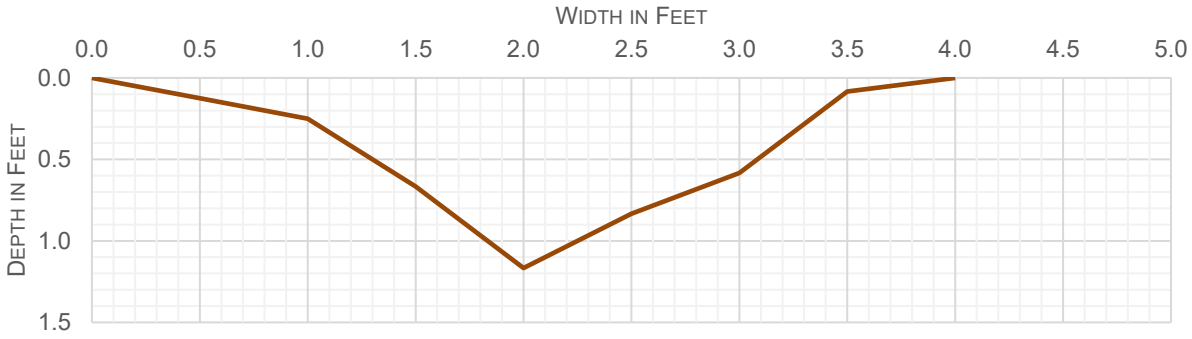



**CHART 3. CROSS-SECTION OF DRAINAGE A DOWNSTREAM OF ROAD.**

**TABLE 2. JURISDICTIONAL NON-WETLAND WATER CHARACTERISTICS**

| Feature | Cross Section | Habitat Type | Hydrology Indicator(s) | OHWM Indicator(s) |
|---|---|---|---|---|
| A | Upstream | Bay riparian | Water present<br>Sediment deposits<br>Drift deposits | Bed and bank<br>Change in litter<br>Change in veg. cover<br>Change in sediment size |
| A | Downstream | Bay riparian | Water present<br>Mudcracks<br>Drift deposits | Bed and bank<br>Change in litter<br>Change in veg. cover |

## 4.2 Additional Areas Investigated

Near the entrance gate, on the southern side of the road, there is a north facing slope supporting three cypress trees. During the February site visit there was water flowing out of the hillside. The owners had created a ditch to reroute the water across the access road to avoid muddy sheetflows. The grass in the vicinity was unidentifiable in February therefore a follow-up site visit with a Wetland Determination Form was completed in April.

A seep is formed when water infiltrating into a hillside is restricted by a clay layer or bedrock and is forced to travel laterally out of the hillside. In this case, the footslope of the hill was thick clay and redoximorphic features were more present near the surface of the soil than further down the horizon. This indicates water only saturates the soil profile to six inches deep and is mostly forced to move laterally down the hillslope. Investigations in April 2019 revealed that the vegetation supported by the seep did not pass the dominance test or prevalence index due to the strong dominance of foxtail barley (UPL) despite the presence of Italian rye grass (FAC), miner's lettuce (*Claytonia perfoliata,* FAC), poison hemlock (*Conium maculatum,* FACW), and curly dock (*Rumex crispus*, FAC). Hydrology was witnessed in February and then indicators of water marks, sediment deposits, surface soil cracks, and biotic crust were present in April. Although the area had wetland hydrology and hydric soil, it did not support a dominance of hydrophytic vegetation, nor was confined to a channel to present an OHWM, and therefore will not likely be jurisdictional per USACE or RWQCB definitions.

# 5 JURISDICTIONAL DELINEATION

The Study Area does not contain habitat that meets the definition of wetland by the USACE or RWQCB. Approximately 295 feet of drainages that meets the definition of non-wetland waters exists within the Study Area. With an average OHWM width of two feet, the total jurisdictional distance is approximately 295 feet (436 square feet) which includes 20 linear feet of culvert.

The drainage that crosses the access road is located approximately 300 feet from the entrance gate and exhibits OHWM indicators up and downstream of the road. Indicators include presence of bed and banks, change in litter presence, change in sediment size, and change in vegetation cover. OHWM width varies as the water is routed along roots and drift deposits.

**TABLE 3. JURISDICTIONAL NON-WETLAND WATER MEASUREMENTS**

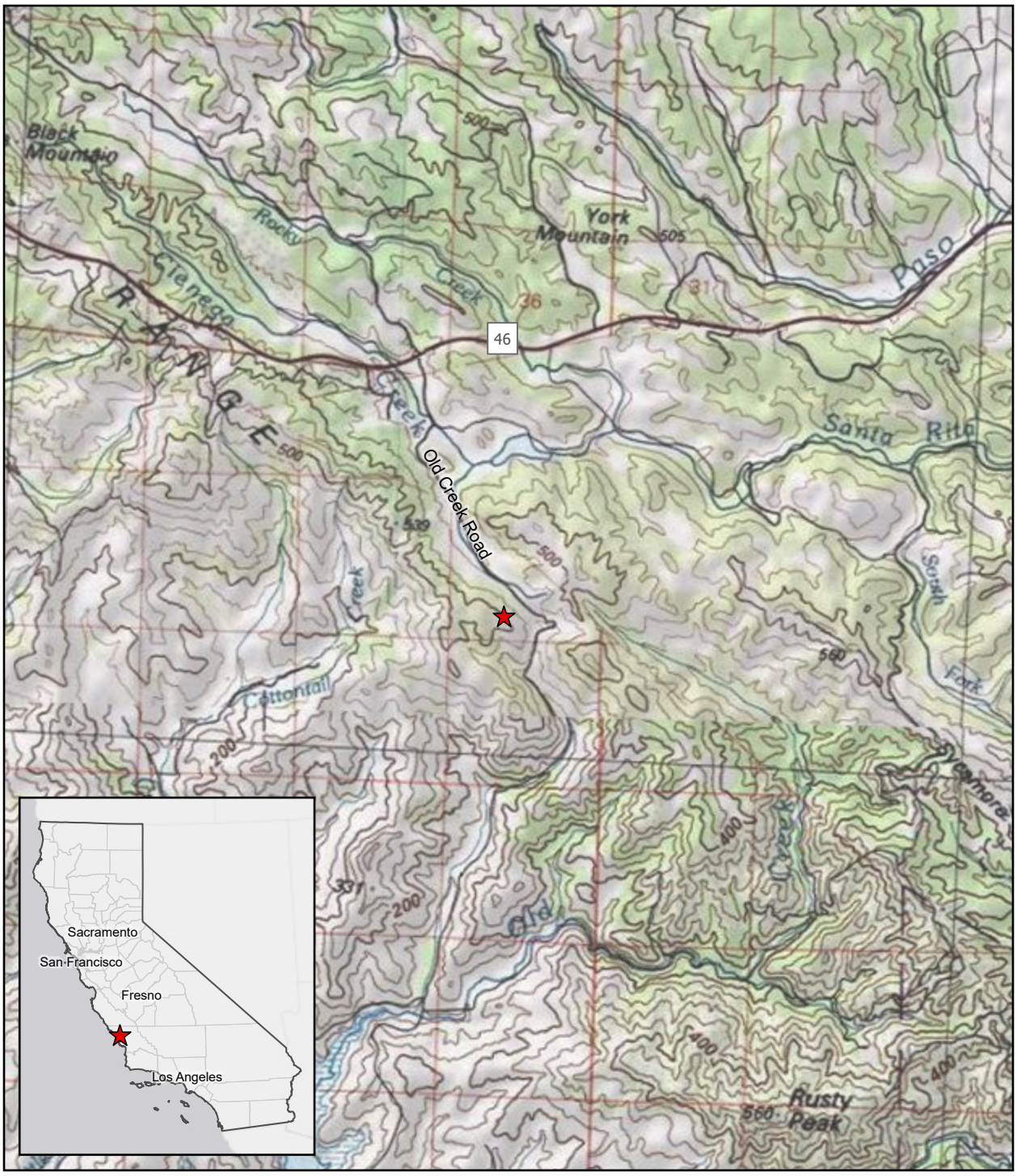
| Feature | OHWM Width (ft) | OHWM Depth (ft) | Length (ft) | Area (ac) | Area (sq ft) |
|---|---|---|---|---|---|
| Drainage A | 2 | 1 | 295 | 0.01 | 436 |
| **Total Federal Non-Wetland Waters** | | | | **0.01** | **436** |

This report is subject to verification by the USACE and RWQCB.

# 6 FIGURES

- **Figure 1. United States Geological Survey Topographic Map**
- **Figure 2. Aerial Imagery History**
- **Figure 3. Hydrologic Unit Codes**
- **Figure 5. National Wetlands Inventory**
- **Figure 4. National Hydrography Dataset**
- **Figure 6. Federal Emergency Management Agency Flood Insurance Rate Map**
- **Figure 7. Potentially Jurisdictional Aquatic Features**

## Figure 1. United States Geological Survey Topographic Map




Legend

★ Study Area Location

N

0 0.5 1 Mile

**Brynildson**
Map Center: 120.84842°W 35.51185°N
San Luis Obispo County

USGS Quadrangle: York Mountain

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Map Updated:
May 23, 2019 02:23 PM by JBB

## Figure 2. Aerial Photograph


Legend

Study Area (12.91 acres)

N

0 100 200 300 400 Feet

Brynildson
Map Center: 120.8489°W 35.51014°N
San Luis Obispo County

Imagery Source: USDA NAIP, 2018

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Map Updated:
May 23, 2019 02:22 PM by JBB

## Figure 3. Hydrologic Unit Codes


Legend

- Study Area Location
- 12-Digit Hydrologic Unit Code
- 10-Digit Hydrologic Unit Code
- 8-Digit Hydrologic Unit Code

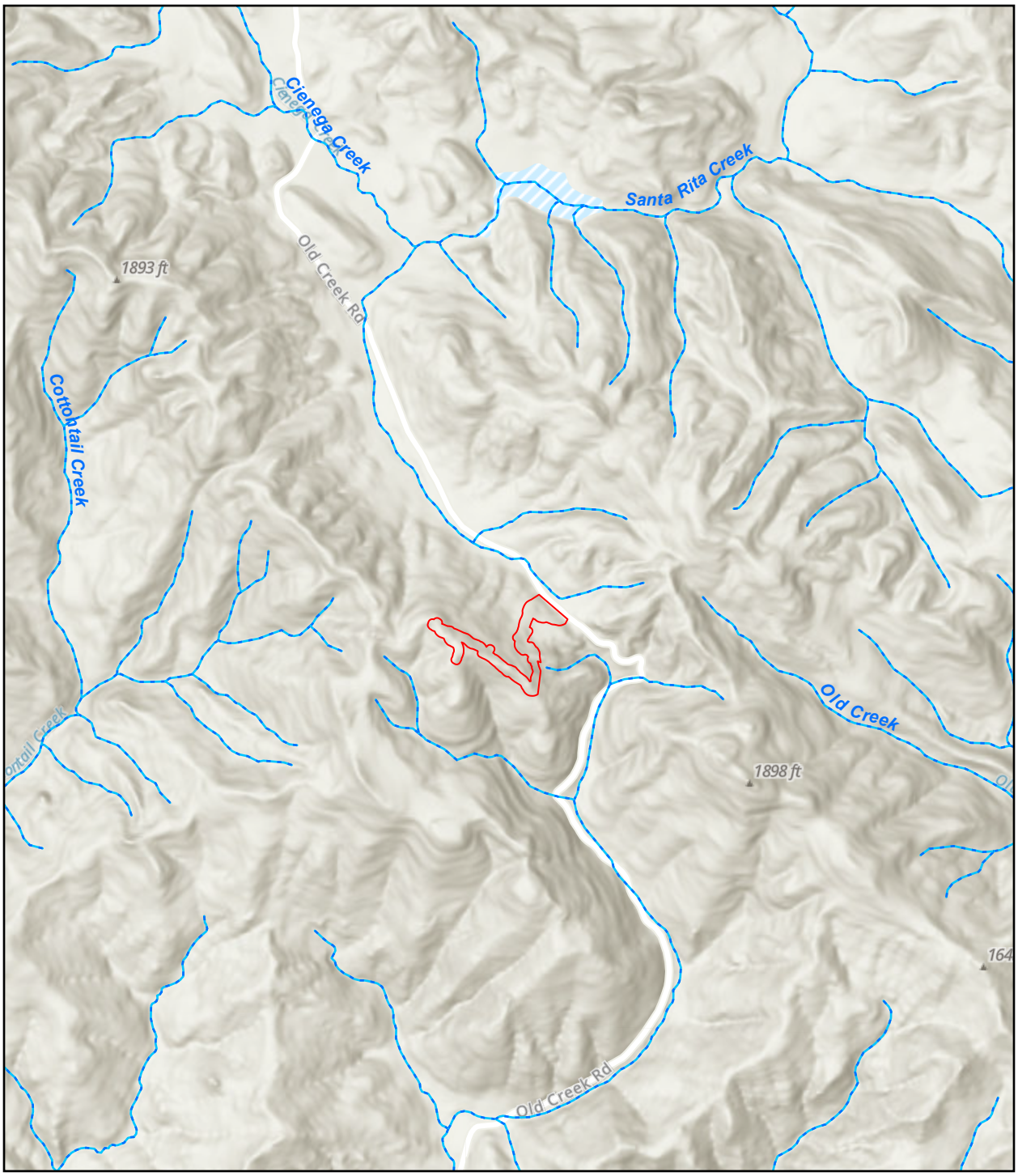
N

0 10 20 Miles

**Brynildson**
Map Center: 121.10096°W 35.86822°N
San Luis Obispo County

Data Source: United States Geological Survey

## Figure 4. National Hydrography Dataset




Legend

Study Area — Drainages

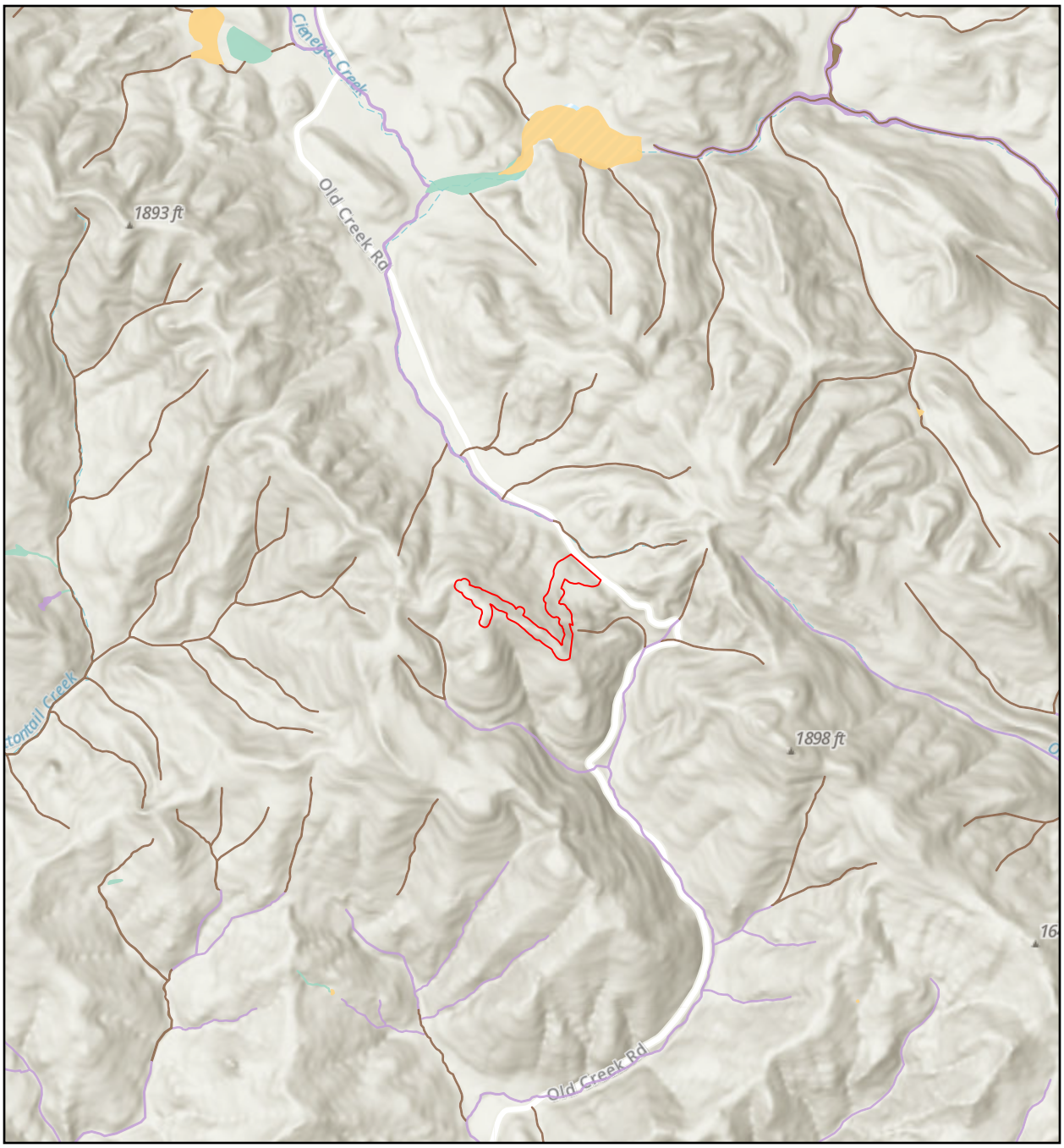
N

0 0.25 0.5 Miles

**Brynildson**
Map Center: 120.84842°W 35.51185°N
San Luis Obispo County

Data Source: United States Geological Survey

## Figure 5. National Wetland Inventory




Legend

- Study Area
- Freshwater Emergent Wetland
- Freshwater Forested/ Shrub Wetland
- Freshwater Pond
- Riverine

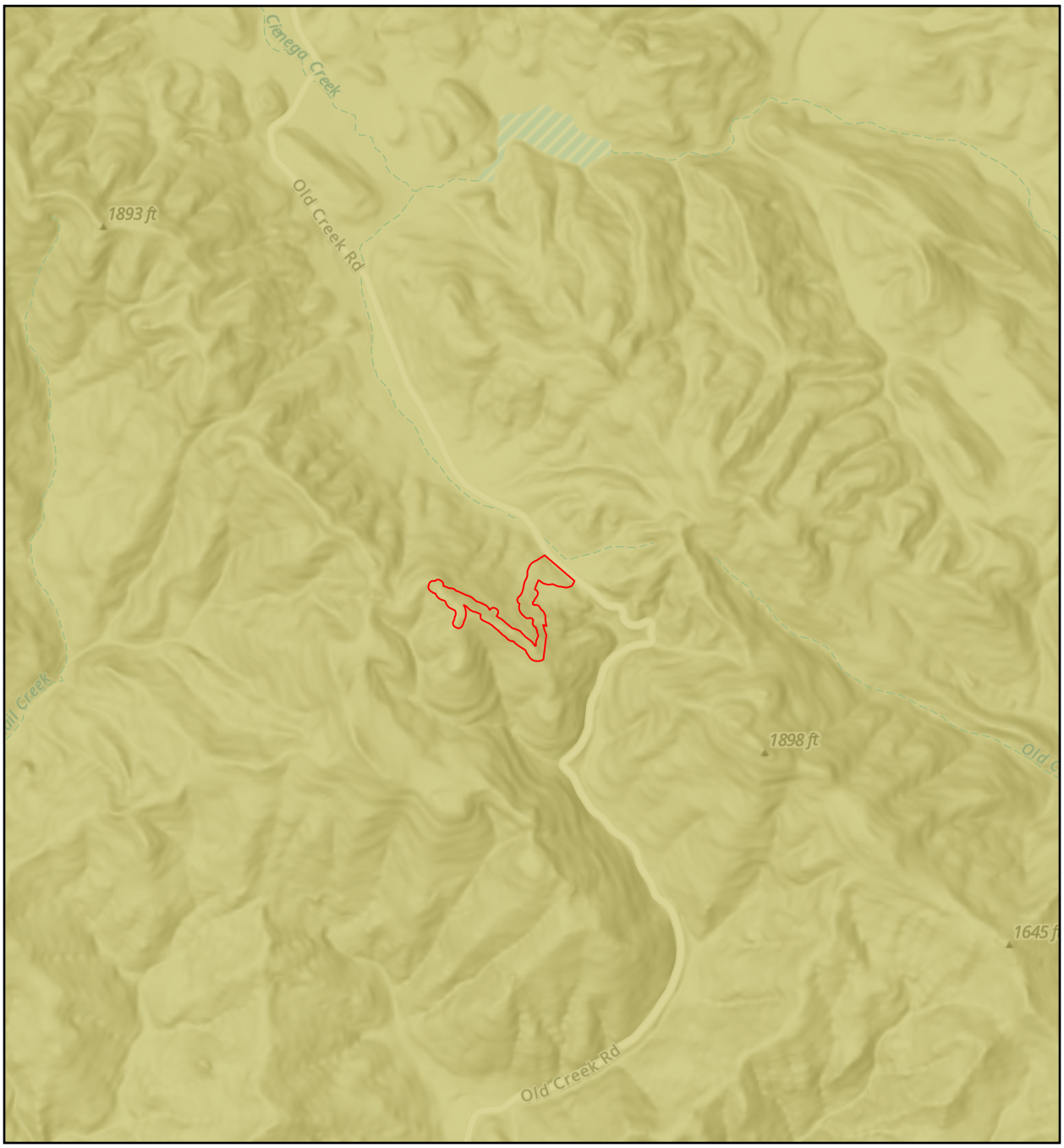
N

0 0.25 0.5 Miles

**Brynildson**
Map Center: 120.8487°W 35.51095°N
San Luis Obispo County

Data Source: United States Fish and Wildlife Service

## Figure 6. Federal Emergency Management Agency Flood Insurance Rate Map




Legend

Study Area

Flood Zone*

X - Moderate Flood Hazard

N

0 0.25 0.5 Miles

*Flood Zone Definitions on Reverse Side

**Brynildson**
Map Center: 120.84761°W 35.511°N
San Luis Obispo County

Data Source: Federal Emergency Management Agency

## FEMA/FIRM ZONE CLASSIFICATION

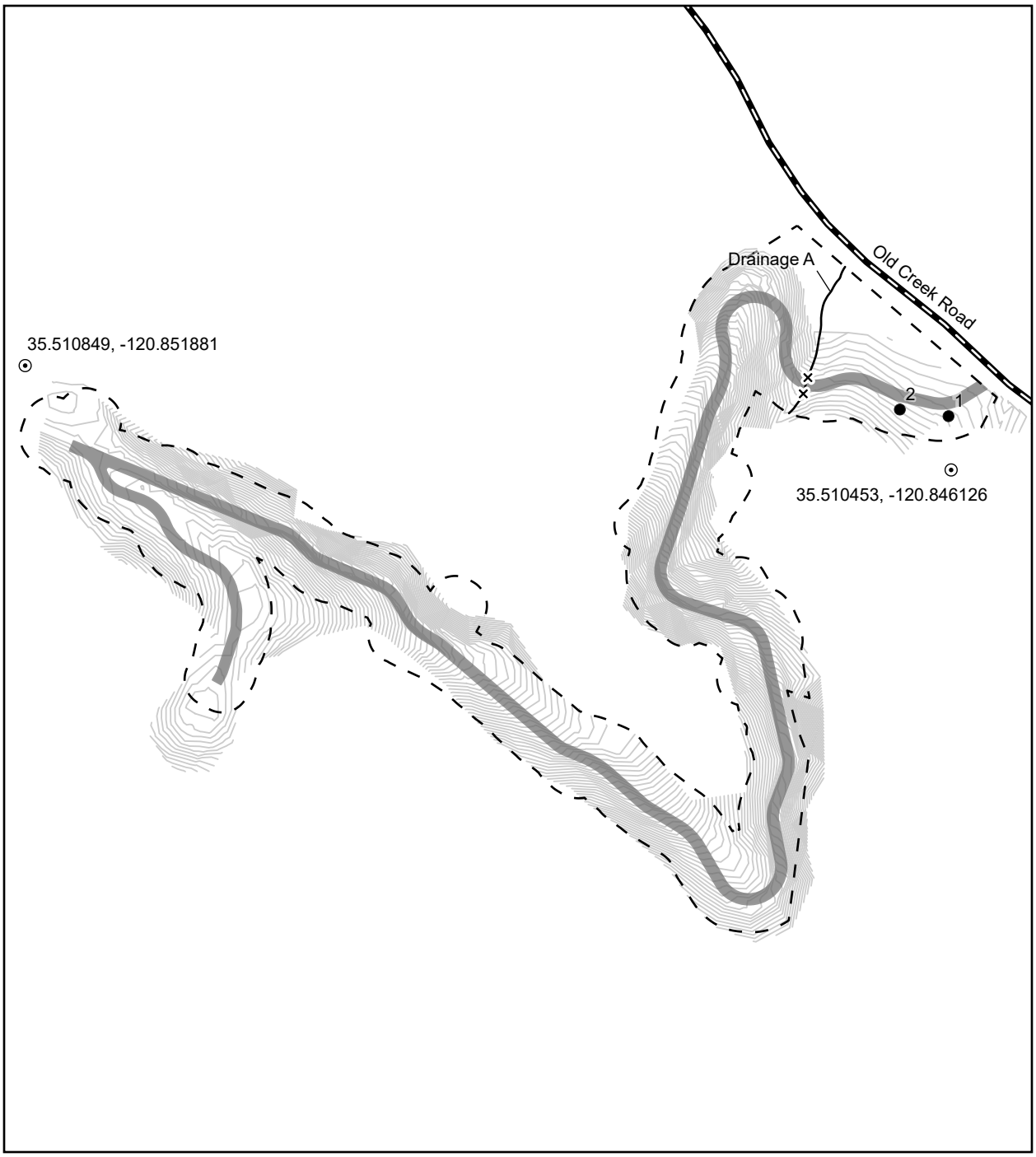
**Moderate to Low Risk Areas**

| Zone | Description |
|---|---|
| B and X (shaded) | Area of moderate flood hazard, usually the area between the limits of the 100- year and 500-year floods. B Zones are also used to designate base floodplains of lesser hazards, such as areas protected by levees from 100-year flood, or shallow flooding areas with average depths of less than one foot or drainage areas less than 1 square mile. |
| C and X (unshaded) | Area of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level. Zone C may have ponding and local drainage problems that don't warrant a detailed study or designation as base floodplain. Zone X is the area determined to be outside the 500-year flood and protected by levee from 100- year flood. |

**High Risk Areas**

| Zone | Description |
|---|---|
| A | Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas; no depths or base flood elevations are shown within these zones. |
| AE | The base floodplain where base flood elevations are provided. AE Zones are now used on new format FIRMs instead of A1-A30 Zones. |
| A1-A30 | These are known as numbered A Zones (e.g., A7 or A14). This is the base floodplain where the FIRM shows a BFE (old format). |
| AH | Areas with a 1% annual chance of shallow flooding, usually in the form of a pond, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones. |
| AO | River or stream flood hazard areas, and areas with a 1% or greater chance of shallow flooding each year, usually in the form of sheet flow, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Average flood depths derived from detailed analyses are shown within these zones. |
| AR | Areas with a temporarily increased flood risk due to the building or restoration of a flood control system (such as a levee or a dam). Mandatory flood insurance purchase requirements will apply, but rates will not exceed the rates for unnumbered A zones if the structure is built or restored in compliance with Zone AR floodplain management regulations. |
| A99 | Areas with a 1% annual chance of flooding that will be protected by a Federal flood control system where construction has reached specified legal requirements. No depths or base flood elevations are shown within these zones. |
| V | Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. No base flood elevations are shown within these zones. |
| VE, V1-30 | Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones. |

## Figure 7. Potentially Jurisdictional Aquatic Features




Legend

- Sample Site
- Cross-Section
- Site Control Point
- Non-Wetland Waters of the U.S. (295 LF)
- Existing Road
- Study Area (12.91 acres)

1 Inch = 291.7 feet

N

0 100 200 300 400 Feet

**Brynildson**
Map Center: 120.84878°W 35.50983°N
San Luis Obispo County
Contour Interval: 2-Feet
Investigator: Jacqueline Tilligkeit

# 7 REFERENCES

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## EXHIBIT A - WETLAND DETERMINATION DATA FORMS

A United States Army Corps of Engineers, Wetland Determination Data Form (2008 Arid West Supplement Version 2.0) was completed in the field for two sampling sites. The forms included here are copies of forms written in the field. The original forms are on file in our office.

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Brymildson City/County: San Luis Obispo Sampling Date: 4-23-19

Applicant/Owner: Brymildson State: CA Sampling Point: 1

Investigator(s): J. Tilliglet + K. Anderson Section, Township, Range: S12 T28S R10E

Landform (hillslope, terrace, etc.): footslope Local relief (concave, convex, none): none Slope (%): 5

Subregion (LRR): CRRC Lat: 35.51072 Long: -120.54139 Datum: WGS84

Soil Map Unit Name: Los Osos-Lake Complex NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes _____ | No ✓ | **Is the Sampled Area within a Wetland?** Yes _____ No _____ |
| Hydric Soil Present? | Yes ✓ | No _____ | |
| Wetland Hydrology Present? | Yes ✓ | No _____ | |

Remarks:
High rainfall year. Hillside seep caused by heavy clay layer. Water diverted into ditch to cross the road.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ✓) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 0 = Total Cover | | |
| **Sapling/Shrub Stratum** (Plot size: ✓) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |
| **Herb Stratum** (Plot size: 3m x 3m) | | | |
| 1. Festuca perennis | 40 | Y | FAC |
| 2. Hordeum marinum | 60 | Y | UPL |
| 3. Claytonia sp. | 10 | N | |
| 4. Stellaria media | 5 | N | |
| 5. Rumex crispus | 5 | N | |
| 6. Conium maculatum | 5 | N | |
| 7. | | | |
| 8. | | | |
| | 125 = Total Cover | | |
| **Woody Vine Stratum** (Plot size: ✓) | | | |
| 1. | | | |
| 2. | | | |
| | _____ = Total Cover | | |

% Bare Ground in Herb Stratum 10 % 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 0 | x 1 = | 0 |
| FACW species 5 | x 2 = | 10 |
| FAC species 55 | x 3 = | 165 |
| FACU species 5 | x 4 = | 20 |
| UPL species 60 | x 5 = | 300 |
| Column Totals: 125 (A) | | 495 (B) |

Prevalence Index = B/A = 3.96

**Hydrophytic Vegetation Indicators:**

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes _____ No ✓

Remarks:

## SOIL

Sampling Point: 1

**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 | 10YR 2/2 | 90 | 10YR 4/6 | 10 | C | PL | C | |
| 6-12 | 10YR 2/2 | 98 | 10YR 5/8 | 2 | C | PL | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [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 Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ✓ No ___

Remarks:

Hard dense clay

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (2 or more required)

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

**Field Observations:**

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

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

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

**Wetland Hydrology Present?** Yes ✓ No ___

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Brynildson City/County: San Luis Obispo Sampling Date: 4-23-19

Applicant/Owner: Brynildson State: CA Sampling Point: 2

Investigator(s): J. Tillquist, K. Anderson Section, Township, Range: S12 T28S R10E

Landform (hillslope, terrace, etc.): backslope Local relief (concave, convex, none): convex Slope (%): 4

Subregion (LRR): LRRC Lat: 35.510747 Long: -120.896472 Datum: WGS84

Soil Map Unit Name: Los Osos-Lodo complex NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | | |
|---|---|---|
| Hydrophytic Vegetation Present? | Yes _____ No ✓ | **Is the Sampled Area within a Wetland?** Yes _____ No _____ |
| Hydric Soil Present? | Yes ✓ No _____ | |
| Wetland Hydrology Present? | Yes _____ No ✓ | |

Remarks:
Upland

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: ✓) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | _____ = Total Cover | | |
| **Sapling/Shrub Stratum** (Plot size: ✓) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | _____ = Total Cover | | |
| **Herb Stratum** (Plot size: _____) | | | |
| 1. Hordeum marinum | 30 | Y | OBL |
| 2. Festuca perennis | 30 | Y | FAC |
| 3. Lolium pyrenaicum | 20 | Y | UPL |
| 4. Bromus diandrus | 5 | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | _____ = Total Cover | | |
| **Woody Vine Stratum** (Plot size: ✓) | | | |
| 1. | | | |
| 2. | | | |
| | _____ = Total Cover | | |

% Bare Ground in Herb Stratum 0 % 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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

**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, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes _____ No ✓

Remarks:

## SOIL

Sampling Point: 2

**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 | 10YR 3/2 | 95 | 10YR 5/8 | 5 | C | PL | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [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 Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ✓ No _____

Remarks:

very hard dry soil

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (2 or more required)

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

**Field Observations:**

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

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

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

**Wetland Hydrology Present?** Yes _____ No ✓

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

Remarks:

## EXHIBIT B - EPHEMERAL AND INTERMITTENT STREAMS OHWM DATASHEETS

A United States Army Corps of Engineers, Wetland Determination Data Form (2010 Updated Datasheet for the Identification of the Ordinary High Water Mark in the Arid West Region of the United States) was completed in the field for two cross-sections. The datasheets included here are copies of datasheets written in the field. The originals are on file in our office.

# Arid West Ephemeral and Intermittent Streams OHWM Datasheet

**Project:** Bryantson
**Project Number:** 1153
**Stream:** Drainage A
**Investigator(s):** T. Wright

**Date:** 2-15-19 **Time:** 900
**Town:** Cayucos **State:** CA
**Photo begin file#:** **Photo end file#:**

Y ☐ / N ☒ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

**Location Details:** Old Creek Road

**Projection:** WGS84 **Datum:** WGS84
**Coordinates:** 35.51858, -120.817084

**Potential anthropogenic influences on the channel system:**
Dirt ranch road with base through drainage. 8" culvert under road. Overflow evident through washed out base & ditches

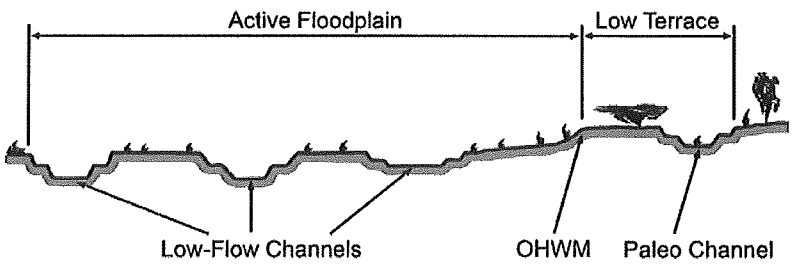
**Brief site description:**
Ranch road off of Old Creek Road (southwest side) to ridge top

**Checklist of resources (if available):**

- ☒ Aerial photography
  Dates:
- ☒ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

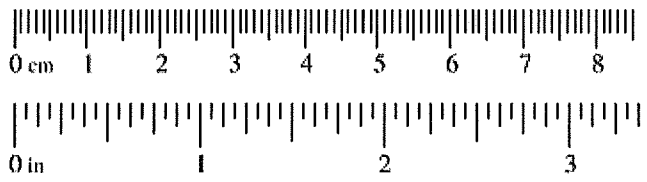



**Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:**

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☒ Other: Aerial measurements

## Wentworth Size Classes

| Inches (in) | | Millimeters (mm) | Wentworth size class | |
|---|---|---|---|---|
| | 10.08 | 256 | Boulder | |
| | 2.56 | 64 | Cobble | Gravel |
| | 0.157 | 4 | Pebble | |
| | 0.079 | 2.00 | Granule | |
| | 0.039 | 1.00 | Very coarse sand | |
| | 0.020 | 0.50 | Coarse sand | |
| 1/2 | 0.0098 | 0.25 | Medium sand | Sand |
| 1/4 | 0.005 | 0.125 | Fine sand | |
| 1/8 | 0.0025 | 0.0625 | Very fine sand | |
| 1/16 | 0.0012 | 0.031 | Coarse silt | |
| 1/32 | 0.00061 | 0.0156 | Medium silt | |
| 1/64 | 0.00031 | 0.0078 | Fine silt | Silt |
| 1/128 | 0.00015 | 0.0039 | Very fine silt | |
| | | | Clay | Mud |



**Project ID:** 1153 **Cross section ID:** Downstream **Date:** 2-25-19 **Time:** 900

**Cross section drawing:**


## OHWM

**GPS point:** 35.510861, -120.817027

**Indicators:**

- [ ] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [x] Other: Change in litter
- [ ] Other: _____

**Comments:**

## Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

**GPS point:** _____

**Characteristics of the floodplain unit:**

Average sediment texture: Mud

Total veg cover: 0 % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

**Indicators:**

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: No litter
- [ ] Other: _____
- [ ] Other: _____

**Comments:**

Flowing water from 8" culvert
Pools downstream

**Project ID:** 1153 **Cross section ID:** downstream **Date:** 2-25-19 **Time:** 900

**Floodplain unit:** ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

**GPS point:** _____

**Characteristics of the floodplain unit:**

Average sediment texture: mud

Total veg cover: 2 % Tree: 0 % Shrub: 0 % Herb: 2 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

**Indicators:**

- ☒ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

**Comments:**

---

**Floodplain unit:** ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

**GPS point:** _____

**Characteristics of the floodplain unit:**

Average sediment texture: _____

Total veg cover: 60 % Tree: 0 % Shrub: 25 % Herb: 50 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

**Indicators:**

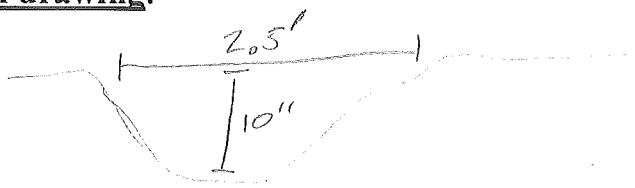
- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

**Comments:**

No evidence of water flowing outside of channel

**Project ID:** 1153 **Cross section ID:** upstream **Date:** 2-25-19 **Time:** 900

**Cross section drawing:**




## OHWM

**GPS point:** 35.510839, -120.877092

**Indicators:**

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [x] Other: Change in litter
- [ ] Other: _____

**Comments:**

## Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

**GPS point:** _____

**Characteristics of the floodplain unit:**

Average sediment texture: mod at cross-section, Gravel downstream.

Total veg cover: 0 % Tree: + canopy % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

**Indicators:**

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

**Comments:**

Riffles & pools, water flowing, 4or 5 inches deep & two feet wide

**Project ID:** 1153 **Cross section ID:** upstream **Date:** 2-25-19 **Time:** 900

**Floodplain unit:** ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

**GPS point:** _____

**Characteristics of the floodplain unit:**

Average sediment texture: mud

Total veg cover: 0 % Tree: ____ % Shrub: ____ % Herb: ____ %

Community successional stage: canopy

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

**Indicators:**

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: Absence of litter
- ☐ Other: _____
- ☐ Other: _____

**Comments:**

No vegetation or litter except where deposited on roots & obstructions

**Floodplain unit:** ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

**GPS point:** _____

**Characteristics of the floodplain unit:**

Average sediment texture: mud

Total veg cover: 100 % Tree: 90 % Shrub: ____ % Herb: 10 %

Community successional stage: canopy

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

**Indicators:**

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

**Comments:**

litter & down branches